ANGLO OPERATIONS LIMITED

KHANYISA INDEPENDENT POWER PLANT (IPP) COAL SUPPLY PROJECT

SCOPING REPORT

April 2017

SHANGONI
Management Services (Pty) Ltd

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND PROSPECTING[1].

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 APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: ANGLO OPERATIONS LIMITED (AOL)
PROJECT: KHANYISA INDEPENDENT POWER PLANT (IPP) COAL SUPPLY
DOCUMENT: SCOPING REPORT
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DMR REF. NUMBER: Not received as yet

[1] Bulk Sampling and Alluvial Diamond Prospecting not relevant however kept in as per DMR's template

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), 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) (NEMA), 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 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—

(a) identify the relevant policies and legislation relevant to the activity;

(b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;

(d) 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;

(e) identify the key issues to be addressed in the assessment phase;

(f) 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

(g) 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.

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(Will be included in the Final Scoping Report once the public review period has ended)

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Scoping Report

1. Details and expertise of the EAP

1.1 Details of the EAP

Name of The Practitioner: Shangoni Management Services: Wilda Meyer
Tel No.: (012) 807 7036
Fax No.: (012) 807 1014
e-mail address: wilda@shangoni.co.za

1.2 Expertise of the EAP

Table 1: The qualification of the EAP

NAME	QUALIFICATIONS
Brian Hayes	Professional Engineer. M.Sc.: Environmental Engineering.
Wilda Meyer	B.Sc. (Hons): Geography and Environmental Management

Table 2: Summary of the EAP's past experience

NAME	SUMMARY OF EXPERIENCE
Brian Hayes	Brian is a registered professional engineer (Chemical) with a master degree in Environmental Engineering from the University of Nottingham. Brian has 23 years' experience in environmental management and environmental engineering.
Wilda Meyer	Wilda obtained a B.Sc. Hons degree in Geography and Environmental Management through the University of Johannesburg. She has experience in conducting Environmental Management Programmes (EMPs), Basic Assessment Reports, Scoping Reports, Environmental Impact Assessments (EIAs), Waste Licence Applications, Integrated Water and Waste Management Plans (IWWMPs) and Integrated Water Use License Applications (IWULAs). Wilda also focusses on conducting environmental audits, such as EMP Performance Assessments and ISO14001 Internal Audits. She also has valuable experience in ISO14001 Environmental Management System (EMS) Implementation and has successfully implemented and obtained ISO14001 certification at various gold- and diamond mine sites.

Detailed CV's of the EAP are attached in Annexure B.

2. Description of the property

Table 3: Description of the property

Farm Name:	Portion 1 of Kleinkopje 15 IS Portion 18 of Klippan 332 JS Portion 14 of Klippan 332 JS RE of Groenfontein 331 JS Portion 10 of Groenfontein 331 JS Portion 36 of Kleinkopje 15 IS RE of Portion 2 of Klippan 332 JS Portion 2 of Blaauwkrans 323 JS Portion 3 of Blaauwkrans 323 JS Portion 23 of Blaauwkrans 323 JS
Application area (Ha)	Refer to Table 5 below.
Magisterial district:	Witbank (Emalahleni) Magisterial District
Distance and direction from nearest town	• The southern project site (Khwezela Bokgoni) is situated approximately 15km south of Emalahleni in Mpumalanga Province. • The northern project site (Khwezela North) is situated approximately 12km south-west of Emalahleni and approximately 3km south-east from Clewer in the Mpumalanga Province.
21-digit Surveyor General Code for each farm portion	1/15: T0IS00000000001500001 18/332: T0JS00000000033200018 14/332: T0JS00000000033200014 RE/331: T0JS00000000033100000 10/331: T0JS00000000033100010 36/15: T0IS00000000001500036 RE/2/332: T0IS00000000001500008 2/323: T0JS00000000032300002 (JS) 3/323: T0JS00000000032300003 (JS) 23/323: T0JS00000000032300023 (JS)

Refer also to Figure 2 below for a map showing the farm portions.

3. Locality map

The localities of the application area(s) are presented in Figure 1 below.

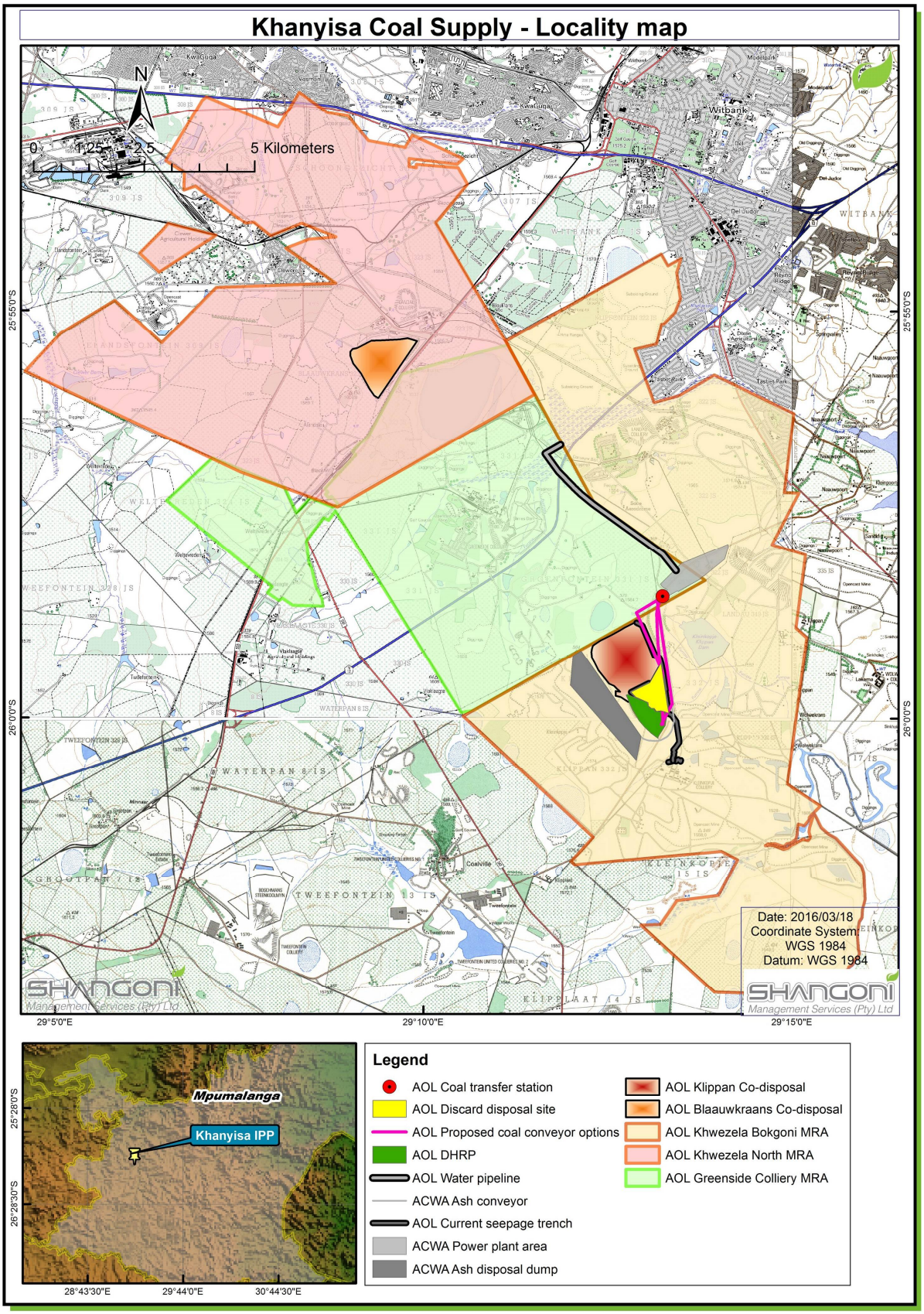

Figure 1: Locality map[2]

[2] ACWA Power related activities indicated in legend of map are authorised activities

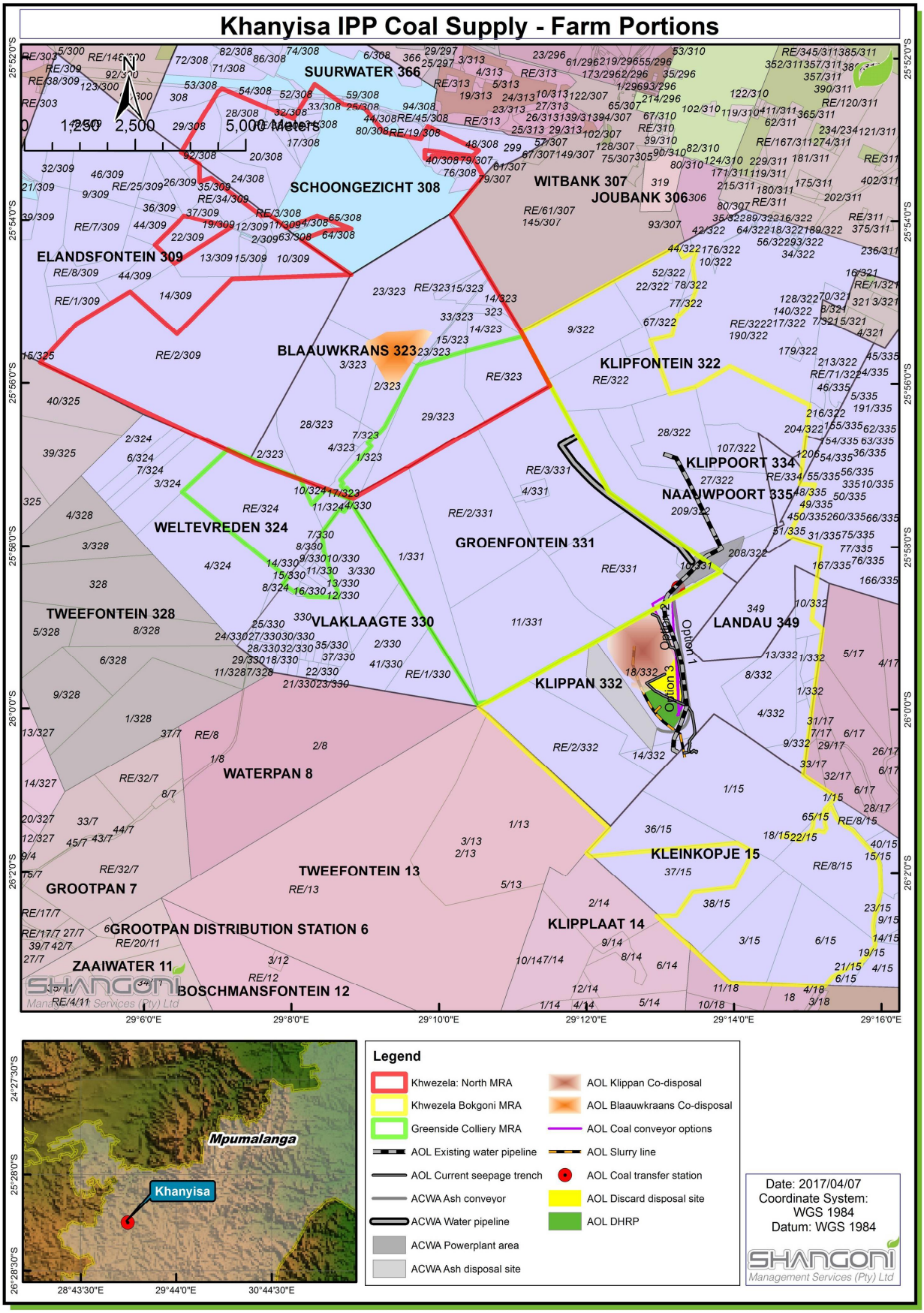

Figure 2: Farm portions map

4. Description of the scope of the proposed overall activity

4.1 Background *(not forming part of this application)*

As part of a previous application to the Department of Environmental Affairs (DEA), Anglo Operations Limited (AOL) applied for environmental authorisation(s) for the construction and operation of a discard-coal Independent Power Plant (IPP) and associated infrastructure (i.e. the proposed Khanyisa IPP). The aim will be for ACWA[3] Power to construct, own, operate and decommission the power station. The mentioned IPP will provide electricity capacity to Anglo and will be located within their South African Coal Estates (SACE) Complex, approximately 15 km from eMalahleni in the Mpumalanga Province. The SACE Complex includes the Greenside-, Kleinkopje- (now known as Khwezela: Bokgoni) and Landau (now known as Khwezela North) Collieries.

An Environmental Impact Assessment Report (EIAR) and associated Environmental Management Programme (EMP) was compiled in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) for the above. The application was submitted to the DEA. Subsequent to receiving the initial environmental authorisation (dated October 2013), a number of additional environmental authorisation applications and amendments were submitted and authorisations received for such. The table below lists the environmental authorisations (attached in Annexure C) that were issued for the IPP and associated activities by the DEA.

Table 4: Existing Authorisations for activities related to the Khanyisa IPP[4]

Existing Authorisations	Associated activities
EA[5] - 12/12/20/2067, dated Oct 2013 and issued by DEA to Anglo Operations Limited (AOL): *Integrated EA in terms of GNR544, 545 and 546, dated 2010 (under NEMA, 1998) and GNR 718, dated 2009 (under NEM: WA, 2008) – For the design, construction, operation and decommissioning of the Khanyisa coal fired power station* *("October 2013 EA")*	• Design, Construction. Commissioning, Operation, and Decommissioning of a discard coal fired power station using fluidised bed technologies and its associated infrastructure. The mentioned project will consist of the following: • Coal Silo and sorbent stock yard; • Coal, ash, sorbent and gypsum conveyors; • A high voltage (HV) yard within the power station precinct; • Water and wastewater treatment facilities; • Ash and spent sorbent disposal systems and dump site; • Gypsum (sorbent) storage facility; • Access roads (temporary and permanent, and external and internal roads);

[3] ACWA Power Khanyisa Thermal Power Station (RF) (Pty) Ltd - an international company for water and power projects

[4] An Integrated Water Use Licence Application (IWULA) and Integrated Water and Waste Management Plan (IWWMP) was also compiled for the Khanyisa IPP Project (ACWA related activities), dated February 2017 and submitted to the Department of Water and Sanitation (DWS) (Water Use Licence not yet received). An IWULA and IWWMP will also be compiled for the Khanyisa (Coal Supply) process (relevant to this application).

[5] Environmental Authorisation

Existing Authorisations	Associated activities
	• Maintenance, medical, administration, services, control buildings; • Water supply pipeline for construction and operation phase; • Raw water pipeline and reservoirs; • Dams for storage of "clean" and "dirty" water; • Power supply for the construction phase; • Communication mast / telecommunication facilities; • General and hazardous waste storage and handling facilities (temporary and permanent); and • Batching plant (including concrete and asphalt) and construction accommodation.
Amended EA - 12/12/20/2067/**AM1**, dated July 2015; and issued by DEA to Anglo Operations Limited (AOL): *Amendment to October 2013 EA*	Amendment to: • Increase the capacity of the power station from 450MW to 600MW; and • Re-alignment of the access road slightly towards the north-west of the previously authorised alignment
Amended EA - 12/12/20/2067/**AM2**, dated Feb 2016; and issued by DEA to Anglo Operations Limited (AOL): *Amendment to October 2013 EA*	Amendment to: • Re-align the road D255 back to the alignment approved in the original EA for the Khanyisa Power Station.
EA – 14/12/16/3/3/2/811, dated May 2016; and issued by DEA to International Company for Water and Power (ACWA Power) *EA in terms of GNR 982, 983, 984 and 985, dated 2014, for the proposed 400kV substation and powerline integration for the Khanyisa coal fired power station.*	The proposed project involves the following components: • 400kV Substation; • 400kV Power line (overhead cable); • Access roads; • Switchyard and associated buildings.
EA – 1/3/1/16/1N-40[6], dated May 2016; and issued by Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs to International Company for Water and Power (ACWA Power) *EA in terms of GNR 983 for the*	Construction of a bulk water supply pipeline of 4.4km connecting Khanyisa IPP Project with the eMalahleni Reclamation Plant. The pipeline will have an internal diameter of 0.36m.

[6] Discrepancy on Environmental Authorisation: 1/3/1/16/1N-26 in header of letter and 1/3/1/16/1N-40 on front page of authorisation

Existing Authorisations	Associated activities
proposed bulk water supply pipeline connecting eMalahleni Reclamation Plant with Khanyisa Power Station	
Amended EA - 12/12/20/2067/**AM4**[7], dated Feb 2017; and issued by DEA to ACWA Power Khanyisa Thermal Power Station (FR) (Pty) Ltd *Amendment to October 2013 EA*	Amendment – Change of applicant name: • From: Anglo Operations Limited (AOL) • To: ACWA Power Khanyisa Thermal Power Station (FR) (Pty) Ltd
Air Emission Licence (AEL) – 17/4/AEL/MP312/14/20, dated September 2015; and issued by Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs to Anglo Operations (Pty) Ltd – Khanyisa Power Plant *Khanyisa Power Plant Provisional Atmospheric Emission Licence in terms of Section 43 of the National Environmental Management: Air Quality Act, 2004 (NEM: AQA)*	Description of listed activity: Solid Fuel Combustion Installations used primarily for steam raising or electricity generation

Refer to the Site Plan in Figure 3 showing the above-mentioned (relevant) authorised infrastructure related to the project along with the proposed infrastructure (related to this application) (i.e. coal supply activities)

AOL's aim with constructing the above-mentioned power plant was to procure its own dedicated supply for a portion of its electricity requirements via the Khanyisa IPP project. Such supply was aimed at increasing Anglo American's security of supply and limiting the impact of electricity price increases.

As indicated in the table above, AOL has since transferred the duties and responsibilities related to the project to ACWA Power, which is an international company for water and power projects. ACWA Power was awarded with the preferred bidder status in 2016 under the Department of Energy's (DoE) Coal Baseload Programme to proceed with the proposed project.

[7] No record available for an AM[3] (Amendment of authorisation)

4.2 Khanyisa Coal Supply Project Description *(forming part of this application)*

The Khanyisa IPP Coal Supply Project (relevant to this application) entails the design, construction, operation and maintenance of a Discard Handling and Retreatment Plant (DHRP) with the capacity to treat 3 Mtpa of discard coal and supply the coal product as fuel to the Khanyisa IPP.

AOL proposes, as part of the Khanyisa Coal Supply Project, to reclaim two existing co-disposal facilities currently located within its mining rights areas (Klippan Co-disposal Facility (located on the Khwezela Bokgoni Colliery Mining Rights Area) (Mining Right: MP 30/5/1/2/2/307MR) and the Blaauwkrans Co-disposal Facility (located on the Khwezela North Colliery Mining Rights Area) (Mining Right: MP 30/5/1/2/2/306MR).

Furthermore, a Discard Handling and Retreatment Plant (DHRP) and associated infrastructure will be established to treat the discard coal and supply the coal product (via conveyor) as fuel to the proposed Khanyisa IPP (for which authorisation has been granted to ACWA Power). Portions of the proposed infrastructure will also be located within the Greenside Colliery Mining Right Area (Mining Right: MP30/5/1/2/2/304MR) (refer to Figure 3). The various discard coal sources will be fed into the DHRP. Below product specification material will be washed in a Dense Medium Separation (DMS) plant. Discard from the plant will be delivered to the discard bin from where it will be loaded into trucks and placed on a proposed new discard disposal area (located to the south of the existing Klippan Co-disposal Facility). Discard from the reclamation activities to be undertaken at the Blaauwkrans Co-disposal Facility will be placed back on the facility's footprint area.

4.3 Environmental application process background[8]

A pre-application meeting was held with the Department of Mineral Resources (DMR) on 24 February 2017. The minutes of the meeting are attached in Annexure C3. Subsequent to the meeting held with the DMR, the Environmental Assessment Practioner (EAP) submitted a letter to the DMR requesting that a single integrated application be submitted for the Khanyisa Coal Supply Project, as per provisions made in the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended by GN R326 in GG 40772 of 7 April 2017). Regulation 11(4) reads as follows:

> *If one or more proponents intend undertaking interrelated activities at the same or different locations within the area of jurisdiction of a competent authority, the competent authority may, in writing, agree that the proponent or proponents submit a single application in respect of all of those activities and to conduct a consolidated assessment process but the potential*

[8] In terms of Section 22 of National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004) (NEM: AQA) no person may conduct an activity listed on a national list anywhere in Republic or listed on a list applicable in a province anywhere in that province without a provisional Atmospheric Emission License or an Atmospheric Emission License. The Khanyisa IPP Coal Supply activities are not listed in Government Notice (GN) 893 published in Government Gazette 37054, dated 22 November 2013 and thus do not require a provisional Atmospheric Emission License or an Atmospheric Emission License.

> *environmental impacts of each activity, including its cumulative impacts, must be considered in terms of the location where the activity is to be undertaken.*

No written response has yet been received from the DMR regarding the above. It is the EAP's intention to consider the potential environmental impacts of each activity, including its cumulative impacts, in terms of the location where the activity is to be undertaken (as per Regulation 11(4)).

An Environmental Authorisation application[9] form was submitted for the Khanyisa IPP Coal Supply Project on 12 April 2017 in terms of the NEMA EIA Regulations, 2014 (as amended). Refer to Annexure C5.

Furthermore, a Water Use Licence Application will be lodged with Department of Water and Sanitation (DWS) in terms of the National Water Act, 1998 (Act 36 of 1998) (NWA) the Water Use Licence Application and Appeals Regulation, 2017 (published under GN R267 in GG 40713 of 24 March 2017), for water use activities that will be triggered by the proposed project. A pre-application enquiry meeting has been scheduled with DWS and will take place on 25 April 2017, the discussion points of which will be included in the final Scoping Report.

[9] Mining Works Programme Revision and associated processes required based on scope of Khanyisa IPP Coal Supply Project

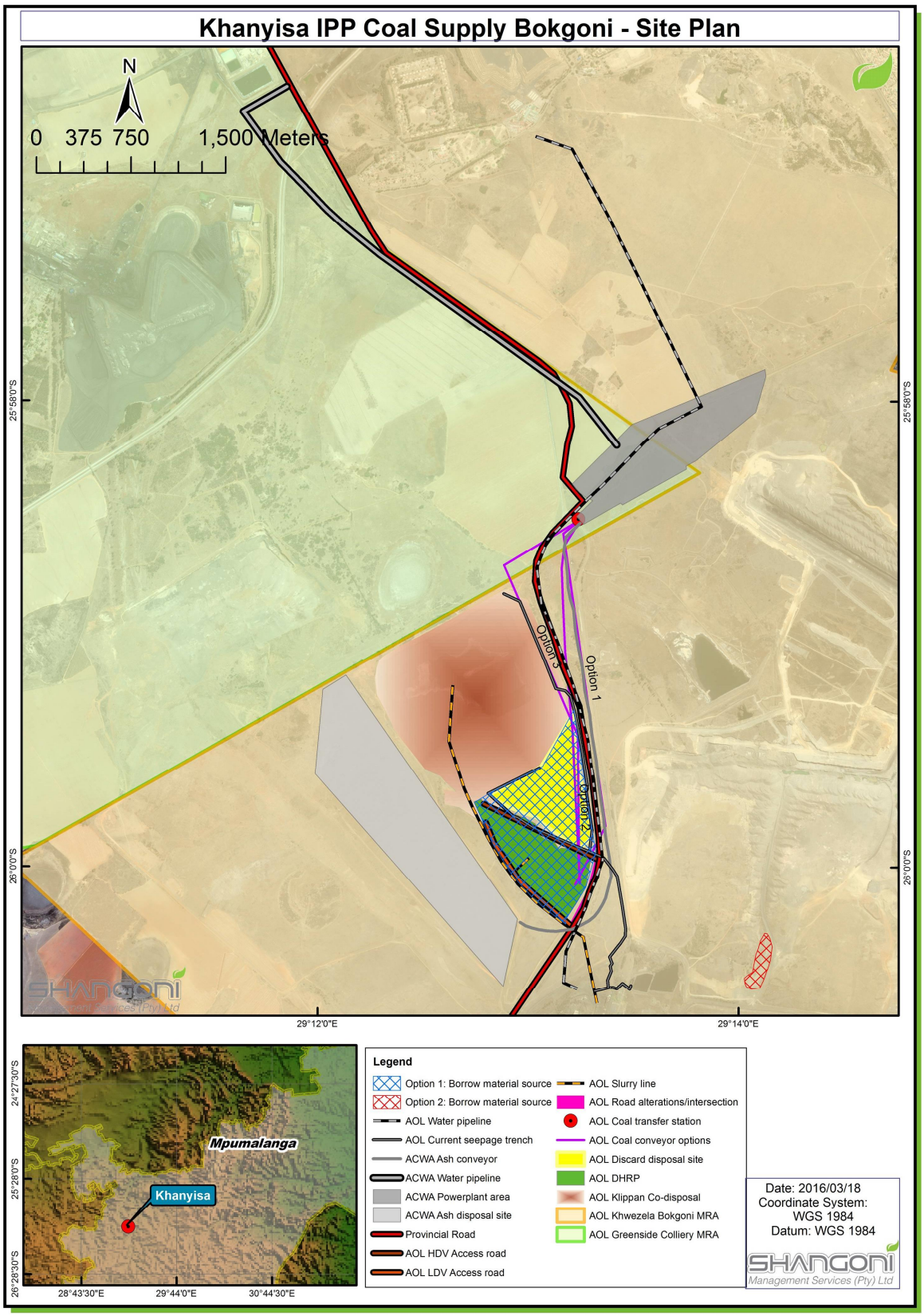

Figure 3: Site layout plan[10]

[10] Refer to Locality map for location of Blaauwkrans Co-disposal Facility. The only activity to be undertaken at Blaauwkrans Co-disposal Facility is the reclamation on the existing facility itself and transportation of material via existing roads. No additional site establishment will be undertaken at the mentioned facility.

4.1 Listed and specified activities

Table 5: Activities and listed activities associated with the proposed development

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY (Mark with an **X**)	APPLICABLE LISTING NOTICE[11]
Reclamation of Klippan Co-disposal Facility	± 162 Ha[12]	**X**	• GN R921 and GNR 633: Category B: Activities 2 and 11 • GNR 327: Listed Activity 19(i) • GNR 325: Listed Activity 17(a)
Reclamation of Blaauwkrans Co-disposal Facility	107.8 Ha[13]	**X**	• GNR921 and GNR 633: Category B: Activities 2 and 11 • GNR 327: Listed Activity 19(i) • GNR 325: Listed Activity 17(a)
Site clearance activities[14]. • The areas earmarked for the site clearance activities fall within the current mine boundary areas of the Khwezela Bokgoni (Kleinkopje) Colliery and a small section within Greenside Colliery (for the latter the majority being linear activities). • The area proposed for the location of the discard disposal site (refer to the activity below and the site plan in Appendix 4) falls within the authorised footprint area of the Klippan Co-disposal facility (as per the approved Kleinkopje (Khwezela Bokgoni) Colliery EMPr, dated 2012). The mentioned area is thus earmarked for discard disposal. • The Kleinkopje (Khwezela Bokgoni) Colliery Biodiversity Action Plan (BAP), dated 2014, states that the *surface rights area has been extensively invaded by alien plants in places particularly wattles*. Furthermore, it indicates that the majority of the mining area is characterised as having a *low biodiversity value*, including the sites associated with the proposed location of the discard disposal facility	See specific activities below.		Not triggered *(refer to description under "Name of Activity" column)*

[11] Reference is also made here to GNR983, 984 and 985 (as amended by GNR 324; 325 and 327)

[12] Refer to Figure 9 showing the authorised footprint area for Klippan Co-disposal Facility, as per the approved Kleinkopje Colliery EMPr, 2012.

[13] As per approved Landau Colliery EMPr Amendment, dated August 2010 ('Footprint area as determined by the mine's surveyor (2010)'). The Landau Colliery Life Extension Project EMPr provides for the extension of the existing facility that will enable the disposal of discard to continue until 2025. As per the mentioned EMPr, the extension is 101 Ha in extend. The extension section does however not form part of the reclamation activities applied for as part of this application.

[14] Listed Activity 27 of GNR983 and Listed Activity 15 of GNR984 excludes clearance of indigenous vegetation for the undertaking of a linear activity

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY (Mark with an **X**)	APPLICABLE LISTING NOTICE[11]
and the DHRP (refer to activity below). These areas are thus not considered to contain large stands of 'indigenous vegetation'. • *All of these activities have resulted in the extensive transformation of the natural habitats within the general area* (Wetland Consulting Services, 2016 – Kleinkopje Colliery Pit 2A Extension Wetland Specialist Study Report). • It is for the reasons provided above that the site clearance activities (GNR 327: Listed Activity 27 / GNR 325: Listed Activity 15), are not considered applicable to this application.			
Discard Handling and Retreatment Plant (DHRP), including: • Plant Section; • Workshop(s) (maintenance activities); • Wash bay(s), • Water bowser; • Stores, • Weighbridge(s) and road truck access control; • Chemical storage and handling areas; • Medical facility • Offices and other buildings, such as Plant and Security buildings, • Weighbridge(s), • Chemical storage areas, • Waste handling and storage area, and Salvage Yard[15], • Medical facility, • Change House and Laundry, • Bus Shelter and carports, • DHRP, Main and Tip Substations[16], • Water reticulation and storage facilities, • Sewage Treatment Facility (Package Plant)[17]; • Waste storage / sorting and handling area(s) and salvage yard; • Change House and Laundry, • Bus Shelter, • Offices, plant control and admin buildings (including training and induction), • Green Room Building, • Security Building, and	DHRP total footprint area: ± 43 Ha	**X**	• GN R 325: Listed Activity 17(b) • GN R921 and GNR 633: Category B: Activities 3 and 10

[15] The general (domestic) and hazardous waste handling and storage (sorting) area will be less than 1000m²

[16] Substations (within DHRP footprint area) – EA Listed Activity threshold not triggered (less than 275 kV inside Industrial Complex (including processing area as per definition)

[17] The Sewage Treatment (Package) Plant will have a capacity of 25 000 l / day (i.e. 25m3 / day). Thus, does not trigger the relevant listed activities in terms of treatment of sewage.

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY (Mark with an **X**)	APPLICABLE LISTING NOTICE[11]
• Carports.			
Potable water storage tank(s)			• Listed Activity not triggered[18]
Process water storage tank(s)			• Listed Activity not triggered
60 000 ton coal product stockpiling (prior to conveyance to Khanyisa IPP)	Forms part of DHRP footprint area provided above	**X**	• GNR 325: Listed Activity 6[19]
Storage and handling of Dangerous Goods (e.g. fuel, hydrocarbons)		**X**	• GNR 325: Listed Activity 4[20]
Pollution Control Dam(s) and associated infrastructure	±11 036m² (inner footprint area) Forms part of DHRP footprint area provided above	**X**	• GNR 325: Listed Activity 6[21]
Water management measures[22], including • Trenches for conveyance of process / return water at the project infrastructure areas (containment in closed circuit and / or connection with the existing Khwezela Bokgoni Colliery infrastructure where possible); • Potable water pipeline connections (with existing Khwezela Bokgoni Colliery / authorised ACWA Khanyisa IPP infrastructure); • Slurry pipeline connections (with existing Khwezela Bokgoni Colliery slurry pipeline running between Klippan Co-disposal Facility and the existing Khwezela Bokgoni Colliery Plant)	Slurry line connection: Maximum ±400m in length Potable water pipeline connection: > 1 000m Trenches: Dependent on Storm Water Management Plan	**X**	• GNR 327: Listed Activity 9(i)(ii) • GNR 327: Listed Activity 10(i)(ii) • GNR 327: Listed Activity 12(ii)(a)(c) • GNR 327: Listed Activity 19(i) • GNR 327: Listed Activity 45(i)(ii) • GNR 327: Listed Activity 46(i)(ii)[23]

[18] The only Khanyisa IPP Coal Supply infrastructure that will be located within a CBA Optimal area will be the proposed Khanyisa IPP Coal Supply overhead powerline that will run between the Eskom Khwezela Bokgoni substation and proposed DHRP site. The project activities will be undertaken in close proximity to the John Cairns Nature Reserve (within 5km from the proposed activities). However, no record exists of this area having been promulgated as a Protected Area in terms of the National Environmental Management Protected Areas Act.

[19] Section 21g water use activity

[20] Listing Notice 3 (GN324) activities not triggered, as the area is not considered "indigenous vegetation"

[21] Section 21g water use activity

[22] More detail will form part of a Storm Water Management Plan (SWMP) that will be developed for the project.

[23] Listing Notice 3 (GN324) activities not triggered, as the area is not considered "indigenous vegetation"

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY (Mark with an **X**)	APPLICABLE LISTING NOTICE[11]
Construction and use of a coal conveyor running from the DHRP to the Khanyisa Independent Power Plant Site (inclusive of maintenance / access road footprint). Three Alternatives to be investigated (refer also to the Site Layout in Appendix 4): • Option 1: Conveyor crosses provincial road in the direction of the (Khwezela Bokgoni) (Kleinkopje) product conveyor. The conveyor then runs along the product conveyor (same route as the ACWA ash conveyor). At the top it crosses the Kleinkopje (Khwezela Bokgoni) product conveyor and ties into ACWA transfer tower. • Option 2: The conveyor follows a more direct (Straight-line route to the transfer point). The conveyor is curved and does not have any intermediate transfer points. This conveyor runs through the middle of the wetland area. The option also has the longest culvert as it crosses the road at an angle. • Option 3: Conveyor runs on the western side of the provincial road to the top of Klippan dump. It then crosses over/under the provincial road to tie-in to the ACWA (Khanyisa IPP) transfer tower.	Coal Conveyor, including maintenance road: ± 21 000m² (based on 3.5km length and 6m wide area (including a 1050mm conveyor)	**X**	• GNR 327: Listed Activity 12(ii)(a)(c) • GNR 327: Listed Activity 19(i)[24]
Construction and use of roads (and associated structures) within and around the project site(s): • Access road junction / Intersection with Provincial Road running from the R544 to the R547 (to the east of the Klippan Co-disposal Facility); • LDV Access road; • HDV Access road; • Internal roads; and • Road along coal conveyor route[25].	HDV road: 1 020 m (10 200m²) LDV road: 1 131m (8 369.4m²) DHRP Internal Roads: 1 719m (10 314m²) Haul area: ±2 921m² Access Junction / Intersection at Provincial Road: ± 12 476.4m² Road along coal conveyor route: See above activity ±3 500m (12 950m²)	**X**	• GNR 327: Listed Activity 24(ii) • GNR 327: Listed Activity 56(ii) • GNR 327: Listed Activity 12(ii)(a)(c)[26] • GNR 327: Listed Activity 19(i)

[24] Listing Notice 3 (GN324) activities not triggered, as the area is not considered "indigenous vegetation"

[25] Borrow pit access roads to also be investigated

[26] Listing Notice 3 (GN324) activities not triggered, as the area is not considered "indigenous vegetation"

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY (Mark with an **X**)	APPLICABLE LISTING NOTICE[11]
Construction and use of coal transfer station (to be located at the Khanyisa IPP)	25 - 100m^2 (TBC)	**X**	• GNR 327: Listed Activity 12(ii)(a)(c) • GNR 327: Listed Activity 19(i)[27]
Overland Conveyor Substation[28]	43.75m^2	**X**	• GNR 327: Listed Activity 19(i)
Proposed powerline(s) from consumer substation to Khanyisa Coal Supply project area (expansion of facilities)[23]	2x 22kV lines	**X**	Threshold of 275kV's (transmission and distribution related activity - expansion outside industrial complex) - not triggered • GNR 327: Listed Activity 12(ii)(a)(c) • GNR 327: Listed Activity 48(i)(a)(c) • GN R 324: Listed Activity 14(ii)(f)(ff)[27]
Hauling of material from Blaauwkrans Co-disposal facility to the DHRP via provincial roads	-		Not listed.
Proposed discard disposal site (to be located within the authorised footprint area of the Klippan Co-disposal facility) [24], and discard disposal back onto Blaauwkrans authorised facility footprint	Klippan additional discard disposal site: ±43 Ha	**X**	• GNR 325: Listed Activity 6 • GN R921 and GNR 633: Category B: Activity 11
Source material [current] alternatives for construction purposes (refer to Site Layout Plan – Figure 3)[25]: • Option 1: DHRP and proposed discard disposal facility footprint areas; • Option 2: Area south of Pit 2A. • Option 3: Combination of Options 1 and 2; or • Option 4: Off-site source (commercial)	± 175 000m^3 [26] Option 1: ± 86 Ha Option 2: ± 4.8 Ha	**X**	• GNR 327: Listed Activity 21(a) • GNR 325: Listed Activity 17(a)
Dust suppression activities	-	**X**	• GNR 325: Listed Activity 6
Removal of infrastructure and rehabilitation	As per footprint sizes above		• Not applicable to this application

[27] Listing Notice 3 of 2014 (GN R985 (GNR324 – April 2017)) activities not triggered, as the area is not considered "indigenous vegetation"

[28] Electricity and transmission related listed activities not triggered.

[23] Located outside of 32m from Tweefontein Pan.

[27] Located within CBA Optimal Area (MBSP)

[24] Proposed location earmarked for discard disposal as part of the authorised Klippan Co-disposal facility footprint area, as per the approved Kleinkopje Colliery EMPr, dated 2012 (of Khwezela Bokgoni (Kleinkopje) Colliery).

[25] Location / source alternatives to be further considered during the process. Therefore, the application of a Mining Right / Permit related listed activities are dependent on the size of alternative areas identified.

[26] Extent of area(s) dependent on material availability, geotechnical surveys and further investigations. Further alternatives to be considered.

4.2 Description of the activities to be undertaken

4.2.1 Mineral to be mined

The mineral to be re-mined will be that of coal discard material from two existing co-disposal facilities currently located within AOL's mining rights areas (Klippan Co-disposal Facility (located on the Khwezela Bokgoni Colliery Mining Rights Area) (Mining Right: MP 30/5/1/2/2/307MR) and the Blaauwkrans Co-disposal Facility (located on the Khwezela North Colliery Mining Rights Area) (Mining Right: MP 30/5/1/2/2/306MR).

4.2.2 Description of the main mining activities and processes

The following main activities and infrastructure will form part of the proposed Khanyisa IPP Coal Supply project:

- Reclamation activities at the Klippan- and Blaauwkrans Co-disposal facilities;
- Transportation of discard from the Blaauwkrans Co-disposal Facility to the DHRP (refer below) via existing roads;
- Discard handling and Retreatment Plant (DHRP) and associated infrastructure:
  - Plant Section;
  - Workshops;
  - Wash bay(s);
  - Diesel storage and handling facilities;
  - Water bowser;
  - Stores;
  - Weighbridge(s) and road truck access control;
  - Chemical storage and handling areas;
  - Waste storage / sorting and handling area(s) and salvage yard;
  - Medical facility
  - Change House and Laundry
  - Bus Shelter
  - Offices, plant control and admin buildings (including training and induction);
  - Green Room Building
  - Security Building
  - Carports
  - Substations (DHRP, Main and Tip substations)
  - Water reticulation and storage facilities (e.g. potable and process water tanks, Pollution Control Dam(s), slurry conveyance system, return water conveyance system, potable water pipeline(s))
  - Coal stockpiling area;
  - Sewage Treatment Facility; and
  - LDV and HDV access- and internal roads.

- Coal Supply Conveyor and associated road (to run from the DHRP to the Coal Transfer Tower at the Khanyisa IPP).
- Coal Transfer Tower / Station (to be located at the Khanyisa IPP).
- Overland Coal Conveyor substation and powerlines (under threshold) from consumer substation to the coal supply project area.
- New discard disposal site (to be located within the authorised footprint area of the Klippan Co-disposal Facility).
- Dust suppression activities.
- Sourcing and use of material for construction purposes.
- Removal of infrastructure and rehabilitation.

Additional to the reclamation and associated activities taking place on the Khwezela Colliery Mining Rights Areas (refer discussions above), portions of the proposed infrastructure will be located within the Anglo Operations Limited: Greenside Colliery mining right area (Mining Right: MP30/5/1/2/2/304MR) (also forming part of the SACE Complex). Refer to the Site Plan (Figure 3) showing the high-level project site layout plan, as well as Figure 4 (below) showing the preliminary layout plan of the DHRP.[29]

Refer also to Table 5 above for a list of activities associated with the proposed project.

[29] Final layouts will be included in the EIAR / EMPr

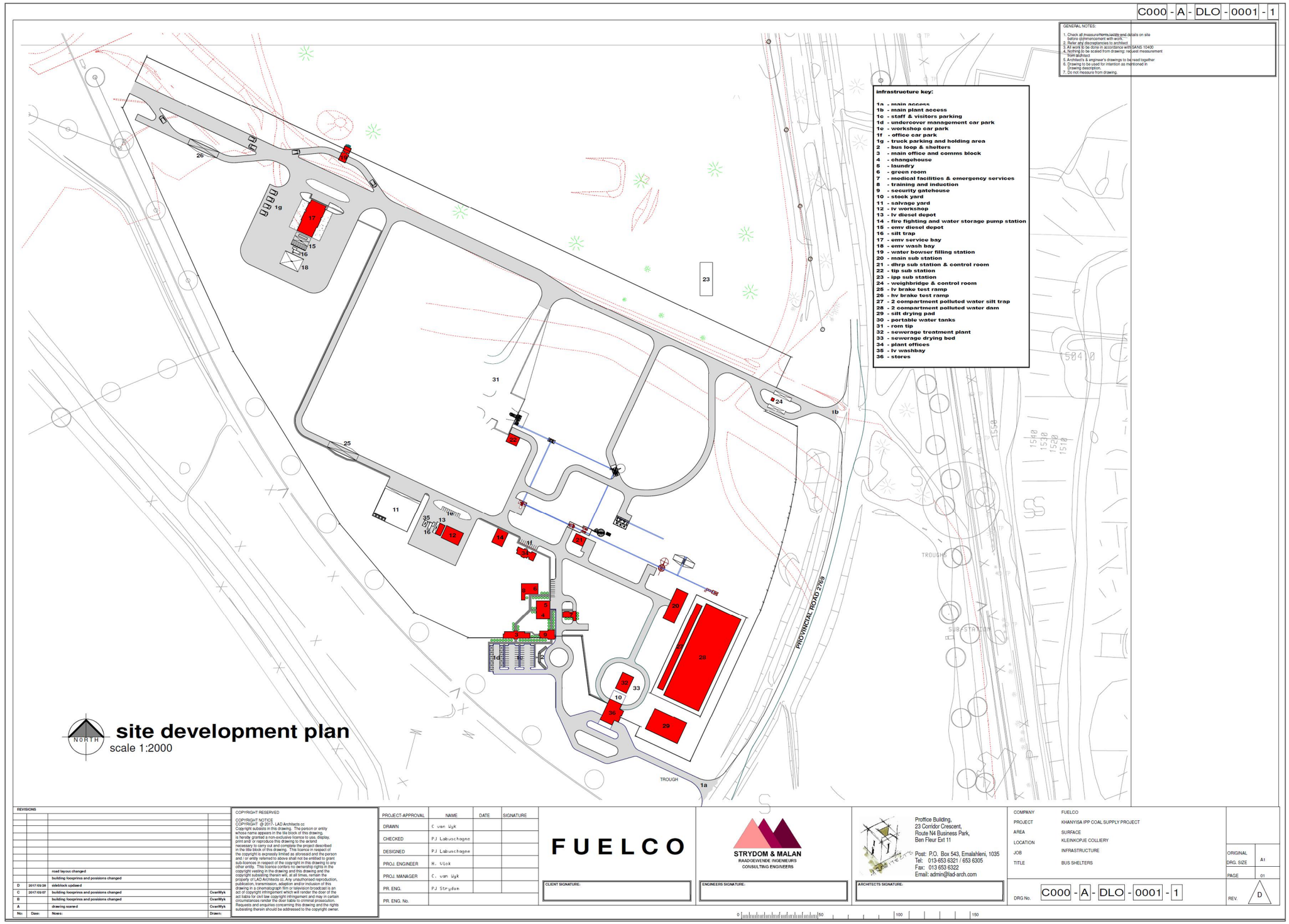

Figure 4: DHRP Preliminary site layout plan

4.2.2.1 Mining method(s)

Both the Klippan- and Blaauwkrans Co-disposal Facilities will be mined by means of conventional load and haul methods (strip mining) using teams of shovels, excavators and articulated dump trucks (ADTs), where after the discard coal will be delivered to the proposed Discard Handling and Retreatment Plant (DHRP), to be located to the south-east of the existing Klippan Co-disposal Facility (refer to Figure 3).

The excavators and ADTs will be working simultaneously in strips from west to east on the discard facilities, starting on the southern side and working northwards. The width of each strip to be determined by the total width of the cut, divided into 2 strips (1 each for each team of machines) and the minimum width required for a 35t ADT to turn. Allowance must also be made for safety berms on the dump edge of any strip. Mining the dried fines from the slurry pond will be done with excavators and 30t ADTs and as an alternative to this, agricultural tractors with ploughs working with a small front-end loader and 30t ADTs can be used.

Due to the risk of spontaneous combustion, the bench slope will be 1V:5H so that a grader can clean the bench surfaces of all loose material, after the excavator and ADT teams have passed and a compactor then can be used to compact the bench slopes in-between strip-mining passes. This will prevent oxygen ingression into the bench walls from the wind.

The coarse discard will be transported to the DHRP with ADTs. The slurry line which is currently pumping slimes (slurry) to the Klippan Co-disposal Facility (from the Khwezela Bokgoni Colliery Plant) will be re-routed to a new filtration plant, located within the DHRP footprint area. The filter slimes will be discharged onto the product conveyor and the excess water will return to the existing Khwezela Bokgoni return water dams.

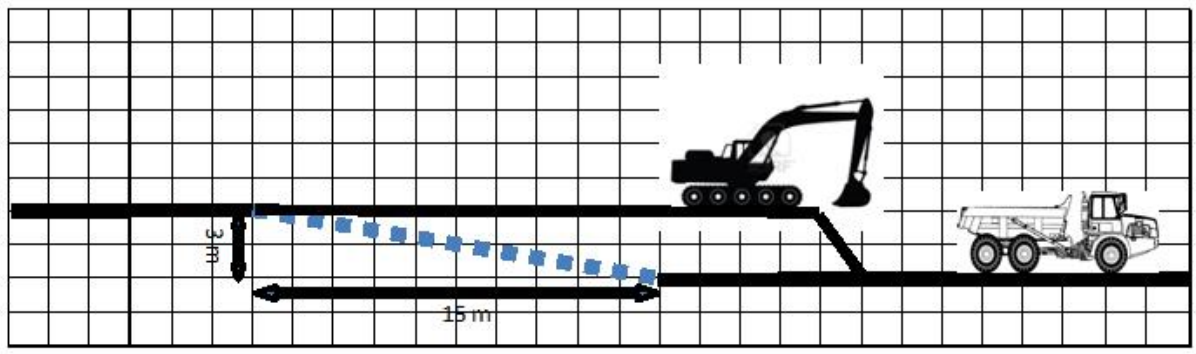

Figure 5: Bench design and wall slope angle for coarse discard

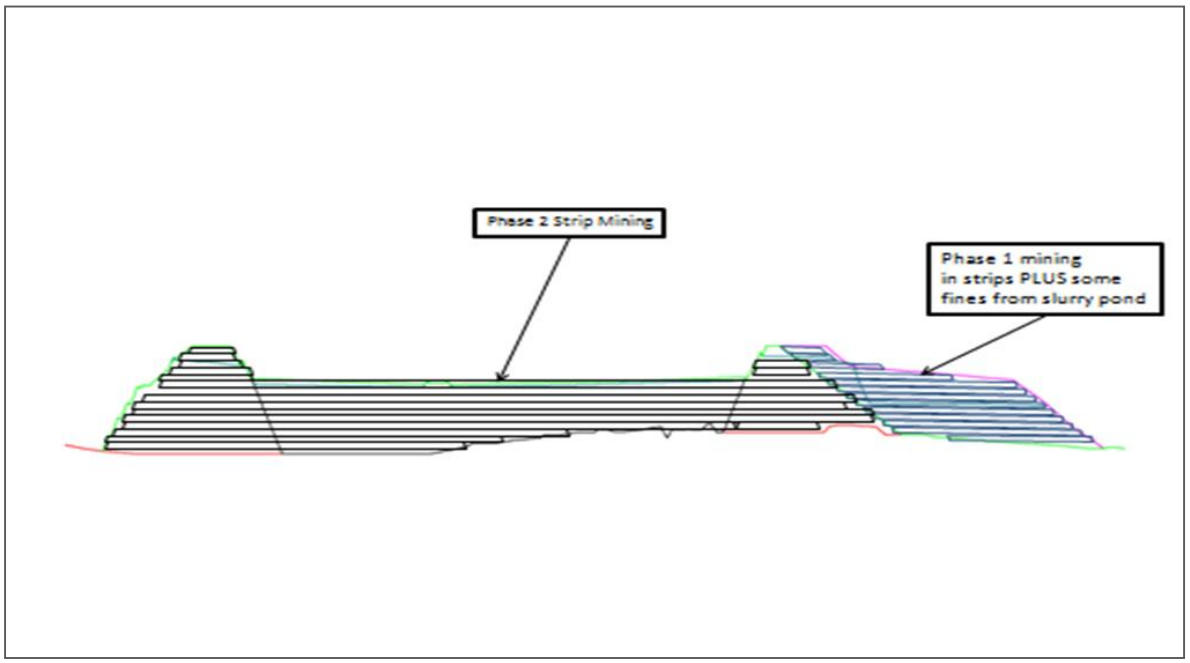

Figure 6: Diagrammatical sketch of Phase 1 and Phase 2 strip mining in cross-section

The reclamation activities at the Klippan Co-disposal Facility will be undertaken in two phases (alternatives investigated)[30]:

- Phase 1 would involve re-mining mainly the coarse material, starting from the Southern boundary of the dump and working northwards towards the predetermined outer safe limits of the slurry pond. The Coarse discard portion available in this phase was modelled to contain approximately 9 367 929 tons of coarse discard (-150mm). Strip mining in benches of 3m with a final cross-sectional longwall slope of 1:5 would be used.
- Phase 2 would be the reclamation of the remaining slurry dam section with its walls of coarse material in flat sections starting from the top. Each section would be reclaimed to meet the production feed requirements for the DHRP. The slurry pond would be mined in such a way that its stability and integrity of the design can be ensured.

Figure 7 below depicts Phase 1, and Figure 8, Phase 2.

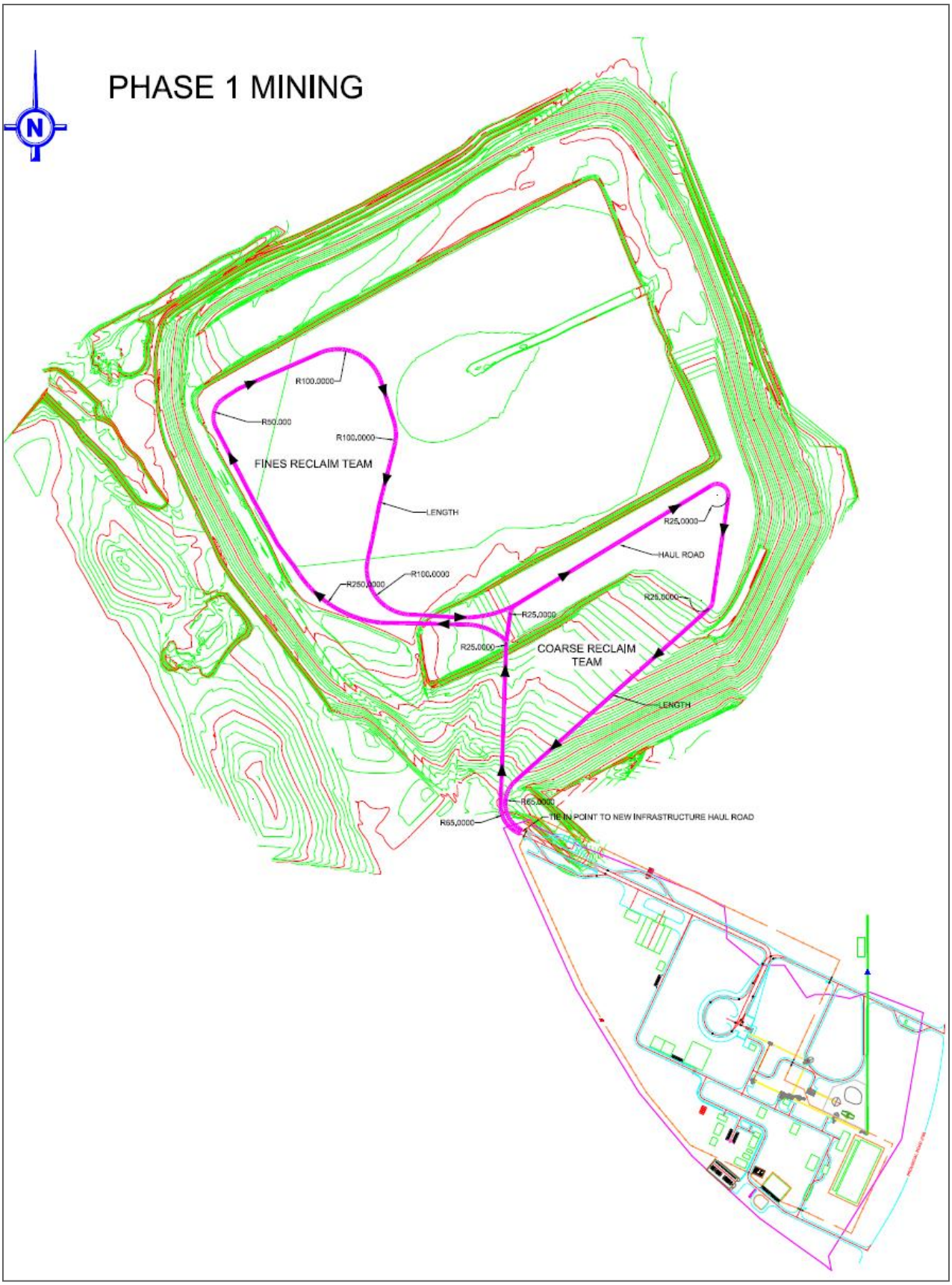

Figure 7: Phase 1 Mining (Klippan)

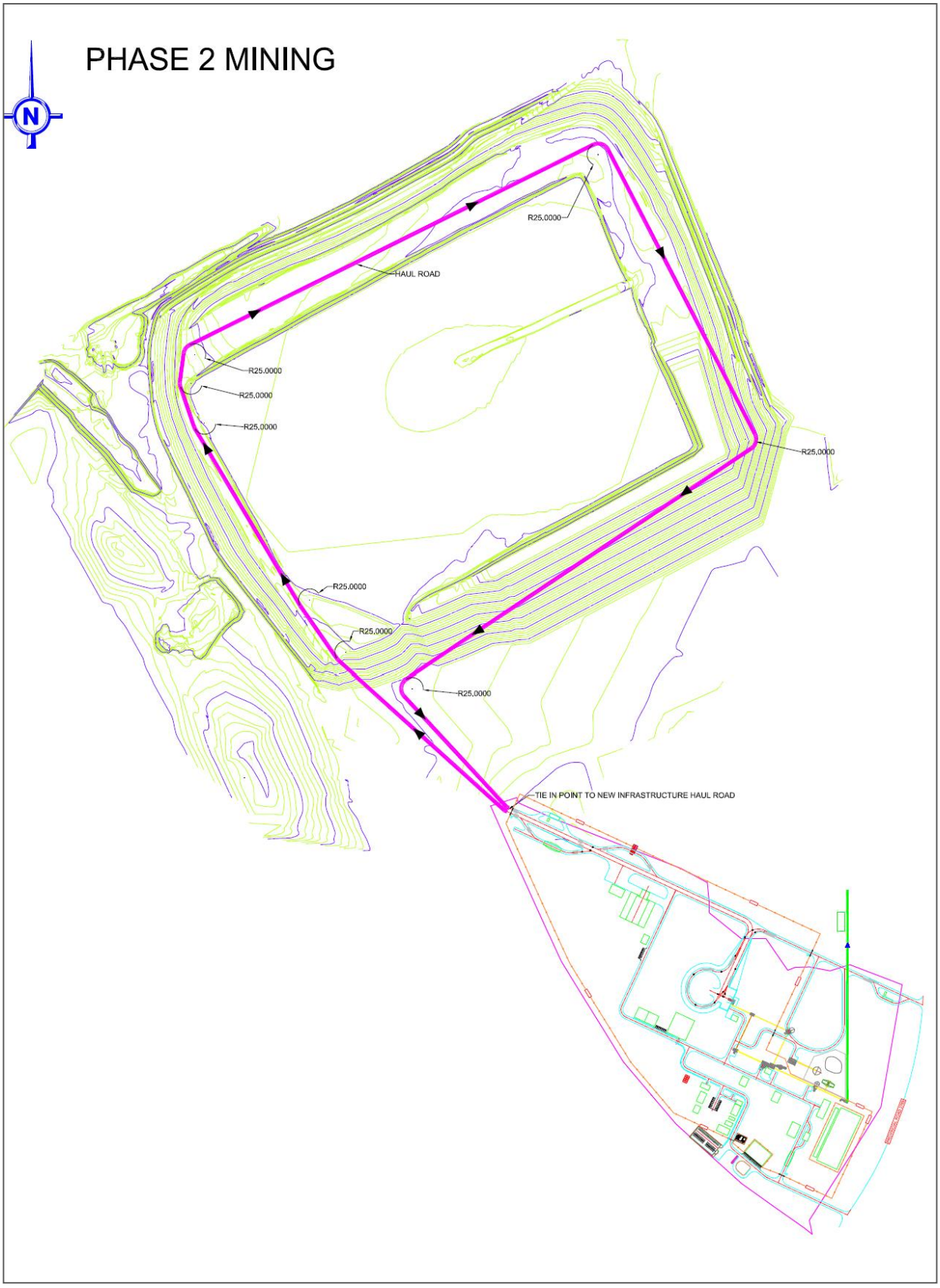

Figure 8: Phase 2 Mining (Klippan)

The following alternatives for the reclamation of the Blaauwkrans Co-disposal Facility have been identified for further assessment:

- Alternative SC_BK_1: Re-claiming the entire dump right from the start in layers of 3m (or less) at a time, including fines and coarse material as the dump is mined away
- Alternative SC_BK_1: Re-claiming the dump in layers of 3m (or less) at a time, including fines and coarse material as the dump is mined away but leaving the yellow boy area in-tact.

4.2.2.2 Ore Processing

The various discard coal sources will be fed into the DHRP. The DHRP will consist of a two run of mine (ROM) tip bins, crushers, conveyors, DMS section, filtration plane and 60,000ton product stockpile. Below product specification material will be washed in a Dense Medium Separation (DMS) plant. Product will be withdrawn from the product stockpile and delivered to the Khanyisa Power Plant via an overland conveyor.

At the Blaauwkrans Co-disposal Facility, the +50mm material will be screened and replaced on the dump. The -50mm material will be loaded via front end loaders and conveyors onto 30t road trucks and transported to the Khanyisa DHRP to be located at Klippan dump.

4.2.2.3 Mine residue

There are two sources of mineral residue:

- Rejects – Oversize, plus 100 mm scalped of at a vibrating screen prior to the plant feed bin.
- Discard – Coarse discard resulting from the DMS process.

Discard from the plant (DHRP) will be delivered to the discard bin from where it will be loaded into ADTs and placed on the new discard disposal site, to be located to the south of the existing Klippan Co-disposal Facility (refer to Figure 3)[31]. The area associated with the proposed location of the new discard disposal facility forms part of the authorised Klippan Co-disposal Facility footprint area, as per the approved Kleinkopje (Khwezela Bokgoni) Colliery Environmental Management Programme Report (EMPr), dated 2012. Refer to Figure 9 below for an extract from the mentioned approved EMPr, indicating the authorised footprint area of the Klippan Co-disposal Facility. The area earmarked for the discard disposal is approximately 43 Ha in size (refer to Table 5).

As per the Pre-feasibility study report, Mineral Residue (Section 5.8), dated December 2012, the existing approved Klippan Co-disposal Facility is large enough to absorb the quantity of mineral residue from the DHRP with certain constraints. The quantities of mineral residue was used to calculated the space required. This space requirement was superimposed onto the approved Klippan footprint, taking into consideration the space not taken up by the Khwezela Bokgoni as arising. It was realised that the mineral residue will have to be deposited in two stages. The first stage on the

[31] Discard from the process undertaken on the Blaauwkrans Co-disposal Facility will be placed back on the facility

rse discard has been reclaimed from
over the project lifespan.

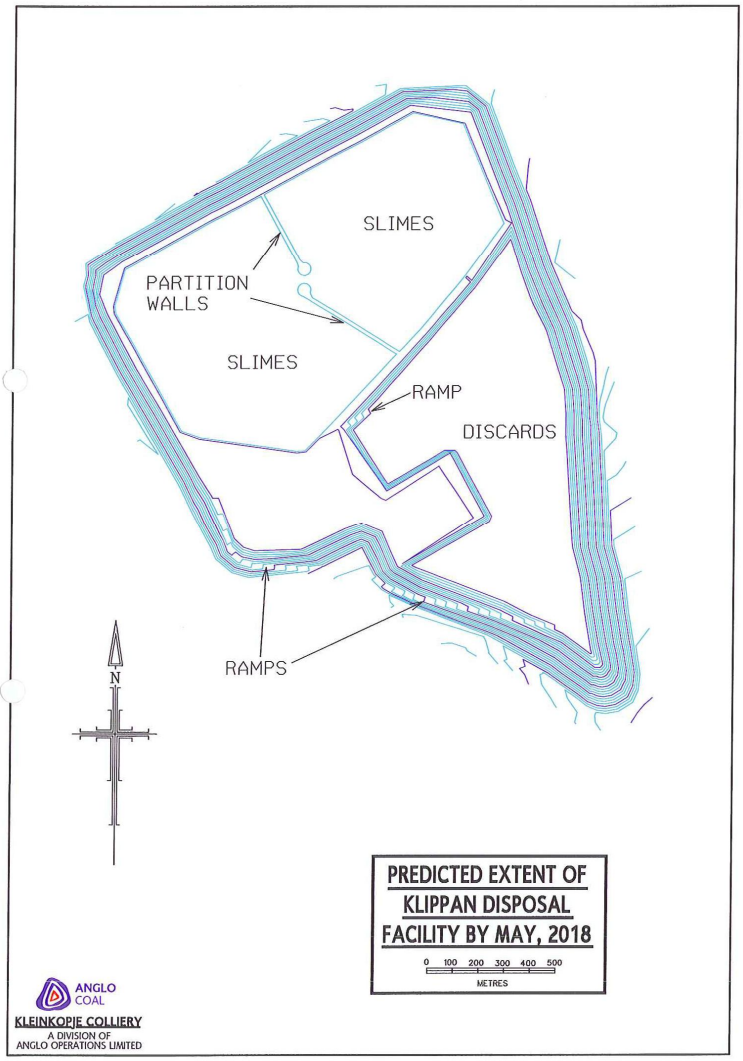

Figure 9: Klippan Co-disposal Facility footprint area (approved Kleinkopje Colliery EMPr, 2012)

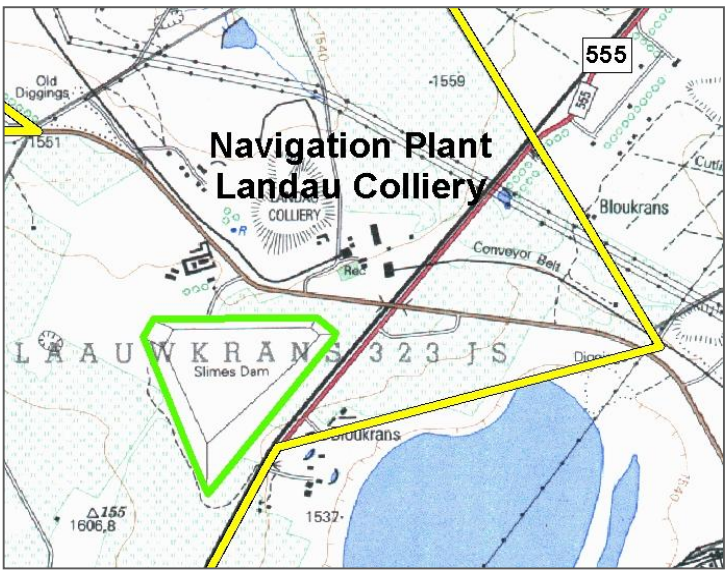

Figure 10: Blaauwkrans Co-disposal Facility footprint area (Landau Colliery EMPr, 2010)

The +50mm discard that was screened out at the Blaauwkrans Co-disposal Facility will remain at Blaauwkrans and will be loaded onto ADT's and placed within the footprint of the existing Blaauwkrans Co-disposal Facility.

The Blaauwkrans Co-disposal Facility layouts and designs are provided in Annexure A.

4.2.2.4 Conveyors and associated infrastructure

Discard coal will be transported from the DHRP (60 000-ton product coal stockpiling area) to the Khanyisa IPP (coal transfer tower) via an overland conveyor, with an accompanying maintenance road.

Three coal conveyor route options have been identified:

- Option 1: The conveyor crosses the provincial road in the direction of the Khwezela Bokgoni product conveyor. The conveyor then runs along the product conveyor (same route as the ACWA ash conveyor). In the north, it crosses the Khwezela Bokgoni product conveyor and ties into ACWA transfer tower.
- Option 2: The conveyor follows a more direct (straight-line route to the transfer station). The conveyor is curved and does not have any intermediate transfer points.
- Option 3: The conveyor runs on the western side of the provincial road to the north of Klippan Co-disposal Facility. It then crosses over/under the provincial road to tie-in to the ACWA transfer station.

Refer to Figure 3 showing the three coal conveyor route options.

The above-listed options will be further investigated during the EIA Phase in terms technical (engineering), socio-economic and environmental aspects. Figures 11 and 12 below provide a side-layout and coal handling flow diagram of the coal conveyor system entering the coal transfer tower at the IPP site.

An overland conveyor substation will also be constructed. However, the exact location is dependent on the preferred conveyor route option (to be further investigated during the EIA Phase). It is anticipated that the mentioned substation will be located in close proximity to the coal transfer tower, therefore the relevant listed activity(ies) related to such location has been included in the application form submitted to the DMR (refer also to Table 5 above). The substation will consist of two transformer bays and a 525V substation. All transformer bays will be bunded as to maintain total volume of transformer oil plus 10%.

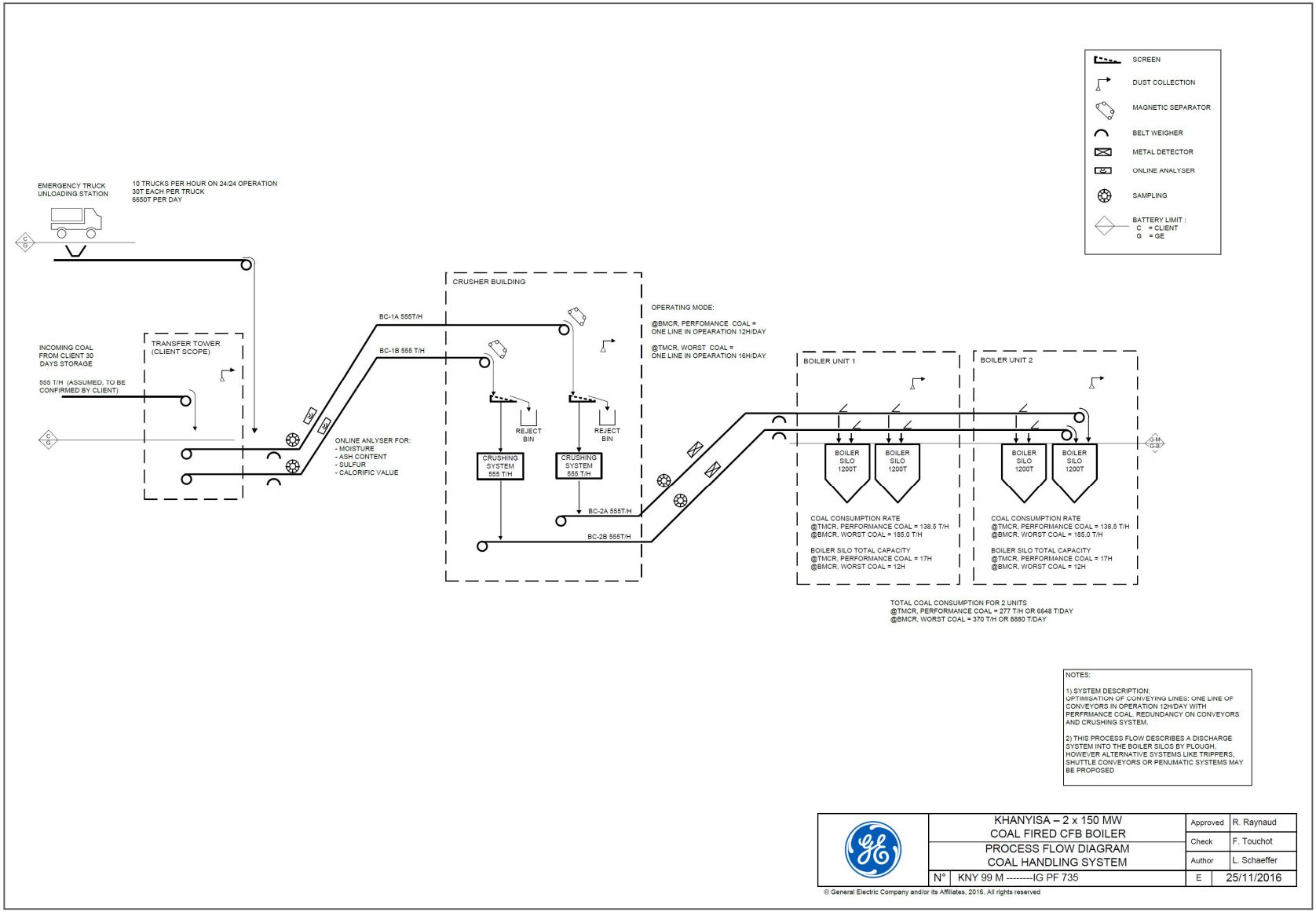

Figure 11: Coal handling flow diagram (provided by ACWA Power, dated 2016)

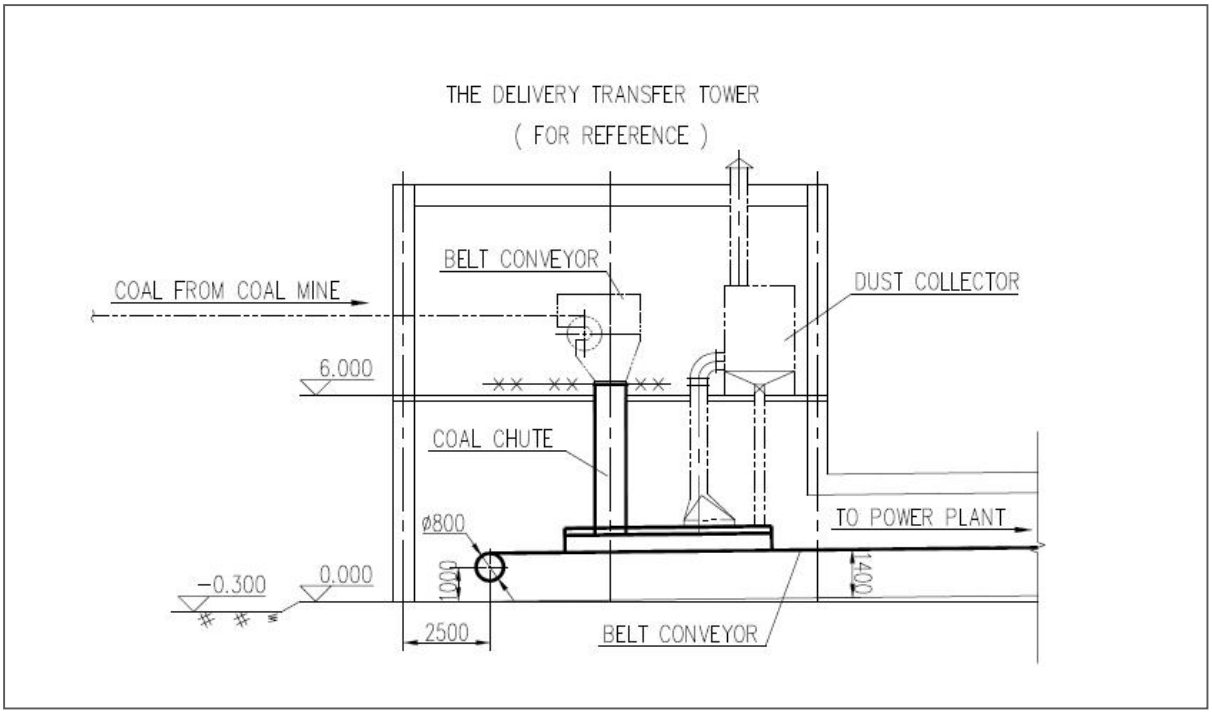

Figure 12: Sketch of Coal transfer tower (as provided by Fuelco, 2017)

4.2.2.5 Roads

The Khanyisa IPP Coal Supply project will also entail the construction and use of roads (and associated structures) within and around the project site (located within the Khwezela Bokgoni mining rights area). These will include:

- An access road junction / intersection with the Provincial Road running from the R544 to the R547 (to the east of the Klippan Co-disposal Facility);
- An LDV Access road on the southern side of the DHRP site;
- HDV Access road on the northern side of the DHRP site;
- Internal roads within and around the DHRP and reclamation sites; and
- An access and maintenance road along the proposed coal conveyor route.

Refer to Figure 3 for the high-level site plan showing some of the major linear infrastructure. Refer also to the preliminary road layouts in Annexure A. More detailed layout plans and designs will be provided as part of the Environmental Impact Assessment Report (EIAR) and EMPr.

Existing roads will be used to truck the discard from the Blaauwkrans Co-disposal Facility to the DHRP. The planned route follows the R547 provincial road from the Navigation plant to the intersection at the Kleinkopje plant, there the trucks will turn right onto the Tweefontein road. The trucks will turn-off from the Tweefontein road into the DHRP. There are no alternative roads that link the two sites.