mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT AS PART OF THE ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE SPRINGFIELD COAL MINING PROJECT AND REDAN SIDING BY GLUBAY COAL (PTY) LTD IN THE DISTRICT OF VEREENIGING & MEYERTON, GAUTENG

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY A MINING LICENSE APPLICATION IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED)

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Final Scoping Report for the Springfield Coal Mining and Redan Siding Project

Situated on the farms Kookfontein 545 IQ, Damfontein 541 IQ, Smaldeel 542 IQ, Waldrift 599 IQ and Vlakfontein 546 IQ in the Vereeniging & Meyerton Magisterial Districts of the Gauteng Province, Republic of South Africa

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Preface

This scoping report has been compiled by M2 Environmental Connections (Pty) Ltd (trading as MENCO), based on the guidelines provided by the National Environmental Management Act, 1998 (Act no 107 of 1998) (NEMA), Environmental Impact Assessment (EIA) Regulations, 2014, as amended in April 2017. Full acknowledgement is made for use of these regulations and guidelines in compiling this report. This document includes MENCO's own interpretation of the requirements of the National Environmental Management Act (Act 107 of 1998), the regulations, the guidelines and the integration with other statutory and best practice criteria. This scoping report is the first step in the process in support of the Mining Right and Environmental Authorisation application for the proposed Springfield Coal Mine by Glubay Coal (Pty) Ltd.

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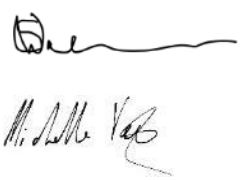
Approved	Sarah Wanless Michelle Venter-Glanvill (Cert. Sci. Nat 114447) (EAPASA 2019/456) Canyon Coal		26 June 2023

Important Notice

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended) (MPRDA), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3) (b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner (EAP) must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

Objective of the Scoping Process

The objective of the scoping process is to, through a consultative process—

- Identify the relevant policies and legislation relevant to the activity;
- Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- Identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
- Identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
- Identify the key issues to be addressed in the assessment phase;
- Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
- Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

Executive Summary

Glubay Coal (Pty) Ltd is an affiliated company of Canyon Resources which is a mining and exploration company with current operations in Mpumalanga and Gauteng. The company has five operational coal mines, Hakhano and Singani Colliery in the Middelburg area, Phalanndwa and Phalanndwa Extension Colliery in the Delmas area and Khanye Colliery situated in the Bronkhorstspruit area. All five are opencast coal mines, mined through the typical truck and shovel method with concurrent rehabilitation being done at all five sites.

The Springfield Coal Mining Project (Springfield Project) is a proposed opencast colliery linked to Redan Siding, located in, on and around the old workings of the abandoned Springfield Colliery, 7km South of Meyerton & 10km North of Vereeniging in the Sedibeng District Municipality of the Gauteng Province. The Mining Right application area falls over the following farms located partially in the Midvaal Local Municipality and the Emfuleni Local Municipality:

- Kookfontein 545 IQ;
- Damfontein 541 IQ;
- Smaldeel 542 IQ;
- Waldrift 599 IQ; and
- Vlakfontein 546.

The application area is 2,547 Hectares (Ha) in extent but the area to be disturbed by mining and associated activities is approximately 1,300 Ha. The project has a resource of approximately 266 million tonnes of coal that will be marketed to local and export markets. Coal will be loaded for export from the Redan Siding. Production will start at approximately 100,000 tons per month and will increase by approximately 100,000 tons per month to an average of 600,000 tons per month during full production with a life of mine (LOM) of 31 years.

Coal mining will be undertaken by the conventional truck and shovel rollover method and will be opencast only. Concurrent rehabilitation will occur during the operational phase by means of the roll over method. The project will entail new mining infrastructure being developed, which will potentially include:

- Opencast mining pit,
- Processing plant,
- Overburden stockpiles,
- Plant roads and haul roads,
- Run of mine (RoM) stockpiles,
- Product stockpile,
- Conveyor belts,
- Pollution control dams (PCDs),
- Discard dump and slurry dams (co disposal facility),

- Redan siding,
- Stormwater trenches,
- Site and security offices,
- Bulk fuel storage facility,
- Workshops and contractor yards for the mining and logistics contractors,
- Hard park areas with offices,
- 2x weighbridges,
- Sewage management system and plant,
- Water treatment plant,
- Water pipelines, and
- Electricity supply infrastructure.

Haul roads on the mine itself will be established, as well as additional haul roads linking the mine and coal loading rail sidings. Access to the project area is from tarred roads (R59 and M61) and a railway line passes the project area in the east.

Water will be sourced from boreholes, groundwater inflow to the pit and water captured in the dirty water containment infrastructure (pollution control dams). Water from the pit and run-off water from the contaminated area (stockpile area and workshops) will be channelled towards the pollution control dams on-site. Potable water will be obtained from a borehole. Process water for the plant will be sourced from the pollution control dams.

The coal will be fed into a crushing and washing plant with a conveyor after which the coal product will be temporarily stored at the product stockpile area before being transported to the Redan Siding for distribution or directly via truck to the relevant markets.

Glubay Coal initially appointed uKhozi Environmentalists (Pty) Ltd (uKhozi) during 2020 to assist with the various legal-environmental requirements. Following the withdrawal of uKhozi as the EAP for the project, GCS (Pty) Ltd had been approached to submit the renewed Environmental Authorisation Application during October 2022 with a Draft Scoping Report. However, the project file had lapsed and subsequently M2 Environmental Connections (Pty) Ltd (MENCO) was appointed to facilitate the environmental authorisation processes. MENCO is now leading the environmental application process. The proposed coal mining operation requires authorisations from various government departments. The following applications must be made as part of the enviro-legal authorisation requirements in order to commence with construction and operation of the proposed project:

- A Mining Right in terms of Section 22 of the Mineral and Petroleum Resources Development Act (Act No.28 of 2002) (MPRDA) regulated by the Department of Mineral Resources and Energy (DMRE);
- Environmental Authorisation in terms of the National Environmental Management Act (Act No 107 of 1998) (NEMA) and associated regulations, including the Environmental Impact

Assessment Regulations of 2014 regulated by the DMRE. The proposed mining operation triggers various listed activities identified in terms of NEMA EIA Regulations, 2014, as amended in April 2017 GNR324, GNR325 and GNR327;

- Waste License Application in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEMWA) regulated by the DMRE. The proposed mining operation triggers Category B listed activities in terms of GNR 921, as amended in July 2015.
- A Water Use License in terms of Section 21 of the National Water Act (Act No 36 of 1998) (NWA) regulated by the Department of Water and Sanitation (DWS).

Alternatives

For this specific application the site and proposed activity (coal mining) has already been selected. Therefore the alternatives will be assessed in terms of:

- Design or layout;
- Technology to be used;
- Operational aspects;
- No-go Option.

Baseline Environment

The site is currently owned and operated on by numerous individuals and companies with associated infrastructure. In addition, there are multiple servitudes crossing the site, including water pipelines and power lines. A portion of the Regional Road (R82 – Johannesburg Rd) runs through the western part of the application area and the Regional Road R59 runs along the eastern boundary. Eskom holds several servitudes on the properties, the extent and width of these servitudes are 23.5 and 27.5 metres on either side of the central lines of the 75kV and 400kV power lines respectively. The study area and its surrounds are currently characterised by numerous activities including:

- Agriculture;
- Waldrift Nature Reserve[1] (transformed by agriculture and industrial activities);
- Natural vegetation;
- Recreational;
- Watercourses, including dams, rivers and wetlands;
- Informal settlements;
- Heavy industrial;
- Mining;
- Waste storage and disposal facilities;
- Warehousing;
- Electricity transmission lines;
- Water supply pipelines;
- Aerodrome (situated on the property directly north west of the application area);
- High urban density directly adjacent to the application area; and
- Ocon Bricks.

[1] As published in Provincial Gazette 348 of 3 December 2007: Notice was given in terms of section 24(1)(b) of NEMA: Protected Areas Act, 2003 – withdrawal of Declaration of Waldrift as a Nature Reserve

Geology

The Springfield Project is located within the Vereeniging-Sasolburg coalfield (also known as the South Rand coalfield), which is located within a southerly trending basin between the towns of Heidelberg in the north and Villiers in the south, in the Gauteng Province of South Africa.

Topography

The project area shows a gradual decrease in elevation to the south east with elevations as high as 1 500m above mean sea-level ("amsl") in the north-west to approximately 1 455m amsl in the south east.

Soils and land capability

The Springfield Mine is located in an area associated with large-scale commercial agricultural farming. The soils are generally favourable for agriculture, although there will be restrictions in some areas. During the consultation process the landowners confirmed that the application area consists of high potential arable soils (Hutton).

Biodiversity

Based on the latest information on South African National Biodiversity Institute (SANBI) and the Gauteng Conservation Plan, large areas of the site have been transformed but there are Ecological Support Areas (ESA), Important Areas and National Freshwater Ecosystem Priority Area (NFEPA) Wetlands remaining. The Springfield Mine will be situated on the Waldrift Nature Reserve area (Farm Kookfontein 545, Portion 29).

It is worthy to note that although the subject property of the mine is situated within the Waldrift Nature Reserve, according to the Notice in terms of Section 24(1) (b) of the National Environmental Management: Protected Areas Act, 2003 of Government Notice 5325 of 2007, Waldrift Nature Reserve has been withdrawn as a declared nature reserve. The Johanna Jacobs Private Nature Reserve and Leeuwkuil Nature Reserve are the only other nature reserves situated within 10km from the site.

Water resources

In terms of water resources, the site is situated within quaternary catchment C22E. The Klip River runs along the eastern boundary of the application area and the Fourie Spruit, a tributary of the Klip River, runs through the northern part of the application area. A wetland associated with the Fourie Spruit is found along the northern boundary of the application area. This wetland is identified as a NFEPA wetland. The proposed mine footprint is located in a complex geological terrain consisting of faulted bounded blocks of Karoo Coal Measures overlying palaeovalleys in the glaciated dolomitic basement. The hydrological cycle surface water filters into groundwater through seeps and infiltration; and in turn, groundwater interacts and replenishes surface water resources via springs or the headwaters of rivers. Groundwater is abstracted for irrigation purposes and the quality fall within the Class I South African Bureau of Standards (SABS) according to the directly affected landowners.

Air quality

The site is located in the Vaal Triangle Airshed Priority Area (VTAPA). The main emission sources within the VT APA are:

- Industrial Sources: sources of air pollutants represent mostly stationary facilities;
- Mining Sources: including opencast and underground mines and quarries.
- Mobile Sources: vehicles traveling on arterial- and main roads, national freeway, secondary roads, slipways, off- and on ramps and streets;
- Domestic Fuel Burning: fuel combustion for energy use in the domestic environment;
- Waste: open burning in residential areas, landfills and wastewater treatment facilities;
- Windblown Dust: from mine waste facilities, product stockpiles, as well as ash storage facilities for large combustion sources.
- Biogenic VOC Emission: plants emitting numerous VOC compounds, primarily isoprene, due to stress response;
- Biomass Burning: large scale agricultural burning and natural fires.
- Agriculture: mainly for its contribution to ammonia emissions.

Noise

Noise in the area is restricted to routine traffic to and from the surrounding farms and existing industrial operations within the study area. Agricultural activities such as the cultivation of lands and harvesting of crops also contribute a low scale source of noise to the ambient level.

Visual

The site is visible from the R59, R82 and R551 district roads and is surrounded by residential areas, agricultural holdings and industrial activities. The accumulation of mines and other industrial activities within the region has contributed to a visually unappealing environment. This visual disturbance of this mine could have a significant impact on the surrounding residential areas located within a 1000m of the site.

Socio Economic

Springfield falls within the Sedibeng District Municipality (Sedibeng), situated in the Gauteng Province. Sedibeng District Municipality occupies 4,173 km^2 of the land area in the Province of Gauteng. Sedibeng consists of three local municipalities: Emfuleni, Lesedi and Midvaal. Springfield falls within Wards 16 and 45 of Emfuleni Local Municipality and Ward 3 of Midvaal Local Municipality. There are many large enterprises established in the area including South 32, Lethabo Power Station, New Vaal Colliery, Cape Gate, Arcelor Mittal and Heineken, amongst others. In the area under application there are several large, intensive agricultural enterprises and brick-making operations – amongst others, which play a major role in job creation and economic activity. In terms of the application area there are established businesses on the properties directly affected by this application. The alleged business value of the farms is very high due to the following factors:

- High value crops are produced;
- The farms are well located in terms of markets;
- High value contracts are in place to supply markets such as Woolworths, Spar, McCain, etc.;
- The Water Rights for all boreholes are registered. The borehole yields are high, and the water quality is Class I SANS, which is required to irrigate crops for supply to the above-mentioned markets;

- High potential soils (Hutton);
- Location of farms – close to factories and strong informal market.

Heritage and Cultural Aspects

The proposed development area lies within the highly fossiliferous early Permian-aged Vryheid Formation, world famous for its rich record of Permian aged plant fossils, predominantly in the clays and mudrocks associated with economically viable coal deposits of the region. Based on the South African Heritage Resource Agency (SAHRA), the site is situated within a very high paleontological sensitivity area. The Redan Engraving Site is a declared National Monument and needs protection by means of an adequate protective buffer zone demarcated as a no-go mining area.

Public Participation

Public Participation has and will be conducted in both the Scoping and EIA Phases of the project in strict accordance with GNR 517 of 11 June 2021. English will be primary medium for the stakeholder engagement process. The following steps had been taken and were planned by Zitholele Consulting as part of the public participation process for the proposed project going forward:

- Verifying existing and identify new internal and external stakeholders and development of a stakeholder database.
- Placement of newspaper and site notices informing the public about the project and inviting them to register as Interested and Affected Parties (IAPs).
- Written notice to key stakeholders (directly affected landowners, relevant authorities, surrounding landowners and occupiers, ward councillors).
- Dissemination of Draft Scoping Report (15th May 2023 to 15th of June 2023) for stakeholder comment.
- Preparation of a Comment and Response Report, for inclusion in the Final Scoping and EIA Reports.
- Public meetings in order to give stakeholders an opportunity to obtain additional information on the project, engage with the client, the EIA teams, and to record any issues and concerns about the project.
- Focus group meetings with key stakeholders and communities to record any issues and concerns about the project.
- An updated list of internal and external stakeholders after completion of the stakeholder engagement process.
- Responding to comments and concerns submitted by stakeholders and relevant authorities.
- Notification and distribution of the decision on the Environmental Authorisation application to registered stakeholders.

The issues and concerns raised during the public participation process will be further assessed during the current Scoping and EIA Phases of this project with the input from the various specialists identified in the Plan of Study. The PPP commenced during May 2023 with Open House meetings scheduled for 3

June at Sicelo Community Hall and 6 June at Arcon Park Primary School. The draft scoping report will be available from 15 May till 15 June for public comment.

Impacts

A high-level approach to the management of the potential environmental impacts identified at this stage has been provided below. The potential impacts with a significant rating of High – Very High pre-mitigation along with the proposed mitigation/management measures are presented in the Table below.

Various specialist investigations are to be conducted as specified in terms of the "Plan of Study" for the project. Once the studies are completed as part of the Environmental Impact Assessment (EIA) phase, the recommended mitigatory measures will be incorporated in the compilation of the Environmental Management Plan for the project.

Table: Potential impacts at Springfield and Redan with a high or very high significance rating

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
Geology	Disturbance of geological profile	Construction. Operational	Negative	Alteration of geology is unavoidable and cannot be mitigated.
Topography	Alteration of the natural topography caused by site establishment, soil stripping and removal of coal.	Construction. Operational	Negative	The operational plan must make provision for an accurate topographical survey of the mining area before any mining operations are to commence in order to determine the topographical baseline that the area will need to be returned to during the rehabilitation phase.
Soils	Alteration to the biophysical, chemical and physical characteristics of the soils caused by soil stripping.	Construction. Operational	Negative	The topsoil must be stockpiled separately and used for the construction of berms: the gradient of the sidewalls must be such as to prevent excessive wash during storms. These must be managed to prevent soil loss through erosion and excessive dust. The topsoil and subsoil must be managed to ensure effective rehabilitation back to the pre mining land capability during the decommissioning phase. Remove the maximum amount of topsoil and store for use in post-construction rehabilitation.
	Loss of soil resource (soils covered or removed) due to sterilisation, erosion (wind and/or water) and compaction.	Construction. Operational	Negative	Management of topsoil to prevent soil loss through erosion and excessive wind. Restrict vegetation clearance to construction areas. Stabilisation and terracing of soil stockpiles on the downslope side should be undertaken to mitigate against runoff erosion. Compacted soils must be ripped to correct any compaction created by the heavy traffic utilized during the mining operation and rehabilitated with the addition of appropriate fertilizers.

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
	Contamination of soils located at the processing plant complex, sewage facilities and workshop.	Operational	Negative	Cross contamination or exposure of soil stockpiles to factors that may cause quality deterioration needs to be mitigated against. All stockpiles must be founded on stabilized and well-engineered "pads". Ensure the impermeability of all storage areas for fuel. Install oil traps at workshop, fuel depots and vehicle wash bays to prevent flow of hydrocarbons
	Loss of soil resource due to cracking caused by poorly consolidated concurrent rehabilitation at surface.	Operational Decommissioning	Negative	Topsoil and subsoil should be replaced in the correct sequence on soft overburden material to ensure that subsurface limiting layers are not created. Replaced soil should be re-vegetated, naturally or with indigenous seeds (as required). Conduct on-going monitoring for subsidence and or cracking to surface. Where needed implement backfilling of cracks and landscaping of collapsed areas.
Land capability and use	Loss in agricultural potential caused by site establishment and soil stripping.	Construction. Operational	Negative	Aim to keep the natural habitats within the study area intact – specifically those that are connected to other natural areas outside the study area extent. The disturbed area must be kept to the minimum needed for the mining operation. Remove vegetation during periods of low rainfall or dry periods. Reshaping of footprint area to allow for naturally free draining topography during concurrent rehabilitation.
	Change of land use from agriculture to mining.	Construction. Operational	Negative	

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
Vegetation	Total destruction of the remaining natural vegetation inside the mining area.	Construction. Operational	Negative	Only areas earmarked for immediate opencast mining (per section) should be cleared of vegetation. Construction vehicles should only use existing access roads as far as possible. A concurrent rehabilitation and re-vegetation plan should be implemented as and when areas become available for rehabilitation. Any sensitive or endemic vegetation should be relocated prior to mining.
Animal life	Displacement of indigenous animal and bird species caused by increased human activity in the area.	Construction. Operational	Negative	Areas beyond the designated development footprint areas should remain no-go areas for mining personnel and vehicles. Implement noise and dust management measures.
Surface Water	Alteration of drainage patterns and the amount of water entering the surface water resources down gradient of the site.	Construction. Operational	Negative	Identify and where possible, maximise areas of the mine that will result in clean storm water runoff (for example open veld areas) as well as infrastructure associated with the mine (for example office areas) and ensure that runoff from these areas is routed directly to natural watercourses and not contained or contaminated.
	Potential contamination of surface water with coal.	Operational	Negative	Ensure the minimisation of contaminated areas, reuse of dirty water wherever possible. A system of clean water channels must be designed and constructed to ensure that all water that falls outside the stockpile area is diverted clear of the deposit. Water that comes into contact with acid generating material should be diverted to the PCDs. A zero-discharge policy will be followed. Maintain a freeboard of 0.8m to minimise the risk for spillage from the PCD.

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
				Locate the processing plant, PCDs and coal stockpiles outside the regulated area of a watercourse. A wastewater management system will be introduced on-site to ensure that potential pollution of the water resource will be minimised.
	Decanting resulting in the contamination of surface water resources down gradient of the mining area.	Decommissioning Closure	Negative	Should seepage or decant occur, the water should be redirected via trenching to an evaporation dam (or similar containment facility) that is sanitarily lined with secondary containment. Treatment of decant may be viable, however all passive methods should be investigated first during the operational phase of the mine. Reduction of the opencast extent in potential decant areas is likely to lower the risk of discharge significantly. Backfill material should be compacted, and surface water flow should be routed around the backfilled opencasts to reduce recharge to a maximal extent.
Groundwater	Drawdown of water table due to the dewatering of the aquifers.	Operational	Negative	A groundwater model must be developed and updated during operation of the opencast by using the measured inflows, water levels and drilling and pump test information to recalibrate and refine the impact prediction. Groundwater monitoring boreholes should be installed to comply with the minimum requirements as set by governmental guidelines. If it can be proven that the mine is indeed affecting the quantity of groundwater available to certain users, the affected parties should be compensated.

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
				Residue and discard stockpiles must be classified according to the relevant legislation and lined with the legislated required liner systems.
	Leaching/Seeping of contaminants from the PCDs, slurry dams, ROM and overburden stockpile areas polluting the aquifer.	Operational	Negative	Ensure that the appropriate design facilities (berms, storm water channels etc.) are constructed to ensure clean and dirty water is separated at the coal handling facilities. Separate the aquifer from the facility by lining the pollution control dams with an HDPE liner (2mm). The workshop and diesel storage area should be sufficiently bunded, and the water should be collected at the lowest point of the site. Water retention dams (or PCDs) should be lined to prevent ingress of contamination. Groundwater quality must be monitored on a quarterly basis.
	Aquifer contamination caused by polluted water migrating away from the mining area (leachate plume).	Decommissioning Closure	Negative	Where leachate is generated, it must be contained separately from water which is only slightly polluted through contact with the waste. All mined areas should be flooded as soon as possible to minimise oxygen from reacting with the remaining pyrite. Mining should remove all possible coal from the mining area and separate acid forming and non-acid forming material. Deposit acid forming material at the base of the pit. The final backfilled opencast topography should be engineered such that runoff is directed away from the mining areas.

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
				Quarterly groundwater sampling must be conducted to establish a database of groundwater quality to assess plume movement trends.
	Recovery of groundwater levels after the cessation of dewatering.	Decommissioning Closure	Positive	No mitigation required. Groundwater levels and quality to continue for 5 years to determine the potential for decant.
Air Quality	Reduction in the ambient air quality through the creation of fugitive dust from construction vehicles, drilling and blasting.	Construction. Operational	Negative	Dust generated from material handling operations and mining operations can be significantly reduced by wet suppression in combination with chemical surfactants to provide more extensive wetting. The loading, transfer and discharge of materials should take place with a minimum height of fall. Have clearly defined hauling routes/vehicle access areas. All main hauling roads should be treated for dust suppression. Control the number of trucks on the road, weight of trucks and the travelling speed.
	Reduction in the ambient air quality through greenhouse gas emissions.	Operational	Negative	Consider use of cleaner fuel types and more fuel- efficient vehicles/mobile equipment/trucks. Establish a maintenance schedule to ensure proper maintenance of the trucks & mobile equipment.
Noise	Increase in ambient noise level at the site, Redan Siding and surrounding area.	Operational	Negative	Noise emanating from construction machinery and equipment should be kept at a minimum by the fitting of exhaust silencers and through the regular maintenance of construction vehicles and equipment. Carry out the noisiest labours as quickly as possible and during normal working hours (07:00 – 17:00) or according to applicable legal criteria. Ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures. Engine bay covers over heavy equipment could be pre-fitted with sound absorbing material. Heavy equipment that fully encloses the engine bay should be considered,

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
				ensuring that the seam gap between the hood and vehicle body is minimised; The applicant includes a component covering environmental noise in the Health and Safety Induction to sensitize all employees and contractors about the potential impact from noise, especially those employees and contractors that have to travel past receptors at night, or might be required to do work close (within 1,000m) to NSRs at night; The applicant investigates any reasonable and valid noise complaint if registered by a receptor staying within 1,000 m from the location where construction activities are taking place. A complaint register, keeping a full record of the complaint, must be kept by the Developer; The use of vehicle horns should be minimized where possible; The construction vehicles must remain on-site as far as possible during the construction period; Erect noise barriers between the noise source and receptors; Ensure good public relations and communications; and A Biannual Environmental Noise Measurement Programme (Monitoring Programme) needs to be implemented.
Visual	Change in the visual characteristics of the immediate area and its surroundings.	Construction	Negative	Keep the mining site and camp neat, clean, and organised in order to maintain a tidy appearance. Limit the heights of the overburden dumps as far as possible. Avoid the unnecessary removal of vegetation. Remove rubble off site as soon as possible or place it in a container in order to keep the site free from additional unsightly elements.
	Disturbance to the sense of place caused by dust and mining activities.	Operational	Negative	Implement dust suppression measures throughout the life of mine.
	Permanent visual change to the nature of the site post closure (remaining dumps).	Decommissioning Closure	Negative	Start the rehabilitation of disturbed areas as soon as practically possible in order to restrict long stages of exposed soil and possible erosion.

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
				Reduce dump size where possible and vegetate remaining dumps.
Socio-economic	Damage to large power lines running through the application area.	Operational	Negative	Establish buffer areas where no mining activities can take place around the large power lines in consultation with ESKOM.
	Additional employment opportunities through the implementation of the Social Labour Plan (SLP).	Construction operational	Positive	Maximise the number of locals sourced for employment. Set targets for local procurement, employment and enterprise development; Appoint a Community Liaison Officer (CLO) for the duration of the construction phase. Formulate and implement the affirmative procurement strategy once the mining right has been awarded.
	The local and regional road transport network will suffer additional pressure from the haulage trucks.	Construction Operational	Negative	Implement all recommendations of the Traffic Impact Assessment Report, to reduce and mitigate potential road safety issues, pedestrian safety and traffic congestion. Communicate with the local authority with regards to potholes and possible repairs to the road surfaces that might be required. Make a complaints' register available at the entrance to the construction site and address complaints speedily.
	Relocation of individuals and households	Operational	Negative	Assess the need for relocation as part of the Socio-Economic Assessment and implement the recommended mitigation/management measures based on the findings.
	Damage to surrounding infrastructure caused by ground vibrations and fly rock.	Operational	Negative	Blasting must be controlled to prevent spillage of explosions. Apply blasting techniques to reduce shock waves. Commit to provide adequate compensation to affected households if required

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
				Clearly identify all sensitive receptors of ground vibration and sound; and survey the quality of the housing and infrastructure prior to blasting activities commencing. Conduct a risk assessment, to determine the impact of blasting on employees and other affected persons and draw up a blasting procedure. Implement all recommendations made by the Blasting Specialist. Create an SMS database and notify I&APs about the date and time of blasting
	On decommissioning of the mine various labours will be left without employment.	Decommissioning Closure	Negative	Implement training programs throughout the life of the mine in order to promote long term sustainability of employees. All recommendations of the SLP that relates to retrenchments, job losses and responsibilities of the Future Forum to be implemented.
Health and Safety	Health and safety risks for local community	Construction Operational	Negative	Limit the number of access gates and ensure 24-hour security and other relevant security measures, as proposed in the previous sections. Fence the entire surface infrastructure area and tailings dam and erect signboards in English and the local languages that warn of the dangers of trespassing at the accesses. Glubay Coal to consult with landowners and other affected parties, should complaints be raised with regards to dust, noise and other impacts that result from traffic movement and the mining activities. Post information boards about public safety hazards and emergency contact information.
Heritage and paleontological	Degradation of heritage and paleontological resources. The Ecca	Construction Operational	Negative	Demarcate heritage sites with a buffer (based on recommendation of heritage specialist) and avoid them.

Aspect	Impacts	Phase	Nature	Mitigation/Management Measure
	sandstone and by extension the Redan engravings will be vulnerable and subject to degradation and vandalism			All work must cease immediately, if graves or burial grounds are uncovered, within the development footprint. If these can't be avoided, the graves could be relocated after completion of a detailed grave relocation process that includes a thorough stakeholder engagement component, adhering to the requirements of section 36 of the National Heritage Resources Act (Act No 25 of 1999) (NHRA) and its regulations as well as the National Health Act (Act 61 of 2003) and its regulations. In the event that fossil remains are discovered, either on the surface or exposed by fresh excavations the Chance Find Protocol must be implemented by the Environmental Control Officer (ECO) in charge. A qualified palaeontologist must be employed to conduct a full PIA field assessment of the study area. The PIA report will make specific recommendations for mitigation measures, if necessary. In terms of the Redan Engraving Site[2], the area must be avoided at all costs. A rock art specialist must be appointed to determine the outer edge of the site and set out a buffer area.

[2] The Redan engraving site was declared a National Monument in 1970/1 and under the National Heritage Resources Act 25 of 1999 is thus a Provincial Heritage site. It is thus a formally protected area and no mining may take place within the formally protected area

Plan of Study

The impact assessment phase includes specialist studies that investigate the project area and potential negative and positive impacts of the proposed project. It is envisaged that the following specialist studies will be undertaken during the EIA Phase.

- Agricultural Potential, Land Capability and Soil Assessment;
- Biodiversity Assessment;
- Hydrological Assessment;
- Freshwater Habitat Assessment;
- Hydrogeological and Hydropedological Assessment;
- Air Quality Impact Assessment;
- Acoustic (Noise) Impact Assessment;
- Visual Assessment;
- Socio-Economic Assessment;
- Traffic Assessment;
- Heritage and Paleontological Assessment;
- Blasting and Vibration Assessment;
- Desktop assessment of potential contaminated land liabilities (Phase 1 Study);
- Dolomitic Investigation;
- Health Risk Assessment;
- Closure Assessment incl. Financial Provision;
- Integrated Water and Waste Management Plan

Recommendations

The very nature of a scoping exercise means that the information available at this point in time is preliminary. It is the intention of the Scoping Report and process to understand the proposed project, describe the existing status of the environment, and identify the potential impacts on the biophysical and social environment through a consultative process with the various stakeholders.

The terms of reference or plan of study for the EIA will be confirmed during this process and need to be verified by the participants in the consultative process, enabling the EIA to proceed smoothly without gaps or duplication in the information generated. The recommendations resulting from this scoping process are as follows:

- The Authorities (formally) should provide comments on the scoping report in order for an objective and relevant impact assessment to be conducted, balanced, and for informed decisions to be made on the basis thereof.
- Further investigations as described in this report (Section 9) should be undertaken and these findings incorporated into the draft EIA and Environmental Management Programme (EMPr) as accessible information to the participating stakeholders.

- The decision-making process should proceed to the next step, namely completion and submission of the EIA and EMP Report supplemented by all the relevant documentation and based on inputs from the specialist studies.

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Appendix 8	Environmental Authorisation Application Form
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List of Abbreviations

ABS	Abstraction
AIP	Alien Invasive Plants
AIS	Alien Invasive Species
amsl	above mean sea level
AQIA	Air Quality Impact Assessment
BH	Borehole
BHN	Basic Human Needs
BID	Background Information Document
BPEO	Best Practical Environmental Option
BPG	Best Practice Guideline
CBA	Critical Biodiversity Area
CMA	Catchment Management Agency
CV	Curriculum Vitae
DEA(T)	Department of Environmental Affairs (and Tourism)
DFFE	Department of Forestry, Fisheries and the Environment
DMRE	Department of Mineral Resources and Energy
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECA	Environment Conservation Act, 1989 (Act 73 of 1989)
ECO	Environmental Control Officer
EcoSpecs	Ecological Specifications
EIA	Environmental Impact Assessment
ELM	Emfuleni Local Municipality
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMPR	Environmental Management Programme

EO	Environmental Officer
ERA	Environmental Risk Assessment
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
GDARD	Gauteng Department: Agriculture and Rural Development
GN	Government Notice
HDSA	Historically Disadvantaged South Africans
HIA	Heritage Impact Assessment
IAPP	International Association for Public Participation
IAPs	Interested and Affected Parties
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
ISO	International Organisation for Standardization
IWWMP	Integrated Water and Waste Management Plan
kg	Kilogram
l/s	Litres per second
LED	Local Economic Development
LOM	Life of Mine
m/s	meters per second
m^3/a	Cubic meters per annum
m^3/d	Cubic meters per day
m^3/s	Cubic meters per second
MAE	Mean annual evaporation
masl	Meters Above Sea Level
mamsl	Meters Above Mean Sea Level
MAP	Mean Annual Precipitation
MAR	Mean annual runoff
mbgl	Meters Below Ground Level
MENCO	M2 Environmental Connections
MJ/kg	Megajoules per kilogram

MLM	Midvaal Local Municipality
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
MR	Mining Right
MW	Megawatt
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
NEMAQA	National Environmental Management: Air Quality Act, 2004 (No. 39 of 2004)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
NEMPA	National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)
NEMWA	National Environmental Management: Waste Amendment Act, 2008 (Act 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHA	National Health Act, 2003 (Act 61 of 2003)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NQF	National Qualifications Framework
NWA	National Water Act, 1998 (Act 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act 85 of 1993)
PECB	Professional Evaluation and Certification Board
PPP	Public Participation Process
RE	Remaining Extent
ROM	Run of Mine
RWD	Return Water Dam
SA	South Africa
SABS	South African Bureau of Standards
SACNASP	South African Council for Natural Scientific Professions
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency
SAIIA	South African Institute of International Affairs
SANAS	South African National Accreditation System
SANBI	South African National Biodiversity Institute
SANS	South African National Standard

SAPS	South African Police Services
SASS	South African Scoring System
SDF	Spatial Development Framework
SDM	Sedibeng District Municipality
SEA	Strategic Environmental Assessment
SHE	Safety Health and Environment
SHEQ	Safety, Health, Environment and Quality
SIA	Socio- Economic Assessment
SLP	Social Labour Plan
SMME	Small, micro and medium enterprise
SQR	Sub-Quaternary Reach
SWMP	Stormwater Management Plan
TIA	Traffic Impact Assessment
TSF	Tailings Storage Facility
VTAPA	Vaal Triangle Airshed Priority Area
WGS	World Geodetic System
WISA	Water Institute of Southern Africa
WMA	Water Management Area
WRD	Waste Rock Dump
WUL	Water Use License
WULA	Water Use License Application

1. CONTACT PERSON

MENCO aims to provide an independent, quality, and time efficient service to proponents of environmentally responsible developments throughout Southern African Development Community (SADC), and to advise those proponents that do not advocate such an approach.

The Environmental Assessment Practitioner (EAP) Team consists of (please refer to **Appendix 1** for the EAPs' qualifications):

- Project Manager Mr Johan Maré (MENCO)
- Alternate Project Manager: Mr Hanjo Fourie (MENCO)
- Environmental Assessment Practitioner: Dr Petro Erasmus (Prescali Environmental)
- Public Participation Practitioner: Dr Mathys Vosloo (Zitholele Consulting)

Specialists that will form part of the project team are listed in **Table 1-1** below.

Table 1-1: Team of Specialists

Field of Expertise	Member	Company
Acoustic (Noise) Assessment	M de Jager	Acoustic Environmental Research
Agricultural, Land Capability and Soils	P Steenkamp	GreenRehab
Aquatic Assessment	B Fourie	Limnology (Pty) Ltd
Biodiversity Assessment	Dr P Olivier	MAPS Scientific Services
Hydrology Assessment	Peter Shepherd	SRK Consulting
Hydrogeological Assessment	Tobias Loubser	Loubser Water Resources Consult
Heritage and Paleontological	W Fourie	PGS Heritage
Air Quality Assessment	M Brugman	Rayten Environmental and Engineering
Socio-Economic Assessment	Vumile Ribeiro	Niara Environmental Consultants
Visual and Sense of Place	André Buys	Environmental Assurance (Pty) Ltd (ENVASS)
Traffic Assessment	P Roets	Siyazi Consulting
Blasting and Vibration Assessment	JD Zeeman	Blast Management and Consulting
Integrated Water and Wastewater Management Plan	J Maré	M2 Environmental Connections (Pty) Ltd
Contaminated Land Assessment	R Mostert	WESST
Dolomitic Assessment	N Welland	GCS (Pty) Ltd
Health Risk Assessment	Vumile Ribeiro	Niara Environmental Consultants
Closure Assessment	E van Drutten	Environmental Assurance (Pty) Ltd (ENVASS)
Water Balance	F Krugel	GFK Consulting Engineers
Civil Engineering Design	F Krugel	GFK Consulting Engineers

Wetland Offset	J. Maré	M2 Environmental Connections

1.1 Details of Environmental Practitioner

Name of the Practitioner:	Dr Petro Erasmus
Postal Address:	PostNet Suite #7, Private Bag X504, Sinoville, 0129
Tel No:	012 543 3808
Fax No:	086 621 0294
Email:	petro@prescali.co.za

1.1.1 Expertise of the EAP

She has been involved in compiling a number of Water Use Licence Applications and Integrated Water and Waste Management Pans, Environmental Impact Assessments, Basic Assessments, and Environmental Management Programmes for projects in different parts of South Africa and conducted extensive public involvement.

1.1.2 Professional Affiliations

- Water Institute of South Africa (WISA): Member
- South African Council for Natural Scientific Professions (SACNASP): Ecological Science
- South African Council for Natural Scientific Professions: Environmental Science
- EAPASA: Environmental Practitioner (2019/1473)
- PECB: Lead Auditor ISO 14001
- PECB: Certified Trainer

1.1.3 Qualifications of the EAP

She has a Doctorate in Zoology and has been involved in the environmental field for the past 16 years. Refer to **Appendix 2** to for a detailed CV of the appointed EAP.

1.1.4 Summary of the EAP's past experience

Dr. P Erasmus has more than 14 years' experience in the environmental management field and conducted numerous scoping and EIA/EMPR reports as indicated below.

Scoping and EIA/EMP Reports

During the compilation of Environmental Impact Assessment and related Management Programmes for mines as part of the requirements of the Mineral and Petroleum Resources Development Act of 2002, the National Environmental Management Waste Act of 2008 as well as the National Environmental Management Act of 1997, the specialist investigations being conducted by various specialists needs to be interpreted in order to provide the correct relevant information through to the relevant authorities in order to make an informed decision. The following Environmental Impact Assessment and related Management Plans have been developed and prepared by Dr P. Erasmus:

- 2009: Compiled the EIA and EMPR for the mine as part of the Mining right conversion for the Buffelsfontein Sections: Samancor Western Chrome Mines
- 2009: Compiled the EIA and EMPR for the mine as part of the Mining right conversion for the Mooinooi Sections: Samancor Western Chrome Mines
- 2009: Compiled the EIA and EMPR for the mine as part of the Mining right conversion, also compiled the EIA and EMPR for new mining right on additional properties. Portion 7 and 10 of Elandsfontein: Apollo Brick (Pty) Ltd
- 2009: Compiled the EIA and EMPR for the mine as part of the Mining right conversion for the Elandsdrift Section: Samancor Western Chrome Mines
- 2011: Compiled an EIA/EMPR for the operations: Hoyohoyo Mining (Pty) Ltd
- 2011: Compiled the Scoping and EIA/EMPR Documents for the waste act application to re-use slag: IFMSA
- 2011: Compilation of an EIA/EMPR for proposed coal mining activities: William Patrick Bower
- 2011: Compiled the EIA / EMPR report for the NEMA applications: Virtual Consulting Engineers
- 2011: Compiled the Scoping and EIA/EMPR Documents for the waste act application to re-use slag: IFMSA
- 2012: Drafted the EIA and EMPR for the EMPr amendment as part of the Mining right conversion process: Coastal Fuels (Pty) Ltd
- 2013: Compiled the EIA/EMPR documentation for the upgrade of the Waste Water Treatment works: Virtual Consulting Engineers
- 2013: Lannex Section: Drafted the scoping and EIA/EMPR documents for the amendment of the existing mining rights: Samancor Eastern Chrome Mines
- 2013: Drafted the Scoping Report for the EIA/EMPR for Tweefontein Section: Samancor Eastern Chrome Mines
- 2020: Compiled the Scoping report for the Eastern Chrome Mines TSF and WRD expansion project at Tweefontein: Samancor Chrome Ltd
- 2021: Compiled the Tweefontein EIA/EMPr amendment and consultation report: Samancor Eastern Chrome Mines 2009: Drafted the Scoping Report for the EIA/EMPR for Jagdlust Section: Samancor Eastern Chrome Mines
- 2021: EIA/EMPr for the Tweefontein section amendment: Samancor
- 2022: EIA/EMPr for the West Block and Bunkers Project for the Vlakfontein Coal Mine: AEMFC (Gudani Consulting)

Basic Assessments & Prospecting Right Applications

Some of the smaller projects that only requires a Basic Assessment in terms of EIA Regulations as promulgated in terms of the National Environmental Management Act and Prospecting Right Applications that I have been part of includes:

- 2009: Conducted and compiled the Basic Assessment for the upgrade of the Waste water treatment works at the Nerston Port of Entry: Virtual Consulting Engineers
- 2018: Management of the BA Process for the proposed new kilns: Corobrik

- 2020: Compiled the Application form and the Basic Assessment Report (inclusive of EMPr) for the proposed pipeline between Lesedi and Mooinooi Sections: Samancor Chrome Ltd
- 2021: Compiled the Basic Assessment Report and Environmental Management Programme for the proposed pipeline between Lesedi and Mooinooi Sections: Samancor Chrome Ltd
- 2022: BAR for prospecting activities on various farms in the Limpopo Province: Sylvania Northern Mining
- 2022: BAR for prospecting activities on portion 2 of the farm Schaffhausen, Limpopo: Sylvania Northern Mining
- 2022: BAR for prospecting activities on various farms in the Northern Cape (Gloria project): Salene Manganese (Mera)

1.2 Full Particulars of the Applicant

The applicant's full particulars are presented in **Table 1-2**.

Table 1-2: Contact details of Applicant

Company Name	Glubay Coal (Pty) Ltd
Responsible Person	Sarah Wanless
Designation	Head: Environmental Licensing
Tel No	011 783 7996
e-mail	sw@menar.com
Contact Person	Michelle Venter-Glanvill
Designation	Environmental Officer: Canyon Coal
Tel No	011 783 7996 ext 2013
E-mail	m.venter@canyoncoal.com
Physical Address	Menar House, 4th Floor 68 Grayston Drive Sandton 2196
Postal Address	PO Box 2632 Saxonwold 2132

2 DESCRIPTION OF THE PROPERTY

The Mining Right application area falls over the following farms situated 7km South of Meyerton and 10km North of Vereeniging, Gauteng:

- Kookfontein 545 IQ;
- Damfontein 541 IQ;
- Smaldeel 542 IQ;
- Waldrift 599 IQ;
- Vlakfontein 546 IQ

The Redan Siding area falls over the following farms:

- Waldrift 599 IQ;
- Kookfontein 545 IQ

Please refer to **Figure 3-1** for the mining right area. The property details are provided in **Table 2-1**.

Table 2-1: Project property details

Farm Names and portions	Kookfontein 545 IQ - portions 2, 16, 22, 29, 30, 34, 35, 39, 54, 55,64, 65, 66, 82, 83, 84, 85, 93, 95, 97, 99, 100, 102, 105 and 106 Damfontein 541 IQ – portions 2, 8, 36 and 37 Smaldeel 542 IQ - Portions 1 and 4 Waldrift 599 IQ - Portions 16, 89 and 101 Vlakfontein 546 IQ - Portion 159
Application area (ha)	Total extent ~ 2 547 Hectares Area to be disturbed ~ 1,300 Hectares
Magisterial District	Vereeniging/Meyerton
Distance and directions – nearest towns	7km South of Meyerton 10km North of Vereeniging
21-digit surveyor general code for each farm portion	**Kookfontein 545 IQ:** T0IQ00000000054500002 T0IQ00000000054500016 T0IQ00000000054500022 T0IQ00000000054500029 T0IQ00000000054500030 T0IQ00000000054500034 T0IQ00000000054500035 T0IQ00000000054500039 T0IQ00000000054500054 T0IQ00000000054500055 T0IQ00000000054500064 T0IQ00000000054500065 T0IQ00000000054500066 T0IQ00000000054500082 T0IQ00000000054500083 T0IQ00000000054500084 T0IQ00000000054500085

	T0IQ00000000054500093 T0IQ00000000054500095 T0IQ00000000054500097 T0IQ00000000054500099 T0IQ00000000054500100 T0IQ00000000054500102 T0IQ00000000054500105 T0IQ00000000054500106 **Damfontein 541 IQ:** T0IQ00000000054100002 T0IQ00000000054100008 T0IQ00000000054100036 T0IQ00000000054100037 **Smaldeel 542 IQ:** T0IQ00000000054200001 T0IQ00000000054200004 **Waldrift 599 IQ:** T0IQ00000000059900016 T0IQ00000000059900089 T0IQ00000000059900101 **Vlakfontein 546 IQ:** T0IQ00000000054600159 **Redan Siding** **Waldrift 599 IQ:** T0IQ00000000059900013 T0IQ00000000059900014 T0IQ00000000059900061 T0IQ00000000059900001 T0IQ00000000059900084 **Kookfontein 545 IQ** T0IQ00000000054500016 T0IQ00000000054500078 T0IQ00000000054500028 T0IQ00000000054500031 T0IQ00000000054500059

2.1 Regional Setting

The Springfield Mine site is situated in both the Midvaal Local Municipality (MLM) and Emfuleni Local Municipality (ELM) which is within the Sedibeng District Municipality (SDM) (refer **Figure 2-1**). Redan Siding proposed site is located within ward 45 of ELM. There are many large enterprises established in the area including South 32, Lethabo Power Station, New Vaal Colliery, Cape Gate, Arcelor Mittal and Heineken, amongst others. In the area under application there are several large, intensive agricultural

enterprises and brick-making operations – amongst others, which play a major role in job creation and economic activity.

Informal settlements are widespread throughout the SDM with the largest informal settlements being located around Bophelong, Polomiet, Sonderwater, Lybia, Waterval, Sicelo and Impumelelo. Mining activity within the SDM mainly occurs in the following areas:

- The old Glen Douglas Dolomite Mine (not operational anymore) along route R59 in the vicinity of Daleside.
- The old Ashphalt Mine south of Vereeniging CBD
- Kwazenzele-Vischkuil (coal mining)
- Bantu Bonke (Sand Quarry) to the south along the Vaal River.

2.2 Historical Information

In 1934, the Amalgamated Collieries – a subsidiary of Vereeniging Estates – acquired the rights to mine coal on the abandoned Springfield Colliery until the year 1983. The coal was to be mined for the new Klip Power Station. Coal was raised through two shafts, the East and the West: the East shaft was located immediately adjacent to the station and delivered the coal via a relatively short conveyor belt system, while the coal supplied from the West shaft was delivered via a rail connection approximately 2.5 km long in 40 ton hopper wagons drawn by steam locomotives. The calorific value of the coal from this colliery was initially over 22.10 MJ/kg, but by the 1950's, it had dropped to about 20.93 MJ/kg. The coal seam petered out and the Springfield mine was closed in 1953.

In the 1980's the Lethabo station came online. It is a coal-burning power station, with the generating sets being able to consume approximately 40 000 tons of coal per day at full load, whilst at the same time producing close to 16 000 tons of ash. Lethabo holds the distinction of being the only power station in the world capable of burning a low-grade coal. The coal, which has a calorific value generally in the range of 15 to 16 MJ/kg, is supplied from the Anglo Coal's nearby New Vaal Colliery. The unusually low quality of the coal means that it also has a very high ash content of up to 42%. In keeping with National Environmental Legislation, electrostatic precipitators, the largest of their kind in the world, have been installed at Lethabo. The precipitators remove 99.8% of the fly ash present in the gases that are released through the smokestacks.

2.3 Land Tenure and Use

The area is mixed use, with a heavily industrial and intensive agricultural presence. A couple of brickworks are located within the application area as well as the Waldrift landfill site. These areas are surrounded by dry and irrigated cultivated fields. The defunct Springfield Colliery is also located on the area. Based on information gathered during the site visit and information obtained from SANBI, the application area and its surrounds are currently characterised by numerous activities (refer to **for** the Springfield and Redan Siding Project

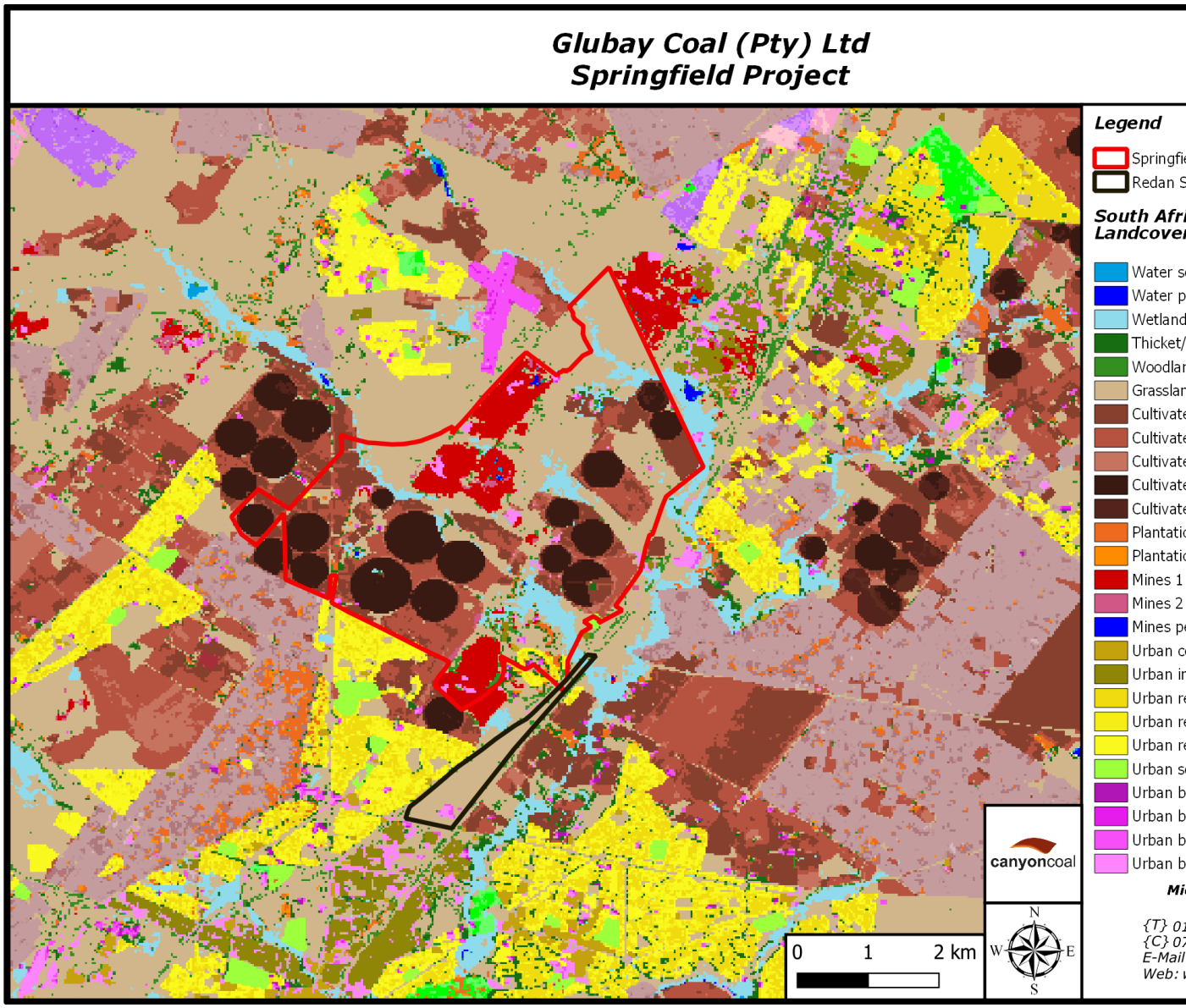

Figure 2–2), including:

- Agriculture;
- The former Waldrift Nature Reserve (transformed by agriculture and industrial activities);
- Natural vegetation;
- Recreational;
- Watercourses, including dams, rivers and wetlands;
- Informal settlements;
- Heavy industrial;
- Mining;
- Waste storage and disposal facilities;
- Warehousing;
- Electricity transmission lines;
- Water supply pipelines;

- Aerodrome (situated on the property directly north west of the application area);
- High urban density directly adjacent to the application area.

2.4 Zoning

The area is mixed use, with a heavily industrial presence. A couple of brickworks are located on the area as well as the defunct Springfield Colliery. The project area spans across two local municipalities, Emfuleni and Midvaal, based in the Sedibeng District Municipality. The properties within the application area are currently zoned for agriculture, open space, conservation use and industrial. A rezoning application must be submitted by the Applicant, to the Midvaal Local Municipality (MLM) and Emfuleni Local Municipality (ELM).

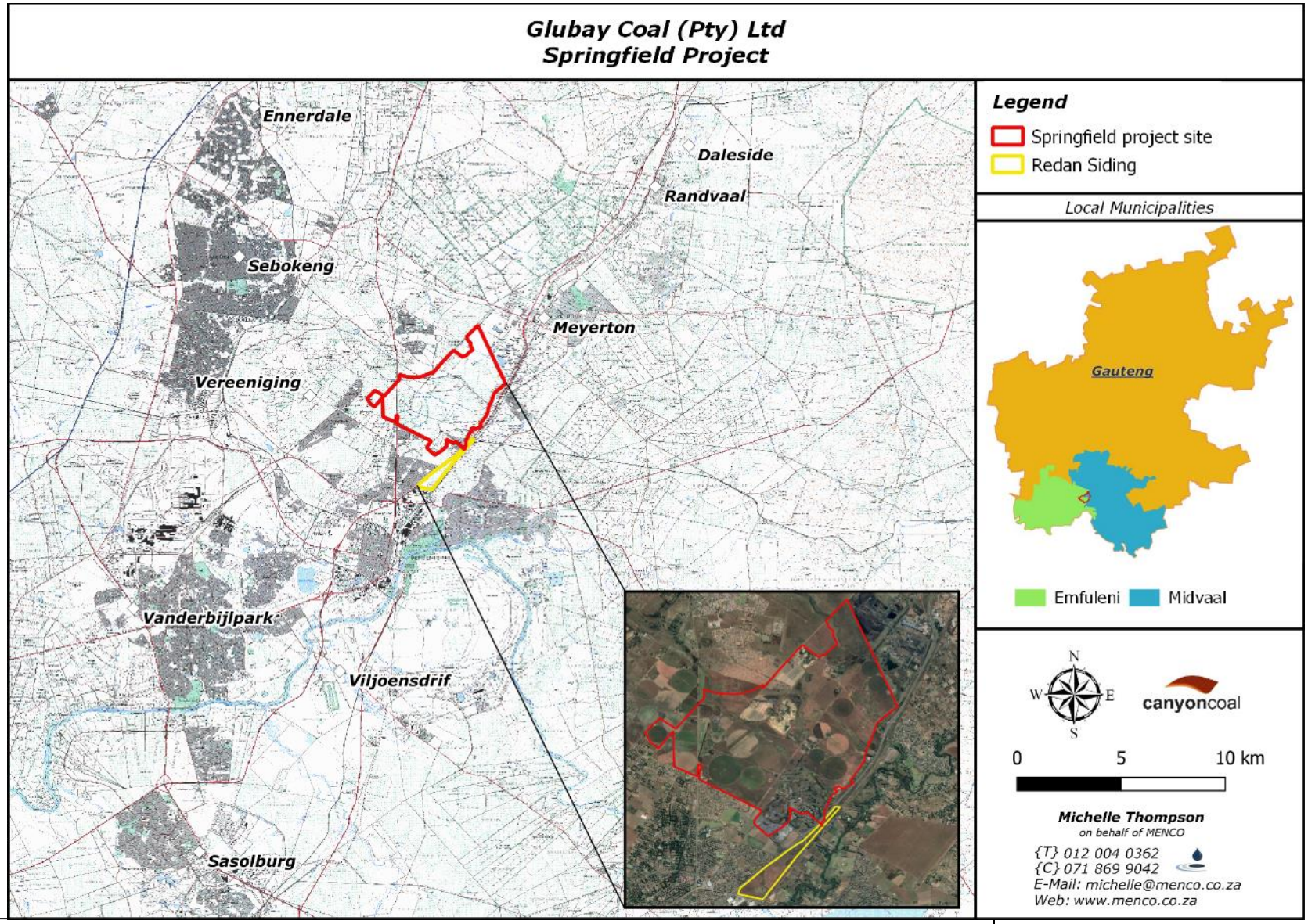
Glubay Coal (Pty) Ltd
Springfield Project
Ennerdale
Daleside
Randvaal
Sebokeng
Meyerton
Vereeniging
Vanderbijlpark
Viljoensdrif
Sasolburg
Legend
Springfield project site
Redan Siding
Local Municipalities
Gauteng
Emfuleni
Midvaal
N
W
E
S
canyoncoal
0
5
10 km
Michelle Thompson
on behalf of MENCO
{T} 012 004 0362
{C} 071 869 9042
E-Mail: michelle@menco.co.za
Web: www.menco.co.za

Figure 2-1: Locality map for the Springfield and Redan Siding Project

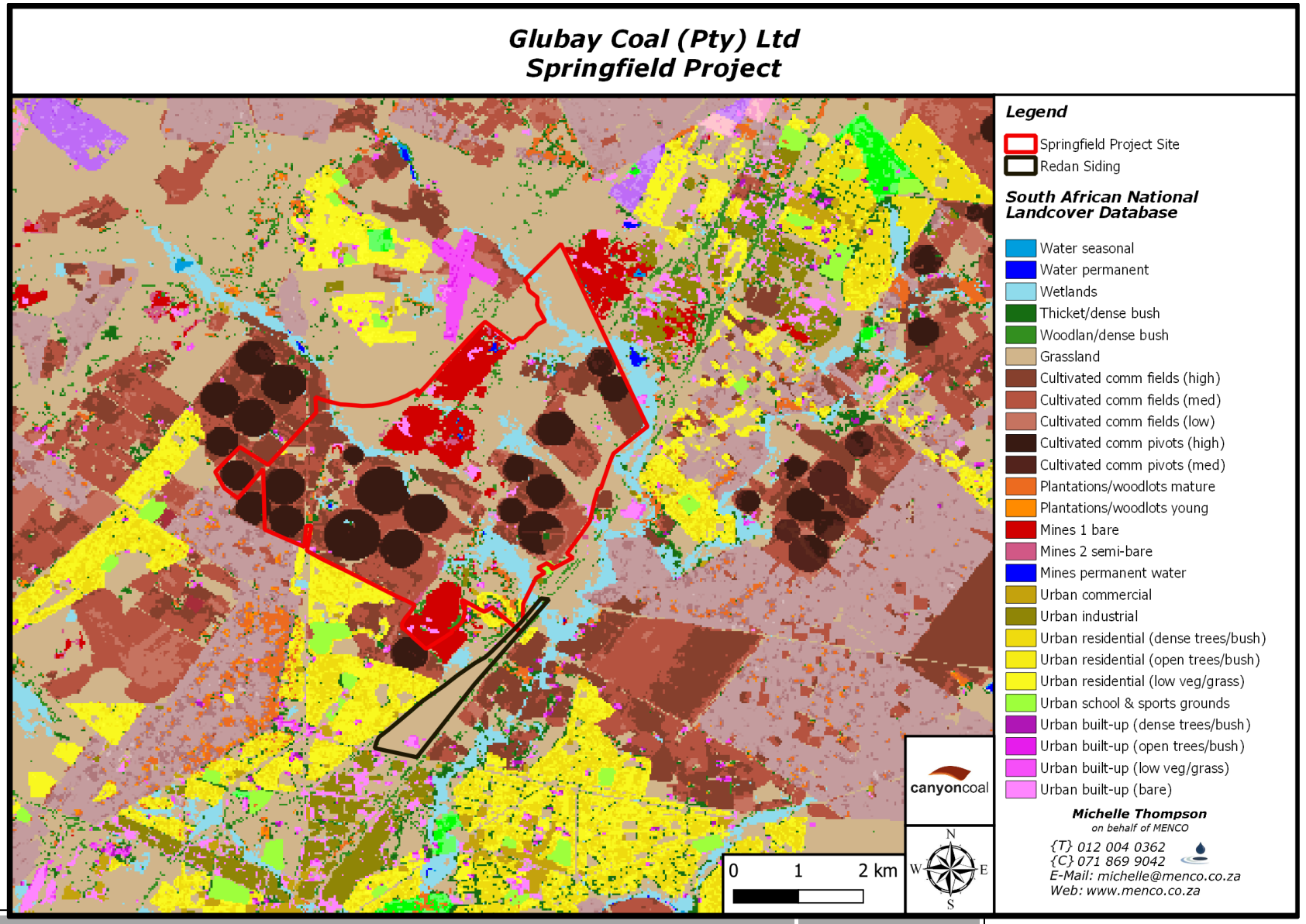
Glubay Coal (Pty) Ltd
Springfield Project
Legend
Springfield Project Site
Redan Siding
South African National Landcover Database
Water seasonal
Water permanent
Wetlands
Thicket/dense bush
Woodlan/dense bush
Grassland
Cultivated comm fields (high)
Cultivated comm fields (med)
Cultivated comm fields (low)
Cultivated comm pivots (high)
Cultivated comm pivots (med)
Plantations/woodlots mature
Plantations/woodlots young
Mines 1 bare
Mines 2 semi-bare
Mines permanent water
Urban commercial
Urban industrial
Urban residential (dense trees/bush)
Urban residential (open trees/bush)
Urban residential (low veg/grass)
Urban school & sports grounds
Urban built-up (dense trees/bush)
Urban built-up (open trees/bush)
Urban built-up (low veg/grass)
Urban built-up (bare)
canyoncoal
0 1 2 km
N
W E
S
Michelle Thompson
on behalf of MENCO
{T} 012 004 0362
{C} 071 869 9042
E-Mail: michelle@menco.co.za
Web: www.menco.co.za

Figure 2-2: Land use of the project area

3 LOCALITY MAP

Please refer to the locality map in **Figure 2-1** under **Section 2.4** in the Report. The figure indicates the application area in relation to the nearest towns, regional routes (R59, R82, R42, R54 and R57), and the Klip River. The Regulation 2(2) plan, developed in terms of the Minerals and Petroleum Resources Development Regulations, is provided as **Figure 3-1**. The plan contains the following:

- Co-ordinates and spheroid (Clarke 1880 / Cape Datum, WGS84 / WGS84, WGS94 /Hartebeesthoek94) of the land to which the application relates;
- North point;
- Scale to which the plan has been drawn;
- Location and where applicable, the name and number of the land to which the application relates;
- Extent of the land to which the application relates:
- Boundaries of the land to which the application relates:
- Surface structures and registered servitudes where applicable; and
- Topography of the land to which the application relates.

The Regulation 2(2) map is also included in **Appendix 3** of the Scoping Report.

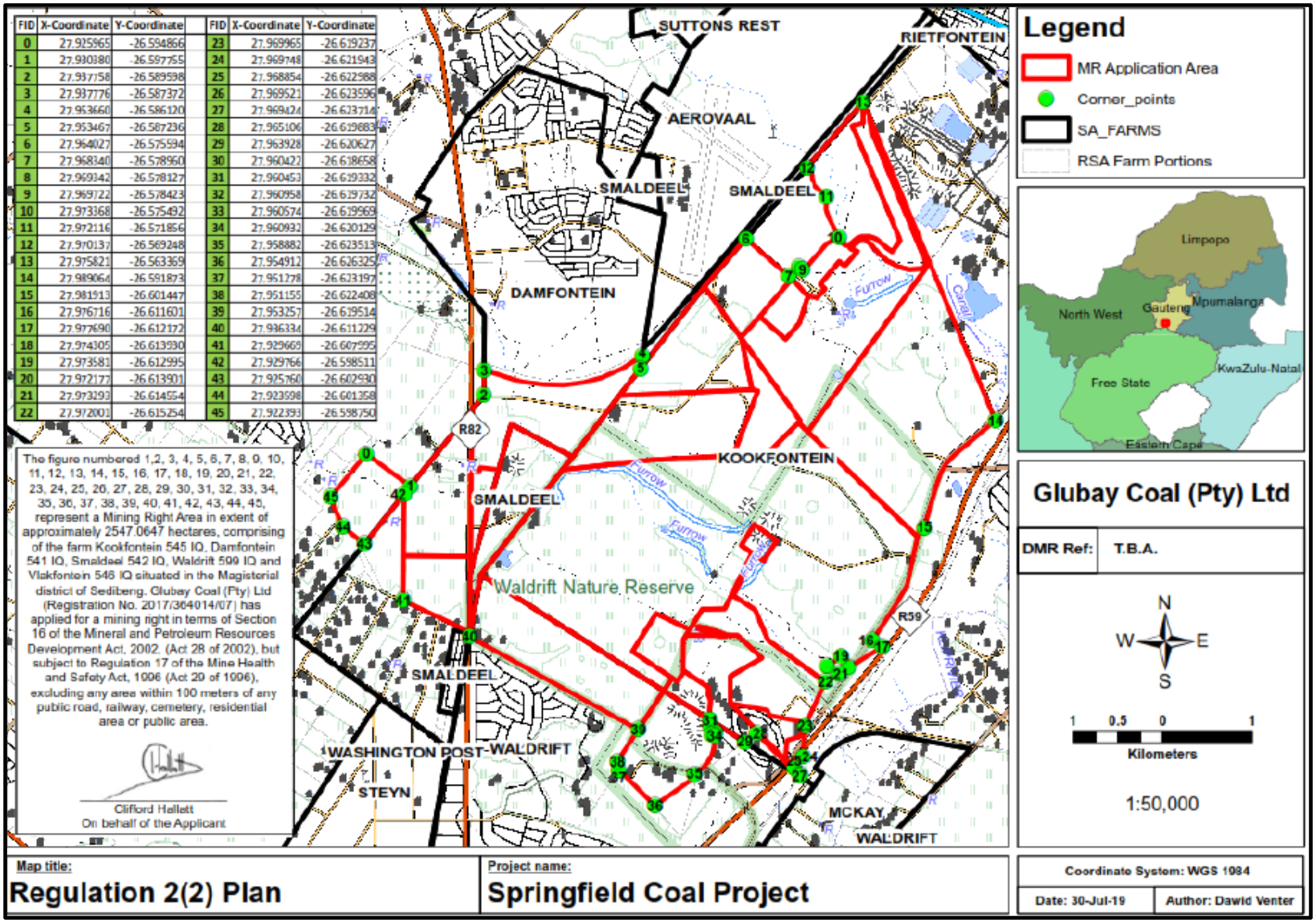

Figure 3-1: Regulation 2(2) Plan

4 DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY

The Springfield Coal Mining Project (Springfield Project) is a proposed opencast colliery, located in, on and around the old workings of the abandoned Springfield Colliery, near Meyerton & Vereeniging in the Gauteng province. Redan Siding, which also forms part of this project is discussed in Section 4.5. Access to the project area is by tarred roads (R59 and M61) and a railway line that passes the project area in the east. The project is situated in the Sedibeng District Municipality and is located partially in the Midvaal Local Municipality and the Emfuleni Local Municipality. Based on the preliminary layout plan the opencast pit and associated mining infrastructure will be located on the following properties:

- Kookfontein 545 IQ – Portions 2, 16, 22, 29, 30, 34, 35, 39, 55, 93, 95;
- Damfontein 541 IQ – Portions 2;
- Smaldeel 542 IQ – Portions 4;
- Waldrift 599 IQ – Portions 16 and 89;
- Vlakfontein 546 IQ – Portion 159.

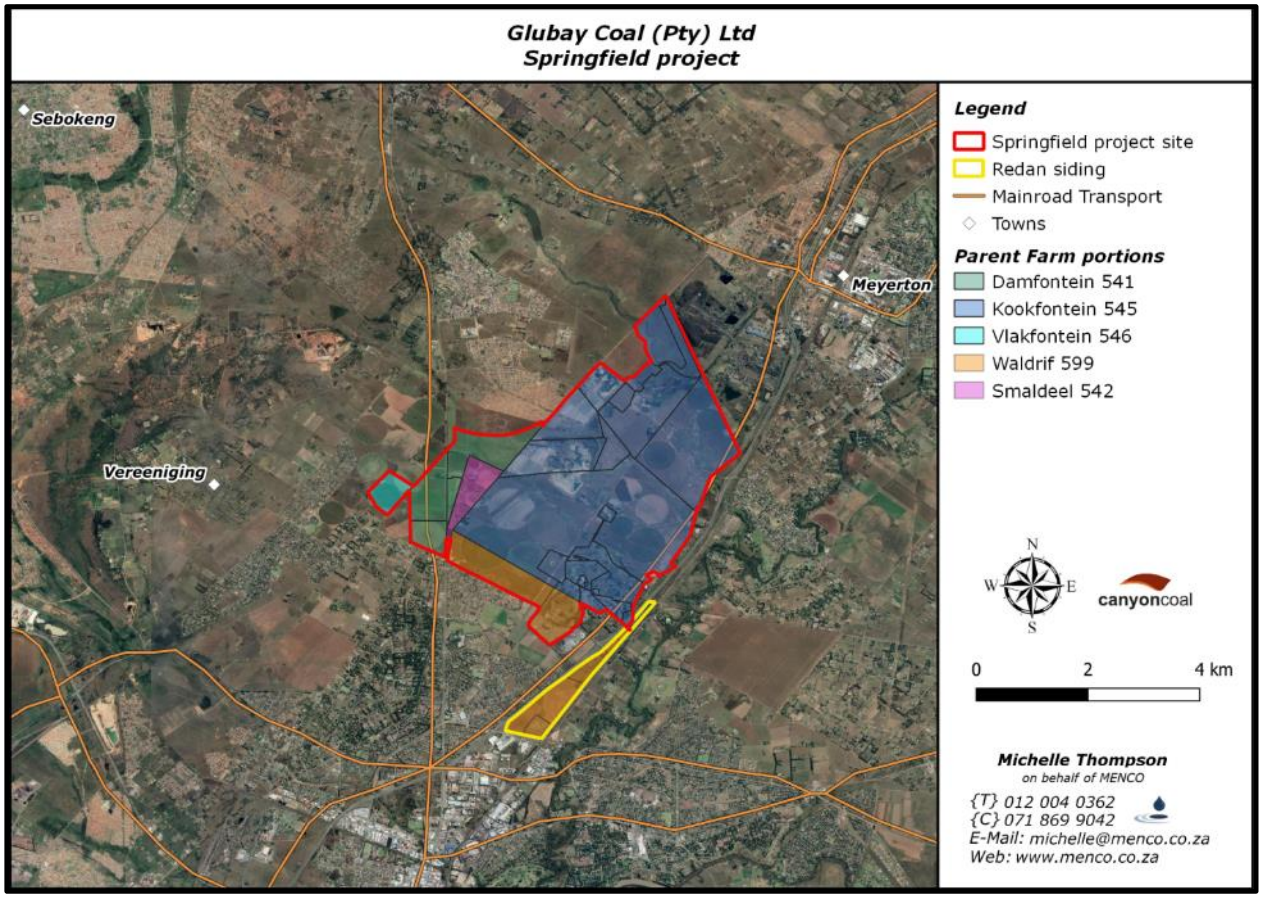

Figure 4-1: Springfield Project Farm Portions

4.1 Depth of Mineral Resource

The project area contains 3 seams:

- Top Seam;
- Non-select Bottom Seam; and
- Bottom Seam.

The Top Seam varies between 0 m and 5.71 m in thickness. On average it is modelled to be 1.99 m thick. It does contain carbonaceous mudstone in-seam partings. The seam is usually a dull to lustrous coal with mudstone stringers and bands. The roof and floor contacts are clearly defined. The distribution of this seam is erratic in the western part of the property. From the historical data this seam thickens and becomes more consistent in distribution towards the western boundary of the property.

The Non-select Bottom Seam varies between 0 m and 7.94 m in thickness. On average it is modelled to be 2.71 m thick. It does contain in-seam mudstone bands. The seam is usually a very dull coal with mudstone stringers and bands. The roof and floor contacts are clearly defined. The distribution of this seam is erratic in the western part of the property.

The Bottom Seam varies between 0 m and 17.96 m in thickness. On average it is 8.35 m thick. The seam is usually a mixed bright and dull to bright coal with very seldom mudstone stringers. The roof and floor contacts are clearly defined. This seam rests on diamictites or varved siltstones and mudstones of the Dwyka Formation.

The weathering horizon in the area investigated is deep with oxidation observed down to 47.80 m. The soft horizon (anticipated free-digging depth) is on average 20.3 m deep. The hard cover below the soft horizon is on average 6.6 m thick but varies from 0 m to 23.01 m. The average depth below surface to the floor of the Bottom Seam is 45 m.

4.2 Extent and Estimated Resources

The application area is 2,547 Ha in extent but the area to be disturbed by mining and associated activities is approximately 1,300 Ha. The project has a resource of approximately 266 million tonnes of coal that will be marketed to local and export markets. Production will start at approximately 100,000 tons per month and will increase by approximately 100,000 tons per month to an average of 600,000 tons per month during full production with a life of mine of 31 years.

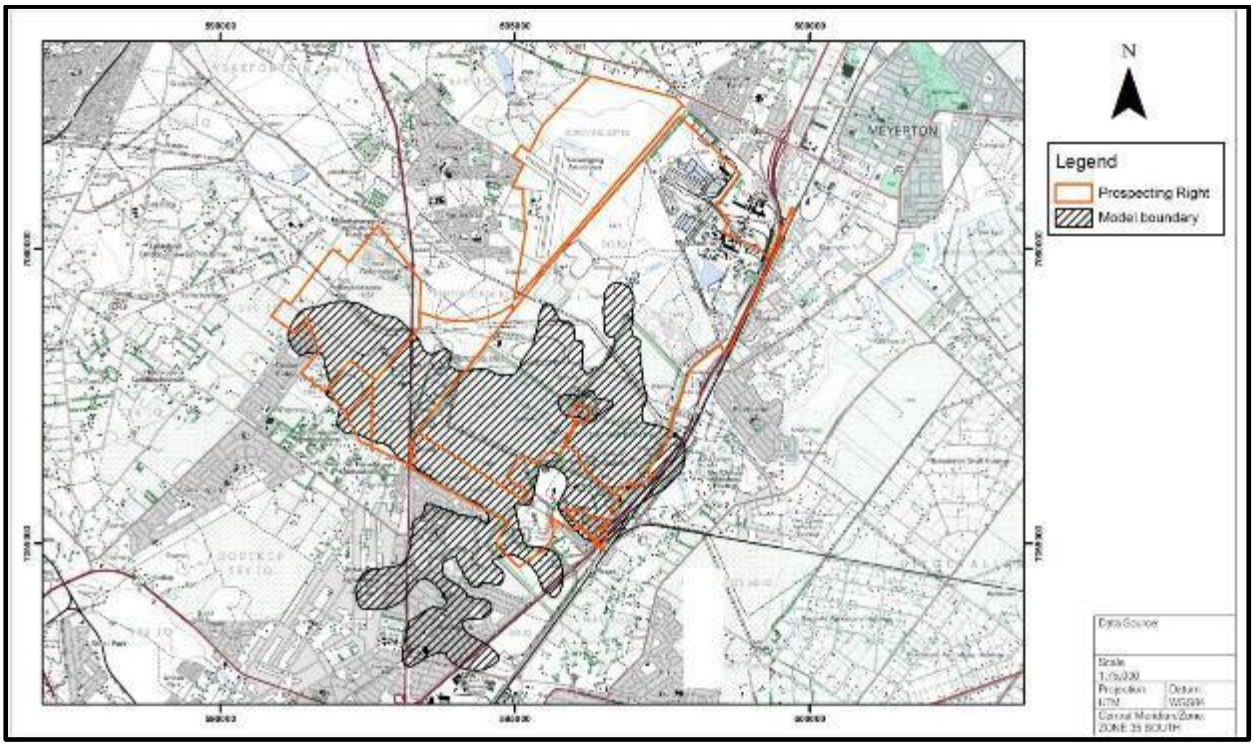

Figure 4-2: Springfield Project boundary

4.3 Mining Method

Coal mining will be undertaken by the conventional truck and shovel rollover method and will be opencast only. Opencast mining is carried out using diesel-powered equipment and hauling trucks.

The mining method is summarised below:

Step 1: Remove a minimum of 1 metre of topsoil and place directly on levelled soil.

Step 2: Remove soft overburden with an excavator and trucks to 2 metres above the hard rock. The 2 metres of soft rock above the hards provides stemming length for the blast holes. By doing this the explosives column can be optimized to fragment the hard rock without incurring excessive fly rock and air blast.

Step 3: Drill and blast and remove the remaining overburden to expose the Top Seam. Some overburden will heave beyond the coal edge and therefore will not need to be excavated.

Step 4: Mine the Top Seam and the parting to the Lower Seam as well as the Lower Seam (if feasible proceed to Step 6, if not able to mine parting simultaneously refer to Step 5).

Step 5: Remove the inter burden with a dozer push over operation to within 2 to 2.5 metres of the Lower Seam. Use an excavator and truck operation to expose the coal. Mine the Lower Seam.

Step 6: The cycle is started again. Concurrent rehabilitation will occur during the operational phase by means of the roll over method.

Concurrent rehabilitation will occur during the operational phase by means of the roll over method.

4.4 Ancillary activities and associated infrastructure

The project will entail new mining infrastructure being developed, which will potentially include:

- Opencast mining pit;
- Processing plant;
- Overburden stockpiles;
- Plant roads and haul roads;
- Run of mine (RoM) stockpiles;
- Product stockpile;
- Conveyor belts;
- Pollution control;
- Discard dump and slurry dams (co disposal facility);
- Stormwater trenches;
- Site and security offices;
- Bulk fuel storage facility;
- Workshops and contractor yards for the mining and logistics contractors;
- Hard park areas with offices;
- 2x weighbridges;
- Sewage management system and plant.
- Water treatment plant;
- Water pipelines;
- Electricity supply infrastructure; and
- Railway Siding (at Redan)

Haul roads on the mine itself will be established, as well as additional haul roads linking the mine and coal loading rail sidings.

Water will be sourced from boreholes, groundwater inflow to the pit and water captured in the dirty water containment infrastructure (pollution control dams). Water from the pit and run-off water from the contaminated area (stockpile area and workshops) are directed towards the pollution control dams on-site. Potable water will be obtained from a borehole. Process water for the plant will be sourced from the pollution control and return water dams.

The coal will be fed into a crushing and washing plant with a conveyor after which the coal product will be temporarily stored at the product stockpile area before being transported to the Redan Siding for distribution or directly via truck to the relevant markets. A filter press will be fitted on the plant. Slurry dams are built for filter press downtime. Electricity is used in the operation of the washing plant. An application has been submitted to Eskom for the establishment of a new substation.

A final layout plan showing the location of the main mining activities including the location of the railway siding, haul roads, pollution control dams, ROM and product stockpiles, topsoil stockpiles, overburden stockpile and clean and dirty water drains and other associated mining infrastructure will be included in the EIA after the layout has been finalised through the consultative scoping process and specialist studies inputs. Refer to **Figure 4–3** below for the preliminary layout plan of the mine with **Figure 4–4** an illustration of the planned schedule of mining. Based on the proposed mining schedule it will take more than 10 years to mine the central pit.

4.5 Description of Redan Siding

The existing private siding is serving Metalloys (old Samancor operations) but the current configuration of train has constraints and cannot be used to serve Glubay Coal's Springfield Coal project. The 52-truck layout of Redan Siding has a capacity constraint and could only rail 200,000 tons per month. Glubay Coal has indicated that they would prefer to handle in excess of 400,000 tons per month at the siding and therefore a different rail layout is required.

The project would further require a geotechnical investigation into the proposed new Redan Road (M61) Over Rail Bridge as well as the construction of a new overland conveyor system located next to the railway line that is linked to a Rapid Loading Terminal. The coal will be processed at a Coal Handling and Processing Plant B (CHPP–B). The processed coal will be transported by the proposed overland conveyor system which will run from Plant B to a main transfer station located 300m west of a dormant Bridge (Bridge number 3038) which crosses the P59 highway from West to East. The overland conveyor system will cross the highway via this existing bridge and follow the railway line south towards the coal stockpile area which will be located on the East of the P59 highway between the Redan and Ring Road off ramps.

Coal conveying capacity via the overland conveyor system will be such that trains can be loaded at the required rate of 8000 ton per 3.2 hours, twice in 24 hours. Please refer to **Figure 4-5** for the planned layout of the siding.

4.6 Listed and specified activities

Table 4-1: Listing Notice 1, GNR 983 of 4 December 2014 (as amended GN517, 11 June 2021) lists the activities and infrastructure associated with the proposed mining project and Redan Siding. During the scoping phase it became evident that additional listed activities will be triggered by the proposed mining operation. **Appendix 4** contains the map depicting the layout of the proposed mining activities at Springfield.

The Environmental Authorisation application form has been revised and is included as **Appendix 8** of this document.

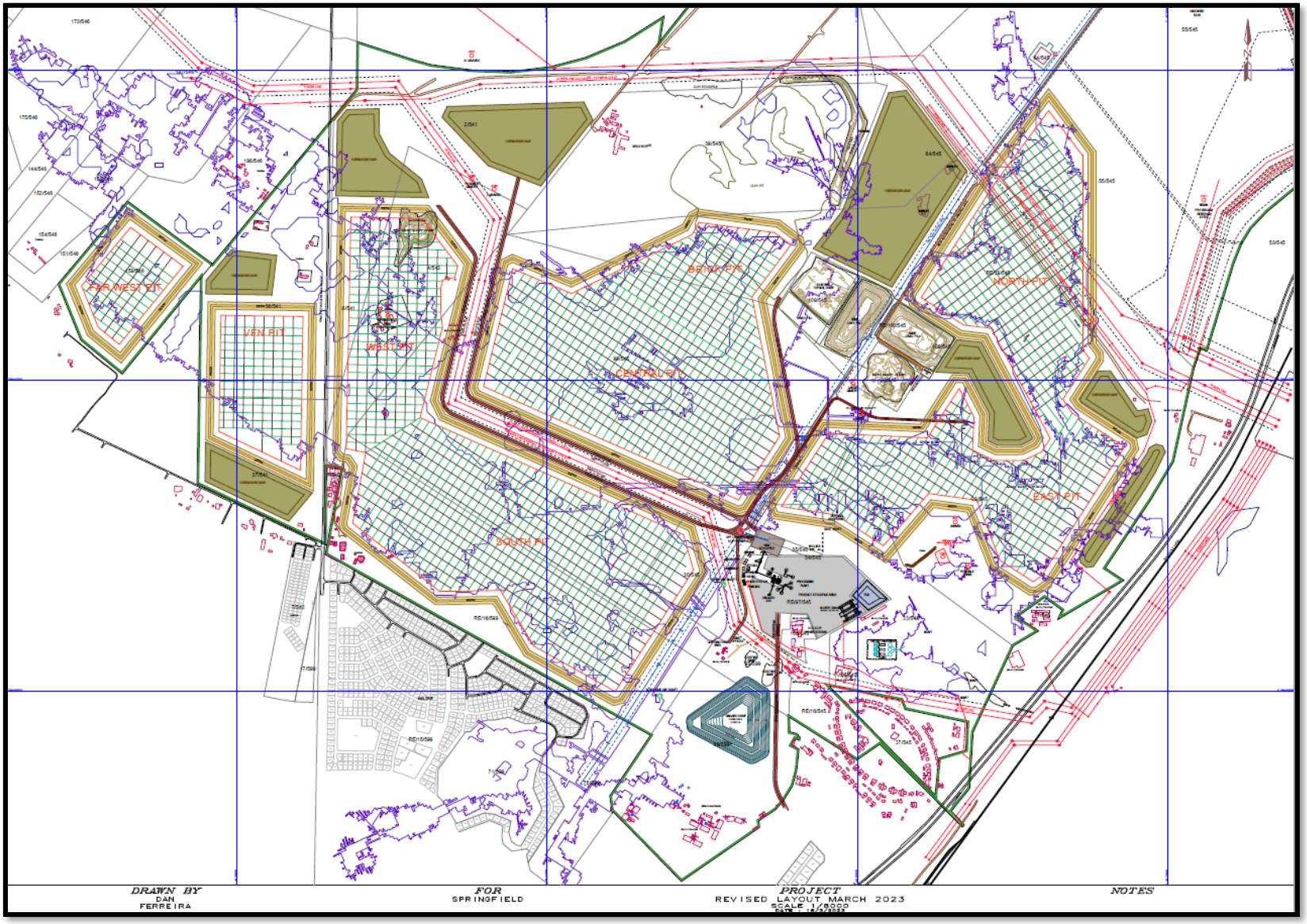
FAR WEST PIT
VEN PIT
WEST PIT
BRIAN PIT
CENTRAL PIT
SOUTH PIT
NORTH PIT
EAST PIT
DRAWN BY
DAN
FERREIRA
FOR
SPRINGFIELD
PROJECT
REVISED LAYOUT MARCH 2023
SCALE 1/30000
NOTES

Figure 4-3: Conceptual Mine layout plan for Springfield

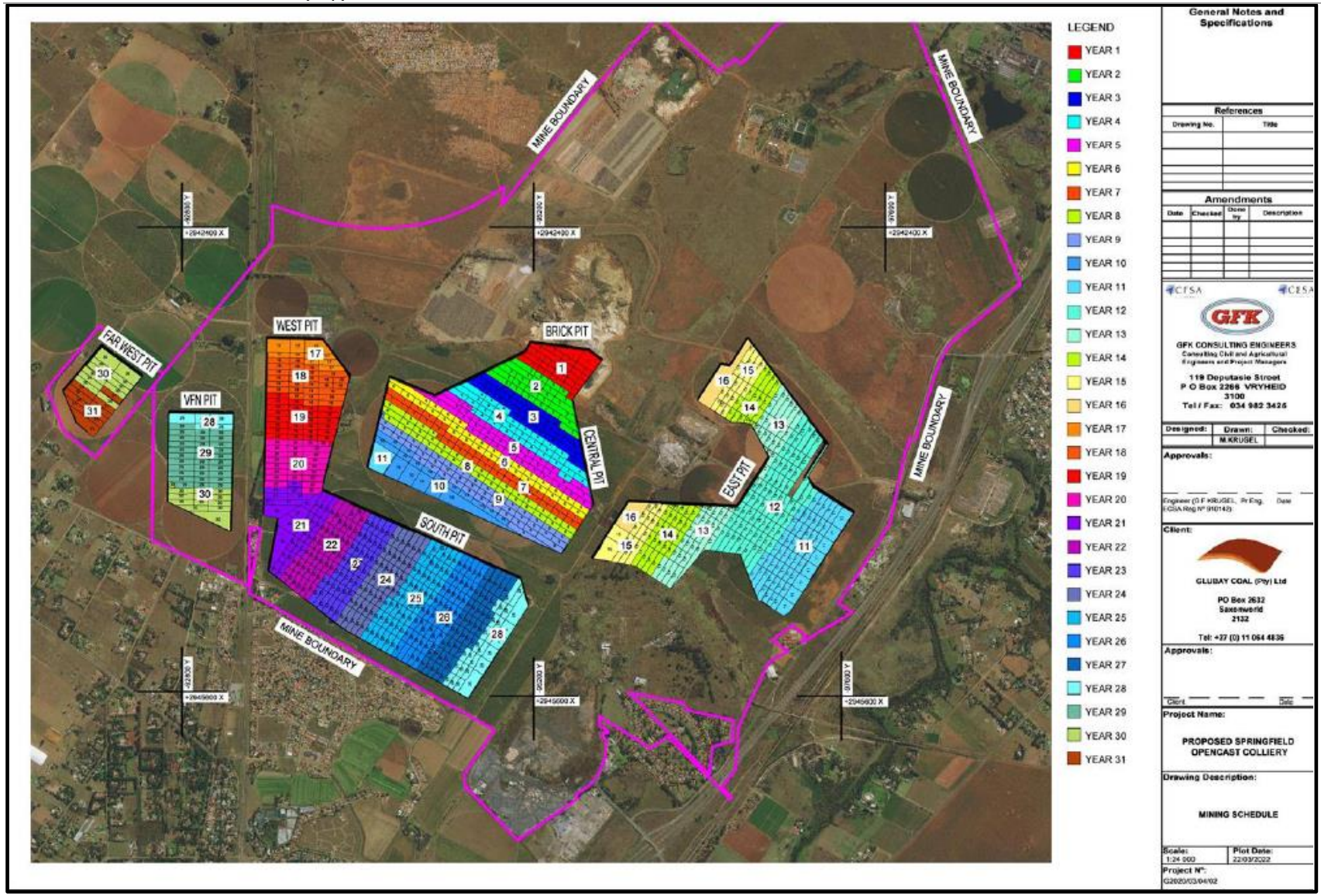

Figure 4-4: Proposed mining schedule for Springfield

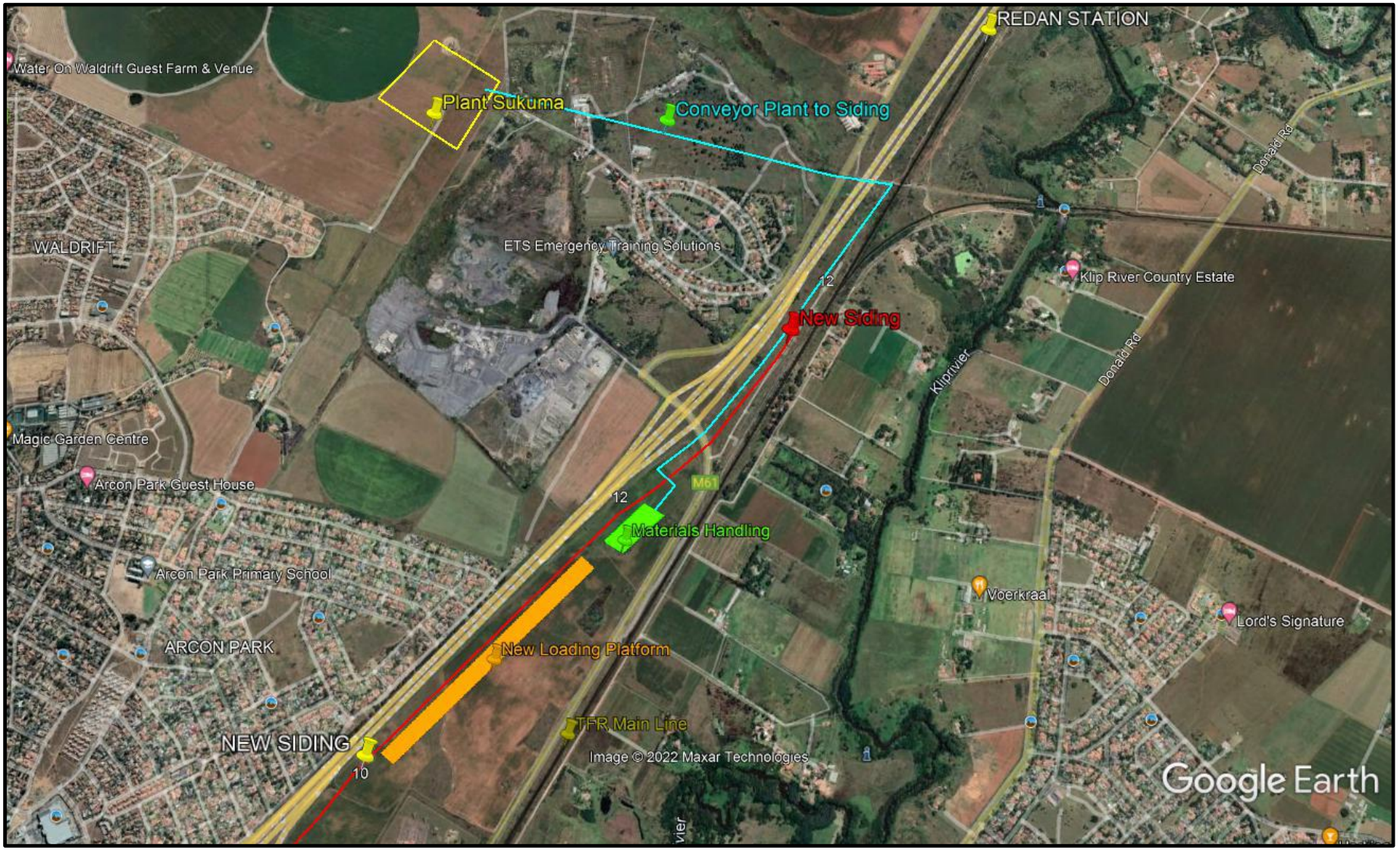

Figure 4-5: Redan Siding and materials handling area

Table 4-1: Listing Notice 1, GNR 983 of 4 December 2014 (as amended GN517, 11 June 2021)

Activity	Description	Applicability
2	The development and related operation of facilities or infrastructure for the generation of electricity from a non-renewable resource where – • the electricity output is more than 10 megawatts but less than 20 megawatts; or • the output is 10 megawatts or less, but the total extent of the facility covers an area in excess of 1 hectare	The development of a transformer at the processing plant with an electricity output of more than 10 but less than 20 MW.
9	The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	There is the potential that pipelines for the conveyance of bulk water or stormwater may be required and that the stipulated threshold will be exceeded.
10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or	Springfield Mine will likely require pipelines for the bulk conveyance of process or return water and that the stipulated threshold will be exceeded.

Activity	Description	Applicability
	(b) where such development will occur within an urban area.	
11	The development of facilities or infrastructure for the transmission and distribution of electricity— • outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or • inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is — • temporarily required to allow for maintenance of existing infrastructure; • 2 kilometres or shorter in length; • within an existing transmission line servitude; and (d) will be removed within 18 months of the commencement of development.	This will likely be applicable due to the permanent relocation of the existing overhead power lines, which is likely more than 33 kilovolts.
12	The development of— • dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or • infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— • within a watercourse; • in front of a development setback; or • if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse	This activity will likely be applicable due to the proposed activities in the vicinity of the watercourse.

Activity	Description	Applicability
14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	It is likely that a bulk fuel storage facility will be required at Springfield Mine and that the stipulated threshold will be exceeded.
19(i)	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from (i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high- water mark of the sea or estuary, whichever distance is the greater	This activity will likely be applicable due to the proposed activities in the watercourses.
24(ii)	The development of a road— (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 m	It is likely that internal and haul roads will have to be constructed and that the length and width thresholds will be exceeded.
25	The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres.	There is a potential that an effluent treatment plant will be required and that the stipulated threshold will be exceeded.
27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or	Based on the site assessment there is the potential that in excess of 1 hectares of indigenous vegetation will have to be cleared

Activity	Description	Applicability
	(ii) maintenance purposes undertaken in accordance with a maintenance management plan.	and this activity will be applicable. It is however unlikely that 20 hectares will be exceeded
28(ii)	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	The site is currently being used for agriculture activities and is in excess of 1 hectare, as such this activity will be applicable.
31	The decommissioning of existing facilities, structures or infrastructure for— • any development and related operation activity or activities listed in this Notice, Listing Notice 2 of 2014 or Listing Notice 3 of 2014; • any expansion and related operation activity or activities listed in this Notice, Listing Notice 2 of 2014 or Listing Notice 3 of 2014; • any phased activity or activities for development and related operation activity or expansion or related operation activities listed in this Notice or Listing Notice 3 of 2014; or • any activity regardless the time the activity was commenced with, where such activity: (a) is similarly listed to an activity in (i) or (ii) above; and (b) is still in operation or development is still in progress; excluding where— (aa) activity 22 of this notice applies; or	The development of the proposed Springfield site will result in the decommissioning of existing activities taking place on-site.

Activity	Description	Applicability
	(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies.	

Table 4-2: Listing Notice 2 (GNR 984 of 4 December 2014 (as amended GN517, 11 June 2021)

Activity	Description	Applicability
6	The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding— (i) activities which are identified and included in Listing Notice 1 of 2014; (ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; (iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less; or (iv) (iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.	The PCD's will require licensing in terms of section 21g of the NWA which governs the generation or release of pollution and as such this activity will trigger.
15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for (i) the undertaking of a linear activity; or (ii) (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Based on the site assessment there is the potential that in excess of 20 hectares of indigenous vegetation will have to be cleared and this activity will be applicable.
17	Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—	The Springfield Mine will require the conversion of a prospecting right to a mining right

Activity	Description	Applicability
	(i) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or (ii) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.	
19	The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (i) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or (ii) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.	The Springfield Mine will result in the removal of minerals, as such this activity will be applicable.

Table 4-3: Listing Notice 3 (GNR 985 of 4 December 2014 (as amended GN517, 11 June 2021)

Activity	Description	Applicability
4(iv), (vii), (xi), (xii)	The development of a road wider than 4 metres with a reserve less than 13,5 metres. (i) Gauteng i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority; vii. Sites identified as high potential agricultural land in terms of Gauteng Agricultural Potential Atlas; viii. Important Bird and Biodiversity Area (IBA); ix. Sites or areas identified in terms of an international convention; x. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA; xi. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or xii. xii. Sites zoned for conservation use or public open space or equivalent zoning.	The site is used for agricultural activities, a portion of the site is considered an ESA and the Waldrift Nature reserve is located within the proposed site therefore the construction of the internal roads will likely trigger this activity. Please note that according to the Notice in terms of Section 24(1) (b) of the National Environmental Management: Protected Areas Act, 2003 of Government Notice 5325 of 2007, Waldrift Nature Reserve has been withdrawn as a declared nature reserve.

Activity	Description	Applicability
14(iv), (ix), (x)	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. c. Gauteng	A portion of the site is considered an ESA and the Waldrift Nature reserve is located within the proposed site therefore this activity will likely be applicable due to the proposed activities in the vicinity of watercourses. Please note that according to the Notice in terms of Section 24(1) (b) of the National Environmental Management: Protected Areas Act, 2003 of Government Notice 5325 of 2007, Waldrift Nature Reserve has been withdrawn as a declared nature reserve.
15	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010. b. Gauteng i. All areas.	The Waldrift Nature Reserve area is situated within the mining right area and will be likely to be transformed. Please note that according to the Notice in terms of Section 24(1) (b) of the National Environmental Management: Protected Areas Act, 2003 of Government Notice 5325 of 2007, Waldrift Nature Reserve has been withdrawn as a declared nature reserve.

Table 4-4: List of Waste Management activities, Category B, GNR 921 July 2015

Activity	Description	Applicability
10	The construction of a facility for a waste management activity listed in Category B of this Schedule	Establishment of overburden and discard stockpile areas.
11	The establishment or reclamation of a residue stockpiles or residue deposit resulting from activities which require a mining right, exploration right or production right in terms of the MPRDA.	The Springfield Mine will result in the establishment of overburden and discard stockpiles.

4.7 Description of the activities to be undertaken

The activities proposed by Glubay Coal (Pty) Ltd for the Springfield Mine and Redan Siding will occur in four phases:

- Pre-construction/planning phase – This phase will involve the dismantling and removal of existing infrastructure situated within the mining area and development of the final plans/designs. The final mine layout plan will take cognisance of all servitudes, infrastructure such as Rand Water pipelines, Eskom power lines and roads as well as no-go areas as demarcated in terms of heritage sites.
- Construction phase – The construction phase will take approximately one (1) year to complete, which will include activities such as site establishment and the construction of all infrastructure, including the development of a box cut. The construction phase will also make provision for the instalment of the required water management infrastructure such as PCD's and stormwater management systems.
- Operational phase – All related mine operations, including coal removal, stockpiling, processing, water treatment and transportation as well as concurrent rehabilitation forms part of this phase.
- Decommissioning, closure and rehabilitation phase – This phase will involve the removal of all infrastructure and rehabilitation of the disturbed area. The closure period will be determined during the EIA Phase based on the input from the rehabilitation specialist.

Please refer to **Table 4-5**: Phase and associated activities to be undertaken as part of the proposed Springfield and Redan Siding Project for a description of the activities.

Table 4-5: Phase and associated activities to be undertaken as part of the proposed Springfield and Redan Siding Project

Activity	Description
Preconstruction and Planning Phase	
Finalise plans and designs	Finalise infrastructure designs in consultation with DWS and execute Mining Right
Dismantling and removal of existing infrastructure.	This will involve the decommissioning of infrastructure located inside the mining area such as power lines, warehouses and other buildings.
Construction Phase	
Site establishment	The clearing of vegetation and levelling of areas designated for surface infrastructure, stockpile areas, and the initial cut.
Soil stripping	Stripping and stockpiling of soil in areas designated for surface infrastructure, stockpile areas, and the initial cut. A minimum of one metre of topsoil will be removed through a truck and shovel stripping procedure. The topsoil recovered from these areas must be stockpiled separately. The stockpile height should be limited as far as possible. The limited height is important to preserve aerobic conditions in the topsoil thereby preventing future reclamation problems. The height will also impact on dust during windy conditions. Stripping and stockpiling the topsoil first will ensure that the source of post mining rehabilitation nutrients and seeds are retained.
Upgrading and establishment of access and haul roads	Roads in the operational area will be constructed to facilitate on-site vehicle movement. The upgrading and establishment of the access and haul roads will involve clearing vegetation and or crops from the route areas. In terms of internal circulation, internal roads will be provided to allow accessibility to loading areas. All internal roads will be provided with sufficient width and turning radius to allow for movements and manoeuvring of trucks.
Opening of initial cut through blasting and excavation of overburden material	The initial cut along with the access ramp will be established. This will involve drilling and blasting activities along with the removal of the hard overburden.
Setting out ROM coal and product stockpile areas	The vegetation will be cleared, and the initial topsoil removed and stockpiled to reuse during rehabilitation. The ROM and product stockpile area will be compacted, and the lining system determined based on the DWS requirements. The ROM and product stockpile areas will be located at the washing plant complex.

Setting out the overburden stockpile areas	The vegetation will be cleared, and the initial topsoil removed and stockpiled to reuse during rehabilitation. The areas will be compacted, and the lining system determined based on the DWS requirements.
Construction of pollution control and dams	Pollution control dams will be constructed to contain dirty water runoff from the mining area. Slurry dams will be constructed at the washing plant complex where dirty water will be disposed and recycled during processing.
Construction of discard dump and slurry dams (Co disposal facility)	The vegetation will be cleared, and the initial topsoil removed and stockpiled to reuse during rehabilitation. The discard dump area will be compacted, and the slurry dams constructed with the lining system determined based on the DWS requirements
Development of storm water infrastructure	A system of grass lined clean water channels and concrete lined dirty water channels will be constructed to separate clean and dirty water. The pollution control dams (PCDs), cut off and dirty water drains will be constructed as early as possible during the construction phase to separate clean and dirty water. Storm water culverts will be constructed on the proposed haul and access roads at the locations determined by the civil engineer.
Establishment of the processing plant and associated infrastructure including conveyor belts	Preparation of the area inside the mining right application in which the processing plant and associated infrastructure will be located and establishment of the processing plant and associated infrastructure.
Construction of security offices	Temporary guard houses will be established at the main entrance, the processing plant complex and offices.
Construction of the bulk fuel storage facility	The diesel storage facilities will have a combined capacity of more than 500m^3. Diesel storage tanks will be located at the contractor's yard and workshop within a bunded area with an impermeable cement layer.
Establishment of hard park area with offices	The parking area will be compacted, and container offices brought to site.
Establishment of a sewage management system and treatment plant	A septic tank system is proposed with Approved Contractors removing the sewage to a suitable municipal sewage treatment works on a regular basis. The installation of a water treatment plan will be investigated during the EIA and WULA
Establishment of workshops and contractor yards.	The workshops will consist of an impermeable surface area with a zinc roof and the contractor's yard will be compacted and fenced.

Establishment of water pipelines	Under and above groundwater pipelines will be installed to convey water from the PCDs to the processing plant.
Establishment of electricity supply infrastructure	Substation will be established at the processing plant complex.
Construction of temporary storage area for general and hazardous wastes	General and hazardous waste as defined under National Environmental Management: Waste Act will be generated during the construction phase. General waste may comprise concrete, rubble, glass, plastics and recyclable metals and hazardous waste could include used oils, oily rags, paint and chemicals containers etc. Domestic and hazardous waste generated by the project will be collected, handled and temporarily stored on-site before being removed on a regular basis for disposal at appropriately licenced facilities. The different type of waste bins will be located at the contractor's yard.
Operation of construction equipment	The activities listed above will involve the operation of construction equipment which will consists of trucks, excavators, dumpers, compactors and pick-ups.
Construction of a railway siding	An existing railway siding (Redan) will be upgraded to transport coal
Operational Phase	
Opening of cut through blasting and excavation of overburden material	Soft overburden will be removed by excavators. Hard overburden consists of solid rock which is not easily excavated. This requires drilling and blasting to break up the rock for easy removal by excavators and dump trucks.
Opencast mining and earth work activities	The roll-over method of mining is used, implying that the overburden stripped from the initial cut is stockpiled. Rollover mining is undertaken by creating an initial cut, this cut is mined out and the overburden and topsoil stockpiled. The 2nd cut is then created and mined out using a portion of the 2nd cut's overburden to backfill the initial cut. This process continues as mining moves forward and finally the overburden from the cut is used to backfill the final cut. The direction of mining has not been finalised
On-going vegetation clearance	Removal of crops and other vegetative cover within the areas earmarked for immediate opencast mining
Removal and stockpiling of available soils in the designated stockpile areas	As per the construction phase, the soils excavated will be separately pre-stripped as topsoil or subsoil and stockpiled separately in a designated area for use during rehabilitation. It is recommended that the topsoil stripping operation is carried out for one cut width plus 15 metres ahead of the pit advance. This will ensure that the mining cycle will not be interrupted at any time for this essential component to be carried out. The topsoil recovered from the cut areas is to be placed on a resource dump close to the final voids where it will

	be required for final closure. Subsoil stripping and stockpiling should follow a similar truck and shovel stripping procedure than the method used in the stripping of topsoil.
Dewatering of opencast pits	Dewatering is required to ensure stability of mine walls and optimise mine production. In opencast mines, a water table that is too high can destabilize mine walls, haulage roads, and slopes. Water pressure reduces the stability of mine walls and can lead to sliding and collapse of materials in the slope. Effective dewatering operations create dry conditions so that low strength aquifer sequence materials (sands, gravel, and clays) can be safely excavated, reducing drilling and blasting costs. Water from the open pits will be pumped to the PCDs.
Overburden stockpiling	Overburden material will be excavated from the pit to expose the coal. The overburden material is classified into: • Softs – the weathered soils between the rock or relatively un-weathered soils and the topsoil. This zone is assumed to be approximately 2m deep. This material can be considered clean as it is unlikely to contain carbonaceous material. • Hards – the rock and relatively un-weathered soils above the coal and in between the coal seams. This material is assumed to contain carbonaceous material and should be considered dirty. The overburden stockpiles will consist of hard and soft dumps. The dumps will be between 15 and 20m high.
ROM Coal and product stockpiling	Run of Mine coal and the product will be stockpiled at the processing plant complex in the designated stockpile areas. The stockpiles will have a maximum height of 10m.
Processing of ROM coal	Glubay Coal will use a wet coal beneficiation process comprising crushing, screening, spiral concentrators and dense medium separation. Coal is tipped directly into a 30-ton capacity bin or reclaimed from the stockyard and tipped into the bin. Coal is reclaimed from the bin by a vibrating feeder and discharged onto a belt conveyor, which is fitted with a mass meter and electro-magnet, before feeding a double deck screen fitted with 90mm and 50mm aperture screen decks. The 400 x 90mm fraction feeds a short picking belt where any stone, shale and tramp will be removed. The 400 x 90mm coal fraction is reduced to –90mm in a primary double roll crusher. The primary crushed product re-joins the intermediate 90 x 50mm screen product on the belt conveyor feeding the secondary double roll crusher. The 90 x 50mm coal fraction is then reduced to –48mm in the secondary double roll crusher. The –48mm secondary crushed product will re-join the – 50mm undersize product from the double deck screen on the belt conveyor feeding the raw coal local stockpile. The

	product is stockpiled and is blended with washed fines from the process plant to improve the overall quality of the coal dispatched to local markets.
Disposal of dirty water in the PCDs	Potentially contaminated storm water from the operational areas will be diverted to the PCDs.
Recycling of dirty water from the PCDs	Dirty water contained in the PCDs will be recycled and used process water in the washing plant.
Storm water management	The grass lined channels will divert all clean water runoff away from the operational area and release clean water into the surrounding drainage lines via energy dispersion erosion control type structures. All dirty water runoff from the polluted areas such as the ROM stockpiles, overburden dumps, contractor's yard will be directed to the PCDs via dirty water channels. The dirty water channels will release dirty water into the PCDs via two separate concrete silt traps. The PCDs will be lined with the lining as advised by DWS and civil engineers to prevent seepage. The water accumulating in the PCDs will then be used for dust suppression. The PCDs will be designed to ensure a capacity that can account for 1:50 year storm events and kept at a freeboard of 0.8m. The capacities required for the water management infrastructure will be determined during the hydrology study and civil engineers' designs.
Operation of bulk fuel storage facility	Diesel will be stored in above ground bunded storage tanks with concrete flooring to prevent spillages from seeping into the underlying aquifer.
Disposal of discard and slurry at co disposal facility	Discard from the processing plant is transported by truck to the discard dump. Settled slime from the thickener will be pumped to a slurry pond within the confines of the discard dump in a co-disposal operation.
Maintaining of equipment at the workshop	Various machinery will be repaired and stored at the workshop. Oil traps and drums will be present to contain oil waste and spills.
Sewage management	Disposal and treatment of human sewage
Increased human activity through operation of site and security offices	The operational phase will involve the constant movement of contractors and mining employees in and around the area.
Transportation of ROM coal and coal product to the desired locations	The ROM coal from the pits will be road hauled to the stockpile area at the processing plant complex. After processing the product will be road hauled to the desired locations. The Lehtabo and Grootvlei Power Stations are the logical choice for customers, but these contracts would still need to be negotiated.
Overland conveyor system	Coal from the Coal Handling and Processing Plant (CHPP) must be transported from the plant stockpile to a coal stockpile area within the Redan railway siding property. This transportation will be done in two phases:

	Phase 1: FEL loading from a loading platform, coal supplied by road trucks. Phase 2: RLT loading fed by a conveyor belt from the plant. Coal conveying capacity via the overland conveyor system must be such that trains can be loaded at the required rate of 8000 ton per 3.2 hours, twice in 24 hours.
Maintaining access and haul roads	The access and haul roads will be treated with wet suppression in combination with chemical surfactants and maintained by the appointed contractor throughout the life of mine.
Water management	Water requirements for the operational phase for the mine are still being determined. In terms of operational water supply different options exist which include using underground water from the open pit (mine dewatering), drilling a supply borehole or obtaining water off site. In terms of domestic purposes potable water will be sourced from an on-site borehole or from the municipal source of site. The amount of operational and domestic water required will be determined as part of the water balance calculations during the WULA.
General and hazardous waste management	General and hazardous waste as defined under National Environmental Management: Waste Act will be generated at the proposed mine operation. General waste will comprise concrete, rubble, glass, plastics and recyclable metals and hazardous waste will include used oils, oily rags, paint and chemicals containers etc. Temporary waste storage facilities will be constructed for hazardous and general waste within the mine infrastructure area. A facility for the bailing and sorting of waste will be provided for within the temporary storage areas. No disposal of general or hazardous waste will take place at the mine; such waste will be transported off-site for disposal at suitably licenced facilities. The different type of waste bins for the temporary storage of waste will be located at the contractor's yard.
Operational vehicle movement inside mining area	The operational phase will involve the constant movement of vehicles and machinery within the mining area.
Implementation of the Social and Labour Plan (SLP)	Canyon has prepared and submitted a Social and Labour Plan for the proposed Springfield Mine, as part of the process for applying for a Mining Right as required of the Mining Charter and the Mineral and Petroleum Resources Development Act 28, 2002. The objectives outlined in the SLP will be implemented during the operational phase.
Concurrent rehabilitation	Concurrent rehabilitation will occur during the operational phase by means of the roll over method. From the rehabilitation perspective, the key factors to consider during the operational phase are to minimise the area affected by the development, minimise potential future contact of toxic or polluting materials with the environment, and to maximise the recovery and effective storage of those mining profile materials that will be most useful during the rehabilitation process.

Decommissioning, Closure, Rehabilitation Phases	
Final backfill of open pit and closing of the final void	The overburden of the initial cut will be used to backfill the final void (discard and hard overburden at the bottom and soft overburden at the top).
Dismantling and removal of processing plant and associated mining infrastructure	Following cessation of mining, it is planned that all infrastructures will be decommissioned and removed from site in a systematic and regulated manner. Mining infrastructure such as the processing plant, water treatment plant, fuel storage facility, workshop, offices, change houses, fences, etc. will be removed from site. All material recovered from the demolition of buildings and/or structures will either be transported to a permitted disposal site, sold as scrap or made available to the local community as building materials (provided they are in a satisfactory condition following demolition).
Rehabilitation of stockpile areas	The stockpile areas will be ripped and re-vegetated with indigenous vegetation.
Rehabilitation of the discard dump	Discard will either be disposed of in the final void if approved by DWS or the dump will be landscaped, stabilised and re-vegetated.
Replacement of soils following the filling and levelling of mined out strips	The pre-stripped, topsoil will be replaced over the remaining landscaped area. Activities associated with the decommissioning phase will aim at rehabilitation of the site and associated soil to the extent that the site can revert to agricultural use post mining.
Cleaning, landscaping and re-vegetation of disturbed area	Coal waste will be removed from the stockpile areas, the disturbed areas will be landscaped, ripped and reseeded with indigenous vegetation to emulate the pre-mining environment as close as practically possible.
Rehabilitation of the access and haul roads	The haul roads will be ripped and reseeded with indigenous vegetation.
Rehabilitation of the PCDs and slurry ponds	The PCDs and slurry ponds along with the storm water management infrastructure will only be demolished should the area proof to be free draining with no pollution potential after rehabilitation. The areas will be cleaned, filled and landscaped during decommissioning.
Waste generation and disposal	Large quantities of waste, including scrap metal and used oil, will be produced during the demolition of infrastructure and the operation of equipment used during decommissioning. No disposal of general or hazardous waste will take place on-site; such waste will be transported off-site for disposal at suitably licenced facilities.

Retrenchment	Mine closure will result in the retrenchment of a number of employees. Only employees and contractors involved in the decommissioning activities will remain employed.

5 POLICY AND LEGISLATIVE CONTEXT

This scoping report has been compiled strictly in accordance with the template provided by the DMRE for mining related Scoping Reports. This is in accordance with the MPRDA as well as the guidelines provided by the National Environmental Management Act, 1998 (Act no 107 of 1998) and Environmental Impact Assessment Regulations of 2014 (as amended).

5.1 Constitution

The environmental right is mentioned in Chapter 2 of the Constitution of the Republic of South Africa (Act No.108 of 1996). In terms of this provision: everyone has the right to an environment that is not harmful to his or her health or wellbeing. The State must therefore respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities. Specifically as regards the environmental right, the Constitution states that:

"*...everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promotes conservation, and secures ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*".

The Constitution therefore recognises that the environment is a functional area of concurrent national and provincial legislative competence, and all spheres of government and all organs of state must cooperate with, consult and support one another if the State is to fulfil its constitutional mandate.

5.2 MPRDA

The Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) identifies the state as the official custodian of South Africa's Mineral and Petroleum Resources. Therefore, all activities relating to the reconnaissance, prospecting rights, mining rights, mining permits and retention permits are regulated by the State. One of the objectives of the Act is to give effect to section 24 of the Constitution by ensuring that the nation's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development. Applicable sections of the MPRDA include sections 10, 16, 21, 22, 27 and 48.

The Mineral and Petroleum Resources Development Regulations (2004) prescribe how an application process in terms of the MPRDA must be lodged. The relevant Regulations include 3, 5, 10, 11 and 13.

5.3 NEMA

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) was promulgated to serve as the general framework within which environmental management and implementation plans must be formulated. It provides guidelines on how any organ of state must exercise any function when

taking any decision in terms of the Act or any statutory provision concerning the protection of the environment. NEMA sets out the principles by reference to which a conciliator appointed under the Act must make recommendations. These principles guide the interpretation, administration and implementation of the Act, and any other specific laws concerned with the protection or management of the environment.

NEMA also advocates and promotes public participation in environmental governance. One of the objectives of NEMA is to provide for institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith, such as detailed regulations for Environmental Impact Assessment to predict the impacts of a plan, proposal or policy.

Since its promulgation on 29 January 1999, there have been several amendments to the original act, with a view to strengthening the environmental management function and the general framework of laws concerning the environment.

Regulations for EIA in South Africa were first promulgated under the Environment Conservation Act, 1989 (ECA) (Act No. 73 of 1989). Those regulations took effect in September 1997 and several minor amendments followed in the early 2000s. Since then, two major reviews of EIA regulations have ushered in gradual reforms aimed at improving the efficiency of EIAs and resolving the administrative problems that soon became apparent with the implementation of the ECA regulations. The most recent of these regulations were promulgated in terms of Sections 24(5), 24M and 44 of NEMA, and are now referred to as the NEMA EIA Regulations, 2014 (Government Notice Nos. R982, R983, R984, R985 and R986, published in Government Gazette No. 38282 of 04 December 2014).

The Environmental Impact Assessment (EIA) for the proposed opencast coal mining activities at Springfield coal Mining Project and Redan Siding is being undertaken in terms of the NEMA EIA Regulations, 2014, which came into effect on 04 December 2014. The NEMA EIA Regulations (2014) were scrutinised to ensure that the required procedures were completed during the EIA.

A number of listed activities, which trigger the EIA process, are planned as part of the proposed project at Springfield and Redan Siding.

The second schedule to the EIA Regulations (R982) deals with activities identified in terms of Section 24(2)(a) and (d) of NEMA, which may not commence without Environmental Authorisation from the competent authority and in respect of which the investigation, assessment and communication of potential impacts of activities must follow the EIA procedure as described in regulations 27 to 36 of the EIA Regulations, 2014.

5.4 NEMWA

A specific environmental management act was promulgated on 10 March 2009 to govern waste management activities. This Act aims to reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.

The National Environmental Management Waste Act (Act No. 59 of 2008) establishes institutional arrangements and planning matters; provides for national norms and standards for regulating the management of waste by all spheres of government; makes provision for specific waste management measures; establishes the procedures for the licensing and control of waste management activities; provides for the remediation of contaminated land; provides for the establishment of the national waste information system; and provides for compliance and enforcement of waste management activities.

The proposed development, being a waste disposal site, is expected to generate significant amounts of waste. Section 16(1) of the Waste Act states that "A holder of waste must, within the holder's power, take all reasonable measures to—

a) *avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated;*
b) *reduce, re-use, recycle and recover waste;*
c) *where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;*
d) *manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts;*
e) *prevent any employee or any person under his or her supervision from contravening this Act; and*
f) *prevent the waste from being used for an unauthorised purpose.*

Also, section 19(1) of the act gives the minister power to gazette certain activities as "listed waste management activities" for which either a Basic Assessment or an Environmental Impact Assessment must be carried out and an Environmental Authorisation and a Waste Management License issued, before such activities may be undertaken.

5.4.1 Minimum requirements for the handling, classification and disposal of hazardous waste

The minimum requirements for handling, classification and disposal of hazardous waste guideline sets out the waste classification system, in which waste is placed in two classes i.e. general or hazardous. The classification of the waste is based on their inherent toxicological properties. Hazardous waste, however, is further subdivided based on the risks the waste poses. The requirements for pre-treatment and disposal of hazardous waste are appropriately set in accordance with the waste classification, and are provided for within the guideline document. Hazardous waste prevention and minimisation as well as the handling, transportation and storage are also briefly addressed. Co-disposal of sewage sludge as well as protocols for evaluating downstream uses of waste, sampling, risk-based modelling and risk assessment are included.

5.4.2 NEMWA: National Norms and Standards for the Storage of Waste

The National Norms and Standards for the Storage of Waste was promulgated in terms of the provision stipulated in the NEMWA, and came into effect on the 23 November 201, GN No. 926. The National Norms and Standards for the Storage of Waste aim to regulate both the storage of general and hazardous waste. The schedule provides standards for the location, construction and design as well as the operation of waste management facilities. Furthermore, the schedule provides the minimum requirements for the both above ground and underground waste storage facilities and containers.

5.5 NWA

The National Water Act, 1998 (Act No. 36 of 1998) aims to provide for management of the national water resources in order to achieve sustainable use of water for the benefit of all water users. This act requires that the quality of water resources is protected as well as the integrated management of water resources with the delegation of powers to institutions at the regional or catchment level. The purpose of the Act is to ensurethat the nation's water resources are protected, used, developed, conserved and managed in ways which take into account:

- Meeting basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial discrimination;
- Promoting the efficient, sustainable and beneficial use of water in the public interest; facilitation social and economic development;
- Providing for the growing demand for water use;
- Protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations;
- Promoting dam safety; and
- Managing floods and drought.

In pursuit of these objectives, Chapter 4 of the act regulates water use, while Section 21 lists eleven water use types that are regulated [Section 21 (a) – (k)]. Watercourses and wetlands are protected in terms of this section, as both are regarded as water resources. Should there be any wetlands located within 500m of the watercourse or with the floodline, a Water Use Licence Application will be undertaken in terms of this Act.

5.6 National Heritage Act

The objective of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) is to introduce an integrated system for the management of national heritage resources. The identification, evaluation and assessment of any cultural heritage site, artefact or find in South Africa are required by this Act.

Section 38(1) of this Act states that: "any person who intends to undertake a development categorised as any development or other activity which will change the character of a site-

i. Exceeding 5 000 m^2 in extent; or
ii. Involving three or more existing erven or subdivisions thereof; or
iii. Involving three or more erven or divisions which have been consolidated within the past 5 years; or
iv. The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
v. The rezoning of a site exceeding 10 000m^2 in extent; or
vi. Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development".

Section 38(3) further states that the responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a).

The Act stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority. Section 34(1) of the Act states that "no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…"

5.7 NEMBA

The object of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEMBA) is to provide for the management and conservation of South Africa's biodiversity within the framework of NEMA; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith. The objectives of NEMBA are:

- Within the framework of the National Environmental Management Act, to provide for:
  - the management and conservation of biological diversity within the Republic and of the components of such biological diversity;
  - the use of indigenous biological resources in a sustainable manner; and
  - the fair and equitable sharing among stakeholders of benefits arising from bio-prospecting involving indigenous biological resources;
- To give effect to ratified international agreements relating to biodiversity which are binding on the Republic;
- To provide for co-operative governance in biodiversity management and conservation; and
- To provide for a South African National Biodiversity Institute to assist in achieving the objectives of this Act.

5.8 NEMAQA

The aim of the National Environmental Management: Air Quality Act, 2004 (No. 39 of 2004) (NEMAQA) is to:

- Protect and enhance air quality in the Republic;
- Prevent air pollution and ecological degradation and
- Secure ecologically sustainable development, while promoting justifiable economic and social development.

The NEMAQA makes provision for the establishment of ambient air quality and emission standards at a national, provincial and local level.

5.9 Other Legislation

Various other laws regarding the protection of the environment that are relevant to this EIA include:

- Mine Health and Safety Act, 1996 (Act No. 29 of 1996) and Regulations,
- Gauteng Provincial Environmental Management Framework;
- Municipal By-laws as applicable;
- National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003);
- Environment Conservation Act, 1989 (Act No. 73 of 1989) (as amended);
- Hazardous Substances Act, 1973 (Act No. 15 of 1973);
- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983);
- Land Administration Act, 1995 (Act No. 2 of 1995);
- Water Services Act, 1997 (Act No. 108 of 1997);
- National Forests Act, 1998 (Act No. 84 of 1998); and
- Occupational Health and Safety Act, 1993 (Act 85 of 1993) (OHSA).

6 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

South Africa's local energy resource base is dominated by coal. Internationally, coal is the most widely used primary fuel, accounting for about 36% of the total fuel consumption of the world's electricity production. About 77% of South Africa's primary energy needs are provided by coal. This is unlikely to change significantly in the next decade owing to the relative lack of suitable alternatives to coal as an energy source. Many of the deposits can be exploited at extremely favourable costs and, as a result, a large coal mining industry has developed.

Glubay Coal (Pty) Ltd is an affiliated company of Canyon Resources which is a mining and exploration company with current operations in Mpumalanga and Gauteng. The company has five operational coal mines, Hakhano and Singani Colliery in the Middelburg area, Phalanndwa and Phalanndwa Extension Colliery in the Delmas area and Khanye Colliery situated in the Bronkhorstspruit area, all five are opencast coal mines, mined through the typical truck and shovel method with concurrent rehabilitation being done at all five sites.

The Springfield Project has a resource of approximately 266 million tonnes of coal that can be mined and marketed to both local and export markets. The Lethabo and Grootvlei Power Stations are the logical choice for customers, but should Glubay decide to sell coal to Eskom, these contracts still need to be negotiated. Extraction of the coal resource will contribute positively to the South African Economy but the benefits of the mining to the community largely centre on the Social and Labour Plan and employment opportunities.

The planned labour compliment, once the mine is fully operational, is expected to be 300 permanent employees, plus the employees of the appointed contractors and ancillary service providers such as transport, cleaning and security, depending on available and potential skills and subject to negotiation with the Authorities Union and Community Representatives:
(a) A target of 40% would be drawn from the Local Municipal Areas, as the direct sending region;

- A target of 35% would be drawn from the Gauteng sending region; and
- A target of 25% would be drawn from other sending regions in South Africa.

The proposed mine will provide employment for locals and support services, as well as empowerment and skills transfer opportunities. Seen in the light of the current economic environment, having an income has a high impact on the quality of life of families, creating a positive effect. This can therefore be considered a significant benefit for the surrounding communities. Springfield plans to build skills that are recognised by the National Qualifications Framework (NQF) and are transferable outside of the workers' current employment. Therefore, the impact here would be long term, past the life of the mine itself. In addition Redan Siding would ease the congestion of heavy vehicles on the roads as well as the degradation of the transport routes.

Springfield has committed to support the well-being of its communities through feasible and sustainable initiatives that will be integrated into the local and district municipalities' Local Economic Integrated Development Planning processes. Springfield will consult with the local municipalities within which the project falls in order to determine how the project can be implemented in a way that will benefit the community. The LED project will focus on the areas of improving the quality of lives of people living in the communities together with creating sustainable job opportunities by the enhancement of existing jobs and developing potential for more jobs.

Furthermore, small, micro and medium enterprise (SMME) development around a mining operation is generally a natural result of the primary activity. Glubay's business model addresses the promotion of this group of enterprises in the development and operation of the mine, together with the community projects. The intention is for the mine committee to purchase the required equipment, provide materials to start operations, set up the necessary systems and recruit and employ community members to operate the community projects.

It is however necessary to highlight the sustainability of mining compared to agriculture (current land use over a large part of the application area) because the proposed Springfield Mine is located in an area associated with large-scale commercial agricultural farming. Mining is a weak-sustainable activity because it is restricted to the extent of the reserve and the life of mine. Agriculture on the other hand can be seen as a strong- sustainable activity if correctly practiced. Through fertilizers and crop maintenance the production of maize, for example, can be sustainable for many decades. Therefore, although mining can generate more gross income over a shorter period, it is less sustainable than good agricultural practices. The development of the proposed Springfield Mine will have a significant negative impact with respect to the site's agricultural potential. The issue of sustainability can only be overcome, by successfully rehabilitating the disturbed area after mining in order to recover the area as close as possible to its natural state and to gain the necessary permits for closure purposes. A maintenance period (as determined by the rehabilitation specialists) must be incorporated into the closure cost, to ensure that sufficient financial provision will be available for the rehabilitation and maintenance of the disturbed area. Depending on the land and the population growth in the affected region, it could be sold back as agricultural land or for either game farming purposes or for other industrial applications. The environmental externalities between commercial crop production and opencast coal mining are significantly different and will be further assessed during the EIA Phase of this project as part of the Agricultural Potential, Land Capability and Soil Assessment which will also inform the Socio-Economic Assessment.

In summary it could be stated that mining at this scale requires the use of trucks, conveyors, jacks and shearers. It is therefore important that these coal reserves are in regular supply at affordable prices, close to the point of consumption. The Redan Siding site will fulfill the need to transport the coal by rail to the markets where needed. By utilizing the railway network the congestion of heavy haul trucks on the national road grid will be reduced. Redan Siding will provide valuable job opportunities to local individuals and contribute towards economic growth within the local municipality.

7 PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORIZATION IS REQUIRED

The life of mine is estimated at this stage to be 31 years. Therefore an Environmental Authorisation is required for the period as stated above.

8 DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED SITE

The DEA Guidelines Series notes the consideration of alternatives as one of the most critical elements of the environmental assessment process. Its role is to provide a framework for sound decision-making based on the principles of sustainable development. The search for alternatives should be well documented and should take into account the views of stakeholders. Key criteria for consideration when identifying alternatives are that they should be: "practicable", "feasible", "relevant", "reasonable" and "viable". The Guideline further notes that although a range of alternatives may exist for a project, they are not all necessarily appropriate for each project under consideration and that the range of categories of alternatives to be evaluated should be considered along with the "no-go" alternative.

Assessment of alternatives should include a comprehensive comparison of all potential impacts, direct, indirect and cumulative, on the environment. The goal of evaluating alternatives is to find the most effective way of meeting the need and purpose of the proposal, either through enhancing the environmental benefits of the proposed activity, or through reducing or avoiding potentially significant negative impacts.

Consideration of alternative activities is a critical element of both EIAs and SEAs. Identification should take place during the scoping phase and should facilitate input from all stakeholders. Evaluation should focus on a few preferred alternatives and should include a comprehensive comparison of all potential impacts, including biophysical, social and economic aspects.

Key issues to consider when identifying alternatives are that:

- Alternatives to most proposals exist;
- The need for and purpose of a development activity must be clearly identified to facilitate the identification of appropriate and feasible alternatives;
- The appropriate development response is identified from a range of possible options;
- The selection is based on a comprehensive and participatory assessment of the full range of options;
- Social and environmental aspects are accorded the same significance as economic and financial factors in the assessment process; and
- The assessment and evaluation of alternatives continues through all stages of the project.

In order to give effect to the general objectives of integrated environmental management laid down in Chapter 5 of the National Environment Management Act 107 of 1998 (NEMA), the potential impact on the environment of listed activities must be considered, investigated, assessed and reported on to the competent authority. The procedures for the investigation, assessment and communication of the potential impact of activities must, *inter alia*, include with respect to every application for an Environmental Authorisation –

- An investigation of the environment likely to be significantly affected by the proposed activity and alternatives thereto.
- An investigation of the potential impact of the activity and its alternatives on the environment and assessment of the significance of that potential impact.
- An investigation of mitigation measures to keep adverse impacts to a minimum, as well as the option of not implementing the activity.

It is clear from the above that the consideration of alternatives is an integral part of the EIA process. The alternatives that will be assessed during the EIA phase are identified below.

8.1 Details of the development footprint alternatives considered

8.1.1 Property on which or location where it is proposed to undertake the activity

No alternative properties are considered for this project because mining can only take place in the area on which the Mining Right is granted. The Mining Right application area has been identified through an extensive prospecting operation which identified the location of the viable coal resource.

Redan Siding is an existing railway siding and no alternative sites were considered. The existing private siding is serving Metalloys (old Samancor operations) but the current configuration of the railhead has constraints and cannot be used to serve Glubay Coal's Springfield Coal project. The only alternative is to haul the coal by road to the various markets.

8.1.2 Type of activity to be undertaken

The choice of mining method is largely determined by the geology and depth of the coal deposit. There exist several alternative mining methods, including opencast and underground mining.

Opencast mining involves the removal of overburden to access the coal. The overburden is stockpiled on-site for later use during backfilling of the mined-out void. The acceptable ratio of coal to overburden is broadly governed by prevailing economic factors, linked to the value of the coal set against the cost of extraction. Strip mining ensures a quick build-up of production, large quantum of production and maximum possible recovery of coal. The constraint to the application of strip mining is the economic limits of stripping ratio and the damage to the surface environment. For the Springfield Mine it is proposed that mining is undertaken by the conventional opencast truck and shovel rollover method mainly due to the depth of the coal deposit and the flexibility of the method.

An alternative to using the truck and shovel method of opencast mining is to make use of a dragline. This method is most suitable where the coal deposit is large in extent and relatively deep. A dragline is capable of moving vast quantities of overburden and coal.

8.1.3 Design or layout of the activity

No alternatives have been considered in terms of the mining area because the location of the reserve was established through extensive exploration activities conducted before the submission of this mining

right application. The extent of the open pit will however be affected by the existing ESKOM servitudes. This will be confirmed during the EIA phase in consultation with ESKOM.

In terms of the proposed infrastructure, a beneficiation facility, workshops and contractor yards for the mining and logistics contractors, 2x weighbridges, and a guardhouse for security will be constructed on-site. Haul roads on the mine itself will be established, as well as additional haul roads linking the mine and coal loading rail sidings. The location of the haul and access roads will depend on the final layout of the mine and end customers of the product. Alternatives locations for the associated infrastructure and haul roads within the application area will be assessed during the EIA phase of this project.

8.1.4 Technology to be used in the activity

Opencast mining is carried out using the truck and shovel method. This mining method is a proven method that has been implemented by the Applicant at its other operational collieries and therefore alternative technologies were not considered.

Glubay Coal's Springfield Project will use a wet coal beneficiation process comprising crushing, screening, spiral concentrators and dense medium separation. The processing plant technology is based on other successful plants operated by the Applicant at other operational collieries and therefore no alternative technologies were considered for processing.

8.1.5 Operational aspects of the activity

The operational aspects of the activity and potential alternatives are discussed below:

Water Supply

There exist a number of alternative options in terms of water supply. For potable water supply the following options are available:

- a borehole can be drilled (subject to the approval from the DWS);
- water can be sourced off site from adjacent landowners (if an agreement can be reached); or
- from the local municipality as the appointed WSP for the area.

The impact of sourcing water from water resources will be assessed during the Water Use License Application (WULA).

In terms of process water, water can be sourced from boreholes (subject to the approval from the DWS), groundwater inflow to the pit and water captured in the dirty water containment infrastructure (pollution control dams). Water from the pit and runoff water from the contaminated area (stockpile area, wash plant and workshops) are directed towards the pollution control dams on-site. Not all water make on the proposed mine will go to the PCDs as options are under consideration for water management for agriculture as well as maintaining/increasing the ecological reserve for the area.

Transport of ROM and coal product

The truck and shovel method will be used to extract coal from the pits and from there road hauled to the stockpile area. The other alternative transport option is via conveyor belts which will be assessed further during the EIA Phase of the project. Depending on the end users, coal product will be transported to the Redan siding for distribution or directly via truck to the end users.

Electricity

Opencast mining is carried out using diesel-powered equipment and therefore no power reticulation is anticipated for this area. Electricity is used in the operation of the wash plant and an application has already been submitted to Eskom for the establishment of a substation. At this stage no alternative energy sources are being considered.

The option of not implementing the activity

Should the proposed Springfield Mine not be established, the current land uses will remain the same for the time being until another mining company will apply for the mining rights. The coal reserves would remain unutilized and the objectives of the National Development Plan as well as the local economic development programs, skills programs and employment opportunities would not be realised. Should Glubay Coal (Pty) Ltd not proceed with the project, mining of the coal reserve would not necessarily be avoided, as another application for a mining right could be made unless the government declares they area off limits for mining, mining houses would continue to apply to mine the coal reserve.

Should the project not be implemented the status quo remains and farming and other activities will continue unaltered with no negative impacts on incomes derived through the existing activities. However, properties within the mining right area are currently under investigation for the establishment of a solar plant. Other positive impacts include:

- No potential impacts on sensitive landscapes;
- No impact of livelihoods;
- No impact on road infrastructure;
- No impact on community health and safety as a result of the mine;
- No impact on land values will manifest as a result of the mine;
- No negative community mobilisation;
- No additional impacts on crime in the project vicinity;

The development of the colliery could prove to be a catalyst in creating new job opportunities, local economic development, employment and much needed basic infrastructure for an impoverished community and should the no-go option be implemented this will not occur. The negative impacts of the no-go option will include:

- No establishment, development or training of new HDSAs, SMMEs and small local businesses;
- No job creation through economic spin-offs and no revenue for local businesses;

- No capacity building and portable skills development for locals to seek employment at other mines and industries.

The central purpose of the impact assessment including specialist input and the environmental management plan is to assess whether the socio-economic benefits of the proposed operation outweighs the environmental impacts and to consider the aim of sustainable development. Therefore, the no-go option will be further assessed during the EIA Phase of the project.

8.2 Public Participation

Public Participation is a legal requirement, where the potential exists for individuals and/or parties to be affected by a proposed activity. According to the principles of Integrated Environmental Management (IEM), these individuals and/or parties should be involved in the decision-making process from an early stage in the project, with regards to any relevant issues and concerns complementing the information on which the Regulating Authorities would base their decision. Through the public participation process the I&APs are offered an opportunity to voice their opinions and concerns with regards to the application and have them formally recorded andregistered as such to be considered by the Authorities in the decision-making process.

The decision would entail one of the following:

- proceeding to the next phase in the project, or
- supplementing inadequate information, or
- not approving the project.

The decision for the project application is made on the basis of adequate information.

The decision-making framework will in practice comprise the Authorities and the Applicant. This facilitation of effective communication between the Authorities, the Public and the Applicant, forms the primary role of the Public Participation Process.

The term "Public Participation" is defined by the International Association for Public Participation (IAPs) as "*any process that involves the public in problem-solving or decision-making and that uses public input to make better decisions".*

Certain other key terminology needs to be clarified from the outset.

- **"Stakeholder(s)"** refers to all individual(s) and institutions that are (potentially) associated with the project including:
    - the Applicant, namely Glubay;
    - Regulating ("Competent") Authorities namely DMRE;
    - "Commenting" Authorities, namely DWS, GDARD, SAHRA, National Agriculture and others as stipulated by the DMRE;
    - surface owners and residents;
    - neighbouring and downstream communities (potentially affected parties);
    - other interested and affected parties (I&APs) including Transnet and Rand Water.

The term "Stakeholders" is defined by the International Association for Public Participation (IAPP) as "*any individual, group of individuals, organization or political entity with an interest or stake in the outcome of a decision*".

It is the right of each stakeholder to decide whether or not they will participate in the process.

- **The "Public",** more specifically, refers to the last three categories described above, namely:
    - surface owners and residents;
    - neighbouring and downstream (water users) communities (potentially affected parties);
    - other interested and affected parties (I&APs).

The term "Public" is defined by the International Association for Public Participation (IAPP) as "*those stakeholders who are not typically part of the decision-making entity or entities*",

- **Consultation – a level of Participation**

"**Participation**" refers to a broad term of communication between parties, and includes various levels of intensity, namely **inform, consult, involve, collaborate, empower** the Stakeholders in joint decision-making, as per the Public Participation spectrum, as developed by the IAPP. This is dependent on the requirements of the project Applicant, IAPs and Stakeholders.

The Applicant appointed Zitholele Consulting (Pty) Ltd ("Zitholele") as the independent public participation practitioner, to facilitate the flow of information for the application processes. Zitholele, is the independent manager of the information generated by all participants in the application process for this project. The information presented in this section was taken from the Public Participation Report compiled by Zitholele which is attached as **Appendix 5** to this report. Reference is made to the following supporting information attached as Appendix 5A-L of the **Public Participation Report**:

- Appendix 5A: I&AP Register and proof of email, hand delivery and ordinary mail;
- Appendix 5B: Minutes of Focus Group Meeting with Landowners;
- Appendix 5C: Registration and Comment sheet;
- Appendix 5D: Background Information Document (BID);
- Appendix 5E: Newspaper Advert;
- Appendix 5F: Site Notice, Library and Electronic Copies;
- Appendix 5G: SMS Text and Live Radio read;
- Appendix 5H: Minutes of Meeting held with Rand Water;
- Appendix 5I: Photoplate of Public open Days;
- Appendix 5J: Comment and Response Report (CRR);
- Appendix 5K: Proceedings/Minutes of Public Open Days;
- Appendix 5L: Slides presented at Arcon Primary: Public Open Day

8.2.1 Public Participation Process

A description of the properties relevant to this application has been given below in
Table 8-1 and preliminary land and water uses in and adjacent to the proposed mining activities in **Table 8-2**.

The PPP for the current Environmental Authorisation application is scheduled to commence on 15 May 2023. The draft Scoping Report will be available for circulation to all registered I&APs for comment. The commenting period will last until 15 June 2023.

In addition two Public Open House Meetings are scheduled to take place on 3 June and 6 June 2023. Final arrangements in this regard were communicated to all registered I&APs.

Table 8-1: Description of properties relevant to process

Farm Name	Farm No	Mining Right Portions
Kookfontein	545 IQ	2, 16, 22, 29, 30, 34, 35, 39, 54, 55, 64, 65, 66, 82, 83, 84, 85, 93, 95, 97, 99, 100, 102, 105 and 106.
Damfontein	541 IQ	2, 8, 36 and 37.
Waldrift	599 IQ	16, 89 and 101.
Vlakfontein	546 IQ	159
Farm Name	**Farm No**	**Redan Siding Portions**
Waldrift	599 IQ	1, 13, 14, 61, 77, 84
Kookfontein	545 IQ	16, 28, 31, 59, 78

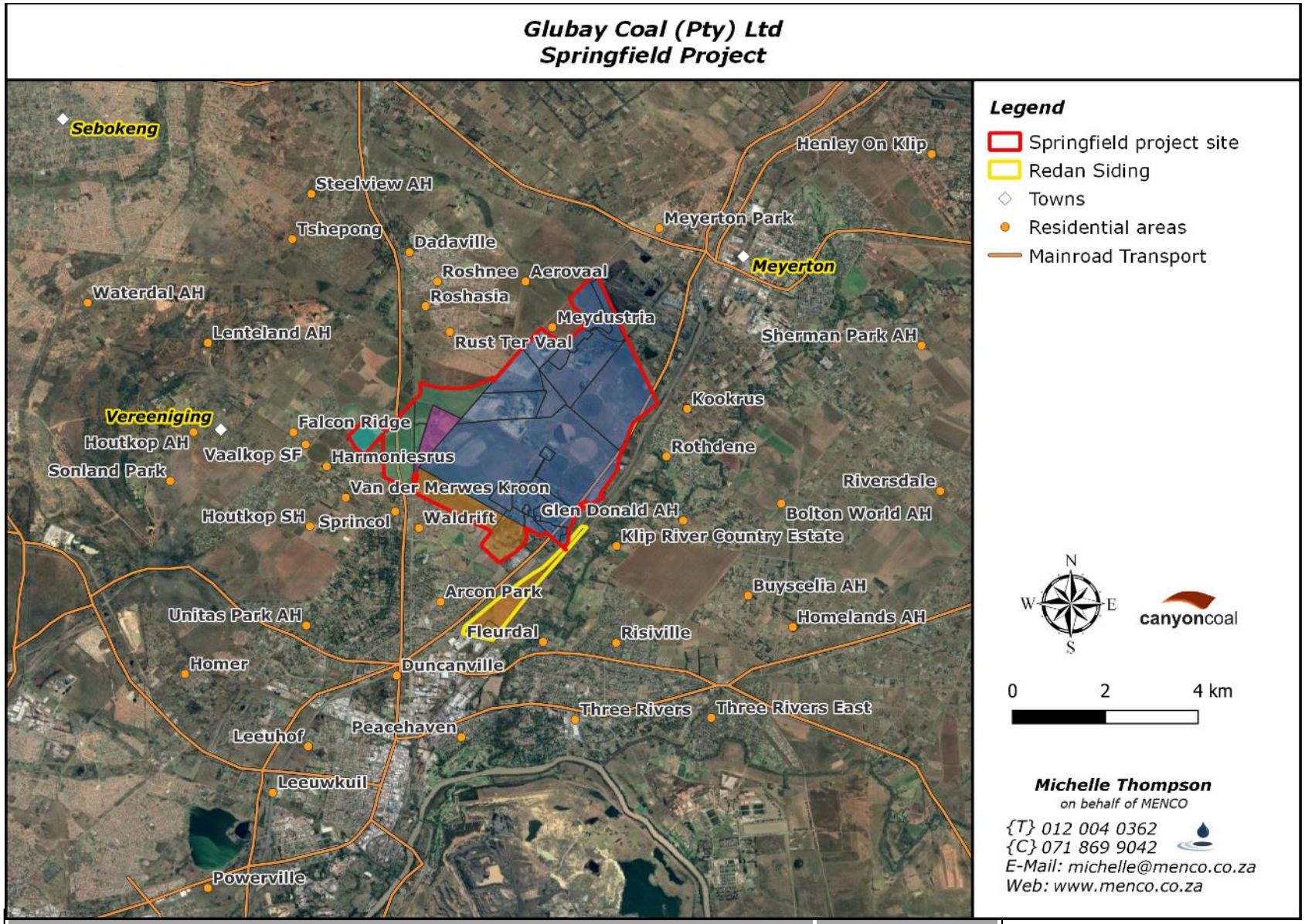
Glubay Coal (Pty) Ltd
Springfield Project
Sebokeng
Steelview AH
Tshepong
Dadaville
Henley On Klip
Meyerton Park
Meyerton
Roshnee
Aerovaal
Roshasia
Waterdal AH
Meydustria
Lenteland AH
Rust Ter Vaal
Sherman Park AH
Kookrus
Vereeniging
Falcon Ridge
Houtkop AH
Vaalkop SF
Harmoniesrus
Rothdene
Sonland Park
Riversdale
Van der Merwes Kroon
Houtkop SH
Sprincol
Waldrift
Glen Donald AH
Bolton World AH
Klip River Country Estate
Buyscelia AH
Arcon Park
Unitas Park AH
Homelands AH
Fleurdal
Risiville
Homer
Duncanville
Three Rivers
Three Rivers East
Peacehaven
Leeuhof
Leeuwkuil
Powerville
Legend
Springfield project site
Redan Siding
Towns
Residential areas
Mainroad Transport
N
W
E
S
canyoncoal
0
2
4 km
Michelle Thompson
on behalf of MENCO
{T} 012 004 0362
{C} 071 869 9042
E-Mail: michelle@menco.co.za
Web: www.menco.co.za

Figure 8-1: Residential areas in proximity to the Springfield Project

Table 8-2: Adjacent land and water uses

Land and Water use	Land	Water	Direction	Approximate Distance from Activity
Irrigated agriculture	√	√	General	Adjacent and within
Intensive dry land agriculture	√	√	General	Adjacent and within
Brick manufacturing and quarry	√	√	Within	Adjacent and within
R59 and R82 provincial roads	√		East and West	500m - 1 km
Paleontological sites	√	√		
Defunct coal discard dump	√	√	East	Adjacent
Nature Reserve	√	√	East	Within
Wetland (Fourie Spruit)	√	√	North East	Within
Servitude: Power line	√	√		
Servitude: Pipe line	√	√		
Residential: Ebenhaeser	√	√	North	1 km
Residential: Rust-ter-Water	√	√	North	1.5 km
Residential: Roshnee	√	√	North	1.5 km
Airfield: Vlakfontein	√		North	Within
Industrial: Samancor	√	√	North-east	Adjacent
Residential: Meyerton	√	√	North-east	1.5- 2 km
Residential: Thulamtwana	√	√	East	2.5 km
Residential: Tshepiso III	√	√	East	4.0 km
Residential: Glen Donald	√	√	East	1.5 km
Residential: Tedderfield	√	√	East	1.5 km
Residential: Rothdene	√	√	East	1.5 – 2 km
Agricultural: Vereeniging farms	√	√	East	2.5 km
Agricultural: McKay Estate	√	√	South-east	2.5 km
Residential: Risiville	√	√	South-east	2.5 km
Industrial: Refractory	√	√	South-east	Adjacent
Residential: Risi Small Holdings	√	√	South-east	3.0 km
Residential: Acron Park	√	√	South	Adjacent
Residential: Sonland Park	√	√	South	Adjacent
Residential: Falcon Ridge	√	√	South	Adjacent
Residential: Springcol	√	√	South	Adjacent
Residential: Waldrift	√	√	South	Adjacent
Cemetery	√		West	0.5 km

The public consultative process is intended to result in the issues and concerns of the Stakeholders being objectively identified and recorded as potentially "key aspects". These have been assessed to determine their:

- relevance;

- level of significance.

Various individuals and parties have been included in the public participation process, namely, the landowners, users, neighbours, district and two local municipalities and relevant authorities. This is regarded as the initiation of the consultation process. During the compilation of the Environmental Impact Assessment report, Environmental Management Programme report, Technical Report (for the water use licence application) all issues and potential impacts identified, will be discussed with the I&APs and stakeholders and recorded. Key landowners as identified during earlier consultative processes conducted for the Springfield Project is included in **Table 8-3**.

Table 8-3: Springfield property and land ownership

Farm Name	No	Ptn	Owner	Title Deed	Ha
Damfontein	541 IQ	2	Smaldeel Trust	T34205/2014	94.63
		8	Damfontein Five-Four-One (Pty Ltd)	T3397/1972	13.97
		36	Estelle de Jager	T90360/2004	68.90
		37	Smaldeel Trust	T121970/2006	39.63
Smaldeel	542 IQ	1	Vereeniging Municipality	T17001/1949	186.53
		4	William Henry Kemp de Jager	T19577/2008	60.16
Kookfontein	545 IQ	2	Midvaal Local Municipality	T407/1973	65.97
		RE 16	ESCOM	T20698/937	13.4
		RE 22	Klip River Industrial Park (Pty) Ltd	T106019/2008	79.95
		29	Ocon Brick (Pty) Ltd	T38756/2014	325.11
		30	Cartoon Inv (Pty) Ltd	T49345/1964	21.41
		34	Transnet Ltd	T4952/1960	0.03
		35	Transnet Ltd	T31763/1960	0.88
		39	Ocon Brick (Pty) Ltd	T21553/2014	101.75
		54	Ocon Brick (Pty) Ltd	T21554/2014	42.83
		55	South Vereeniging Prop (Pty) Ltd	T4134/1984	239.86
		64	Northern Vaal Metropolitan Substructure	T32934/1973	32.92
		65	Midvaal Local Municipality	T31527/2013	9.20
		66	Midvaal Local Municipality	T31527/2013	1.07
		93	Ocon Brick (Pty) Ltd	T21555/2014	75.52
		95	Rosherville Prop (Pty) Ltd	T133050/2000	11.45
		RE 97	Klip Industrial Park (Pty) Ltd	T106019/2008	30.18
		99	PH Hamman Boerderye cc	T6244/2010	306.85
		100	Emfuleni Local Municipality	T7726/2004	29.42
		102	Saib Mohammed Ameen	T148120/2007	246.09
		105	Unknown		1.12
		106	Unknown		2.66

Farm Name	No	Ptn	Owner	Title Deed	Ha
Vlakfontein	546 IQ	159	PH Hamman Boerderye cc	T133050/2000	37.43
Waldrift	599 IQ	16	PH Hamman Boerderye cc	T6244/2010	106.73
		89	Rosherville Prop (Pty) Ltd	T133050/2000	64.83
		101	PH Hamman Boerderye cc	T6245/2010	0.83

Land ownership and farm portions related to Redan Siding are contained in Table below.

Table 8-4: Redan Siding property and land ownership

Farm	Portion	Owner
Waldrift 599 IQ	77	ESKOM
Waldrift 599 IQ	13, 14	Badenhorst and Badenhorst Prop Holding (Pty) Ltd
Kookfontein 545 IQ	28	Cartoon Inv (Pty) Ltd
Kookfontein 545 IQ	31	Cornelius Georgius van Greune
Waldrift 599 IQ	1	Donald Mckay
Kookfontein 545 IQ	59	Republic of South Africa
Waldrift 599 IQ	84	Transnet
Kookfontein 545 IQ	16	ESKOM
Kookfontein 545 IQ	78	Unknown

Regulatory officials administrating the application procedure

The DMRE (Gauteng Regional Office) has, as lead agent, undertaken to consult (collaborate) with all other relevant government departments.

Interested and Affected Parties

The possible Interested and potentially Affected Parties are being progressively identified through consultation with the representatives and the community members, surface owners, Windeed system, State Departments and the Land Claims Commissioner.

The level of participation by the I&APs has and will continue to be self- determined, as to their perceived importance of the project within the framework of their corporate and/or individual lives.

Identification of information gaps

The process of data gathering and evaluation entails discussing the issues of concern and preliminary findings with the I&APs and Stakeholders and will assist in identifying gaps in the information to be collated by the Applicant and its consultants. This could be either quantitative (extent and/or detail), or qualitative (integrity). Consultation with the I&APs and Stakeholders during the participative process will assist this process by both:

- Adding directly to the list of (key) issues, and thus possibly also to the absence of required information, and
- Confirming that the extent, detail and quality of information is reasonably adequate for the process.

8.2.2 Provision of opportunity for participation

New or future Interested and potentially Affected Parties (I&APs) will continue to be given an opportunity to participate in the process and express their points of view by the following means:

- Written replies in response to information of the project that was sent to them;
- Written replies in response to notices placed in the local and provincial/national newspapers;
- A facility for SMS and WhatsApp text messages and project-specific email address and website blog is available for the duration of the process;
- At meetings with the I&APs and stakeholders during the EIA phase, at which the details of the proposed mitigation measures will be presented for discussion with them: the preference of the manner of participation will be directed by the I&APs and Stakeholders;
- Through written appeals directly to the relevant departments (DMRE and DWS).

8.2.3 Legal Requirements

This application is subject to legislation stipulated in the GN R326 of NEMA with regards to public participation, and the EIA Regulations of 2014 Regulation 41- These regulations stipulate the public participation process that must be conducted in order to provide the IAPs the opportunity to form part of the process. The focus of the public participation process is to involve the public in the decision-making process from an early stage in the project, with regards to any relevant issues and concerns complementing the information on which the Regulating Authorities would base their decision. Steps that have and will be taken throughout the EIA Process will include:

- Notification of the public in writing and through the press and site notices (of meetings and the availability of reports and information);
- Stakeholder meetings (one-on-one and focus group meetings with key stakeholders);
- Public meetings;
- Make information (containing all relevant facts in respect of the application available to potential I&APs);
- Provide I&APs a reasonable opportunity to comment on the application;
- Open and maintain an I&AP Register of issues and concerns;
- Provide the registered I&APs the opportunity to comment on all reports;
- Record all comments of I&APs in the reports and plans and ensure that written comments, including responses to such comments and records of meetings, are attached to the reports and plans that are submitted to the competent authority.

A combined public participation process will be conducted in accordance with Regulations 41 - 44 of the GNR326 as part of the Mining Right, Environmental Authorisation, Waste License and Water Use License Applications (WULA).

Notification

The steps that were taken to notify the public of the proposed project are explained in detail below.

Site notices

Site notices were placed at strategic locations on site, at public places and in the vicinity of the site. Photographs of all the site notices are provided in **Appendix 5I: Photoplate of Public Open Days.** The Notification of the I&APs regarding the Public Participation process is attached as **Appendix 5A: I&AP Register and proof of email** contained in the Final Scoping Report.

In terms of the Public Participation Process for the Springfield Project, site notices have been placed at the following libraries – Roshnee, Meyerton, Vereeniging, Rust ter Vaal and Sicelo Community Hall. The draft Scoping Report was also available at these venues.

8.2.4 Focus Group Meetings

A focus group meeting was held with the directly affected landowners and their representative (Mr Riaan van der Merwe) on the 24th of January 2023. Refer to **Appendix 5** of the Public Participation Report for the minutes of the meeting.

8.2.5 Previous Public Meetings - GP 30/5/1/2/2/ (10084) MR

The public meetings that were held during 2021/22 along with the number of attendees are presented in Table 8–5 below. Zitholele Consulting was appointed to conduct the PPP in terms of the renewed application for Environmental Authorisartion for the proposed Springfield Mining Project. Potential venues for the meetings included Sicelo Community Hall and the Arcon Primary School Hall.

Table 8-5: Public meetings held during 2021/22 for Springfield Mining Project

Area	Number of Attendees
Falcon Ridge	63
Rus-ter-Water	102
Roshnee	307
Riversdale	82
Redan	66
Arcon Park	369
Sicelo	211
Waldrift	53
TOTAL	**1,253**

8.2.6 Issues raised during the open House Days

The consultative process conducted over a 30 day period with the I&APs as well as stakeholders have raised several concerns that have the potential to impact negatively on several residential areas surrounding the proposed mining area. All of these concerns are captured and it forms part of the Comment and Response Report (CRR) attached to this document as **Appendix 5J.** The general concerns are summarized in

Table 8-6.

Table 8-6: Summarised comments received during Open House Days

Category / Aspect	General Concern
Agricultural	Numerous concerns were raised regarding the impact of the proposed mining on the high potential of agricultural activities in the area. The concerns include the loss of high potential soils, loss of land capability and job losses.
Air	The air quality in the area will deteriorate based on dust fall-out stemming from opencast activities. Air quality will also cause health conditions. The impacted area falls within the VTASPA.
Biodiversity	The biodiversity of the area will be disrupted by mining
Blasting and Vibration	The mining area is too close to residential areas and blasting will cause damage to the houses. How will these impacts be avoided?
Dolomites	The area is classified as dolomitic. Over abstraction or dewatering of mining areas could give rise to unstable conditions and sinkhole formation. This could have devastating impacts for the region.
Heritage	The Redan Engraving Site is a declared National Monument and is regarded as a no-go area
Hydrology	Several concerns were raised that deal with the impact on the surface water resources of the area. The 1:50 year flood line was questioned and considered to be outdated
Hydrogeology	The high impact on groundwater was tabled as an issue of grave concern. Groundwater is a source for many for potable use. Dewatering could lead to sinkhole formation.
Hydropedological and wetlands	The mining area transgresses wetland areas that will be impacted. Wetland functions will be negatively impacted. The biodiversity of the wetlands will be destroyed.
Infrastructure and disruption of Services	The ageing infrastructure is rated as vulnerable and mining is likely to cause damage to water supply pipelines, electricity and road network.
Noise	High level of noise disturbance, especially during night will impact negatively on quality of life

Category / Aspect	General Concern
Pollution	Several concerns related to pollution were tabled. The water quality of the various water sources in the area will be subject to degradation. Toxic substances associated with mining will cause health related issues and contribute towards land contamination.
Socio-economic	The livelihood and quality of life of several communities will be disrupted in terms of property depreciation, health issues and loss of job opportunities. The issue of compensation with regards to displacement of business, damage to houses caused by blasting and health related matters will have to be addressed. The mine is not considered to be economic viable
Traffic	The increase in traffic into the residential area is of concern based on road conditions and the heavy traffic volume that brings a safety concern

8.3 Environmental attributes associated with the development footprint (Baseline Environment)

The objective of this section is to describe the type of environment that will be affected by the proposed activity in terms of biophysical, cultural and socio-economic aspects. The baseline information presented below will be used to determine protection, remedial measures and environmental management objectives. The methodology used during the scoping phase to assess the baseline environment is described below. An in-depth desktop baseline assessment of the proposed study area was undertaken using the following available information:

- Proposed Springfield Coal Mine Scope Definition Report compiled by WSP Environmental (Pty) Ltd, July 2019;
- Environmental Management Plan compiled by Minerals Development (Pty) Ltd in support of the prospecting right application;
- Springfield Due Diligence Report compiled by Canyon Coal, November 2016;
- Springfield Project Geological Data Review and Resource Statement Report compiled by SRK Consulting (Pty) Ltd, September 2016.
- EIA screening Tool;
- South African National Biodiversity Institute (SANBI);
- Google Earth; and
- South African Heritage Resources Agency (SAHRA).

The findings of the desktop assessment were verified through site assessments conducted by the initial appointed EAP and specialists during 2021/22. Consultation with the landowners were also utilised to determine the environmental attributes of the application area.

8.3.1 Geology

The Springfield Project is located within the Vereeniging-Sasolburg coalfield (also known as the South Rand coalfield), which is located within a southerly trending basin between the towns of Heidelberg in the north and Villiers in the south, in the Gauteng Province of South Africa. The southern extension of the south rand coalfield is subdivided into the Sigma, Cornelia and Coalbrook basins. The Springfield Project is located within the Cornelia basin of the Coal field. The coal deposits occur in the Permian age Karoo Supergroup. This coalfield is isolated from the adjacent coal-bearing areas by basement palaeohighs of the Ventersdorp and the Witwatersrand Supergroups. The coal strata lie conformably on the basal Dwyka Group diamictite unit, which may be up to 10 m in thickness. The overlying coal-bearing Vryheid Formation comprises sandstones, siltstones, mudstones and coal and may reach a maximum thickness of as much as 150m in places. A thick overlying dolerite sill is mapped and known to overly the ground in the three sub-basins to the south of the town of Vereeniging.

Three main coal seams occur in the coalfield, namely, the No. 1 Seam at the base with an average thickness of approximately 2.8 m, the No. 2 Seam averaging 10 m and up to 20 m in places towards the northern part of the basin where it occurs as a composite seam, split into the No. 2A and 2B Seams. The No. 3 Seam is the most widespread coal horizon in the coalfield with an estimated thickness of 5 m. In places, the No. 2 and No. 3 Seam coalesce or are separated by a thin parting that prevents the seams from being mined independently. The topmost seam is the Ryder Seam with an average thickness of approximately 2.3 m. This seam is very sporadic and of low quality. In the Springfield Project area, the No. 1 Seam is correlated to the Bottom Seam, the Middle Seam (or Main Seam) to the No. 2 Seam and the Top Seam to the No. 3 Seam.

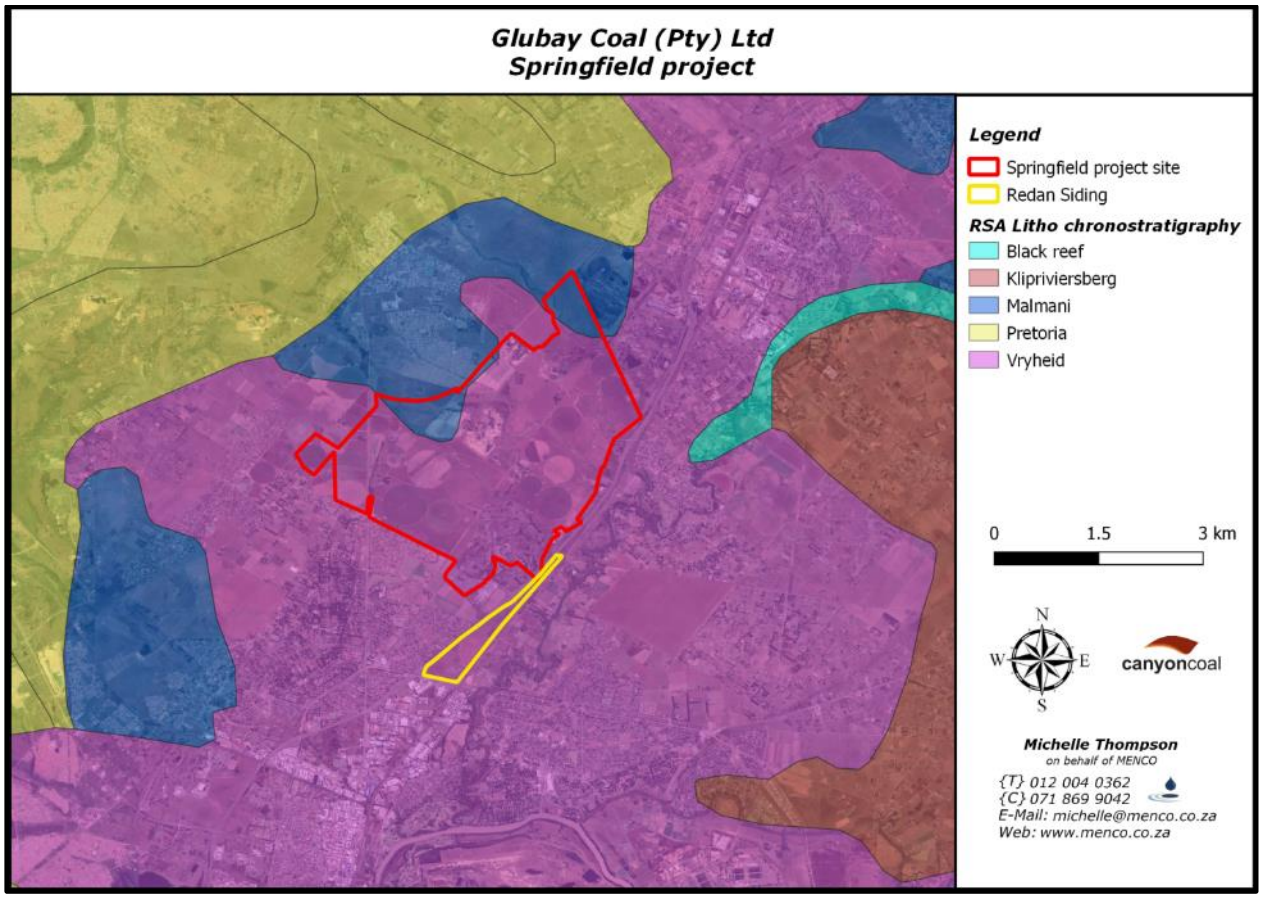

Figure 8-2: Geology of the project area

8.3.2 Topography

Figure 8-3 shows the topographical plan of the Springfield Project area extracted from a 1:50 000 survey plan and verified against the collar co-ordinates. The project area shows a gradual decrease in elevation to the south east with elevations as high as 1 500m above mean sea- level ("amsl") in the north west to approximately 1 455m amsl in the south east.

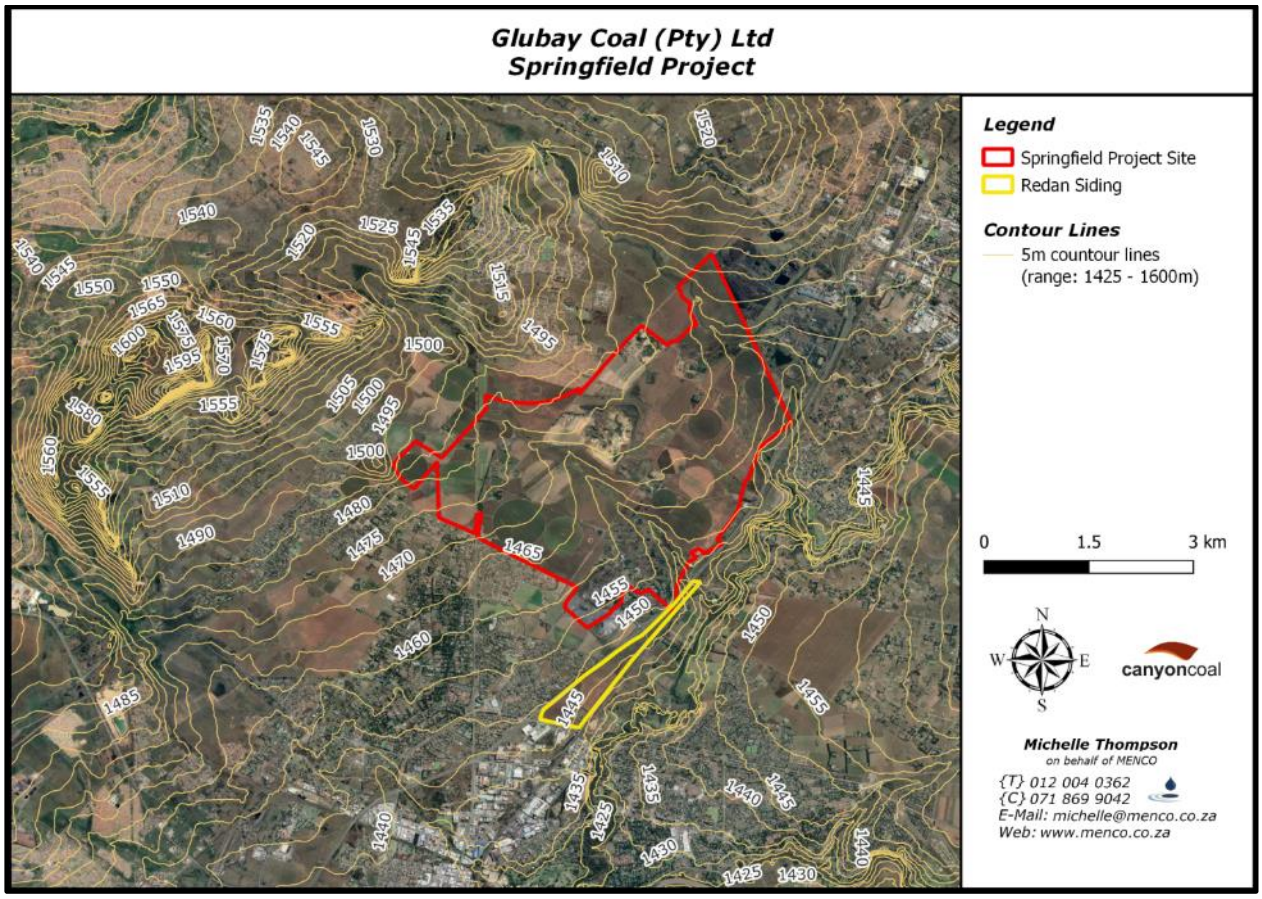

Figure 8-3: Topography for the Springfield area

8.3.3 Climate

The project area falls within the Highveld climatic zone, which is generally associated with a cool temperate climate with high extremes between maximum summer and winter temperatures. The area is characterised by summer rainfall with a mean annual precipitation of 662 mm. The area is prone to frost.

8.3.3.1 Temperature

Monthly temperatures statistics for hourly data recorded at the Sharpeville AQMS (2013 to 2015) show that minimum temperatures can drop below 0°C between June and September, while maximum temperatures exceed 30°C between August and April (**Table 8-7**). The period reported for the Sharpeville AQMS is within the range of the long-term average for the area; however, the maximum for Sharpeville (39.1°C) is higher than the long-term average.

Table 8-7: Temperature data applicable to Springfield

Temp	Month of the Year												Long-term
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Min	8.2	3.0	7.0	1.1	-1.7	-5.7	-5.0	-3.8	-1.2	2.9	5.9	9.1	-6.4
Avg	21.8	21.7	20.0	17.1	13.9	10.8	10.4	13.8	18.5	20.2	20.9	21.7	16.8
Max	39.1	34.6	33.2	31.7	29.1	26.4	24.6	30.4	32.7	35.3	36.4	36.7	35.9

8.3.3.2 Rainfall and evaporation

Rainfall data was sourced from the nearest Department of Water and Sanitation (DWS) managed rain gauge station, Vaalplaats, and from the Water Resources of South Africa manual (WR2012). The adopted mean annual precipitation (MAP) for the project area is 659.2 mm (obtained by calculating the average rainfall of the three rain gauges) (**Table 8-8**). Most rainfall occurs during summer. Examination of the daily rainfall records for Vaalplaats indicates that while the mean annual precipitation (MAP) is fairly low, there has been significant rainfall on occasions (up to 54% of MAP in 30 days and 80% of MAP in 60 days) (SLR, 2018b). Average monthly evaporation sourced from the Vaalplaats station indicates an annual evaporation of 1 259 mm (**Table 8-7**). From the data evaporation far exceeds rainfall (SLR, 2018b).

Table 8-8: Rainfall and Evaporation

Month	Rainfall in mm				Evaporation in mm	
	Vaalplaats	438734W	438550W	Average	S-Pan	Open Water
Jan	122.1	69.7	64.2	85.3	178.9	150.2
Feb	92.3	95.5	95.4	94.4	147.1	129.4
Mar	80.3	101.0	105.1	95.5	135.7	119.4
Apr	50.9	98.3	122.4	90.5	102.2	89.9
May	21.1	81.0	74.7	58.9	78.4	68.2
Jun	8	75.6	73.1	52.2	59.2	50.3
Jul	7.2	41.9	54.2	34.4	64.8	53.8
Aug	9.9	18.4	19.5	16.0	92.5	74.9
Sep	23.1	6.9	7.5	12.5	129.1	104.6
Oct	72.6	5.6	6.5	28.2	161.3	130.7
Nov	100.2	7.6	7.4	38.4	168.6	138.3
Dec	115.1	22.5	20.8	52.8	180.1	149.5
TOTAL	**702.9**	**624.1**	**650.8**	**659.2**	**1497.9**	**1259.2**

8.3.3.3 Wind

Wind roses comprise 16 spokes which represent the directions from which winds blew during the period. The wind rose colours reflect the different categories of wind speeds. For example, the dark green areas represent winds of 3 to 4 m/s. The dotted circles provide information regarding the frequency of occurrence of wind speed and direction categories. For the current wind roses, each dotted circle represents a 2% frequency of occurrence. The figure given in the centre of the circle described the frequency with which calms occurred, i.e. periods during which the wind speed was below 1 m/s. The period average wind rose taken from the Sharpville monitoring station is reflected in **Figure 8-4**. A predominance of wind from the north-easterly and north-westerly sectors is evident.

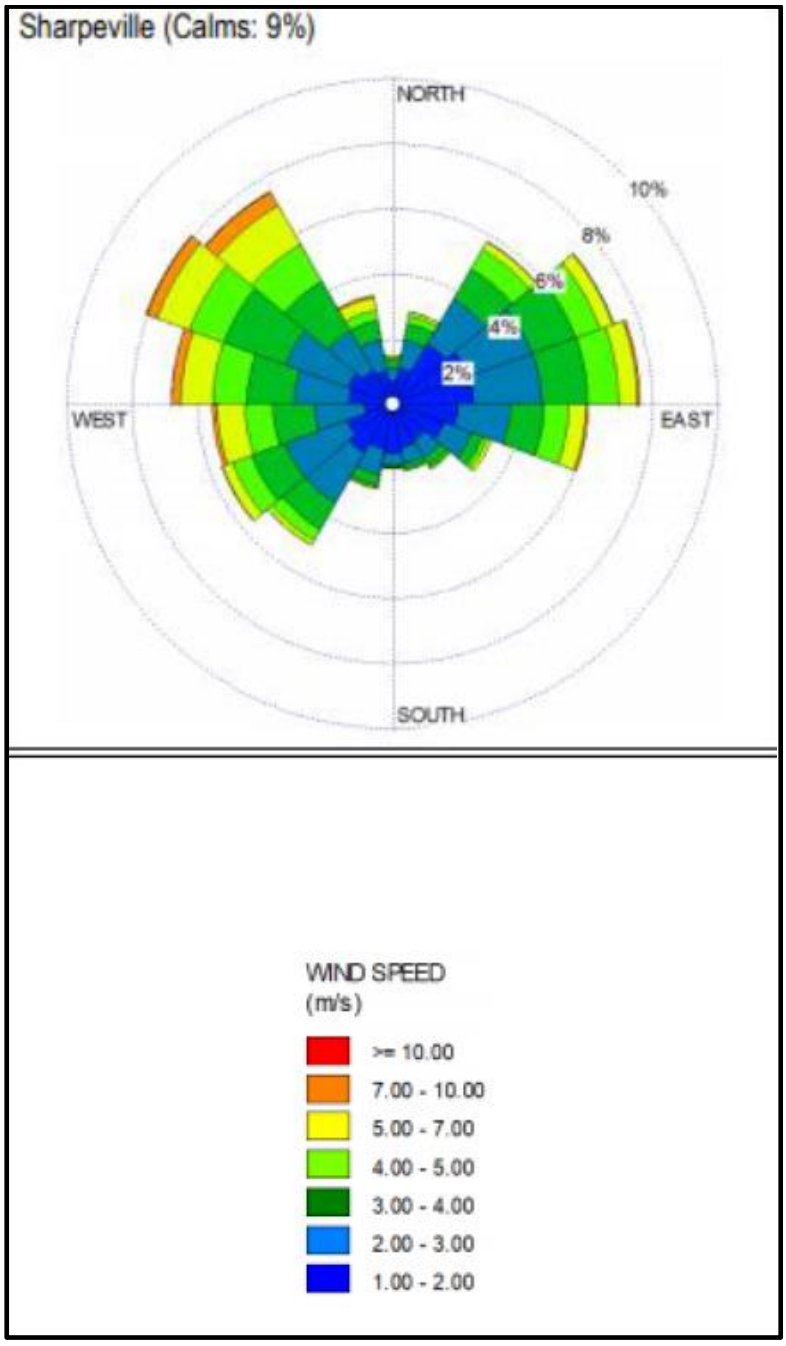

Figure 8-4: Wind Rose for Springfield

8.3.4 Soils and land capability

The Springfield Mine is located in an area associated with large-scale commercial agricultural farming. The soils are generally favourable for agriculture, although there will be restrictions in some areas. During the consultation process the landowners confirmed that the application area consists of high potential arable soils (Hutton). An Agricultural Potential, Land Capability and Soil Assessment will be conducted during the EIA phase of this project to establish and describe the soil and agricultural status quo of the application area, to describe land use and capability of the site based on the soil forms, slope of the site and climatic data. Areas not used for agriculture have been disturbed by industrial, residential and disposal activities.

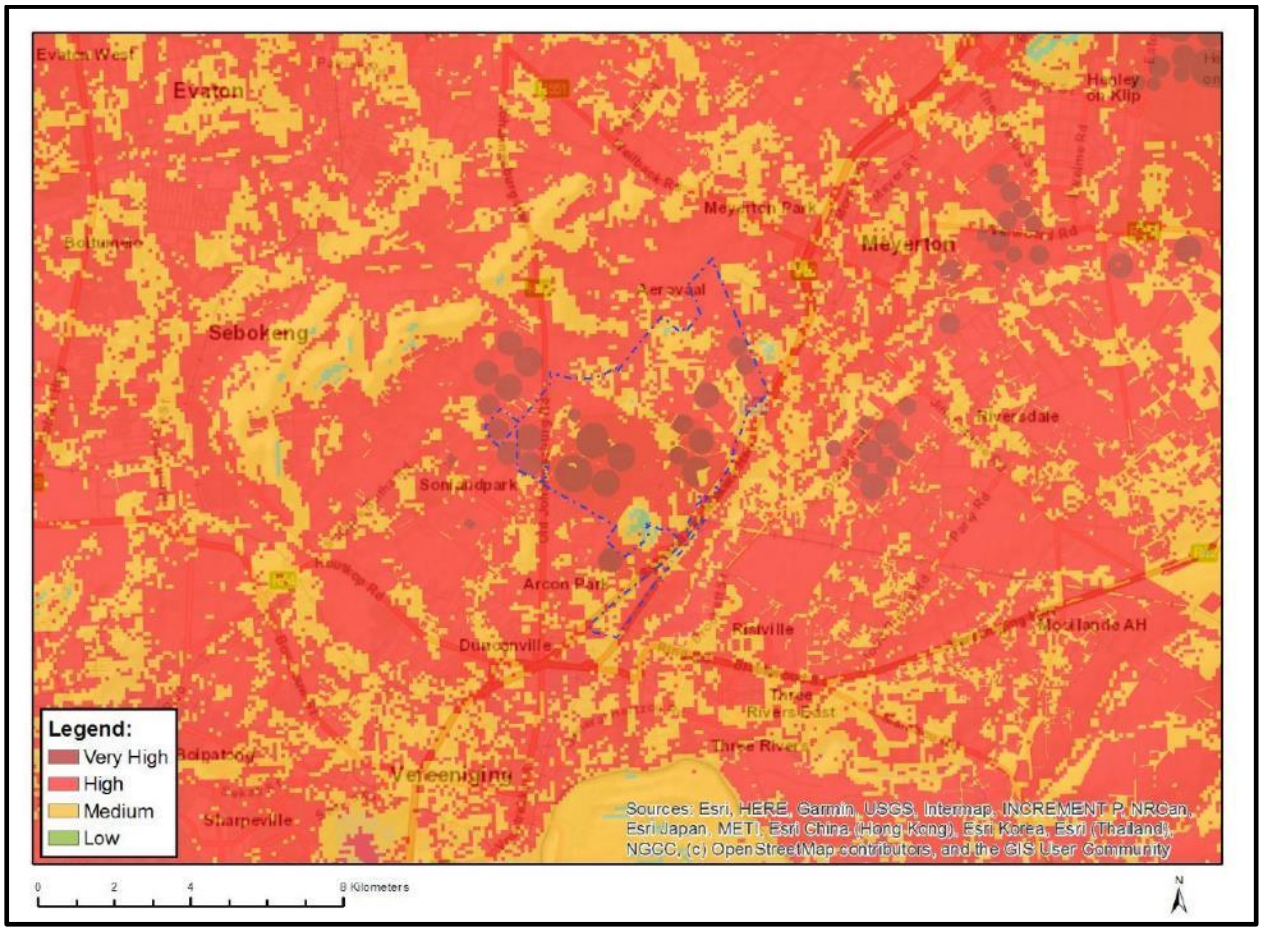

Figure 8-5: Map indicating soils and land capability

8.3.5 Biodiversity

Critical Biodiversity Areas (CBAs) 1 and 2 mostly occur along the main rivers in the Sedibeng District Municipality (SDM) and around the ridges. The CBAs are linked to one another via Environmental Support Areas (ESAs) in order to create/ maintain continuous environmental corridors which link the main terrestrial and aquatic habitats to one another (rivers, dams, ridges etc.). CBAs are required to meet biodiversity targets for ecosystems, species and ecological processes, as identified in a systematic biodiversity plan. ESAs are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of CBA's and/or in delivering ecosystem services. CBAs and ESAs may be terrestrial or aquatic.

Based on the latest information on SANBI and the Gauteng Conservation Plan, large areas of the site has been transformed but there are Ecological Support Areas (ESA), Important Areas and NFEPA Wetlands remaining as indicated in **Figure 8-6**. Based on visual inspection some of these areas have been transformed by agricultural and industrial activities but due to the occurrence of natural areas within the study site a detailed biodiversity assessment will be undertaken during the EIA Phase of this project

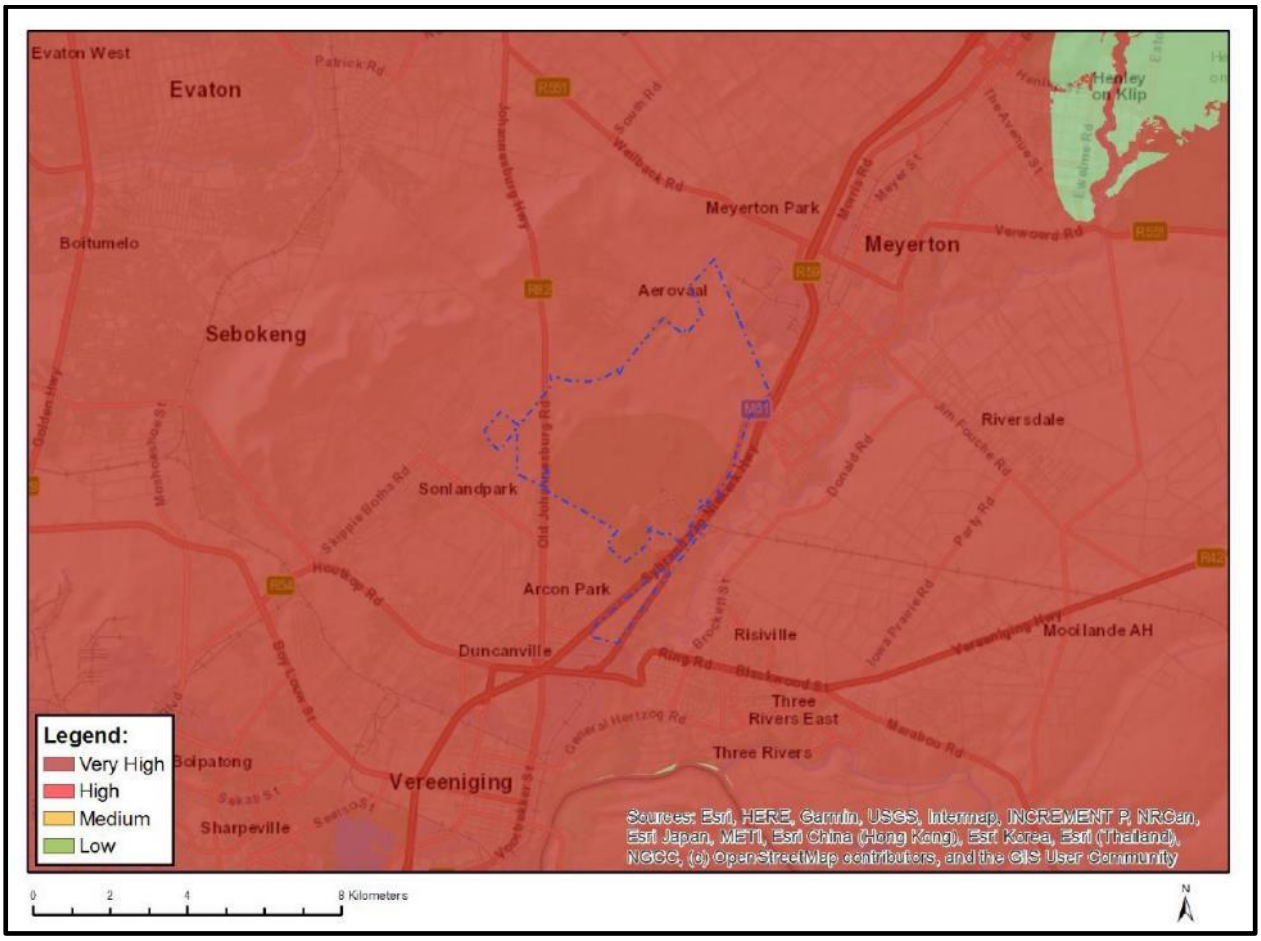

Figure 8-6: Terrestrial biodiversity sensitivity

8.3.5.1 Protected areas

In South Africa protected areas are defined as parts of the landscape that are formally protected by law in terms of the National Environmental Management: Protected Areas Act (No. 57 of 2003) (NEMPAA) and managed primarily for the purpose of biodiversity conservation. A system of strategically located and effectively managed protected areas is the most common mechanism used to secure biodiversity in the long term.

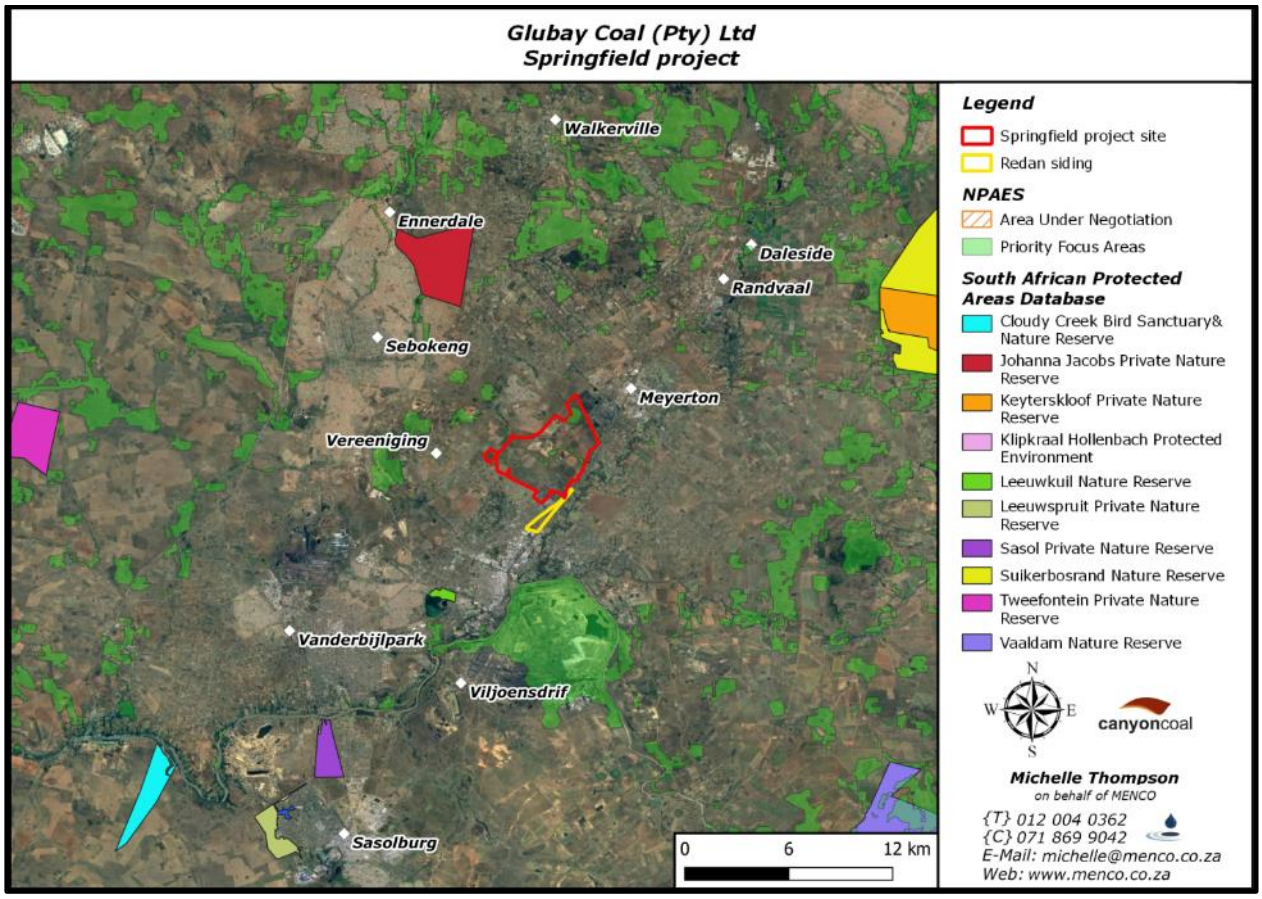

Figure 8-7: Protected areas

The most significant protected areas in the region are the Suikerbosrand Nature Reserve in the central parts of the SDM, and the Vaal Dam Nature Reserve to the south. Several smaller nature reserves (mostly private) occur throughout the District.

The Springfield Mine will be situated on the "Waldrift Nature Reserve" area (Farm Kookfontein 545 Portion 29). It should be noted that the Waldrift Nature Reserve is no longer a protected area as per promulgation in Provincial Gazette 348 of 3 December 2007. The terrestrial biodiversity sensitivity of this area is indicated as very high by the National Web-based Environmental Screening Tool however during the site visit it was visually confirmed that the Waldrift Nature Reserve has already been transformed by agriculture and industrial activities. The Johanna Jacobs Private Nature Reserve and Leeuwkuil Nature Reserve are the only other nature reserves situated within 10km from the site.

8.3.6 Surface Water

Freshwater resources in South Africa are considered limited due to the semi-arid nature of the country's rainfall regime and as a result of over-use by people. Gauteng province does not have any significant water resources within its own boundaries and has long since used the available fringe water resources contained in the Vaal River Catchment. Gauteng's water is supplied by three significant Water Management Areas (WMAs); namely the Upper Vaal, the Olifants and the Crocodile (West) Marico. The SDM comprises of five main catchment areas:

- The Rietspruit which extends from the Glen Harvie area in Rand West City from where it flows southwards through the western extents of the SDM before feeding into the Vaal River to the south.
- The Klip River which extends southwards from the City of Johannesburg mining belt where after the Natalspruit and Rietspruit merge with it in the vicinity of the Waterval node; from here it flows southwards parallel to the east of route R59 past Meyerton and Vereeniging before feeding into the Vaal River.
- The Blesbokspruit originates in Ekurhuleni from where it runs through the central parts of Lesedi from where it flows southwards to link up with the Boesmanspruit.
- The Boesmanspruit flows westwards from where it links up with the Blesbokspruit to become the Suikerbosrand from where it links into the Vaal River in the vicinity of Drie Riviere (Vereeniging).
- Prominent ridges occur in the vicinity of Walkerville; Suikerbosrand and southwards up to the Vaal Dam; and to the south-east of Ratanda Heidelberg towards Balfour.

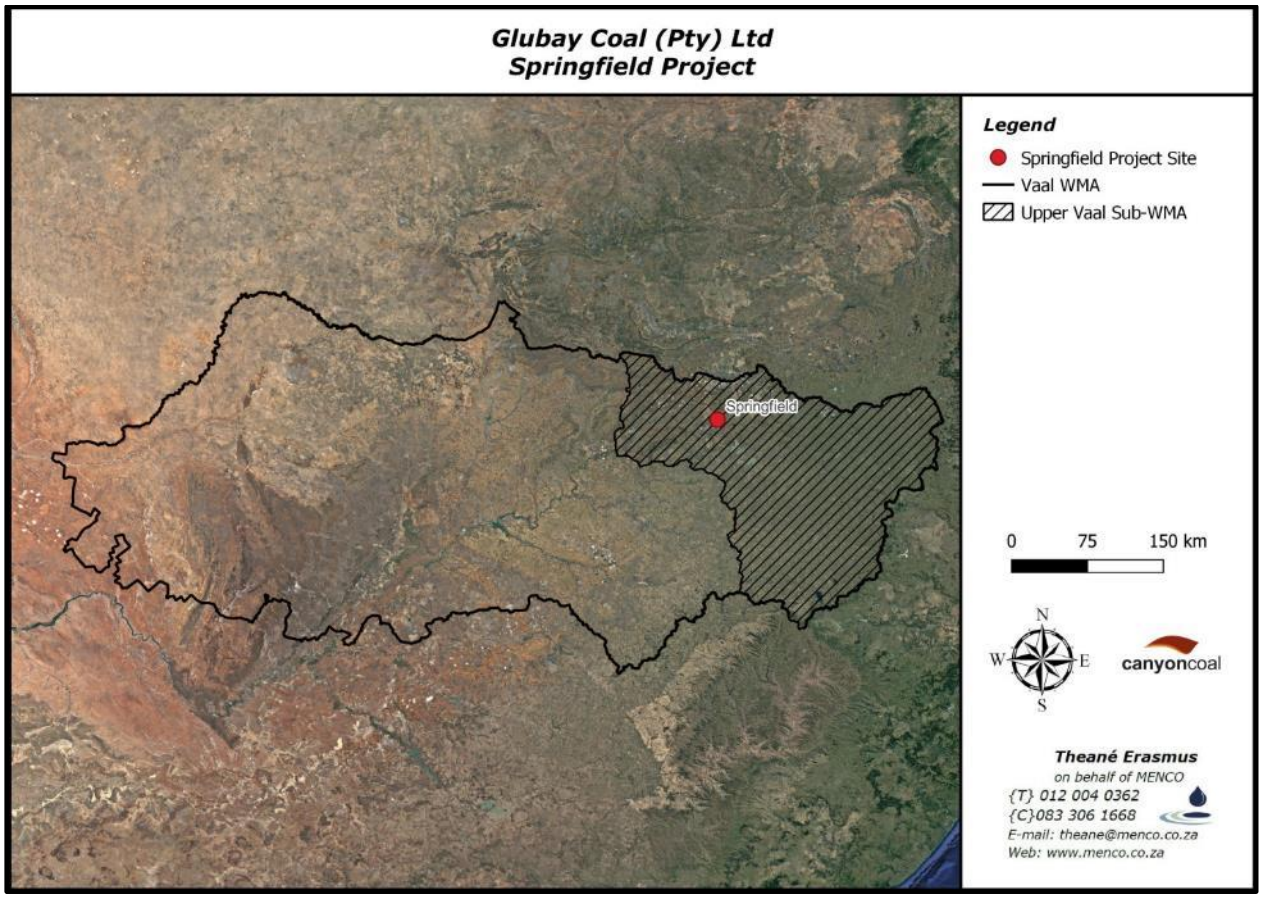

Figure 8-8: Map indicating the Water Management Area

The site is situated within quaternary catchment C22E with watercourses identified as a National Freshwater Ecosystem Priority Area (NFEPA) located on the site (**Figure 8-8**). The Klip River runs

along the eastern boundary of the application area and the Fouriespruit, a tributary of the Klip River, runs through the northern part of the application area.

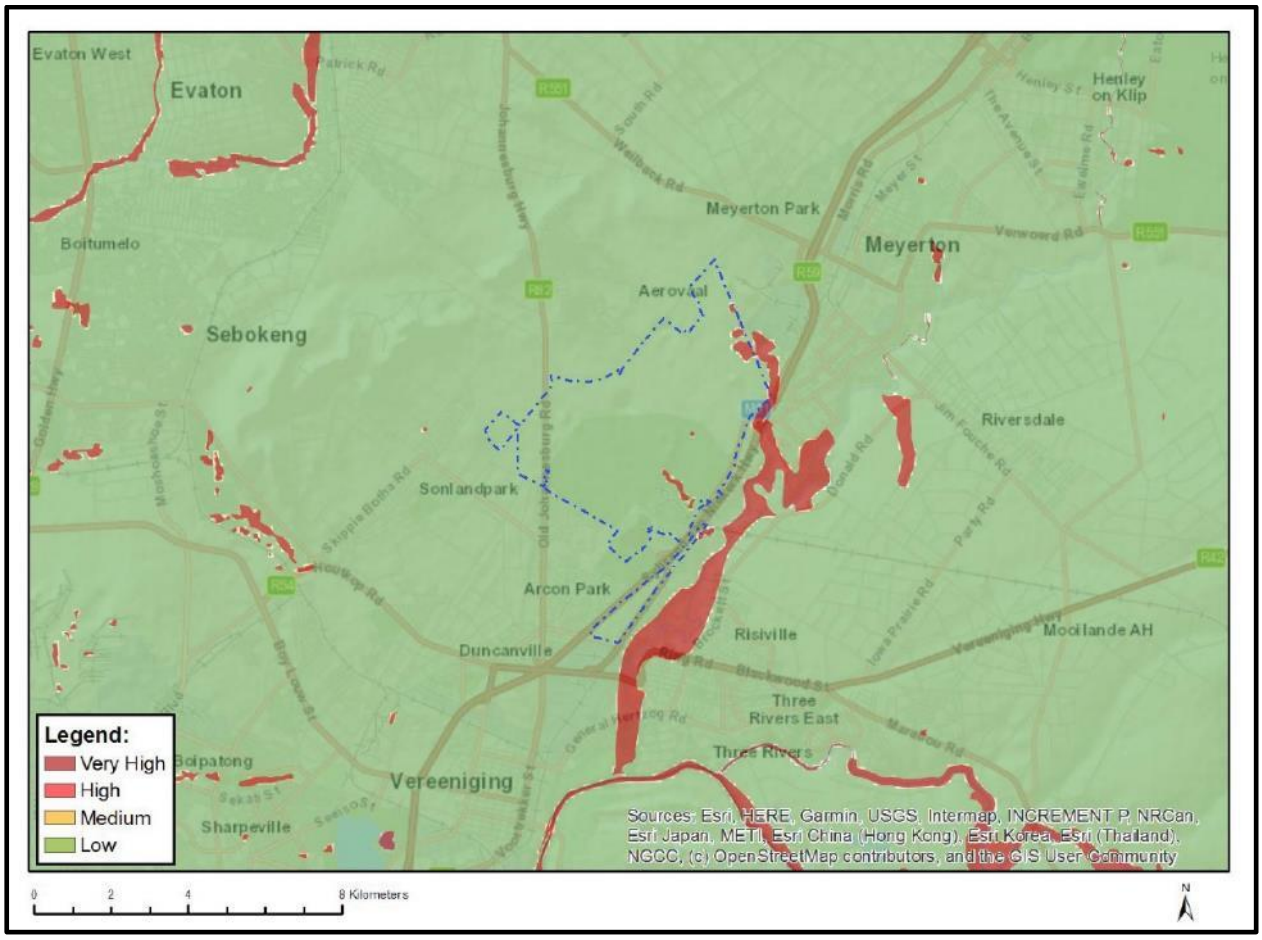

Figure 8-9: Aquatic biodiversity sensitivity

8.3.7 Wetlands

Wetlands or lower-lying valleys where the groundwater tables break through the surface are generally considered as surface water. A wetland associated with the Fouriespruit is found along the northern boundary of the application area. This wetland is identified as a National Freshwater Ecosystem Priority Area (NFEPA). This was verified during the site visit, with the wetland appearing to be functional. A second isolated wetland was identified inside the southern part of the application area situated just below the existing landfill site. This wetland was dry during the previous fieldwork.

The **Figure 8-10** below indicates the location of these wetlands.

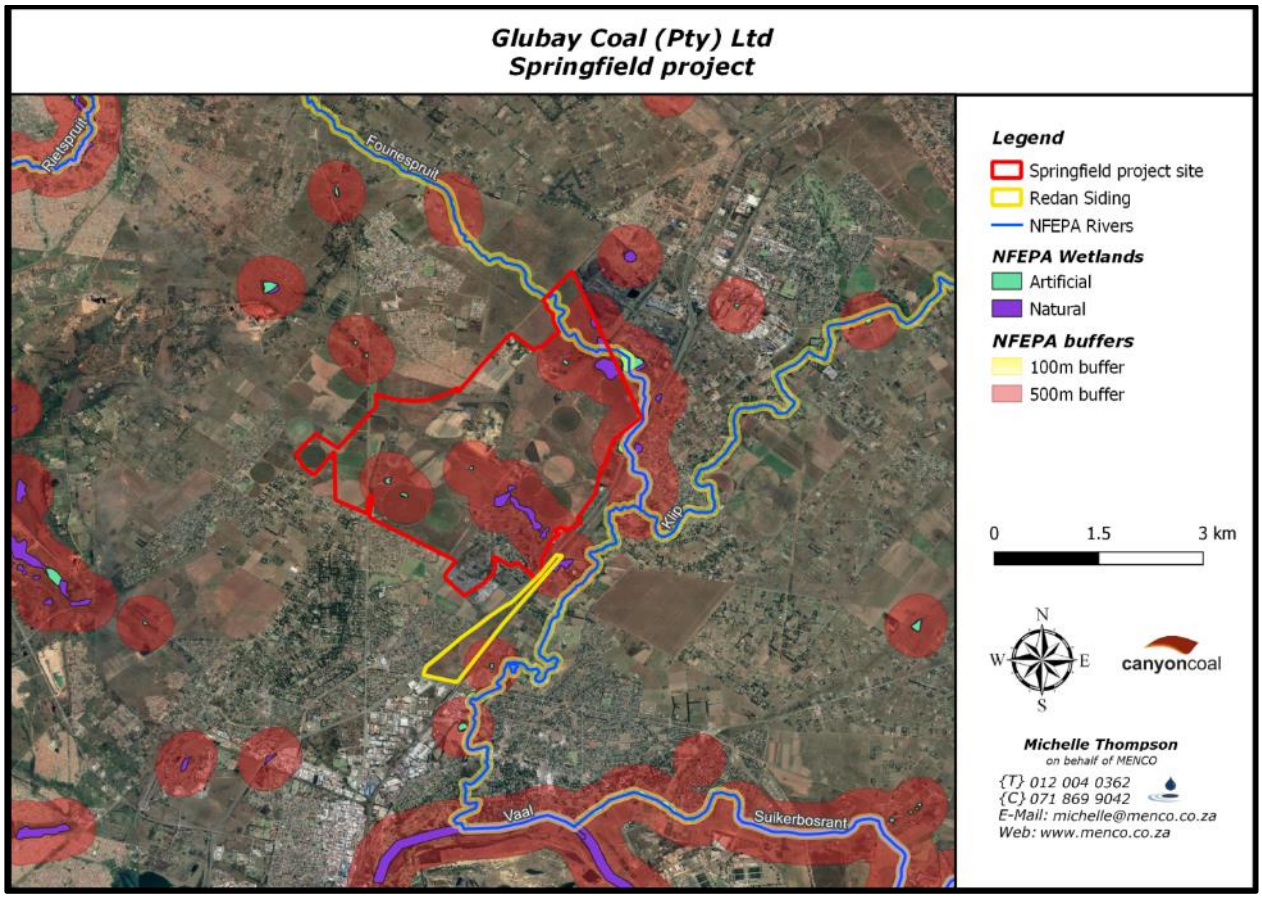

Figure 8-10: Wetlands and riparian areas with buffer zones

The Klip River and one of its tributaries, the Rietspruit, have numerous small wetlands in their headwaters. Wetlands are highly sensitive, and they show serious signs of being depleted as a result of human activities in and around the application area. The aquatic biodiversity sensitivity of the application area is indicated as low according to the National Web-based Environmental Screening Tool most probably due to the disturbance caused by historic and current human activities.

8.3.8 Groundwater

The Springfield Mine footprint is located in a complex geological terrain consisting of faulted bounded blocks of Karoo Coal Measures overlying palaeovalleys in the glaciated dolomitic basement. The hydrological cycle surface water filters into groundwater through seeps and infiltration; and in turn, groundwater interacts and replenishes surface water resources via springs or the headwaters of rivers. Groundwater is abstracted for irrigation purposes and the quality fall within the Class I SABS according to the directly affected landowners. In terms of industrial use in the surrounding area groundwater is abstracted for use in existing mining operations.

The geological complexity of the site will require site specific hydrogeological models to be developed for all individual open cast pits and their associated stockpiles, waste and residue deposits. Furthermore, a Hydropedological study will be undertaken in order to better understand the soil-

surface water interactions associated with the extensive wetland area found in the northern part of the application area.

8.3.9 Air Quality

The Vaal Triangle Airshed Priority Area (VT APA) was declared a priority area in GNR 365 (21 April 2006). The Springfield Mine will be located within the VT APA and need to implement and comply with the requirements of the VT APA Air Quality Management Plan GNR 1241 (21 November 2008). According to the Second-Generation Vaal Triangle Airshed Priority Area Air Quality Management Plan: Draft Baseline Assessment Report the main emission sources within the VT APA are:

- Industrial Sources: sources of air pollutants represent mostly stationary facilities;
- Mining Sources: including opencast and underground mines and quarries.
- Mobile Sources: vehicles traveling on arterial- and main roads, national freeway, secondary roads, slipways, off- and on ramps and streets;
- Domestic Fuel Burning: fuel combustion for energy use in the domestic environment;
- Waste: open burning in residential areas, landfills and wastewater treatment facilities;
- Windblown Dust: from mine waste facilities, product stockpiles, as well as ash storage facilities for large combustion sources.
- Biogenic VOC Emission: plants emitting numerous VOC compounds, primarily isoprene, due to stress response;
- Biomass Burning: large scale agricultural burning and natural fires.
- Agriculture: mainly for its contribution to ammonia emissions.

Based on the quantified emissions from, industrial sources were the main contributors of SO_2 (99.8%) and NOx (93%) emissions within the VTAPA. Mobile sources were the only other significant contributors to NOx emissions at 7%. Total PM10 emissions were mainly a result of mining operations (49%) followed by industrial sources (31%), with windblown dust the third most significant contributing source group at 16%. For the sources for which PM2.5 emissions were reported and/or quantified, mining was the main contributing source (39%) followed by windblown dust (33%) and domestic fuel burning (17%). CO emissions were a result of domestic fuel burning (28%), mobile sources (27%), biomass burning (26%) and industrial sources (19%). Biogenic VOC emissions were unsurprisingly the main contributor to NMVOC emissions followed by biomass burning. Ammonia (NH3) emission sources were mainly (soil) biogenic, with contributions from agriculture (87%) and to a lesser extent mobile source (11%) (DEA: *Second-Generation Vaal Triangle Airshed Priority Area Air Quality Management Plan: Draft Baseline Assessment Report*).

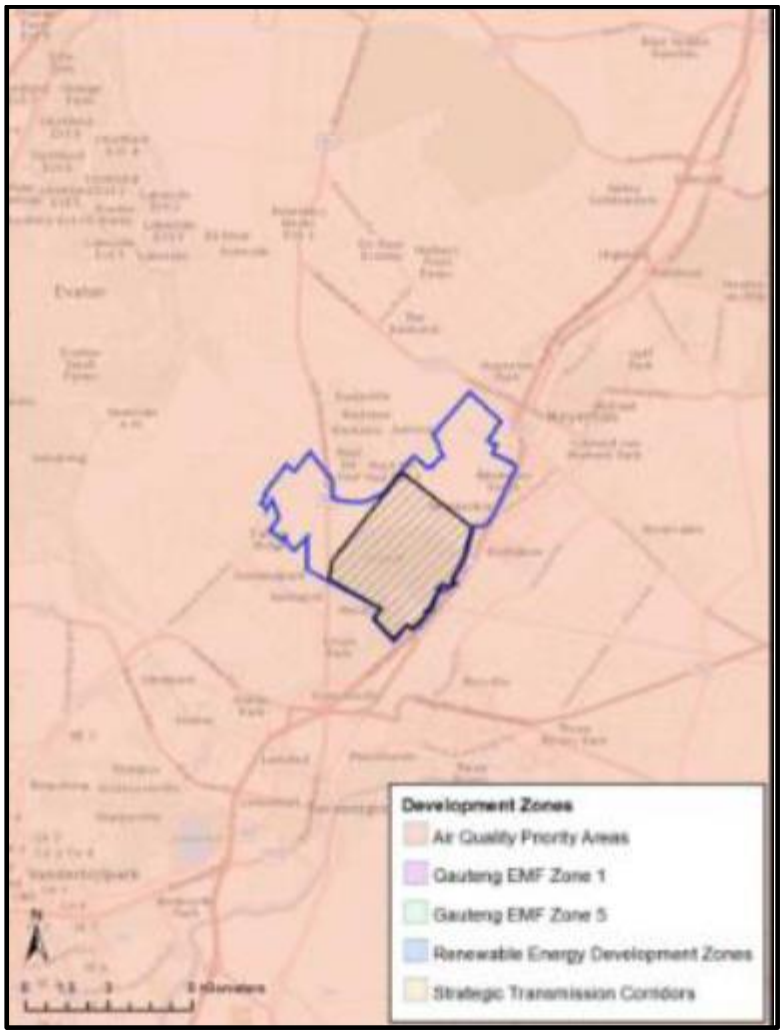

Figure 8-11: Project locality within Air Quality Priority Area

8.3.10 Noise

Noise in the area is restricted to routine traffic to and from the surrounding farms and existing industrial operations within the study area. Agricultural activities such as the cultivation of lands and harvesting of crops along also contribute a low scale source of noise to the ambient level. Potential receptors which might be affected by the mining operation are the residents and workers of the directly affected farms and adjacent farms as well as the neighbouring residential areas such as Arcon Park, Waldrift, Rust-ter-Vaal etc.).

Refer to **Figure 8-1** illustrated earlier showing the study area in relation to the surrounding residential areas. An Acoustic Impact Assessment will be conducted to quantify the impact of noise during the construction and operational phases of the mine on the prevailing ambient levels and outdoor environment. The assessment will include recommendations for compliance with the Noise Control by-laws.

8.3.11 Visual

The site is visible from the R59, R82 and R551 district roads and is surrounded by residential areas, agricultural holdings, and industrial activities (**Figure 8-1**). The accumulation of mines and other industrial activities within the region has contributed to a visually unappealing environment. This visual disturbance of this mine could have a significant impact on the surrounding residential areas located within a 1000m of the site.

A visual assessment will be conducted during the EIA to establish a visual baseline description of the project's zone of influence, evaluate the landscape character and scenic value of the study area and to identify and assess visual concerns.

8.3.12 Socio-Economic

Springfield falls within the Sedibeng District Municipality (Sedibeng), situated in the Gauteng Province. Sedibeng District Municipality occupies 4 173 km^2 of the land area in the province of Gauteng. Sedibeng consists of three local municipalities: Emfuleni, Lesedi and Midvaal. Springfield falls within Ward 16 of Emfuleni Local Municipality and Ward 3 of Midvaal Local Municipality. The district also includes the historic townships of Evaton, Sebokeng, Boipatong, Bophelong, Sharpeville and Ratanda, which have a rich political history and heritage.

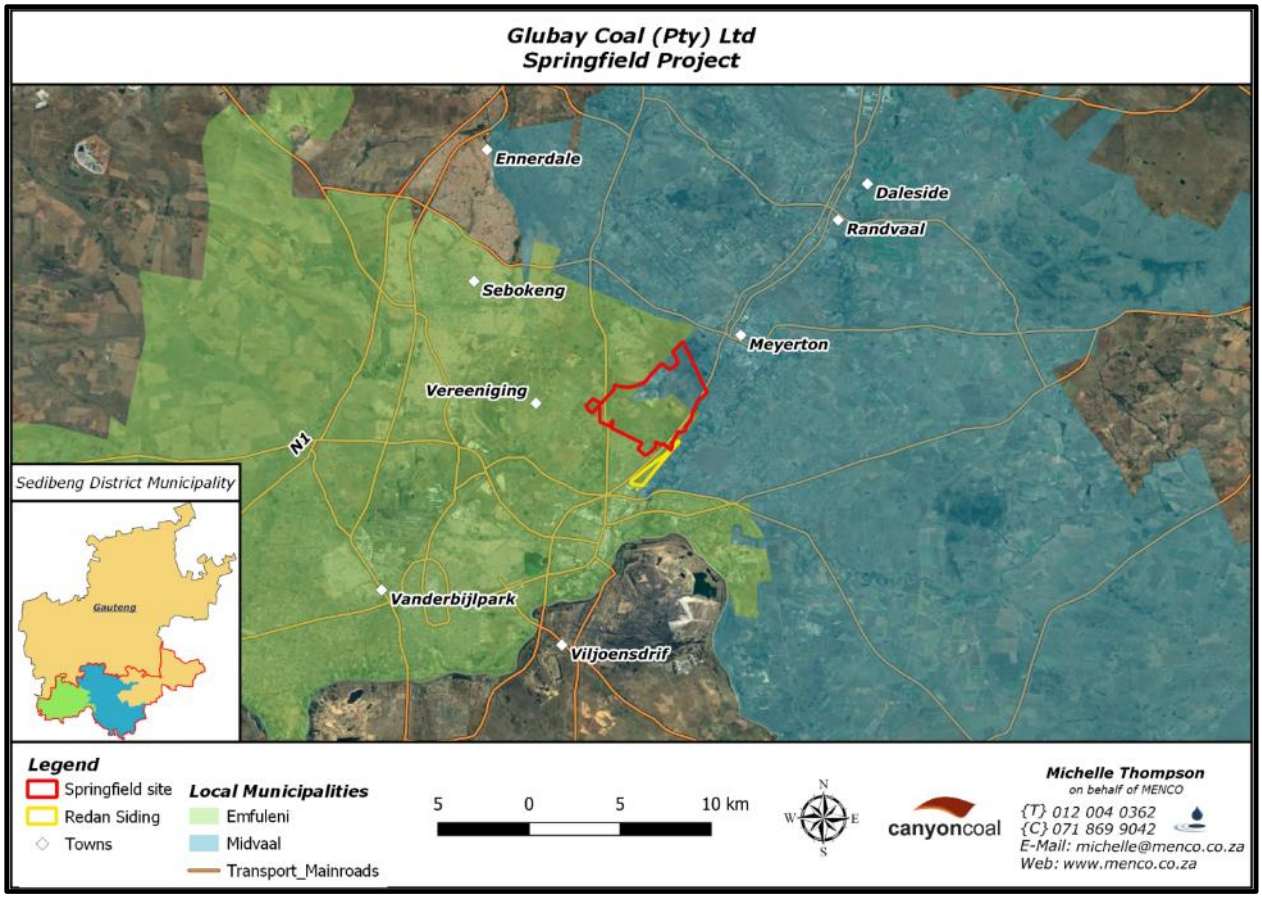

Figure 8-12: Municipal Boundaries

8.3.12.1 Population density, growth and location

The total population within the district contributes to 9% of Gauteng's total population. The current population is 916,484. Breakdown of the population is outlined in the tables below.

Table 8-9: Population statistics for project area

Local Municipality	Population	Area (km^2)
Emfuleni	721,663	1,276
Lesedi	99,520	1,042
Midvaal	95,301	2,312

8.3.12.2 Unemployment

The unemployment figures are contained in **Table 8-10**.

Table 8-10: Labour force statistics

Description	2011 (SA Census)
Labour force	343,651
Employed	228,508
Unemployed	115,143
Unemployed rate	34.0%
Not economically active	252,042

8.3.12.3 Housing demand and availability

83.9% of the citizens of Sedibeng have access to formal housing, and 16.1% have access to informal housing. Sedibeng has delivered more houses per capita than most other places in the country. However, reducing the housing backlog through mixed income, mixed tenure and mixed land use developments on well-located land has not been delivered as effectively as planned. Houses have been built in the absence of a comprehensive human settlement plan. This has led to enormous challenges in meeting subsequent community needs. There has been too much focus on urban housing and rural housing has been neglected.

8.3.12.4 Water Supply

95.5% of households have access to piped water, 92% of which either have it in their dwelling place, yard or a communal area within less than 200m of their house. There are still around 5 000 households of an estimated 252 876 households who do not have access to clean piped water. Extending and maintaining the level of piped water to all residents remains critical.

8.3.12.5 Key economic activities

The municipality is dominated by manufacturing which contributes to 32% of the local economy. The growth of Sedibeng has been steady between 2006 and 2007, and then declined sharply before

increasing again in 2010. In terms of Sedibeng DM (IDP, 2022), the reported economic growth was steadily again since 2011. The key driving sectors of Sedibeng are the Manufacturing, General Government, Business Services and Trade sectors. Of these, only the Manufacturing sector forms part of the Secondary sector, where the others all form part of the Tertiary sector.

8.3.12.6 Business and property value

In terms of the application area there are established businesses on the properties directly affected by this application. The business value of the farms is very high due to the following factors:

- High value crops are produced;
- The farms are well located in terms of markets;
- High value contracts are in place to supply markets such as "Woolies", Spar, McCain, etc.;
- The Water Rights for all boreholes are registered. The borehole yields are high, and the water quality is Class I SABS Standard, which is required to irrigate crops for supply to the above-mentioned markets;
- High potential soils (Hutton);
- Location of farms – close to factories and strong informal market.

The socio-economic study will have to assess, and compare in detail, the employment supported by current farming and other economic activities with that to be generated by the planned mining activities.

8.3.13 Heritage and Cultural aspects

The development area lies within the highly fossiliferous early Permian-aged Vryheid Formation, world famous for its rich record of Permian aged plant fossils, predominantly in the clays and mudrocks associated with economically viable coal deposits of the region. Based on the South African Heritage Resource Agency (SAHRA), the site is situated within a very high paleontological sensitivity area and subsequently a Phase 1 paleontological impact assessment will be required during the EIA Phase.

The prospecting EMP indicated that an archaeological reserve which contains Neolithic paintings was identified in the western part of the application area. This could however not be confirmed during the site inspection. However, SAHRIS contains several references to the Redan engravings. This site needs to be demarcated as a no-go zone for any mining activity. Grave sites are scattered throughout the study area. A Heritage Impact Assessment (HIA) is required on the basis that the development will change the character of a site and exceed 5000m^2 and potentially may involve three or more existing erven or subdivisions. The assessment will be undertaken in order to confirm whether any heritage resources are located within the area to be developed.

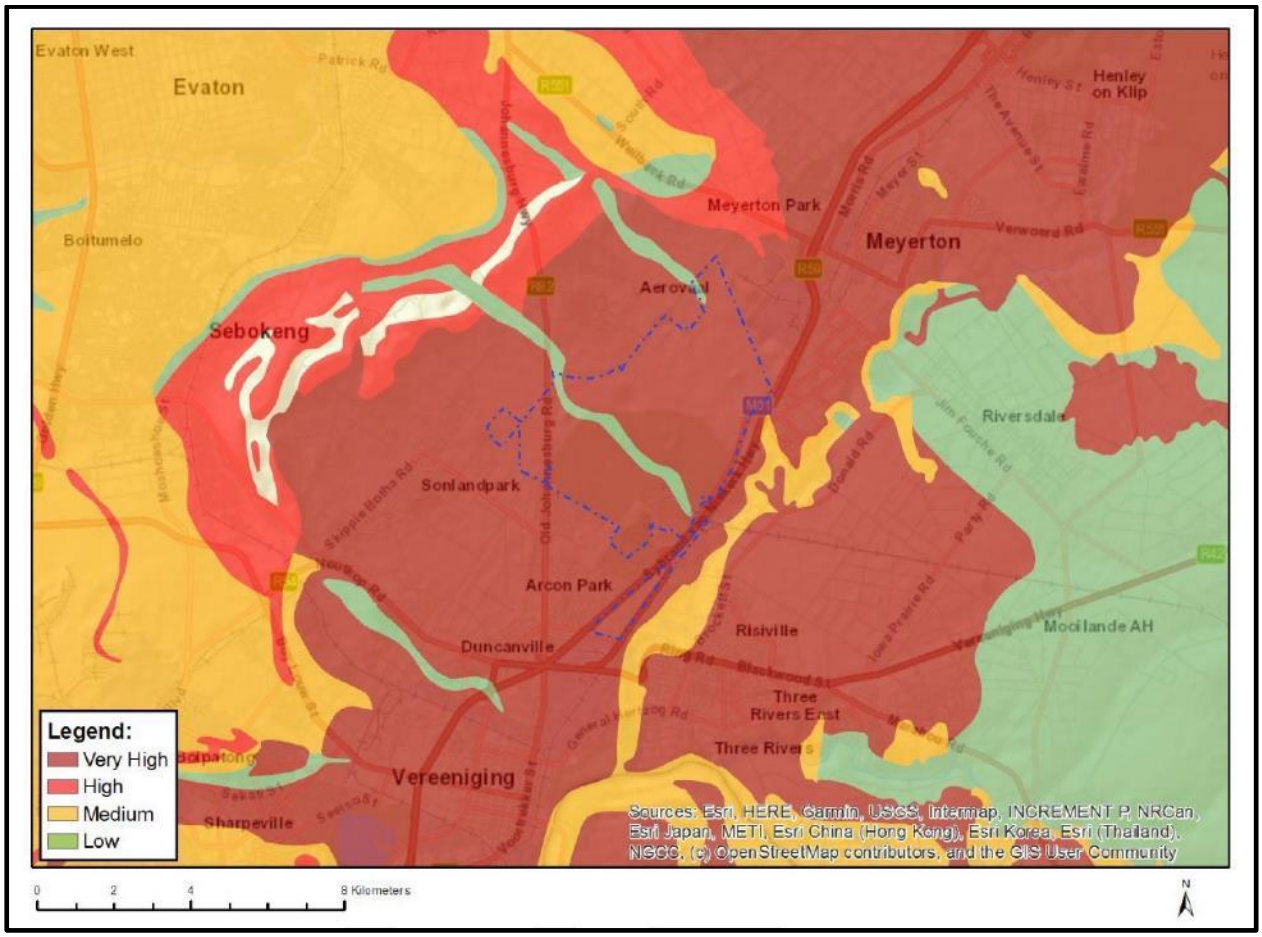

Figure 8-13: Paleontology sensitive map

8.3.14 Specific environmental features occurring on-site which may require protection, remediation, management or avoidance

The following specific environmental features have been identified that my require protection, remediation, management or avoidance:

- Regulated areas around the surface water resources (i.e. the outer edge of the 1:100 flood line or delineated riparian habitat; and/or 500m radius from the delineated boundary of a wetland) namely:
    - Fourie Spruit;
    - Klip River;
    - Wetlands
- Groundwater resources in and around the application area;
- The Waldrift Nature Reserve - During the site visit it was visually confirmed that portions of the Waldrift Nature Reserve have already been transformed by agriculture and industrial activities, but a Biodiversity Assessment is required to confirm whether any natural vegetation remains;

- Ecological Support Areas consisting of indigenous vegetation. When clearing indigenous vegetation, it is accordingly important to ensure that the existence of protected species is considered during the early planning phases of such projects;
- High potential agricultural soils;
- Grave sites. Mindful of the location and nature of mining activities, the identification of heritage resources require consideration and a Heritage

Assessment needs to be undertaken. Specialist investigations will be conducted as part of the EIA Phase to confirm the existence of other areas that may require protection, remediation, management or avoidance.

8.3.15 Description of current land uses

The area is mixed use, with a heavily industrial and agricultural presence. The current land uses within the mining right application area are listed below:

- Agriculture including:
    - Vegetables and maize under irrigation;
    - Magic lawns kikuyu (Instant lawns 450,000 to 500,000 $m^{2)}$
- Nursery;
- Heavy industrial – Purple Rain Properties (Pty) Ltd (t/a "Ocon Brick") Ocon Brick holds, in their existing mining right, more or less 15% of the proposed mining right area.
- Municipal landfill site (Waldrift);
- Residential - Informal settlements (ESKOM Holdings);
- Waste storage and disposal facilities;
- Servitudes; and
- Transportation

8.3.16 Environmental and current land use map

Refer to **Figure 8-14** below for an illustration of the land cover for the study area.

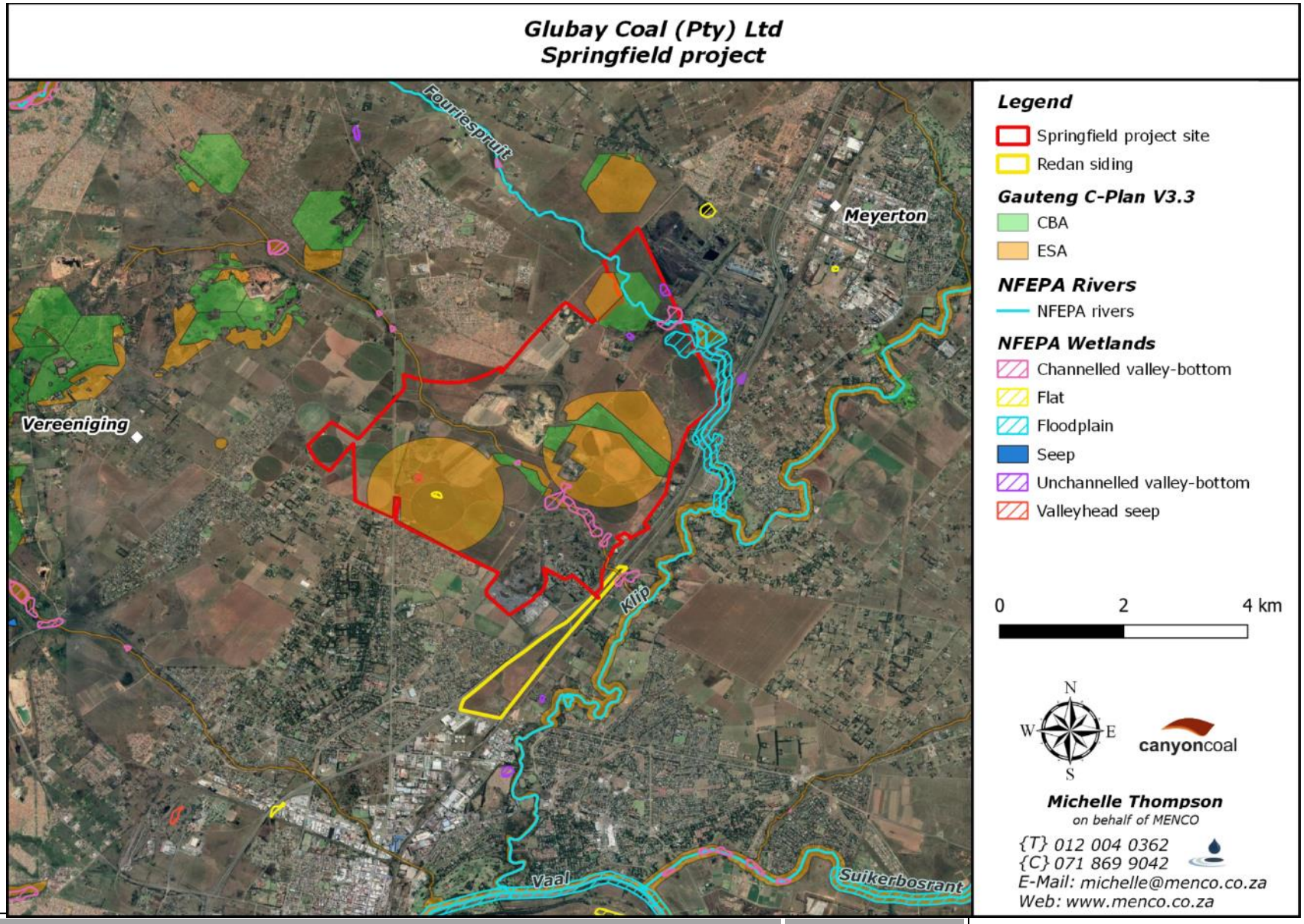
Glubay Coal (Pty) Ltd
Springfield project
Fouriespruit
Meyerton
Vereeniging
Klip
Vaal
Suikerbosrant
Legend
Springfield project site
Redan siding
Gauteng C-Plan V3.3
CBA
ESA
NFEPA Rivers
NFEPA rivers
NFEPA Wetlands
Channelled valley-bottom
Flat
Floodplain
Seep
Unchannelled valley-bottom
Valleyhead seep
0
2
4 km
N
W
E
S
canyoncoal
Michelle Thompson
on behalf of MENCO
{T} 012 004 0362
{C} 071 869 9042
E-Mail: michelle@menco.co.za
Web: www.menco.co.za

Figure 8-14: Land use sensitivity map

8.4 Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources, can be avoided, managed or mitigated

Table 8-11: Impact Assessment describes the potential impacts identified for all project phases at this stage. The table further describes the impacts duration, probability of occurring, level of significance (pre mitigation), if these impacts can be reversed, degree to which these impacts could cause irreplaceable loss of resource and whether these impacts can be avoided, managed or mitigated. These impacts have been rated prior to any mitigation measures being applied. The methodology, as described in Section 8.5 below, was used to complete the Impact Assessment.

Please note the full impact assessment which shows the determination of the level of significance is included as **Appendix 6 of this report. These impacts will be assessed in more detail during the EIA Phase of the project.

Table 8-11: Impact Assessment

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
Pre-construction/planning phase: This phase will involve the dismantling and removal of existing infrastructure situated within the mining area and development of the final plans/designs							
Soil	Loss of soil resource due to vegetation clearing, compaction and erosion.	Short term	High	Medium	Not reversible	Very low	Yes
	Soil pollution caused by waste generation and incorrect disposal.	Short term	Medium	Low	Completely reversible	Very low	Yes
	Soil contamination through hydrocarbon spillages.	Short term	Medium	Low	Completely reversible	Very low	Yes
Surface and groundwater	Surface and groundwater contamination through hydrocarbon spillages.	Short term	Medium	Low	Completely reversible	Very low	Yes
Vegetation	Alien plant infestation on disturbed areas.	Short term	High	Low	Completely reversible	Very low	Yes
Animal Life	Disturbance of animal species caused by increased noise and human activity.	Short term	High	Low	Partially reversible	Very low	Yes
Air quality	Dust generation contributing to the decrease in the ambient air quality.	Short term	Almost certain	Medium	Completely reversible	N/A	Yes
Noise	Potential increased in the ambient noise levels associated with the use of construction machinery,	Short term	Almost certain	Medium	Completely reversible	N/A	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	transformers and power tools during dismantling activities.						
Visual	Visual intrusion caused by poor handling of construction waste	Short term	High	Low	Completely reversible	N/A	Yes
Socio-economic	Temporary employment opportunities for construction contractors or other labourers	Short term	High	Low	N/A	N/A	Yes
Health, Safety, Security	Disruption of the power supply to associated power users supplied by the power line to be decommissioned if decommissioning is not appropriately integrated with the supply availability from the new power line connection; Injury to persons involved with the dismantling activities.	Immediate	Low	Very low	Completely reversible	N/A	yes
Construction phase: **The construction phase will take approximately 1 year to complete, which will include activities such as site establishment and the construction of all infrastructure, including the development of a cut.**							
Geology	Disturbance of geological profile caused by the establishment of the initial cut and ramps	Permanent	Almost certain	High	Not reversible	High	No
Topography	Alteration of the natural topography caused by site establishment and soil stripping.	Long term	Almost certain	High	Partial reversible	Low	No

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
Soils	Alteration to the biophysical, chemical and physical characteristics of the soils caused by soil stripping.	Permanent	Almost certain	Very High	Not reversible	High	Yes
	Loss of soil resource (soils covered or removed) due to sterilisation, erosion (wind and/or water) and compaction.	Permanent	High	High	Partial reversible	High	Yes
	Soil contamination from hydrocarbon spillages from construction vehicles and machinery.	Short term	Medium	Low	completely reversible	Very low	Yes
Land capability and use	Loss in agricultural potential caused by site establishment and soil stripping.	Permanent	almost certain	Very high	Not reversible	High	No
	Change of land use from agriculture to mining.	Long term	Almost certain	High	Reversible overt time	High	No
Vegetation	Loss and degradation of vegetation resulting in the disturbance of ecological functioning.	Long term	Almost certain	Medium	Partial reversible	Low	Yes
	Disturbance in vegetative growth caused by dust outfall on vegetation outside the development footprint area.	Short term	High	Low	Reversible	Low	Yes
	Destruction of natural habitat forcing animals to relocate.	Long term	High	Medium	Not reversible	Medium	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
Animal life	Harm to animals as a result of increased human activity in the area.	Short term	Medium	Low	Not reversible	Very low	Yes
	Disturbance of animal species especially sensitive bird species nesting in and around the remaining natural areas.	Short term	High	Medium	Partial reversible	Low	Yes
Surface water	Alteration of drainage patterns and the amount of water entering the surface water resources down gradient of the site	Long term	Almost certain	High	Reversible	Medium	Yes
	Sedimentation of downstream surface water resources caused by erosion and sediment runoff from cleared areas.	Short term	High	Medium	Not reversible	Medium	Yes
	Decrease in natural surface water runoff to surrounding watercourses caused by storm water management.	Short term	Almost certain	Medium	Not reversible	Medium	Yes
	Deterioration in surface water quality due to hydrocarbon, sewage or other waste spillages ending up in surrounding watercourses.	Short term	High	Medium	Not reversible	Low	Yes
Wetlands	Loss and disturbance of watercourse habitat and fringe vegetation.	Short term	High	Medium	Partial reversible	High	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	Changing the amount of sediment entering wetlands and associated change in turbidity (increasing or decreasing the amount)	Short term	High	Medium	Partial reversible	High	Yes
Groundwater	Removal of vegetation and topsoil will decrease the recharge of aquifers.	Short term	High	Low	Not reversible	Very low	Yes
	Contamination of the underlying aquifer through hydrocarbon spillages.	Short term	Medium	Low	Not reversible	Low	Yes
Air Quality	Reduction in the ambient air quality through the creation of fugitive dust from construction vehicles, drilling and blasting.	Short term	Almost certain	High	Reversible	N/A	Yes
Noise	Increase in ambient noise levels caused by infrastructure establishment.	Short term	Almost certain	Medium	Reversible	N/A	Yes
Visual	Change in the visual characteristics of the immediate area and its surrounds.	Long term	Almost certain	High	not reversible	N/A	Yes
Socio-economic	The existing status quo of the local economy will be affected by the introduction of relatively higher paying (assumed) but short-term employment opportunities.	Short term	Almost certain	Medium	N/A	N/A	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
Health, Safety, Security	Increased potential for accidents within the construction site.	Short term	Medium	Low	Not reversible	N/A	Yes
Heritage and paleontological	Degradation of heritage and paleontological resources.	Permanent	High	High	Not reversible	Very high	Yes
Operational phase: **All related mine operations, including coal removal, stockpiling, processing, water treatment and transportation as well as concurrent rehabilitation forms part of this phase.**							
Geology	Total removal of target ore body.	Permanent	Almost certain	High	Not reversible	Very high	No
Topography	Alteration of the natural topography caused by the shift of opencast pits, coal stockpiles and overburden stockpiles	Long term	Almost certain	Medium	Reversible over time	N/A	No
Soils	Alteration to the biophysical, chemical and physical characteristics of the soils caused by soil stripping.	Permanent	Almost certain	Very high	Not reversible	Very high	No
	Loss of soil resource caused by sterilisation, erosion and compaction over the mine footprint area.	Long term	High	High	Partial reversible	High	Yes
	Contamination of soils located at the processing plant complex, sewage facilities and workshop.	Long term	Almost certain	High	Partial reversible	Very high	No
	Loss of soil resource due to cracking caused by poorly	Permanent	High	High	Not reversible	Very high	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	consolidated concurrent rehabilitation at surface.						
Land capability and use	Disruption of ecosystems and potential loss of agricultural land, land capability being reduced to mining.	Long term	Almost certain	High	reversible over time	Very high	Yes
	Land use will remain altered and high potential agricultural land will be lost.	Permanent	Almost certain	Very high	not reversible	Very high	Yes
Vegetation	Total destruction of the remaining natural vegetation inside the mining area.	Permanent	High	High	Not reversible	Medium	Yes
	Potential invasion of alien plants on disturbed areas.	Long term	High	Medium	Completely reversible	Low	Yes
	Dust outfall and blown coal dust will affect the adjacent undisturbed vegetation directly by settlement on the leaves and indirectly through contamination of soil and surface water.	Long term	High	High	Reversible	Medium	Yes
Animal life	Displacement of indigenous animal and bird species caused by increased human activity in the area.	Long term	Almost certain	High	Partial reversible	Very low	Yes
	Fatalities in terrestrial mammals.	Long term	Medium	Low	Not reversible	N/A	Yes
Surface water	Alteration of drainage patterns and the amount of water	Long term	High	High	Not reversible	Medium	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	entering the surface water resources down gradient of the site.						
	Potential contamination of surface water with coal.	Long term	High	High	Not reversible	High	Yes
	Surface water contamination through operational wastes generated.	Long term	Medium	Medium	Not reversible	Medium	Yes
	Surface water contamination due to sedimentation from overburden deposition.	Long term	Medium	Medium	Not reversible	Medium	Yes
Wetlands	Reduction in base flow reporting to wetlands	Long term	High	High	Partial reversible	High	Yes
	Changing the quantity and fluctuation properties of the wetlands by restricting water flow or increasing flood flows	Long term	High	High	Partial reversible	High	Yes
Groundwater	Drawdown of water table due to the dewatering of the aquifers.	Permanent	Almost certain	Very High	Reversible over time	Very high	Yes
	Leaching/Seeping of contaminants from the PCDs, slurry dams, ROM and overburden stockpile areas polluting the aquifer.	Long term	High	High	Not reversible	High	Yes
	Aquifer contamination caused by polluted water migrating	Permanent	Almost certain	Very High	Not reversible	Very High	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	away from the mining area (leachate plume).						
Air Quality	Reduction in ambient air quality through fugitive dust caused by operational activities.	Long term	Almost certain	Very High	Partial reversible	N/A	Yes
	Reduction in the ambient air quality through greenhouse gas emissions.	Permanent	Almost certain	Very High	Not reversible	High	No
Noise	Increase in ambient noise level at the site, Redan Siding and surrounding area.	Long term	Almost certain	High	Completely reversible	N/A	Yes
Visual	Disturbance to the sense of place caused by dust and mining activities.	Long term	Almost certain	High	Partial reversible	N/A	Yes
	Visual intrusion of artificial lighting from lighting masts, security lights and vehicles at night.	Long term	High	Medium	Completely reversible	N/A	Yes
Socio economic	Damage to large power lines running through the application area.	Long term	High	High	Completely reversible	N/A	Yes
	Additional employment opportunities through the implementation of the SLP.	Permanent	High	High	N/A	N/A	Yes
	Economical injection to the local area through the implementation of the SLP.	Long term	High	Medium	N/A	N/A	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	The local and regional road transport network will suffer additional pressure from the haulage trucks.	Long term	Almost certain	High	Not reversible	N/A	Yes
	Disruptions in daily living and movement patterns for surrounding communities, landowners, tenants and road users	Long term	High	High	Partial reversible	N/A	Yes
	Relocation of individuals and households	Permanent	High	High	Not reversible	N/A	No
	Loss of agricultural jobs	Long term	High	High	Not reversible	N/A	No
	Damage to surrounding infrastructure caused by ground vibrations and fly rock.	Long term	High	High	Not reversible	N/A	Yes
Health, Safety, Security	Increase in criminal activities.	Long term	Medium	Low	Partial reversible	N/A	Yes
	Health and safety risks for workers	Long term	Medium	Medium	Not reversible	N/A	Yes
	Increase potential for traffic accidents	Long term	Medium	Medium	Not reversible	N/A	Yes
	Potential fires fuelled by combustible hydrocarbons	Long term	Medium	Medium	Not reversible	N/A	Yes
	Health and safety risks for local community	Long term	High	High	Not reversible	Very high	Yes
Decommissioning, closure and rehabilitation phase: This phase will involve the removal of all infrastructure and rehabilitation of the disturbed area							
Topography	Altering the established topography by reshaping it to	Short term	High	Medium	N/A	N/A	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	emulate pre-mining environment.						
	Ponding on areas due to bulking failure and lack of compaction	Short term	Medium	Very low	Reversible	Very low	Yes
Soils	Loss of soil resource through erosion and cracking of surface from areas of unconsolidated rehabilitation.	Permanent	High	Very high	Not reversible	Very high	Yes
	Loss of soil resource due to compaction and contamination during the removal of infrastructure.	Short term	Medium	Medium	Not reversible	High	Yes
	Amelioration of soils and recovery of topsoil to "baseline" conditions that is conducive for commercial scale production of adapted crops.	Permanent	Medium	Medium	N/A	N/A	Yes
Land use and capability	Slow positive impact on areas requiring rehabilitation and transforming mining to a state of post-mining, engineered agricultural and wilderness areas.	Permanent	Medium	Medium	N/A	N/A	Yes
	Land use will change from mining back to agriculture and wilderness areas.	Permanent	Medium	Medium	N/A	N/A	Yes
Vegetation	Re-vegetation of previous natural areas and topdressing	Permanent	Medium	Low	N/A	N/A	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	in an aim to establish pastures for livestock grazing.						
	Alien Infestation resulting from the introduction of species not naturally occurring (nurse grass species) in the area.	Short term	High	Medium	Reversible	Low	Yes
Animal life	Positive impact of livestock breeding and naturally assisting the transformation back to natural state.	Permanent	Medium	Low	N/A	N/A	Yes
	Slow positive impact as animal species return to the re-habilitated areas, although they will be disturbed by decommissioning and rehabilitation activities.	Permanent	Medium	Low	N/A	N/A	Yes
Surface water	Sedimentation of downstream surface water resources caused by erosion and sediment runoff from un-vegetated rehabilitated areas.	Permanent	High	Medium	Not reversible	Medium	Yes
	Free drainage and natural surface water patterns stabilisation.	Permanent	Medium	Low	N/A	N/A	Yes
	Surface water contamination associated with removal of plant and associated infrastructure.	Short term	Medium	Low	Not reversible	high	Yes

Aspect	Impacts	Duration	Probability	Level of Significance	Reversible	Degree to which impact can cause irreplaceable loss	Can be avoided, mitigated or managed (yes or no)
	Decanting resulting in the contamination of surface water resources down gradient of the mining area.	Permanent	High	High	Reversible	High	Yes
Groundwater	Aquifer contamination caused by polluted water migrating away from the mining area (leachate plume).	Permanent	Almost certain	Very High	Not Reversible	Very High	Yes
	Recovery of groundwater levels after the cessation of dewatering.	Permanent	High	High	N/A	N/a	Yes
Air quality	Increase dust levels for a short period during decommissioning activities.	Short term	Permanent	Medium	Completely reversible	N/A	Yes
Noise	Increase noise levels for a short period during decommissioning activities.	Short term	Permanent	Medium	Completely reversible	N/A	Yes
Visual	Permanent visual change to the nature of the site post closure (remaining dumps).	Permanent	High	High	Not reversible	N/a	Yes
	The removal of infrastructure will leave a temporary bare "scar" on the landscape.	Short term	High	Low	Reversible	N/A	Yes
Socio-economic	On decommissioning of the mine various labours will be left without employment.	Permanent	Permanent	High	N/A	N/A	Yes
	Short term employment opportunities.	Short term	High	Low	N/A	N/A	Yes

8.5 Methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks

8.5.1 Risk Assessment

During the Environmental Impact Assessment data gathered and studies conducted will be used to identify the risks associated with the proposed project. All issues that have been identified as posing significant risks to the environment will be identified and prioritised. Management of these issues will be determined and will form part of this risk assessment.

8.5.2 Methodology

The methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks are contained in **Table 8-12** and **Table 8-13** below.

Table 8-12: Criteria used for ERA

Status of Impact		
Positive	A benefit to the holistic environment	
Negative	A cost to the holistic environment	
Neutral	No cost or benefit to the holistic environment	
Probability of Impact		
Score	**Severity/beneficial effect**	**Description**
0	None	Impact will not occur
1	Improbable	Less than 15% sure of an impact occurring
2	Low probability	Between 15 – 40% sure of an impact occurring
3	Medium probability	Between 40-60% sure that impact will occur
4	Highly probable	Between 60-85% sure that impact will occur
5	Definite	More than 85% sure impact will occur
Duration of Impact		
Score	**Severity/beneficial effect**	**Description**
1	Short Term	Less than 2 years
2	Short to Medium Term	2-5 years
3	Medium Term	6-25 years
4	Long Term	26-50 years
5	Permanent	50 years and more
Scale of Impact		
Score	**Severity/beneficial effect**	**Description**
0	None	No impact
1	site	Within the site boundary
2	Local	Affects immediate surrounding area
3	Regional	Extends substantially beyond the site boundary but only affects the region or province
4	National	Affects country
5	International	Affects are beyond the country and possible globally
Magnitude of Impact		
Score	**Severity/beneficial effect**	**Description**

2	Minor	Effects observable – environmental impacts reversible with time without human intervention
4	Low	Effects observable – impacts reversible with rehabilitation
6	Moderate	Effects observable – affected area restored to acceptable environmental state
8	High	Extensive effects – irreversible alteration to the environment
10	Very High/Don't know	Extensive permanent effects with irreversible alteration

8.5.3 Significance of Impacts

The significance of the impacts is calculated by multiplying the consequence of the impact by the probability of the impact. **Table 8-13** below illustrates the methodology used to calculate the significance of the impact.

Table 8-13: Significance Rating

Consequence of the Impact		
Consequence = Magnitude + Duration + Scale		
Significance of Impact		
Significance = Consequence x Probability		
Significance	**Score (out of 100)**	**Rating**
Low	1 – 30	
Medium	31 – 59	
High	60 +	

9 PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The main objectives of the EIA phase are to:

- Assess the potential cultural, heritage, socio-economic and biophysical impacts of the project;
- Identify and describe procedures and measures that will prevent, reduce or contain potential negative impacts and enhance potential positive impacts;
- Liaise with I&APs including relevant government departments on issues relating to the proposed development to ensure compliance with existing guidelines and regulations and to determine the Best Practical Environmental Option (BPEO) to carry out specific activities;
- Undertake consultations with IAPs and provide them with an opportunity to review and comment on the outcomes of the environmental assessment process and acceptability of mitigation measures
- Develop an environmental management programme (EMPr) and conceptual closure/decommissioning plan. The Environmental Management Programme (EMP) will be implemented by means of an operational procedure. It is the objective of the EIA process to determine whether or not this will be sustainable (with acceptable risk and impact).
- Provide measures for on-going monitoring (including environmental audits) to ensure that the project plan and proposed mitigation measures are implemented as outlined in the detailed EIR/EMPr report.

This chapter describes the nature and extent of further investigations to be conducted by MENCO and other specialists in the Environmental Impact Assessment and sets out the proposed approach to the EIA and EMPr phase**.**

9.1 Other applicable licenses and permits

The additional licenses and permits that will be applied for are listed below:

- Water Use License;
- Waste Management License.

9.1.1 Water Use License

The proposed mining activities constitute water uses in terms of Section 21 NWA. The procedure which will be followed during the WULA process is outlined within the procedural regulations published by the DWS, within the GNR 267. These regulations specify timeframes, required information per Water Use and the reporting structure of required supporting technical information. As specified within GNR 267, the technical motivation in support of the WULA will take the form of a concise WULA technical report and a comprehensive IWWMP. The IWWMP will be drafted in accordance with the structure specified within GNR 267. The following water uses under the National Water Act (Act 36 of 1998) section 21, will be applied for:

- *21 (a) Taking water from a water resource;*

- *21 (b) Storing water;*
- *21 (c) Impeding or diverting the flow of water in a water course;*
- *21 (i) Altering the bed/banks, course or characteristics of a water course;*
- *21 (f) Discharging waste or water containing waste into a water resource;*
- *21 (g) Disposing of waste or water containing waste in a manner that may detrimentally impact on a water resource;*
- *21 (j): Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people*

If additional water uses become apparent during the EIA phase these will be included in the application. Section 22 stipulates the authorisation requirements for water use in terms of the Act. The information from the specialist studies described below will also form part of the WULA.

9.1.2 Waste Management License

All organisations that wish to commence, undertake or conduct a waste management activity must apply for a waste management license. As from 2 June 2014, residue deposits and residue stockpiles, as defined in the MPRDA, are no longer excluded from the provisions of NEMWA. All residue deposits and stockpiles, as defined, are deemed hazardous waste until proven otherwise in accordance with the Waste Classification and Management Regulations (23 August 2013).

A Waste License Application was submitted with the Environmental Authorisation application to the DMRE for the following activities triggered by the proposed Springfield Mine:

Category B: Activity 11 - *The establishment or reclamation of a residue stockpiles or residue deposit resulting from activities which require a mining right, exploration right or production right in terms of the MPRDA* for the establishment of overburden and discard stockpiles at the Springfield Mine.

Category B: Activity 10 - *The construction of a facility for a waste management activity listed in Category B of this Schedule for the establishment of overburden and discard stockpile areas.*

9.2 Description of the aspects to be assessed as part of the EIA process

The nature and extent of further investigations required in the environmental impact assessment report are discussed below.

9.2.1 Agricultural Potential, Land Capability and Soil Assessment

The Springfield Mine and Redan Siding is located in an area associated with large-scale commercial agricultural farming. Findings from this assessment can supplement the requirements of a socio-economic assessment for the project. The objectives of the soil and land capability assessment are to establish and describe the soil and agricultural status quo of the selected sites, to describe land use and capability of the site based on the soil forms, slope of the site and climatic data, to determine impacts

of the proposed mining activities on soils within the selected site, and to make mitigation recommendations for associated better soil management within the mining site.

9.2.2 Biodiversity Assessment

Mining has a significant impact on biodiversity and ecosystem services and biodiversity considerations are relevant throughout the mining life cycle – from discovery or reconnaissance, to exploration or prospecting, development and production, and finally to decommissioning and closure. The early identification and assessment of mining impacts on biodiversity provides an opportunity to put in place environmental management measures and actions that reduce risks to biodiversity and mitigate identified negative impacts.

9.2.3 Hydrological Assessment

The hydrological assessment will assess the impacts of the proposed mining activities on the receiving surface water environment and implications to downstream surface water users. Understanding of the hydrological environment is fundamental in assessing potential impacts and management requirements for the proposed mining activities.

9.2.4 Surface Water assessment

The objective of the Freshwater Habitat Impact Assessment is to identify freshwater habitats (wetland and riparian systems) present within the proposed mining footprint and within a 500m radius of the footprint boundary. This is to determine whether the proposed mining activities will infringe on the regulated area of a watercourse, (i.e. the outer edge of the 1:100 flood line or delineated riparian habitat; and/or 500m radius from the delineated boundary of a wetland).

9.2.5 Hydrogeological Assessment

The Springfield Mine and Redan Siding footprint is located in a complex geological terrain consisting of faulted bounded blocks of Karoo Coal Measures overlying palaeovalleys in the glaciated dolomitic basement. The geological complexity of the site will require site specific hydrogeological models to be developed for all individual open cast pits and their associated stockpiles, waste and residue deposits.

9.2.6 Hydropedological Assessment

A Hydropedological study will be undertaken in order to better understand the soil-surface water interactions associated with the wetland areas identified on-site.

9.2.7 Air Quality Impact Assessment

Particulate emissions are a pollutant of concern associated with mining activities. An Air Quality Impact Assessment (AQIA) is therefore required to quantify the possible impacts resulting from the project activities on the surrounding environment and human health.

9.2.8 Noise Impact Assessment

An Acoustic Impact Assessment is necessary to quantify the impact of noise during the construction and operational phases of the mine on the prevailing ambient levels and outdoor environment. The assessment will include recommendations for compliance with the Noise Control by-laws.

9.2.9 Visual Assessment

The principal objectives of the study will be to establish a visual baseline description of the project's zone of influence, evaluate the landscape character and scenic value of the study area and to identify and assess visual concerns.

9.2.10 Socio-Economic Assessment

The establishment of the Springfield Mine and Redan Siding will create a number of potential social and socio-economic opportunities during both the construction and operational phase. These include creation of employment and downstream economic opportunities for suppliers and other businesses. There will also be potential negative impacts associated with the proposed mine, such as impact on currentland uses and adjacent communities and land uses. The objectives of the Socio- Economic Assessment (SIA) are to provide a detailed description of the local socio- economic conditions affected by the proposed project and to identify the potential social opportunities and risks associated with the project. In so doing, the SIA will seek to identify measures that can be implemented to avoid and/or minimize the potential social risks. The SIA will also identify measures to enhance the potential social benefits associated with the proposed project.

9.2.11 Traffic Assessment

The Springfield Mine and Redan Siding will generate traffic during the construction, operational and decommissioning phases. The proposed development will therefore have an impact on the immediate surrounding road network. The Traffic Impact Assessment (TIA) will assess the expected traffic impacts of the proposed development during the various phases and proposed mitigating measures to address these impacts, if required.

9.2.12 Heritage and Paleontological Assessment

A Heritage Impact Assessment (HIA) is required on the basis that the development will change the character of a site and exceed 5 000m^2 / and potentially may involve three or more existing erven or subdivisions. The assessment will be undertaken in order to determine whether any heritage resources are located within the area to be developed. The study will align with the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999) (NHRA) and provides recommendations with regard to responsible cultural resources management.

The development area lies within the highly fossiliferous early Permian-aged Vryheid Formation, world famous for its rich record of Permian aged plant fossils, predominantly in the clays and mudrocks associated with economically viable coal deposits of the region. The Vryheid Formation is listed as being

of high palaeontological sensitivity by SAHRA. It is inevitable that fossil heritage will be impacted by the mining and construction activities at Springfield, given the regional geological and palaeontological context. Both a Phase 1 paleontological impact assessment and regular monitoring activities during construction and mining will be required, as well as on-site training and consultation with the resident geologist and supervisors of the construction and mining activities.

9.2.13 Basting and Vibration Assessment

People surrounding mining projects are sensitive to the influences from blasting operations and could have significant influence on the success of such operations. A Blasting and Vibration Assessment is recommended in order to identify receptors that could be influenced by blasting operations and the possible negative impacts of blasting operations and specific ground vibration, air blast, fly rock and noxious fumes. The assessment incorporates relevant mitigation measures, which can also be used in tenders to ensure contractors adhere to necessary requirements.

9.2.14 Desktop assessment on potential contaminated land liabilities

The desktop assessment will consist of a high-level review of all available information pertinent to potential contaminated land liabilities associated with the individual properties on the proposed footprint.

The review will cover aspects of environmental liability associated primarily with contaminated land in relation to both current and historic operations on the properties.

9.2.15 Dolomitic investigation

The Springfield Mine footprint is located in a complex geological terrain consisting of faulted bounded blocks of Karoo Coal Measures overlying palaeovalleys in the glaciated dolomitic basement. A Phase 1 detailed dolomitic investigation is therefore required to form the basis of development planning and broadly delineate the site into inherent hazard zones which are guiding the allowable land usage. The dolomitic investigation shall cover, but not be limited to, the requirements as stipulated the SANS1936-2:2012 document.

9.2.16 Health Risk Assessment

A health risk assessment will be conducted to identify potential hazards associated with the proposed operation that may cause harm to the local community. The potential zone of influence associated with the project will be defined in the Health Risk Assessment which will be informed by other specialist studies such as air, noise, blasting etc. The potential risks will be assessed, and mitigation/management measures identified to reduce the level of risk.

9.2.17 Closure Assessment

Section 6 of the Financial Provisioning Regulations requires that an Applicant determines financial provisioning through a detailed itemisation of all activities and costs, calculated based on the actual cost of implementation of the measures required for:

- Annual rehabilitation, as reflected in an annual rehabilitation plan;
- Final rehabilitation, decommissioning and closure of the prospecting, exploration, mining or production operations at the end of the life of operations, as reflected in a final rehabilitation, decommissioning and mine closure plan; and
- Remediation of latent or residual environmental impacts which may become known in the future, including the pumping and treatment of polluted or extraneous water, as reflected in an environmental risk assessment report.

9.2.18 Integrated Water and Wastewater management Plan

The water uses required to be licensed for the mining activities, will determine which supporting documentation and specialist input will be required, to be able to compile the WULA Report and IWWMP. Therefore, the scope of works proposed in compliance with GN267 will therefore entail the conceptualization of activity, regulatory water and waste management framework, present environmental situation, analyses and characterization of activity and water and waste management. The following information will form part of the civil engineer design report that will be compiled in support of the WULA.

Water Balance

The water balance will describe the flow of water into and out of the proposed mining footprint to allow the proposed site to meet site water management objectives. The study aims to determine water security for the life of the mine.

Storm Water Management Plant

The objective of the Stormwater Management Plan (SWMP) will be to separate and appropriately manage both "clean" and "dirty" stormwater runoff to limit the impacts of the proposed mining activities to regional water resources. The proposed infrastructure layout will be reviewed and consolidated into a single plan pertinent for the mining activities as a whole.

9.3 Indication of the stages at which the competent authority will be consulted

The Gauteng DMRE is the delegated competent authority for the EA and Waste License application in terms of the NEMA and NEMWA as per legislation stating "*(1A) The Minister responsible for mineral resources is the licensing authority where the waste management activity is, or is directly related to-*

(a) prospecting or exploration of a mineral or petroleum resource;

(b) extraction and primary processing of a mineral or petroleum resource; or

(c) residue deposits and residue stockpiles from a prospecting, mining, exploration or production operation ".

An Integrated Application process will be undertaken, and the reports submitted to the DMRE. The draft and final Scoping, EIA/EMP reports will be submitted to the DMRE for review. This draft scoping report will be submitted to the DMRE for comment after which the scoping report will be finalised and submitted to the DMRE for processing. A site visit and meeting will be held upon request.

9.4 Details of the engagement process to be followed

The engagement process to be followed, including steps that will be taken to notify I&APs and information that will be provided, is summarised below:

- Stakeholder engagement during the EIA Phase will also be undertaken in strict accordance with GN. R326. English will be primary medium for the stakeholder engagement process.
- Verifying existing and identify new internal and external stakeholders and on-going development of a stakeholder database.
- The registered I&APs will be kept up to date with the process of the application and any major changes to the proposed development (if any);
- Two newspaper advertisements will be placed, one local newspaper and one regional newspaper, informing the public of public meetings/open house sessions where the draft EIA/EMPr will be discussed.
- Dissemination of Draft EIA Reports for stakeholder comment.
- Updating of a Comment and Response Report throughout the process, for inclusion in the final EIA/EMPr Report;
- Responding to comments submitted by stakeholders and relevant authorities.
- Additional focus group meetings will be held with key stakeholders as required.
- The final EIA/EMPr will incorporate and address the comments and concerns of all the I&APs.
- Notification and distribution of the decision on the Environmental Authorisation application to registered stakeholders (newspaper adverts excluded as experience has shown that this is not a likely requirement).

9.5 Description of the tasks that will be undertaken as part of the EIA process

The environmental attributes identified during the scoping phase will be assessed in more detail. The plan of study for the EIA as per **Section 9.2** of this report will be implemented, enabling the EIA to proceed smoothly without gaps or duplication in the information generated.

MENCO Environmentalists, as the EIA managers of this project, will establish the Terms of Reference for the specialist studies. The terms of reference put forth for the impact assessment methodology for

the specialist studies established that the requirements of NEMA EIA Regulations of 2014 be fulfilled. Specifically, those impacts are assessed in accordance with Regulations 31 (l) as described below:
An assessment of each identified potentially significant impact including –

i. Cumulative impacts;
ii. The nature of the impact;
iii. The extent and duration of the impact;
iv. The probability of the impact occurring;
v. The degree to which the impact can be reversed;
vi. The degree to which the impact may cause irreplaceable loss of resources; and
vii. The degree to which the impact can be mitigated.

The different specialists will not have a uniform impact assessment methodology therefore MENCO will summaries these reports in the EIA/EMPr and combine the impacts identified into a single impact assessment describing the phase/aspect/activity/impact/significance before and after mitigation.

The impact management objectives will be determined per phase for each of the proposed activities. A description will be provided of all the mitigation measures for the potentially significant impacts per phase of the activity using experience of working on similar opencast coal mines, specialist information generated, and previous studies conducted on and around the proposed site, as well as consultation with the I&APs. The principal objectives for impact mitigation would be to:

- Prevent or avoid;
- Reduce or minimise the impacts; and/or
- Contain (and treat where possible).

Only the impacts that could potentially be significant before mitigation will be addressed in the Environmental Management Program (EMPr). The operation would be subject to a comprehensive EMPr that is fully integrated with all outcomes of the EIA. Mining would only proceed under the authorisation and control of an approved EMPr (plus the other parallel legally required environmental authorisations, such as a water use license, integrated water and waste management plan, change in land use, amongst possible other requirements).

Alternatives will further be assessed using specialist information as the information become available throughout the process. For this specific application the site and proposed activity (coal mining) has already been selected. Therefore the alternatives will be assessed in terms of:

- Design or layout;
- Technology to be used;
- Operational aspects;
- No-go Option.

9.6 Identify suitable measures to avoid, reverse, mitigate or manage the identified impacts and to determine the extent of the residual risks that need to be managed

Please refer to **Table 8-11** above which lists the potential impacts associated with the proposed project activities, the significance of these impacts pre mitigation, the proposed mitigation/management measures envisaged and the residual risk level. It should be noted that this table (as well as **Appendix 6**) has been compiled with the information in hand and will be refined during the EIA phase.

10 OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

No additional requests for information have been received to date.

10.1 Compliance with the provisions of sections 24(4)(a)(b) read with section 24(3)(a) and (7) of the National Environmental Management act, 1998 (Act 107 of 1998)

A Socio-Economic Assessment will be conducted during the EIA Phase of this project to assess how the socio-economic conditions of the directly affected persons will be affected by the proposed mine. The following potential socio-economic impacts have been identified at this stage of the project:

- Damage to large power lines running through the application area;
- Additional employment opportunities;
- Economical injection to the local area;
- Degradation of the local and regional road transport network;
- Disruptions in daily living and movement patterns for surrounding communities, landowners, tenants and road users;
- Relocation of individuals and households;
- Loss of agricultural jobs;
- Damage to surrounding infrastructure caused by ground vibrations and fly rock.

The assessment will include, but not be limited to, the following:

- Determine the affected communities and economies located in the zone of influence and identify sensitive receptors and beneficiaries within the delineated study area, i.e. people, land uses and economic activities that could be directly or indirectly negatively affected by the proposed project or benefit from it;
- Conduct a site visit and collect primary social and economic data of the parties that may be directly or indirectly be affected (positively or negatively) by the proposed project to address data gaps;
- Create a socio-economic profile of the potentially affected and benefiting environment, which would then represent a status of the environment under the "no-go" alternative and would be used to assess the potential changes ensued from the proposed project;
- Quantify the potential positive and negative effects of the proposed project on the economic environment in the delineated study area;
- Assess the potential economic losses, which may ensue as a result of the proposed project in the zone of influence.

10.2 Impact on any National Estate referred to in section 3(2) of the National Heritage Resources Act

A Heritage Impact Assessment (HIA) will be undertaken during the EIA Phase in order to determine whether any heritage resources are located within the area to be developed. The HIA will assess the significance of the identified resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.

10.3 Other matters required in terms of sections 24(4)(a) and (b) of NEMA

Section 24(4)(b)(i) of the NEMA (as amended), provides that an investigation must be undertaken of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity. Alternatives have been identified in **Section 8.1** of this report. For this specific application the site and proposed activity (coal mining) has already been selected. Therefore, the alternatives in terms of the following aspects will be further assessed during the EIA Phase:

- Design or layout;
- Technology to be used;
- Operational aspects;
- No-go Option.

11 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are relevant to this Scoping Report:

- The report is based on the project description, preliminary layout plan and other maps provided by the Applicant;
- Although some specialist studies were initiated as part of the earlier process, no specialist studies were completed as part of the latest Scoping Phase;
- The description of the baseline environment was compiled using information from several sources including the draft studies that were conducted. The EIA will describe each environmental aspect in detail based on the latest specialist studies to be completed.
- At this stage of the project, the potential impacts of the proposed mining operation can't be assessed in detail due to the lack of site-specific information available.
- It was not always possible to involve all I&APs individually, however every effort has been made to involve as many affected stakeholders as possible.

12 REFERENCES

Canyon Coal, (2016). Springfield Due Diligence Report.

Canyon Coal, (2022). Mining Work Programme Submitted for a Mining Right Application, Glubay Coal (Pty) Ltd: Springfield Colliery.

Department of Environmental Affairs. The Second-Generation Vaal Triangle Airshed Priority Area Air Quality Management Plan: Draft Baseline Assessment Report.

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Minerals Development (Pty) Ltd. Environmental Management Programme compiled in support of the prospecting right application.

Sedibeng District Municipality, 2023. Integrated Development Plan 2023/2024

SRK Consulting. 2016. Springfield Project Geological Data Review and Resource Statement Report Prepared for Minerals Development Mozambique (Pty) Ltd. Report Number 505996.

uKhozi Environmental, 2019. Scoping Report for the Springfield Coal Mining Project. Report GVM844 dated December 2019

WRW Consulting Engineers, 2022. Preliminary Design Report for the Redan Railhead at Sukuma Colliery near Vereeniging, Gauteng. Phase 2 Report dated November 2022

WSP Environmental (Pty) Ltd. 2019. Proposed Springfield Coal Mine Scope Definition Report prepared for Glubay Coal.

13 UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I **Johan Maré** herby undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and IAPs have been correctly recorded in the report.

_____

Signature of Consultant: Johan Maré
M2 Environmental Connections (Pty) Ltd
Date: 2023/06/25

I, **Christina Petronella Erasmus** herby confirm that the information provided in the foregoing report is correct.

_____

Signature of EAP: Dr Petro Erasmus
Prescali Environmental Consultants (Pty) Ltd
Date: 2023/06/25

APPENDIX 1
Qualification of the EAP

APPENDIX 2
CV of the EAP

APPENDIX 3
Regulation 2(2) Map

APPENDIX 4
Springfield Layout Map

APPENDIX 5
Public Participation Report

Appendix 5A:
I&AP Register and proof of email, hand delivery and ordinary mail

Appendix 5B:
Minutes of Focus Group Meeting with Landowners

Appendix 5C:
Registration and Comment Sheet

Appendix 5D:
Background Information Document

Appendix 5E:
Newspaper Advert

Appendix 5F:
Site Notice, Library and Electronic Copies

Appendix 5G:
SMS Text and Live Radio Read

Appendix 5H:
Minutes of Meeting: Rand Water

Appendix 5I:
Photoplate of Public Open Days

Appendix 5J:
Comment and Response Report

Appendix 5K:
Proceedings/Minutes of Public Open Days

Appendix 5L:
Slides presented at Arcon Park Primary: Public Open Day

Appendix 5M:
I&AP Database

APPENDIX 6
Impact Assessment

APPENDIX 7
Authority Correspondence

APPENDIX 8
Environmental Authorisation Application Form

APPENDIX 9
EIA Screening Tool