GAUTENG INDUSTRIAL DEVELOPMENT ZONE (GIDZ)

PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINCT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

DRAFT SCOPING REPORT

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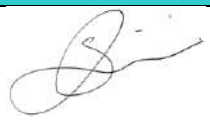
Author	**Sindiso Lubisi** (Environmental Assessment Practitioner)		17 September 2018
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DISCLAIMER

Information contained in this report was based on the information received from Metal Concentrators (Pty) Ltd and the Gauteng Industrial Development Zone (GIDZ) in July to August 2018. Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Marang Environmental and Associates (Pty) Ltd for incomplete or inaccurate data supplied by others. We are aware of the fact that there might have been changes since this report was submitted, however this report and its findings is based on the last information received from the client. To the best of our knowledge the assumptions and findings are correct at the time of submission of the specialist reports. Should any of the assumption or findings prove to be incorrect subsequent to submission of the report we as the specialist cannot be held accountable.

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GAUTENG INDUSTRIAL DEVELOPMENT ZONE (GIDZ)

PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINCT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

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Executive Summary

Marang Environmental and Associates (Pty) Ltd (hereafter referred to as “Marang”) was appointed by the Gauteng Industrial Development Zone (hereafter referred to as the “GIDZ”) to undertake an Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as “MetCon”) Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the “proposed project”).

The GIDZ, as appointed by the Gauteng Department of Economic Development (GDED), have been given the mandate to develop the JMP (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR) within the ORTIA Precinct. The JMP aims to increase employment opportunities and foreign direct investment in the jewellery manufacturing sector. The total size of the JMP site is approximately 7.5 hectares (ha). It should be noted that the proposed MetCon facility will occupy an area of approximately 0.24ha within the JMP site and will specialise in extracting precious and base metals from secondary gold materials (i.e. dorè sourced from other refineries and mines) through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the proposed JMP site. The additional area will be used for parking (vehicles) in the future. As such, the proposed MetCon facility has been identified as a key facility to be incorporated into the JMP site.

It should be noted that a Basic Assessment (BA) process was undertaken in 2009 to obtain Environmental Authorisation (EA) for the development of the original JMP site. The BA was carried out in terms of the 2006 EIA Regulations. The GDED were subsequently issued with an approved EA (GDARD Ref No. GAUT002/09-10/N0021) for the original JMP development by the Provincial Authority, namely the Gauteng Department of Agriculture and Rural Development (GDARD), on 25 July 2011 (**Appendix 8**). The EA covers an area of approximately 6.5ha. The EA was then amended in May 2018 and included a change in the licence holder details from the GDED to the GIDZ. This amendment was subsequently granted by the Department of Environmental Affairs (DEA), and the amended EA was issued on 11 May 2018 (DEA Ref No. 14/12/16/3/3/1/7/94/AM1) (**Appendix 8**). Construction on the JMP site (6.5ha as approved in the EA) commenced in 2013 and is still currently underway. However, construction of the proposed MetCon facility and above-mentioned additional 1ha area has not yet commenced. This will only commence once the necessary authorisations / approvals have been obtained.

The development and inclusion of the proposed MetCon facility within the JMP now requires an EA from the DEA. However, the provincial authority (namely GDARD) will also be consulted. The EIA for the proposed development will be conducted in terms of the EIA Regulations 2014, promulgated in terms of Chapter 5 of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), which came into effect on 8 December 2014, and as amended on 7 April 2017. In terms of these

regulations, a full EIA is required for the proposed development. The proposed project also triggers sub-category 4.17 and 4.2 of Section 21 of the National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004) and therefore requires an Atmospheric Emissions Licence (AEL). All relevant legislations and guidelines will be consulted during the EIA process and will always be complied with.

In light of the above, Marang has compiled this Draft Scoping Report (DSR) on behalf of the GIDZ in order to comply with the requirements of the EIA Regulations 2014 (as amended) in terms of the NEMA. The potential impacts associated with the proposed project have been assessed and are described in the report.

It should be noted that the following environmental parameters were assessed as part of the BA process which was undertaken for the original JMP project in 2009, however no specialist studies / assessments were conducted for these:

- Vehicular Access and Traffic Congestion;
- Biophysical (clearance of vegetation);
- Socio-economic impacts;
- Soil instability and erosion;
- Stormwater run-off volume and velocity;
- Increased Waste Generation;
- Noise pollution; and
- Increased demand/pressure on service infrastructure.

During the BA, overall potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. An assessment of the potential impacts was provided, identifying the impacts that are potentially significant including management recommendations and mitigation measures to reduce the impacts.

The Final Basic Assessment Report (FBAR) compiled as part of the BA process undertaken for the original JMP project in 2009 concluded that the development of the JMP in the OR Tambo International Airport IDZ, is “in line with the region’s Spatial Development Plan”, as well as the adjacent land uses. It further stated that the development will provide a number of “job opportunities during the construction phase” and thereby enhance the local economy. The property on the Remainder of Portion 69 of the Farm Witkoppie No. 64 - IR has “no ecological, archaeological or geohydrological sensitivities” which may be impacted on by the proposed development. If all mitigation measures as stipulated in the FBAR and in the Environmental Management Programme (EMPr) are implemented, the significance of most, if not all, and the potential impacts, as listed above, will be “reduced to ‘medium’ and ‘low’” and reach “environmentally acceptable levels”.

A Scoping Geotechnical Report (assessing the topography, vegetation, geology, and surface and ground water in a geotechnical viewpoint) was also compiled as part of the BA process undertaken for the original JMP project in 2009 and is thus also available (**Appendix 9**). While this report raised concerns about the presence of a large trench that discharges to the “triangular very wet area” (wetland), it recommended feasible mitigations and concluded that the proposed development has “no fatal flaws”. Furthermore, a more extensive geotechnical assessment was completed for the JMP development site in 2015, approximately four (4) years after the EA was issued, which also was in consonance with the findings of the initial Scoping Geotechnical Report. This above-mentioned geotechnical assessment has also been provided in **Appendix 9**.

It should be noted that only the FBAR and the above-mentioned Geotechnical reports were completed during the BA process undertaken for the original JMP project in 2009 to support the above assessment conclusions with no other specialist reports or documentation in this regard.

An extensive Geotechnical study and Traffic Impact (scoping and extensive) Assessment, which were completed recently in 2015 and 2016 respectively, for the same JMP development site, are also available (**Appendix 9**). The traffic impact assessment recommended road upgrades which will see the surrounding road network being able to accommodate the development traffic at acceptable levels, and further concluded that the development be approved from a traffic point of view.

It should be noted that the above-mentioned Geotechnical and Traffic specialist assessments will be reviewed as part of this EIA process for the proposed development and inclusion of the MetCon facility to certify that the specialist assessments are still relevant, and the findings remain valid. The specialists who conducted the respective studies / assessments will be consulted in order to undertake this review and provide confirmation. Proof that the specialists have been consulted in order to review the above-mentioned studies / assessments is provided in **Appendix 9**.

It can therefore be confirmed that only two (2) specialist assessments / studies are available for the original development of the JMP site. These include;

- Geotechnical Studies, and
- Traffic Impact Assessment.

In addition, the following specialist reviews have been conducted for the following environmental parameters as part of the EIA process for the proposed development and inclusion of the MetCon facility within the JMP site:

- Heritage;
- Visual;
- Noise;
- Soil and Land Capability; and
- Surface Water;

It should also be noted that a full Air Quality Impact Assessment (AQIA) has also been undertaken as part of this EIA process, the results of which have been included in this DSR (**Appendix 6**).

The results of the above-mentioned specialist reviews and AQIA are detailed in **Table i** below.

Table i: Outcomes and Recommendations of Specialist Reviews and/or Assessments

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
Surface Water	None	From the results of the review, it was determined that the findings of the Basic Assessment Report (BAR) are likely to still hold true but are not absolute. The recommendations presented in the BAR and EMPr are appropriate, relevant/necessary, sensible and achievable; and the proposed mitigatory measures are considered the best options available. Additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required have been provided in the report.	Yes. A DWS Risk Assessment Matrix as promulgated in Regulation GN R. 509 of 2016 and the appropriate water use authorisation process (namely a General Authorisation) will be undertaken as part of the EIA process. This is detailed in section

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		The information on the adjacent wetlands has been presented, at a high level, in the report. This information was used to inform the impact assessment undertaken according to the Marang Impact Rating methodology. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on the freshwater resources of the area. Due to the distance between the activities and the watercourses in the area, and the presence of existing developments between the study area and watercourses of the area, limited to negligible impact from the proposed activities on the wetlands is expected to occur. Fulfilment of Regulation GN R. 509 of 2016 now needs to be considered within all areas within 500m of the proposed development site. As such, the Department of Water and Sanitation (DWS) Risk Assessment Matrix as promulgated in Regulation GN R. 509 of 2016 and the appropriate water use authorisation process (namely a General Authorisation) will be undertaken as part of this EIA process. • ***Construction Phase Recommendations***: o Contractor laydown areas and material storage facilities must be placed within the study area and must not be placed within 30m of the wetlands in line with GDARD and NEMA requirements; o All vehicle re-fuelling is to take place on a sealed surface within the study area and must not be permitted to occur within 30m of the wetlands; o All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is absolutely essential; o Retain as much indigenous vegetation as possible; o Excavated materials should not be contaminated, and it should be ensured that the minimum surface area is taken up, however, the stockpiles may not exceed 2m in height;	10, Plan of Study for the EIA.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		○ All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion and sedimentation of the wetlands; and ○ Immediate revegetation of all stockpiles which are to remain on site post-construction. • ***Operational Phase Recommendations***: ○ Clean and dirty water management must take place in order to prevent contaminated runoff from the precious metal refinery facility creating preferential flow paths which may reach the wetlands. Clean and dirty water management systems must be implemented prior to commencement of construction; and ○ Suitable waste disposal facilities should be provided. These facilities should regularly be emptied and taken to a registered waste disposal facility; and ○ All recyclable waste should be recycled as far as possible.	
Soil and Land Capability	None	From the results of the review, it was determined that the findings of the Basic Assessment Report (BAR) are likely to still hold true but are not absolute. The recommendations presented in the BAR and Environmental Management Programme EMPr are appropriate, relevant/necessary, sensible and achievable; and the proposed mitigatory measures outlined in this report are considered the best options available. The study area is located within a highly industrialised and urbanised area with no active agricultural practices within or in the immediate vicinity of the study area. The eastern half of the study area is situated within the Environmental Management Framework (EMF) Zone 5 (Industrial and large commercial focus zone) (EMF, 2015). The proposed facility falls within the EMF Zone 5. In addition, the study area is currently under development and the soils have been anthropogenically transformed, thus these soils are likely to have little to no bearing on agricultural productivity. Thus, from a soil, land use and land capability point of view, the impact significance on	No

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		the loss of high agricultural potential soils is anticipated to range between very low and negligible. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on soil, land use and land capability. Additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required have been provided in the specialist review. • ***Construction Phase Recommendations***: o All development footprint areas to remain as small as possible; o Laydown areas should be located within disturbed soils (anthrosols) to avoid compaction of natural soils; o All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion; o Stockpile height should not exceed 2 meters o Vehicle re-fuelling is to take place on a sealed surface within the study area; and o Contamination prevention measures should be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this should always be implemented and made available and accessible to the contractors and construction crew conducting the works on site for reference. • ***Operational Phase Recommendations***: o All vehicles should remain within demarcated roads as far as practically possible; o Stormwater management must take place to prevent contaminated runoff from the precious metal refinery facility; o Waste product should be recycled as best as practically possible to minimise sources of soil contamination; and o Contamination prevention measures should be addressed in the EMPr for the proposed development, and this should be	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		implemented and made available and accessible at all times to the contractors and construction crew conducting the works on site for reference.	
Visual	None	It was evident from the review of the Basic Assessment Report (BAR) that very little to no information was presented on visual impacts. However, based on the geographic setting of the proposed Precious Metals Refinery Facility (PMRF), the development is not likely to lead to any change in the visual character and sense of place of the surrounding environment. Both the EMPr and the Environmental Authorisation set conditions to limit the visual impact of the development. Should these conditions be adhered to, the significance of the impact on visual resources and the visual landscape are considered negligible. The development of the proposed PMRF is located within a highly industrialised and urbanised area, with the eastern portion of the proposed PMRF situated within the Industrial and Large Commercial Zone (Zone 5) of the Environmental Management Framework (EMF, 2015). Since the surrounding area has been subject to development and the proposed PMRF is situated within a footprint where buildings are already constructed, the visual character and sense of place of the area will not be significantly negatively affected. Furthermore, since the proposed PMRF is situated adjacent to the OR Tambo International Airport, none of the buildings are permitted to be higher than two storeys (approximately 12m), therefore the proposed buildings associated with the PMRF is congruous with the surrounding existing buildings from the Jewellery Manufacturing Precinct (JMP). Based on the findings of the impact assessment, the proposed PMRF poses a low significance of impact on the visual character and aesthetics of the area. Additional information from desktop sources with emphasis on climate, topography, land uses and land cover as well as protected areas within a 10km radius from the proposed development was gathered to assist with decision making for additional listed activities for which authorisation may be required. • ***Construction Phase Recommendations:***	No

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		○ The development footprint area should remain as small as possible; ○ No rubble should be disposed of at random within the site, but within relevant removable bins, where recyclable and non-recyclable waste is kept separate; ○ Contractor's laydown areas and temporary storage facilities should be located within the development footprint and cordoned off with shade cloth to conceal and minimise the visual impact; ○ Any topsoil stockpiled should either be utilised during landscaping or it should be shaped and rounded to blend in with the surrounding landscape and to minimise visual contrast; ○ Vegetation, especially large and tall trees bordering the Bonaero Park residential area south of the PMRF should be retained if feasible; ○ It must be ensured that the buildings fit into its surroundings through the appropriate use of colour and material selection. Natural Colours should be used in all instances. Should the stacks comprise metal surfaces, it must be painted in a colour that blends in with the natural environment. White structures are to be avoided; ○ A dust management plan must be implemented to reduce dust generation. Such dust control measures may include, but is not limited to; watering of the footprint area and any access roads, speed limits of 20km/h must be adhered to and should it be practical stockpiles should be covered with a tarpaulin on windy days to avoid soil and dust being blown away; ○ Construction activities should be restricted to daylight hours as far as possible; ○ A lighting engineer may be consulted to assist in the placement of temporary and permanent light fixtures, to reduce the visual impact associated with glare and light trespass; and ○ No naked / unshielded light sources are to be used. It is recommended that "full cut-off" light fixtures that direct light only below the horizontal is to be used.	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		• ***Operational Phase Recommendations:*** o Operational activities of the PMRF and gas emissions at the stacks; o An increase in vehicular movement and level of human activity in the area due to operational activities; o Exterior and security lighting around the buildings and parking facilities, possibly contributing to light pollution; o Potential lighting at night from operational vehicles; and o Light sources temporarily stationed for maintenance activities conducted at night, in case of emergencies. o It is recommended that routine maintenance on buildings and other structures be implemented, to ensure that the paint of buildings are not weathered and that the buildings fit into the colour palette of the surroundings; o In the event that a green open space is demarcated and landscaped, it must be ensured that the vegetation be maintained and controlled to reduce the risk of potential alien floral species proliferation and to keep it aesthetically appealing to the receiving environment; o It is recommended that maintenance activities should not take place at night or on weekends, unless absolutely essential; o Making use of motion detectors on security lighting at buildings and parking facilities, ensures that the site will remain in relative darkness, until lighting is required for security and maintenance purposes; o No naked / unshielded light sources are to be directly visible from a distance; and o The PMRF should be screened through the use of a clearVU fence, or equally approved, which will result in a more unified and tidy appearance	
Heritage	None	A brief desktop study was undertaken which consisted of an assessment of old aerial photographs. Aerial photographs taken in 1941, 1952, 1969 and 1976 were obtained and included in the study. Neither one of these images depict any buildings or heritage sites within the study area. In 1941 a plantation was growing across the study area and its surroundings. Eleven years later, in 1952, this	No. It is the specialist's professional opinion that there is no need for a Heritage Impact Assessment.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		plantation had almost entirely been cut down. By 1969 the remaining trees from the plantation started growing and expanding again, albeit in an unmanaged way suggesting that the study area was not farmed or formally used for any particular purpose. By 1976 signs for earthworks and excavations within the study area started appearing, although sections of it still comprised trees. The site was assessed in the field by way of a brief walkthrough undertaken by Polke Birkholtz, an experienced archaeologist / heritage specialist. The fieldwork showed that the study area is almost entirely disturbed and construction on the jewellery precinct is at an advanced stage. The following recommendations are made: ▪ Despite the fact that study area was assessed by way of a detailed investigation of aerial photographs, no evidence for any buildings or heritage sites could be found on any of these old depictions of the study area. Furthermore, the walkthrough also did not reveal any evidence for archaeology or heritage, even though sections of intact soil profiles that were exposed by construction were scrutinised during the walkthrough. As a result, it is my professional opinion that there is no need for a Heritage Impact Assessment on this project.	
Air Quality	None	Particulate and gaseous emissions were identified for operations associated with the proposed facility and will be emitted from the following key sources: ▪ Jewellers secondary gold material incineration in roasting oven; ▪ Gas (fuel) combustion installation (roasting oven); ▪ Chemical refining process; ▪ Melting of material in induction furnaces and adding fluxes; and ▪ Casting of material. The abovementioned activities trigger sub-category 4.17 (precious and base metal production and refining) and 4.2 (combustion installations) in terms of S21 of NEM:AQA (Act No. 39 of 2004). As such, the proposed facility requires an AEL to operate. While there were other identified existing key sources of air pollution surrounding the project site which also need to be taken into account, Marang	No. It should however be noted that an AEL will be obtained for the proposed development.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		predicted low unmitigated incremental concentrations. MetCon do plan to install abatement equipment, as per their current design at the MetCon Centurion Plant. Under the mitigated scenario, very low concentrations were observed within 2 km from the facility, as the abatement equipment (scrubber and baghouse) has an associated emission control efficiency of approximately 98%. Therefore, Marang further concluded that the development be approved from an Air Quality point of view. • ***Operational Phase Recommendations***: o The proposed facility must install abatement equipment (baghouse and scrubber) as per their current design at the existing MetCon Centurion Plant. The abatement equipment must achieve at least 90% control efficiency and must ensure compliance with the minimum emission standards for sub-category 4.17 in terms of S21 of the NEM:AQA listed activities. Additional recommendations include: o MetCon must apply for an AEL prior to the commencement of operations. All conditions of the AEL must be complied with. o Appoint a responsible person, such as an emission control officer or safety, health & environmental manager, to ensure compliance with the AEL. o Once operational, conduct stack emissions monitoring on all stacks for the relevant listed activity and ensure compliance with the minimum emission standards, with the use of abatement equipment. Ensure that monitoring is undertaken in accordance with nationally or internationally acceptable methods. o Ensure that all unit processes & apparatus used for undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing emissions, are at all times properly maintained and operated. o Submit an annual AEL report within the required timeframe. o Submit compliance audit reports annually. o Once operational, maintain and report monthly to the authority a complaint	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		register. Should a complaint be logged, a report in the required format as per the AEL, should be submitted to the authority. o Register and report on the NAEIS. Category A (listed activities) are required to report their emissions on the NAEIS annually. The NAEIS is a national emissions inventory. o Maintenance and pollution prevention plans should be developed for the facility. o Undertake regular training of all key employees to ensure effective implementation of the AEL requirements, maintenance and pollution prevention plans.	
Noise	None	If only daytime activities are planned, no mitigation measures are recommended. If night-time activities are planned (after 22:00 at night, before 06:00) it is recommended that MetCon: ▪ measure the typical night-time ambient sound levels in the area prior to the project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not raise the noise levels with more than 7 dB (Noise Control Regulations) and ideally, does not raise the ambient sound levels with more than 3 dB (International Finance Corporation recommendation). ▪ select appropriate noise mitigation measures (to be considered during the planning stage) which may include: o Eliminating the noise source where possible at night; o The installation of one or more acoustical silencer(s) or enclosures; o Acoustical treatment of ducts and exhaust stacks; o A change in equipment, controlling the speed of the fans/blowers; o Moving the noise source further from the residential area (if possible). • ***Operational Phase Recommendations***: o No additional mitigation required for activities during daytime (06:00 – 22:00) operations. o If night-time activities are required, MetCon should measure the typical night-time ambient sound levels in the area prior to the	No.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not raise the noise levels with more than 7 dB (Noise Control Regulations), ideally, no more than 3 dB (International Finance Corporation recommendation). o Other measures include: - Minimise night-time activities that will require the use of the baghouse stack and blowers at night. - The design of the baghouse stack exit to ensure a more flared design, or the use of a silencing system at the exit. - Enclose the blowers in a structure to reduce the noise levels from this source. o The reduction of the gas exit velocities at night.	

The above-mentioned specialist reviews (namely Heritage, Freshwater, Visual, Soil and Land Capability and Noise) and assessments (namely Air Quality, Traffic and Geotechnical) were conducted to address the potential impacts relating to the proposed development. Impact assessments were conducted as part of the specialist reviews and assessments to ascertain the level of each identified impact, as well as mitigation measures which may be required. The potential positive and negative impacts associated within these reviews and assessments have been evaluated and rated accordingly. The results of the specialist reviews and impact assessments have indicated that no fatal flaws exist as a result of the proposed project.

However, the EIA Phase will (where possible) culminate in the compilation of detailed mitigation measures to reduce impacts and the identification of sensitive areas within the site which may require more specific management measures. The EIA Phase will also aim to optimise and improve potential positive impacts that may result from the proposed development. Furthermore, the EMPr of the project will detail mitigation and management measures, in response to the detailed assessment, and will be undertaken towards the end of EIA phase of the project. Should this project receive a positive EA, the EMPr will help inform the project proponent and appointed contractors through the final design, construction and operational phases of the proposed project.

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LIST OF ABBREVIATIONS

AEL	Air Emissions License
ACSA	Airport Company of South Africa
AGIS	Agricultural Geo-Referenced Information System
APPA	Atmospheric Pollution Prevention Act (Act No. 45 of 1965)
AQA	Air Quality Assessment
AQIA	Air Quality Impact Assessment
ATNS	Air Traffic and Navigation Services SOC Limited
ASTM D1739	The American Society for Testing and Materials standard method for collection and measurement of dust fall (Settleable Particulate Matter)
BA	Basic Assessment
C-Plan	Gauteng Conservation Plan
C&RR	Comments and Response Report
CAA	Civil Aviation Act, 2009 (Act No. 13 of 2009)
CARA	Conservation of Agricultural Resources Act No. 43 of 1983
CBA	Critical Biodiversity Area
CBD	Central Business District
CH_4	Methane
CO	Carbon Monoxide
$CO_{2\text{-eq}}$	Carbon Dioxide equivalents
CoE	City of Ekurhuleni
DD	Due Diligence
DEA	Department of Environmental Affairs
DEIAr	Draft Environmental Impact Assessment Report
DEMPr	Draft Environmental Management Programme
DSR	Draft Scoping Report
DoI	Declaration of Interest
DTI	Department of Trade and Industry
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECA	Environment Conservation Act (Act No 73 of 1989)
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMPR	Environmental Management Programme
ESA	Ecological Support Area
FBAR	Final Basic Assessment Report
FGM	Focus Group Meeting

FEIAR	Final Environmental Impact Assessment
Fe_2O_3	Hematite
FeOOH	Goethite
FSR	Final Scoping Report
GA	General Authorization
GDARD	Gauteng Department of Agriculture and Rural Development
GDED	Gauteng Department of Economic Development
GGDA	Growth & Development Agency
GHG	Greenhouse Gas
GIDZ	Gauteng Industrial Development Zone
GIFA	Gauteng Infrastructure Financial Agency
GN	Government Notice
GPS	Geographic Positioning System
HFCs	Hydrofluorocarbons
HPA	Highveld Priority Area
IPAP	Industrial Policy Action Plan
IRPTS	Integrated Rapid Public Transport System
JMP	Jewellery Manufacturing Precinct
MAP	Mean Annual Precipitation
MetCon	Metal Concentrators SA (Pty) Ltd
N_2O	Nitrous Oxide
NAEIS	National Atmospheric Emissions Inventory System
NDP	National Development Plan
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:BA	National Environmental Management: Biodiversity Act 2004, (Act No. 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
NFEPA	National Freshwater Ecosystem Priority Area
NHRA	National Heritage Resources Act No. 25 of 1999
NMT	Non-Motorised Transport
NO_2	Nitrogen Dioxide
NPAES	National Protected Areas Expansion Strategy
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)
NWA	National Water Act 1998 (Act No. 36 of 1998)
O_3	Ozone
ORTIA	OR Tambo International Airport

PAEL	Provisional Air Emissions License
PFCs	Perfluorocarbons
PM	Particulate Matter
PMRF	Precious Metals Refinery Facility
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANRAL	South African National Road Agency SOC Ltd
SANS	South African National Standards
SAPAD	South African Protected and Conservation Areas Databases
SEZ	Strategic Economic Zone (Special, Economic and Industrial Development Zones)
SF_6	Sulphur hexafluoride
SHE	Safety, Health and the Environment
SIP	Strategic Infrastructure Projects
SO_2	Sulphur Dioxide
WML	Waste Management Licence
WULA	Water Use Licence Authorisation

LIST OF APPENDICES

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- Appendix 7A – Proof of Site Notices & BID Distribution
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1. INTRODUCTION

Marang Environmental and Associates (Pty) Ltd (hereafter referred to as “Marang”) was appointed, in terms of Section 12, Chapter 3 of the National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998) Environmental Impact Assessment (EIA) Regulations, 2014 (as amended in April 2017) by the Gauteng Industrial Development Zone (hereafter referred to as “GIDZ”) to undertake an EIA process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as “MetCon”) refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the “proposed project”).

It should be noted that a Basic Assessment (BA) process was undertaken in 2009 to obtain Environmental Authorisation (EA) for the development of the original JMP site. The BA was carried out in terms of the 2006 EIA Regulations. The Gauteng Department of Economic Development (GDED) were subsequently issued with an approved EA (GDARD Ref No. GAUT002/09-10/N0021) for the original JMP development by the Provincial Authority, namely the Gauteng Department of Agriculture and Rural Development (GDARD), on 25 July 2011 (**Appendix 8**). The EA covers an area of approximately 6.5ha. The EA was then amended in May 2018 and included a change in the licence holder details from the GDED to the GIDZ. This amendment was subsequently granted by the National Department of Environmental Affairs (DEA), and the amended EA was issued on 11 May 2018 (DEA Ref No. 14/12/16/3/3/1/7/94/AM1) (**Appendix 8**). Construction on the JMP site (6.5ha as approved in the EA) commenced in 2013 and is still currently underway.

The GIDZ, as appointed by the GDED, have been given the mandate to develop the JMP (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR) within the ORTIA Precinct. The JMP aims to increase employment opportunities and foreign direct investment in the jewellery manufacturing sector. The total size of the JMP site is approximately 7.5 hectares (ha). The proposed MetCon facility will occupy an area of approximately 0.24ha within one (1) of the blocks of the JMP site (please refer to the Site Layout Map attached in **Appendix 5**) and will specialise in extracting precious and base metals from secondary gold materials (i.e. dorè sourced from other refineries and mines) through a chemical treatment refining process. As such, the proposed MetCon facility has been identified as a key facility to be incorporated into the JMP site. These activities trigger sub-category 4.2 (combustion installations) and sub-category 4.17 (precious and base metal production and refining) in terms of Section 21 (S21) of the National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004) and will therefore require an Atmospheric Emissions Licence (AEL).

The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the proposed JMP site. The additional area will be used for parking (vehicles) in the future. No construction has taken place over this area, however, a boundary fence is present. It should be noted that the area was already cleared and consisted of bare soil when the GIDZ were given the land to incorporate into the proposed JMP development. As mentioned above, construction on the JMP site (6.5ha as approved in the EA) commenced in 2013 and is still currently underway. However, construction at the proposed MetCon facility and above-mentioned additional 1ha area has not yet commenced. This will only commence once the necessary approvals / authorisations have been obtained.

In light of the above, the development and inclusion of the proposed MetCon facility within the JMP requires an EA from the DEA. However, the provincial authority, namely the GDARD, will also be consulted. The EIA for the proposed development will be conducted in terms of the EIA Regulations 2014, promulgated in

terms of Chapter 5 of the NEMA (Act No. 107 of 1998), which came into effect on 8 December 2014, and as amended on 7 April 2017. In terms of these regulations, a full EIA is required in order to obtain an EA for the proposed development.

1.1. Objectives of Scoping Report

This Draft Scoping Report (DSR) has been prepared as part of the EIA process to fulfill the required objectives of a scoping process as outlined in Appendix 2 of the NEMA EIA Regulations, 2014 (as amended). In terms of the NEMA EIA Regulations 2014 (as amended), published under GN R. 326, state that 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 identification of impacts and risks and ranking process of such impacts and risks;
d) identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification 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.

Furthermore, this scoping report contains information as outlined in Section 2(1) of Appendix 2 of the NEMA EIA Regulations, 2014 (as amended) which is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the EIA process. The content requirements for a scoping report, as well as details of which section of the report fulfils these requirements, are shown in **Table 1-1** below.

Table 1-1: Requirements of a Scoping Report

Content Requirements	Applicable Section
a) details of- i. the EAP who prepared the report; and ii. the expertise of the EAP, including a curriculum vitae;	Details of the EAP and full project team are included in section 1.5 on page 10. The expertise (including curriculum vitae) of the EAP and full project team are included in **Appendix 2**.
b) the location of the activity, including- i. the 21-digit Surveyor General code of each cadastral land parcel;	The location of the proposed project is detailed in on page 38 of the report.

ii. iii.	where available, the physical address and farm name; where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	
c) i. ii.	a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is- a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	A map of the regional locality is shown in section 5.1 on page 36. Additionally, all project maps are included in **Appendix 5**. Coordinates are shown in section 5.2 on page 38.
d) i. ii.	a description of the scope of the proposed activity, including- all listed and specified activities triggered; a description of the activities to be undertaken, including associated structures and infrastructure;	The listed and specified activities triggered as per NEMA are detailed in section 3.1.1 on page 19. The technical project description is included in section 2 on page 15. This includes a description of activities to be undertaken, including associated structures and infrastructure.
e)	a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	A description of all legal requirements and guidelines is provided in section 3 on page 19. This includes key legal and administrative requirements as well as key development strategies and guidelines.
f)	a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	The need and desirability of the proposed project is discussed in section 4 on page 35.
g) i. ii. iii. iv.	a full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including - details of all the alternatives considered; details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Alternatives have been discussed in section 2.4 on page 17. It should however be noted that no site or layout alternatives have been considered and/or assessed as part of this EIA process.

v. the impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; vi. the methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; viii. the possible mitigation measures that could be applied and level of residual risk; ix. the outcome of the site selection matrix; x. if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and xi. a concluding statement indicating the preferred alternatives, including preferred location of the activity;	
h) a plan of study for undertaking the environmental impact assessment process to be undertaken, including- (i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity; (ii) a description of the aspects to be assessed as part of the environmental impact assessment process; (iii) aspects to be assessed by specialists; (iv) a description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists; (v) a description of the proposed method of assessing duration and significance; (vi) an indication of the stages at which the competent authority will be consulted; (vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and	The plan of study for the EIA phase is included in section 10 on page 94. Alternatives have been discussed in section 2.4 on page 17.

	(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process; (ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	
i)	an undertaking under oath or affirmation by the EAP in relation to- i. the correctness of the information provided in the report; ii. the inclusion of comments and inputs from stakeholders and interested and affected parties; and iii. any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	The EAP declaration is included in **Appendix 3**.
j)	an undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	The EAP affirmation and declaration of interest is included in **Appendix 3**. The plan of study is included within this DSR which has been made available for review and comment by I&APs. Should any I&APs identify any issues or concerns with respect to the plan of study for undertaking the EIA, it will be updated accordingly.
k)	where applicable, any specific information required by the competent authority; and	At this stage there is no specific information required by the competent authority. However, a record of authority consultation is kept in section 1.4 on page 8, and should there be any specific information requested, this will be detailed in the same section.
l)	any other matter required in terms of section 24(4)(a) and (b) of the Act.	All requirements in terms of section 24(4)(a) and (b) of the Act have been met in this report.

1.2. Applicable documentation

The following documentation should be read in conjunction with this Scoping Report:

- Gauteng Industrial Development Zone Strategic Plan (2014-2019) – Updated 2017 February.
    - This document, similar to any programme management and planning documentation, outlines all the programmes, objectives, targets and indicators of the GIDZ over a medium period as well as relevant legislative requirements and mandates thereof.

- South African Special Economic and Industrial Development Zones (SEZ).
    - The GIDZ Project, as described in page 12 of the SEZ document, forms part of the Special Economic Zones (SEZ) aimed at the stimulating economic development through the JMP project.

The above-mentioned documents have been provided in **Appendix 1**.

1.3. Specialist Reviews and/or Assessments

A BA process was undertaken in 2009 for the development of the existing JMP development site under the guidance of the then NEMA, 1998 (Act No. 107 of 1998), as amended, and the EIA Regulations, 2006. Inputs were "made by specialists to the extent that may be necessary" in terms of Section 23(2)(j) of the NEMA Regulations, 2006. As such, the Final Basic Assessment Report (FBAR), included the following environmental impacts for the construction, operation, and decommissioning phases of the original above-mentioned JMP development. The following environmental parameters were assessed and included in the FBAR compiled as part of the BA process undertaken for the original JMP project in 2009, however, only a Scoping Geotechnical Report was available as an extension to the BA.

- Vehicular Access and Traffic Congestion,
- Biophysical (clearance of vegetation),
- Socio-economic impacts,
- Soil instability and erosion,
- Stormwater run-off volume and velocity,
- Increased Waste Generation,
- Noise pollution, and
- Increased demand/pressure on service infrastructure.

In 2015 and 2016, two (2) detailed specialist assessments were conducted. These included the following:

- Geotechnical; and
- Traffic Impact Assessment.

The above-mentioned Geotechnical and Traffic studies / assessments are included in **Appendix 9**.

During the original BA process, overall potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. An assessment of the potential impacts was provided, identifying the impacts that are potentially significant including management recommendations and mitigation measures to reduce the impacts.

The FBAR concluded that the development of the JMP in the OR Tambo International Airport IDZ, is "in line with the region's Spatial Development Plan", as well as the adjacent land uses. It further stated that the development will provide a number of "job opportunities during the construction phase" and thereby enhance the local economy. The property on the Remainder of Portion 69 of the Farm Witkoppie No. 64 - IR has "no ecological, archaeological or geohydrological sensitivities" which may be impacted on by the proposed development. If all mitigation measures as stipulated in the FBAR and in the Environmental Management Plan (EMPr) are implemented, the significance of most, if not all, and the potential impacts, as listed above, will be "reduced to 'medium' and 'low'" and reach "environmentally acceptable levels".

A Scoping Geotechnical Report (assessing the topography, vegetation, geology, and surface and ground water in a geotechnical viewpoint) was also compiled as part of the BA process undertaken for the original JMP project in 2009 and is thus also available (**Appendix 9**). While this report raised concerns about the presence of a large trench that discharges to the "triangular very wet area" (wetland), it recommended feasible mitigations and concluded that the proposed development has "no fatal flaws". Furthermore, a more extensive geotechnical assessment was completed for the JMP development site in 2015, approximately four (4) years after the EA was issued, which also was in consonance with the findings of the initial Scoping Geotechnical Report. This above-mentioned geotechnical assessment has also been provided in **Appendix 9**.

It should be noted that only the FBAR and above-mentioned Geotechnical report were completed during the BA process undertaken for the original JMP development in 2009 to support the above assessment conclusions, with no other specialist reports or documentation in this regard.

An extensive Geotechnical study and Traffic Impact (scoping and extensive) Assessment, which were completed recently in 2015 and 2016 respectively, for the same JMP development site, are however also available (**Appendix 9**). The Traffic Impact Assessment recommended road upgrades which will see the surrounding road network being able to accommodate the development traffic at acceptable levels, and further concluded that the development be approved from a traffic point of view.

It should be noted that the above-mentioned Geotechnical and Traffic specialist assessments / studies will be reviewed as part of this EIA process for the proposed development and inclusion of the MetCon facility to certify that the specialist assessments are still relevant, and the findings remain valid. The specialists who conducted the respective studies / assessments will be consulted in order to undertake this review and provide confirmation. Proof that the specialists have been consulted in order to review the above-mentioned studies / assessments is provided in **Appendix 9**.

It can thus be confirmed that only two (2) specialist assessments / studies were undertaken as part of the development of the original JMP site. These include;

- Geotechnical Studies, and
- Traffic Impact Assessment.

After consultation with the DEA on the 2nd of July 2018 (see attached Meeting Minutes in **Appendix 7G**), It was decided that various specialists would be required to review the findings of the FBAR compiled as part of the BA process undertaken in 2009, including all other specialist studies that have been completed for the JMP site (as defined in terms of Part 2 of Chapter 3 of the NEMA EIA Regulations, 2014, as amended). All correspondence with the DEA is also included in **Appendix 4**.

The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts. Each impact was assessed through the Construction and Operation phases of the proposed development. Where required, the proposed mitigation measure have been detailed.

It should also be noted that the following specialist reviews have been identified in terms of the Section 12(2), Chapter 3 of the NEMA Regulations, 2014 (as amended) as requiring a confirmatory assessment;

- Heritage;
- Noise;
- Visual;
- Soil and Land Capability; and

- Surface Water.

It should also be noted that a full Air Quality Impact Assessment (AQIA) has been undertaken as part of this EIA process, the results of which have been included in this DSR. This has been included in **Appendix 6**, along with the other specialist reviews mentioned above.

1.4. Authority Consultation

As mentioned, a BA process was undertaken in 2009 for the development of the JMP Industrial Development Zone (IDZ) at the ORTIA precinct. An EA was subsequently granted by GDARD to the then, holder, namely the GDED, on 25 July 2011. The GIDZ was founded in 2009 as a subsidiary of the Gauteng Growth & Development Agency (GGDA) under the auspices of GDED to develop and operate the JMP IDZ. This meant that the details of the EA holder had to be amended from GDED to GIDZ.

In light of the above, Marang was appointed in December 2017 to undertake a Part 1 EA Amendment process in order to amend the holder details of the EA from GDED to GDIZ, as mentioned above. Prior to the EA Amendment application, it was noted that both the GDED and GDARD are regulated by, and report to, the same MEC. In terms of S24C, subsection 2(d)(ii), "*the Minister must be identified as the competent authority in terms of subsection (1),…, if the activity is undertaken, or is to be undertaken, by a provincial department responsible for environmental affairs or any other organ of state performing a regulatory function and reporting to the MEC*". Therefore, the DEA has been identified as the competent authority for this project.

As such, a Part 1 EA Amendment application (DEA Reference Number: **14/12/16/3/3/1/7/94/AM1)** was lodged with the DEA on 13 February 2018 in order to amend;

1. *the holder and contact details of the EA*.
   The reason for the amendment was that the GDED had appointed GIDZ (as the Gauteng Provincial Industrial Development Agency,) to develop the project on behalf of the GDED. Therefore, the holder and contact details were subject to change.

2. *the authorised listed activities under the 2006 Environmental Impact Assessment Regulations to incorporate activities as per the EIA Regulations, 2014, as amended*.
   The reason for the amendment was that the activities originally applied for and authorised in the EA dated 25 July 2011, had been delisted and replaced with the 2014 EIA Regulations, as amended. Furthermore, the EA needed to be amended to include an additional listed activity as the proposed MetCon facility triggers listed activities in terms of Section 21 of the National Environmental Management Air Quality Act (NEM:AQA) (Act No. 39 of 2004) and will require an AEL.

The proposed activities triggered by the MetCon facility include Listed Activity 6 in terms of the 2014 EIA Regulations Listing Notice 2 of the NEMA, 1998 (Act No. 107 of 1998) (NEMA), as amended.

Listed activity as described in Listing Notice 2 of GN R. 325	**Description of project activity that may trigger the listed activity**
Listed Activity 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	The incorporation of one (1) of the facilities (namely the MetCon Refinery Facility) within the JMP requires an AEL from the City of Ekurhuleni (CoE) before the facility can be

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. where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.	operational. In order for them to apply for an AEL, they are required to undertake an EIA and obtain an EA.

On 11 May 2018, the DEA responded with a decision to approve the first amendment of the holder and contact details of the EA from GDED to GIDZ, including the change of EA contact details. However, the second amendment to include Listed Activity 6 of Listing Notice 2 of GN R. 325, was refused. The DEA's reason for the refusal was that "*the EA was issued in terms of 2006 EIA Regulations and the EA cannot be amended to include similar listed activities as per the EIA Regulation 2014, as amended and this activity is activity 6 of GN R984*".

In May 2018, Marang was subsequently further appointed to undertake an EIA process for the proposed development and inclusion of the MetCon refinery facility within the JMP site. Marang together with the GIDZ then requested a pre-application meeting with the DEA to confirm the triggered listed activities associated with the proposed development and to clarify the appropriate EIA process to be followed.

The meeting was held at the DEA's Head Office (473 Steve Biko, Arcadia, Pretoria) on 02 July 2018 with the following attendees:

- Vincent Chauke, Nyiko Nkosi and Chulumanco Myakaza representing the DEA;
- Sophia Rosslee, Veronique Evans and Sindiso Lubisi from Marang; and
- Pat Sibiya as the representative for the GIDZ.

Listed Activity 6 (in terms of the 2014 EIA Regulations Listing Notice 2 of the NEMA, as amended), as mentioned above, was confirmed as the only activity triggered by the proposed MetCon facility. Also, the DEA stated that specialists can include statements to certify that the findings on the impacts and mitigation recommendations stipulated in the FBAR (which was compiled as part of the BA process undertaken for the original JMP development) and any other relevant specialist assessments completed during the original BA process are still relevant for the site. The DEA further mentioned that this can be in the form of specialist review letters and may include any other additional recommendations (where applicable). These specialist review letters have been included in **Appendix 6**. In addition, a full AQIA has been undertaken as part of this EIA process. This has also been included in **Appendix 6**.

Minutes of the above-mentioned meeting are included in **Appendix 7G**. In addition, all correspondence undertaken with the DEA is included in **Appendix 4**.

This DSR is submitted to the DEA together with the Application for EA. Following the allocation of a DEA reference number, this will be included in the Final Scoping Report (FSR).

1.5. Expertise of Environmental Assessment Practitioner (EAP)

Marang has experience in undertaking EIAs. The staff and specialists who have contributed to the completion of this report are detailed below in **Table 1-2**.

Table 1-2: Project Team.

Name and Organisation	Role
Stephan Jacobs – Marang	Environmental Assessment Practitioner (EAP)
Sindiso Lubisi – Marang	Environmental Assessment Practitioner (EAP)
Sophia Rosslee – Marang	Senior Air Quality Specialist
Stephen van Staden – Scientific Aquatic Services (SAA)	Soil and Land Capability; Surface Water & Visual
Polke Birkholtz – PGS Heritage	Heritage
Morné de Jager – Enviro Acoustic Research (EAR)	Noise

The details and level of expertise of the EAP who prepared the report are provided in **Table 1-3** below.

Table 1-3: Expertise of EAP

Environmental Practitioner	Stephan Jacobs
Contact Details	011 792 0880 / info@maranggroup.co.za
Qualifications	BSc. Hon. Environmental Sciences
Expertise of EAP	• Environmental Impact Assessment (EIA) for the Proposed Construction of the Graskoppies Wind Farm near Loeriefontein, Northern Cape Province. • Environmental Impact Assessment (EIA) for the Proposed Construction of the Hartebeest Leegte Wind Farm near Loeriefontein, Northern Cape Province. • Environmental Impact Assessment (EIA) for the Proposed Construction of the Ithemba Wind Farm near Loeriefontein, Northern Cape Province. • Environmental Impact Assessment (EIA) for the Proposed Construction of the !Xha Boom Wind Farm near Loeriefontein, Northern Cape Province. • Environmental Control Officer (ECO) for the Polokwane Integrated Rapid Public Transport System (IRPTS), Limpopo Province. • Basic Assessment (BA) for the construction of a Non-Motorised Transport (NMT) Training and Recreational Park adjacent to the Peter Mokaba Stadium in Polokwane, Limpopo Province.

	• Basic Assessment (BA) for the Proposed Expansion of the Tissue Manufacturing Capacity at the Twinsaver Kliprivier Operations Base, Gauteng Province. • Basic Assessment (BA) for the Proposed Construction of a New SPAR Distribution Centre on Erf 1092 at Redhouse in Port Elizabeth, Eastern Cape Province. • Basic Assessment (BA) for the Proposed Construction of the Graskoppies Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Basic Assessment (BA) for the Proposed Construction of the Hartebeest Leegte Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Basic Assessment (BA) for the Proposed Construction of the Ithemba Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Basic Assessment (BA) for the Proposed Construction of the !Xha Boom Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Environmental Control Officer (ECO) for Phase 1 and Phase 2 of the Newmarket Retail Development, Gauteng Province. • Environmental Control Officer (ECO) for the proposed NuPay Office Block development at the Newmarket Retail Development, Gauteng Province. • Environmental Control Officer (ECO) for the proposed Construction of the Decathlon Building at the Newmarket Retail Development, Gauteng Province. • Environmental Control Officer (ECO) for the External Road Upgrades at the Newmarket Retail Development, Gauteng Province. • Environmental Review of the Xakwa Coal Operations, adjacent to the proposed Eastside Junction Development. • Environmental Due Diligence for the Woodlands and Harrowdene Office Parks in Woodmead, Gauteng Province. • Visual Impact Assessment for the Helena Solar PV Plant, Northern Cape Province. • Visual Impact Assessment for the Nsoko Msele Integrated Sugar Project, Swaziland. • Visual Impact Assessments for the proposed construction of the Sendawo Solar 1, Sendawo Solar 2 and Sendawo Solar 3 Photovoltaic (PV) Energy Facilities near Vryburg, North West Province. • Visual Impact Assessments for the proposed construction of the Sendawo Substation and Associated 400kV Power Line near Vryburg, North West Province. • Visual Impact Assessments for the proposed construction of the Tlisitseng Solar 1 and Tlisitseng Solar 2 Photovoltaic (PV) Energy Facilities near Lichtenburg, North West Province. • Visual Impact Assessment for the proposed construction of the Tlisitseng 1 132kV Substation and associated 132kV Power Line near Lichtenburg, North West Province.

	• Visual Impact Assessment for the proposed construction of the Tlisitseng 2 132kV Substation and associated 132kV Power Line near Lichtenburg, North West Province. • Visual Impact Assessment for the proposed construction of the 3000MW PhilCo Green Energy Wind Farm and Associated Infrastructure near Richmond, Northern Cape Province. • Visual Impact Assessment for the proposed construction of the Aletta 140MW Wind Energy Facility neat Copperton, Northern Cape Province. • Visual Impact Assessment for the proposed construction of the Aletta 132kV Substation and associated 132kV Power Line near Copperton, Northern Cape Province. • Visual Impact Assessment for the proposed construction of the Eureka 140MW Wind Energy Facility and associated Infrastructure near Copperton, Northern Cape Province. • Visual Impact Assessment for the proposed construction of the Eureka 400kV Substation and 400kV Power Line neat Copperton, Northern Cape Province. • Visual Impact Assessment for the Proposed Construction of the Graskoppies Wind Farm near Loeriesfontein, Northern Cape Province. • Basic Visual Impact Assessment for the Proposed Construction of the Graskoppies Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Visual Impact Assessment for the Proposed Construction of the Hartebeest Leegte Wind Farm near Loeriesfontein, Northern Cape Province. • Basic Visual Impact Assessment for the Proposed Construction of the Hartebeest Leegte Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Visual Impact Assessment for the Proposed Construction of the Ithemba Wind Farm near Loeriesfontein, Northern Cape Province. • Basic Visual Impact Assessment for the Proposed Construction of the Ithemba Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Visual Impact Assessment for the Proposed Construction of the !Xha Boom Wind Farm near Loeriesfontein, Northern Cape Province. • Basic Visual Impact Assessment for the Proposed Construction of the !Xha Boom Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province. • Visual Impact Assessment for the Proposed Construction of the 315MW Phezukomoya Wind Energy Facility near Noupoort, Northern Cape Province. • Visual Impact Assessment for the Proposed Construction of the 390MW Sankraal Wind Energy Facility near Noupoort, Northern Cape Province. • Visual Impact Assessment for the proposed development of the Phase 1 Kuruman Wind Energy Facility, Kuruman, Northern Cape Province • Visual Impact Assessment for the proposed development of the Phase 2 Kuruman Wind Energy Facility, Kuruman, Northern Cape Province

	• Basic Visual Impact Assessment for the proposed development of Supporting Electrical Infrastructure to the Phase 1 and Phase 2 Kuruman Wind Energy Facilities, Kuruman, Northern Cape Province • Visual Impact Assessment for the Proposed Tinley Manor South Banks Beach Enhancement Solution, KwaZulu-Natal Province. • Visual Impact Assessment for the proposed Mlonzi Hotel and Golf Estate Development, Near Lusikisiki, Eastern Cape Province. • Visual Impact Assessment for the Proposed Assagay Valley Development, KwaZulu-Natal Province. • Visual Impact Assessment for the Proposed Kassier Road North Development, KwaZulu-Natal Province. • Basic Visual Impact Assessment for the proposed construction of up to a 132kV Power Line and Associated Infrastructure for the Rooipunt Solar Thermal Power Plant near Upington, Northern Cape Province. • Basic Visual Impact Assessment for the proposed construction of up to a 132kV Power Line and Associated Infrastructure for the proposed Kalkaar Solar Thermal Power Plant near Kimberly, Free State and Northern Cape Provinces. • Surface Water Assessment for the Steve Tshwete Local Municipality, Mpumalanga Province. • Surface Water Delineation and Assessment for the proposed coal Railway Siding at the Welgedacht Marshalling Yard and associated Milner Road Upgrade near Springs, Ekurhuleni Metropolitan Municipality.

Please Refer to **Appendix 2** for CV's of the team members and specialists. Declaration of Independence (DoIs) and the EAP Affirmations are included in **Appendix 3**.

1.6. Draft Scoping Report (DSR) Structure

This DSR is structured as follows:

- Section 1 introduces the project and explains the objectives of the Scoping Phase. This section also outlines the applicable documentation and the relevance thereof. In addition, this section points out the specialist studies which were undertaken as part of the BA process for the original JMPO development in 2009, as well the specialist reviews and assessment undertaken as part of this EIA process. It also describes the authority consultation undertaken thus far. Furthermore, the section discusses the experience of the Environmental Assessment Practitioners (EAP), including specialists, who have contributed to the report.
- Section 2 presents the project background, current status and technical description of the project, including a discussion with regards to alternatives.
- Section 3 discussed the relevant legal requirements of the project and describes relevant development strategies and guidelines.
- Section 4 provides an explanation to the need and desirability of the proposed project.
- Section 5 provides a description of the area in which the proposed project is intended to be located. Although the chapter provides a broad overview of the area, it is also specific to the application. It also contains descriptions of the proposed site.
- Section 6 discusses the receiving environment from the perspective of the respective specialist reviews and assessments.

- Section 7 identifies potential impacts associated with the proposed project. The chapter further identifies these impacts per specialist review and/or assessment and provides mitigation measures to reduce identified impacts.
- Section 8 describes the Public Participation Process (PPP) undertaken during the Scoping Phase so far. Issues and concerns raised by Interested and Affected Parties (I&APs) / Stakeholders and/or Organs of State / Authorities will be provided in the FSR.
- Section 9 provides a conclusion to the DSR and specialist recommendations. This section also touches on any further assessments which might be required.
- Section 10 describes the environmental impact reporting phase of the EIA process (i.e. the way forward for this EIA study and includes the Plan of Study for the EIA).
- Section 11 lists references indicated in the DSR.

2. TECHNICAL DESCRIPTION

2.1. Project Background

The GIDZ was founded in 2009 as a subsidiary of the GGDA and was given the responsibilities to develop and operate the designated IDZ within the grounds of the ORTIA. Located within the ORTIA (Remainder of Portion 69 of the Farm Witkoppie 64 – IR), the proposed development entails identifying, designing, packaging and enabling focused export-driven manufacturing and beneficiation programmes that will increase industrialization and manufacturing capability in the region. Also, the project will be focused on the identification of jewellery manufacturers for export and will include enterprise mentorship between established and upcoming jewellery manufacturers. The JMP furthermore aims to increase employment opportunities and foreign direct investment in the jewellery manufacturing sector.

As mentioned, a BA process was undertaken in 2009 to obtain EA for the development of the original JMP site. The EA was subsequently issued by the DEA and covers an area of approximately 6.5ha. Construction on the JMP site (6.5ha as approved in the EA) commenced in 2013 and is still currently underway.

It should be noted that the proposed MetCon facility will occupy an area of approximately 0.24ha within the existing JMP site and will specialise in extracting precious and base metals from jewellery store secondary materials through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the proposed JMP site. The additional area will be used for parking (vehicles) in the future. As such and in-line with the objectives of the JMP project, MetCon has been identified and incorporated as part of the significant and required facilities to compliment the JMP project. Construction of the proposed MetCon facility and above-mentioned additional 1ha area has not yet commenced. This will only commence once the necessary authorisations / approvals have been obtained.

2.2. Current Status of the Project

While construction of the other facilities commenced in 2013, the proposed MetCon facility has not yet been constructed pending this EIA process and the issuing of an EA by the DEA.

The activities to be undertaken in the MetCon facility trigger sub-category 4.2 (combustion installations) and sub-category 4.17 (precious and base metal production and refining) in terms of S21 of the NEM:AQA Act, 2004 (Act No. 39 of 2004) and will therefore require an AEL. Therefore, the MetCon facility consequently triggers Activity 6 of GN R. 325 Listing Notice 2 of the 2014 EIA Regulations (as amended)

in terms of the NEMA, 1998 (Act No. 107 of 1998). It should be noted that the existing EA for the JMP development does not include Activity 6 in terms of the GN R. 325 Listing Notice 2 of the 2014 EIA Regulations (as amended). Furthermore, the EA cannot be amended to include this activity as an EIA process is required. As such, an EA is required specifically for the development and inclusion of the proposed MetCon facility in the existing JMP site.

2.3. Technical Project Description

The proposed MetCon facility will primarily specialize in extracting precious metals from secondary gold materials (i.e. dorè sourced from other refineries and mines), provide services to the jewellers in the JMP and the local South African market, and beneficiate gold, silver and platinum into finished products for export. MetCon will also undertake a minor process that will involve roasting a small amount of jeweller sweeps (mix of papers, bench sweeps, carpets and polishing residues) from manufacturing jewellers, to separate out the metallic components which will then be refined through MetCon's primary refining process. It should be noted that this minor roasting process will constitute about 1% of MetCon's turnover.

In the primary refining process (**Figure 2-1**), the main acid solution, known as aqua regia, will comprise acids, namely hydrochloric and nitric acid, used individually and as blends for the dissolution and refining of the precious metals. Various chemicals such as, Sodium Hydroxide, Borax and Sodium Metabisulphate are also required in the process for neutralization and separation. Chemicals such as 25% Ammonia and ethanol will be used in MetCon's Laboratory.

Metals will be chemically refined and concentrated by means of selective dissolution and recovery to separate the different components as shown in **Figure 2-1** of the refining process indicating inputs, outputs and emissions. The chemistry of this refining process consists of using an aqua regia solution, which is a combination of commercial nitric acid and hydrochloric acid mixed at specific ratios. Nitric acid is a powerful oxidizer and will be used to dissolve to virtually undetectable amounts of certain precious materials. The hydrochloric acid provides a ready supply of chloride ions (Cl-), which reacts with the ions of the precious materials to produce tetrachloroaurate (III) anions in a solution. The reaction with hydrochloric acid is an equilibrium reaction which favours formation of chloroaurate anions ($AuCl_4$-). This results in a removal of ions of the precious materials from the solution and allows further oxidation to take place. The precious material dissolves to become chloroauric acid. In addition, precious materials may be dissolved by the free chlorine present in aqua regia.

Upon mixing the metals with aqua regia, chemical reactions occur resulting in the volatile products nitrosyl chloride and chlorine. Nitrosyl chloride can further decompose into nitric oxide and chlorine. This dissociation is equilibrium-limited. Therefore, in addition to nitrosyl chloride and chlorine, the fumes over aqua regia contain nitric oxide. Because nitric oxide reacts readily with atmospheric oxygen, the gases produced also contain nitrogen dioxide, NO_2. These gaseous emissions are scrubbed in a caustic soda (sodium hydroxide) scrubber before been released to atmosphere. The resultant scrubber solution is neutralised to a pH of 7 before been disposed using the services of a licensed contractor. Liquid and solid effluent generated from the refining activities will be treated and the remaining sludge and filter cake sent for further refining by other refiners. Once refined, the precious metals will be cast into ingots using an induction furnace and then assayed to determine the purity of the metal. Emissions from the melting and casting process will be captured in a fume hood, then extracted via a baghouse filter to atmosphere. All air emissions arising from the various processes are extracted through the caustic scrubber and the baghouse filtration system, thereby meeting emissions standards.

In the minor process, a small amount of jeweller sweeps (mix of papers, bench sweeps, carpets and polishing residues) from manufacturing jeweller operations, will be processed by placing the jewellers sweeps in a gas-fired roasting oven and transformed them into ash within the roaster oven. It is important to note that, in this minor process, the burning of the raw material/jewellers sweep in the roaster oven is a key part of the process to separate out the precious metals in the sweeps. The roaster oven extraction unit will be equipped with a baghouse filter to capture particles that are emitted from the process. The ash will then be removed from the oven and de-magnetized to remove any steel components contained within the ash. The remaining ash will then be put through a screening process to separate the metals and the ash. Once screening is complete, fluxes will be added to the metal containing residue and then placed in a furnace for melting. As soon as the melting process has been completed the high density precious metals will be separated, weighed and added into the primary refining process for further refining.

In summary, MetCon plans to operate a variety of processes and activities on the site which will aid in achieving the desired productions. These will include:

- Chemical refining and concentration of precious metals.
- Roasting of jewellers waste materials, known as jewellers sweep.
- Casting of precious metals into ingots by means of induction furnace.
- Manufacture of Jewellery
- Manufacture of products for use by manufacturing jewellers
- Cooling water by means of cooling towers.
- Storage of liquid and solid raw materials.
- Caustic soda chemical scrubbing of acid gas emissions from the chemical refining process.
- Collection of dust and particulates from the roaster and induction furnace by means of a bag filter.

The products from MetCon's facility will include refined precious metals of gold, silver and platinum which will be beneficiated and chemically refined into added value finished products such as minted bars, 1-kilogram bars, as well as jewellery pieces. Jewellery pieces and products for use by manufacturing jewellers will be sold into South Africa and some of the finished jewellery will be exported. Surplus gold will be melted into 400 oz bullion bars and exported.

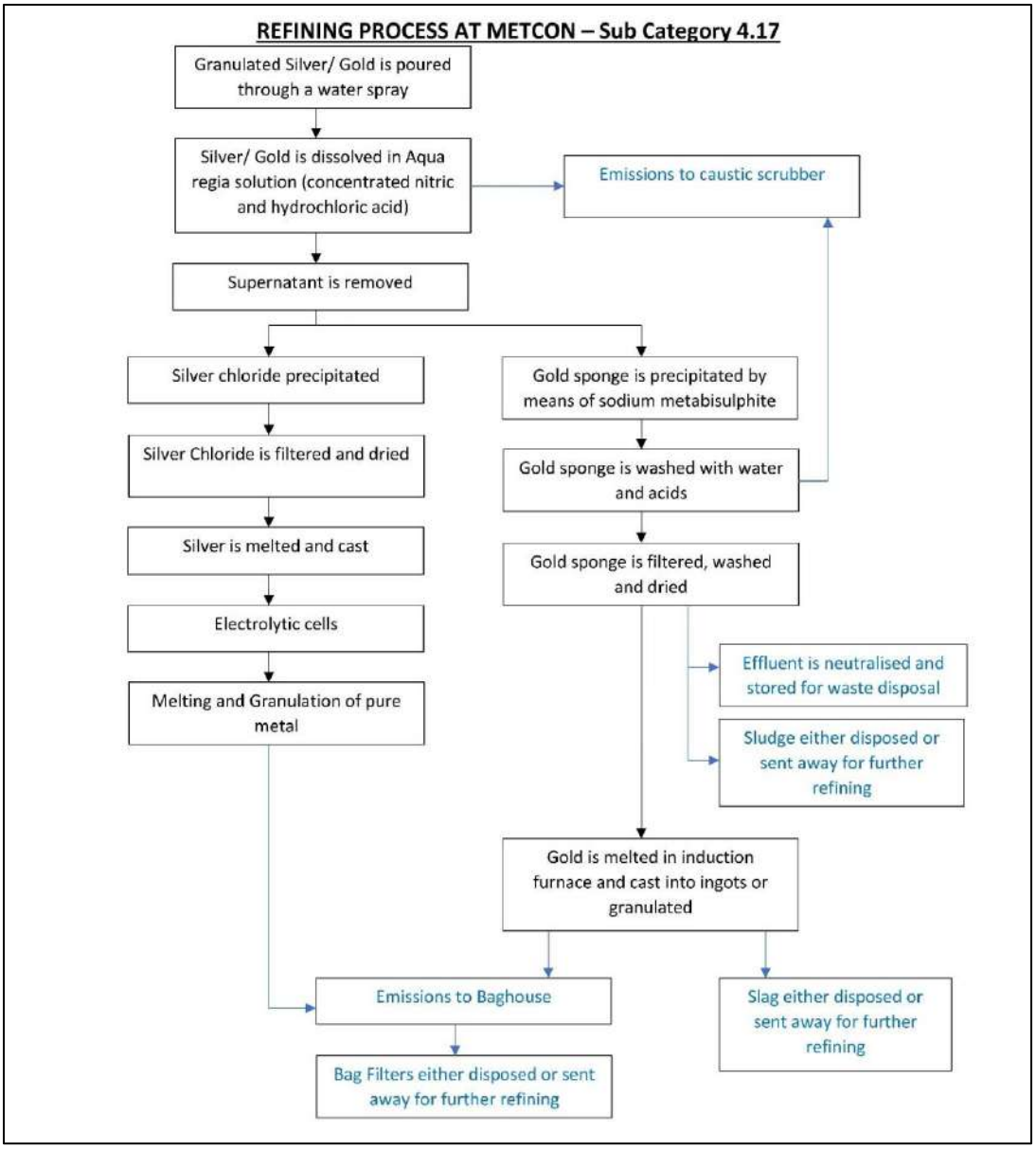

Figure 2-1: MetCon Facility Process Diagram

2.4. Alternatives

As per Chapter 1 of the 2014 EIA Regulations (as amended), feasible and reasonable alternatives are required to be considered during the EIA process. Alternatives are defined at "different means of meeting the general purpose and requirements of the activity" These alternatives may include:

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

Each of these alternatives is discussed in relation to the proposed project in the sections below:

2.4.1. The property on which or location where it is proposed to undertake the activity

No feasible or reasonable alternatives exist for the JMP project. The site has been systematically identified as part of the National Strategic Infrastructure Projects (SIPs) and falls under the Aerotropolis Master plan developed by the host City of Ekurhuleni. It should further be noted that the Aerotropolis Master plan is part of the South African Special, Economic and Industrial Development Zones (SEZs) which are part of the SIPs.

It should further be noted that the proposed JMP development falls under the OR Tambo Industrial Development Zone (IDZ) (Gauteng) of the South African SEZs. The OR Tambo IDZ aims to develop land around OR Tambo International Airport to stimulate economic development through the use of the IDZ mechanism. The OR Tambo IDZ supports the growth of the beneficiation of precious metals and minerals sector, with a focus on light, high-margin, export-oriented manufacturing of South African precious and semi-precious metals.

Development of the proposed project will further transform the ORTIA property into an investment. Not only will the development provide formalized employment after construction, but it will provide employment during its construction phase. The development would be able to provide approximately 3000 jobs during construction and about 500 specialized jobs after construction. The numbers for employment will depend on the market appetite.

2.4.2. The type of activity to be undertaken;

There are no feasible and reasonable alternatives for the type of activity to be undertaken by the MetCon facility. As outlined in the sections above, the proposed MetCon facility will specialize in extracting precious and base metals from secondary gold materials (i.e. dorè sourced from other refineries and mines) through a chemical treatment refining process. In addition, the proposed MetCon refinery facility is considered to be in line with the services which the JMP would want to offer and is thus in line with the ultimate objective of the JMP. Due to all the above mentioned, no other operational alternatives were considered or deemed applicable.

2.4.3. The technology to be used in the activity;

There are no feasible and reasonable alternatives for the technology used in the activity as these will be utilizing recent technology available for this purpose.

2.4.4. The operational aspects of the activity; and

No operational alternatives are applicable for the development as MetCon has standard operational activities relevant to industry. In order to meet the perceived demand/outputs, the facility may be required to operate up to 24 hours a day. Also, double shifts may need to be implemented with each staff maintaining up to 12 hours a shift.

2.4.5. No-go Alternative

In addition to the refining processes, the MetCon facility will be aiding in the recovery of precious metals from jewellers secondary materials, what could be regarded as waste. The MetCon facility will further contribute in the socio-economic factors or the surrounding community while enhancing the broader economic goals of the GIDZ development project. Should the "no-go" option be selected, the above-mentioned socio-economic benefits would not be realized.

3. LEGAL REQUIREMENTS

3.1.1. The National Environmental Management Act (NEMA) (Act No. 107 of 1998) – NEMA EIA Requirements

The National Environmental Management Act (NEMA) (Act No. 107 of 1998) was promulgated in 1998 but has since been amended on several occasions from this date. This Act replaces parts of the Environment Conservation Act (ECA) (Act No 73 of 1989) with exception to certain parts pertaining to Integrated Environmental Management.

The act intends to provide for:

- co-operative environmental governance by establishing principles for decision-making on matters affecting the environment;
- institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state;
- to provide for the prohibition, restriction or control of activities which are likely to have a detrimental effect on the environment; and
- to provide for matters connected therewith.

Sections 24 and 44 of the NEMA, 1998 (Act No. 107 of 1998), as amended, make provision for the promulgation of regulations that identify activities which may not commence without an EA, the result being that NEMA now governs the EIA process with the said promulgation of the EIA Regulations in December 2014. This EIA has therefore been undertaken in accordance with the NEMA EIA Regulations, 2014, as amended on 07 April 2017, contained in four (4) Government Notices (GN R. 324, 325, 326, and 327).

The proposed activities triggered by the MetCon facility include Listed Activity 6 in terms of the 2014 EIA Regulations Listing Notice 2 of the NEMA, 1998 (Act No. 107 of 1998) (NEMA), as amended. In terms of these Regulations, a full EIA is required for the proposed development based on the following triggered activity.

Table 3-1: Listed Activities in terms of GN R. 325 triggered by the proposed MetCon facility

Listed activity as described in Listing Notice 2 of GN R.325	**Description of project activity that may trigger the listed activity**
Listed Activity 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–	The incorporation of one (1) of the facilities (namely the MetCon refinery facility) within the JMP requires an AEL from the City of Ekurhuleni (CoE) before the facility can be operational. In order for them to apply for and AEL they are required to undertake an EIA and obtain an EA.

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.	

3.1.2. National Environmental Management: Air Quality Act (NEM:AQA), 2004 (Act No. 39 of 2004)

Previously air pollution regulation and air quality management in South Africa was informed and regulated by the Atmospheric Pollution Prevention Act (APPA) (Act No. 45 of 1965) (APPA). As such any company that undertook one (1) of the scheduled processes were required to have an APPA registration certificate. However, over time concerns around ambient air quality arose and as such the APPA (Act No. 45 of 1965) was delisted and replaced with the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA). NEM:AQA defined the process of acquiring and implementing AEL.

As a result of the legislation changes, companies that had registered for an APPA registration certificate had three (3) years to apply for an AEL and the department would convert their existing APPA into an AEL. All companies requiring an AEL had until the 31 March 2013 to apply for an AEL otherwise they would trigger Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), which defined and detailed the processes to be followed when a facility is in contravention of current legislations.

The NEM:AQA (Act No. 39 of 2004) and as amended Act No. 20 of 2014 has shifted the approach of air quality management from source-based control to receptor-based control. The main objectives of the Act are to:

- Give effect to everyone's right 'to an environment that is not harmful to their health and well-being'
- Protect the environment by providing reasonable legislative and other measures that (i) prevent pollution and ecological degradation, (ii) promote conservation and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The Act makes provision for the setting and formulation of National ambient air quality standards for 'substances or mixtures of substances which present a threat to health, well-being or the environment'. More stringent standards can be established at the provincial and local levels.

The control and management of emissions in the air quality assessment (AQA) relates to the listing of activities that are sources of emissions and the issuing of emission licenses. Listed activities are defined as activities which 'result in atmospheric emissions and are regarded as having a significant detrimental effect on the environment, including human health'. Listed activities have been identified by the Minister of

the DEA and atmospheric emission standards have been established for each of these activities. These listed activities now require an atmospheric emission license to operate. The issuing of emission licenses for Listed Activities will be the responsibility of the Metropolitan and District Municipalities.

In addition, the Minister may declare any substance contributing to air pollution as a priority pollutant. Any industries or industrial sectors that emit these priority pollutants will be required to implement a Pollution Prevention Plan. Municipalities are required to 'designate an air quality officer to be responsible for coordinating matters pertaining to air quality management in the Municipality'. The appointed Air Quality Officer is responsible for the issuing of atmospheric emission licenses

In terms of Section 21 of the NEM:AQA Act, 2004 (Act No. 39 of 2004), as amended, the MetCon facility is required to have an AEL to operate – as it triggers sub-category 4.2 (combustion installations) and sub-category 4.17 (precious and base metal production and refining) of Category 4 for a Metallurgical Industry.

Table 3-2: NEM:AQA Government Notice R. 893.

NEM: AQA Government Notice R893				
Listed Activity Number	**Category of Listed Activity**	**Sub-category of the Listed Activity**	**Name of the Listed Activity**	**Description of the Listed Activity**
1	4. Metallurgical Industry	4.2	Combustion Installations	Combustion installations not used for primarily for steam raising and electricity generation (except drying).
2	4. Metallurgical Industry	4.17	Precious and Base Metal Production and Refining	Production or processing of precious and associated base metals through chemical treatment (Excluding Inorganic Chemicals-related activities under Category 7).

3.1.3. National Environmental Management Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA), as amended

The promulgation of the National Environmental Management Waste Act (NEM:WA) (Act no. 59 of 2008) sought to consolidate various legislation concerning waste within South Africa 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;
- to provide for institutional arrangements and planning matters;
- to provide for national norms and standards for regulating the management of waste by all spheres of government;
- to provide for specific waste management measures;
- to provide for the licensing and control of waste management activities;
- to provide for the remediation of contaminated land;

- to provide for the national waste information system; and
- to provide for compliance and enforcement; and to provide for matters connected therewith.

The objectives of this Act are:

a) to protect health, well-being and the environment by providing reasonable measures for –
    i. minimising the consumption of natural resources;
    ii. avoiding and minimising the generation of waste;
    iii. reducing, re-using, recycling and recovering waste;
    iv. treating and safely disposing of waste as a last resort;
    v. preventing pollution and ecological degradation;
    vi. securing ecologically sustainable development while promoting justifiable economic and social development;
    vii. promoting and ensuring the effective delivery of waste services;
    viii. remediating land where contamination presents, or may present, a significant risk of harm to health or the environment; and
    ix. achieving integrated waste management reporting and planning;
b) to ensure that people are aware of the impact of waste on their health, well-being and the environment;
c) to provide for compliance with the measures set out in paragraph (a); and
d) generally, to give effect to section 24 of the Constitution in order to secure an environment that is not harmful to health and well-being.

The waste act introduced the concept of dealing with waste according to a waste management hierarchy. The hierarchy approach places emphasis on waste reduction, followed by re-use, then recycling and composting, recovery for energy production and disposal as the last resort. In terms of NEM:WA, waste management activities that are listed in regulations published under NEM:WA may not be undertaken without a WML. The listed activities for which a WML is required are contained in GN R921 published in Gazette No 37083 on the 29th of November 2013, as amended on the 11th of October 2017. Category A activities require a WML and a BA must be conducted, and Category B activities require a WML and a full Scoping and EIA must be conducted.

In the case of MetCon, waste materials, also referred to as jewellers sweep, will be acquired from jewellery stores. The jewellers sweep is photographed and weighed and then placed in a gas-fired roasting oven with no other preprocesses. Furthermore, MetCon plans to install abatement equipment such as baghouses and scrubbers for the particulate matter (PM) and effluent waste water. However, as outlined in the Technical Project Description section above, the PM as well as the slag that will be produced as by-products are valuable and will be sent for further processing and refining.

3.1.4. National Heritage Resources Act (NHRA) (Act No. 25 of 1999)

In terms of Section 35(4) of the National Heritage Resources Act No. 25 of 1999 (NHRA), no person may, without a permit issued by the responsible heritage resources authority—

a) Destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

The South African Heritage Resources Agency (SAHRA), has been established to manage the national estate and make provision for the establishment of provincial heritage resources authorities to manage provincial and local heritage resources in terms of section 4(d) of the NHRA (Act No. 25 of 1999). As such, all authorities, bodies and persons, including SAHRA, performing functions of exercising powers in terms of this Act for the management of heritage resources must recognize the principles set out in section 5 and 6 of the NAHRA. Various sections in Part 1 of Chapter II of the NAHRA make provision for the protection and management of South African heritage resources. The following should be noted:

a) Section 27(18): "No person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site".
b) Section 28(3): "No person may damage, disfigure, alter, subdivide or in any other way develop any part of a protected area unless, at least 60 days prior to the initiation of such changes, he or she has consulted the heritage resources authority which designated such area in accordance with a procedure prescribed by that authority".
c) Section 29(10): "No person may damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of a provisionally protected place or object without a permit issued by a heritage resources authority or local authority responsible for the provisional protection".

As such, Chapter II, III, IV, V, and VI of the NAHRA Regulations, 2000, as amended, make provision for the application process of permits prior to a development impacting on any heritage resource.

The GIDZ JMP site is not regarded as a SAHRA conservation area. In addition, an overview heritage impact study has been conducted to explore how the proposed development may impact any heritage resources as well as identifying whether or not a permit may be required as per the NAHRA Act. In terms of this study, no evidence for any buildings or heritage sites could be found on any of the old depictions of the study area. Furthermore, the walkthrough also did not reveal any evidence for archaeology or heritage, even though sections of intact soil profiles that were exposed by construction were scrutinised during the walkthrough. As a result, it is the specialist's professional opinion that there is no need for a Heritage Impact Assessment on this project. The Heritage Screening Assessment which was undertaken as part of this EIA process is included in **Appendix 6**.

In addition, SAHRA will be notified about the EIA process. All relevant impact assessment documents will be made available to SAHRA, giving them the opportunity to comment on the project. Any comments, or recommendations in this regard will be included and incorporated in the final EIA report.

3.1.5. National Water Act (NWA) (Act No. 36 of 1998, as amended)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) provides a framework to protect water resources against over exploitation. It is also in place to ensure that aquatic environment needs, socio-economic and economic development needs are all met. It is important to note that water resources are protected under

the Act. The water resources, in terms of the NWA, is defined as watercourse, surface water, estuary or aquifer. A watercourse is defined as a river or spring, a natural channel in which water flows regularly or intermittently, or a wetland, lake or dam into which, or from which water flows. 'Protection' in relation to a water resource entails:

- Maintenance of the quality of the water resource to the extent that the water use may be used in a sustainable way;
- Prevention of degradation of the water resource; and
- The rehabilitation of the water resource.

In terms of Section 19 of the NWA, owners / managers / people occupying land on which any activity or process undertaken which causes or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring. These measures may include (inter alia):

- measures to cease, modify, or control any act or process causing the pollution;
- comply with any prescribed waste standard or management practice;
- contain or prevent the movement of pollutants;
- remedy the effects of the pollution; and
- remedy the effects of any disturbance to the bed and banks of a watercourse.

In the case of the MetCon facility, a surface water / freshwater specialist review has been conducted to explore how the proposed development may impact on surface water resources with a specific focus on the wetlands as protected by the Act. Based on the findings of the impact assessment undertaken as part of the specialist review, it was determined that the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on the freshwater resources of the area. Due to the distance between the activities and the watercourses in the area, and the presence of existing developments between the study area and watercourses of the area, limited to negligible impact from the proposed activities on the wetlands is expected to occur.

It should however be noted that fulfilment of Regulation GN R. 509 of 2016 needs to be considered within all areas within 500m of the proposed development site. As such, the Department of Water and Sanitation (DWS) Risk Assessment Matrix as promulgated in Regulation GN R. 509 of 2016 and the appropriate water use authorisation process (namely a General Authorisation) will be undertaken as part of the EIA process. This will include facilitating a freshwater verification and General Authorisation (GA) in terms of the NWA, 1998 (Act 36 of 1998). This process is detailed in section 10, Plan of Study for the EIA.

The Surface Water / Freshwater Specialist Review which was undertaken as part of this EIA process is included in **Appendix 6**.

3.1.6. National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004 as amended)

The aim of the National Environmental Management: Biodiversity Act 2004, (Act No. 10 of 2004) (NEM:BA), within the framework of NEMA, is to provide for:

- The management and conservation of biological diversity within South Africa, 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.

The South African National Biodiversity Institute (SANBI) was established by the NEM:BA with its purpose being to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems. Chapter 5 of NEM:BA provides a range of subsections for the protection of ecosystems and for the protection of species that are threatened or in need of protection, including a prohibition on carrying out a "restricted activity" involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7. Lists of critically endangered, endangered, vulnerable and protected species have been published and a permit system for listed species has been published under Government Notice R. 151 in Government Gazette 29657, as amended.

While portion of the GIDZ JMP development site is located within an Ecological Support Area (ESA) as identified in the South African National Biodiversity Institute (SANBI) Gauteng Conservation Plan (2011) (as indicated in **Figure 6.1**), a preliminary biophysical desktop study which was conducted during the BA concluded that the proposed JMP project has "no fatal flaws" to the environment. It should however be noted that the whole JMP development site has subsequently been cleared for construction which began in 2013 approximately two (2) years after the site was issued with an EA. Therefore, an ecological study is regarded as insignificant for the site which no longer has any vegetation.

3.1.7. National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003 as amended)

The overarching aim of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA), within the framework of NEMA, is to provide for:

- provide for the declaration and management of protected areas;
- provide for co-operative governance in the declaration and management of protected areas;
- effect a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity;
- provide for a representative network of protected areas on state land, private land and communal land;
- promote sustainable utilisation of protected areas for the benefit of people, in a manner that would preserve the ecological character of such areas;
- promote participation of local communities in the management of protected areas, where appropriate; and
- provide for the continued existence of South African National Parks.

The GIDZ JMP development site does not fall within a protected area and therefore, does not require any permit in terms of the NEMPAA Act.

3.1.8. Conservation of Agricultural Resources Act No. 43 of 1983

The Conservation of Agricultural Resources Act (CARA) No. 43 of 1983 controls the utilization of natural agricultural resources in South Africa. The Act promotes the conservation of soil, water sources and vegetation as well as the combating weeds and invader plants. The Act has been amended in part by the Abolition of Racially Based Land Measures Act, No. 108 of 1991.

The primary objective of the Act is to conserve natural agricultural resources by:

- maintaining the production potential of land;
- combating and preventing erosion and weakening or destruction of the water resources;
- protecting vegetation; and
- combating weeds and invaders plants.

It is important to note that an agricultural impact assessment as part of the studies that explore any potential impacts on the agricultural production potential of the proposed site was not undertaken during the BA. While construction at the JMP site has already commenced and this study may be regarded negligible for this EIA process, a Soil and Land Capability overview study has been conducted to confirm any impacts that the JMP project may potentially have on the environment where it is located.

In terms of the Soil and Land Capability overview study, it was found that the study area is located within a highly industrialised and urbanised area with no active agricultural practices within or in the immediate vicinity of the study area. The eastern half of the study area is situated within the Environmental Management Framework (EMF) Zone 5 (Industrial and large commercial focus zone) (EMF, 2015). The proposed facility falls within the EMF Zone 5. In addition, the study area is currently under development and the soils have been anthropogenically transformed, thus these soils are likely to have little to no bearing on agricultural productivity. Thus, from a soil, land use and land capability point of view, the impact significance on the loss of high agricultural potential soils is anticipated to range between very low and negligible. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on soil, land use and land capability.

3.1.9. National Road Traffic Act (NRTA) (Act No. 93 of 1996, as amended)

The National Road Traffic Act, 1996 (Act No. 93 of 1996) (NRTA), provides for all road traffic matters and is applied uniformly throughout South Africa. The Act enforces the necessity of registering and licensing motor vehicles. It also stipulates requirements regarding fitness of drivers and vehicles as well as making provision for the transportation of dangerous goods.

All the requirements stipulated in the NRTA will need to be complied with during the construction and operational phases of the proposed development.

3.1.10. Civil Aviation Act (Act No. 13 of 2009)

The Civil Aviation Act, 2009 (Act No. 13 of 2009), controls and regulates aviation within Republic of South Africa. This Act makes provision for the establishment of a South African Civil Aviation Authority (SA CAA) and independent Aviation Safety Investigation Board in terms of the Annex 13 of the Chicago Convention. In addition, the objectives of the Act include:

- to repeal, consolidate and amend the aviation laws giving effect to certain International Aviation Conventions;
- to provide for the control and regulation of aviation within the Republic;
- to give effect to certain provisions of the Convention on Offences and Certain other Acts Committed on Board Aircraft;

- to give effect to the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation;
- to provide for the National Aviation Security Program;
- to provide for additional measures directed at more effective control of the safety and security of aircraft, airports and the like; and
- to provide for matters connected thereto.

Although the Act is not directly relevant to the proposed development, it should be considered that the JMP is located within the bounds of an aviation sensitive site. While it should also be noted that the JMP site has been given consent as leased by ACSA for the JMP proposed development, the Air Traffic and Navigation Services SOC Limited (ATNS) and the Airport Company of South Africa (ACSA) will be consulted to give them an opportunity to raise any comments or objections to the MetCon project. All relevant impact assessment reports will also be made available to them.

3.1.11. City of Ekurhuleni: Air Quality Management By-Law

The air quality management by-law for the CoE was issued on 25 January 2005 (Report No.: APP/04/EMM02c of 2005). The purpose and objective of the by-law is to enable the local municipalities to protect, intervene, regulate and control activities which emit emissions and promote the long-term health, well-being and safety of people and environment within its jurisdiction area.

The by-law states that any person who is responsible for causing air pollution or creating a risk of air pollution within the municipality must take reasonable measures to:

a) Prevent any potential air pollution from occurring; or
b) Where the causing of any air pollution is permitted, not prohibited, or cannot be reasonably avoided or stopped, to minimise that pollution.

Reasonable measures, as provided by the by-law, include the following:

a) Investigate, assess and evaluate the impact of air pollution on the environment;
b) Inform and educate employees about the environmental risks of their work and how they can perform their work in order to avoid air pollution;
c) Cease, modify or control any act, activity or process causing the air pollution;
d) Contain or prevent the movement of pollutants or remedy the effects of the air pollution.

The municipality may direct any person causing significant air pollution either to cease the activity; investigate, evaluate and assess the impact of such; implement specific measures before a given date and continue with those measures in place. The municipality also has the authority to issue a directive. Should the person fail to comply with the directive, the municipality may take reasonable steps to remedy the situation or apply to court for appropriate relief.

The by-law has identified eight (8) priority air pollutants [particulate matter with an aerodynamic diameter of < 10 µm (PM_{10}), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), lead (Pb), benzene (C_6H_6) and dust fall which may present a threat on the health and well-being of people in the municipal area. The municipality may add more substances to the list in the future. The by-law makes provision for the CoE to develop and adopt local emissions standards for any of the identified substances. A person emitting any of the identified substances must comply with the relevant emission standards.

Under the Air Quality Management by-law for the CoE there are specific provisions pertaining to the several activities or emissions sources that need to be complied with. In most instances, authorisation from the Municipality is required before the emitting activities can take place and in other instances the activity is prohibited. The relevant activities or emissions sources are summarised below:

a) Emissions from domestic fuel burning.
b) Emissions from mining operations and tailings impoundments.
c) Any activity resulting in dust emissions.
d) Road transportation emissions.
e) Open burning emissions.
f) Emissions from industrial and domestic waste disposal and treatment (e.g. landfill operations, incineration, sewage and waste water treatment works.
g) Emissions caused by burning of garden waste.
h) Emissions from industrial processes.
i) Emissions from industrial fuel burning appliances.
j) Emissions from electricity generation
k) Emissions from aircraft engines
l) Emissions from other sources like vehicle entrainment from unpaved public roads, agricultural activities, veld burning and railway transport.

3.1.12. Ambient Air Quality Standards

National ambient air quality standards, including allowable frequencies of exceedance and compliance timeframes, were issued by the Minister of Water and Environmental Affairs on 24 December 2009 (**Table 3-3**). National standards for $PM_{2.5}$ were established by the Minister of Water and Environmental Affairs on 29 June 2012.

Table 3-3: National Ambient Air Quality Standards for Criteria Pollutants.

POLLUTANT	AVERAGING PERIOD	CONCENTRATION ($\mu g/m^3$)	FREQUENCY OF EXCEEDANCE
Sulphur dioxide (SO_2)	10 minutes	500 (191)	526
	1 hour	350 (134)	88
	24 hours	125 (48)	4
	1 year	50 (19)	0
Nitrogen dioxide (NO_2)	1 hour	200 (106)	88
	1 year	40 (21)	0
Particulate Matter (PM_{10})	24 hours	75	4
	1 year	40	0
Particulate Matter ($PM_{2.5}$)	24 hours	$40^{(1)}$ $25^{(2)}$	0
	1 year	$20^{(1)}$ $15^{(2)}$	0

Ozone (O_3)	8 hours (running)	120 (61)	11
Benzene (C_6H_6)	1 year	5 (1.6)	0
Lead (Pb)	1 year	0.5	0
Carbon monoxide (CO)	1 hour	30 000 (26 000)	88
	8 hour (calculated on 1 hourly averages)	10 000 (8 700)	11

Notes:

*Values indicated in blue are expressed in PPB.

(1) Compliance required by 1 January 2016 – 31 December 2029.

(2) Compliance required by 1 January 2030.

3.1.13. Dust Deposition Standards

The Department of Environmental Affairs has issued National dust control regulations on 1 November 2013 (**Table 3-4**). The purpose of the regulations is to prescribe general measures for the control of dust in all areas. The regulations prohibit activities which give rise to dust in such quantities and concentrations that the dust fall at the boundary or beyond the boundary of the premises where it originates exceeds –

a) 600 mg/m^2/day averaged over 30 days in residential areas measured using reference method ASTM D1739.
b) 1200 mg/m^2/day averaged over 30 days in non-residential areas measured using reference method ASTM D1739.

Table 3-4: South African Dust Fallout Regulations.

RESTRICTION AREAS	DUST FALLOUT RATE (D) (1)	REQUENCY OF EXCEEDANCE
Residential Areas	D < 600	Two within a year, no two sequential months (2)
Non-residential areas	600 < D < 1200	Two within a year, no two sequential months (2)

Notes:

(1) Averaged over 1 month (30±2-day average) (mg/m^2/day)

(2) Per dust fallout monitoring site.

Any person who has exceeded the dust fallout standard must, within three (3) months after submission of a dust fallout monitoring report, develop and submit a dust management plan to the air quality officer for approval. The dust management plan must:

a) Identify all possible sources of dust within the affected site;
b) Detail the best practicable measures to be undertaken to mitigate dust emissions;
c) Develop an implementation schedule;
d) Identify the line management responsible for implementation;
e) Incorporate the dust fallout monitoring plan;

f) Establish a register for recording all complaints received by the person regarding dust fall, and for recording follow up actions and responses to the complainants.

The dust management plan must be implemented within a month of the date of approval. An implementation progress report must be submitted to the air quality officer at agreed time intervals.

3.1.14. GHG Emissions

On 14 March 2014, the following six (6) greenhouse gases were declared as priority air pollutants in South Africa:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF_6)

National Greenhouse Gas (GHG) Emission Reporting Regulations (Government Gazette No. 40762 of 3 April 2017), were published by the DEA. A person identified as a Category A data provider in terms Annexure 1 of these regulations, must register their facilities by filling in the form under Annexure 2 and must submit a GHG emissions inventory and activity data in the required format given under Annexure 3 on an annual basis.

Updated draft National Pollution Prevention Plan Regulations (Draft Gazette No. 40996) were published on 21 July 2017 by the DEA. A pollution prevention plan will be required should the proposed development:

a) Undertake any of the following activities identified in Annexure A of the National GHG Emission Reporting Regulations (Government Gazette No. 40762 of 3 April 2017), which involves the direct emission of GHG in excess of 0.1 Megatonnes (Mt) annually measured as carbon dioxide equivalents ($CO_{2\text{-}eq}$); or
b) Undertake any of the following activities identified in Annexure A of the Draft National Pollution Prevention Plan Regulations (Gazette No. 40996 of 21 July 2017) as a primary activity.

<u>Annexure A activities in terms of the Draft National Pollution Prevention Plan Regulations include:</u>

- Coal mining
- Production and /or refining of crude oil
- Production and/or processing of natural gas
- Production of liquid fuels from coal or gas
- Cement production
- Glass production
- Ammonia production
- Nitric acid production
- Carbon black production
- Iron & steel production
- Ferro-alloys production
- Aluminium production
- Polymers production
- Pulp and paper production
- Electricity production

A person identified as a Category A data provider in terms of these regulations must register their facilities by filling in the form under Annexure 2 and must submit a GHG emissions inventory and activity data in the required format given under Annexure 3. All data must be provided annually, by the 31 March of the following year. Data providers are required to register on the NAEIS and report on their direct GHG emissions on an annual basis and comply with the reporting requirements as detailed in the National GHG Emission Reporting Regulations.

The MetCon Refinery Facility within the JMP would need to report on GHG emissions by the 31 March of every year, should the total design net heat input capacity of all the stationary fuel combustion installations, associated with their activities, fall above the 10MW threshold in terms of Annexure 1 of the National GHG emission reporting regulations (Government Gazette No. 40762 of 3 April 2017).

3.1.15. Highveld Priority Area Air Quality Management Plan

The HPA was declared a priority area by the Minister of Environmental Affairs and Tourism on the 23 November 2007 under the NEM:AQA (Act No. 39 of 2004) (Government Gazette, No. 30518 of 23 November 2007). A Priority Area is usually associated with elevated ambient concentrations of criteria air pollutants such as PM_{10}, $PM_{2.5}$, SO_2 and NO_x. Generally, a high number of emitters (industrial and non-industrial) are also concentrated in these areas. In order to meet the requirements of Air Quality Act (Act No. 39 of 2004), an Air Quality Management Plan (AQMP) was compiled for the HPA and provides as a management tool that can be used and implemented by departments and industry to ensure effective air quality management within the area.

The primary aim of the AQMP is to provide a framework including short to long term strategies and programs that can be used to work towards achieving and maintaining compliance with the National ambient air quality standards within the HPA. In the HPA, industrial emitters were identified as the most significant contributor of emissions accounting for 89% of PM_{10}, 90% of NO_x and 99% of SO_2. Industrial emitters within the HPA include (DEA, 2011):

- Power generation;
- Coal mining;
- Primary & secondary metallurgical operations;
- Brick manufactures;
- Petrochemical industry;
- Ekurhuleni industrial sources (excluding the above); and
- Mpumalanga industrial sources (excluding the above).

An assessment of ambient air quality monitoring data within the HPA, allowed for the following areas to be identified as areas of concern. These areas are associated with high frequency exceedances of the PM_{10} and SO_2 ambient standards. The air quality monitoring data for the HPA also shows seasonal trends. A higher frequency of exceedances of the standards are observed during the winter season where the dispersion potential of ground level pollutants (e.g. vehicle exhaust emissions) are largely reduced due to the strengthening of surface inversions (DEA, 2011).

- Witbank 2;
- Middelburg;
- Secunda;
- Ermelo;
- Standerton;

- Balfour; and
- Komati.

A comprehensive emissions inventory was compiled for the HPA. A combination of ambient air quality monitoring and dispersion modelling results identified nine areas within the HPA as hotspot areas, where ambient concentrations of PM_{10}, SO_2 and NO_2 frequently exceed and/or were predicted to exceed the ambient standards (**Table 3-5**). Residential areas associated with a high level of domestic fuel burning (wood and coal) were identified to experience high concentrations of particulates and CO.

Table 3-5: HPA Air Quality Hot Spot Areas (DEA, 2011;20).

Hot Spot	PM_{10}	SO_2	NO_2
Emalahleni	✓	✓	
Kriel		✓	
Steve Tshwete	✓	✓	✓
Ermelo	✓	✓	
Secunda	✓	✓	✓
Ekurhuleni	✓	✓	
Lekwa	✓	✓	
Balfour	✓		
Delmas		✓	

In order to achieve compliance with the National air quality limits for criteria pollutants within the HPA, the AQPM for the HPA developed seven goals which are given below (DEA, 2011):

1. ***Goal 1:*** *By 2015, organisational capacity in government is optimised to efficiently and effectively maintain, monitor and enforce compliance with ambient air quality standards*
2. ***Goal 2:*** *By 2020, industrial emissions are equitably reduced to achieve compliance with ambient air quality standards and dust fallout limit values*
3. ***Goal 3:*** *By 2020, air quality in all low-income settlements is in full compliance with ambient air quality standards*
4. ***Goal 4:*** *By 2020, all vehicles comply with the requirements of the National Vehicle Emission Strategy*
5. ***Goal 5:*** *By 2020, a measurable increase in awareness and knowledge of air quality exists*
6. ***Goal 6:*** *By 2020, biomass burning, and agricultural emissions will be 30% less than current*
7. ***Goal 7:*** *By 2020, emissions from waste management are 40% less than current*

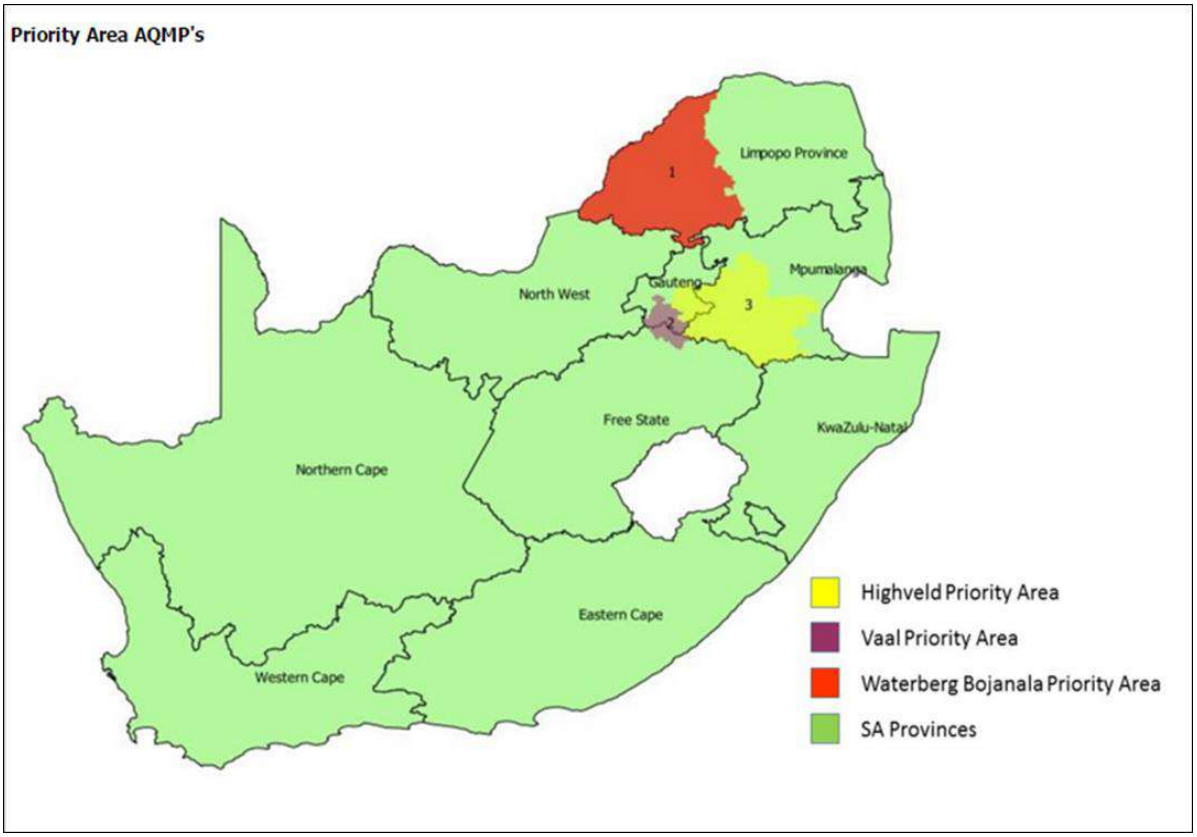

Figure 3-1: Air Quality Priority Areas

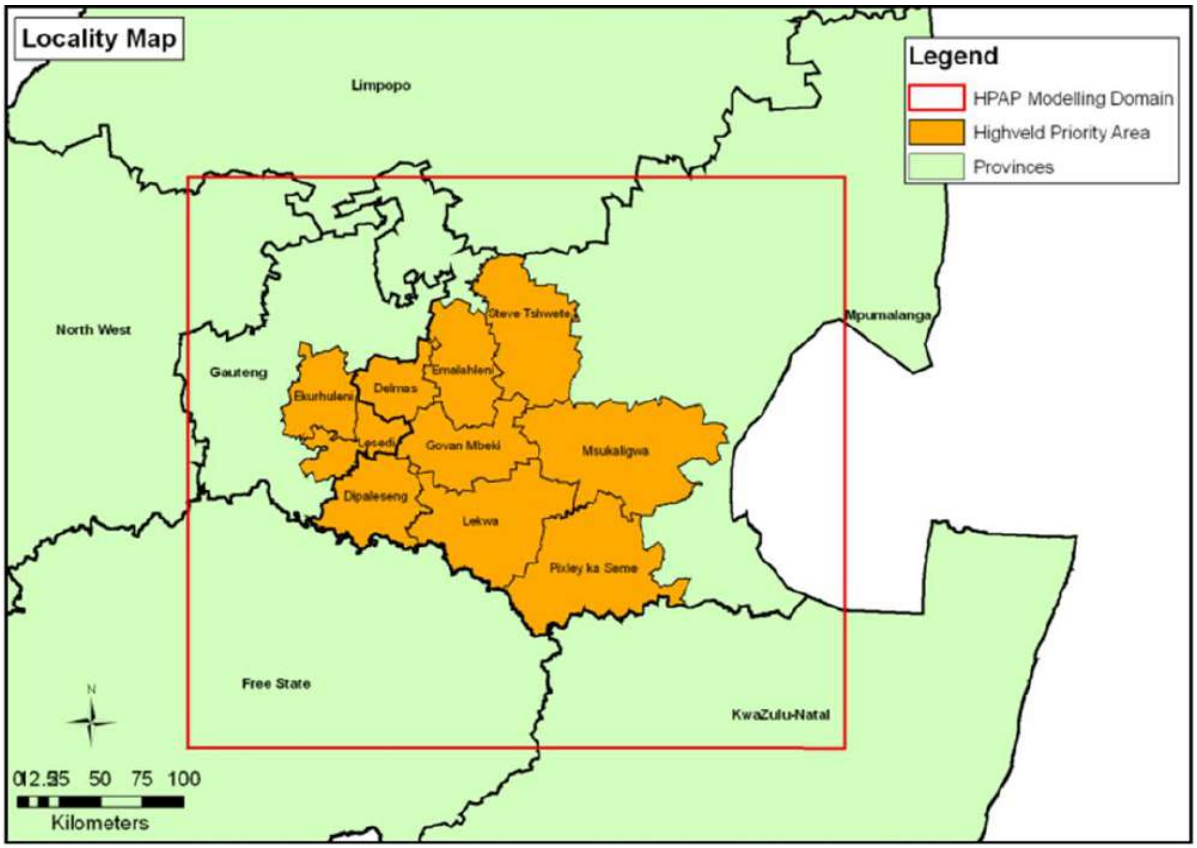

Figure 3-2: Highveld Priority Area (DEA, 2011)

3.1.16. Additional Relevant Legislation

- Gauteng Conservation Plan Version 3.3 (C-Plan 3.3);
- Constitution of South Africa (Act No 108 of 1996);
- Conservation of Agricultural Resources Act (Act No 43 of 1998);
- National Forests Act (Act No. 84 of 1998);
- Occupational Health and Safety Act (Act 85 of 1993);
- Development Facilitation Act (Act No. 67 of 1995);
- Water Services Act (Act No. 108 of 1998);
- Municipal Systems Act (Act No. 32 of 2000);
- Mineral and Petroleum Resource Development Act (Act No. 28 of 2002 as amended);
- South African Diamond & Precious Metals Regulator (SADPMR);
- Precious Metals Act, 2005 (Act 37 of 2005); and
- Applicable local by-laws.

3.1.17. Key Development Strategies and Guidelines

- Gauteng Growth development strategy;
- Gauteng development plan;
- City of Ekurhuleni development plan; and

- City of Ekurhuleni integrated development plan.

4. PROJECT NEED AND DESIRABILITY

The South African Government seeks to transform and improve the economy into a global competitive industrial economy. The National Development Plan (NDP) and various South African industrial policies such as the Industrial Policy Action Plan (IPAP), outlines a long-term development path towards a prosperous and successful economy characterised by high levels of economic growth, employment generation and an equitable society. In addition, these plans and policies aim to address the South African Government's industrial agenda, prioritized industrial sectors and a range of interventions required to accelerate economic growth, create jobs, and fight poverty and underdevelopment. The Strategic Infrastructure Projects (SIPs) have been identified and implemented all over the country in attempts to achieve the best outcomes towards the latter objectives.

The GIDZ falls under the Aerotropolis Master plan developed by the host City of Ekurhuleni and is part of the South African Special, Economic and Industrial Development Zones SEZs which further form part of the SIPs. The SEZ Programme, which was mandated by the SEZ Act, proclaimed on the 9th of February 2016, is one (1) of the critical tools for accelerating the country's industrial development agenda. In terms of the Department of Trade and Industry (DTI), SEZs are a tool to help:

- promote industrial agglomeration;
- build the required industrial infrastructure;
- promote coordinated planning among key government agencies and the private sector; and
- guide the deployment of other necessary development tool.

It should be noted that the proposed JMP development falls under the OR Tambo Industrial Development Zone (IDZ) (Gauteng) of the South African SEZs. The OR Tambo IDZ aims to develop land around OR Tambo International Airport to stimulate economic development through the use of the IDZ mechanism. The OR Tambo IDZ supports the growth of the beneficiation of precious metals and minerals sector, with a focus on light, high-margin, export-oriented manufacturing of South African precious and semi-precious metals. In light of this, the proposed JMP development forms part of SIP 2. Furthermore, it is the objective of the GIDZ to significantly contribute to the realization of the competitive and inclusive economic growth within the Gauteng Province. Also, by the attracting both domestic and foreign investors and maximizing the provincial exports economic contribution, the JMP project will essentially position the Gauteng Province as a globally recognized city.

The OR Tambo IDZ JMP project will consist of several industry-specific entities which will occupy the facilities in the precinct. In order to achieve the objectives of the project and those of the broader plans, the GIDZ has strategically identified MetCon as one (1) of the occupants within the precinct. MetCon was established in 1989 to provide a service for the refining of precious metals to the Jewellery industry. During 2004, the operation was expanded, and a second refinery was opened. MetCon chemically refines precious metals from jeweller's waste materials and casts the metals it into ingots. In addition, MetCon is also considered to be a major exporter of gold beneficiated from dorè. As such, MetCon has been identified as a key facility to be incorporated into the JMP GIDZ project.

5. PROJECT SITE DESCRIPTION

5.1. Locality

The existing GIDZ JMP site is situated on Airports Company South Africa (ACSA) Ltd land (namely the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the boundaries of the ORTIA. The location coordinates are as follows: S26.114351, E28.250192. The ORTIA is situated in close proximity to the commercial center of Johannesburg and other economic development areas such as Wadeville and Alrode. As part of the City of Ekurhuleni Airport City/ Aerotropolis economic development framework, the JMP project is aimed at achieving the economic potential of the City also through the promotion of industry-based enterprises located close to the ORTIA.

The site is further complemented by the linkages to some of Gauteng's major technical cities such as Alberton, Benoni, Germiston, Midrand, Centurion and the further City of Tshwane. Furthermore, the JMP project site is situated within a 10 km radius of the Rand Refinery (a large supplier of gold) and a 20 km radius of Jewel City, where most of South Africa's diamond trade takes place. It should also be noted that the proposed development is situated adjacent to the suburb of Bonaero Park, Kempton Park.

A map showing the locality of the proposed project site is provided in **Figure 5-1** below.

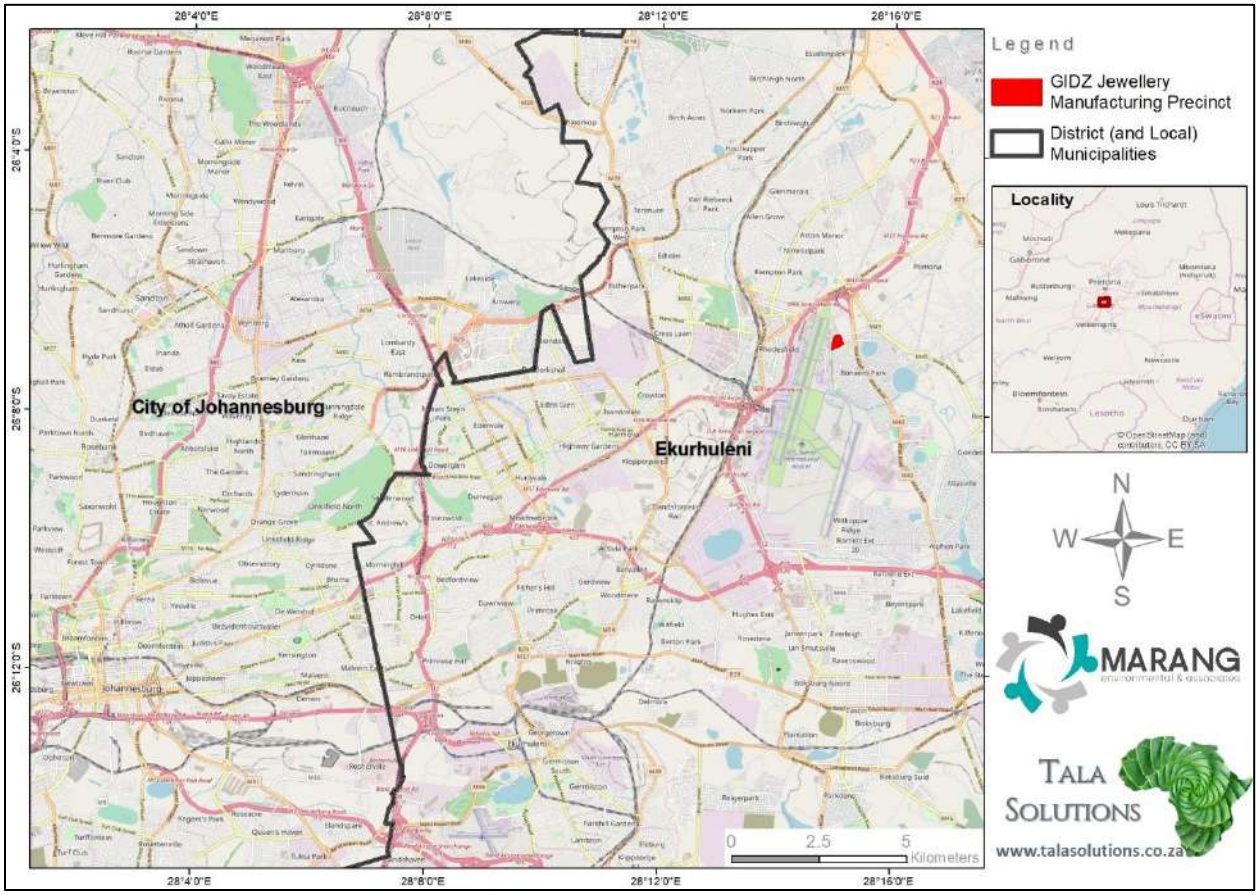

Figure 5-1: JMP development site locality map.

5.2. Study site description

The application site is approximately 7.53 ha in extent. The GDED have signed a Notarial Deed of Lease agreement, which is defined as a long-term agreement on immovable property, for the JMP located on the Remainder of Portion 69 of the Farm Witkoppie 64 – IR in Kempton Park, within the City of Ekurhuleni, Gauteng Province. It must be noted that the JMP site initially received an EA for a 6.5ha portion of the site from the provincial authority (namely GDARD) in 2011. On 13 February 2018, the GIDZ acquired a further lease agreement for an extra 1ha, north-east of the original site, which increase the size of the JMP site to approximately 7.53ha. Furthermore, it should be noted that this extra 1ha site was already cleared and consisted of bare soil when the GIDZ were given the land to incorporate into the proposed JMP development.

Construction on the JMP site (6.5ha as approved in the EA) commenced in 2013 and is still currently underway. However, construction of the proposed MetCon facility and above-mentioned additional 1ha area has not yet commenced. This will only commence once the necessary approvals / authorisations have been obtained.

The proposed MetCon facility will occupy block 2 of the JMP site as represented in the site layout diagram below (**Figure 5-3**). The infrastructure within the site will include office buildings, industry buildings, parking, and paved grounds as well as environment complementary components such as vegetation. It should be noted that an attenuation pond / dam was constructed in the south-eastern corner of the study area during the construction of the original JMP site (**Figure 5-2**). This attenuation pond is still present and will remain within the JMP site. A site layout plan (which was compiled for the development of the original JMP site in 2009) which illustrates the above-mentioned infrastructure is provided in **Appendix 5**.

Figure 5-2: Attenuation pond/ dam located in the south-eastern corner of the JMP site

The JMP will consist of jewellery manufacturers and retail outlets such as In2Food, Isondo, Julius Klein, Akapo, Diarough, Break even and Ruzow Diamonds. The development area is close to major roads such as the R21, M43 and the M45 (Dann Road), although accessibility by public transport is limited.

Table 5-1: 21-digit Surveyor General code of the JMP site.

T	0	I	R	0	0	0	0	0	0	0	0	0	0	6	4	0	0	0	6	9

Table 5-2: Corner Points of the JMP site.

Corner	Latitude	Longitude
Corner 1	26° 6'45.34"S	28°15'4.15"E
Corner 2	26° 6'45.38"S	28°15'1.82"E
Corner 3	26° 6'46.06"S	28°14'58.35"E
Corner 4	26° 6'52.25"S	28°14'56.78"E
Corner 5	26° 6'58.13"S	28°14'56.89"E
Corner 6	26° 6'53.60"S	28°15'7.43"E

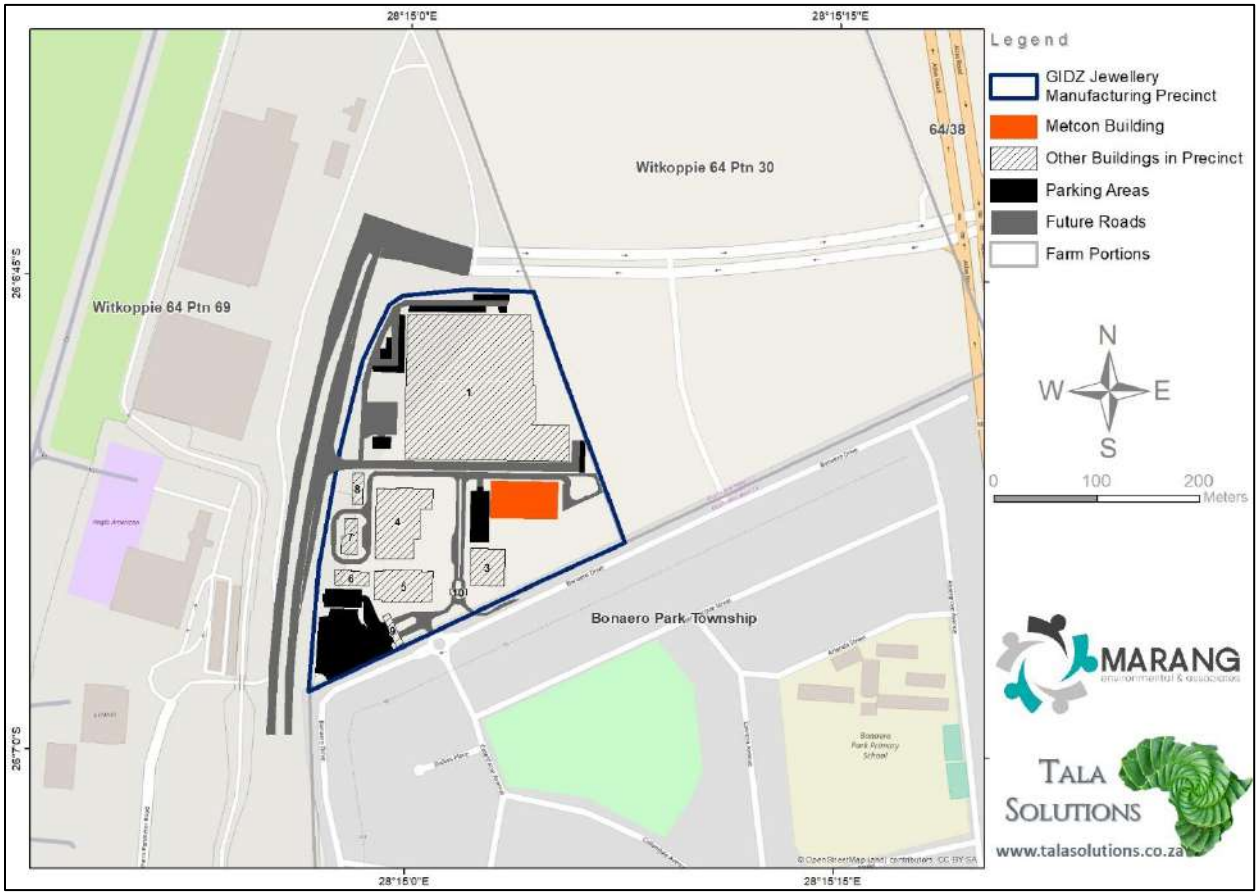

Figure 5-3: JMP Site Layout.

5.3. Topography

The topography surrounding the proposed development site is shown in **Figure 5-4**. Surrounding elevations range from approximately 1376 – 1913 m above sea level. The proposed project site is situated approximately 1670 m above sea level; with increasing elevation towards the north-west.

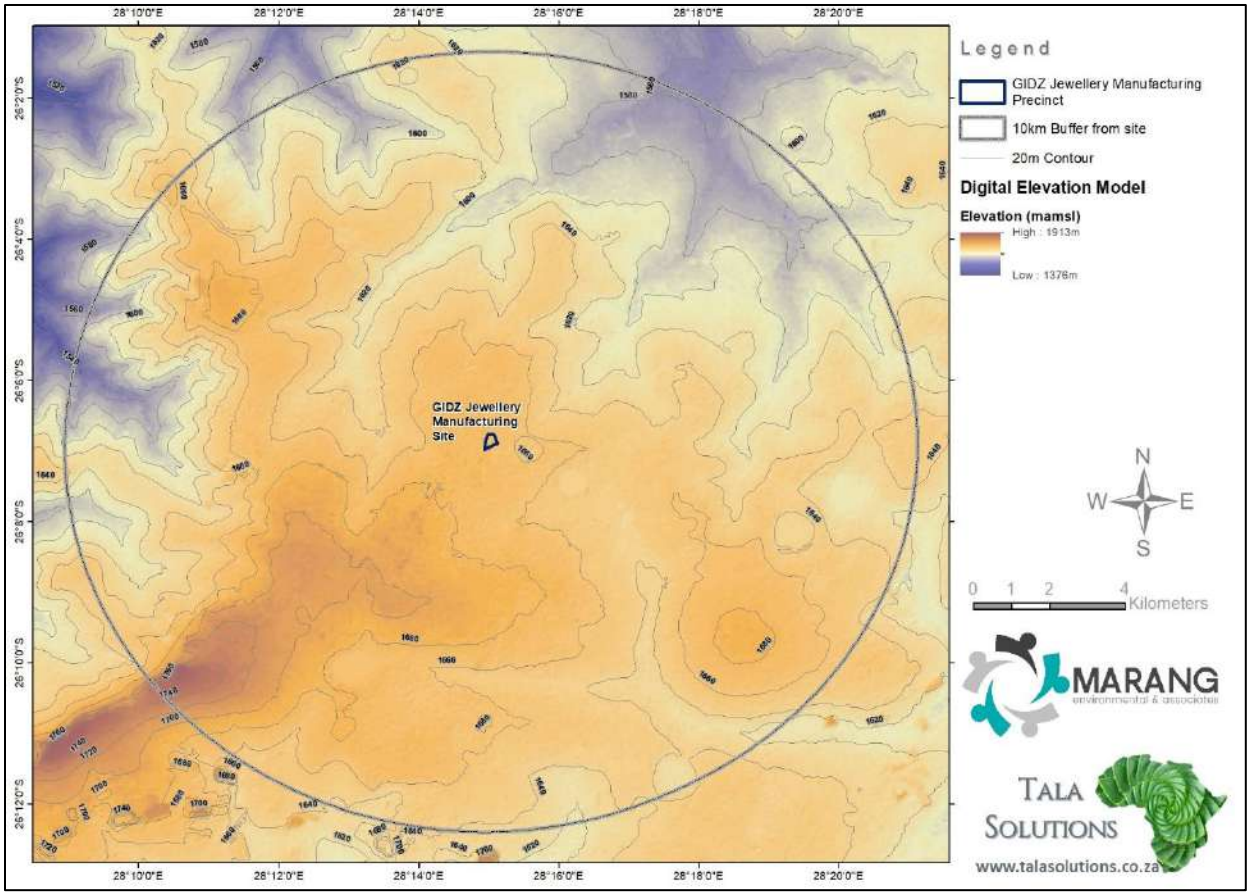

Figure 5-4: Topography surrounding MetCon Jewellery Precinct Facility.

5.4. Geology and Soil

The JMP development site sits on the Dwyka Group which is part of the oldest deposits found in the Karoo Supergroup basin (**Figure 5-5**). The geological history regarding the formation of the Karoo Supergroup records over 100 million years ago and was part of the supercontinent Gondwana, which was situated near the south pole and covered with ice. The development area is characterized by red, yellow, and greyish soils with low to medium base status, classified as Acrisols, which contain iron oxides such as hematite (Fe_2O_3) and goethite (FeOOH) with poor drainage (**Figure 5-6**). In addition, other soils with plinthic and gleyic properties may also be present.

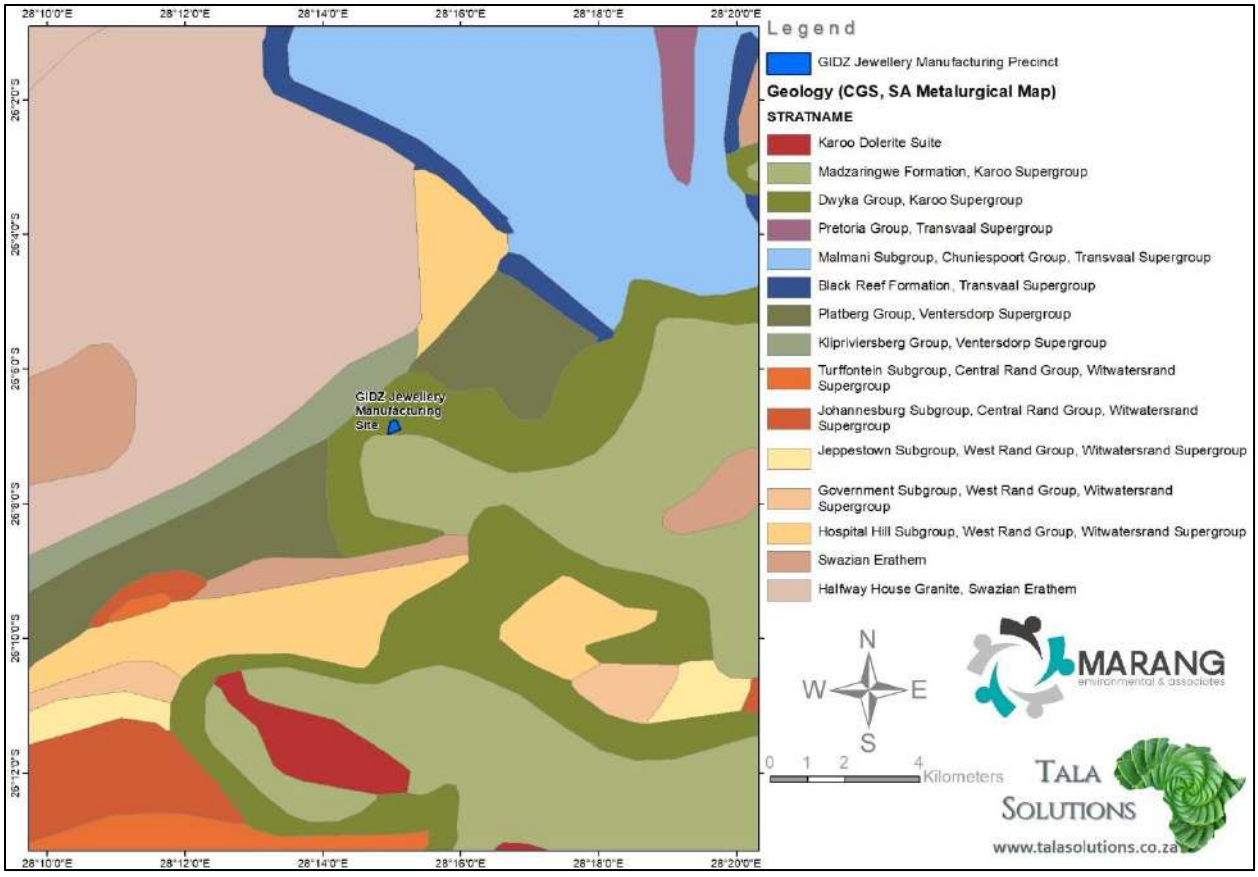

Figure 5-5: Geology of the surrounding area.

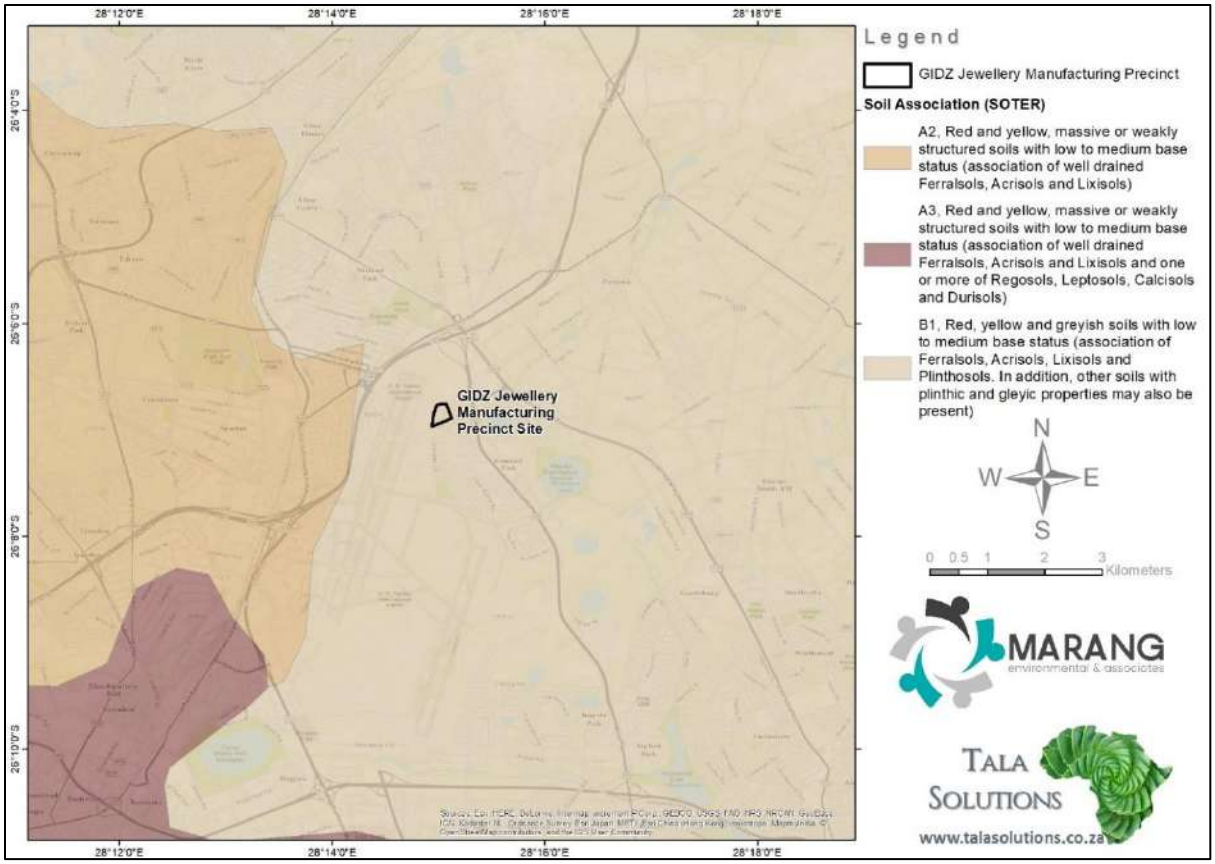

Figure 5-6: Soil characteristics of the development area.

5.5. Land use

The closest residential area is the urban residential area, Bonaero Park Township, south of the project site (**Figure 5-7**). Some immediate cultivated lands are sited within 500m north and north-east of the proposed development site. Urban built-up and urban smallholding areas are located approximately 1km north-east of the JMP site. The ORTIA runaway can also be found on the western side of the JMP site. The Kempton Park Central Business District (CBD), classified as urban commercial area, is situated further west, approximately 1.5km from the JMP site.

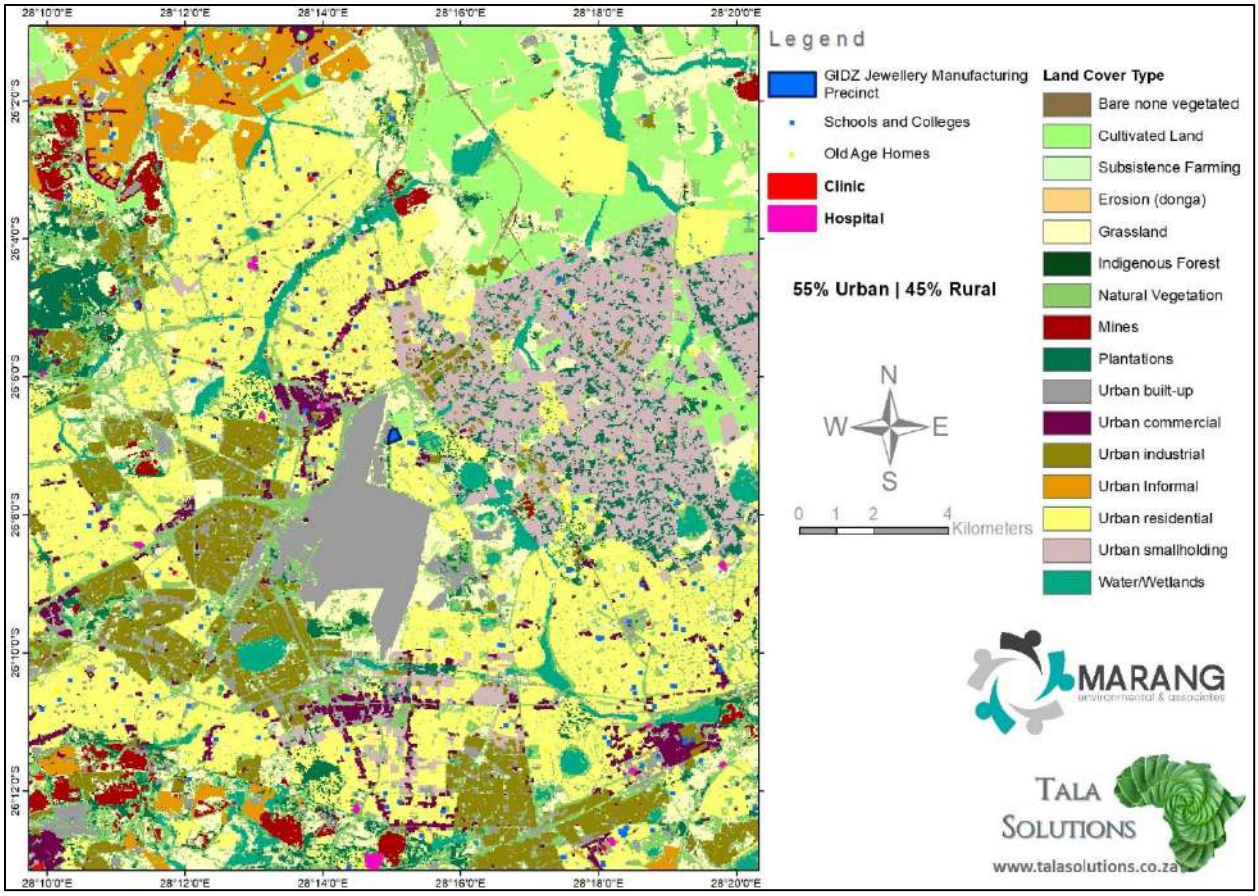

Figure 5-7: JMP surrounding land use map.

5.6. Climate

Meteorological data for the project area was obtained from the ORTIA weather station, for the period January 2014 to December 2016. Details of the meteorological data obtained is summarised in **Table 5-3**.

Table 5-3: Meteorological Data Details (SAWS, 2017).

Meteorological Data Details	
Met Data Information	**Description**
Source	South African Weather Services
Met data type	Surface Data
Station	OR Tambo International Airport
Latitude	26.143000 S
Longitude	28.234600 E
Time zone	UTC +2 hours
Period of record	January 2014 - December 2016
Met Station Parameters	**Description**
Anemometer height	Assumed 10m
Station base elevation	1711 m

Parameters	Wind speed, wind direction, cloud cover, temperature, relative humidity, rainfall
Format	Excel - hourly

5.6.1. Temperature and Relative Humidity

Monthly average temperatures and relative humidity profiles at the project site for the period January 2014 to December 2016 are presented in **Table 5-4**. Average monthly temperatures range from 11.0 – 20.7 ºC (**Figure 5-8**). Highest temperatures are observed during the spring and summer months (September – February) and minimum temperatures are observed during the winter months (June – August). Relative humidity is highest during late spring to autumn months (i.e. November – March), and lower but consistent for the rest of the year (i.e. May – October).

Table 5-4: Hourly Minimum, Maximum and Monthly Average Temperatures for January 2014 - December 2016.

MINIMUM, MAXIMUM AND MONTHLY AVERAGE TEMPERATURES (ºC)												
	JAN	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Minimum	12.8	11.2	10.6	3.8	3.9	-1.3	-3.3	-1.9	3.3	2.8	4.4	10.5
Maximum	34.8	31	29.4	27.6	25.5	22.6	21.7	27.5	30.3	32.9	33	32.2
Average	20.7	20.7	19.0	16.9	15.1	11.4	11.0	14.5	17.7	19.6	19.0	20.8

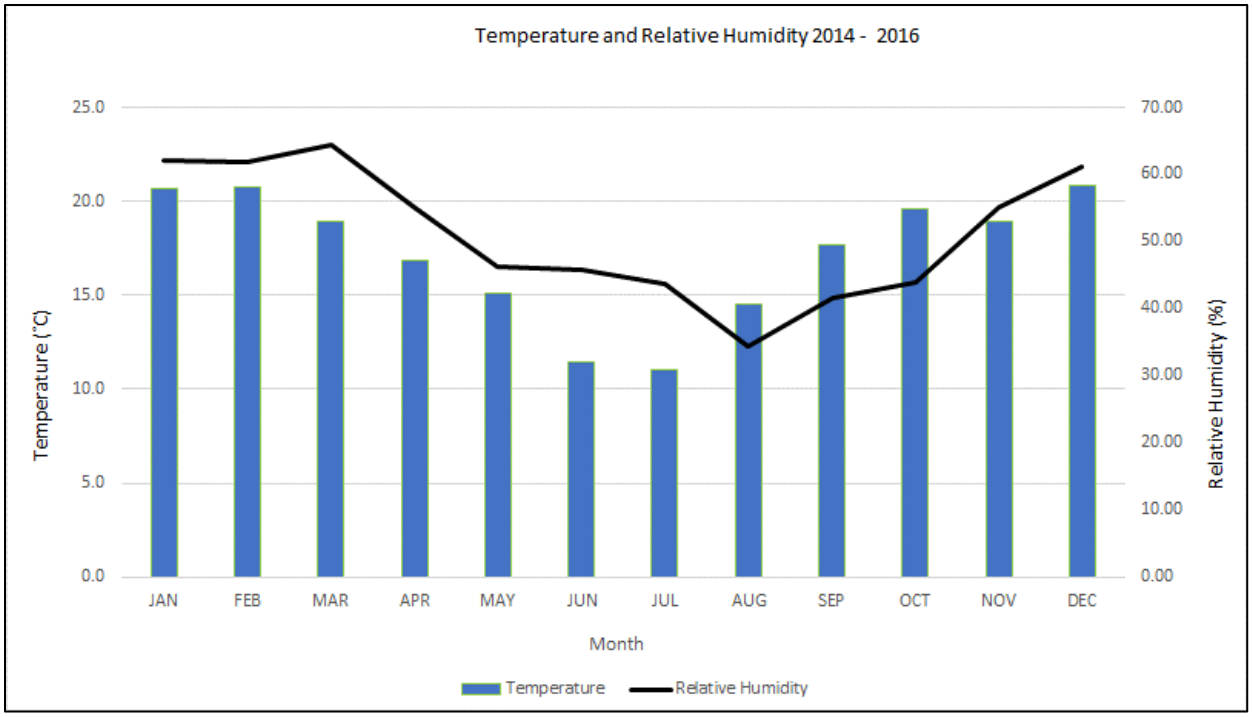

Figure 5-8: Monthly Average Temperature and Relative Humidity profiles for the project site for January 2014 - December 2016.

5.6.2. Precipitation

Monthly total rainfall at the project site for the period January 2014 to December 2016 is presented in Figure **5-9**. The area receives most of its rainfall during the spring, summer and early autumn seasons during the months October - March. Little to no rainfall is observed during the late autumn and winter seasons from April to August (**Table 5-5**).

Table 5-5: Total Monthly Rainfall for January 2014 - December 2016.

TOTAL MONTHLY RAINFALL (mm)												
YEAR	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
2014	26.2	115.6	122.0	16.2	4.4	0.2	0.0	3.6	8.6	33.6	90.2	174.4
2015	155.0	27.8	52.2	23.2	0.0	3.4	8.2	1.4	31.2	17.6	63.0	62.4
2016	123.2	65.2	137.0	13.8	49.0	10.8	15.4	0.0	3.0	50.4	210.0	119.6

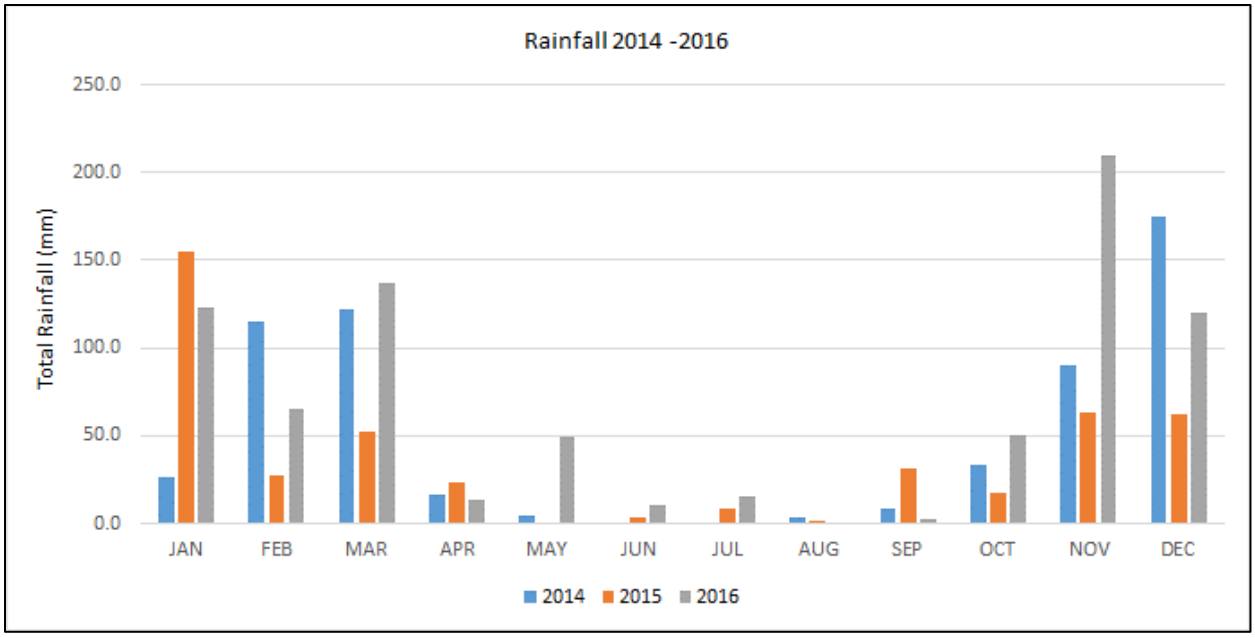

Figure 5-9: Total Monthly Rainfall (mm) for the project site for the period January 2014 - December 2016.

6. DESCRIPTION OF RECEIVING ENVIRONMENT

6.1. Biodiversity

The closest Critical Biodiversity Area (CBA) to the JMP site is approximately 500m east of the JMP site and is located outside the site boundary. As mentioned, the north-west boundary of the site overlaps onto an ESA according to the SANBI Gauteng Conservation Plan (2011) (**Figure 6-1**). According to the SANBI, ESAs are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of CBAs as well as delivering ecosystem services.

As mentioned in **Section 5.2**, most vegetation has been cleared at the site including the previously authorised 6.5ha and the recently acquired 1ha along the north-western boundary of the site. As such, this assessment is considered insignificant.

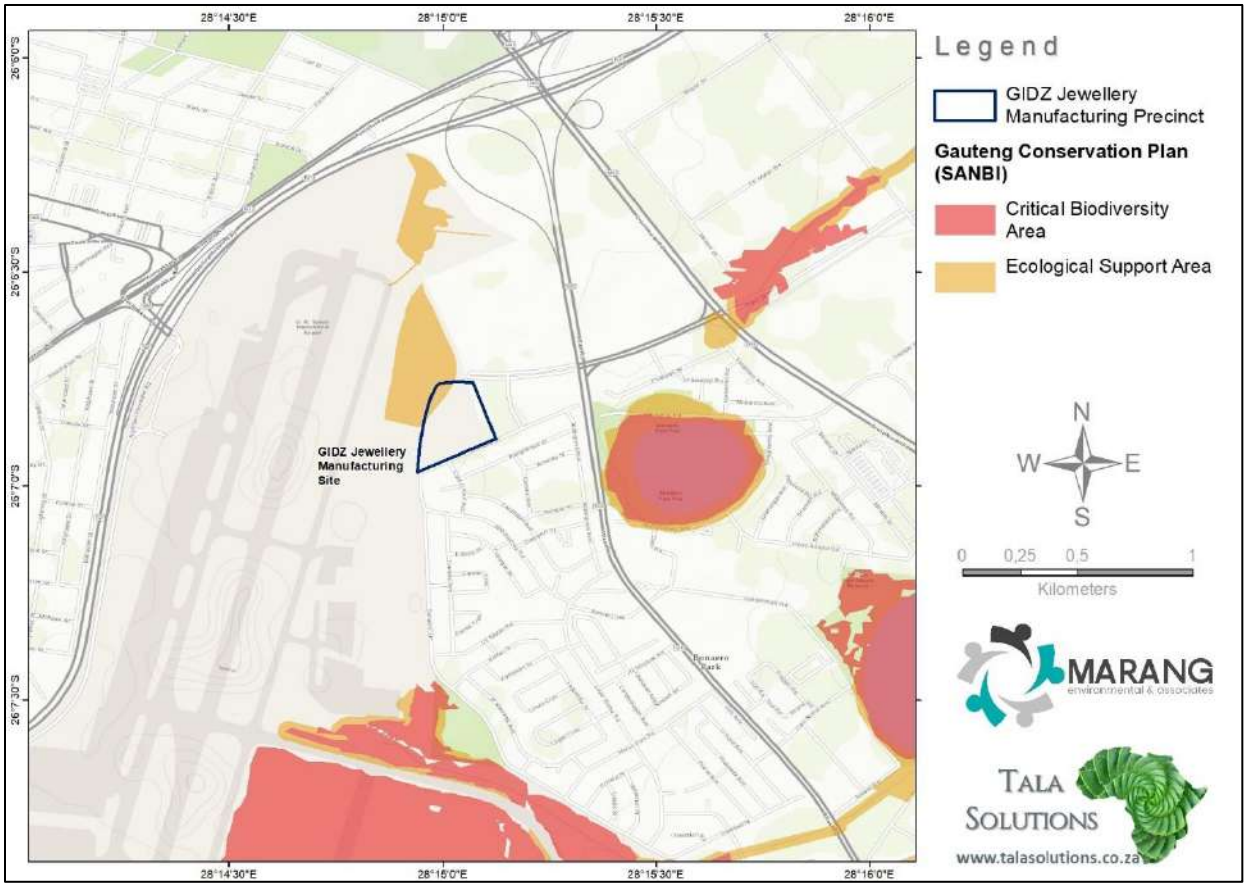

Figure 6-1: Biodiversity map around the JMP development site.

6.2. Surface water

6.2.1. Details of Study area in terms of the National Freshwater Ecosystem Priority Area (NFEPA) (2011) database

The study area is situated within a sub-quaternary catchment considered an upstream management area, indicating that human activities need to be managed to prevent the downstream degradation of National Freshwater Ecosystem Priority Areas (NFEPAs) and Fish Support Areas. The NFEPA Database indicates a natural flat wetland situated in the western portion of the study area. Additionally, one (1) natural depression feature is situated approximately 460m east of the study area, situated within the investigation area. Furthermore, according to NFEPA these wetland features are in a heavily to critically modified ecological condition.

According to the NFEPA Database there are no rivers associated with the study area, nor are there any rivers situated within a 5km radius of the study area. It falls within the Mesic Highveld Grassland Group 3 wetland vegetation type, considered to be Least Threatened (SANBI, 2012; Mbona et al, 2014).

6.2.2. Details of Study area in terms of the Gauteng Conservation Plan (C-Plan V3.3, 2011)

According to the Gauteng Conservation Plan (C-Plan) (2011), there are no wetland or river buffers associated with the study area. However, a pan buffer is associated with the investigation area (within

500m) (**Figure 6-2**). In terms of the NWA, as amended, a Pan *means any depression collecting water or that is inward draining or a flow through system with flow contributions from surface water, groundwater or interflow or combinations thereof*. A regulated area of a watercourse in terms of section 21(c) of the NWA Act, includes a 500m radius from the delineated boundary (extent of any wetland or pan). The north-western corner of the study area is situated within an ESA. ESAs are defined by GDARD as natural, near-natural, degraded or heavily modified areas required to be maintained in an ecologically functional state to support CBAs and/or Protected Areas.

Although rescinded as a policy document in the Gauteng Spatial Development Framework in 2011, the Urban Edge nevertheless remains a useful indicator of where concentration [of development] should occur. According to the Gauteng C-Plan (2011) and the Gauteng Environmental Management Framework (EMF, 2015), the study area is located within the Urban Edge and the eastern half of the study area is situated within the EMF Zone 5 (Industrial and large commercial focus zone).

Figure 6-2: Surface water map around the JMP development site

6.3. Soils and Land Capability

The following data is applicable to the study area and the proposed operations, according to various data sources including but not limited to the Agricultural Geo-Referenced Information System (AGIS).

- The Mean Annual Precipitation (MAP) on the study area is estimated to range between 601 to 800 mm per annum;
- The SOTER database indicates that the entire study area is comprised of slightly or moderately weathered parent material with good structural stability, classified as Plinthic Acrisols (ACp) (**Figure 6-3**);
- Geology 2001: According to the Geology 2001 layer the southern portion of the study area is underlain by Shale;
- The databases reviewed indicate that the entire study area is comprised High potential arable land (class II), which implies that the site has high agricultural potential for cultivated crops;
- According to the AGIS database, the livestock grazing capacity potential is estimated to be approximately 3 hectares per large animal unit (Morgenthal et al., 2005);
- The natural soil pH is estimated to be range between 5.5 and 6.4, indicating that the soils within the study area are anticipated to be slightly acidic to neutral, as interpolated from topsoil pH values obtained from the National Soil Profile Database (AGIS database);
- Soils 2001: According to the Soils 2001 Layer the entire portion of the study area is situated within an area where the soils are classified as Sandy loams dominant;
- According to the Gauteng Agricultural Potential Atlas database there no crops nor cultivation activities that were identified within the study area, however a small portion located in close proximity (east) of the study area is said to be under cultivated pastures;
- The desktop assessment indicates that there no Agricultural Hubs situated within the study area and the surrounding areas; and
- Some of the surrounding areas have been urbanized and no longer used for food production purposes.

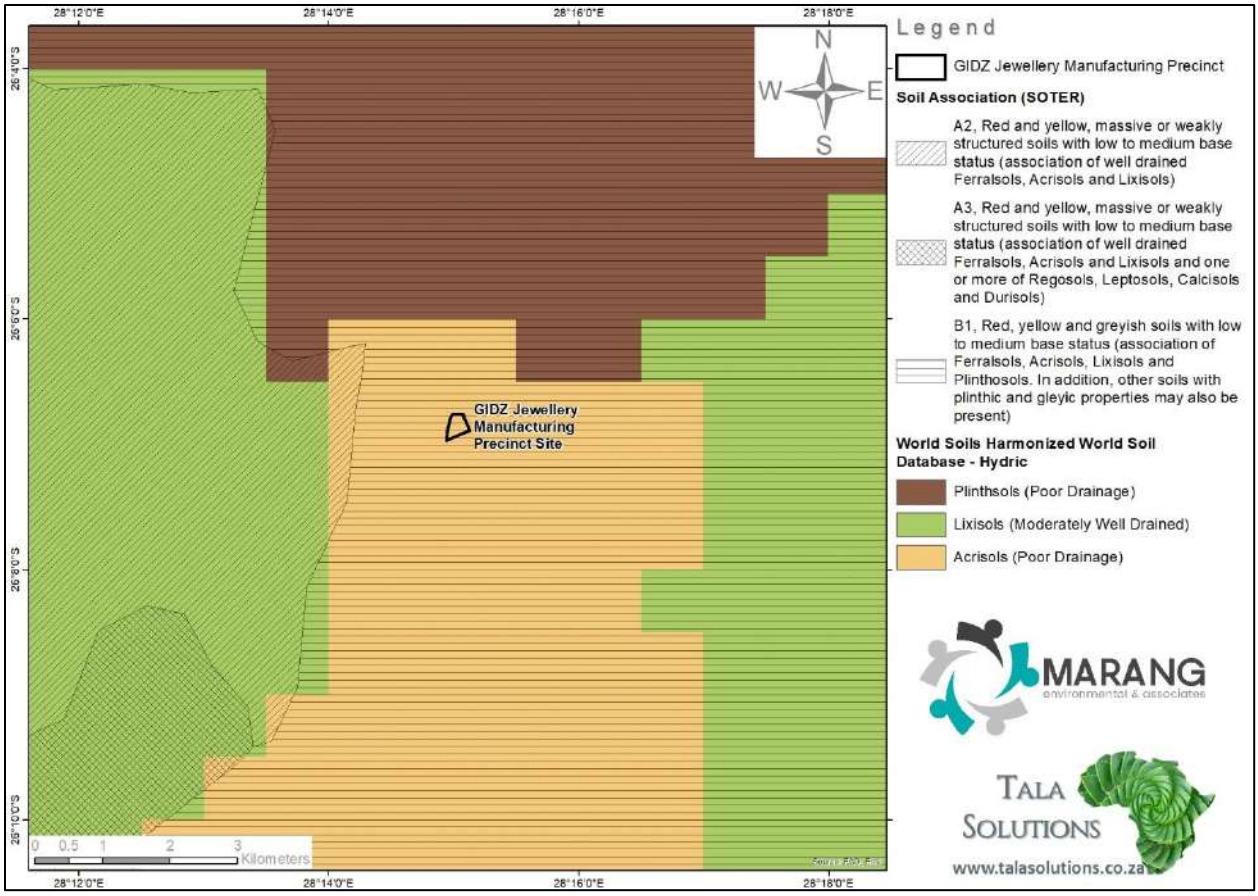

Figure 6-3: SOTER Database: Soil type of the JMP development site.

6.4. Visual

The following data is applicable to the Precious Metals Refinery Facility (PMRF), according to various databases including but not limited to Mucina & Rutherford (2012):

- The PMRF is situated within the Grassland Bioregion, the Mesic Highveld Grassland Bioregion and is characterised by the Soweto Highveld Grassland Vegetation Type, according to Mucina & Rutherford (See Appendix B of Visual Review Letter for further detail on the climate, topography and vegetation of the Soweto Highveld Grassland Vegetation Type);
- According to the South African Protected and Conservation Areas Databases (SAPAD & SACAD, 2018) and the National Protected Areas Expansion Strategy (NPAES, 2009) the following nature reserves are within a 10km radius of the PMRF:
  - The Korsman Bird Sanctuary (Local Nature Reserve) is situated approximately 9.1km southeast of the PMRF. This Bird Sanctuary is otherwise known as the Westdene Pan Nature Reserve (Under SAPAD);
  - The Pamula Park Private Nature Reserve is situated approximately 1.5km east of the PMRF; and
  - No conservation areas are situated within a 10km radius of the PMRF.
- The eastern portion of the PMRF is situated within the Industrial and Large Commercial Zone (Zone 5) of the Environmental Management Framework (EMF, 2015) (Refer to Appendix B of Visual Review Letter for the map); and

- Based on digital satellite imagery of the PMRF and surrounding area, the PMRF is situated directly east of the OR Tambo International Airport, north of the residential area Bonaero Park and Club Africa & Jubilee Guest Lodge & Golf Driving Range is situated approximately 470m north of the PMRF and open grassveld is situated east of the PMRF. The elevation profile of the area indicates gently to moderately undulating terrain. Since the surrounding area has been subject to urban and industrial development and the PMRF is situated within a footprint site where buildings are already constructed, the visual character and sense of place of the area will not be affected negatively. Furthermore, the gently to moderately undulating terrain, existing vegetation associated with the residential and industrial areas and anthropogenic structures (buildings, storage facilities, factories, powerlines, houses etc.) serve to partially or completely obscure the view toward the PMRF from various sensitive receptors in the surrounding environment.

6.5. Heritage

6.5.1. History of site

The brief desktop study comprises two (2) components, namely an assessment of a historic topographic sheet to assess the historic nature of the study area as well as a brief discussion on palaeontology.

- Early Farm Ownership History:

The ownership history for the farm Witkoppie was located at the National Archives (National Archives, RAK, 2874). As the historic property description for the study area is not known, only the early component of the farm ownership history will be discussed below.

The farm Witkoppie, which at the time comprised farm number 87 of the Suikerboschrand District, was first inspected on 24 April 1862 by J.G. Marais. On 13 January 1863 the farm was transferred to its first owner, Daniel Jacobus Oosthuizen. Oosthuizen remained in possession of the farm for more than five years. On 22 October 1868, the farm was transferred to Jacobus Steenkamp. Steenkamp owned the farm for only a year when, on 1 November 1869, the farm was transferred to Jan Hermanus Cronjé. For the subsequent three years, J.H. Cronjé remained in possession of the farm. On 28 February 1873 the farm was transferred to Abraham Cronjé, Johan Andries Muller and Cornelis Johannes Muller.

On 7 February 1874 a one third portion of the farm was transferred from Cornelis Johannes Muller to Daniel Wynand du Preez. On 18 April 1876, another one third portion of the farm was transferred from Abraham Cronjé to the same Daniel Wynand du Preez and on 20 February 1877 the third portion was transferred from Johan Andries Muller to Daniel Wynand du Preez. This last transaction meant that the entire farm was now owned by Daniel Wynand du Preez.

On 4 September 1886 the entire farm was transferred from Daniel Wynand du Preez to Charles Daniel Rudd, Cecil John Rhodes and Harry Stratford Caldecott. Cecil John Rhodes (5 July 1853 – 26 March 1902) was a famous British imperialist, businessman, mining magnate and politician. Charles Daniel Rudd (22 October 1844 – 15 November 1916) was a business partner of Rhodes and the two men inter alia were founding directors of the De Beers Diamond Mine (www.wikipedia.org). Harry Stratford Caldecott is known to have been a lawyer and Rudd's brotherin- law (Rotberg, 1990). The acquisition of the farm Witkoppie by mining men such as Rhodes and Rudd at this particular time was no coincidence. Seven months earlier, in February 1886, George Harrison had discovered an outcrop of the Witwatersrand Main Reef on the farm

Langlaagte, a discovery which directly resulted in the Witwatersrand gold rush and establishment of Johannesburg (www.wikipedia.org). It is important to note that the acquisition of the farm Witkoppie by these three men did not mean that they had any intention of living on the farm or farming here. This acquisition was one of many that especially Rhodes and Rudd made during the rush for gold mining properties along the Witwatersrand during this time.

On 20 December 1888 three portions of the farm Witkoppie were transferred collectively from the three owners to each owner individually. In this way, Portion A was transferred to Cecil John Rhodes, Portion B to Charles Daniel Rudd and Portion C was transferred to Harry Stratford Caldecott. On 24 May 1889 the three portions were transferred from Rhodes, Rudd and Caldecott to the Witkopje Estate and Gold Mining Company Limited. On 31 March 1892, the three portions were transferred from the Witkopje Estate and Gold Mining Company Limited to Isaac Lewis. This meant that Isaac Lewis was now the owner of the entire farm Witkoppie. Lewis was an industrialist and businessman who for most of his life was in partnership with his friend and nephew Sammy Marks under the business name Lewis & Marks. On 16 July 1892, the three farm portions were transferred from Isaac Lewis to the New Witkopje Estate and Gold Mining Company Limited.

The available farm ownership history ends with this transfer of 16 July 1892. It can be assumed that for the subsequent decades this history would have revolved around gold mining companies. Over time, individual persons would also have become owners of portions of the farm Witkoppie.

- Historical Aerial Photographs:

Aerial photographs provide a valuable tool in assessing the characteristics of a particular portion of land over time. A sequence of aerial photographs depicting the study area was obtained from National Geo-Spatial Information at the Department of Rural Development and Land Reform in Cape Town.

- The 1941 Aerial Photograph:

The 1941 aerial photograph (NGI, Aerial Photographs, 162_07_57193) represents the oldest aerial photograph depicting the study area that could be found. It was taken in October 1941. The following observations can be made from the depiction of the study area on this 1941 aerial photograph:

  - A plantation is located across the study area and its surroundings.
  - No buildings or other possible heritage features are shown within the study area or its
  - immediate surroundings.
  - No evidence for what is today known as the OR Tambo International Airport can be seen
  - on the image.

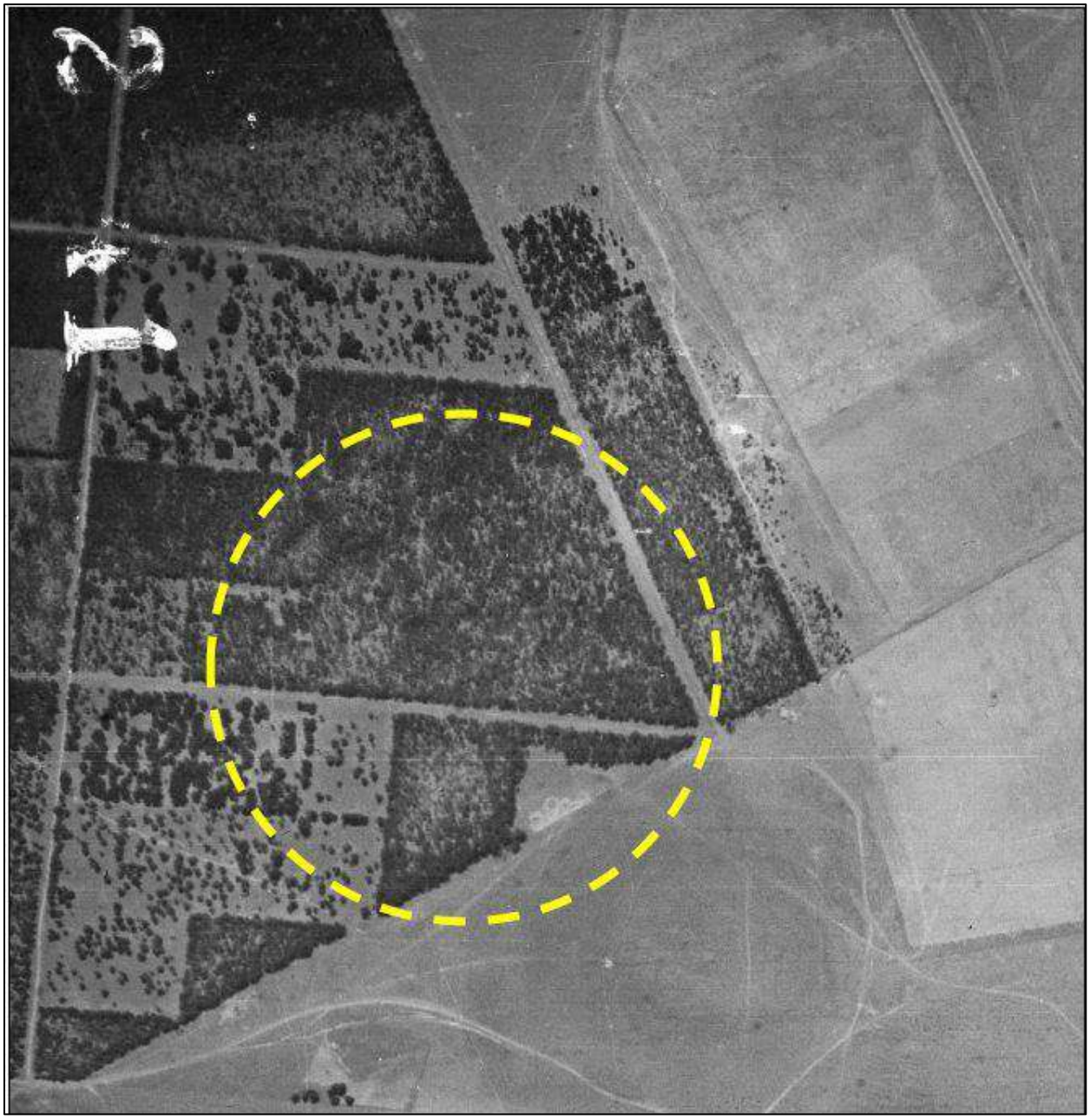

Figure 6-4: Section of the 1941 photograph (NGI, Aerial Photographs, 162_07_57193) showing the study area and its surroundings. The approximate position of the study area is marked in stippled yellow line.

- The 1952 Aerial Photograph:

The 1952 aerial photograph (NGI, Aerial Photographs, 314_04_44444) represents the second oldest aerial photograph depicting the study area that could be found. This particular aerial photograph was taken on 12 March 1952. The following observations can be made from the depiction of the study area on this 1952 aerial photograph:

- The plantation which had characterised the study area on the 1941 aerial photograph, had almost entirely been removed on this 1952 aerial photograph.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- It is clear from the surroundings of the study area that construction work on what was then known as the Jan Smuts International Airport was already well underway. The main runway which at present extends some distance further to the north, was much shorter at the time (see bottom left corner of the depiction).

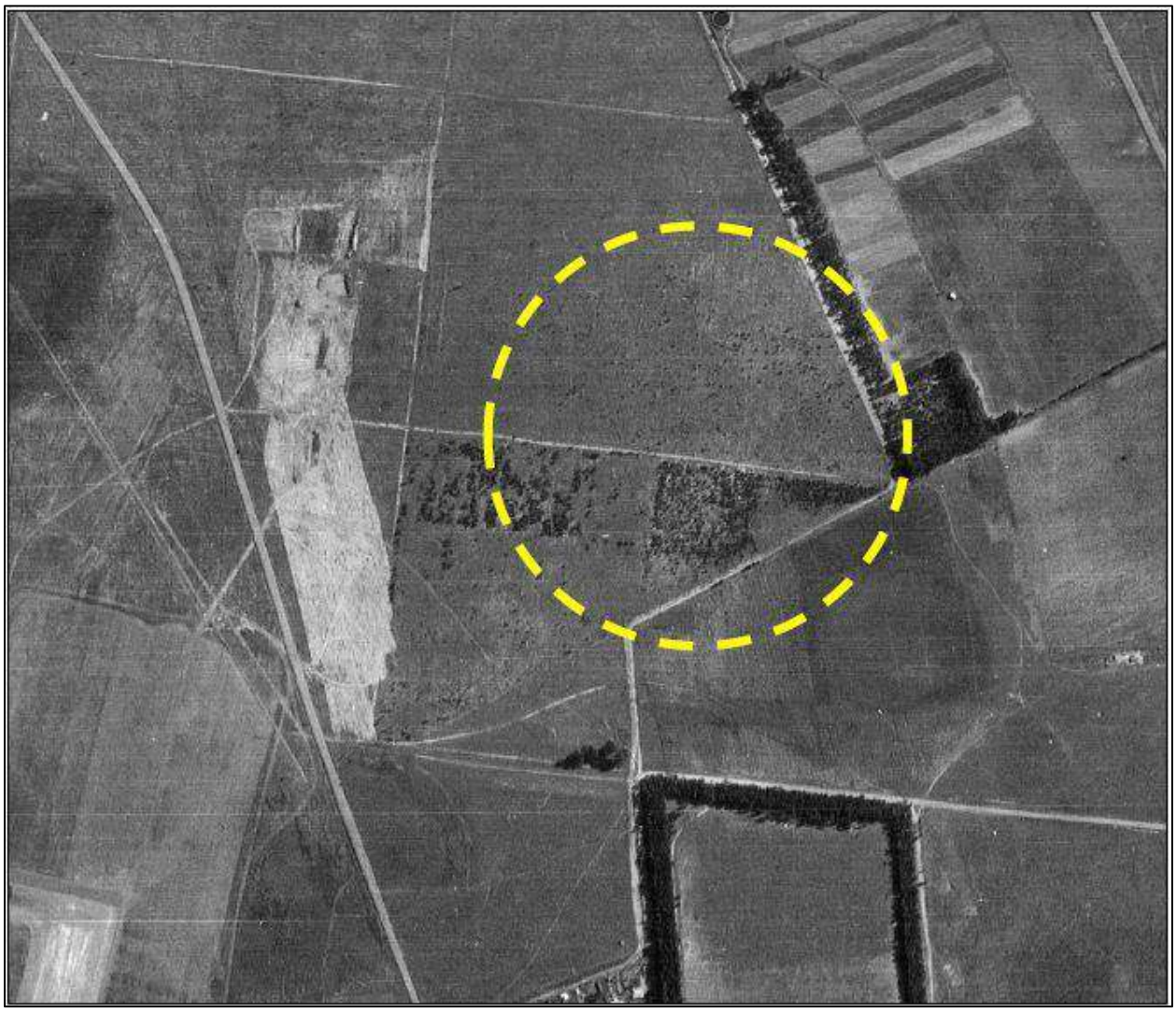

Figure 6-5: Section of the 1952 image (NGI, Aerial Photographs, 314_04_44444) showing the study area and its surroundings. The position of the study area is marked in stippled yellow line. The northern edge of the main runway at the airport can be seen in the bottom left-hand corner.

- <u>The 1969 Aerial Photograph</u>:

The 1969 aerial photograph (NGI, Aerial Photographs, 273_1969_02_7490) represents the third oldest aerial photograph depicting the study area that could be found. The following observations can be made from the depiction of the study area on this 1969 aerial photograph:

- Within the study area, the trees from the plantation which had been partially removed between 1941 and 1952, appear to have expanded in an uncontrolled way across the study area. A number of smaller saplings can be seen.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- The main runway at the airport was extended by some distance in a northern direction to its general position and length today.
- Immediately south of the study area, the residential area known as Bonaero Park is shown.

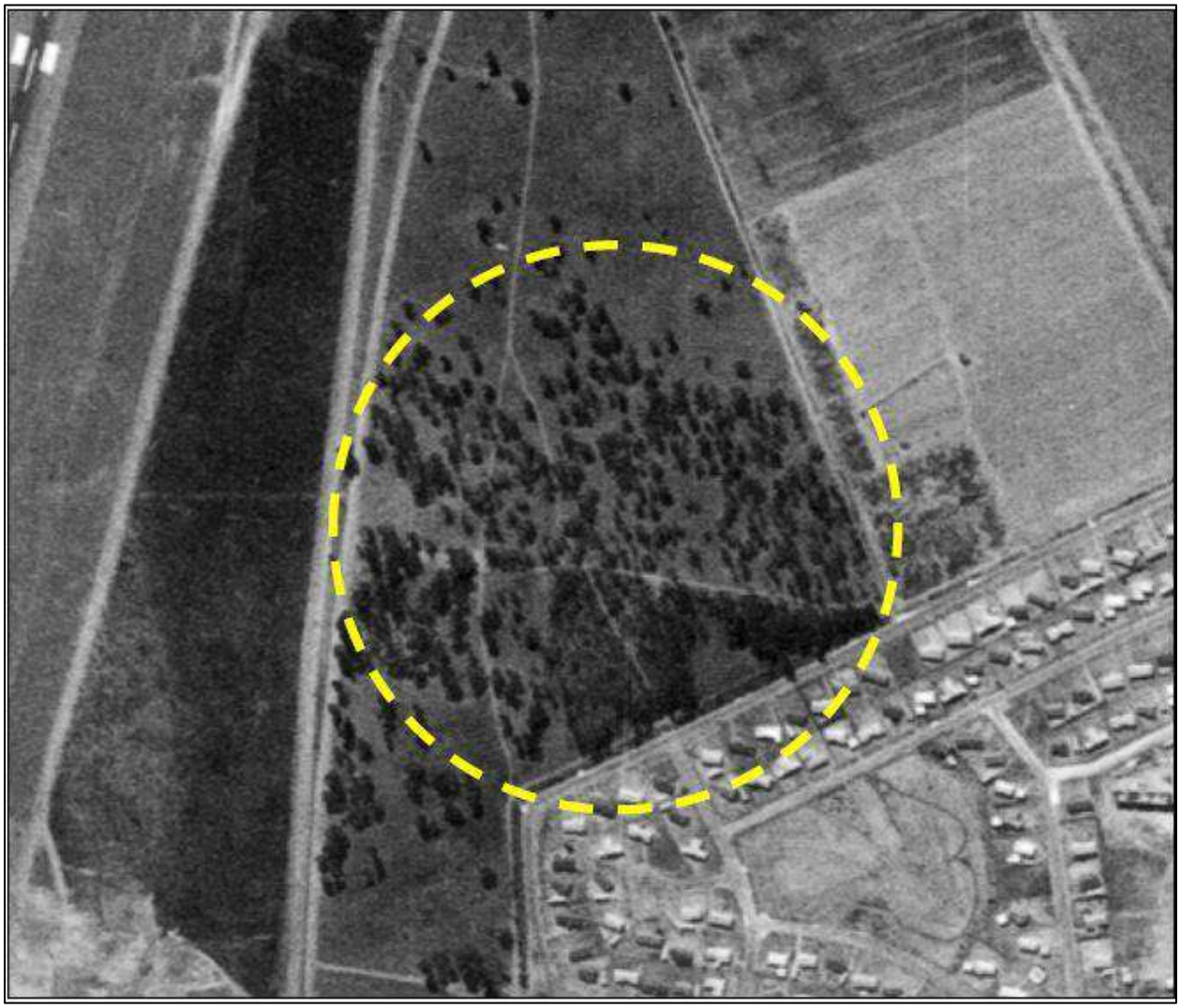

Figure 6-6: Section of the 1969 photograph (NGI, Aerial Photographs, 273_1969_02_7490) showing the study area and surroundings. The position of the study area is marked in yellow stippled line. The residential area known as Bonaero Park is shown for the first time south of the study area. A section of the main runway at the airport can be seen in the top left-hand corner.

- The 1976 Aerial Photograph:

The 1976 aerial photograph (NGI, Aerial Photographs, 775_02_0282) represents the fourth oldest aerial photograph depicting the study area that could be found. This particular aerial photograph was taken on 8 June 1976. The following observations can be made from the depiction of the study area on this 1976 aerial photograph:

- Within the study area, sections of the plantation depicted on the 1941 aerial photograph, can still be seen. Some surface excavation and earthworks appear to have taken place within the study area.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- In the surroundings of the study area, the first appearance of hangars on this side of the airport is shown. These first two hangars appear to be located where the hangars of the company Cem Air are located today.

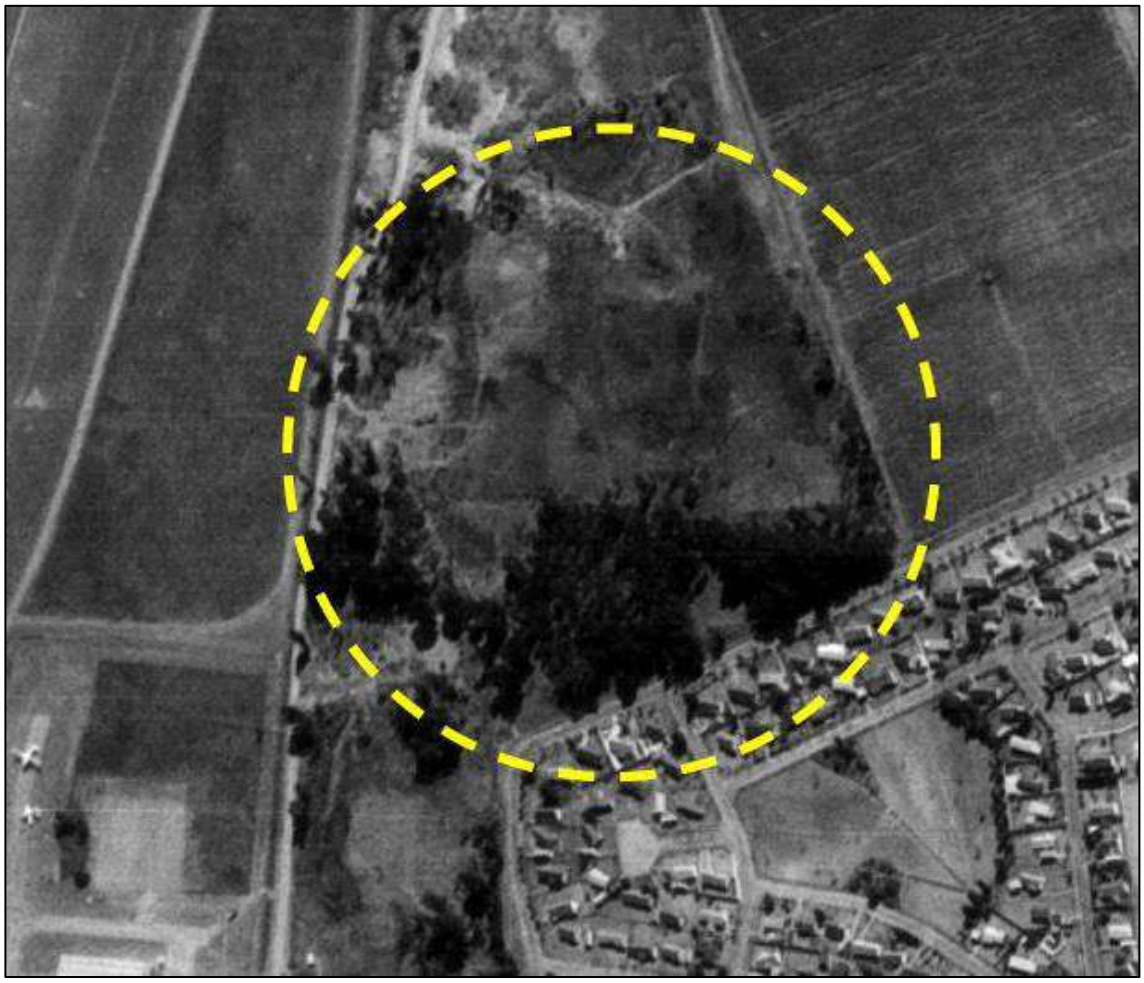

Figure 6-7: Section of the 1976 photograph (NGI, Aerial Photographs, 775_02_0282) showing the study area and surroundings. The position of the study area is marked in yellow stippled line.

6.6. Air quality

The proposed MetCon facility is located within the Highveld Air Quality Priority Area, within the City of Ekhurhuleni. Existing key sources of air pollution surrounding the proposed MetCon facility have been identified to be:

- Wind erosion from exposed areas (e.g. stockpiles, open storage piles, exposed cultivated fields, degraded land, etc.);
- Potential veld fires;
- Agricultural activity and biomass burning;
- Refuse dumps,
- Industrial activity,
- Treatment plants;
- Township/Informal settlements;
- Vehicle emissions.

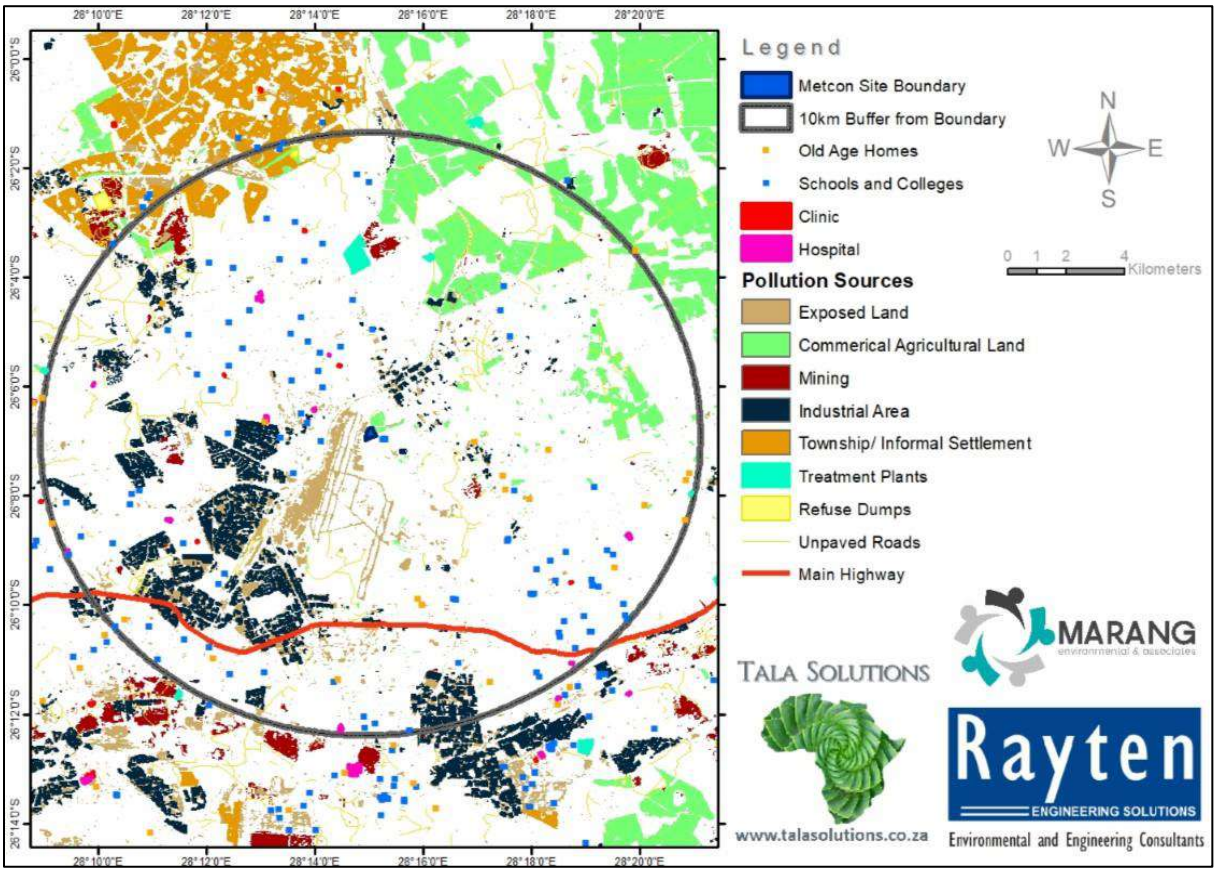

Figure 6-8: Identified surrounding emission sources within 10km of the proposed JMP MetCon facility.

6.6.1. Local Wind Field

Figure 6-9 provides the period wind rose plot for the MetCon Jewellery Precinct Facility for the period January 2014 to December 2016. The predominant wind directions for the period are observed from the north-west (~14% of the time), north (~12.5% of the time) and north-north-west (~11.2% of the time). Wind

speeds for the three (3)-year period are generally moderate to fast with calm conditions, defined as wind speeds less than 1 m/s, observed for 2.14 % of the time.

The morning (AM) and evening (PM) period wind rose plots for the period January 2014 to December 2016 are given in **Figure 6-10** and show diurnal variation in the wind field data. During the morning (AM) period, high frequency winds are observed from the north, north-north-east and north-west; as opposed to the evening (PM) period, where winds are predominantly observed from the north west (**Figure 6-10**).

Seasonal variation in winds at the MetCon Jewellery Precinct Facility is shown in **Figure 6-11**. During the spring and summer seasons, winds originate predominantly from the northerly and north-westerly sectors. During the autumn season, winds originate predominantly from the north-westerly and west-north-westerly sectors. Winter months, in particular, exhibit greater variation in wind direction. with prevailing winds observed from the north-westerly, northerly and south-south-westerly quadrants.

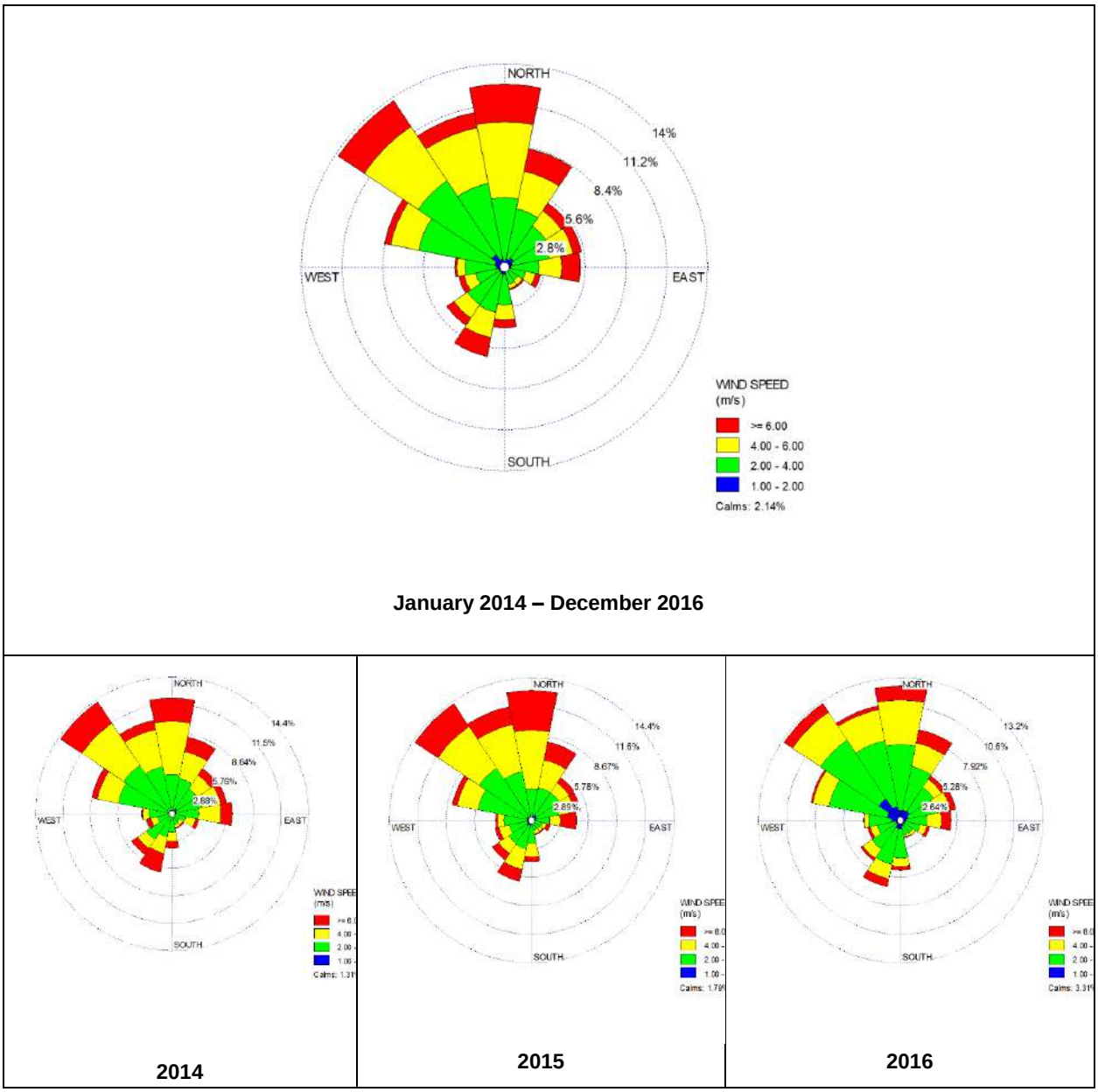

Figure 6-9: Period Wind Rose Plots for the project site for the period January 2014 - December 2016.

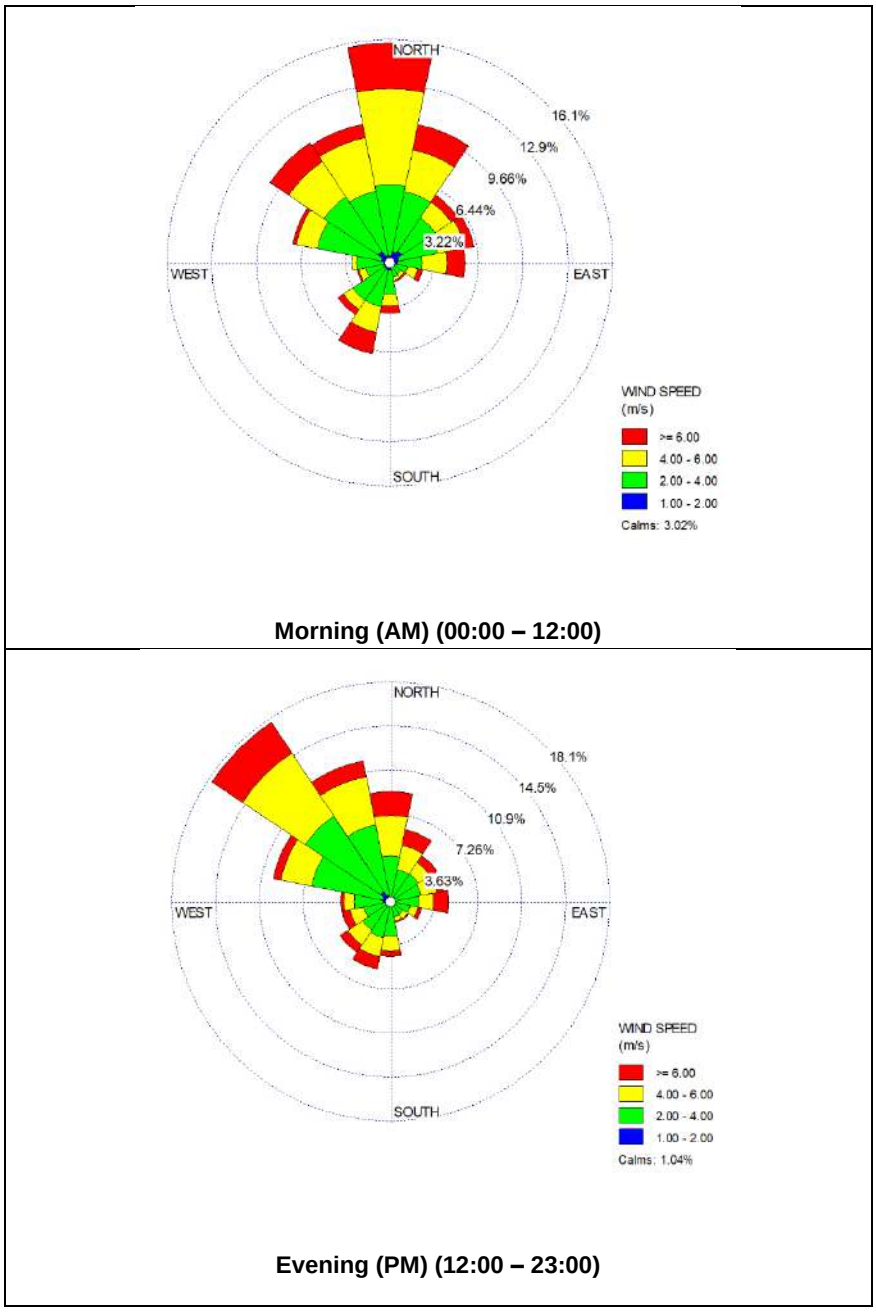

Figure 6-10: Morning (AM) (00:00 - 12:00) and Evening (PM) (12:00 - 23:00) Period Wind Rose Plots for the project site for the Period January 2014 - December 2016.

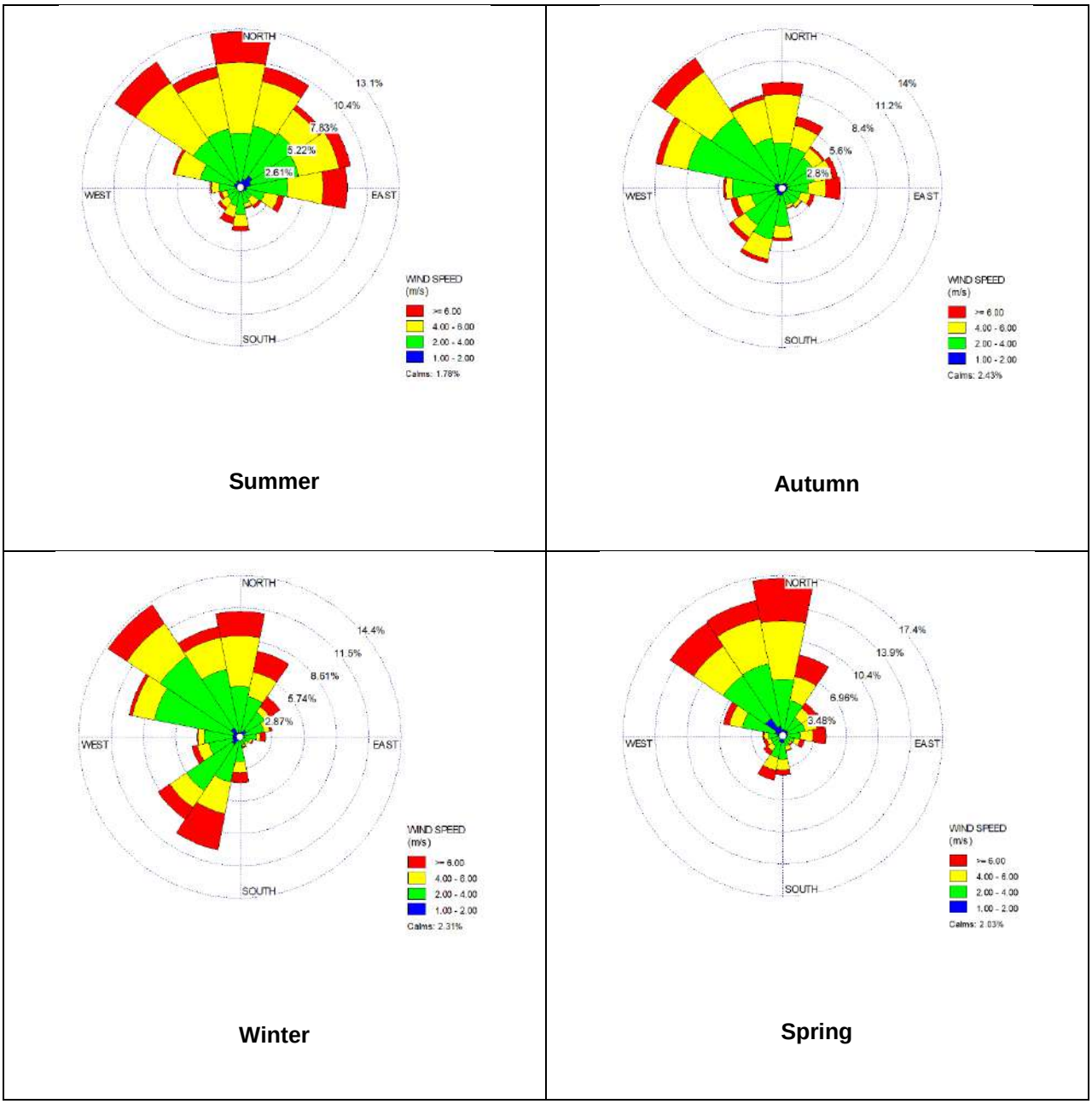

Figure 6-11: Seasonal Variation of Winds for the Project Site for the Period January 2014 - December 2016.

6.7. Noise

Based on the Air Quality Impact Assessment compiled for the project, the potential sources of noise would be:

- A baghouse Stack (with an associated blower). The stack may be 20 m high and generate 99 dBA (based on a stack diameter of 0.58 m, exit velocity of 21 m/s);

- A Scrubber Stack (with an associated blower). The stack may be 5 m high and generate 94 dBA (based on a stack diameter of 0.36 m, exit velocity of 24 m/s);
- A blower generating 105 dBA, located on the far side of the building. This is an unmitigated scenario with the blower not enclosed (which will reduce noise levels from the blower).

6.7.1. Other noise sources of significance

Other noise sources in the area include:

- The ORT Airport with flights landing and taking off from around 05:00 – 24:00. The project area is within 1,000 m and noises from the airport definitely impact on this area, with the noises from planes raising the ambient sound levels every few minutes.

- The busy R21, M43 and M45 are within 2,000 m from this development area. This will raise ambient sound levels resulting in a constant drone both night and day in this development area.

6.7.2. Potential noise sensitive receptors

The residential suburb of Bonaero Park is located just south-east from the proposed MetCon operation with the closest residential dwellings situated within 150 m. Considering the location of the residential area as well as the developmental character of the area, it is likely that the residential area falls within the typical noise rating level for an Urban District with one or more of the following: workshops; business premises and main roads. The acceptable zone sound level is 60 and 50 dBA during the day and night-time periods respectively. It should be noted that this is higher than the noise levels recommended by the World Health Organization for residential use at night (45 dBA).

6.7.3. Appropriate noise limits and legal framework

The Gauteng Noise Control Regulations (GN 5479 of 20 August 1999) is based on the National Noise Control Regulations, and most of the regulations are the same. It prohibits the generation of a disturbing noise in any manner (Regulation 8) and defines and prohibits activities that can result in a noise nuisance (Regulation 9). Regulation 11(1) allows a local authority to designate a noise-controlled area as well as zone sound levels for specific areas and during specific times. It is not known if the area surrounding the ORT airport was designated as a noise control area (although considered highly unlikely).

The Gauteng Provincial Noise Control Regulations define a **"disturbing noise"** as:
means a noise level that causes the ambient noise level to rise above the designated zone level, or if no zone level has been designated, the typical rating levels for ambient noise in districts, indicated in table 2 of SABS 01031.

Typical rating levels for ambient noise in different districts are given in **Table 6-1** (from Table 2, SANS 10103:2008).

It must be noted that SANS 10103:2008 does state *"for industries legitimately operating in an industrial district during the entire 24 h day/night cycle, LReq,d = LReq,n =70 dBA can be considered as typical and normal".* There is, however, no noise limits for industry and 61 dBA will be used as a reasonable noise limit at the industrial boundary closest to any residential area. This however has certain risks, especially when a residential area is located next to, in the close vicinity of an industrial area or activity. The World Health

Organization recommends an outdoor noise level of 45 dBA at night to allow people acceptable quality of sleep.

Considering the developmental character of the area, as well as acceptable noise limits to allow a reasonable quality of sleep, night-time ambient noise levels (outside) should not exceed 50 dBA (the zone sound level).

Table 6-1: Typical rating levels for noise in districts.

1	2	3	4	5	6	7
Type of district	**Equivalent continuous rating level ($L_{Req,T}$) for noise** dBA					
	Outdoors			**Indoors, with open windows**		
	Day/night $L_{R,dn}$ [a]	**Daytime** $L_{Req,d}$ [b]	**Night-time** $L_{Req,n}$ [b]	**Day/night** $L_{R,dn}$ [a]	**Daytime** $L_{Req,d}$ [b]	**Night-time** $L_{Req,n}$ [b]
a) Rural districts	45	45	35	35	35	25
b) Suburban districts with little road traffic	50	50	40	40	40	30
c) Urban districts	55	55	45	45	45	35
d) Urban districts with one or more of the following: workshops; business premises; and main roads	60	60	50	50	50	40
e) Central business districts	65	65	55	55	55	45
f) Industrial districts	70	70	60	60	60	50

6.7.4. Projected noise levels

Potential noise level contours are presented in **Figure 6-12**. Based on the noise contours, the first row of houses may be subject to noise levels of 45 – 49 dBA.

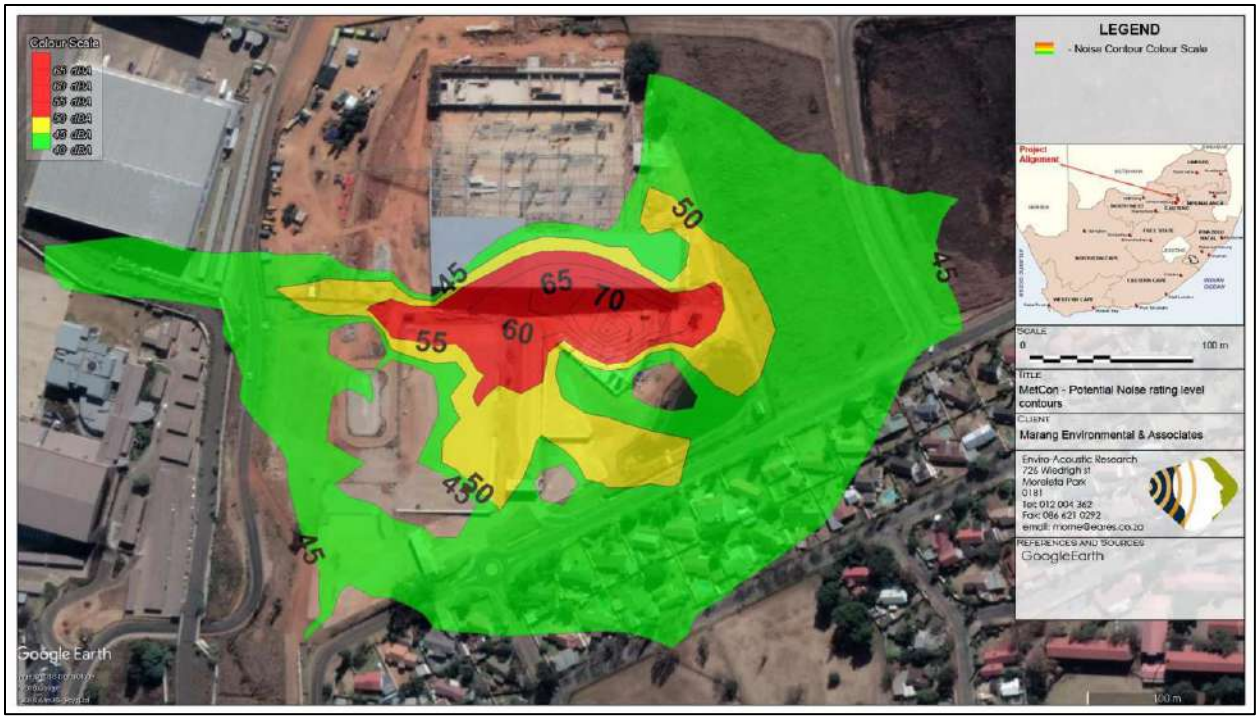

Figure 6-12: Potential noise rating levels in contours of constant sound levels.

7. IDENTIFICATION OF POTENTIAL IMPACTS

During the BA that was undertaken in 2009, the overall potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. An assessment of the potential impacts was provided, identifying the impacts that are potentially significant including management recommendations and mitigation measures to reduce the impacts.

A Scoping Geotechnical Report (assessing the topography, vegetation, geology, and surface and ground water in a geotechnical viewpoint) was also compiled as part of the BA process undertaken for the original JMP project in 2009 and is thus also available (**Appendix 9**). While this report raised concerns about the presence of a large trench that discharges to the “triangular very wet area” (wetland), it recommended feasible mitigations and concluded that the proposed development has “no fatal flaws”. Furthermore, a more extensive geotechnical assessment was completed for the JMP development site in 2015, approximately four (4) years after the EA was issued, which also was in consonance with the findings of the initial Scoping Geotechnical Report. This above-mentioned geotechnical assessment has also been provided in **Appendix 9**.

A detailed Geotechnical study and Traffic Impact (scoping and extensive) Assessment, which were completed recently in 2015 and 2016, respectively, for the same JMP development site, are also available. The Traffic Impact Assessment recommended road upgrades which will see the surrounding road network being able to accommodate the development traffic at acceptable levels, and further concluded that the development be approved from a traffic point of view.

It should be noted that the above-mentioned Geotechnical and Traffic Specialist assessments will be reviewed as part of this EIA process for the proposed development and inclusion of the MetCon facility to certify that the specialist assessments are still relevant, and the findings remain valid. The specialists who conducted the respective studies / assessments will be consulted in order to undertake this review and provide confirmation. This will be provided in the FSR. Proof that the specialists have been consulted in order to review the above-mentioned studies / assessments is however provided in **Appendix 9**.

Furthermore, Marang has also completed a Full AQIA in March 2018 to assess the impacts of the proposed MetCon facility on air quality. This has been included in **Appendix 6**.

After satisfactory consultation with the DEA, Marang has gathered that the following specialist reviews will be required in terms of the Section 12(2), Chapter 3 of the NEMA Regulations, 2014, as amended:

- Heritage;
- Noise;
- Visual;
- Soil and Land Capability; and
- Surface Water.

Impacts of the proposed project on the environmental sensitivities outlined in **Section 6** of this report above have been quantified using the EIA methodology in **Table 7-1** below. This EIA methodology assists in evaluating the overall effect of the proposed development on the environment. The determination of the effect of an environmental impact on an environmental parameter have been determined through a systematic analysis of the various components of each impact. The evaluation of predicted impacts has been undertaken through an assessment of the significance of the impacts. Each impact has been assessed through the Planning, Construction, Operation and Decommissioning phases of the prosed development, where relevant. Where required, the proposed mitigation measure have been detailed.

Table 7-1 below provides an explanation of the parameters used to determine the significance of an impact, as well as what "significance" means in the context of this impact assessment.

It should also be noted that Marang's Impact Rating Methodology has been included in **Appendix 10**.

Table 7-1: Description of parameters used to establish impact significance.

Extent = E *(The area over which the proposed impact will be experienced).* **5**: International **4**: National **3**: Regional **2**: Local **1**: Site	***Reversibility = R*** *(The degree to which the proposed impact can be reversed upon completion of the proposed development/ activity).* **4**: Irreversible **3**: Barely Reversible **2**: Partly Reversible **1**: Completely Reversible
Status of Impact **+**: Positive (A benefit to the receiving environment) **N**: Neutral (No cost or benefit to the receiving environment) **-**: Negative (A cost to the receiving environment)	
Magnitude = M *(The severity of the proposed development/activity)*. **5**: Very high/ don't know **4**: High **3**: Moderate **2**: Low	***Duration = D*** *(The timeframe for which the proposed impact will be experienced).* **5**: Permanent **4**: Long-term (ceases with the operational life) **3**: Medium-term (5-15 years) **2**: Short-term (0-5 years)

1: Minor **0**: Not applicable/none/negligible	**1**: Immediate **0**: Not applicable/none/negligible
Probability = P *(The likelihood / degree of certainty of the proposed impact occurring).* **5**: Definite/don't know **4**: Highly probable **3**: Medium probability **2**: Low probability **1**: Improbable	***Cumulative Effect = C*** *(The impact of the proposed development/ activity on the environmental parameter being assessed when added to other existing or potential impacts).* **4**: High Cumulative Impact **3**: Medium Cumulative Impact **2**: Low Cumulative Impact **1**: No Cumulative Impact **0**: Not applicable
Loss of Resources = L *(The degree to which a given resource will be lost as a result of the proposed development / activity.)* **4**: Complete Loss of Resources **3**: Intermediate Loss of Resources **2**: Low loss of resources **1**: No Loss of resources	

Significance with be determined through the *Marang methodology for determining significance*. Significance will be determined through a synthesis of the assessed impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:

(Extent + probability + reversibility + loss of resources+ duration + cumulative effect) x magnitude/intensity.

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Significance	***Environmental Significance Points***	***Colour Code***
High (positive)	>90	H
Medium (positive)	30 to 90	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	<-30	L
Medium (negative)	-30 to -90	M
High (negative)	>-90	H

7.1. Surface Water Impact Assessment

Following the impact assessment, mitigation measures were compiled to serve as guidance throughout the construction and operational phase. An impact assessment was applied to ascertain the significance of perceived impacts on the key drivers and receptors (hydrology, water quality, geomorphology, habitat and biota) of the assessed wetlands associated with the proposed development.

7.1.1. Construction Phase

The following are the potential impacts during construction phase:

- Earthworks, leading to the exposure of soils, and thus to increased runoff, erosion, and the potential for sedimentation of the wetlands;
- Soil stockpiling;
- Increased sedimentation of the wetland habitat, leading to changes in instream habitat and potentially altering surface water quality (if present);
- Decreased ecoservice provision by the wetlands; and
- Proliferation of alien vegetation due to disturbances.

Table 7-2: Construction Phase Water Impact Assessment

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Site preparation prior to construction activities related to the construction of the proposed precious metal refinery facility, including placement of contractor laydown areas and storage facilities within the 500m GN509 Zone of Regulation of a wetland.		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	2
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	2	1
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	1	1
Duration (D)	Description of the time frame for which the proposed impact will be experience	2	2
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	1
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	1	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 11 (low negative)	- 8 (Low negative)
Mitigation Measures	• Contractor laydown areas and material storage facilities must be placed within the study area and must not be placed within 30m of the wetlands in line with GDARD and NEMA requirements; • All vehicle re-fuelling is to take place on a sealed surface within the study area and must not be permitted to occur within 30m of the wetlands; • All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is absolutely essential; • Retain as much indigenous vegetation as possible; • Excavated materials should not be contaminated, and it should be ensured that the minimum surface area is taken up, however, the stockpiles may not exceed 2m in height; • All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion and sedimentation of the wetlands; and • Immediate revegetation of all stockpiles which are to remain on site post-construction.		

7.1.2. Operational Phase

The following is the potential impact during operational phase:

- Contaminated runoff may reach the wetlands resulting in impaired surface water quality.

Table 7-3: Operational Phase: Water Impact Assessment

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Operation of the precious metal refinery facility.		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	2
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	2	1

Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	2
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	2	2
Duration (D)	Description of the time frame for which the proposed impact will be experience	1	1
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	1
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	2	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 22 (low negative)	- 9 (Low negative)
Mitigation Measures	• Clean and dirty water management must take place in order to prevent contaminated runoff from the precious metal refinery facility creating preferential flow paths which may reach the wetlands. Clean and dirty water management systems must be implemented prior to commencement of construction; and • Suitable waste disposal facilities should be provided. These facilities should regularly be emptied and taken to a registered waste disposal facility; and • All recyclable waste should be recycled as far as possible.		

7.2. Soils and Land Capability

7.2.1. Construction Phase

The following potential impacts have been identified during the construction phase:

- Earthworks, leading to the exposure of soils, and thus leading to dust emission, erosion and potential loss of soil;
- Soil compaction as a result of laydown area and construction machinery/equipment;
- Spillage of hydrocarbons resulting from construction vehicles, leading to soil contamination; and
- Proliferation of alien vegetation due to disturbances, leading to change of soil chemistry and quality.

Table 7-4: Construction Phase: Soil and Land Capability Impact Assessment

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Site preparation prior to construction activities related to the construction of the proposed precious metal refinery facility, including topsoil stripping, excavation and stockpiling activities.		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	2
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	5	2
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	2	1
Duration (D)	Description of the time frame for which the proposed impact will be experience	2	2
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental	2	1

	parameter being assessed when added to other existing or potential impacts.		
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	1	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 15 (low negative)	- 9 (Low negative)
Mitigation Measures	• All development footprint areas to remain as small as possible; • Laydown areas should be located within disturbed soils (anthrosols) to avoid compaction of natural soils • All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion; • Stockpile height should not exceed 2 meters • Vehicle re-fuelling is to take place on a sealed surface within the study area; and • Contamination prevention measures should be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this should be implemented and made available and accessible at all times to the contractors and construction crew conducting the works on site for reference.		

7.2.2. Operational Phase

The following are the potential impacts during operational phase:

- Movement of transport vehicles off demarcated roads, thus leading to soil compaction in untarred/unpaved surfaces which consist of soil material; and
- Contaminated surface runoff water resulting in soil contamination of the surrounding soils.

Table 7-5: Operational Phase: Soil and Land Capability Impact Assessment

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Operation of the precious metal refinery facility and waste management.		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	2
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	2	1
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	2	2
Duration (D)	Description of the time frame for which the proposed impact will be experience	3	2
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	1
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	2	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 26 (low negative)	- 9 (Low negative)
Mitigation Measures	• All vehicle should remain within demarcated roads as far as practically possible; • Stormwater management must take place in order to prevent contaminated runoff from the precious metal refinery facility; • Waste product should be recycled as best as practically possible so as to minimise sources of soil contamination; and		

	• Contamination prevention measures should be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this should be implemented and made available and accessible at all times to the contractors and construction crew conducting the works on site for reference.

7.3. Visual Impact Assessment

7.3.1 Construction Phase:

The following are the potential impacts during construction phase:

- Excavation activities for the laying of the foundation for the proposed PMRF;
- Stockpiling of topsoil during excavation activities, potentially altering landform;
- Dust generation due to excavation and general construction activities including movement of construction vehicles and human activity leading to dust suppression;
- Construction of the Precious Metal Refinery Facilities (including the bag filtration plant and scrubber and associated stacks);
- Placement of temporary contractor's laydown areas and storage facilities in higher lying areas or in close proximity to Bonaero Park, and outside the demarcated footprint area; and
- Security lighting around the perimeter of the PMRF.

Table 7-6: Construction Phase: Visual Impact Assessment.

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Further site preparation for construction activities related to the proposed Precious Metal Refinery Facility (PMRF), including excavation and stockpiling, laying of foundation for the buildings, construction of these buildings and associated stacks, placement of temporary contractor laydown areas and storage facilities if necessary.		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	1
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	5	5
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	1	0
Duration (D)	Description of the time frame for which the proposed impact will be experience	2	2
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	1
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	2	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 28 (low negative)	- 10 (Low negative)

Mitigation Measures	• The development footprint area should remain as small as possible; • No rubble should be disposed of at random within the site, but within relevant removable bins, where recyclable and non-recyclable waste is kept separate; • Contractor's laydown areas and temporary storage facilities should be located within the development footprint and cordoned off with shade cloth to conceal and minimise the visual impact; • Any topsoil stockpiled should either be utilised during landscaping or it should be shaped and rounded to blend in with the surrounding landscape and to minimise visual contrast; • Vegetation, especially large and tall trees bordering the Bonaero Park residential area south of the PMRF should be retained if feasible; • It must be ensured that the buildings fit into its surroundings through the appropriate use of colour and material selection. Natural Colours should be used in all instances. Should the stacks comprise metal surfaces, it must be painted in a colour that blends in with the natural environment. White structures are to be avoided; • A dust management plan must be implemented to reduce dust generation. Such dust control measures may include, but is not limited to; watering of the footprint area and any access roads, speed limits of 20km/h must be adhered to and should it be practical stockpiles should be covered with a tarpaulin on windy days to avoid soil and dust being blown away; • Construction activities should be restricted to daylight hours as far as possible; • A lighting engineer may be consulted to assist in the placement of temporary and permanent light fixtures, to reduce the visual impact associated with glare and light trespass; and • No naked / unshielded light sources are to be used. It is recommended that "full cut-off" light fixtures that direct light only below the horizontal is to be used.

7.3.2 Operational Phase:

The following potential impacts have been identified during the operational phase:

- Operational activities of the PMRF and gas emissions at the stacks;
- An increase in vehicular movement and level of human activity in the area due to operational activities;
- Exterior and security lighting around the buildings and parking facilities, possibly contributing to light pollution;
- Potential lighting at night from operational vehicles; and
- Light sources temporarily stationed for maintenance activities conducted at night, in case of emergencies.

Table 7-7: Operation Phase: Visual Impact Assessment.

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Operation of the Precious Metal Refinery Facility (PMRF) and emissions from the stacks		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	1
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	4	4
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	1	0
Duration (D)	Description of the time frame for which the proposed impact will be experience	2	2
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental	1	1

	parameter being assessed when added to other existing or potential impacts.		
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	2	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 24 (low negative)	- 9 (Low negative)
Mitigation Measures	• It is recommended that routine maintenance on buildings and other structures be implemented, to ensure that the paint of buildings are not weathered and that the buildings fit into the colour palette of the surroundings; • In the event that a green open space is demarcated and landscaped, it must be ensured that the vegetation be maintained and controlled to reduce the risk of potential alien floral species proliferation and to keep it aesthetically appealing to the receiving environment; • It is recommended that maintenance activities should not take place at night or on weekends, unless absolutely essential; • Making use of motion detectors on security lighting at buildings and parking facilities, ensures that the site will remain in relative darkness, until lighting is required for security and maintenance purposes; • No naked / unshielded light sources are to be directly visible from a distance; and • The PMRF should be screened through the use of a clearVU fence, or equally approved, which will result in a more unified and tidy appearance.		

7.4. Heritage Impact Assessment

Due to the fact that no heritage or archaeological resources were identified during the desktop investigation and site walkthrough, no impacts are anticipated from a heritage point of view. As such, the Heritage Specialist did not undertake an impact assessment as part of his review.

7.5. Air Quality Impact Assessment

Table 7-8: Operational phase: Air Quality Impact Assessment

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Air Quality		
Extent (E)	Area over which the proposed impact will be experienced.	2	2
Probability (P)	Likelihood/degree of certainty of the proposed impact occurring.	3	3
Reversibility (R)	Degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	2
Loss of Resources (L)	Degree to which a given resource will be lost as a result of the proposed development / activity.	2	2
Duration (D)	Time frame for which the proposed impact will be experience.	4	4
Cumulative Effect (C)	Impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	2
Magnitude or Intensity (M)	Severity of the proposed development / activity. Activity may be audible during the day.	1	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 15 (low negative)	- 15 (Low negative)
Mitigation Measures	The proposed facility must install abatement equipment (baghouse and scrubber) as per their current design at the existing MetCon Centurion Plant. The abatement equipment must achieve at least 90% control efficiency and must ensure compliance with the minimum emission standards for sub-category 4.17 in terms of S21 of the NEM:AQA listed activities. Additional recommendations include:		

	• MetCon must apply for an AEL prior to the commencement of operations. All conditions of the AEL must be complied with. • Appoint a responsible person, such as an emission control officer or safety, health & environmental manager, to ensure compliance with the AEL. • Once operational, conduct stack emissions monitoring on all stacks for the relevant listed activity and ensure compliance with the minimum emission standards, with the use of abatement equipment. Ensure that monitoring is undertaken in accordance with nationally or internationally acceptable methods. • Ensure that all unit processes & apparatus used for undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing emissions, are at all times properly maintained and operated. • Submit an annual AEL report within the required timeframe. • Submit compliance audit reports annually. • Once operational, maintain and report monthly to the authority a complaint register. Should a complaint be logged, a report in the required format as per the AEL, should be submitted to the authority. • Register and report on the NAEIS. Category A (listed activities) are required to report their emissions on the NAEIS annually. The NAEIS is a national emissions inventory. • Maintenance and pollution prevention plans should be developed for the facility. • Undertake regular training of all key employees to ensure effective implementation of the AEL requirements, maintenance and pollution prevention plans.

7.6. Noise Impact Assessment

7.6.1. The preliminary significance of the noise impact

Ambient sound levels in the vicinity of the residential area would be impacted by the roads and activities as the airport. The project may be audible during the day, but, if the operation is active at night, it will be clearly audible and may raise the ambient sound levels. Mitigation may reduce the noise levels, but the developer must consider the proposed measures during the planning stage to unsure that the recommendations are considered during this early phase.

Table 7-9: Impact Assessment considering daytime (06:00 - 22:00) noise levels

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Noise Generation: Noise generation during day-time operations having the possibility of being a nuisance to adjacent landowners.		
Extent (E)	Area over which the proposed impact will be experienced.	2	2
Probability (P)	Likelihood/degree of certainty of the proposed impact occurring.	1	1
Reversibility (R)	Degree to which the proposed impact can be revered upon completion of the proposed development / activity.	1	1
Loss of Resources (L)	Degree to which a given resource will be lost as a result of the proposed development / activity.	1	1
Duration (D)	Time frame for which the proposed impact will be experience.	4	4
Cumulative Effect (C)	Impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	2
Magnitude or Intensity (M)	Severity of the proposed development / activity. Activity may be audible during the day.	1	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 12 (low negative)	- 12 (Low negative)
Mitigation Measures	No additional mitigation required.		

Table 7-10: Impact Assessment considering night-time (22:00 – 06:00) noise levels

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Noise Generation: Noise generation during night-time operations having the possibility of being a nuisance to adjacent landowners.		
Extent (E)	Area over which the proposed impact will be experienced.	2	2
Probability (P)	Likelihood/degree of certainty of the proposed impact occurring.	1	1
Reversibility (R)	Degree to which the proposed impact can be revered upon completion of the proposed development / activity.	1	1
Loss of Resources (L)	Degree to which a given resource will be lost as a result of the proposed development / activity.	1	1
Duration (D)	Time frame for which the proposed impact will be experience.	4	4
Cumulative Effect (C)	Impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	2	2
Magnitude or Intensity (M)	Severity of the proposed development / activity. Activity may be audible during the day.	1	1
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 12 (low negative)	- 12 (Low positive)
Mitigation Measures	If night-time activities are required, MetCon should measure the typical night-time ambient sound levels in the area prior to the project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not raise the noise levels with more than 7 dB (Noise Control Regulations), ideally, no more than 3 dB (International Finance Corporation recommendation). Other measures include: • Minimise night-time activities that will require the use of the baghouse stack and blowers at night. • The design of the baghouse stack exit to ensure a more flared design, or the use of a silencing system at the exit. • Enclose the blowers in a structure to reduce the noise levels from this source. • The reduction of the gas exit velocities at night. The night-time noise level can be reduced with the implementation of the correct mitigation measures that will reduce the significance of the noise impact.		

7.7. Environmental Management Programme (EMPr)

The Environmental Management Programme (EMPr) is a detailed plan for the implementation of the mitigation measures to minimize the negative environmental impacts highlighted in the Environmental Impact Assessment Report (EIAr). The initial EMPr which was completed during the BA process will be reviewed and incorporated into the one (1) which will be produced during the EIA phase of this proposed project. The EMPr will contribute to the preparation of the contract documentation by developing clauses to which the contractor must adhere for the protection of the environment.

The EMPr for this project will compiled during the EIA phase and will include a construction and operational environmental monitoring plan specifying how the construction and operation of the project is to be carried out. The EMPr will include the actions required for the Post-Construction Phase (Operation Phase) to ensure that all the environmental impacts are managed for the duration of the project's life-cycle and will ensure environmental good practice. The Operation Phase mitigation measures will require more detailed work in interpreting the specialist reports.

The EMPr will be included with the EIAr for submission to the adjudicating authority. The EMPr for the proposed development will be in line with Appendix 4 of the EIA Regulations, 2014 of the NEMA Act, as amended and as published under GN R326 (EIA Regulations).

7.7.1. Contents of the EMPr

The EMPr will comply with section 24N of the NEMA, 1998 (Act No. 107 of 1998) and will include—

a) details of–
   i. the EAP who prepared the EMPr; and
   ii. the expertise of that EAP to prepare an EMPr, including a curriculum vitae;
b) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
c) A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;
d) A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the Environmental Impact Assessment (EIA) process for all phases of the development including-
   i. planning and design;
   ii. pre-construction activities;
   iii. construction activities;
   iv. rehabilitation of the environment after construction and where applicable post closure; and
   v. where relevant, operation activities;
e) A description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);
f) A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to –
   i. avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
   ii. comply with any prescribed environmental management standards or practices;
   iii. comply with any applicable provisions of the Act regarding closure, where applicable; and
   iv. comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;
g) The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);
h) The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);
i) An indication of the persons who will be responsible for the implementation of the impact management actions;
j) The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;
k) The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);
l) A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;
m) An environmental awareness plan describing the manner in which-

i. the applicant intends to inform his or her employees of any environmental risk which may result from their work; and
ii. risks must be dealt with in order to avoid pollution or the degradation of the environment;

n) Any specific information that may be required by the competent authority.

8. PUBLIC PARTICIPATION PROCESS

Public participation is the foundation of any impact assessment process. The principles set out in Chapter 6 of the 2014 EIA Regulations (as amended), govern the EIA process, including public participation. The Public Participation Process (PPP) for the EA Application will be conducted according to Section 41 of the 2014 EIA Regulations (as amended). The PPP include provision of sufficient and transparent information on an ongoing basis to stakeholders to allow them to comment, and ensuring the participation of previously disadvantaged people, women and the youth.

The public participation process is based on two (2) primary factors; firstly, ongoing interaction with the environmental specialists and the technical teams to achieve integration of technical assessment and public participation throughout. Secondly, to obtain the bulk of the issues to be addressed early in the process, with the latter half of the process designed to provide environmental and technical evaluation of these issues. Findings will be presented to stakeholders, giving them the opportunity to give further comments and verify all captured comments.

Inputs into the public participation process by members of the public and stakeholders can be given at two (2) stages of the EIA process, open for thirty (30) days each. The two (2) stages of the PPP will be conducted during the Scoping phase and the EIA phase of the EIA process respectively. Registration as an Interested and Affected Party (I&AP) for the project can take place at any time during the two phases of the impact assessment before the Final Environmental Impact Assessment report (FEIAr) is submitted to the relevant decision-making authority (namely the DEA). There are however set periods in which comments are required from I&APs in order to ensure that these are captured in time for the submission of the various reports. The comment periods during the Scoping Phase will be implemented according to the 2014 NEMA EIA Regulations (as amended). The comment periods during the Scoping Phase (as set out by 2014 EIA Regulations, as amended) are as follows:

- Background Information Document (BID): 4 Calendar weeks, but also as and when an I&AP registers.
- Comment period for the DSR and FSR: 4 Calendar weeks (30 days) for each report.
- Any public participation process must be conducted for a period of at least 30 days.

The 2014 EIA Regulations (as amended) emphasise the importance of public participation. In terms of these regulations, registered interested and/or affected parties –

- may participate in the application process;
- may comment on any written communication submitted to the competent authority by the applicant or environmental consultant;
- must comment within the timeframes as stipulated by the EIA Regulations;
- must send a copy of any comments to the applicant or Environmental Assessment Practitioner (EAP) if the comments were submitted directly to the competent authority; and
- Must disclose any direct business, financial, personal or other interests that the person has in the application being granted or refused.

Further, in terms of the 2014 EIA Regulations (as amended), the EAP:

- manages the application process;
- must be independent;
- must undertake the work objectively – even if this results in views and findings that are not favourable to the applicant;
- must disclose material information that may influence the decision; and
- must conduct a public participation process.

The following actions will be taken upon receiving comments/queries/issues:

- The contact details provided will be entered into the project database for use in future notifications.
- Confirmation receipts will be sent to those submitting comments.
- Comments will be addressed in the Comments & Response Report (C&RR) – To be included in FSR.

8.1. Objectives of Public Participation

An understanding of what public participation is, and is what it is not, needs to be explored and must be clarified.

Public Participation is:

- A communication mechanism to inform I&APs regarding a proposed project.
- A communication mechanism to record comments and/or concerns raised during the relevant phase of the EIA by I&APs regarding a proposed project.

What Public Participation is not:

- A marketing exercise.
- A process to address grievances but rather to record comments raised.
- One-on-one consultation with each I&AP during the EIA process (not relevant to possibly affected landowners identified).

The primary aims of the PPP are:

- To inform I&APs and key stakeholders of the proposed development.
- To initiate meaningful and timeous participation of I&APs.
- To identify issues and concerns of key stakeholders and I&APs with regards to the proposed development
- To promote transparency and an understanding of the proposed project and its potential environmental impacts.
- To provide information used for decision-making.
- To provide a structure for liaison and communication with I&APs and key stakeholders.
- To assist in identifying potential environmental impacts associated with the proposed development.
- To ensure inclusivity (the views, needs, interests and values of I&APs must be considered in the decision-making process).
- To focus on issues relevant to the project and issues considered important by I&APs and key stakeholders.
- To provide responses to I&AP queries.
- To encourage co-regulation, shared responsibility and a sense of ownership.

In addition to the guidance of the PPP in the EIA Regulations, every effort was also made to conform to the requirements of the Promotion of Administrative Justice Act 2000 (Act 3 of 2000).

8.2. Public Participation to date

The public participation process was initiated in September 2018 with the issuing of the BID. Site notices (as per regulations) were placed near the study area during a site visit on the 13th of September 2018. In addition, posters were erected near the study area and Background Information Document (BIDs) were distributed at the Bonaero Park Public Library. Proof of the site notices and posters which were erected is included in **Appendix 7A**. In addition, proof of the BID distribution is also included in **Appendix 7A**. Public notification of the EIA process was advertised in a local/regional newspaper (namely the Daily Sun) on the 12th of September 2018, as required in terms of the 2014 EIA Regulations (as amended). Proof of this is included in **Appendix 7C**. The information gathered on the initial BA process undertaken in 2009 for the original JMP development, as well as the site visit undertaken as part of this EIA process, will form part of the database with surrounding landowner and other potential I&APs.

Members of the public who wished to be registered on the database as an I&AP were able to do so via telephone, fax, email, mail or Marang's website (www.maranggroup.co.za).

Ongoing consultation with key stakeholders (e.g. provincial, district and local authorities, relevant government departments, local business etc.) and identified I&APs ensured that I&APs were kept informed regarding the EIA process. Networking with I&APs will effectively continue throughout the Scoping Phase of the project until the FSR and EIA Plan of Study are submitted to DEA. Where required, stakeholders and I&APs were engaged on an individual basis.

During the environmental studies, consultations were held with individuals, businesses, institutions and organisations, and the following sectors of society have been identified and were afforded the opportunity to comment (the full stakeholder database list is included in **Appendix 7F**):

- National Authorities;
- Provincial Authorities;
- City of Ekurhuleni;
- Government Structures such as SAHRA, SANBI, SANRAL, Eskom Telkom, etc.;
- Regional and local media (advertisements and public documents e.g. BID);
- Business and commerce;
- Schools;
- Department of Environmental Affairs: Biodiversity Section;
- Department of Water and Sanitation (DWS);
- Gauteng Industrial Development Zone (GIDZ);
- Gauteng Infrastructure Financing Agency (GIFA);
- Gauteng Growth and Development Agency (GGDA);
- Gauteng Province Economic Development (GDED);
- Community representatives such as Ward Councillors;
- Landowners;
- Airports Company South Africa (ACSA);
- Civil Aviation Authority (CAA); and
- Air Traffic and Navigation Services (ATNS).

The DSR will be released for a thirty (30)-day public review and comment period on the 17th of September 2018. The stages that typically form part of the public participation process during the Scoping and EIA phases respectively are reflected in the figure below.

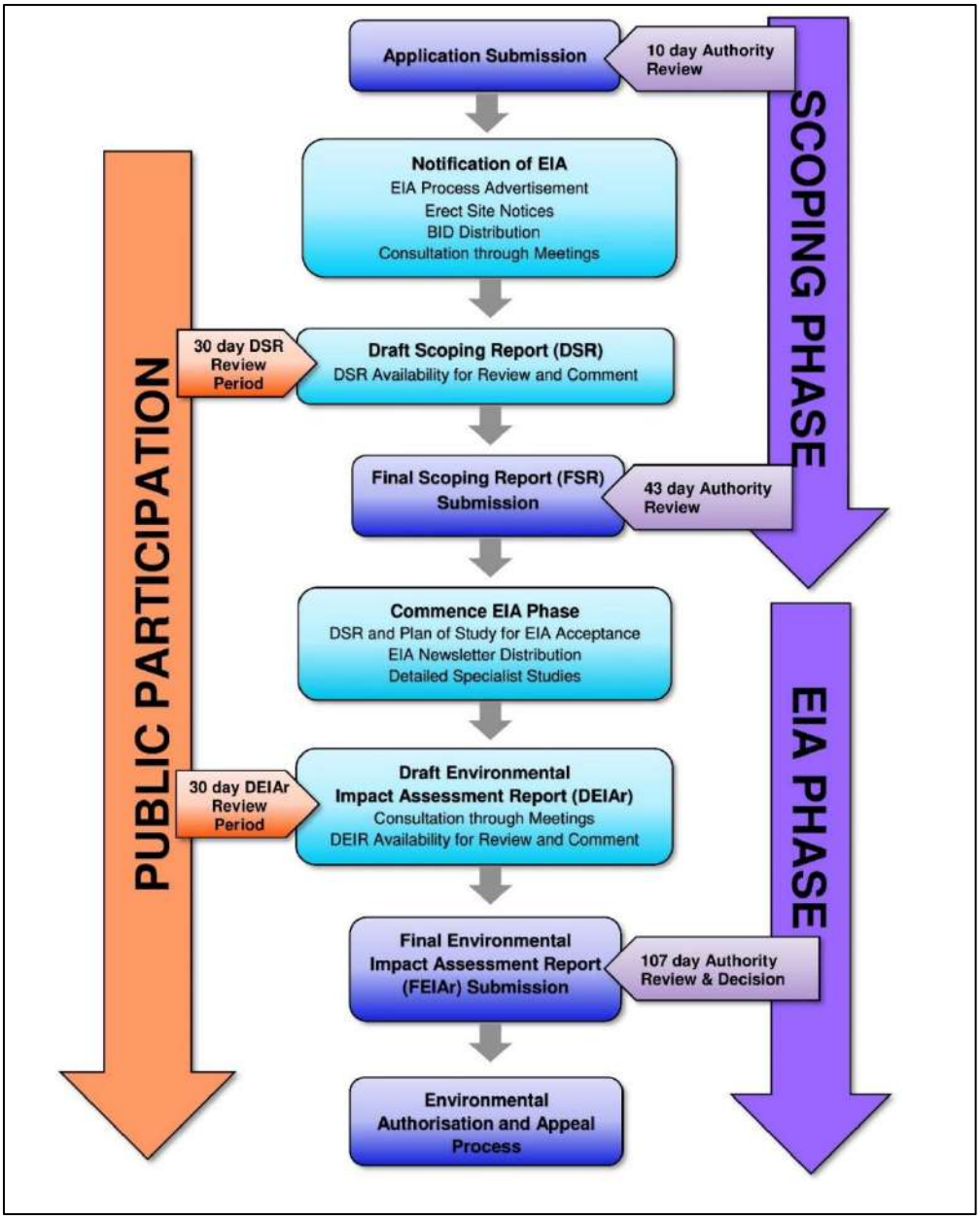

Figure 8-1: Typical EIA process

8.3. Consultation and Public Involvement

Relevant issues to be incorporated in the FSR will be identified and confirmed through a consultation process. Telephonic discussions and one-on-one consultation will be undertaken where relevant. Meetings with the public, landowners and authorities will take place prior to the release of the FSR in order to identify key issues, needs and priorities for input into the proposed project. Special attention will be paid to the

consultation with possibly affected landowners and communities within the study area to try and address their main concerns.

Upon DEA's acceptance of the FSR and approval of the Plan of Study for the EIA Phase, an EIA Newsletter will be prepared and distributed. The EIA Newsletter will provide a brief overview of the Scoping Phase and provide an overview of the process to be followed during the Environmental Impact Phase.

One (1) Public Meeting and one (1) Focus Group Meetings will be undertaken during the Scoping Phase. During the review period of the Draft Environmental Impact Assessment Report (DEIAr), meetings will be undertaken to present the proposed development to the public and solicit comments. One (1) Public Meeting and up to two (2) Focus Group Meetings will be undertaken during the Environmental Impact Phase.

The public participation process will come to a close for the proposed development when the decision on environmental authorisation (EA) is received and is made available to the public. All registered I&APs will be notified of the EA and appeal process.

8.4. Stakeholders and I&APs

In order to identify potential I&APs, the following will be made use of:

- print media – EIA process advertisements (Proof is included in **Appendix 7C**);
  - The Daily Sun (English).
- site notices throughout the study area (Proofs included in **Appendix 7A**);
- referrals; and
- requesting databases and/or contact information from NGOs / CBOs and other organisations

A full database list of registered I&APs was compiled and is included in **Appendix 7F**.

Other important stakeholders (such as parastatals, municipalities and other governmental departments etc.) relevant to the study area will be contacted and included in the database. The I&AP database is a working database that allows potential I&APs identified throughout the Scoping and EIA Phase process to be added/removed. The DSR will be released for public review on 17 September 2018. A thirty (30) day review period will be provided for general public and for authorities as required by the EIA Regulations. Potential I&APs will include the following:

- Surrounding landowners;
- Surrounding businesses and corporations;
- Surrounding schools and other recreational facilities;
- Local Authorities / Municipalities (CoE);
- Department of Water Affairs and Sanitation (DWS);
- GDARD;
- SAHRA;
- ACSA;
- ATNS;
- Telkom SA;
- South African National Road Agency SOC Ltd (SANRAL);
- GDED;
- Gauteng Infrastructure Financial Agency (GIFA);
- Gauteng Growth and Development Agency (GGDA)

8.5. Notification and Announcement of the Opportunity to Participate

Participation for stakeholders during the EIA process are as follows:

Scoping Phase:

- Newspaper adverts for Scoping phase will be released on 17 September 2018 to announce the inception of the PPP to run until 17 October 2018 (**Appendix 7C**);
- PPP invitation notifications to desktop-identified I&APs – via email, telephone, fax, etc.;
- Placement of Site Notices at the site (**Appendix 7A**);
- One (1) Public Meeting; and
- One (1) Focus Group Meeting

EIA Phase:

- Newspaper adverts for EIA phase to announce the inception of the PPP – Date to be confirmed;
- PPP invitation notifications to desktop-identified and already identified I&APs during the scoping phase – via email, telephone, fax, etc.;
- Placement of Site Notices at the site;
- One (1) Public Meeting; and
- Up to two (2) Focus Group Meetings.

Notifications will be sent to all registered I&APs regarding the open, and close of the PPP processes as well as five (5) days before each PPP closing date as a reminder to comment.

8.6. Notification of Potential Interested and/or Affected Parties (I&APs)

Communication with I&APs was conducted by means of telephone and email in order to obtain the necessary background information to compile this report. The advertising process was followed in terms of regulation 41 of the 2014 EIA Regulations (as amended) published in R 326 in Government Gazette No. 40772 of 7 April 2017.

An advertisement was placed in the Daily Sun newspaper on 12 September 2018 (**Appendix 7C**). In addition, many site notices (as per regulations) were placed near the study area during a site visit in September 2018 (**Appendix 7A**).

As stakeholders respond to these advertisements, they will be registered on the project database and sent the BID.

8.7. Proof of Notification

All proof of notification of I&APs will be recorded and incorporated in the impact assessment process. The following types of proofs will be recorded:

- Site notice text;
- Photographs of site notices;
- Proof of advertisements in the newspapers;
- Background Information Document (BID); and
- Correspondence to registered I&APs and key stakeholders.

8.8. Focus Group Meetings

Focus Group Meetings (FGMs) will be held with affected and surrounding landowners as well as Local Municipality officials, councillors and community leaders during the two (2) 30-day PPPs of the scoping and EIA phases. Additional Open Day Meetings with the public and affected and surrounding landowners will be held during the same PPP periods. Following all meetings, minutes will be compiled and forwarded to all attendees for their review and comment. The primary aim of these meetings was to:

- disseminate information regarding the proposed development to I&APs;
- provide I&APs with an opportunity to interact with the EIA team and the GIDZ representatives present;
- supply more information regarding the EIA process;
- answer questions regarding the project and the EIA process;
- receive input regarding the public participation process and the proposed development.

8.9. One-on-One Consultation

Potential direct affected landowners will be consulted on a one-on-one basis and informed about the proposed project, where possible. Any comments and/or concerns received will be noted and included in the Comments and Responses Report.

This consultation process is seen as one of the important aspects of the EIA and Public Participation process. Should the proposed project be granted an EA, these particular stakeholders will be directly affected, and their properties impacted upon. The consultation process will also ensure that as many uncertainties and concerns as possible are raised upfront and channeled to the GIDZ to ensure that the stakeholders and the applicant are informed about these issues throughout the process.

8.10. Comments and Response Report (C&RR)

The Comments and Response Report (C&RR) will document all issues, comments and concerns raised during the public participation process to date. This report will be included in the FSR. It will provide a summary of the issues raised, as well as responses which were provided to I&APs. The information will be incorporated into the relevant impacts in both the FSR and the FEIAr.

8.11. Comments on Draft Scoping Report (DSR)

All I&APs will be given a chance to comment on the Draft Scoping Report. The DSR will be made available for public review after submission to DEA. The report will be out for public review and comment for a period of 30 calendar days. Written notice will be given to all registered I&APs as well as all key stakeholders on the database that the DSR will be available for public review.

Electronic copies (CD) of the report will also be made available and distributed on written request.

8.12. Authority Review of the Draft Scoping Report (DSR)

In terms of section 40 (2) of the 2014 EIA Regulations (as amended), under Government Notices No R. 326, public participation must include consultation with "*all organs of state which have jurisdiction in respect of the activity to which the application relates*".

8-1 below includes all the organs of state who will be e-mailed the DSR and sent electronic copies (on CD) of the full report including all appendices. Telephonic and email follow-up with stakeholders will be done in order to provide them with ample opportunity to comment.

Table 8-1: Authorities follow-up consultation.

Name	Surname	Company/Department	Position	Email Address
City of Ekurhuleni (CoE)				
André	Du Plessis	CoE	DA: 23Ward Councillor	Andre.DuPlessis@ekurhuleni.gov.za
Tracey	Bulter	CoE	DA: 17Ward Councillor	starr@polka.co.za
Flip	Visser		Air Quality Official	flip.visser@ekurhuleni.gov.za
Imanuel	Joemath	CoE	Environmental Health Practitioner	Imanuel.joemath@ekurhuleni.gov.za
Gauteng Department of Agriculture and Rural Development (GDARD)				
Boniswa	Berlot	GDARD	Enforcement-Section 24G	Boniswa.belot@gauteng.gov.za
Abimbola	Olowa	GDARD	Chief Director: Compliance and Enforcement	abimbola.olowa@gauteng.gov.za
David	Klien	GDRAD	N/A	davidkl@nda.agric.za
Department of Water & Sanitation (DWS)				
Portia	Ramanenyiwa	DWS	Acting Chief Director: Gauteng	RamunenyiwaP@dws.gov.za
Thokozani	Mazibuko	DWS	Deputy Director: Compulsory Licensing	mazibukot@dws.gov.za
SM	Matsheka	DWS	N/A	MatshekaS@dwa.gov.za
Justice	Maluleka	DWS		teo@dwaf.gov.za
Airports Company South Africa (ACSA)/ OR Tambo International Airport (ORTIA)				
Puleng	Makhetha	ACSA	Airports Planner	puleng.makhetha@airports.co.za
Musa	Dlamini	ORTIA	Environmental Manger	musa.dlamini@airports.co.za
South African Civil Aviation Authority (SACAA)				
Robert	Harry	SACAA		Robertsh@caa.za
Lizelle	Strohl	SACAA		strohl@caa.co.za
Air Traffic & Navigation Services				
Simphiwe	Masilela	ATNS	Obstacle Evaluator	ObstacleEvaluators@atns.co.za
TELKOM				
Bester	Amanda	Telkom	N/A	BesterAD@telkom.co.za
Transnet				
Livhuwani	Ndou	Transnet	N/A	livhuwani.ndou@transnet.net
Gauteng Province Economic Development (GDED)				
Jerry	Khumalo	GDED	N/A	jerry.khumalo@gauteng.gov.za
Alfred	Tau	GDED	N/A	alfred.tau@gauteng.gov.za

9. CONCLUSIONS AND RECOMMENDATIONS

During the original BA process undertaken in 2009, overall potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. An assessment of the potential impacts was provided, identifying the impacts that are potentially significant including management recommendations and mitigation measures to reduce the impacts.

The FBAR compiled as part of the BA process undertaken for the original JMP project in 2009 concluded that the development of the JMP on the OR Tambo International Airport IDZ, is “in line with the region’s Spatial Development Plan”, as well as the adjacent land uses. It further states that the development will provide a number of “job opportunities during the construction phase” and thereby enhance the local economy. The property on the Remainder of Portion 69 of the Farm Witkoppie 64 - IR has “no ecological, archaeological or geohydrological sensitivities” which may be impacted on by the proposed development. If all mitigation measures as stipulated in the FBAR and in the EMPr are implemented, the significance of most, if not all, and the potential impacts, as listed above, will be “reduced to ‘medium’ and ‘low’” and reach “environmentally acceptable levels”.

With regards to the specialist reviews which have been conducted as part of the EIA process for the proposed development and inclusion of the MetCon facility within the JMP site, the overall conclusions of the reviewed specialist assessments are congruous with the first findings of the BA undertaken in 2009, highlighting no fatal flaws posed by the proposed project to the receiving environment. The above-mentioned report provides a broad introduction to the issues that are pertinent to the proposed JMP development site and highlights important issues that may be further investigated during the EIA Phase of the project. The EIA Phase will draw on the above information and make use of the recommended specialist studies to reach an objective decision on the overall impact of the proposed development.

The EIA Phase will however, where possible, culminate in the compilation of detailed mitigation measures to reduce impacts and the identification of sensitive areas within the site which may require more specific management measures. The EIA Phase will also aim to optimise and improve potential positive impacts that may result from the proposed development. Furthermore, the EMPr of the project will detail mitigation and management measures, in response to the detailed assessment, and will be run towards the end of EIA phase of the project. Should this project receive a positive EA, the EMPr will help inform the project proponent and appointed contractors through the final design, construction and operational phases of the proposed project.

None of the specialist reviews conducted for the proposed development has identified any fatal flaws. This is also true for the AQIA which was undertaken. However, a few of potentially significant negative environmental impacts have been identified for which detailed mitigation and management measures have been provided.

Detailed mitigation and management measures will also be included in the EMPr which will be compilked as part of the EIA phase, in response to the detailed assessment. Should this project receive a positive EA, the EMPr will guide the project proponent and appointed contractor(s) through the final design, construction and operational phases of the proposed project.

9.1.1. Summary of Findings, Conclusions and Recommendations

A summary of the findings, conclusions and recommendations for each specialist review and/or assessment undertaken as part of this EIA process is provided in the table below.

Table 9-1: Summary of Findings, Conclusions and Recommendations for Specialist Reviews/Assessments

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
Surface Water	None	From the results of the review, it was determined that the findings of the Basic Assessment Report (BAR) are likely to still hold true but are not absolute. The recommendations presented in the BAR and EMPr are appropriate, relevant/necessary, sensible and achievable; and the proposed mitigatory measures are considered the best options available. Additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required have been provided in the report. The information on the adjacent wetlands has been presented, at a high level, in the report. This information was used to inform the impact assessment undertaken according to the Marang Impact Rating methodology. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on the freshwater resources of the area. Due to the distance between the activities and the watercourses in the area, and the presence of existing developments between the study area and watercourses of the area, limited to negligible impact from the proposed activities on the wetlands is expected to occur. Fulfilment of Regulation GN R. 509 of 2016 now needs to be considered within all areas within 500m of the proposed development site. As such, the Department of Water and Sanitation (DWS) Risk Assessment Matrix as promulgated in Regulation GN R. 509 of 2016 and the appropriate water use authorisation process (namely a General Authorisation) will be undertaken as part of this EIA process.	Yes. A DWS Risk Assessment Matrix as promulgated in Regulation GN R. 509 of 2016 and the appropriate water use authorisation process (namely a General Authorisation) will be undertaken as part of the EIA process. This is detailed in section 10, Plan of Study for the EIA.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		• ***Construction Phase Recommendations***: o Contractor laydown areas and material storage facilities must be placed within the study area and must not be placed within 30m of the wetlands in line with GDARD and NEMA requirements; o All vehicle re-fuelling is to take place on a sealed surface within the study area and must not be permitted to occur within 30m of the wetlands; o All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is absolutely essential; o Retain as much indigenous vegetation as possible; o Excavated materials should not be contaminated, and it should be ensured that the minimum surface area is taken up, however, the stockpiles may not exceed 2m in height; o All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion and sedimentation of the wetlands; and o Immediate revegetation of all stockpiles which are to remain on site post-construction. • ***Operational Phase Recommendations***: o Clean and dirty water management must take place in order to prevent contaminated runoff from the precious metal refinery facility creating preferential flow paths which may reach the wetlands. Clean and dirty water management systems must be implemented prior to commencement of construction; and o Suitable waste disposal facilities should be provided. These facilities should regularly be emptied and taken to a registered waste disposal facility; and o All recyclable waste should be recycled as far as possible.	
Soil and Land Capability	None	From the results of the review, it was determined that the findings of the Basic Assessment Report (BAR) are likely to still hold true but are not absolute.	No

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		The recommendations presented in the BAR and Environmental Management Programme EMPr are appropriate, relevant/necessary, sensible and achievable; and the proposed mitigatory measures outlined in this report are considered the best options available. The study area is located within a highly industrialised and urbanised area with no active agricultural practices within or in the immediate vicinity of the study area. The eastern half of the study area is situated within the Environmental Management Framework (EMF) Zone 5 (Industrial and large commercial focus zone) (EMF, 2015). The proposed facility falls within the EMF Zone 5. In addition, the study area is currently under development and the soils have been anthropogenically transformed, thus these soils are likely to have little to no bearing on agricultural productivity. Thus, from a soil, land use and land capability point of view, the impact significance on the loss of high agricultural potential soils is anticipated to range between very low and negligible. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on soil, land use and land capability. Additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required have been provided in the specialist review. • ***Construction Phase Recommendations***: o All development footprint areas to remain as small as possible; o Laydown areas should be located within disturbed soils (anthrosols) to avoid compaction of natural soils; o All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion; o Stockpile height should not exceed 2 meters	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		○ Vehicle re-fuelling is to take place on a sealed surface within the study area; and ○ Contamination prevention measures should be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this should always be implemented and made available and accessible to the contractors and construction crew conducting the works on site for reference. • ***Operational Phase Recommendations***: ○ All vehicles should remain within demarcated roads as far as practically possible; ○ Stormwater management must take place to prevent contaminated runoff from the precious metal refinery facility; ○ Waste product should be recycled as best as practically possible to minimise sources of soil contamination; and ○ Contamination prevention measures should be addressed in the EMPr for the proposed development, and this should be implemented and made available and accessible at all times to the contractors and construction crew conducting the works on site for reference.	
Visual	None	It was evident from the review of the Basic Assessment Report (BAR) that very little to no information was presented on visual impacts. However, based on the geographic setting of the proposed Precious Metals Refinery Facility (PMRF), the development is not likely to lead to any change in the visual character and sense of place of the surrounding environment. Both the EMPr and the Environmental Authorisation set conditions to limit the visual impact of the development. Should these conditions be adhered to, the significance of the impact on visual resources and the visual landscape are considered negligible. The development of the proposed PMRF is located within a highly industrialised and urbanised area, with the eastern portion of the proposed PMRF situated within the Industrial and Large Commercial Zone (Zone	No

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		5) of the Environmental Management Framework (EMF, 2015). Since the surrounding area has been subject to development and the proposed PMRF is situated within a footprint where buildings are already constructed, the visual character and sense of place of the area will not be significantly negatively affected. Furthermore, since the proposed PMRF is situated adjacent to the OR Tambo International Airport, none of the buildings are permitted to be higher than two storeys (approximately 12m), therefore the proposed buildings associated with the PMRF is congruous with the surrounding existing buildings from the Jewellery Manufacturing Precinct (JMP). Based on the findings of the impact assessment, the proposed PMRF poses a low significance of impact on the visual character and aesthetics of the area. Additional information from desktop sources with emphasis on climate, topography, land uses and land cover as well as protected areas within a 10km radius from the proposed development was gathered to assist with decision making for additional listed activities for which authorisation may be required. • ***Construction Phase Recommendations:*** o The development footprint area should remain as small as possible; o No rubble should be disposed of at random within the site, but within relevant removable bins, where recyclable and non-recyclable waste is kept separate; o Contractor's laydown areas and temporary storage facilities should be located within the development footprint and cordoned off with shade cloth to conceal and minimise the visual impact; o Any topsoil stockpiled should either be utilised during landscaping or it should be shaped and rounded to blend in with the surrounding landscape and to minimise visual contrast; o Vegetation, especially large and tall trees bordering the Bonaero Park residential area south of the PMRF should be retained if feasible;	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		○ It must be ensured that the buildings fit into its surroundings through the appropriate use of colour and material selection. Natural Colours should be used in all instances. Should the stacks comprise metal surfaces, it must be painted in a colour that blends in with the natural environment. White structures are to be avoided; ○ A dust management plan must be implemented to reduce dust generation. Such dust control measures may include, but is not limited to; watering of the footprint area and any access roads, speed limits of 20km/h must be adhered to and should it be practical stockpiles should be covered with a tarpaulin on windy days to avoid soil and dust being blown away; ○ Construction activities should be restricted to daylight hours as far as possible; ○ A lighting engineer may be consulted to assist in the placement of temporary and permanent light fixtures, to reduce the visual impact associated with glare and light trespass; and ○ No naked / unshielded light sources are to be used. It is recommended that "full cut-off" light fixtures that direct light only below the horizontal is to be used. • ***Operational Phase Recommendations:*** ○ Operational activities of the PMRF and gas emissions at the stacks; ○ An increase in vehicular movement and level of human activity in the area due to operational activities; ○ Exterior and security lighting around the buildings and parking facilities, possibly contributing to light pollution; ○ Potential lighting at night from operational vehicles; and ○ Light sources temporarily stationed for maintenance activities conducted at night, in case of emergencies. ○ It is recommended that routine maintenance on buildings and other structures be implemented, to ensure that the paint of	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		buildings are not weathered and that the buildings fit into the colour palette of the surroundings; ○ In the event that a green open space is demarcated and landscaped, it must be ensured that the vegetation be maintained and controlled to reduce the risk of potential alien floral species proliferation and to keep it aesthetically appealing to the receiving environment; ○ It is recommended that maintenance activities should not take place at night or on weekends, unless absolutely essential; ○ Making use of motion detectors on security lighting at buildings and parking facilities, ensures that the site will remain in relative darkness, until lighting is required for security and maintenance purposes; ○ No naked / unshielded light sources are to be directly visible from a distance; and ○ The PMRF should be screened through the use of a clearVU fence, or equally approved, which will result in a more unified and tidy appearance	
Heritage	None	A brief desktop study was undertaken which consisted of an assessment of old aerial photographs. Aerial photographs taken in 1941, 1952, 1969 and 1976 were obtained and included in the study. Neither one of these images depict any buildings or heritage sites within the study area. In 1941 a plantation was growing across the study area and its surroundings. Eleven years later, in 1952, this plantation had almost entirely been cut down. By 1969 the remaining trees from the plantation started growing and expanding again, albeit in an unmanaged way suggesting that the study area was not farmed or formally used for any particular purpose. By 1976 signs for earthworks and excavations within the study area started appearing, although sections of it still comprised trees. The site was assessed in the field by way of a brief walkthrough undertaken by Polke Birkholtz, an experienced archaeologist / heritage specialist. The fieldwork showed that the study area is almost entirely	No. It is the specialist's professional opinion that there is no need for a Heritage Impact Assessment.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		disturbed and construction on the jewellery precinct is at an advanced stage. The following recommendations are made: ▪ Despite the fact that study area was assessed by way of a detailed investigation of aerial photographs, no evidence for any buildings or heritage sites could be found on any of these old depictions of the study area. Furthermore, the walkthrough also did not reveal any evidence for archaeology or heritage, even though sections of intact soil profiles that were exposed by construction were scrutinised during the walkthrough. As a result, it is my professional opinion that there is no need for a Heritage Impact Assessment on this project.	
Air Quality	None	Particulate and gaseous emissions were identified for operations associated with the proposed facility and will be emitted from the following key sources: ▪ Jewellers secondary gold material incineration in roasting oven; ▪ Gas (fuel) combustion installation (roasting oven); ▪ Chemical refining process; ▪ Melting of material in induction furnaces and adding fluxes; and ▪ Casting of material. The abovementioned activities trigger sub-category 4.17 (precious and base metal production and refining) and 4.2 (combustion installations) in terms of S21 of NEM:AQA (Act No. 39 of 2004). As such, the proposed facility requires an AEL to operate. While there were other identified existing key sources of air pollution surrounding the project site which also need to be taken into account, Marang predicted low unmitigated incremental concentrations. MetCon do plan to install abatement equipment, as per their current design at the MetCon Centurion Plant. Under the mitigated scenario, very low concentrations were observed within 2 km from the facility, as the abatement equipment (scrubber and baghouse) has an associated emission control efficiency of approximately 98%. Therefore, Marang further concluded that the development be approved from an Air Quality point of view.	No. It should however be noted that an AEL will be obtained for the proposed development.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		• ***Operational Phase Recommendations***: o The proposed facility must install abatement equipment (baghouse and scrubber) as per their current design at the existing MetCon Centurion Plant. The abatement equipment must achieve at least 90% control efficiency and must ensure compliance with the minimum emission standards for sub-category 4.17 in terms of S21 of the NEM:AQA listed activities. Additional recommendations include: o MetCon must apply for an AEL prior to the commencement of operations. All conditions of the AEL must be complied with. o Appoint a responsible person, such as an emission control officer or safety, health & environmental manager, to ensure compliance with the AEL. o Once operational, conduct stack emissions monitoring on all stacks for the relevant listed activity and ensure compliance with the minimum emission standards, with the use of abatement equipment. Ensure that monitoring is undertaken in accordance with nationally or internationally acceptable methods. o Ensure that all unit processes & apparatus used for undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing emissions, are at all times properly maintained and operated. o Submit an annual AEL report within the required timeframe. o Submit compliance audit reports annually. o Once operational, maintain and report monthly to the authority a complaint register. Should a complaint be logged, a report in the required format as per the AEL, should be submitted to the authority. o Register and report on the NAEIS. Category A (listed activities) are required to report their emissions on the NAEIS annually. The NAEIS is a national emissions inventory.	

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		○ Maintenance and pollution prevention plans should be developed for the facility. ○ Undertake regular training of all key employees to ensure effective implementation of the AEL requirements, maintenance and pollution prevention plans.	
Noise	None	If only daytime activities are planned, no mitigation measures are recommended. If night-time activities are planned (after 22:00 at night, before 06:00) it is recommended that MetCon: ▪ measure the typical night-time ambient sound levels in the area prior to the project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not raise the noise levels with more than 7 dB (Noise Control Regulations) and ideally, does not raise the ambient sound levels with more than 3 dB (International Finance Corporation recommendation). ▪ select appropriate noise mitigation measures (to be considered during the planning stage) which may include: ○ Eliminating the noise source where possible at night; ○ The installation of one or more acoustical silencer(s) or enclosures; ○ Acoustical treatment of ducts and exhaust stacks; ○ A change in equipment, controlling the speed of the fans/blowers; ○ Moving the noise source further from the residential area (if possible). • ***Operational Phase Recommendations***: ○ No additional mitigation required for activities during daytime (06:00 – 22:00) operations. ○ If night-time activities are required, MetCon should measure the typical night-time ambient sound levels in the area prior to the project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not	No.

Aspect	Fatal flaws	Outcomes & Recommendations	Further Investigations
		raise the noise levels with more than 7 dB (Noise Control Regulations), ideally, no more than 3 dB (International Finance Corporation recommendation). o Other measures include: - Minimise night-time activities that will require the use of the baghouse stack and blowers at night. - The design of the baghouse stack exit to ensure a more flared design, or the use of a silencing system at the exit. - Enclose the blowers in a structure to reduce the noise levels from this source. o The reduction of the gas exit velocities at night.	

10. PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

It is important to note that this impact assessment will include the review of the impacts, recommendations and mitigation measures outlined in the FBAR that was approved in 2011. Furthermore, issues identified during the Scoping phase will be investigated further during the EIA phase of the proposed project. Mitigation measures will be formulated, and these will be included in the EMPr. The sections below confirm the process to be undertaken by the EAP in the EIA Phase of the project.

The following specialist studies have already been completed for the JMP site:

- Geotechnical Study (Lukhanyo Gqobo – Earth Investigation Laboratories);
- Traffic Impact Assessment (Bonginkosi Msiya – Phunga Holdings (Pty) Ltd); and
- Air Quality Impact Assessment (Sophia Rosslee – Marang Environmental & Associates (Pty) Ltd).

The following specialist reviews will be undertaken as per consultation with the DEA:

- Heritage Review (Polke Birkholtz – PGS Heritage);
- Noise Review (Morné de Jager – Enviro Acoustic Research CC);
- Surface Water Review (Stephen van Staden – SAS Environmental Group of Companies);
- Soils and Land Capability Review (Stephen van Staden – SAS Environmental Group of Companies); and
- Visual Impact Review (Stephen van Staden – SAS Environmental Group of Companies).

These studies will involve assessing the potential impacts that have been identified in this DSR in addition to any new issues that are identified during the detailed assessments. The qualifications of these specialists are included in their CV's which are included in **Appendix 2**.

The following tasks will form part of the Scoping Phase:

- A Public Participation Process;
- Conduct specialist studies confirmation;
- Conduct alternatives assessment on any emerging alternatives;
- Compilation of a Final Scoping Report (FSR)

- Make FSR available for public comment;
- Submit FSR to DEA; and
- Await decision

The following tasks will form part of the Environmental Impact Assessment (EIA) Phase:

- A comprehensive Public Participation Process;
- Compilation of Draft Environmental Impact Assessment Report (DEIAr);
- Compilation of Draft Environmental Management Programme (Draft EMPr);
- Make DEIAr and Draft EMPr available for comment;
- Submit DEIAr and Draft EMPr to DEA;
- Compilation of Final Environmental Impact Report (FEIAr);
- Compilation of Final Environmental Management Programme (Final EMPr);
- Submit FEIAr and Final EMPr to DEA; and
- Await decision.

10.1. Aim of the EIA Phase

The aim and objectives of the EIA phase will be in line with Section 2 of Appendix 3 of the 2014 EIA Regulations (as amended):

- To further determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- To further describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the development footprint on the approved site as contemplated in the accepted scoping report;
- To further identify the location of the development footprint within the approved site as contemplated in the accepted scoping report based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- To further determine the—
    - nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
    - degree to which these impacts—
        - can be reversed;
        - may cause irreplaceable loss of resources, and
        - can be avoided, managed or mitigated;
- To further identify the most ideal location for the activity within the development footprint of the approved site as contemplated in the accepted scoping report based on the lowest level of environmental sensitivity identified during the assessment;
- To further identify, assess, and rank the impacts the activity will impose on the development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity;
- To further identify suitable measures to avoid, manage or mitigate identified impacts; and
- To further identify residual risks that need to be managed and monitored.

10.2. Authority Consultation

The stages at which the competent authority will be consulted are as follows:

- Submission of FSR;
- Response from competent authority regarding acceptance of FSR;
- Submission of DEIAr and Draft EMPr for comment;
- Submission of FEIAr and Draft EMPr with comments; and
- Response from competent authority regarding acceptance of FEIAr and Final EMPr.

Additional consultation may occur with the DEA during the EIA process should the need arise.

10.3 Further Investigations

10.3.1. Surface Water

As previously mentioned, fulfilment of Regulation GN R. 509 of 2016 needs to be considered within all areas within 500m of the proposed development site. As such, the Department of Water and Sanitation (DWS) Risk Assessment Matrix as promulgated in Regulation GN R. 509 of 2016 and the appropriate water use authorisation process (namely a General Authorisation) will be undertaken as part of the EIA process. This will include facilitating a freshwater verification and General Authorisation (GA) in terms of the NWA, 1998 (Act 36 of 1998). This process is detailed below.

Proposed Method of Assessment

A detailed desktop assessment will be undertaken in which all available background information will be reviewed. All relevant national and provincial databases will be reviewed and searched as required, in order to further define the environmental sensitivities of the receiving environment. As part of the desktop studies all freshwater areas will be mapped based on desktop delineation methods.

- Wetland Ecology:
  - A brief site visit will be undertaken whereby, all freshwater feature(s) within 500m of the study area as provided by the client will be assessed, and the following will be undertaken:
  - Delineation of freshwater features within 500m of the study area will be undertaken utilising desktop methods, with limited field verification thereof (access dependent);
  - All freshwater features identified during the field assessment will be mapped using a handheld GPS and the use of ARC GIS 10.1 software;
  - A freshwater resource classification assessment will be undertaken according to the Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems (Ollis et al., 2013);
  - Applicable buffer zones and/or zones of regulation according to relevant legislation or provincial guidelines will then be delineated around the freshwater resources. The applicable buffer maps will be provided;
  - The wetland services provided by the resources within the study area will be assessed according to the method of Kotze et al (2009) in which services to the ecology of the site will be defined and services to the people of the area will be defined;
  - The wetland Present Ecological State (PES) will be assessed according to indices such as the Wet-Health / Index of Habitat Integrity as advocated by Macfarlane et al., (2008) and DWA (2007), respectively as applicable;

- The wetland EIS will be determined based on the method described by Rountree & Kotze, (2013);
- The Risk Assessment as promulgated in General Notice 509 of 2016, as it relates to the National Water Act, 1998 (Act 36 of 1998) will be undertaken to determine if a General Authorisation (Low Risk) can be applied for the proposed activities; and
- Recommendations on management and mitigation measures (including opportunities and constraints) with regards to the development/operation in order to improve manage and mitigate impacts on the freshwater ecology of the area will be provided. All results will be compiled into a brief fact-presenting verification report.

- Water Use Authorisation

As of January 2018, all water use applications are to be submitted via the e-WULA portal, whereby three (3) phases must be undertaken (each phase requires approval from the DWS before progressing to the next phase). On review of the proposed plans it is anticipated that only a General Authorisation will be required (as applicable for Low Risk activities, as identified in the Risk Assessment Matrix), which is inclusive of only Phase 1 and 2:

1. **Pre-application (I)** – this includes an overview of the application, including water uses triggered, applicant details as well as property details. A pre-consultation meeting with the DWS will be held prior to logging any information on the e-portal in order to ascertain all information requirements.
2. **Application (II)** – This phase required more detail about the water use, including application forms, all supporting documentation (I.e. title deeds, company registration forms etc). A site visit will be undertaken with the relevant case officer at the end of this phase.

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Appendix 1

Applicable Documentation

SOUTH AFRICAN
SPECIAL ECONOMIC AND INDUSTRIAL DEVELOPMENT ZONES

the dti
Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

towards full-scale industrialisation and inclusive growth

the dti Customer Contact Centre: 0861 843 384
the dti Website: www.thedti.gov.za

NDP

the dti Campus
77 Meintjies Street
Sunnyside
Pretoria
0002

the dti
Private Bag X84
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0001

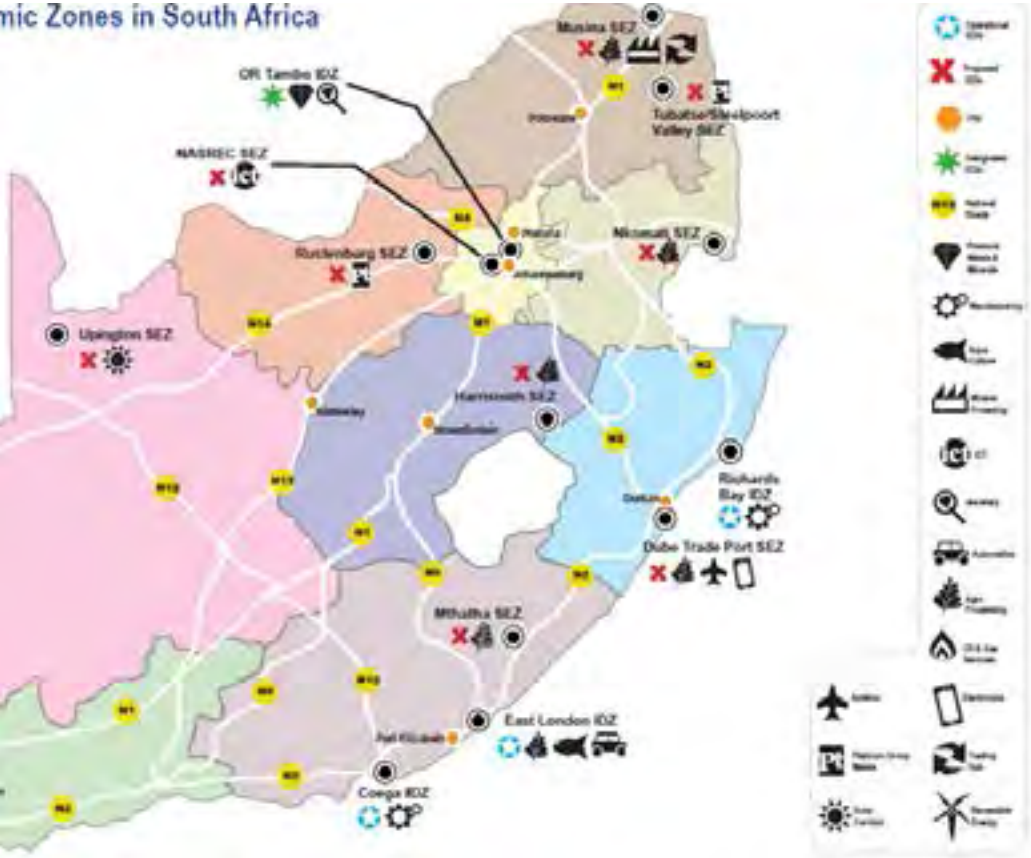
the dti customer contact centre: 0861 843 384
the dti website: www.thedti.gov.za

Contents

SECTION 1: BACKGROUND

The South African Government seeks to transform the economy into a globally competitive industrial economy, built on the full potential of all citizens and regions. The National Development Plan (NDP) outlines a long-term development path towards a prosperous and successful economy characterised by high levels of economic growth, employment generation and an equitable society. Macro-economic policy such as the New Growth Path (NGP) and Industrial Policy Action Plan (IPAP) outline the Government's industrial agenda, the critical jobs drivers, prioritised industrial sectors and a range of interventions required to accelerate economic growth, create jobs, and fight poverty and underdevelopment.

One of the critical tools for accelerating the country's industrial development agenda is the new Special Economic Zone (SEZ) Programme, which was mandated by the SEZ Act, proclaimed in February, 9, 2016. SEZs are a tool to help (i) promote industrial agglomeration, (ii) build the required industrial infrastructure, (iii) promote coordinated planning among key government agencies and the private sector, and (iv) guide the deployment of other necessary development tools. Below is a list of designated and planned SEZs in South Africa:


mic Zones in South Africa
Musina SEZ
OR Tambo IDZ
Tubatse/Steelpoort Valley SEZ
NASREC SEZ
Rustenburg SEZ
Mkhuhlu SEZ
Upington SEZ
Harrismith SEZ
Richards Bay IDZ
Dube Trade Port SEZ
Mthatha SEZ
East London IDZ
Coega IDZ

1. LIST OF DESIGNATED SEZs

South Africa has seven SEZs located in different provinces, namely:

1.1. COEGA IDZ (EASTERN CAPE)

The Coega IDZ is the largest in Southern Africa. It was designated in 2001 and became South Africa's first IDZ. It is strategically located in the Nelson Mandela Bay Metropolitan Municipality on the East-West trade route, to service both world and African markets. The Coega IDZ leverages public-sector investment to attract foreign and domestic direct investment in the manufacturing sector with an export orientation. The IDZ has attracted investment in the agro-processing, automotive, aquaculture, energy, metals logistics and business process services sectors. This has advanced socio-economic development in the Eastern Cape through skills development, technology transfer and job creation.

For more information, visit www.coega.co.za

1.2. RICHARDS BAY IDZ (KWAZULU-NATAL)

The Richards Bay IDZ is a purpose-built and secure industrial estate on the north-eastern South African coast. The N2 business corridor links the province's two major ports, Durban and Richards Bay, and connects with Maputo in Mozambique and, ultimately, areas of East Africa. It is linked to

an international sea port of Richards Bay, tailored for the manufacturing and storage of minerals and products to boost beneficiation, investment, economic growth and, most importantly, the development of skills and employment. First-world infrastructure allows for full exploitation of the area's natural and strategic advantages. Through the superb industrial infrastructure, well-established network of shipments, and tax- and duty-free incentives, the IDZ aims to encourage international competitiveness and attract export-orientated manufacturing investment.

For more information, visit www.rbidz.co.za

1.3. EAST LONDON IDZ (EASTERN CAPE)

Innovation, efficiency, growth and sustainability are key to the East London IDZ (ELIDZ). Established in 2003, as part of the South African Government initiative to improve industrial competitiveness and economic growth in the country, the zone has become a prime industrial park, renowned for its customised solutions for various industries, including automotive, agro-processing and aquaculture. The ELIDZ offers growth-oriented companies a specialised manufacturing platform, innovative industrial and business solutions, and access to new markets and strategic industry networks.

The ELIDZ is located in Buffalo City, the municipal area that incorporates Bhisho, the province's capital, and King William's Town. It is one of the first IDZs in South Africa to be operational and is an ideal choice for the location of

exported manufacturing and processing, providing investors with connections to major markets, locally and across the globe.

For more information, visit www.elidz.co.za

1.4. SALDANHA BAY IDZ (WESTERN CAPE)

President Jacob Zuma launched the Saldanha Bay IDZ (SBIDZ) in the Western Cape on 31 October 2013 and handed over the operator permit. It is envisioned that this IDZ will serve as the primary oil, gas and marine repair engineering and logistics services complex in Africa, servicing the needs of the upstream oil exploration industry and production service companies operating in the oil and gas fields off Sub-Saharan Africa. Situated approximately two hours north of Cape Town, the SBIDZ will include logistics, repairs and maintenance, and fabrication activities.

For more information, visit www.sbidz.co.za

1.5. DUBE TRADEPORT SEZ (KWAZULU-NATAL)

Dube TradePort is a catalyst for global trade and a portal between KwaZulu-Natal and the world. It is the only facility in Africa that brings together an international airport, cargo terminal, warehousing, offices, retail sector, hotels and agricultural area. Located 30km north of Durban, Dube TradePort is positioned between the two biggest sea ports of Southern Africa, and linked to the rest of Africa by road and rail.


29° SOUTH

Areas that have been designated as the IDZ are the Dube TradeZone and the Dube AgriZone. The **Dube TradeZone** focuses on manufacturing and value-addition primarily for automotive, electronics and fashion garments. The facility involves warehousing, manufacturing, assembling real estate resource, complete with a single facility in which all freight-forwarders and shippers are located (Dube TradeHouse), which enjoys a direct link to the adjacent Dube Cargo Terminal via an elevated cargo conveyor system.

The **Dube AgriZone** is a high-tech, future-farming facility that hosts the continent's largest climate-controlled growing area under glass and focuses on high-value, niche agricultural and horticultural products. The AgriLab will look into specialised tissue culture, greenhouses, and flowers and plants, all of which require swift air transportation.

For more information, visit www.dubetradeport.co.za

1.6. MALUTI-A-PHOFUNG SEZ (FREE STATE)

Maluti-A-Phofung SEZ in Harrismith, Free State, lies at the mid-point of the crucial Durban-Johannesburg logistics route. This newly established SEZ offers exporters a logistics base that facilitates access to the Port of Durban, and intermodal logistics solutions for the transfer of freight between road and rail. The zone is well-suited and licensed for general manufacturing, offering a convenient production base for light and medium manufacturing. With excellent logistics links by road or rail to South Africa's industrial heartland,

the Port of Durban and the southern Bloemfontein-Cape Town route, the SEZ is a natural choice for investors seeking a cost-effective location to service domestic and export markets.

In addition, the SEZ intends building on existing strengths to attract agro-processing industries to an area that has good access to the products of the agriculturally rich Free State. It harbours intentions of acting as an agglomeration, storage and logistics point for agricultural produce. Owned by the Free State Development Corporation, this site has existing facilities that can be leased immediately, and is currently upgrading both the internal road and utility infrastructure to meet expected demand.

For more information, visit www.fdc.co.za

1.7. OR TAMBO IDZ (GAUTENG)

The OR Tambo IDZ aims to develop land around OR Tambo International Airport to stimulate economic development through the use of the IDZ mechanism. The OR Tambo IDZ supports the growth of the beneficiation of precious metals and minerals sector, with a focus on light, high-margin, export-oriented manufacturing of South African precious and semi-precious metals. The multi-site development at OR Tambo IDZ consists of several industry-specific precincts and will be developed in phases over a 10- to 15-year period.

1.8. MUSINA/MAKHADO SEZ (LIMPOPO)

The Musina/Makhado SEZ comprises two geographical locations that address unique industrial clusters. The site in Musina targets the light industrial and agro-processing clusters, while the Makhado site is a metallurgical/mineral beneficiation complex. A third site has been identified to target the petrochemical industries.

The SEZ is strategically located along the N1 North-South route into the Southern African Development Community (SADC), very close to the border between South Africa and Zimbabwe. It forms part of the Trans-Limpopo Spatial Development Initiative (SDI) and has been developed as part of greater regional plans to unlock investment and economic growth and address the development of skills and employment. Newly built infrastructure enables full utilisation of the area's unique combination of mineral endowments and supports industries in the full-value chains for mineral beneficiation, agro-processing and light industrial manufacturing.

The strategic location of the SEZ and its close proximity to the main land-based route into SADC and the African continent, together with supporting incentives and a good logistics backbone, will make it the location of choice for investment in the mineral beneficiation, agro-processing and petrochemical industries.


cosco

2. LIST OF PROPOSED/NON-DESGNATED SEZS

Work is under way between the Department of Trade and Industry (**the dti**) and the provinces on the planning and implementation of new SEZs. The current work package focuses on infrastructure planning, designation process and investment promotion.

2.1. NKOMAZI SEZ (MPUMALANGA)

The Nkomazi SEZ is located in the Nkomazi Local Municipality, which is in the eastern part of Ehlanzeni District Municipality and approximately 65km of the central business district of Nelspruit in Mpumalanga. The geographic location of the Nkomazi area is its main competitive advantage. The area is strategically placed between northern Swaziland and the southwest of Mozambique. It is linked to Swaziland by two national roads, the R570 and R571, and with Mozambique by a railway line and the national road, the N4, which together form the Maputo Corridor.

The Nkomazi SEZ is conceptualised as an agro-processing hub, which will be supported by mixed services such as warehousing and logistics. The processing of agricultural products in the Nkomazi SEZ will be based on automated and semi-automated as well as high-tech manufacturing technologies, which will be largely based on green or renewable energy uses. The supporting services will include logistics (intermodal logistic; production logistics) and warehousing facilities, which will also promote

the utilisation of green sources of energy. The targeted value chains of the proposed Nkomazi SEZ include secondary and tertiary stages of the processing of citrus and sub-tropical fruits, aromatic plants/herbs, ground and tree nuts, sugarcane, nutraceuticals, meat processing, leather goods and agri-inputs such as fertilizer. The designation of SEZ status for the Nkomazi area will transform what historically has been a rural corridor into an economic ”high-tech agri-hub” thereby improving the productivity of the region.

For more information, visit www.nkomazisez.co.za

2.2. ATLANTIS SEZ (WESTERN CAPE)

The proposed Atlantis SEZ is part of the City of Cape Town’s initiative taken in 2011 to establish a greentech manufacturing hub in Atlantis. This was in response to the Department of Energy’s Renewable Energy Independent Power Producer Programme (REIPPP). Localisation of manufacturing and the resultant job creation is one of the key priorities of Government through the REIPP programme.

Situated on the West Coast of South Africa, 40km from Cape Town, the proposed Atlantis SEZ (ASEZ) capitalises on the province’s already booming renewable energy and green technology sector. Greentech refers to green technologies that reduce or reverse the impact of people on the planet. This includes renewable energy technologies. Wind turbines, solar panels,

insulation, biofuels, electric vehicles, materials recycling and green building materials are all examples of green technology. The hub has already attracted its first large greentech investor, Gestamp Renewable Industries (GRI). A wind tower manufacturer, GRI has already invested R300 million and is in full-scale production.

Five reasons for the renewable energy and green technology sector to locate in the Atlantis SEZ:

1. Strong and growing South African and African markets for greentech
2. Well-located and development-ready area
3. Strong support base and existing relationships for investors to tap into
4. One-Stop-Shop for wide-ranging investor support
5. Incentives for investors and tenants

For more information, visit www.greencape.co.za

2.3. BOJANALA SEZ (NORTH WEST)

The Bojanala SEZ is also known as the Platinum Valley SEZ, which clearly indicates its focus on mineral beneficiation of platinum group metals (PGM), including Platinum (Pt), Palladium (Pd), Rhodium (Rh), Osmium (Os), Ruthenium (Ru) and Iridium (Ir).

The SEZ falls within the originally conceptualised Platinum Corridor, with the focus on the North-West portion of the East-West Corridor that links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Maputo with Walvisbay through Nelspruit, Pretoria, Rustenburg, Lobatse and Windhoek; the Treasure Corridor, to strengthen developments from Johannesburg to Potchefstroom, Klerksdorp and further south along the N12; and the Western Corridor, to strengthen a North-South initiative from SADC through Botswana and the North West to the Northern Cape.

The SEZ targets PGM beneficiation, mining equipment and machinery, renewable energy products and components and logistics, including the upstream value chain as well as several downstream opportunities.

The primary focus of the SEZ is on PGM beneficiation industries and key opportunities include catalysts (automotive catalytic converters), electrical and electronics components, biomedical and pharmaceutical products (cancer treatment and micro implants), high-performance alloys (labware, optical equipment and turbine blades), fuel cells and jewellery.

The SEZ will capitalise on the area's well-established mining industry, good infrastructure and a large labour pool to drive investment and economic growth, skills development and employment. It is perfectly located to take advantage of the main trade routes into SADC and Africa, as well as international destinations by air, attracting investment and supported by **the dti**'s SEZ incentives, as well as other incentives pertaining to customs and VAT that enhance the competitiveness of export-driven industries in the area.

SECTION 2: SEZ TAX INCENTIVES

To complement **the dti** SEZ strategy, a package of tax incentives will be available to companies locating in certain SEZs, subject to specific criteria. The tax incentives that companies may qualify for include VAT and customs relief if located within a Customs-Controlled Area (CCA), employment tax incentive, building allowance and reduced corporate income tax rate.

The design and eligibility criteria for each incentive seeks to strike a balance between achieving the objectives of higher levels of investment, growth and employment creation, and ensuring that the incentives are appropriately targeted for efficiency purposes, while minimising any deadweight loss to the fiscus.

Business located within a CCA will qualify for VAT and customs relief (similar to that for the current IDZs). The employment tax incentive will be available to businesses located in any SEZ. Businesses operating within approved SEZs (by the Minister of Finance, after consultation with the Minister of Trade and Industry) will be eligible for two additional tax incentives. Firstly, all such businesses can claim accelerated depreciation allowances on capital structures (buildings) and, secondly, certain companies (carrying on qualifying activities within an approved SEZ) will benefit from a reduced corporate tax rate (i.e. 15% instead of 28%).

1. VAT AND CUSTOMS RELIEF

Companies located within a CCA will be eligible for VAT and customs relief, as per the current IDZs.

Characteristics of a CCA include the following:

- Import duty rebate and VAT exemption on imports of production-related raw materials, including machinery and assets, to be used in production with the aim of exporting the finished products;
- VAT suspension under specific conditions for supplies procured in South Africa; and
- Efficient and expedited customs administration.

More information on CCAs can be found on the SARS website www.sars.gov.za

2. EMPLOYMENT TAX INCENTIVE

All employers of low-salaried employees (below R60 000 per annum) in any SEZ will be entitled to the employment tax incentive (ETI). This aims to encourage employers to hire young and less experienced work seekers. However, the employee age restriction will not apply to SEZs. It reduces an employer's cost of hiring people through a cost-sharing mechanism with Government, while leaving the wage the employee receives unaffected. The employer can claim the ETI and

reduce the amount of Pay-As-You-Earn (PAYE) tax payable by the amount of the total ETI calculated in respect of all qualifying employees.

3. BUILDING ALLOWANCE

Businesses operating within approved SEZs (by the Minister of Finance, after consultation with the Minister of Trade and Industry) will be eligible for an accelerated depreciation allowance on capital structures (buildings). The special rate of capital (depreciation) allowances in lieu of normal allowances will be available for erecting or improving buildings and other fixed structures. This rate will equal 10% per annum over 10 years.

Companies engaged in the following activities, based on the Standard Industrial Classification Code issued by Statistics South Africa, will not qualify for the building allowance:

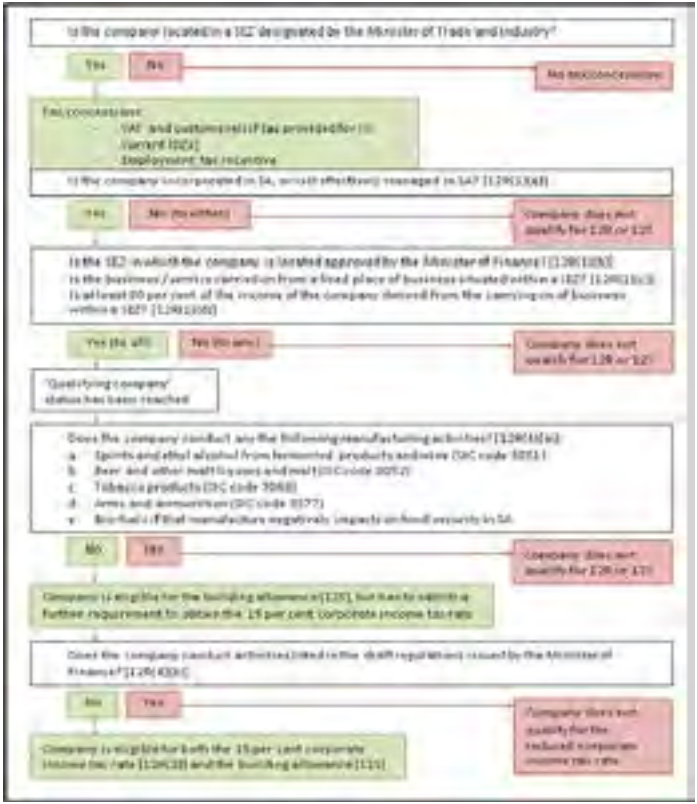
- Spirits and ethyl alcohol from fermented products and wine (SIC code 3051)
- Beer and other malt liquors and malt (SIC code 3052)
- Tobacco products (SIC code 3060)
- Arms and ammunition (SIC code 3577)
- Bio-fuels if that manufacture negatively impacts on food security in South Africa

4. REDUCED CORPORATE INCOME TAX RATE

Certain companies will qualify for a reduced corporate income tax rate of 15%, instead of the current 28% headline rate. To qualify, the following conditions must be satisfied:

- The company must be located in a SEZ that is approved by the Minister of Finance;
- It must be incorporated or effectively managed in South Africa;
- At least 90% of the income must be derived from the carrying on of business or provision of services within that SEZ; and
- The company must not be engaging in activities listed in the Government Gazette No. 39930.

The following decision tree can be used to assist companies in determining whether they are eligible for the tax incentives:



Note:

GAUTENGIDZ

INDUSTRIAL DEVELOPMENT ZONE

STRATEGIC PLAN (2014-2019)

UPDATED: 2017 February

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FOREWORD BY THE GAUTENG IDZ CHAIRPERSON

The Gauteng Industrial Development Zone is a Special Purpose Vehicle established to develop and operate the Industrial Development Zone, designated at OR Tambo International Airport. It (Gauteng IDZ) continues to work towards the goal of developing and operationalizing a competitive entity, located in and within the proximity of OR Tambo International Airport.

Taking advantage of OR Tambo International as the primary air passenger and cargo hub within Southern Africa, it is the objective of the Gauteng IDZ to, beyond its initial focus of mineral beneficiation, also explore beneficiation opportunities that the company can leverage on from being in close locational proximity to OR Tambo. To this end, the Gauteng IDZ has already undertaken a study on the air freight value chain to determine the 'hit list of commodities' that can be considered for locational consideration into the designated Zone, thereby enhancing the proposition of developing a competitive 'High Value Low Mass' Industrial Development Zone at Africa's largest and busiest airport.

Given that the Gauteng IDZ programme is not being implemented in a 'silo', the organisation is also engaging with national, provincial and local stakeholders to ensure that a consolidated SEZ strategy that gives due consideration to various national, provincial and local policies and strategies developed as a guide for the enhanced growth of the South African economy are considered. These include, inter alia, directives defined in the Industrial Policy Action Plan, the Gauteng Economic Development Plan and the Aerotropolis Master plan developed by the host metro, Ekurhuleni Metropolitan Municipality, amongst others.

In all of the above, the objective of Gauteng IDZ is clear: to ensure that a globally competitive Special Economic Zone that enhances beneficiation at OR Tambo International Airport IDZ and the broader Eastern Corridor of the Province is realised.

Like with any broad intent and strategy, efficient programme management and planning is key; this strategic plan therefore reflects the programmes, objectives, indicators and targets that Gauteng IDZ seeks to achieve over the medium term in support of its defined projects and policy and / or regulatory prescripts.

Kind regards

Dr. Paul Jourdan
Chairperson
Gauteng IDZ Devco

OFFICIAL SIGN-OFF

It is hereby certified that this updated Strategic Plan was developed by the management of the Gauteng Industrial Development Zone Development Company ('Gauteng IDZ' or 'GIDZ') and takes into account all relevant policies, strategies and other mandates of the Gauteng Growth and Development Agency and the Gauteng Department of Economic Development, of which entities, the Gauteng IDZ is a subsidiary organisation. The document reflects the strategic outcome oriented goals and objectives which the Gauteng IDZ will endeavour to achieve over the period 2014-2019.

RECOMMENDED BY:

Ms. Susan van der Merwe

Chief Financial Officer Gauteng IDZ Devco

Signature:

Date: 22/2/2017

Ms. Seipati Mangadi

Chief Executive Officer IDZ Devco

Signature:

Date: 22/02/17

APPROVED BY:

Dr. Paul Jourdan

Board Chairperson Gauteng IDZ Devco

Signature:

Date: 3/3/17

1. VISION AND MISSION STATEMENT AND STRATEGIC INTENT

VISION

The Gauteng IDZ is a subsidiary of the Gauteng Growth and Development Agency (GGDA). It was established to develop and operationalise the Industrial Development Zone designated at OR Tambo International Airport, Africa's largest and busiest international airport.

In line with its establishment background and mandate, it is the objective of the Gauteng IDZ to contribute to the realisation of inclusive and competitive economic growth and development in the Province. We also aim to position Gauteng as a global city region, by enabling focussed manufacturing and beneficiation programmes at the IDZ that drive inclusive, export driven economic growth. We will also ensure the manifestation of decent work, economic inclusion and equity.

MISSION STATEMENT

To support the industrial development of Gauteng Province with a specific focus on export oriented, value-added industries or sectors, concentrated around OR Tambo International Airport and Ekurhuleni Metro

STRATEGIC INTENT

As a Special Purpose Vehicle established to develop and operate the designated Industrial Development Zone at OR Tambo International, the strategic intent of the Gauteng IDZ remains that of ensuring the development and effective operations of a globally competitive IDZ at OR Tambo International that contributes to the growth of the South African economy through exports. To this end, the Gauteng IDZ is required to scope, design, plan, develop and operate OR Tambo IDZ, by inter alia, defining its sectors of focus and attracting both domestic and foreign investors to beneficiate products at the Zone for export purposes.

As a subsidiary of the GGDA, a further strategic intent of the Gauteng IDZ is to contribute to the promotion and realisation of Gauteng as a Global City Region. We will do this by working with the Province and Ekurhuleni Metropolitan Municipality in the identification, scoping, designing and implementation of projects that have synergies and linkages with strategic programmes driven by all spheres of government within the Eastern Corridor of the Province. This includes, inter alia, giving due consideration to national government's strategic infrastructure programmes being undertaken in Ekurhuleni Metropolitan Municipality and proposed projects identified in the home municipality's development framework viz. the Aerotropolis Master Plan.

As a first step in the achievement of the above, the Gauteng IDZ's work is focused on the development of a High-Value, Low-Mass Manufacturing Precinct that incorporates mineral beneficiation and the manufacturing and packaging of perishables. Concurrent to this, the Gauteng IDZ is also exploring its expansion phase, which phase will have direct linkages to national and / or provincial and / or local opportunities identified and defined as beneficial for location in an SEZ.

2. VALUES

The Gauteng IDZ subscribes to the values defined by the GGDA in its strategic plan viz:

GGDA PEOPLE Values	
Integrity	We value each other's opinion regardless of rank and we respect across culture, religion, gender and race.
Transparency	We share information and knowledge and encourage a culture of learning and we provide an open, safe and responsive environment.
Empowerment	We encourage and facilitate personal and professional development in order to promote an efficient and successful organisation.
GGDA PERFORMANCE Values	
Creative Excellence	We strive for creative and continuous improvement, through an innovative attitude, to achieve high performance
Goal Driven	We deliver on clearly defined objectives through a well coordinated effort, in an effective and efficient manner
Professionalism	We consistently perform with integrity and are accountable

3. LEGISLATIVE MANDATE

As a Special Purpose Vehicle established to develop and operate the Industrial Development Zone, the Gauteng IDZ was granted an IDZ Operator Permit by the Minister of the Department of Trade and Industry, Dr. Rob Davies during December 2010. The IDZ Operator Permit, which was issued in terms of Regulations 57 (e) and 17 of the IDZ Programme (as amended), indicates that the operator is authorised to develop and operate the ORTIA IDZ, subject to Regulation 18 and the specific terms and conditions of the permit, which are:

- The IDZ Operator must at all times comply with the IDZ Programme, all other applicable legislation and standards and the terms of the IDZ Operator Permit
- The IDZ Operator Permit authorises the Gauteng IDZ DEVCO to develop and operate the IDZ situated at ORTIA
- Due to the importance of the physical infrastructure, the IDZ development requires a clear construction time table and utility supply plan for the planning, construction and supply of infrastructure and utilities within the IDZ
- The IDZ Operator is required to install and maintain such security measures in or around the customs controlled area as SARS may identify and require

- The IDZ Operator must provide the relevant and applicable facilities to enable the Board to exercise its functions within the IDZ
- The IDZ Operator Permit will remain valid and in full force and effect until such time as it is suspended, withdrawn or transferred in terms of the IDZ Programme
- The IDZ Operator must exercise its option to purchase/lease the land in accordance with the terms and conditions of the option and must notify the DTI of such conditions
- The IDZ Operator must ensure that IDZ enterprises within the IDZ comply with the IDZ Programme and other applicable legislation and standards
- The IDZ Operator must maintain adequate and proper financial and other records pertaining to its operations
- The IDZ Operator must report to the Board on the development and operation of the IDZ, in terms of infrastructure development, investment facilitation and signing of agreements with tenants, general operational developments and set milestones as per the business plan
- The IDZ Operator must be registered as such with SARS
- The IDZ Operator shall enforce internal rules and procedures to govern activities
- The IDZ Operator is responsible for maintaining the aesthetic appearance of the entire IDZ area, including all buildings, roadways and walkways, as well as pause, refuse and parking areas
- Access into the developed area of the IDZ and the CCA shall be strictly controlled by the IDZ security personnel, which shall be employed by and contracted to the IDZ Operator

Given that it is also a public sector enterprise; the Gauteng IDZ's operations are also informed and guided by various national and provincial acts and regulations viz:

National Legislation

- Public Finance Management Act, 1999
- Companies Act, 2008, as amended
- Promotion of Access to Information Act, 2000
- Inter-governmental Relations Framework Act, 2005
- Preferential Procurement Policy Framework Act, 2000
- Employment Equity Act, 1998
- Basic Conditions of Employment Act, 1997
- Labour Relations Act, 1995
- Occupational Health and Safety Act, 1995
- Prevention and Combating of Corrupt Activities Act, 2004
- Skills Development Act, 1998
- World Heritage Convention Act, 1999
- The SEZ Act, 16 of 2014

Provincial Legislation

- Blue IQ Investment Holdings Act, as amended
- Gauteng Tourism Act, 2001
- The Gauteng Tender Board Repeal Act, 2002
- Gauteng Unfair Business Practices Act, 1996

4. UPDATED LEGISLATIVE AND POLICY MANDATES

INTRODUCING THE SPECIAL ECONOMIC ZONE ACT, 16 OF 2014

Pursuant to the roll out of the 2000 national IDZ programme originating from the Manufacturing Development Act (MDA), the Department of Trade and Industry initiated a review of the IDZ programme under implementation in the country. The review, which was precipitated by constraints identified during implementation of the programme country-wide (inclusive of weak governance, lack of IDZ incentives, poor stakeholder coordination, lack of integrated planning, etc.) found that there was a need to revise the approach to the development of dedicated economic zones in the country. It further resulted in the promulgation of the Special Economic Zone Act, 16 of 2014, which Act is intended to build upon efforts already undertaken as part of the IDZ programme. In this regard, the following objectives have been defined in the Act: viz. To –

- Provide for the designation, promotion, development, operation and management of Special Economic Zones;
- Provide for the establishment, appointment of members and functions of the Special Economic Zones Advisory Board;
- Provide for the establishment of the Special Economic Zones Fund;
- Regulate the application, issuing, suspension, withdrawal and transfer of Special Economic Zones operator permits;
- Provide for functions of the Special Economic Zones operator;
- Provide for transitional arrangements and matters connected therewith.

The Act is further intended to:

- Facilitate the creation of an industrial complex, having strategic national economic advantage for targeted investments and industries in the manufacturing sector and tradable services;
- Enhance the development of infrastructure required to support the development of targeted industrial activities;
- Provide a basis for attracting foreign and domestic direct investment;
- Provide a dedicated location for the establishment of targeted investments;
- Enable the beneficiation of mineral and natural resources;
- Take advantage of existing industrial and technological capacity, promoting integration with local industry and increasing value-added production;
- Promote regional development;
- Create decent work and other economic and social benefits in the region in which it is located, including the broadening of economic participation by promoting small, micro and medium enterprises and co-operatives, and
- Promote skills and technology transfer; and
- Provide a basis for the generation of new and innovative economic activities.

Clause 39 of the SEZ Act further stipulates that all IDZs established under the Manufacturing Development Act are to be considered Special Economic Zones and that these Zones must convert into SEZs within three years from date of commencement of the Act.

THE 10 PILLAR DEVELOPMENT PROGRAMME OF THE GAUTENG PROVINCIAL GOVERNMENT

In his inaugural State of the Province Address presented during May 2014, Premier Makhura announced a 10 pillar programme aimed at radically transforming, modernising and reindustrialising Gauteng Province over the next five to fifteen years. The Premier's 2014 SOPA further announced focused areas of economic intervention inclusive of the township economy.

The Gauteng IDZ has reviewed the SOPA with a view of identifying ways in which it can effectively respond to the call of the Premier to transform, modernise and reindustrialise Gauteng. Specific to Phase I of the IDZ programme, the Gauteng IDZ has identified the following:

On transformation

The jewellery manufacturing sector remains predominantly white owned. The focus of the GIDZ JMP project is on the identification and attraction of jewellery manufacturers with the ability to manufacture jewellery for export. The GIDZ aims to facilitate an enterprise mentorship arrangement between established and up-coming jewellery manufacturers, thereby ensuring that opportunities are provided to emerging and previously disadvantaged jewellery makers. They will be mentored on how to successfully operate a globally competitive jewellery manufacturing business.

On modernisation of the economy

The South African economy has undergone substantial high level restructuring since 1994, notably the application of macro-economic policies and variables as well as the opening up of the economy to world trade. As part of this process, a systematic approach to eliminate constraints aimed at ensuring efficiency of the South African economy has been undertaken. At the core of this efficiency enhancement is knowledge intensity with the aim of streamlining the utilisation of knowledge and skills in order to integrate information and communication technology into labour-based industries. Sectors identified for manufacturing enhancement include agriculture, ICT, cultural industries, minerals and metals, clothing and textiles, automobiles and chemicals.

For its part, it is the objective of the GIDZ that the multi sector high value, low mass manufacturing precinct with a bias on Jewellery Manufacturing must provide an opportunity for modern technology and innovative processes to be introduced in the beneficiation and manufacturing of jewellery. This will ensure that South Africa becomes globally competitive in the beneficiation of minerals.

On re-industrialisation of the Province

The multi sector high value, low mass manufacturing precinct with a bias on Jewellery Manufacturing is a green-fields infrastructure and minerals beneficiation project that will contribute to the province's reindustrialisation. The project is also part of the broader Aerotropolis programme being undertaken by Ekurhuleni Metropolitan Municipality as well as ACSA's cargo expansion strategy. Both these programmes will have positive spin-offs for the province's reindustrialisation efforts.

The above analysis of the SOPA is specific to Phase I; same notwithstanding, the GIDZ plans to undergo a similar review process for its Phase II programme i.e. once the expansion concept has been defined; in this regard, the selection of a concept for consideration in the IDZ's expansion phase will consider the following pertinent questions:

i. What is the status quo of the airfreight logistics industry and Gauteng's position internationally?
ii. Where should the focus on improving air cargo services be; thereby ensuring that Gauteng can gain a competitive advantage internationally and more importantly, identify potential markets?

iii. What is the potential for a diversified service from Gauteng?
iv. What does the containerisation manufacturing (including refrigeration) industry comprise of i.e. its infrastructure, requirements and value? What is the potential for airfreight specific containerisation?
v. What are the commodities most exported and imported and their respective values?
vi. What service industries support these commodities?
vii. Is there potential in the establishment of OR Tambo International Airport as a Southern African cargo airport?
viii. What are the cost implications of Air Cargo Charter services?
ix. What measures can reduce the cost of air freight services especially to countries just north of South Africa's borders so as to decrease the volume on the road and rail system and alleviate backlogs at the country's border posts?
x. What are the present and project future airfreight contribution to the national purse?
xi. What is the airfreight economic impacts and catalytic effects?

With the strategic approach to remain responsive to the economic conditions that the region is facing, a decision has been taken, to open up the first phase of development, to be a multi-sector precinct, informed by the drive for the programme to address the biggest opportunities that present themselves for economic development.

THE INDUSTRIAL POLICY ACTION PLAN (IPAP 2014-2015) AND THE GAUTENG CITY REGION ECONOMIC DEVELOPMENT FRAMEWORK (GCREDF 2016)

The Industrial Policy Action Plan (IPAP 2014/15) and the GCREDF 2016 are critical pieces of policy in the GGDA strategy framework. The IPAP 2014/15 is informed by the long-term vision of the NDP that seeks to ensure a restructuring of the economy to set it on a more value-adding, labour-intensive and environmentally sustainable growth path. Sustainable long-term development should be underpinned by higher growth, exports and labour-intensive, value-adding economic activity in the production sectors, led by manufacturing.

It is widely and increasingly acknowledged that manufacturing should play the critical role in this adjusted model of economic development. The economy is not made up of a set of discrete and isolated activities, but a range of primary and secondary sectors that are fundamentally interlinked and mutually supportive, requiring carefully calibrated, interlocking interventions.

The IPAP should be understood in close relation to the GCREDF, same that also puts forward a framework for economic development in context of the Gauteng City Region. The following sectoral areas of intervention have been identified in the IPAP issued by the DTI:

Source: adapted from the IPAP 2014-2015 issued by the DTI. 2014

In considering the activities of the Gauteng IDZ against the sectoral interventions proposed in IPAP 2014-2015, it is clear that the GIDZ's focused activities on the promotion of beneficiation are in line with DTI defined sectoral interventions. Indeed beneficiation and, or advanced manufacturing is one of the five big drivers of the IPAP and is a positive contributor to the IPAP's goal to promote South Africa's growth through enhanced manufacturing as well as integrated upstream and downstream industrial growth.

In addition to the above, the GCREDP also identifies specific policy levers towards enhanced industrialization and economic development, which policy levers will be considered in the execution of the GIDZ's work:

- TMR Priority Strategic Pillars
- Strategic Focus Areas
- Enabling Policy Levers
- Cross-Cutting Drivers, and
- Strategic Focus Areas

GAUTENG VISION 2055

Gauteng Vision 2055 is a long-term strategy for Gauteng. It is positioned as a continuous, well-informed process that is broadly owned and socially mandated. The key driving forces that shape the prospects of the Gauteng City Region include:

- Economic and population growth and the shifting centre of the global economy
- Climate change
- Fuel prices
- Technological innovation and diffusion
- The increasing focus on city regions as centres of development.

In addition, the preferred scenario in Vision 2055 sets out the following key imperatives:

- Becoming the gateway to Africa
- Special integration
- Social advances (training and education, health)
- Social compact
- Environmental sustainability.

All the above can be diagrammatically depicted as indicated below:

For its part, the GIDZ views its infrastructure development programme(s) as direct contributors to the realization of the Vision 2055 strategy.

NATIONAL DEVELOPMENT PLAN

The National Development Plan (NDP) is the country's development blueprint and broad strategic framework adopted with the objective to eliminate poverty, increase jobs and reduce inequality by 2030. With respect to employment, the NDP sets a target to reduce the unemployment rate to 14% by 2020 and 6% by 2030. To achieve this, an additional 11 million jobs must be created. The NDP further seeks to increase the GDP by 2.7 times i.e. to achieve an increased GDP per capita of R110, 000 per person in 2030. The achievement of this target would require average annual GDP growth of 5.4% over the period.

The NDP advocates that all the above be achieved in a balanced approach to sustainable and inclusive development viz:

In reviewing the NDP, the GIDZ has identified the following specific performance areas to be of relevance to its functions:

- Creating jobs and livelihood;
- Expanding economic infrastructure;
- South Africa in the region and the world;
- Improving education, training and innovation; and
- Building a capable and developmental state

NEW GROWTH PATH

The aim of the New Growth Path (NGP) is to provide strategies to significantly increase employment opportunities by attaining a more developed democratic, cohesive and equitable economy. A key element of the growth path is to restructure the South African economy to improve its labour absorption capacity as well as the composition and rate of growth. It focuses on decent work through meaningful economic transformation and inclusive growth. The NGP argues that job creation is at the heart of economic success and that there needs to be a focus on youth employment. The GIDZ's activities in contributing to the achievement of the NGP are centred on how the IDZ can contribute to job creation by facilitating skills development for the youth through sector defined interventions of the IDZ programme, thereby providing a basis upon which a skilled youth labour force can be absorbed into the job market.

STRATEGIC ECONOMIC INFRASTRUCTURE INVESTMENT PROGRAMME TWO (SEIIP 2)

There are many challenges that South Africa faces as a country, particularly with regard to poverty, unemployment and inequality. To address some of these issues a Strategic Economic Infrastructure Investment Programme has been initiated. This programme outlines eighteen catalytic projects that will address economic issues and fast-track development. The projects are listed below:

- Unlocking the Northern Mineral Belt with Waterberg as the catalyst
- Durban-Free State-Gauteng as logistics and industrial corridors
- South Eastern Node and Corridor development
- Unlocking economic opportunities in the North West
- Saldanha-Northern Cape development corridor
- Green energy in support of the South African economy
- Electricity development to support socio-economic development
- Electricity transmission and distribution for all
- Integrated municipal infrastructure project
- Integrated urban space and public transport programme
- Agri-logistics and rural infrastructure
- Revitalisation of public hospitals and other health facilities
- National school build project
- Higher education infrastructure
- Expanding access to communication technology
- SKA and Meercat
- Regional integration for African cooperation and development
- Water and sanitation infrastructure

In reviewing the SEIIP 2 projects, the GIDZ is of the opinion that its GIDZ PHASE 1 (JMP) development provides a basis for regional integration and development on minerals beneficiation, wherein the precinct could serve as a regional hub for jewellery manufacturing and related trade across the value chain.

5. THE GAUTENG IDZ PROPOSED TRANSITION ARRANGEMENTS TO SEZ

Compliance Requirements

Section 14 of the SEZ Regulations states the following in respect of an IDZ transitioning into an SEZ:

(1) An industrial development zone operator must, within twelve months of commencement of the Act, submit a plan with timelines to the Director-General on the how the industrial development zone will comply with the framework regulating Special Economic Zones as contemplated in section 39(5) of the Act including:

(a) Compliance with the **governance and management obligations** for a Special Economic Zone as contemplated in section 25 of the Act;

(b) Compliance with **reporting obligations** for a Special Economic Zone as contemplated in sections 26, 27 and 28 of the Act;

(c) Compliance with the **obligations to appoint an operator** as contemplated in section 31 of the Act;

(d) Compliance with the **functions of an operator** contemplated in section 35 of the Act; and

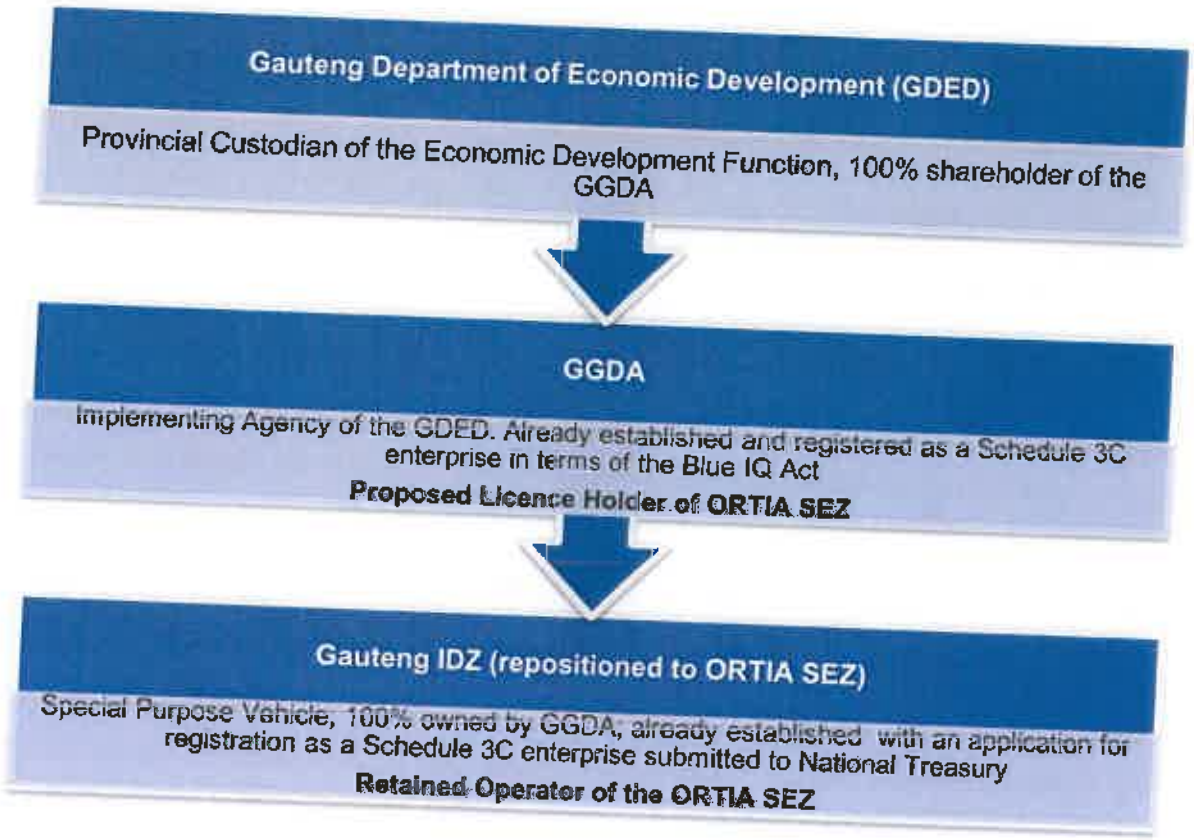
(e) **Compliance by businesses located in the industrial development zone** with the obligations contemplated in section 24(4) and section 38 of the Act.

Details on the proposed arrangements of Gauteng in ensuring compliance to the above is as indicated herein below.

Governance Arrangements and Management Obligations

Section 25 of the Act indicates that 'upon designation of an area as a Special Economic Zone, the licensee must establish an entity to manage the Special Economic Zone and provide the entity with the resources and means necessary to manage and operate the Special Economic Zone. This includes the transfer of ownership or control of the land comprising the area designated as a Special Economic Zone. In the case of a national or provincial government or a public entity licensee, the entity must be established as a national government enterprise or a provincial government business enterprise contemplated in section 1 of the Public Finance Management Act'.

In considering the above as well as section 1 of the PFMA and specifically considering existing arrangements, wherein Gauteng IDZ is a subsidiary of the GGDA, the following **governance arrangements are herewith proposed by Gauteng** in respect of the transition of Gauteng IDZ:



The above governance arrangements are aimed at supporting existing arrangements already in place at provincial level. These arrangements, from a governance perspective are clearly defined in respect of processes, structures, how decisions are taken and how decision-makers are held to account.

In order to ensure effective management and operations of the ORTIA SEZ programme, a **Shareholders Performance Agreement** will be concluded between the GGDA and its subsidiary detailing the roles and obligations of each of the parties in respect of the management and operations of the ORTIA SEZ programme,

which management roles and responsibilities will be in line with the SEZ Act requirements and will incorporate the following:

In respect of the GGDA as Licence	In respect of the Gauteng IDZ as Operator
• **Provide policy and strategic input and advice** in respect of the focus and activities of Gauteng IDZ • Through the GDED budgetary allocation, **support Gauteng IDZ with the necessary resources and means** to effectively operate and manage the ORTIA SEZ programme • Together with Gauteng IDZ and on recommendation by Gauteng IDZ, engage GDED on understandings (that need to be) concluded to **facilitate the transfer of ownership or control of land proposed for designation as part of the ORTIA SEZ programme to Gauteng IDZ** • **Support the Gauteng IDZ** in its required registration as a business entity contemplated in terms of section 1 of the PFMA • Through the board of the GGDA, **appoint the board of directors of the Gauteng IDZ**, same that must be responsible for the efficient governance and management of the business affairs of the Gauteng IDZ • **In collaboration with the Gauteng IDZ**, jointly package opportunities available for investment within the ORTIA SEZ programme • Provide **technical support to the Gauteng IDZ, as and when may be requested** including but not limited to infrastructure project management oversight, investment packaging, marketing and communications, legal and secretariat, human resources and supply chain management	• Undertake **feasibility studies** (as determined) on the ORTIA SEZ programme; • **Develop and implement** the ORTIA SEZ's **strategy and strategic plan** • **Develop and submit**, the **business and financial plan to the dti;** • **Monitor** the implementation of defined activities and develop and submit, monthly and quarterly progress reports to the dti • Keep full **and proper records** of the ORTIA SEZ programme and oversee the preparation of financial statements in accordance with generally accepted accounting practice • **Provide or facilitate the provision of infrastructure** and other services to its designated SEZs to achieve its strategic and operational goals • Oversee the **management of the SEZ facilities** inclusive of the provision of the **necessary security** thereof and the adoption of **applicable rules and regulations for businesses** located in the Zone; • **Effectively design and manage the Customs Controlled Area** – in line with the requirements of SARS; • Undertake **domestic and foreign direct investment** on opportunities available within the ORTIA SEZ programme • **Package and apply for infrastructure development financial assistance** to the dti • Recommend to the board of the Gauteng IDZ, businesses to be approved for location at the designated SEZs; • Apply to the Minister for finance and support measures forming part of the SEZ programme • Engage with the dti on the set up and operations of a One Stop Shop at the SEZ that provides the necessary government services – as contemplated in the OSS model; • Make improvements to the SEZ's infrastructure and facilities; • Undertake any other activities within the scope of the SEZ Act to promote the effective functioning of the SEZs

Resources and Means to manage and operate the SEZ

As an already established entity, the Gauteng IDZ does have the resources and means, to operate the SEZ. In this regard, **R60, 6m has been committed to the operations of the Gauteng IDZ for the MTEF allocation commencing on 01 April 2017.** A further allocation is committed over the MTEF period.

Control of the land comprising the SEZ

In pursuance of the development of the designated IDZ at OR Tambo International, GDED entered into a notarial lease agreement with the Airports Company South Africa (ACSA), wherein ACSA has let to GDED, a portion of the land at the airport for the development of the IDZ.

As a 100% shareholder of the Gauteng IDZ, it was the intention of GGDA for GIDZ to be the lessor under the ACSA lease agreement; however due to the limitation placed on a Schedule 3C provincial public entity in respect of borrowing, issuing of guarantees and future financial commitments, the province resolved that GDED as 100% shareholder of the GGDA enter into the notarial lease agreement with ACSA.

To give effect to the mandate of the GIDZ to develop and operate the designated IDZ and in order to enable GIDZ to effortlessly and seamlessly carry out its mandate, GDED, together with the GGDA have entered into an Agency Agreement with GIDZ for the company, to on behalf of the GDED, manage OR Tambo IDZ and act as an agent of the GDED. The Agency Agreement thus confers the rights and obligations of the GDED onto GIDZ, in so far as they relate to the development of OR Tambo IDZ including the identification, appointment and management of sub tenants.

The above arrangement, which transfers control of the land under the control of the Province for development of the IDZ to Gauteng IDZ, will form the basis of additional control that may be required by the Gauteng IDZ in respect of additional land parcels to be secured.

Reporting Obligations

Sections 26, 27 and 28 of the SEZ Act require that the SEZ board, inter alia, 'develop and implement a strategic plan within the framework of the Special Economic Zones strategy, in order to achieve the mandate of, performance the functions of and comply with the conditions for that Special Economic Zone'.

The Special Economic Zone Board is further required to, 'at least two months before the end of each financial year, submit to the Minister for approval a business and financial plan' containing, inter alia, a projection of revenue and expenditure of that Special Economic Zone entity in respect of the ensuing financial year; and covering the affairs of that Special Economic Zone entity for each of the two immediately following financial years.

Furthermore, the Special Economic Zone Board must 'keep full and proper records of the financial affairs of the Special Economic Zone entity contemplated in section 25, prepare financial statements for each financial year. This must be in accordance with the generally accepted accounting practice' and 'those financial statements within three months after the end of the financial year to the Auditor-General for auditing;....'

In respect of compliance to the above reporting obligations, both the **GGDA (as proposed licensee) and GIDZ (as proposed operator)** are required as Schedule 3C public enterprises, to comply with the requirements of the

PFMA, which include, inter alia, the development of strategic and annual performance plans in line with the government planning cycle.

Specific to the requirements of the SEZ Act, the **Gauteng IDZ has and will continue to submit its strategic, business and financial plan to both the board of the GGDA and the dti.** The reporting and financial statements of the Gauteng IDZ have and will also continue to be submitted to the dti in line with agreed time lines. In this regard, a compliance matrix aimed at ensuring timeous submission of documentation to the dti has been developed and is being implemented.

Obligations to appoint an Operator

Section 31 of the SEZ Act requires that a '*fair, equitable, transparent, competitive and cost-effective procurement process....*' be followed when appointing an operator to develop, operate and manage the SEZ on behalf of the SEZ board.

In considering the obligations of this section of the Act, Gauteng takes note of the establishment mandate of both the GGDA and the Gauteng IDZ. The latter is a Special Purpose Vehicle established with the mandate of developing and operating OR Tambo IDZ and is 100% by GDED's implementing agency. To give compliance effect to this section of the Act, the GDED recommends the appointment of the Gauteng IDZ as operator of the SEZ. The appointment would be the most competitive and cost-effective, with the least disruptive impact, given resources already invested into operationalising Gauteng IDZ.

In support of this proposal, upon receipt of feedback from the dti, formal processes will be undertaken at the board of both the GGDA and Gauteng IDZ to give effect to the proposed arrangement. The arrangement must in terms of the Act, be supported by the board of the Licensee.

Functions of the Operator

The functions of the Operator as reflected in Section 35 of the Act, will be undertaken by the Gauteng IDZ, as operator of the ORTIA SEZ programme. In this regard, it is hereby confirmed that these functions are being effected by the proposed operator, same who has the mandate to, inter alia, undertake any and all activities within the scope of the Act to promote the effective functioning of OR Tambo IDZ and by extension, the envisaged ORTIA SEZ programme.

Compliance by businesses located in the industrial development zone

Whilst no businesses are presently operational at OR Tambo IDZ, the Gauteng IDZ, as present (and proposed) operator of the ORTIA SEZ programme has, in compliance to the type of services or businesses that may be located into the SEZ, identified the following investment and activity pipeline for location at its designated Zone(s):

- **Businesses undertaking value-adding activities** for beneficiation, storage or processing for export (subject to Customs procedures). In respect of OR Tambo IDZ. These include high value low mass products, including mineral beneficiation and agro-processing products. Within the broader context of the ORTIA SEZ programme, these include additional sectors identified for consideration in the expansion of the ORTIA SEZ programme – refer section 1.3 of this document;
- **General sector or industry services**, including facilities management, sector specific logistics, regulatory bodies,, financial services, conferencing and catering; and

- Post-incubation or **skills development programmes** linked to value-adding activities being undertaken at the Zone

The **requirements of Section 38** of the Act with regards to a company's location in an SEZ achieving the purposes of the SEZ as set out in Section 4 of the Act viz. facilitating strategic national economic advantage for targeted investments and industries in the manufacturing and tradeable services, attracting foreign and domestic direct investment amongst others, have also been **noted and will be complied with**. To this end, all applications submitted to the dti for SEZ funding consideration have and will continue to provide an underlying motivation on the reason for location of a company into the Zone. This process is being followed by the Gauteng IDZ and is the premise upon which dti SEZ funding approval was granted for development of the OR Tambo IDZ's top structure. This is where a food processing factory that contributes to the country's export earnings and occupies 50% of the designated Zone is in the process of being developed.

As part of the Gauteng IDZ's investor attraction process, a due diligence of all prospective tenants is undertaken to confirm their viability and most importantly, their eligibility to access SEZ incentives, should that be a drawing card. The following principles also underpin the consideration of companies for tenancy consideration at the IDZ:

- Type of service viz. manufacturing or support service and its contribution to the sectors identified for focus in the Gauteng IDZ integrated strategic positioning business case and specifically to the programmes located at the Precincts;
- Export oriented operations, specifically clarification on whether the proposed location at the IDZ is an expansion of an existing facility or a new facility, both of which are aimed at enhancing domestic or foreign direct investment;
- Projected revenue of the activity proposed for beneficiation at the IDZ;
- The company's present and projected job creation potential;
- The technology and skills required for the company to succeed;
- The company's contribution to the country's socio-economic indicators

6. STRATEGIC GOALS & OBJECTIVES

The strategic focus of the re-framed ORTIA SEZ programme is driven by the mission of Gauteng IDZ to support industrial development in the eastern corridor of Gauteng, specifically the enhancement of export-oriented, value-adding manufacturing that contributes to the province's GVA and export, through the use of support measures and /or systems aimed at attracting domestic or foreign direct investment.

Considering the competitive location of the ORTIA SEZ programme at or in proximity to OR Tambo International, the scope of the broader ORTIA SEZ programme will in the first instance, be centred around OR Tambo International Airport, with the view of leveraging off OR International's air cargo logistics capability and network for the export of high value low mass goods beneficiated at OR Tambo IDZ. The ORTIA SEZ programme will further be defined by the integrated strategic positioning and business case developed on the expansion of Gauteng IDZ, which report **identified potential beneficiation and investment opportunities** in the following industries or sectors:

Pharmaceuticals

The pharmaceutical industry includes the discovery, development, production, and marketing of pharmaceutical drugs for use as medications. These drugs are intended for use in the diagnosis, cure, mitigation, treatment, or

prevention of diseases. Chemically-derived drugs are produced in forms such as pills, tablets, capsules, vials, ointments, powders, solutions, and suspensions. Biologicals include a wide range of products such as vaccines, therapeutic proteins, blood and blood components, anti-sera, tissues etc.

ORTIA SEZ Investment Opportunities

- Manufacture of veterinary medical equipment and drugs
- Manufacture of medical equipment and instruments for dentistry
- Manufacture of drugs, surgical instruments and equipment
- Manufacture of homeopathic and alternative medicine and supplements
- Manufacture of other chemical and biological-based drugs

Chemicals

The chemicals industry is large and complex and plays an essential role in other industries and economic sectors. Companies that produce chemicals are intricately tied to one another as suppliers and consumers, and are dependent upon other industries, as well as global economic trends.

The main raw materials of the chemical industry are fossil fuel, water, air, salt, limestone, sulphur, and other specialized raw materials. The industry converts these materials into products; a chief characteristic of the industry is that its products almost always require further processing before reaching end users. The chemicals industry has two major sub-sections; these are the production of organic and inorganic chemicals.

ORTIA SEZ Investment Opportunities

- Manufacture of liquefied or compressed inorganic industrial or medical gases
- Manufacture of dyes and pigments
- Manufacture of distilled water
- Manufacture of synthetic aromatic products
- Manufacture of hydraulic and transmission fluids
- Manufacture of liquid fertiliser
- Manufacture of oils, perfumes and cosmetics
- Manufacture of food preservatives

Plastics

The plastics industry manufactures polymer materials -commonly called plastics - and offers services in plastics important to a range of industries, including packaging, building and construction, electronics, aerospace, and transportation. The plastics industry is considered part of the chemicals industry as it relies heavily on the input of petrochemical products into its production processes.

ORTIA SEZ Investment Opportunities

- Manufacture plastic packaging materials
- Manufacture of polyacetals, polycarbonates and epoxy resins
- Manufacturing of general plastic products (tubes, pipes, hoses and fittings, etc.)
- Polymers of propylene
- Recycling, sorting and pelleting of plastics to produce secondary raw material.

Tertiary Metals Processing

The platinum group metals (PGMs) consist of six elements that are characterised by similarity, namely platinum, iridium, osmium, rhodium, ruthenium and palladium. Based on their densities, the first three are categorised as heavy, while the last three are regarded as light.

ORTIA SEZ Investment Opportunities

Tertiary metals processing opportunities for the SEZ will include the following:

- Jewellery: The Jewellery Manufacturing Precinct (JMP) is in the process of being established as part of phase 1 of the ORTIA SEZ programme. Subsequent phases of SEZ development will integrate with and compliment the growth of the JMP. It is foreseen that the introduction of other forms of metals such as titanium as well as materials for imitation jewellery will benefit the JMP. Also, the introduction of additive manufacturing technologies can potentially stimulate production in terms of efficiency and jewellery design.
- Titanium: The beneficiation of titanium presents one of the foremost opportunities for economic development in South Africa.

In summary, specific areas of investment may include the following:

- Manufacture of jewellery and related articles
- Manufacture of imitation jewellery and related articles
- Tertiary processing of PGM- and Titanium-based products
- Manufacture of technical or laboratory articles of precious metals
- Manufacture of watches and clocks
- Manufacture of aircraft components and spare parts
- Manufacture of tins and cans for food products
- Manufacture of containers

Capital Goods

Capital equipment is generally defined as "equipment that you use to manufacture a product, provide a service or use to sell, store and deliver merchandise. The equipment has an extended life so that it is properly regarded as a fixed asset".

ORTIA SEZ Investment Opportunities

- Manufacture of components and spares for lifting, handling, loading or unloading machinery
- Manufacture of components and spares for machinery for mining, quarrying and construction

Perishables

Business Dictionary[1] defines perishables as an "article that can lose its usefulness and value if not appropriately stored or transported, or if not utilised within a certain period". Generally, and for the purposes of ORTIA SEZ, perishables are regarded as food and beverage items.

1 http://www.businessdictionary.com/definition/perishable.html

ORTIA SEZ Investment Opportunities

- Processing and preservation of fruit, vegetables, meat, oils and fats
- Manufacture of grain mill products and starches
- Manufacture of beverages

Electronics

The electronics sector encompasses a broad range of technology and component, intermediate, and final products that feed into a range of end markets. In this document, the electronics industry is defined to include the complete life cycle (design, production, maintenance, etc.) of electronic devices from raw material and components through to boxes or sub-systems and includes hardware and embedded software.

ORTIA SEZ Investment Opportunities

- Manufacture of containers
- Manufacture of smart metering systems
- Manufacture of energy-saving lighting solutions
- Manufacture of electronics for the renewable energy sector
- Assembly of solar PV panels
- Manufacture of aircraft instrumentation and aeronautical instruments

Aerospace

The aerospace sector refers to an industry that encompasses private and public entities which carry out the research, design, manufacturing, operation and maintenance of all vehicles capable of propulsion through air and space. The primary product of the global aerospace industry is flight vehicles for both military and commercial use, missiles and spacecraft; however, the industry's product line encompasses millions of individual components which are required to produce these final goods.

ORTIA SEZ Investment Opportunities

- Manufacture of airscrews, helicopter rotors and propelled rotor blades
- Manufacture of parts of turbojets and turboprops for aircraft
- Overhaul and conversion of aircraft or aircraft engines
- Manufacture of other aircraft components and spare parts

Advanced Manufacturing

Over the past few decades, manufacturing has evolved from a more labour-intensive set of mechanical processes (traditional manufacturing) to a sophisticated set of information-technology-based processes (advanced manufacturing). Advanced manufacturing "improves existing or creates entirely new materials, products, and

processes via the use of science, engineering, and information technologies; high-precision tools and methods; a high-performance workforce; and innovative business or organisational models".[2]

In respect of advanced manufacturing, particular focus has been placed on opportunities in additive manufacturing as indicated herein below.

ORTIA SEZ Investment Opportunities
Additive Manufacturing

Some of the main opportunities presented by additive manufacturing technologies to the ORTIA SEZ include the following:

- **Aerospace**
  Additive manufacturing is regarded as an 'enabling platform' for product and component manufacturing aimed at the aerospace industry. This is so because of its ability to fabricate products and components of complex geometry and materials. Components can be produced quickly on demand when needed based on the latest improvements in engineering design specifications.

- **Medical and Pharmaceutical**
  Additive manufacturing is set to become increasingly popular in the medical and pharmaceutical industries. This is based on the need for complex geometries in implants and tissue scaffolds which are light, strong and customisable to individual patients (e.g. titanium hip implants, joints, surgical implants and hearing aids). In the Additive Manufacturing Strategy for South Africa (2016), the CSIR highlights the potential of these technologies for the production of medical and dental devices such as instruments, implants, aligners and crowns. This integrates well with and will provide demand side stimulus to the titanium value chain that the country seeks to develop. These opportunities are classified under 'structural applications' which is currently the most well-established in the market.

- **Jewellery**
  Jewellery is a large global industry estimated at over $220 billion. Additive manufacturing has allowed individual, small-scale designers and artists to produce products for sale to the general public. Online 3D printing content and sales portals such as Shape ways carry more than 25 000 jewellery and fashion-related products, all designed to be 3D printed[3].

- **Direct consumer/household manufacturing**
  Worldwide, entrepreneurs have seized the opportunities provided by home-based 3D-Printers. These opportunities include the production of low cost toys, ornaments, lamps, kitchen utensils and so on. In South Africa, such 3D-Printers are widely available and start from as little as R8, 000. From an industrial perspective, the production of these home-based 3D-Printers have become increasingly efficient and more advanced that saw a significant decline in the cost of production. Opportunities for the ORTIA SEZ may include the production of household consumer goods made from higher quality base materials- such as metals, ceramics and certain polymers- that may not be feasible for home-based printing. Such products may include tools, musical instruments, and replacement part for household appliances, certain textiles and footwear. Advanced product designs could also be developed and sold to both household and industrial consumers globally over

2 Kotha, S., and P. Swamidass. 2000. "Strategy, Advanced Manufacturing Technology and Performance: Empirical Evidence from US Manufacturing Firms." Journal of Operations Management.

[3] The South African Additive Manufacturing Strategy- CSIR, 2016

the internet. This integrates with information technologies such as IoT and Block chain systems which form part of the SEZ business concept.

- **Bio manufacturing and Synthetic Biology**
  Some of the main opportunities presented by bio manufacturing and synthetic biology technologies to the ORTIA SEZ include the following:

- Advanced manufacturing of pharmaceuticals, perishables and biofuels
- Advanced manufacturing of materials
- Biomimicry

Biomimicry refers to the synthetic production or modification of bacteria. The CSIR has successfully used this technology to place active bacteria in water for cleaning and treatment- sanitation, agriculture, aquaculture, environmental bioremediation and solid waste treatment.

- **Point-of-care diagnostics for infectious diseases**
  The CSIR has developed an isothermal polymerase chain reaction (PCR) technology that allows gene-based testing and detection of a specific pathogen. Infectious livestock diseases threaten local food security and may prevent livestock commodity exports to foreign markets. The diagnosis of infectious (bacteria and viruses) diseases at the point-of-care reduces long-term testing costs, improves sample viability and minimises the need for cold chain storage and the transportation of samples. In most cases, it reduces the turnaround time of test results, which is pivotal in the event of an infectious disease outbreak leading to better disease management and containment[4].

Transport and Logistics

The transport and logistics sector is vital for the efficient functioning of an SEZ, as this sector facilitates the operations of all the sectors that will fall within this zone; a failure to upgrade this sector will lead to significant bottlenecks in procuring inputs and delivering final goods which will inhibit export-led growth. The sector includes all aspects pertaining to the transport industry that includes the infrastructure and logistical requirements for moving people, services and goods. An important aspect of the transport and logistics sector in an SEZ is the potential for facilitating intermodal transport including buses, coaches and automobiles for services, employees and consumers as well as railway, automobiles, trucks and airplanes for goods. To support the development of the industries included in the ORTIA SEZ, the transport and logistics industry which will serve the ORTIA area, must be developed as part of the Eastern Development Corridor.

Comparative Advantage of the Transport Sector
The advantages of introducing a transport logistics hub within the ORTIA SEZ area can be summarised as follows:

- The logistics hub will **facilitate the creation of an efficient distribution network** linking the suppliers in the area with the trade ports.
- The **proximity to ICT manufacturers** associated with the aerospace industry and to firms within the electronics sector will provide competitive advantages by acting as a driver for an intelligent transport system which will enable more efficient and cost-effective freight movement. This will improve the profit margins in other sectors and improve the chances of success for the ORTIA SEZ.

[4] www.csir.co.za/csir-biosciences

- Improved **operational efficiencies** derived from using modern logistics principles which reduces road congestion and wastage.
- Advances in **ICT technology** allows manufacturers of different products within the ORTIA SEZ to combine shipments, thereby sharing transport costs and risks and increasing profitability. Apart from chemicals and perishables, the goods made in other sectors can be transported together to maximise efficiency.
- **Integrated transport planning** can exploit synergies with the clustering of manufacturing, transport and communications activities in the area.
- The **clustering of manufacturing activities** will allow for easier tracking, verification, and monitoring of transported goods.
- The clustering of industrial activities across a range of sectors will develop awareness of export opportunities, potential target markets and new business relationships.

The above sectors are the bedrock from which expansion of the ORTIA SEZ programme will be further investigated for implementation within a multi-sectoral and site arrangement in Ekurhuleni.

7. STRATEGIC OUTCOME ORIENTED PROGRAMMES OF THE INSTITUTION

PROGRAMME 1: GIDZ PHASE 1 (JMP): INFRASTRUCTURE DEVELOPMENT

This programme is responsible for overseeing the development of infrastructure at the designated ORTIA IDZ.

PROGRAMME 2: INVESTOR ATTRACTION

This programme has two functions, namely: stakeholder management and investor attraction. The programme is responsible for stakeholder liaison and management and investor attraction into the GIDZ's proposed projects of operation. The programme specifically seeks to enhance stakeholder engagements and investor interest into the IDZ programmes.

PROGRAMME 3: SKILLS DEVELOPMENT

This programme is responsible for project management of the skills development project developed and implemented as part of the JMP ('Design @50'); which programme seeks to enhance the availability of sector specific skills in the jewellery sector.

PROGRAMME 4: EXPANSION OF THE IDZ PROGRAMME

This programme is responsible for the identification, scoping and design of concepts that could form part of the IDZ's expansion phase. The programme is further responsible for the feasibility and selection of a viable concept to inform the IDZ expansion phase.

PROGRAMME 5: FINANCE

This programme is responsible for the financial management of the IDZ programme and is undertaken through a shared services arrangement with the GGDA.

8. PURPOSE, OBJECTIVES & RISKS OF THE PROGRAMMES

PROGRAMME 1: GIDZ PHASE 1 PRECINCT: INFRASTRUCTURE DEVELOPMENT

Purpose: To project manage the infrastructure development of the GIDZ PHASE 1 PRECINCT.

Measurable objectives: The programme aims to ensure the development of infrastructure at the GIDZ PHASE 1 PRECINCT through the achievement of targets and development milestones set in concurrence with national and local government requirements.

The execution of this programme requires achievement of the following aspects over the medium term:

- Construction roll out of the GIDZ PHASE 1 PRECINCT bulk infrastructure;
- Construction roll out of the top structure[5]

Strategic Objectives

Strategic objective	To stimulate employment led growth and development through the facilitation of strategic economic infrastructure interventions
Objective Statement	To project manage the development and operationalization of the GIDZ PHASE 1 PRECINCT
Baseline	GIDZ PHASE 1 PRECINCT bulk infrastructure and enablement works design and approved Top Structure Designs by Ekurhuleni Metropolitan Municipality

PROGRAMME 2: INVESTOR ATTRACTION

Purpose: To enhance stakeholder engagements and facilitate investor attraction into the IDZ development programmes.

Measurable objectives: The programme aims to ensure maximum investor attraction into the IDZ programme, in line with the processes and approach defined in the GIDZ investor strategy.

The execution of this programme requires the achievement of 5 specific aspects over the medium term:

- Active maintenance of the stakeholder management plan and related stakeholder relations;
- Compliance to the Operator Permit Conditions;
- Development of the GIDZ investor strategy and defined value proposition for the OR Tambo IDZ;
- Investor attraction facilitation;;
- Top structure funding

Strategic Objectives

[5] These works are subject to the outcome of the tenant attraction process and the pipeline to be secured to facilitate investor engagements on the development of the top structure.

Strategic objective	To stimulate employment led growth and development through the facilitation of strategic economic infrastructure interventions
Objective Statement	To facilitate investor attraction of IDZ investment opportunities
Baseline	GIDZ investor strategy, GIDZ PHASE 1 PRECINCT prospectus, policy on the procurement and remuneration of Deal Makers or Brokers to market and procure tenants for the GIDZ phase 1 precinct

PROGRAMME 3: SKILLS DEVELOPMENT

Purpose: To enhance sector-specific skills in the jewellery manufacturing sector.

Measurable objectives: The programme aims to ensure the establishment and efficient management of the skills development programme of the IDZ viz. Design @50.

The execution of this programme requires the achievement of 4 specific aspects over the medium term:

- Ongoing funding confirmation for the skills development programme;
- Appointment of a training service provider to coordinate and facilitate the training;
- Development of an annual training plan;
- Ongoing monitoring and evaluation of the programme

Strategic Objectives

Strategic objective	Facilitate the development of sector specific skills to meet the needs of the jewellery economic sector
Objective Statement	To manage the jewellery skills development programme and design studio
Baseline	Jewellery skills development programme concept document

PROGRAMME 4: EXPANSION OF THE IDZ PROGRAMME

Purpose: To identify, scope and define a concept for the IDZ expansion phase

Measurable objectives: The programme aims to ensure the identification and selection of a viable concept that will inform the IDZ expansion phase(s). This programme will work closely with the Ekurhuleni Metropolitan Municipality on the identification of a concept that also supports the operationalisation of the Aerotropolis master plan.

The execution of this programme requires the achievement of 3 specific aspects over the medium term:

- Concept identification and pre-feasibility of the various options that can be considered by the GIDZ in its expansion phase;
- Detailed feasibility and commercial business case of the preferred expansion concept(s);
- IDZ expansion phase project planning

Strategic Objectives

Strategic objective	To facilitate the development of high value, low mass manufactured products at the IDZ that can be air freighted
Objective Statement	To complete the studies and plans expansion and transition roadmap of the ORTIA SEZ
Baseline	Pre-feasibility, & Land-audit Reports

PROGRAMME 5: FINANCE

Purpose: To ensure effective financial accountability and compliance.

Measurable objectives: The programme aims to ensure the effective and efficient management of all IDZ funds inclusive of grant funding received from the DTI.

The execution of this programme requires the achievement of 2 specific aspects over the medium term:

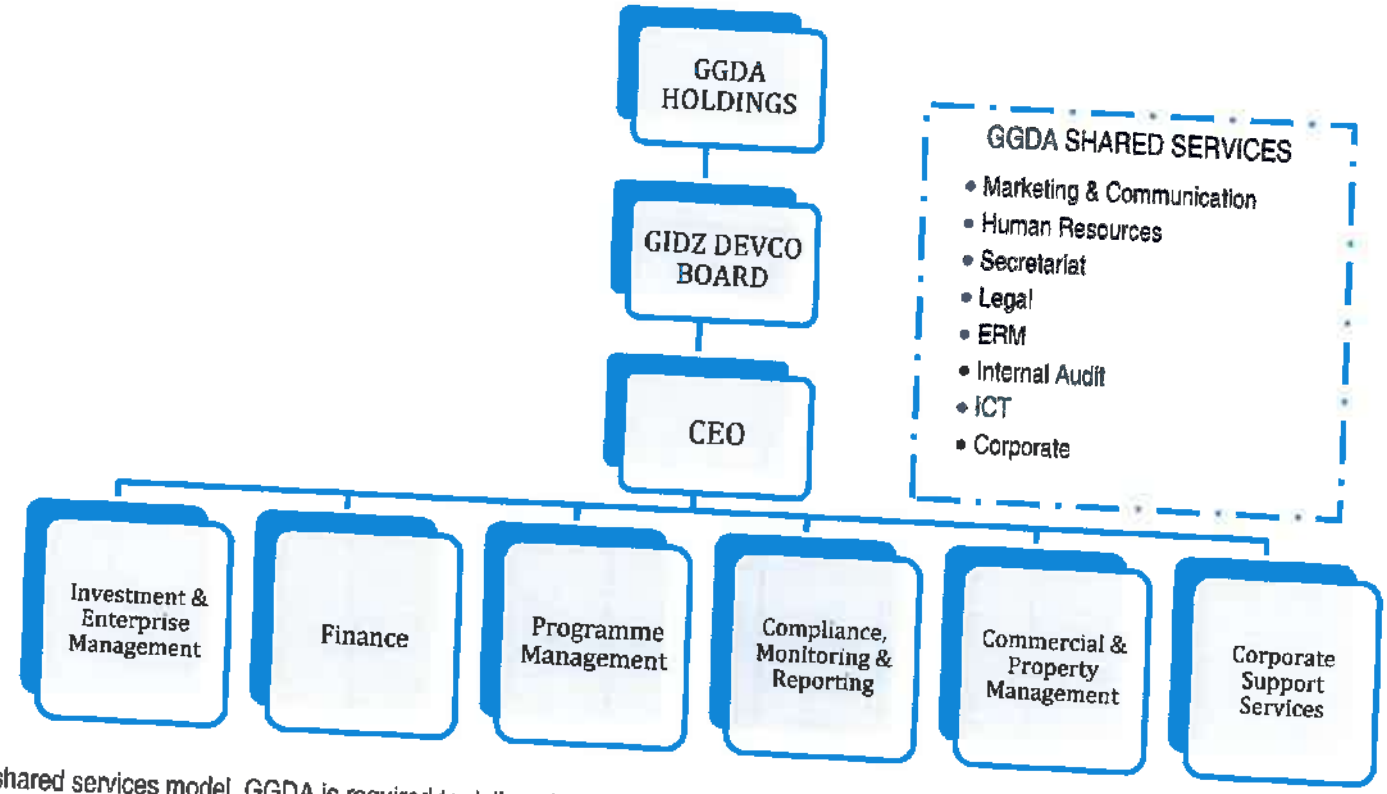
- Opening of an independent IDZ administrative / operations bank account; and
- Treasury recognition of the GIDZ.

STRATEGIC RISK REGISTER

No	Risk	Causal Factor	II	IL	IR	Mitigating Controls	RI	RL	RR	Action Plan
1	Value proposition of IDZ	1. Investor attraction - Competitive disadvantage (SEZ proposition) 2. Lack of GP incentive model 3.Contradiction between policy and implementation 4. Insufficient and Misalignment of MTEF allocation 5. Inappropriate operating model	5	4	20	1. Lobbying stakeholders (established stakeholders) 2. Legislative frameworks 3. Investor attraction	4	4	16	1. Continuing Lobbying of stakeholders 2.Lobby for more Shareholder involvement/support 3. Lobbying for MTEF allocation
2	Competing mandates at different spheres of Government	1. Political differences in terms of focus areas and priorities (linked to dynamics and implementation of frameworks and funding) 2. Community priorities/expectations (ineffective IGR processes) 3. DTI and Treasuries' priorities (poor funding of approved programs) 4. Inappropriate/ineffective operating model 5. Minmec - lack of attendance	4	4	16	1. Aerotropolis Steering Committee 2. EMT (DED)/Community liaison officer 3. PBC 4. Operating model (GGDA) 5. IGR 6. SEZ steering committee	3	4	12	1. Political support to enhance visibility and impact of IDZ 2. Revise operating model 3. Continuing to be a part of the Aerotropolis and SEZ engagements
3	Socio-Economic Political environment for industrial development industry	1. Global Economic cycles 2. Political changes locally and globally 3. Market size 4. Transformation/Ownership/Dynamics of the particular industry	4	4	16	1. National and Provincial policies 2. Engagement with stakeholders 3. Business forum engagements(GBCF)	4	4	16	1. Utilisation of National and Provincial policies for competitive advantage 2. Engagement with stakeholders 3. Business forum engagements(GBCF)

9. INSTITUTIONAL ARRANGEMENTS

The following is the macro structure of the IDZ:



In line with the shared services model, GGDA is required to deliver the following services and therefore there is no need for dedicated resources for following:

- Marketing and communication
- ICT
- ERM
- Internal Audit
- Corporate Secretariat
- Legal
- HR

GAUTENG IDZ 5-YEAR CORPORATE SCORE CARD

The following is the 5 Year Corporate Score Card; a separate document detailing the 2017/2018 APP has been developed

STRATEGIC GOAL 1: To enable equitable economic development and inclusive growth through focused support to targeted sectors.

Strategic Goal	Strategic Objective	5 Year Target result statement	Performance Indicator	Baseline	MTEF Targets					Annual Target 2017/18	Quarterly Targets[6]				PI NO
				2014/15	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20		Q1	Q2	Q3	Q4	
To enable equitable economic development and inclusive growth through focused support to targeted sectors	To facilitate the development of high value low mass manufactured products at the IDZ that can be air freighted	Conceptualise and incubate programmes that will support targeted sectors	Conceptualisation, design and project approval for expansion phases	Expansion Phase Terms of Reference	1 expansion phase concept approved	Approved business plan	****Preliminary Designs	Designation and Detailed Designs	Implementation	****Preliminary Designs	HOA on identified land parcels	Concept plan Draft feasibility 20%	Feasibility Studies 40%	****Preliminary Designs	IDZ 3c
	To facilitate the development of sector specific skills required to meet the needs of the jewellery economic sector	Conceptualise and incubate programmes that support targeted sectors	Increased jewellery sector skills	15	No. of students successfully trained in jewellery manufacturing and design (15)	15	15	15	15	No. of students successfully trained in jewellery manufacturing and design (15)	15 Signed Contracts	15	15	15	GGDA IDZ 2

STRATEGIC GOAL 3: To stimulate employment-led growth and development through the facilitation of strategic economic infrastructure interventions.

[UPDATED FEBRUARY 2017]

Strategic Goal	Strategic Objective	5 Year Target and result statement	Performance Indicator	Baseline 2014/15	MTEF Targets Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Annual Target 2017/18	Quarterly Targets Q1	Q2	Q3	Q4	PI NO
To stimulate employment led growth and development through the facilitation of strategic economic infrastructure interventions	Strategic economic infrastructure implemented	Enhanced infrastructure in the IDZ	Investor attraction drive	Prospectus and Strategy	Appoint Deal Maker	4 Letters of Intents and Draft Lease Agreements	4 foreign and/or domestic direct investment secured	4 foreign and/or domestic direct investment secured	4 foreign and/or domestic direct investment secured	*4 foreign and/or domestic direct investment secured	4 foreign and/or domestic direct investment secured	4 foreign and/or domestic direct investment secured	4 foreign and/or domestic direct investment secured	4 foreign and/or domestic direct investment secured	IDZ 3a
							R300million Value of investment	R320million investment	R350million Value of investment	**R300million Value of investment	R250million investment	R250million Value of investment	R250million Value of investment	R300million investment	3b
			Infrastructure at ORTIA IDZ constructed	Approved SDP by EMM	Bulk Infrastructure Complete per development plan	Bulk Infrastructure Completion and snagging	Final completion and handover of Bulk Infrastructure	-	-	Final completion and handover of Bulk Infrastructure	Final completion and handover of Bulk Infrastructure	-	-	-	IDZ 1a
			-	-	-	-	20% Northern precinct top structure constructed	Northern Precinct Top Structure Final Completion and Handover	Southern Precinct Top Structure construction completion and handover	20% Northern precinct top structure constructed	turnkey solution providers contracting concluded	detailed designs and BOQ's	Soil turning	20% Northern precinct top structure constructed	IDZ 1b

*Leads successfully converted into Formal Agreements on investment; subject to confirmation of funding allocation to develop required infrastructure
**Equates to value of transaction over duration of lease agreement
***** Preliminary Designs includes (Master plan, EIA, Traffic Impact studies, geological studies etc.)

STRATEGIC GOAL 4: To enhance public accountability; high standards of corporate governance and efficient resource utilisation.

Strategic Goal	Strategic Objective	5 Year Target result statement	Performance Indicator	Baseline	MTEF Targets					Annual Target 2017/18	Quarterly Targets[7]				PI NO
				2014/15	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20		Q1	Q2	Q3	Q4	
An efficient, effective and development oriented Public Service with high standards of corporate governance and optimised resource utilisation	Enhanced financial accountability and compliance with prescribed financial regulations and guidelines.	Sound Corporate Governance and Internal Control	Level of attainment of a Clean audit	Clean audit	Clean audit	Clean audit	Audit tracker developed	Ongoing management towards clean audit	On-going management towards clean audit for previous FY	Clean audit with Audit tracker developed					Group
		To increase BBBEE spend through internal budget	% of budget spend (year to date)[8]	80%	80% budget spend	80% budget spend	80% budget spend	80% budget spend	80% budget spend	80% budget spend	80% budget spend	80% budget spend	80% spend	80% budget spend	CFO

[7] All quarterly targets are cumulative
[8] Excluding non-discretionary spend

Number of Jobs

NAME OF PROGRAMME	PROGRAMME DESCRIPTION	TYPE OF JOBS	PERFORMANCE INDICATORS	2017/18 ANNUAL TARGET	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	WOMEN	YOUTH	PwD	MVs
Design@50	Training	Direct permanent job	JMP students trained in jewellery manufacturing skills	15	0	0	0	15	8	15		
Northern Precinct Top structure	Construction	Contract	Number of jobs created	100	25	50	10	15	10	60	0	0

11. FINANCIAL PLANNING FOR IMPLEMENTING THE GAUTENG IDZ

The Financial Plan for the Gauteng IDZ has been developed and form part of a separate document.

CONDITIONAL GRANTS

The matter of conditional grants is not applicable to the Gauteng Growth and Development Agency at this stage.

PUBLIC-PRIVATE PARTNERSHIPS

There are currently no Public-Private Partnerships in place.

MATERIALITY FRAMEWORK

In terms of Treasury Regulation 30.1.3; t is hereby stated that the GGDA has a Materiality Framework in place.

ANNEXURES

The Strategic Plan is over a 5-year period, and on an annual basis the APP is reviewed and approved by the Board of the entity. Based on the APP Annual Implementation plans are developed.

DEFINITIONS AND ACRONYMS

AIDC	Automotive Industry Development Centre
AO	Agency Oversight
APP	Annual Performance Plan
BCM	Business Continuity Management
BBBEE	Broad-based Black Economic Empowerment
BIA	Business Impact Assessment
Blue IQ	Blue IQ Investment Holdings and its subsidiaries
CDW	Community Development Workers
CEO	Chief Executive Officer
COI	Centre of Innovation
COO	Chief Operations Officer
CRM	Customer Relationship Management
CWP	Community Works Programme
DDI	Direct Domestic Investment
DED	Department of Economic Development
EPWP	Expanded Public Works Programme
Exco	Gauteng Executive Council
FDI	Foreign Direct Investment
GCR	Global City Region
GDP	Gross Domestic Product
GEDA	Gauteng Economic Development Agency
GEGDS	Gauteng Employment, Growth and Development Strategy
GEP	Gauteng Enterprise Propeller

GEYODI	Gender, Youth and People with Disabilities
GGDA	Gauteng Growth and Development Agency
GPG	Gauteng Provincial Government
GTA	Gauteng Tourism Authority
HOD	Head of Department
HRD / M	Human Resources Development / Management
ICT	Information and Communication Technology
IDP	Integrated Development Plan
IGR	Inter-Governmental Relations
KPI	Key Performance Indicators
LED	Local Economic Development
M&E	Monitoring and Evaluation
Mancom	Management Committee
MEC	Member of the Executive Council
MFMA	Municipal Finance Management Act
MIS	Management Information System
MTEC	Medium Term Expenditure Committee
MTEF	Medium Term Expenditure Framework
MTSF	Medium Term Strategic Framework
NT	National Treasury
NSDP	National Spatial Development Perspective
OLA	Service or Operating Level Agreement
PE	Public Entity
PFMA	Public Finance Management Act

POA	Programme of Action
SALGA	South African Local Government Association
SDIP	Service Delivery Improvement Plan
SMME	Small, Medium and Micro Enterprises

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Appendix 2

Expertise of EAP & Project Team

SCIENTIFIC AQUATIC SERVICES (SAS) – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF STEPHEN VAN STADEN

PERSONAL DETAILS

Position in Company	Managing member, Ecologist with focus on Freshwater Ecology
Date of Birth	13 July 1979
Nationality	South African
Languages	English, Afrikaans
Joined SAS	2003 (year of establishment)
Other Business	Trustee of the Serenity Property Trust and emerald Management Trust

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP);

Accredited River Health practitioner by the South African River Health Program (RHP);

Member of the South African Soil Surveyors Association (SASSO);

Member of the Gauteng Wetland Forum;

Member of International Association of Impact Assessors (IAIA) South Africa

Member pf the Land Rehabilitation Society of South Africa (LaRSSA)

EDUCATION

Qualifications

MSc (Environmental Management) (University of Johannesburg)	2003
BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg)	2001
BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)	2000
Tools for wetland Assessment short course Rhodes University	2016

COUNTRIES OF WORK EXPERIENCE

South Africa – All Provinces

Southern Africa – Lesotho, Botswana, Mozambique, Zimbabwe Zambia

Eastern Africa – Tanzania Mauritius

West Africa – Ghana, Liberia, Angola, Guinea Bissau, Nigeria, Sierra Leone

Central Africa – Democratic Republic of the Congo

PROJECT EXPERIENCE (Over 2500 projects executed with varying degrees of involvement)

1. Mining
   Coal, Chrome, PGM's, Mineral Sands, Gold, Phosphate, river sand, clay, fluorspar
2. Linear developments
   Energy Transmission, telecommunication, pipelines, roads
3. Minerals beneficiation
4. Renewable energy (wind and solar)
5. Commercial development
6. Residential development
7. Agriculture
8. Industrial/chemical

REFERENCES

- Terry Calmeyer (Former Chairperson of IAIA SA)
  Director: ILISO Consulting Environmental Management (Pty) Ltd
  Tel: +27 (0) 11 465 2163
  Email: terryc@icem.co.za

- Alex Pheiffer
  African Environmental Management Operations Manager
  SLR Consulting
  Tel: +27 11 467 0945
  Email: apheiffer@slrconsulting.com

- Marietjie Eksteen
  Managing Director: Jacana Environmental
  Tel: 015 291 4015

Yours faithfully

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menco.morne.dejager@gmail.com

Morné de Jager

Personal Data

Identity Number	711221 5062 080
Date of Birth	21 December 1971
Sex	Male
Marital Status	Married, three children
Driver's license	Code 08
Nationality	South African
Home Language	Afrikaans (speak, read and write)
Other Languages	English (speak, read and write)
Higher Educational Qualifications	B.Ing (Chemical Engineering) [Pretoria University]
Previous Employment	JCI Wates Meiring and Barnard Department of Water Affairs and Forestry M2 Environmental Connections cc
Current Employment	Enviro-Acoustic Research cc

Short Resumé

Morné started his career in the mining industry as a bursar Learner Official (JCI, Randfontein), working in the mining industry, doing various mining related courses (Rock Mechanics, Surveying, Sampling, Safety and Health [Ventilation, noise, illumination etc] and Metallurgy. He did work in both underground (Coal, Gold and Platinum) as well as opencast (Coal) for 4 years. He changed course from Mining Engineering to Chemical Engineering after his second year of his studies at the University of Pretoria.

After graduation he worked as a Water Pollution Control Officer at the Department of Water Affairs and Forestry for two years (first year seconded from Wates, Meiring and Barnard), where duties included the perusal (evaluation, commenting and recommendation) of various regulatory required documents (such as EMPR's, Water Licence Applications and EIA's), auditing of licence conditions as well as the compilation of Technical Documents.

Since leaving the Department of Water Affairs, Morné has been in private consulting for the last 15 years, managing various projects for the mining and industrial sector, private developers, business, other environmental consulting firms as well as the Department of Water Affairs. During that period he has been involved in various projects, either as specialist, consultant, trainer or project manager, successfully completing these projects within budget and timeframe. During that period he gradually moved towards environmental acoustics, focusing on this field exclusively since 2007.

He has been interested in acoustics as from school days, doing projects mainly related to loudspeaker design. Interest in the matter brought him into the field of Environmental Noise Measurement, Prediction and Control. He has been doing work in this field for the past 9 years, and was involved with more than 250 noise studies in the last few years, including amongst others:

Project Experience – Acoustics

Wind Energy Facilities	*Full Environmental Noise Impact Assessments for - Bannf (Vidigenix), iNCa Gouda (Aurecon SA), Isivunguvungu (Aurecon), De Aar (Aurecon), Kokerboom 1 (Aurecon), Kokerboom 2 (Aurecon), Kokerboom 3 (Aurecon), Kangnas (Aurecon), Plateau East and West (Aurecon), Wolf (Aurecon), Outeniqwa (Aurecon), Umsinde Emoyeni (ARCUS) , Komsberg (ARCUS), Karee (ARCUS), Kolkies (ARCUS), San Kraal (ARCUS), Phezukomoya (ARCUS), Canyon Springs (Canyon Springs), Perdekraal (ERM), Scarlet Ibis (CESNET), Albany (CESNET), Sutherland (CSIR), Kap Vley (CSIR), Kuruman (CSIR), Rietrug (CSIR), Sutherland 2 (CSIR), Perdekraal (ERM), Teekloof (Mainstream), Eskom Aberdene (SE), Dorper (SE), Spreeukloof (SE), Loperberg (SE), Penhoek Pass (SE), Amakhala Emoyeni (SE), Zen (Savannah Environmental – SE), Goereesoe (SE), Springfontein (SE), Garob (SE), Project Blue (SE), ESKOM Kleinzee (SE), Namas (SE), Zonnequa (SE), Walker Bay (SE), Oyster Bay (SE), Hidden Valley (SE), Deep River (SE), Tsitsikamma (SE), AB (SE), West Coast One (SE), Hopefield II (SE), Namakwa Sands (SE), VentuSA Gouda (SE), Dorper (SE), Klipheuwel (SE), INCA Swellendam (SE), Cookhouse (SE), Iziduli (SE), Msenge (SE), Cookhouse II (SE), Rheboksfontein (SE), Suurplaat (SE), Karoo Renewables (SE), Koningaas (SE), Spitskop (SE), Castle (SE), Khai Ma (SE), Poortjies (SE), Korana (SE), IE Moorreesburg (SE), Gunstfontein (SE), Boulders (SE), Vredenburg (Terramanzi), Loeriesfontein (SiVEST), Rhenosterberg (SiVEST), Noupoort (SiVEST), Prieska (SiVEST), Dwarsrug (SiVEST), Graskoppies (SiVEST), Philco (SiVEST), Hartebeest Leegte (SiVEST), Ithemba (SiVEST), !Xha Boom (SiVEST), Spitskop West (Terramanzi), Haga Haga (Terramanzi), Vredenburg (Terramanzi), Msenge Emoyeni (Windlab)*
Mining and Industry	*Full Environmental Noise Impact Assessments for – Delft Sand (AGES), BECSA – Middelburg (Golder Associates), Kromkrans Colliery (Geovicon Environmental), SASOL Borrow Pits Project (JMA Consulting), Lesego Platinum (AGES), Tweefontein Colliery (Cleanstream Environmental), Evraz Vametco Mine and Plant (JMA), Goedehoop Colliery (Geovicon), Hacra Project (Prescali Environmental), Der Brochen Platinum Project (J9 Environment), Brandbach Sand (AGES), Verkeerdepan Extension (CleanStream Environmental), Dwaalboom Limestone (AGES), Jagdlust Chrome (MENCO), WPB Coal (MENCO), Landau Expansion (CleanStream Environmental), Otjikoto Gold (AurexGold), Klipfontein Colliery (MENCO), Imbabala Coal (MENCO), ATCOM East Expansion (Jones and Wagner), IPP Waterberg Power Station (SE), Kangra Coal (ERM), Schoongesicht (CleanStream Environmental), EastPlats (CleanStream Environmental), Chapudi Coal (Jacana Environmental), Generaal Coal (JE), Mopane Coal (JE), Glencore Boshoek Chrome (JMA), Langpan Chrome (PE), Vlakpoort Chrome (PE), Sekoko Coal (SE), Frankford Power (REMIG), Strahrae Coal (Ferret Mining), Transalloys Power Station (Savannah), Pan Palladum Smelter, Iron and PGM Complex (Prescali Environmental), Fumani Gold (AGES), Leiden Coal (EIMS), Colenso Coal and Power Station (SiVEST/EcoPartners), Klippoortjie Coal (Gudani), Rietspruit Crushers (MENCO), Assen Iron (Tshikovha), Transalloys (SE), ESKOM Ankerlig (SE), Nooitgedacht Titano Project (EcoPartners), Algoa Oil Well (EIMS), Spitskop Chrome (EMAssistance), Vlakfontein South (Gudani), Leandra Coal (Jacana), Grazvalley and Zoetveld (Prescali), Tjate Chrome (Prescali), Langpan Chromite (Prescali), Vereeniging Recycling (Pro Roof), Meyerton Recycling (Pro Roof), Hammanskraal Billeting Plant 1 and 2 (Unica), Development of Altona Furnace, Limpopo Province (Prescali Environmental), Haakdoorndrift Opencast at Amandelbult Platinum (Aurecon), Landau Dragline relocation (Aurecon), Stuart Coal Opencast (CleanStream Environmental), Tetra4 Gas Field Development (EIMS), Kao Diamonds – Tiping Village Relocation (EIMS), Kao Diamonds – West Valley Tailings Deposit (EIMS), Upington Special Economic Zone (EOH), Arcellor Mittal CCGT Project near Saldanha (ERM), Malawi Sugar Mill Project (ERM), Proposed Mooifontein Colliery (Geovicon Environmental), Goedehoop North Residue Deposit Expansion (Geovicon Environmental), Mutsho 600MW Coal-Fired Power Plant (Jacana Environmentals), Tshivhaso Coal-Fired Power Plant (Savannah Environmental), Doornhoek Fluorspar Project (Exigo)*
Road and Railway	*K220 Road Extension (Urbansmart), Boskop Road (MTO), Sekoko Mining (AGES), Davel-Swaziland-Richards Bay Rail Link (Aurecon), Moloto Transport Corridor Status Quo Report and Pre-Feasibility (SiVEST), Postmasburg Housing Development (SE), Tshwane Rapid Transport Project, Phase 1 and 2 (NRM Consulting/City of Tshwane), Transnet Apies-river Bridge Upgrade (Transnet), Gautrain Due-diligence (SiVest), N2 Piet Retief (SANRAL),*

	Atterbury Extension, CoT (Bokomoso Environmental), Riverfarm Development (Terramanzi)
Airport	*Oudtshoorn Noise Monitoring (AGES), Sandton Heliport (Alpine Aviation), Tete Airport Scoping (Aurecon)*
Noise monitoring and Audit Reports	*Peerboom Colliery (EcoPartners), Thabametsi (Digby Wells), Doxa Deo (Doxa Deo), Harties Dredging (Rand Water), Xstrata Coal – Witbank Regional (Xstrata), Sephaku Delmas (AGES), Amakhala Emoyeni WEF (Windlab Developments), Oyster Bay WEF (Renewable Energy Systems), Tsitsikamma WEF Ambient Sound Level study (Cennergi and SE), Hopefield WEF (Umoya), Wesley WEF (Innowind), Ncora WEF (Innowind), Boschmanspoort (Jones and Wagner), Nqamakwe WEF (Innowind), Hopefield WEF Noise Analysis (Umoya), Dassiesfontein WEF Noise Analysis (BioTherm), Transnet Noise Analysis (Aurecon), Jeffries Bay Wind Farm (Globeleq), Sephaku Aganang (Exigo), Sephaku Delmas (Exigo), Beira Audit (BP/GPT), Nacala Audit (BP/GPT), NATREF (Nemai), Rappa Resources (Rayten), Measurement Report for Sephaku Delmas (Ages), Measurement Report for Sephaku Aganang (Ages), Development noise measurement protocol for Mamba Cement (Exigo), Measurement Report for Mamba Cement (Exigo), Measurement Report for Nokeng Fluorspar (Exigo), Tsitsikamma Community Wind Farm Pre-operation sound measurements (Cennergi), Waainek WEF Operational Noise Measurements (Innowind), Sedibeng Brewery Noise Measurements (MENCO), Tsitsikamma Community Wind Farm Operational noise measurements (Cennergi), Noupoort Wind Farm Operational noise measurements (Mainstream),*
Small Noise Impact Assessments	*TCTA AMD Project Baseline (AECOM), NATREF (Nemai Consulting), Christian Life Church (UrbanSmart), Kosmosdale (UrbanSmart), Louwlardia K220 (UrbanSmart), Richards Bay Port Expansion (AECOM), Babalegi Steel Recycling (AGES), Safika Slag Milling Plant (AGES), Arcelor Mittal WEF (Aurecon), RVM Hydroplant (Aurecon), Grootvlei PS Oil Storage (SiVEST), Rhenosterberg WEF, (SiVEST), Concerto Estate (BPTrust), Ekuseni Youth Centre (MENCO), Kranskop Industrial Park (Cape South Developments), Pretoria Central Mosque (Noman Shaikh), Soshanguve Development (Maluleke Investments), Seshego-D Waste Disposal (Enviroxcellence), Zambesi Safari Equipment (Owner), Noise Annoyance Assessment due to the Operation of the Gautrain (Thornhill and Lakeside Residential Estate), Upington Solar (SE), Ilangalethu Solar (SE), Pofadder Solar (SE), Flagging Trees WEF (SE), Uyekraal WEF (SE), Ruuki Power Station (SE), Richards Bay Port Expansion 2 (AECOM), Babalegi Steel Recycling (AGES), Safika Ladium (AGES), Safika Cement Isando (AGES), RareCo (SE), Struisbaai WEF (SE), Perdekraal WEF (ERM), Kotula Tsatsi Energy (SE), Olievenhoutbosch Township (Nali), , HDMS Project (AECOM), Quarry extensions near Ermelo (Rietspruit Crushers), Proposed uMzimkhulu Landfill in KZN (nZingwe Consultancy), Linksfield Residential Development (Bokomoso Environmental), Rooihuiskraal Ext. Residential Development, CoT (Plandev Town Planners), Floating Power Plant and LNG Import Facility, Richards Bay (ERM), Floating Power Plant project, Saldanha (ERM), Vopak Growth 4 project (ERM), Elandspoort Ext 3 Residential Development (Gibb Engineering)*
Project reviews and amendment reports	*Loperberg (Savannah), Dorper (Savannah), Penhoek Pass (Savannah), Oyster Bay (RES), Tsitsikamma Community Wind Farm Noise Simulation project (Cennergi), Amakhala Emoyeni (Windlab), Spreeukloof (Savannah), Spinning Head (SE), Kangra Coal (ERM), West Coast One (Moyeng Energy), Rheboksfontein (Moyeng Energy), De Aar WEF (Holland), Quarterly Measurement Reports – Dangote Delmas (Exigo), Quarterly Measurement Reports – Dangote Lichtenburg (Exigo), Quarterly Measurement Reports – Mamba Cement (Exigo), Quarterly Measurement Reports – Dangote Delmas (Exigo) Quarterly Measurement Reports – Nokeng Fluorspar (Exigo), Proton Energy Limited Nigeria (ERM), Hartebeest WEF Update (Moorreesburg) (Savannah Environmental), Modderfontein WEF Opinion (Terramanzi), IPD Vredenburg WEF (IPD Power Vredenburg), etc.*

PROFESSIONAL CURRICULUM
FOR POLKE DOUSSY BIRKHOLTZ

Name: Polke Doussy Birkholtz

Date & Place of Birth: 9 February 1975 – Klerksdorp, North West Province, South Africa

Place of Tertiary Education & Dates Associated:

Institution: University of Pretoria
Qualification: BA (Cum Laude) - Bachelor of Arts Degree Specializing in Archaeology, History and Anthropology
Date: 1996

Institution: University of Pretoria
Qualification: BA Hons (Cum Laude) - Bachelor of Arts with Honours Degree Specializing in Archaeology
Date: 1997

Institution: National College of Photography
Qualification: Photography
Date: 1998

Qualifications:

BA	-	Degree specialising in Archaeology, History and Anthropology
BA Hons	-	Professional Archaeologist

Memberships:

Association of Southern African Professional Archaeologists (ASAPA)
Professional Member of the CRM Section of ASAPA

Overview of Post Graduate Experience:

1997 – 2000 – Member/Archaeologist – Archaeo-Info
2001 – 2003 – Archaeologist/Heritage Specialist – Helio Alliance
2000 – 2008 – Member/Archaeologist/Heritage Specialist – Archaeology Africa
2003 - Present – Director / Archaeologist / Heritage Specialist – PGS Heritage

Languages: English: Speak, Read & Write & Afrikaans: Speak, Read & Write

Total Years' Experience: 18 Years

Conference Papers:

- *Taking Small Steps in Augrabies Falls National Park*. With Nico Schwartz and Lynne Simpson. South African National Parks: Towards Best Practice. Communities and Conservation. 15 – 19 May 2000. Berg en Dal Rest Camp, Kruger National Park.

Books:

- *The Story of Voorspoed: A Historical and Archaeological appraisal of the Voorspoed Diamond Mining Company Limited (1906 -1912).* Book written by Polke Birkholtz for De Beers Consolidated Mines.

Experience Related to the Scope of Work:

- Polke has worked as a **HERITAGE SPECIALIST / ARCHAEOLOGIST / HISTORIAN** on more than 300 projects, and acted as **PROJECT MANAGER** on almost all of these projects. His experience include the following:

    - Development of New Sedimentation and Flocculation Tanks at Rand Water's Vereeniging Pumping Station, Vereeniging, Gauteng Province. Heritage Impact Assessment for *Greenline*.
    - EThekwini Northern Aqueduct Project, Durban, KwaZulu-Natal. Heritage Impact Assessment for *Strategic Environmental Focus*.
    - Johannesburg Union Observatory, Johannesburg, Gauteng Province. Heritage Inventory for *Holm Jordaan*.
    - Development at Rand Water's Vereeniging Pumping Station, Vereeniging, Gauteng Province. Heritage Impact Assessment for *Aurecon*.
    - Comet Ext. 8 Development, Boksburg, Gauteng Province. Phase 2 Heritage Impact Assessment for *Urban Dynamics*.
    - Randjesfontein Homestead, Midrand, Gauteng Province. Baseline Heritage Assessment with Nkosinathi Tomose for Johannesburg City Parks.
    - Rand Leases Ext. 13 Development, Roodepoort, Gauteng Province. Heritage Impact Assessment for *Marsh*.
    - Proposed Relocation of the Hillendale Heavy Minerals Plant (HHMP) from Hillendale to Fairbreeze, KwaZulu-Natal. Heritage Impact Assessment for *Goslar Environmental*.
    - Portion 80 of the farm Eikenhof 323 IQ, Johannesburg, Gauteng Province. Heritage Inventory for *Khare Incorporated*.
    - Comet Ext. 14 Development, Boksburg, Gauteng Province. Heritage Impact Assessment for *Marsh*.
    - Rand Steam Laundries, Johannesburg, Gauteng Province. Archival and Historical Study for *Impendulo* and *Imperial Properties*.
    - Mine Waste Solutions, near Klerksdorp, North West Province. Heritage Inventory for *AngloGold Ashanti*.
    - Consolidated EIA and EMP for the Kroondal and Marikana Mining Right Areas, North West Province. Heritage Impact Assessment for *Aquarius Platinum*.
    - Wilkoppies Shopping Mall, Klerksdorp, North West Province. Heritage Impact Assessment for *Centre for Environmental Management*.
    - Proposed Vosloorus Ext. 24, Vosloorus Ext. 41 and Vosloorus Ext. 43 Developments, Ekurhuleni District Municipality, Gauteng Province. Heritage Impact Assessment for *Enkanyini Projects*.
    - Proposed Development of Portions 3, 6, 7 and 9 of the farm Olievenhoutbosch 389 JR, City of Tshwane Metropolitan Municipality, Gauteng Province. Heritage Impact Assessment for *Marsh*.
    - Proposed Development of Lotus Gardens Ext. 18 to 27, City of Tshwane Metropolitan Municipality, Gauteng Province. Heritage Impact Assessment for *Pierre Joubert*.
    - Proposed Development of the site of the old Vereeniging Hospital, Vereeniging, Gauteng Province. Heritage Scoping Assessment for *Lekwa*.
    - Proposed Demolition of an Old Building, Kroonstad, Free State Province. Phase 2 Heritage Impact Assessment for *De Beers Consolidated Mines*.

- Proposed Development at Westdene Dam, Johannesburg, Gauteng Province. Heritage Impact Assessment for *Newtown*.
- West End, Central Johannesburg, Gauteng Province. Phase 1 Heritage Impact Assessment for the *Johannesburg Land Company*.
- Kathu Supplier Park, Kathu, Northern Cape Province. Heritage Impact Assessment for *Synergistics*.
- Matlosana 132 kV Line and Substation, Stilfontein, North West Province. Heritage Impact Assessment for *Anglo Saxon Group* and *Eskom*.
- Marakele National Park, Thabazimbi, Limpopo Province. Cultural Resources Management Plan for *SANParks*.
- Cullinan Diamond Mine, Cullinan, Gauteng Province. Heritage Inventory for *Petra Diamonds*.
- Highveld Mushrooms Project, Pretoria, Gauteng Province. Heritage Impact Assessment for *Mills & Otten*.
- Development at the Reserve Bank Governor's Residence, Pretoria, Gauteng Province. Archaeological Excavations and Mitigation for the *South African Reserve Bank*.
- Proposed Stones & Stones Recycling Plant, Johannesburg, Gauteng Province. Heritage Scoping Report for *KV3*.
- South East Vertical Shaft Section of ERPM, Boksburg, Gauteng Province. Heritage Scoping Report for *East Rand Proprietary Mines*.
- Soshanguve Bulk Water Replacement Project, Soshanguve, Gauteng Province. Heritage Impact Assessment for *KWP*.
- Biodiversity, Conservation and Participatory Development Project, Swaziland. Archaeological Component for *Africon*.
- Camdeboo National Park, Graaff-Reinet, Eastern Cape Province. Cultural Resources Management Plan for *SANParks*.
- Main Place, Central Johannesburg, Gauteng Province. Phase 1 Heritage Impact Assessment for the *Johannesburg Land Company*.
- Modderfontein Mine, Springs, Gauteng Province. Detailed Archival and Historical Study for *Consolidated Modderfontein Mines.*
- Proposed New Head Office for the Department of Foreign Affairs, Pretoria, Gauteng Province. Heritage Impact Assessment for *Holm Jordaan Group*.
- Proposed Modification of the Lukasrand Tower, Pretoria, Gauteng Province. Heritage Assessment for IEPM.
- Proposed Road between the Noupoort CBD and Kwazamukolo, Northern Cape Province. Heritage Impact Assessment for *Gill & Associates*.
- Proposed Development at the Johannesburg Zoological Gardens, Johannesburg, Gauteng Province. Detailed Archival and Historical Study for *Matakoma.*

- Polke's **KEY QUALIFICATIONS:**

  - Project Management
  - Archaeological and Heritage Management
  - Archaeological and Heritage Impact Assessment
  - Archaeological and Heritage Fieldwork
  - Archival and Historical Research
  - Report Writing

- Polke's **INFORMATION TECHNOLOGY EXPERIENCE:**

    - MS Office – Word, Excel, & Powerpoint
    - Google Earth
    - Garmin Mapsource
    - Adobe Photoshop
    - Corel Draw

I Polke Doussy Birkholtz, hereby confirm that the above information contained in my CV is true and correct.

PD Birkholtz

13 September 2017
Date

CURRICULUM VITAE

Name	Sindiso Jacob Lubisi
Address	66 Hampton Ave, Auckland Park, Johannesburg, 2093
Cell no	061 468 7782
E-mail	sindiso@maranggroup.co.za
Nationality	South African
ID number	8906296013089
Marital Status	Not Married
Languages	English (Speak, read & write); SiSwati (Fluent, Read, Write); SePedi (Speak, Read); SeSotho (Speak, Read); SeTswana (Speak, Read); Afrikaans (Read, Moderate); IsiZulu (Fluent, Read, Write); IsiXhosa (Fluent, Read, Write); ISiNdebele (Fluent, Read, Write)

QUALIFICATIONS

Tertiary Education

BSc Hon	Geography & Environmental Sciences	2017	University of Pretoria
BSc	Environmental Sciences	2010 - 2010	University of Fort Hare
BSc	Geology (Earth Sciences) – *2nd yr level*	2007 - 2009	University of Stellenbosch

PROFESSIONAL EXPERIENCE

Job Title : Technical Writer
Employer Name : Sparrow Consulting
Date Employed : May 2016 – September 2017

RESPONSIBILITIES

- Plan, develop, organize, write and edit operational procedures and manuals.
- Research, develop and document technical design specifications and test scripts.
- Produce electronic documentation in addition to hard copy manuals.
- Maintain a comprehensive library of technical terminology and documentation.
- Analyze documents to maintain continuity of style of content.
- Manage updates and revisions to technical literature.

Job Title : Lecturer Assistance (GIS)
Employer Name : University of Pretoria

Date Employed : June 2017 – November 2017

RESPONSIBILITIES

- Supervise the Geographic Information Systems (GIS) work of students, provide advice on study skills and help them with learning problems.
- Mark assignments and examination questions as well as assessing the work and progress of students by reference to defined criteria set by the GIS Lecturer.
- Seek ways of improving performance by reflecting on teaching design and delivery and obtaining and analysing feedback.
- Supervise student projects under guidance and supervision.

Job Title : Junior Environmental Scientist
Employer Name : Rayten Engineering Solutions CC
Date Employed : January 2018 – Current

RESPONSIBILITIES

- Ensure the implementation by the contractor of the project Environmental Authorisation (EA), Environmental Management Program (EMPr), Water Use General Authorisation, Threatened or Protected Species removal permit and landowners conditions;
- Review the Environmental Management Programme and Environmental Authorisation and compile of site specific checklists and registers;
- Conducting on-site environmental audits and the preparation of written reports on the results of the audits;
- Preparing and conducting environmental inductions for contractor management;
- Client liaison, follow-up and feedback;
- Generation of weekly and monthly reports to various authorities;
- Attend and report back findings at monthly site progress meetings;
- Writing project environmental Close-out Reports.

Conferences

- University of Stellenbosch - Geological mapping of a 5km2 area at the Laingsburg mountains in the Western Cape (2007).
- SAAG International Conference, Swaziland (2017)
    - Excursion & Camping: KZN & Free State.
    - Seminar Conference: University of Swaziland.

CURRICULUM VITAE

Name	Sophia Katerina Rosslee
Address	Matumi Sands, Straight Ave, Lone hill
Cell no	083 646 9172
E-mail	sophia@maranggroup.co.za
Nationality	South African
ID number	9009050099086
Marital Status	Married
Languages	English (Speak, read & write)

QUALIFICATIONS

Tertiary Education

MSc	Geography and Environmental Sciences	2013-2015	Wits University
BSc Hon	Geography and Environmental Sciences	2012	Wits University
BSc	Environmental Sciences	2009 - 2011	Wits University

Other Qualifications

- Carbon Analyst - SETA Qualified (2017)
- Geographic Information Systems (GIS) and Remote Sensing (2010-2012)
- Senior Bursar Tutor Development (2012)
- Certificate of Competence in computer literacy (2010)

PROFESSIONAL EXPERIENCE

Job Title	**:**	Executive Manager - Environmental Scientist
Employer Name	**:**	Rayten Engineering Solutions cc
Date Employed	**:**	July 2013 – Current

RESPONSIBILITIES

- Staff management
- Project management

- Compiling quotes and tenders
- Liaising with suppliers and clients
- Air quality data analysis and report writing
- GHG Accounting and Reporting
- Dispersion modelling and Air Quality Impact Assessments
- Company administration
- Business development and marketing

KEY PROJECTS COMPLETED

- Air Quality Impact Assessments for different projects:
    - Proposed bulk fuel storage and handling facility, MBT petroleum,
    - Proposed Iron Ore Mine, Muhlava Mining,
    - Evander Gold Mine, Elikhulu Gold Project,
    - Ixopo Renewable Energy Plant,
    - Ghofa Trading Prospecting & Bulk Sampling Project,
    - Twinsaver Kliprivier Tissue Mill proposed extension,
    - Proposed De Roodepoort Coal Mine,
    - Proposed Spitsvale Chrome Mine,
    - Proposed Grootehoek Waterberg Coal Mine,
    - Silica Quartz Mine in Delmas,
    - Proposed Mukulu Mine, Northern Cape,
    - Xaris Energy Project Namibia, Power Station
    - Line 2C and 2D BRT route in City of Tshwane
    - Colenso Power Project in KZN
    - Proposed housing development on Portion 44 Finaalspan, Ekurhuleni Metropolitan Municipality
- Level One Air Quality Impact Assessments (Screening assessments) for several foundries.
- Green House Gas Inventory and Reports for several foundries, Kelvin Power Station, Black Mountain Mining and Transvaal Galvanizers.
- Industrial Emissions Audit for the eastern customer care areas of Ekurhuleni Metropolitan Municipality.
- Environmental Legal Compliance Audit for a Macsteel Tube and Pipe in Boksburg.
- Atmospheric Emission Licence (AEL) compliance audits for Transvaal Galvanizers and several foundries.
- Air quality monitoring, analysis and reporting for several industries and mines such as: Limpopo Coal Company, Sibanye Gold Mining Company, Boteti Mining, Universal Coal, Everest Mine, Mukulu Mine, Goldfields South Deep Mine, Rappa Holdings, Eskom Kendal and Duvha Power Station and Scaw Metals Union Junction.

- Air quality monitoring, analysis and report compilation for several medium – large scale foundries.
- Fugitive Dust Management Plans for foundries and Transvaal Galvanizers.
- Atmospheric Emissions Licensing for several industries.
- Section 24G rectification applications for several foundries and a waste sorting facility.
- Passive badge sampling for several mines and industries.
- Social compatibility report of the proposed Plumari country village and equestrian estate developments within Mogale City.

Job Title : Vacation Student in Environmental Management Work Programme
Employer Name : Eskom
Date Employed : December 2012 – January 2013.

RESPONSIBILITIES

- Environmental Management
- Report Writing and data analysis
- Project Management
- Research, problem solving and presentation thereof

COMPLETED PROJECTS

- Data analysis and report compilation investigating the impact of power lines on bird mortalities.
- Data analysis and report compilation investigating the effectiveness of mitigation strategies in preventing bird mortalities due to power lines.

Conferences

- Second Annual Waste Management and Recycling Conference (2012)
- SGS Carbon Accounting and Green House Gas Emission Inventory (2013)
- NBI Greenhouse Gas Protocol – GHG Inventory and Reporting (2014)
- NACA National Air Quality Conference (2014 & 2015 & 2016)
- Terra Firma Academy Carbon Analyst (2017)
- NACA Introduction to Dispersion Modelling (AERMOD) (2017)

CURRICULUM VITAE

Name	Stephan Hendrik Jacobs
Cell no	072 737 2114
E-mail	stephan@maranggroup.co.za
Nationality	South African
ID number	9105285065080
Marital Status	Single

QUALIFICATIONS

Tertiary Education

BSc	Environmental Sciences	2010-2013	University of Pretoria
BSc. Hons	Environmental Management & Analysis	2014	University of Pretoria

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent
Afrikaans	Good	Good	Good

PROFESSIONAL EXPERIENCE

Aug 2018– Current	Marang Environmental and Associates (Pty) Ltd
May 2015 – Aug 2018	SiVEST SA (Pty) Ltd – Environmental Consultant / Visual Specialist
Nov 2014 – Feb 2015	Sodwana Bay Fishing Charters – Assistant Manager
Oct 2014 – Mar 2015	Ufudu Turtle Tours – Tour Guide

RESPONSIBILITIES AND EXPERIENCE

- Strong computer skills (Word, Excel, PowerPoint etc.);
- Strong Proposal and report writing skills;
- Report compilation skills for Environmental Impact Assessments (EIAs) and Basic Assessments (BAs);
- Report compilation skills for Environmental Management Plans/Programmes (EMPr);
- Compiling and conducting Visual Impact Assessments; Assisting in Surface Water / Wetland Delineations and Assessments

Key experience includes:

- Environmental Impact Assessment (EIA) of small, medium and large-scale infrastructure projects,
- Basic Assessment (BA), of small, medium and large-scale infrastructure projects,
- Environmental Management Plans (EMPr), of small, medium and large-scale infrastructure projects,
- Proposal and tender compilation,

- Environmental Compliance and Auditing (ECO);
- Various site inspections, and
- Visual Impact Assessments (Field work and report compilation).

KEY PROJECTS COMPLETED

ENVIRONMENTAL MANAGEMENT AND IMPACT ASSESSMENT

Responsible for task management to ensure that the EIA/BA process was implemented correctly, on schedule, the EIA/BA process includes applications, baseline assessments, EIA/BA reports and Environmental Management Plans (EMPr).

- Environmental Control Officer (ECO) for the Polokwane Integrated Rapid Public Transport System (IRPTS), Limpopo Province.
- Basic Assessment (BA) for the construction of a Non-Motorised Transport (NMT) Training and Recreational Park adjacent to the Peter Mokaba Stadium in Polokwane, Limpopo Province.
- Basic Assessment (BA) for the Proposed Expansion of the Tissue Manufacturing Capacity at the Twinsaver Kliprivier Operations Base, Gauteng Province.
- Basic Assessment (BA) for the Proposed Construction of a New SPAR Distribution Centre on Erf 1092 at Redhouse in Port Elizabeth, Eastern Cape Province.
- Basic Assessment (BA) for the Proposed Construction of the Graskoppies Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Basic Assessment (BA) for the Proposed Construction of the Hartebeest Leegte Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Basic Assessment (BA) for the Proposed Construction of the Ithemba Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Basic Assessment (BA) for the Proposed Construction of the !Xha Boom Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province
- Environmental Impact Assessment (EIA) for the Proposed Construction of the Graskoppies Wind Farm near Loeriefontein, Northern Cape Province.
- Environmental Impact Assessment (EIA) for the Proposed Construction of the Hartebeest Leegte Wind Farm near Loeriefontein, Northern Cape Province.
- Environmental Impact Assessment (EIA) for the Proposed Construction of the Ithemba Wind Farm near Loeriefontein, Northern Cape Province.
- Environmental Impact Assessment (EIA) for the Proposed Construction of the !Xha Boom Wind Farm near Loeriefontein, Northern Cape Province.
- Environmental Control Officer (ECO) for Phase 1 and Phase 2 of the Newmarket Retail Development, Gauteng Province.
- Environmental Control Officer (ECO) for the proposed NuPay Office Block development at the Newmarket Retail Development, Gauteng Province.
- Environmental Control Officer (ECO) for the proposed Construction of the Decathlon Building at the Newmarket Retail Development, Gauteng Province.
- Environmental Control Officer (ECO) for the External Road Upgrades at the Newmarket Retail Development, Gauteng Province.
- Environmental Review of the Xakwa Coal Operations, adjacent to the proposed Eastside Junction Development.
- Environmental Due Diligence for the Woodlands and Harrowdene Office Parks in Woodmead, Gauteng Province.
- Visual Impact Assessment for the Helena Solar PV Plant, Northern Cape Province.
- Visual Impact Assessment for the Nsoko Msele Integrated Sugar Project, Swaziland.
- Visual Impact Assessments for the proposed construction of the Sendawo Solar 1, Sendawo Solar 2 and Sendawo Solar 3 Photovoltaic (PV) Energy Facilities near Vryburg, North West Province.
- Visual Impact Assessments for the proposed construction of the Sendawo Substation and Associated 400kV Power Line near Vryburg, North West Province.
- Visual Impact Assessments for the proposed construction of the Tlisitseng Solar 1 and Tlisitseng Solar 2 Photovoltaic (PV) Energy Facilities near Lichtenburg, North West Province.

- Visual Impact Assessment for the proposed construction of the Tlisitseng 1 132kV Substation and associated 132kV Power Line near Lichtenburg, North West Province.
- Visual Impact Assessment for the proposed construction of the Tlisitseng 2 132kV Substation and associated 132kV Power Line near Lichtenburg, North West Province.
- Visual Impact Assessment for the proposed construction of the 3000MW PhilCo Green Energy Wind Farm and Associated Infrastructure near Richmond, Northern Cape Province.
- Visual Impact Assessment for the proposed construction of the Aletta 140MW Wind Energy Facility neat Copperton, Northern Cape Province.
- Visual Impact Assessment for the proposed construction of the Aletta 132kV Substation and associated 132kV Power Line near Copperton, Northern Cape Province.
- Visual Impact Assessment for the proposed construction of the Eureka 140MW Wind Energy Facility and associated Infrastructure near Copperton, Northern Cape Province.
- Visual Impact Assessment for the proposed construction of the Eureka 400kV Substation and 400kV Power Line neat Copperton, Northern Cape Province.
- Visual Impact Assessment for the Proposed Construction of the Graskoppies Wind Farm near Loeriesfontein, Northern Cape Province.
- Basic Visual Impact Assessment for the Proposed Construction of the Graskoppies Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Visual Impact Assessment for the Proposed Construction of the Hartebeest Leegte Wind Farm near Loeriesfontein, Northern Cape Province.
- Basic Visual Impact Assessment for the Proposed Construction of the Hartebeest Leegte Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Visual Impact Assessment for the Proposed Construction of the Ithemba Wind Farm near Loeriesfontein, Northern Cape Province.
- Basic Visual Impact Assessment for the Proposed Construction of the Ithemba Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Visual Impact Assessment for the Proposed Construction of the !Xha Boom Wind Farm near Loeriesfontein, Northern Cape Province.
- Basic Visual Impact Assessment for the Proposed Construction of the !Xha Boom Substation, Linking Substation and Associated 132kV Power Line near Loeriesfontein, Northern Cape Province.
- Visual Impact Assessment for the Proposed Construction of the 315MW Phezukomoya Wind Energy Facility near Noupoort, Northern Cape Province.
- Visual Impact Assessment for the Proposed Construction of the 390MW Sankraal Wind Energy Facility near Noupoort, Northern Cape Province.
- Visual Impact Assessment for the proposed development of the Phase 1 Kuruman Wind Energy Facility, Kuruman, Northern Cape Province
- Visual Impact Assessment for the proposed development of the Phase 2 Kuruman Wind Energy Facility, Kuruman, Northern Cape Province
- Basic Visual Impact Assessment for the proposed development of Supporting Electrical Infrastructure to the Phase 1 and Phase 2 Kuruman Wind Energy Facilities, Kuruman, Northern Cape Province
- Visual Impact Assessment for the Proposed Tinley Manor South Banks Beach Enhancement Solution, KwaZulu-Natal Province.
- Visual Impact Assessment for the proposed Mlonzi Hotel and Golf Estate Development, Near Lusikisiki, Eastern Cape Province.
- Visual Impact Assessment for the Proposed Assagay Valley Development, KwaZulu-Natal Province.
- Visual Impact Assessment for the Proposed Kassier Road North Development, KwaZulu-Natal Province.
- Basic Visual Impact Assessment for the proposed construction of up to a 132kV Power Line and Associated Infrastructure for the Rooipunt Solar Thermal Power Plant near Upington, Northern Cape Province.
- Basic Visual Impact Assessment for the proposed construction of up to a 132kV Power Line and Associated Infrastructure for the proposed Kalkaar Solar Thermal Power Plant near Kimberly, Free State and Northern Cape Provinces.
- Surface Water Assessment for the Steve Thswete Local Municipality, Mpumalanga Province.
- Surface Water Delineation and Assessment for the proposed coal Railway Siding at the Welgedacht Marshalling Yard and associated Milner Road Upgrade near Springs, Ekurhuleni Metropolitan Municipality.

Appendix 3

Declarations of Interest (DoIs) & EAP Affirmation

P.O Box 1369
Bromhof 2188
Tel. 011 792 0880
Fax 086 592 02980
info@maranggroup.co.za
www.maranggroup.co.za

AFFIRMATION BY ENVIRONMENTAL ASSESSMENT PRACTIONER (EAP) IN TERMS OF APPENDIX 2 AND 3 OF THE EIA REGULATIONS, 2014 (AS AMENDED)

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (Metcon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province

Environmental Assessment Practitioner (EAP):	Marang Environmental and Associates (Pty) Ltd		
Contact person:	Stephan Jacobs		
Postal address:	P.O. Box 1369, Bromhof, Randburg, South Africa		
Postal code:	2154	Cell:	072 737 2114
Telephone:	011 792 0880	Fax:	086 592 0298
E-mail:	stephan@maranggroup.co.za		

I, ____ **Stephan Jacobs**_____, the appointed EAP confirm through this affirmation (as required in terms of Appendix 2 subsection (2) (j) and (k) and Appendix 3 subsection (3) (s) of GN982) that –

i) To the best of my knowledge the information provided in this report is factually correct;

ii) All comments and inputs received from stakeholders / interested and affected parties, prior to submission of the report, have been included as part of the report, and addressed where necessary;

iii) All relevant inputs and recommendations from the specialist reports have been included in the report;

iv) To the best of my knowledge all relevant project information which has been provided to stakeholders and interested and affected parties is correct, and is included in the report;

v) All responses provided to comments received from stakeholders and interested and affected parties are the unbiased opinion of the EAP and are based on factually correct information;

vi) The level of agreement between the EAP and the interested and affected parties on the plan of study for the undertaking of the environmental impact assessment has been agreed upon.

Signature of the environmental assessment practitioner:

Marang Environmental and Associates (Pty) Ltd

Name of company:

17 September 2018

Date:

P.O Box 1369
Bromhof 2188
Tel. 011 792 0880
Fax 086 592 02980
info@maranggroup.co.za
www.maranggroup.co.za

AFFIRMATION BY ENVIRONMENTAL ASSESSMENT PRACTIONER (EAP) IN TERMS OF APPENDIX 2 AND 3 OF THE EIA REGULATIONS, 2014 (AS AMENDED)

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (Metcon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province

Environmental Assessment Practitioner (EAP):	Marang Environmental and Associates (Pty) Ltd		
Contact person:	Sindiso Lubisi		
Postal address:	P.O. Box 1369, Bromhof, Randburg, South Africa		
Postal code:	2154	Cell:	061 468 7782
Telephone:	011 792 0880	Fax:	086 592 0298
E-mail:	sindiso@maranggroup.co.za		

I, ____ **Sindiso Lubisi**_____, the appointed EAP confirm through this affirmation (as required in terms of Appendix 2 subsection (2) (j) and (k) and Appendix 3 subsection (3) (s) of GN982) that –

i) To the best of my knowledge the information provided in this report is factually correct;

ii) All comments and inputs received from stakeholders / interested and affected parties, prior to submission of the report, have been included as part of the report, and addressed where necessary;

iii) All relevant inputs and recommendations from the specialist reports have been included in the report;

iv) To the best of my knowledge all relevant project information which has been provided to stakeholders and interested and affected parties is correct, and is included in the report;

v) All responses provided to comments received from stakeholders and interested and affected parties are the unbiased opinion of the EAP and are based on factually correct information;

vi) The level of agreement between the EAP and the interested and affected parties on the plan of study for the undertaking of the environmental impact assessment has been agreed upon.

Signature of the environmental assessment practitioner:

Marang Environmental and Associates (Pty) Ltd
Name of company:

17 September 2018
Date:

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF EAP AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	To be confirmed.
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

(1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and

(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (Metcon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province

Environmental Assessment Practitioner (EAP):	Marang Environmental and Associates (Pty) Ltd		
Contact person:	Stephan Jacobs		
Postal address:	P.O. Box 1369, Bromhof, Randburg, South Africa		
Postal code:	2154	Cell:	072 737 2114
Telephone:	011 792 0880	Fax:	086 592 0298
E-mail:	info@maranggroup.co.za		
Professional affiliation(s) (if any)			

Project Consultant:	Marang Environmental and Associates (Pty) Ltd		
Contact person:	Stephan Jacobs		
Postal address:	P.O. Box 1369, Bromhof, Randburg, South Africa		
Postal code:	2154	Cell:	072 737 2114
Telephone:	011 792 0880	Fax:	086 592 0298
E-mail:	stephan@maranggroup.co.za		

4.2 The Environmental Assessment Practitioner

I, **Stephan Jacobs** , declare that –

General declaration:

I act as the independent environmental practitioner in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I will take into account, to the extent possible, the matters listed in regulation **8** of the Regulations when preparing the application and any report relating to the application;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
I will keep a register of all interested and affected parties that participated in a public participation process;
I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not;
all the particulars furnished by me in this form are true and correct;
will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;

~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~

Signature of the environmental assessment practitioner:

Marang Environmental and Associates (Pty) Ltd

Name of company:

17 September 2018

Date:

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF EAP AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	To be confirmed.
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

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(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (Metcon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng province

Environmental Assessment Practitioner (EAP):	Marang Environmental and Associates (Pty) Ltd		
Contact person:	Stephan Jacobs		
Postal address:	P.O. Box 1369, Bromhof, Randburg, South Africa		
Postal code:	2154	Cell:	072 737 2114
Telephone:	011 792 0880	Fax:	086 592 0298
E-mail:	info@maranggroup.co.za		
Professional affiliation(s) (if any)	N/A		

Project Consultant:	Marang Environmental and Associates (Pty) Ltd		
Contact person:	Sindiso Lubisi		
Postal address:	P.O. Box 1369, Bromhof, Randburg, South Africa		
Postal code:	2154	Cell:	061 468 7782
Telephone:	011 792 0880	Fax:	086 592 0298
E-mail:	sindiso@maranggroup.co.za		

4.2 The Environmental Assessment Practitioner

I, **Sindiso Lubisi** , declare that –

General declaration:

I act as the independent environmental practitioner in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I will take into account, to the extent possible, the matters listed in regulation **8** of the Regulations when preparing the application and any report relating to the application;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
I will keep a register of all interested and affected parties that participated in a public participation process;
I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not;
all the particulars furnished by me in this form are true and correct;
will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;

~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~

_____

_____

_____

_____

Signature of the environmental assessment practitioner:

Marang Environmental and Associates (Pty) Ltd

Name of company:

17 September 2018

Date:

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

(1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and

(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (MetCon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct

Specialist:	**Marang Environmental and Associates (Pty) Ltd**		
Contact person:	**Sophia Rosslee**		
Postal address:	**PO Box 1369, Bromhof, Randburg**		
Postal code:	**2154**	**Cell:**	**0836469172**
Telephone:	**011 792 0880**	**Fax:**	**086 592 0298**
E-mail:	**info@maranggroup.co.za**		
Professional affiliation(s) (if any)	**none**		

Project Consultant:	**Marang Environmental and Associates (Pty) Ltd**		
Contact person:	**Stephan Jacobs**		
Postal address:	**P.O. Box 1369, Bromhof, Randburg**		
Postal code:	**2154**	Cell:	**072 737 2114**
Telephone:	**011 792 0880**	Fax:	**086 592 0298**
E-mail:	**info@maranggroup.co.za**		

4.2 The specialist appointed in terms of the Regulations_

I, Sophia Rossouw , declare that --

General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

Murang Environmental & Associates

Name of company (if applicable):

17 September 2018.

Date:

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

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PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (MetCon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct

Specialist:	**Enviro Acoustic Research cc**		
Contact person:	**Morné de Jager**		
Postal address:	**Box 2047, Garsfontein East**		
Postal code:	**0060**	Cell:	**082 565 4059**
Telephone:	**012 004 0362**	Fax:	**086 621 0292**
E-mail:	**morne@menco.co.za**		
Professional affiliation(s) (if any)			

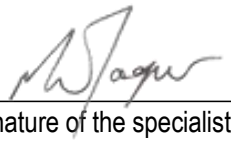
Project Consultant:	**Marang Environmental and Associates (Pty) Ltd**		
Contact person:	**Stephan Jacobs**		
Postal address:	**P.O. Box 1369, Bromhof, Randburg**		
Postal code:	**2154**	Cell:	**072 737 2114**
Telephone:	**011 792 0880**	Fax:	**086 592 0298**
E-mail:	**info@maranggroup.co.za**		

4.2 The specialist appointed in terms of the Regulations_

I, **Morné de Jager** , declare that --

General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the specialist:

Enviro Acoustic Research cc

Name of company (if applicable):

2018 – 09 – 07

Date:

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
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Application for integrated environmental authorisation and waste management licence in terms of the-

(1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and

(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (MetCon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct

Specialist:	PGS HERITAGE (PTY) LTD		
Contact person:	POLKE BIRKHOLTZ		
Postal address:	906 BERGAREND STREET WAVERLEY		
Postal code:	0186	Cell:	0827176661
Telephone:	012 3325305	Fax:	086 675 8077
E-mail:	polke@pgsheritage.co.za		
Professional affiliation(s) (if any)	CRM SECTION OF ASAPA ASAPA (ASSOCIATION OF SOUTHERN AFRICAN PROFESSIONAL ARCHAEOLOGISTS)		

Project Consultant:	**Marang Environmental and Associates (Pty) Ltd**		
Contact person:	**Stephan Jacobs**		
Postal address:	**P.O. Box 1369, Bromhof, Randburg**		
Postal code:	**2154**	Cell:	**072 737 2114**
Telephone:	**011 792 0880**	Fax:	**086 592 0298**
E-mail:	**info@maranggroup.co.za**		

I, POLKE BIRKHOLTZ, declare that --

General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

PGS HERITAGE (PTY) LTD

Name of company (if applicable):

17 SEPTEMBER 2018.

Date:

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

(1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and

(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Proposed Development and Inclusion of the Metal Concentrators (MetCon) Refinery Facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct

Specialist:	SCIENTIFIC AQUATIC SERVICES		
Contact person:	STEPHEN VAN STADEN		
Postal address:	PO BOX 751779, GARDENVIEW, 2047		
Postal code:	2047	Cell:	083 415 2356
Telephone:	011 616 7893	Fax:	011 615 6240
E-mail:	Stephen@sasenvgroup.co.za		
Professional affiliation(s) (if any)	*SACNASP (South African Council for Natural Scientific Profession) # SASSO *RHP (River Health Practitioner by South African River Health Program) # IAIA		

Project Consultant:	**Marang Environmental and Associates (Pty) Ltd**		
Contact person:	**Stephan Jacobs**		
Postal address:	**P.O. Box 1369, Bromhof, Randburg**		
Postal code:	**2154**	Cell:	**072 737 2114**
Telephone:	**011 792 0880**	Fax:	**086 592 0298**
E-mail:	**info@maranggroup.co.za**		

4.2 The specialist appointed in terms of the Regulations_

I, Stephen Van Staden , declare that --

General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

Name of company (if applicable):
Scientific Aquatic Services

Date: 07/07/2018

Scientific Aquatic Services CC
Tel 011 616 7893
PO BOX 751779
Gardenview
2047

Appendix 4

Competent Authority Consultation

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Friday, 03 August 2018 3:45 PM
To: 'Chulumanco Myataza'
Cc: 'pats@gidz.co.za'; 'sophia@maranggroup.co.za'; 'clive@maranggroup.co.za'; 'Stephan'
Subject: RE: GIDZ Specialist Enquiry

Good day Chulumanco

Thank you for the clarification. We will do as advised.

Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Chulumanco Myataza <CMyataza@environment.gov.za>
Sent: Friday, 3 August 2018 3:38 PM
To: Sindiso <sindiso@maranggroup.co.za>; Vincent Chauke <VChauke@environment.gov.za>
Cc: Nyiko Nkosi <NNkosi@environment.gov.za>; sophia@maranggroup.co.za; 'Stephan' <stephan@maranggroup.co.za>; clive@maranggroup.co.za; pats@gidz.co.za
Subject: RE: GIDZ Specialist Enquiry

Afternoon Sindiso

Please note that the is no need for the two studies below as per your request to be included in the verification, since they have been conducted recently. The verification is required for all the other studies which were part of the initial application.

Regards
Chulumanco Myataza

From: Sindiso [mailto:sindiso@maranggroup.co.za]
Sent: 03 August 2018 10:21 AM
To: Vincent Chauke
Cc: Nyiko Nkosi; Chulumanco Myataza; sophia@maranggroup.co.za; 'Stephan'; clive@maranggroup.co.za;

pats@gidz.co.za
Subject: GIDZ Specialist Enquiry

Good day Mr. Chauke

We have received the following specialist studies' reports from GIDZ for the same site:

1. Traffic Impact Assessment (2016)
2. Geotechnical (2015)

These have been done recently. Can you please confirm whether or not these should be part of the studies that must be verified by Specialists?

As per our conversation. I have also attached the Pre-Application minutes for your approval.

Please let me know if there is any further information you need.

Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

'Please consider the environment before you print this email'

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Tuesday, 04 September 2018 9:36 AM
To: 'Vincent Chauke'
Cc: sophia@maranggroup.co.za; 'Stephan'
Subject: RE: Pre-Application Minutes

Good morning Mr. V. Chauke

Thank you very much for the response. However, we will await your reviews and approval of the minutes so we can finalize it from our side to include in the application.

We really appreciate your time.
Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Vincent Chauke <VChauke@environment.gov.za>
Sent: Tuesday, 4 September 2018 9:27 AM
To: Sindiso <sindiso@maranggroup.co.za>
Cc: Nyiko Nkosi <NNkosi@environment.gov.za>; Chulumanco Myataza <CMyataza@environment.gov.za>; sophia@maranggroup.co.za; 'Stephan' <stephan@maranggroup.co.za>
Subject: RE: Pre-Application Minutes

Good morning,

This is okay.

Kind regards
Vincent

From: Sindiso [mailto:sindiso@maranggroup.co.za]
Sent: 31 August 2018 11:42 AM
To: Vincent Chauke

Cc: Nyiko Nkosi; Chulumanco Myataza; sophia@maranggroup.co.za; 'Stephan'
Subject: RE: Pre-Application Minutes

Good day Mr V. Chauke

As per our conversation earlier today, please find the attached amended pre-application minutes.

Please revert back to me if you have any further requests or concerns in this regard.
Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
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www.maranggroup.co.za

Marang Project Number: MAR-MET-180017
Department Reference Number: TBC
Date: 10 August 2018

Department of Environmental Affairs
473 Steve Biko
Arcadia
Pretoria
0001

ATT: Nyiko Nkosi
Email: NNkosi@environment.gov.za
Tel: 012 399 9372

Dear Ms N Nkosi,

CLARIFICATION ON THE SPECIALIST STUDIES REQUIRED TO BE UNDERTAKEN/ CONFIRMED AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT FOR THE INCLUSION OF THE PROPOSED METAL CONCENTRATORS FACILITY WITHIN THE GAUTENG INDUSTRIAL DEVELOPMENT ZONE JEWELLERY MANUFACTURING PRECINCT AT THE OR TAMBO INTERNATIONAL AIRPORT.

Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") was appointed by Metal Concentrators (Pty) Ltd (hereafter referred to as "MetCon") to conduct an Environmental Impact Assessment (EIA) for the inclusion of its facility in the Gauteng Industrial Development Zone (GIDZ) development of a Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct.

MetCon was established in 1989 in Pretoria to provide a service for the refining of precious metals to the Jewellery industry. During 2004, the operation was expanded, and a second refinery was opened at 23 Natal Street, Paarden Eiland, Cape Town. MetCon chemically refines precious metals, namely gold, silver and rhodium from jeweller's waste materials and casts the metals it into ingots. As such, MetCon has been identified as a key facility to be incorporated into the JMP of the GIDZ project.

- **BACKGROUND INFORMATION**

In 2009, a Basic Assessment (BA) process was undertaken by the GIDZ for the development of the JMP. Environmental Authorisation (EA) was issued on 25 July 2011 and construction commenced on site in 2013. An EA Amendment application, Reference: **14/12/16/3/3/1/7/94/AM1**, was lodged with the Department of Environmental Affairs (DEA) on 13 February 2018 to amend;

1. *the holder and contact details of the EA*.
   The reason for the amendment is that the Gauteng Department of Economic Development (GDED) has appointed GIDZ as an agency and been given the mandate to develop the project on behalf of the GDED. Therefore, the holder and contact details were subject to change.

2. *the authorised listed activities under the 2006 Environmental Impact Assessment Regulations to incorporate activities as per the EIA Regulations, 2014, as amended*.

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The reason for the amendment was that the activities originally applied for and authorised in the EA dated 25 July 2011, have been delisted and replaced with the 2014 EIA Regulations, as amended. Furthermore, the EA needs to be amended to include an additional listed activity as the proposed MetCon facility triggers the listed activities in terms of S21 of the National Environmental Management Air Quality Act (No. 39 of 2004) and will require an Atmospheric Emission Licence (AEL).

The proposed activities triggered by the MetCon facility include Listed Activity 6 in terms of the EIA Regulations Listing Notice 2 of 2014 the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended.

Listed activity as described in Listing Notice 2 of GNR.984	**Description of project activity that may trigger the listed activity**
Listed Activity 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 incorporation of one of the facilities (MetCon) within the GIDZ requires an AEL from the City of Ekurhuleni (CoE) before the facility can be operational. In order for them to apply for and AEL they are required to undertake an EIA and obtain an EA.

On 11 May 2018, the DEA responded with a decision to approve the amendment of the holder and contact details of the EA. However, the second amendment to include Listed Activity 6, was refused. The reason for the refusal was that "the EA was issued in terms of 2006 EIA Regulations and the EA cannot be amended to include a similar listed activities as per the EIA Regulation 2014, as amended and this activity is activity 6 of GN R984".

In May 2018, Marang was appointed to undertake an EIA process. Marang together with the GIDZ then requested a pre-application meeting with the DEA to confirm the triggered listed activities associated with the project and to clarify the appropriate EIA process to be followed. The meeting was held on 02 July 2018 with Vincent Chauke, Nyiko Nkosi & Chulumanco Myakaza representing the DEA; Sophia Rosslee, Veronique Evans & Sindiso Lubisi from Marang; and Pat Sibiya as the representative for the GIDZ. The Listed Activity 6 above was confirmed as the only activity triggered by the proposed MetCon facility. Also, the DEA stated that specialists can include statements to certify that the recommendations and findings stipulated in the BA are still

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relevant for the site. The DEA further mentioned that this can be in the form of a specialist letter and may include any other additional recommendations (if applicable).

However, there still has been questions raised on the need for further studies and/or the confirmation thereof as the construction phase of the JMP is almost complete. Furthermore, the proposed MetCon facility will be occupying one of the buildings (block 2 in **Figure 1** below) already authorised as part of the original EA for the JMP. The main impact associated with the proposed MetCon project will be in terms of air quality. Therefore, Marang wish to gain clarification from the DEA as to which specialist studies/confirmation letters are required as part of the EIA process for the MetCon facility.

- **PROJECT SO FAR**

An EA was issued on 25 July 2011 and construction at the authorised site commenced in 2013. **Figure 1** below shows the site layout diagram for the JMP. The proposed MetCon facility will be in block 2 as represented in the site layout diagram. Most vegetation has been cleared (**Figure 2**) at the site for construction with some structures already nearing completion (**Figure 3**).

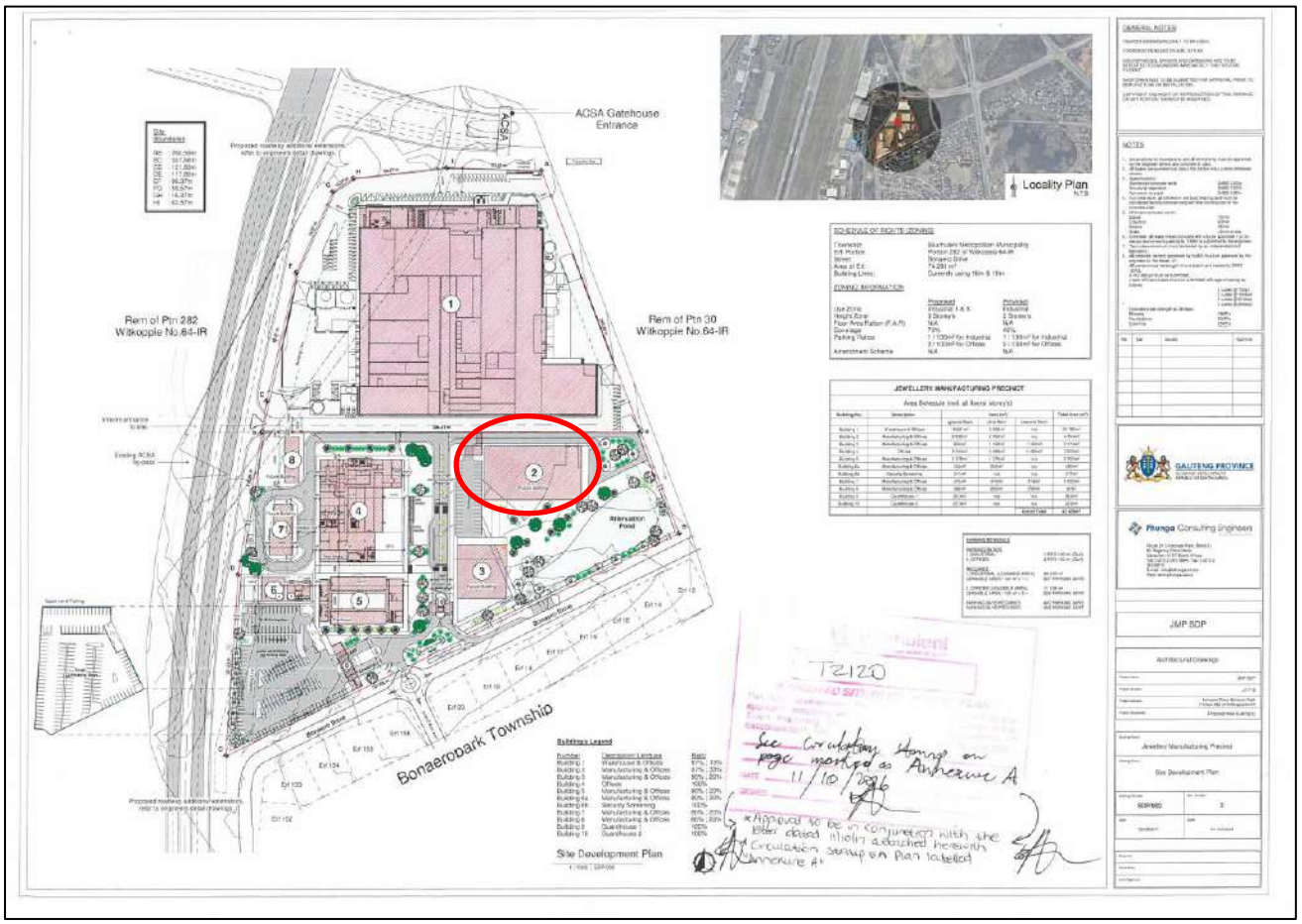

Figure 1: JMP OR Tambo International Airport IDZ Site Layout

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Figure 2: JMP OR Tambo International Airport IDZ Google Image (20 June 2018)

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Figure 3 (a,b,c): Images of the current JMP site

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- **SPECIALIST STUDIES SO FAR**

Marang can confirm, from the Final Basic Assessment Report (FBAr) compiled in 2009, that the following environmental impacts were assessed for the construction and operation, and decommissioning phases of the JMP development project. The findings were included in the FBAr, however, there were no specialist reports.

a. Vehicular Access and Traffic Congestion,
b. Biophysical (clearance of vegetation),
c. Socio-economic impacts,
d. Soil instability and erosion,
e. Stormwater run-off volume and velocity,
f. Increased Waste Generation,
g. Noise pollution, and
h. Increased demand/pressure on service infrastructure.

In 2015 and 2016, two detailed specialist assessments were conducted for:

a. Geotechnical Report,
b. Traffic Impact Assessment Report.

During the BA, overall potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. An assessment of the potential impacts was provided, identifying the impacts that are potentially significant including management recommendations and mitigation measures to reduce the impacts.

The FBAr concluded that the development of the JMP on the OR Tambo International Airport IDZ, is “in line with the region’s Spatial Development Plan”, as well as the adjacent land uses. It further states that the development will provide a number of “job opportunities during the construction phase” and thereby enhance the local economy. The property on the Remainder of Portion 69 of the Farm Witkoppie 64 - IR has “no ecological, archaeological or geohydrological sensitivities” which may be impacted on by the proposed development. If all mitigation measures as stipulated in the FBAr and in the Environmental Management Plan (EMPr) are implemented, the significance of most, if not all, and the potential impacts, as listed above, will be “reduced to ‘medium’ and ‘low’” and reach “environmentally acceptable levels”.

A Scoping Geotechnical Report, assessing the topography, vegetation, geology, and surface and ground water in a geotechnical viewpoint is also available. While this report raised concerns about the presence of a large trench that discharges to the “triangular very wet area” (wetland), it recommended feasible mitigations and concluded that the proposed development has “no fatal flaws”. Furthermore, a more extensive geotechnical assessment was completed for the JMP development site in 2015, approximately four (4) years after the EA was issued, which also was in consonance with the findings of the initial Scoping Geotechnical Report.

An extensive Geotechnical study and Traffic Impact (scoping and extensive) assessment, which were completed recently in 2015 and 2016, respectively, for the same JMP development site, are available. The traffic impact assessment recommended road upgrades which will see the surrounding road network being able to accommodate the development traffic at acceptable levels, and further concluded that the development be approved from a traffic point of view.

Furthermore, Marang has also completed a Full Air Quality Impact Assessment (AQIA) in March 2018 to assess the impacts of the proposed MetCon facility on air. Marang found that the proposed MetCon facility will trigger

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sub-category 4.17 (precious and base metals production and refining) of Section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), as amended. Particulate and gaseous emissions were identified for operations associated with the proposed facility and will be emitted from the following key sources:

- Jewellers secondary gold material incineration in roasting oven;
- Gas (fuel) combustion installation (roasting oven);
- Chemical refining process;
- Melting of material in induction furnaces and adding fluxes; and
- Casting of material.

As such, the facility requires an AEL to operate. MetCon will install abatement equipment, as per their current design at the MetCon Centurion Plant which will allow them to reduce their emission significantly. Under the mitigated scenario, the dispersion model indicated very low concentrations within 2 km from the facility, as the abatement equipment (scrubber and baghouse) has an associated emission control efficiency of approximately 98%. Therefore, Marang further concluded that the development be approved from an Air Quality point of view.

- **CLARIFICATION ON SPECIALIST STUDIES**

Marang can confirm that so far, only two (2) Specialist Studies Reports are available for the whole JMP site. These specialists are;

1. Geotechnical Studies, and
2. Traffic Impact Assessment

Also, with the third study being the AQIA for the MetCon facility specifically.

As such, Marang would like clarification on whether the above specialist assessments, including the original FBAr, would be sufficient enough to fulfil the specialist studies' requirements as extensions to the Environmental Impact Assessment (EIA) as per the EIA Regulations, 2014, as amended. In the alternative, please advise on the nature of the required sufficient specialist assessments, and the necessary supporting documentation thereof.

Marang trusts that you will find the above in order and will hopefully be able to assist in determining a way forward for the inclusion of the MetCon facility for them to receive an AEL as well as providing Marang with a formal response to the matter in question.

Please do not hesitate to contact me if you require any additional information or queries regarding the above.

Yours sincerely

Sindiso Lubisi *BSc Hon. Env. Sciences*
Marang Environmental and Associates (Pty) Ltd
Contact Number: 011 792 0880
Email Address: info@maranggroup.co.za

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Monday, 13 August 2018 9:36 AM
To: 'Chulumanco Myataza'
Cc: 'nnkosi@environment.gov.za'; 'vchauke@environment.gov.za'; 'sophia@maranggroup.co.za'; 'stephan@maranggroup.co.za'
Subject: RE: Specialist Clarification

Hi Chulumanco

I have tried to get hold of Nyiko and Vincent to no avail. If you can help, please find out when can we expect feedback on the Specialist Clarification Letter we sent on Friday since this is now an urgent matter so we can soon commence with the EIA Project.

We really appreciate your assistance.
Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Friday, 10 August 2018 12:32 PM
To: 'nnkosi@environment.gov.za' <nnkosi@environment.gov.za>
Cc: 'vchauke@environment.gov.za' <vchauke@environment.gov.za>; 'Chulumanco Myataza' <CMyataza@environment.gov.za>; 'sophia@maranggroup.co.za' <sophia@maranggroup.co.za>; 'stephan@maranggroup.co.za' <stephan@maranggroup.co.za>; 'pats@gidz.co.za' <pats@gidz.co.za>; 'mohudugi@gmail.com' <mohudugi@gmail.com>
Subject: Specialist Clarification

Good day Ms. Nyiko Nkosi

As per our conversation with you and Pat on the 7th of August 2018. Please find the attached letter requesting clarification regarding the specialist studies needed to be undertaken to fulfil the requirements of the EIA process for the inclusion of the MetCon facility in the JMP GIDZ project.

Please do not hesitate to contact me or Sophia if you require any further information in this regard.

Kind Regards,

Sindiso Lubisi

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email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Monday, 13 August 2018 10:07 AM
To: 'Chulumanco Myataza'
Cc: sophia@maranggroup.co.za; stephan@maranggroup.co.za
Subject: RE: Specialist Clarification

Hi Chulumanco

Thank you very much for your assistance. We shall be waiting.

We appreciate it.
Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
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From: Chulumanco Myataza <CMyataza@environment.gov.za>
Sent: Monday, 13 August 2018 10:04 AM
To: Sindiso <sindiso@maranggroup.co.za>
Subject: RE: Specialist Clarification

Morning Sindiso

Mrs Nkosi and Mr Chauke are currently attending training and are out of office for the entire week. I will try contact them if possible, so we can discuss the contents of the specialist Clarification letter and get back to you as soon as possible. If not you can expect feedback next week.

Regards
Chulumanco Myataza

From: Sindiso [mailto:sindiso@maranggroup.co.za]
Sent: 13 August 2018 09:36 AM
To: Chulumanco Myataza
Cc: Nyiko Nkosi; Vincent Chauke; sophia@maranggroup.co.za; stephan@maranggroup.co.za
Subject: RE: Specialist Clarification

Hi Chulumanco

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We really appreciate your assistance.

Kind Regards,

Sindiso Lubisi

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Sent: Friday, 10 August 2018 12:32 PM
To: 'nnkosi@environment.gov.za' <nnkosi@environment.gov.za>
Cc: 'vchauke@environment.gov.za' <vchauke@environment.gov.za>; 'Chulumanco Myataza' <CMyataza@environment.gov.za>; 'sophia@maranggroup.co.za' <sophia@maranggroup.co.za>; 'stephan@maranggroup.co.za' <stephan@maranggroup.co.za>; 'pats@gidz.co.za' <pats@gidz.co.za>; 'mohudugi@gmail.com' <mohudugi@gmail.com>
Subject: Specialist Clarification

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Please do not hesitate to contact me or Sophia if you require any further information in this regard.

Kind Regards,

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'Please consider the environment before you print this email'

stephan@maranggroup.co.za

From: Veronique <veronique@maranggroup.co.za>
Sent: Thursday, 14 June 2018 4:51 PM
To: 'Pat Sibiya'
Cc: 'Neville Crosse'; sophia@maranggroup.co.za; 'Sindiso'
Subject: FW: Venue Booking Confirmation
Attachments: 20180612102826.pdf

Good Afternoon Pat,

Please find attached correspondence from the DEA regarding the pre-application meeting.

Please let me know if you will be there. I have included you in the list of attendees.

Please feel free to contact me if you have any questions.

We will be preparing a presentation for this and will also be taking minutes of the meeting.

Kind Regards,

Veronique Evans *Cand Sci Nat* ◦ EAP
tel. +2711 792 0880 | cell. +27 82 825 6069
email. *veronique@maranggroup.co.za* | web. *www.maranggroup.co.za*
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Vincent Chauke <VChauke@environment.gov.za>
Sent: Tuesday, 12 June 2018 10:50 AM
To: Veronique <veronique@maranggroup.co.za>
Cc: Nyiko Nkosi <NNkosi@environment.gov.za>; Chulumanco Myataza <CMyataza@environment.gov.za>; Danie Smit <Dsmit@environment.gov.za>; Zama Langa <ZLanga@environment.gov.za>
Subject: FW: Venue Booking Confirmation

Good day,

Please note that the pre-application meeting you requested has been scheduled for 02 July 2018 at 10:00AM. See the attached document.

Kind regards

Vincent

From: Imvelo FM Helpdesk [*mailto:helpdesk@imvelofm.co.za*]
Sent: 12 June 2018 10:29 AM
To: Vincent Chauke
Subject: Venue Booking Confirmation

If you are having problems viewing this e-mail, please view the online version here

Venue Booking Confirmation

Venue Detail Information:

Organisor: Vincent Chauke

Telephone Nr: 0123999399

E-mail Address: *vchauke@environment.gov.za*

Booking Reference Number: 40743

Venue Booked: L-C1-2-14-2 - C1 Second Floor 12 Seater Meeting Room 2 (Proj WB)

Venue Booking Start Date and Time: Jul 2 2018 10:00AM

Venue Booking End Date and Time: Jul 2 2018 5:00PM

Instructions:

Please quote the reference number should you have any queries.

Kindly note that if the meeting is not confirmed two (2) days before it will be considered as cancelled and meeting room will be allocated to the next user.

Kind Regards
Imvelo Facility Management Helpdesk

For further queries or information please e-mail *helpdesk@imvelofm.co.za*

Please contact DEA IT department on 0800 ENVIRO (368476) should you require IT assistance (Projector, Microphones, Video Conferencing & Telephone Conferencing)

Mail send to; *vchauke@environment.gov.za*

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stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Wednesday, 15 August 2018 10:10 AM
To: 'Vincent Chauke'
Cc: 'Nyiko Nkosi'; vchauke@environment.gov.za; 'Chulumanco Myataza'; sophia@maranggroup.co.za; stephan@maranggroup.co.za
Subject: RE: GIDZ Specialist Enquiry

Good day Mr V. Chauke

Thank you for the response. We will amend the pre-application meeting minutes as per request and have them sent to you as soon as possible.

Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Vincent Chauke <VChauke@environment.gov.za>
Sent: Wednesday, 15 August 2018 10:02 AM
To: Sindiso <sindiso@maranggroup.co.za>; Chulumanco Myataza <CMyataza@environment.gov.za>
Cc: Nyiko Nkosi <NNkosi@environment.gov.za>; 'Stephan' <stephan@maranggroup.co.za>; sophia@maranggroup.co.za
Subject: Re: GIDZ Specialist Enquiry

Dear Sindiso,

Please note that we have gone through your minutes for the pre-application meeting held in the Department and the DEA is not happy with the structure used in the preparation of the minutes.

The following but not limited has been observed: There is no project background, purpose of the meeting, listed activities and etc.

Therefore, you are advised to follow the agenda as your minutes are not a true reflection of what was discussed and the way forward of the meeting.

The DEA apologises for this inconvenience.

Kind regards
Vincent Chauke.

Sent from my Samsung Galaxy smartphone.

-------- Original message --------
From: Sindiso <sindiso@maranggroup.co.za>
Date: 2018/08/03 11:04 (GMT+02:00)
To: Chulumanco Myataza <CMyataza@environment.gov.za>
Cc: Vincent Chauke <VChauke@environment.gov.za>, Nyiko Nkosi <NNkosi@environment.gov.za>, 'Stephan' <stephan@maranggroup.co.za>, sophia@maranggroup.co.za
Subject: RE: GIDZ Specialist Enquiry

Good day Mr Myataza

As per your request. Please find the word version of the Pre-Application meeting.

Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
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Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
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From: Chulumanco Myataza <CMyataza@environment.gov.za>
Sent: Friday, 3 August 2018 11:01 AM
To: Sindiso <sindiso@maranggroup.co.za>
Subject: RE: GIDZ Specialist Enquiry

Morning Sindiso

Please forward us the minutes in a word document format, so that we will be able to comment on them, thanks.

Regards
Chulumanco

From: Sindiso [mailto:sindiso@maranggroup.co.za]
Sent: 03 August 2018 10:21 AM
To: Vincent Chauke
Cc: Nyiko Nkosi; Chulumanco Myataza; sophia@maranggroup.co.za; 'Stephan'; clive@maranggroup.co.za;

pats@gidz.co.za
Subject: GIDZ Specialist Enquiry

Good day Mr. Chauke

We have received the following specialist studies' reports from GIDZ for the same site:

1. Traffic Impact Assessment (2016)
2. Geotechnical (2015)

These have been done recently. Can you please confirm whether or not these should be part of the studies that must be verified by Specialists?

As per our conversation. I have also attached the Pre-Application minutes for your approval.

Please let me know if there is any further information you need.

Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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stephan@maranggroup.co.za

From: Vincent Chauke <VChauke@environment.gov.za>
Sent: Wednesday, 15 August 2018 10:02 AM
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Cc: Nyiko Nkosi; 'Stephan'; sophia@maranggroup.co.za
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Sent: 03 August 2018 10:21 AM
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Cc: Nyiko Nkosi; Chulumanco Myataza; sophia@maranggroup.co.za; 'Stephan'; clive@maranggroup.co.za; pats@gidz.co.za
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Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

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stephan@maranggroup.co.za

From: Nyiko Nkosi <NNkosi@environment.gov.za>
Sent: Wednesday, 15 August 2018 10:37 AM
To: Sindiso
Cc: Vincent Chauke; sophia@maranggroup.co.za; stephan@maranggroup.co.za; pats@gidz.co.za
Subject: RE: Specialist Clarification

Dear Sindiso

Note that it is the responsibility of the EAP to identify all specialist studies that are required and applicable for the project. Further, other stakeholders such as SAHRA or GDARD might require further studies based on their mandate. As part of the EIA process, all the stakeholders must be consulted to give comments on the proposed project.

The specialist studies as indicated on your letter must form part of your application. With limited information presented to the Department, there is no other specialist studies that can be identified by the Department as we are not familiar with the project site. Note that the Department might require further studies during the review of Scoping Report and draft EIAr, however this will be based on the information to be provided on the report and/or as an outcome of the site visit to be conducted by the Department once an application is lodged. Note that the Clarity letter has limited information. The Department will further provide comments on the draft scoping report.

The Department reserves the right to request any other information and should you have any other queries don't hesitate to liaise with the Department.

Regards
Nyiko Nkosi

From: Sindiso [mailto:sindiso@maranggroup.co.za]
Sent: 14 August 2018 12:13 PM
To: Nyiko Nkosi
Cc: Vincent Chauke; sophia@maranggroup.co.za; stephan@maranggroup.co.za; pats@gidz.co.za
Subject: RE: Specialist Clarification

Hi Nyiko

Thank you very much for your response. Please note that the EA that was received in 2011 was for the construction of all planned buildings. Please also note that MetCon will be occupying one of these facilities/buildings as per the EA.

However, the building for MetCon itself, has not yet commenced pending the EIA process.

Kind Regards,

Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
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From: Nyiko Nkosi <NNkosi@environment.gov.za>
Sent: Tuesday, 14 August 2018 11:55 AM
To: Sindiso <sindiso@maranggroup.co.za>; Chulumanco Myataza <CMyataza@environment.gov.za>
Cc: Vincent Chauke <VChauke@environment.gov.za>
Subject: RE: Specialist Clarification

Dear Sindiso

Please note that our emails were down on Friday and I only saw your email yesterday. As I have indicated during telecom last week, Vincent and I are out of office attending training for the whole week. We will be able to respond to your request on Monday.

From the attached clarity request, there is a new information which was not presented to the Department during the pre-application meeting. From the information provided, the building which will be used by Metcon have commenced as per the EA issued by GDARD. From the presentation on the pre-application meeting, it was presented that the construction of the facility which requires an AEL have not yet commenced and only the bulk services have commenced.

You are required to provide clarity whether the building that will be used by Metcon which require AEL have commenced or not.

Regards
Nyiko Nkosi

From: Sindiso [mailto:sindiso@maranggroup.co.za]
Sent: 13 August 2018 09:36 AM
To: Chulumanco Myataza
Cc: Nyiko Nkosi; Vincent Chauke; sophia@maranggroup.co.za; stephan@maranggroup.co.za
Subject: RE: Specialist Clarification

Hi Chulumanco

I have tried to get hold of Nyiko and Vincent to no avail. If you can help, please find out when can we expect feedback on the Specialist Clarification Letter we sent on Friday since this is now an urgent matter so we can soon commence with the EIA Project.

We really appreciate your assistance.
Kind Regards,
Sindiso Lubisi

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Cc: 'vchauke@environment.gov.za' <vchauke@environment.gov.za>; 'Chulumanco Myataza' <CMyataza@environment.gov.za>; 'sophia@maranggroup.co.za' <sophia@maranggroup.co.za>; 'stephan@maranggroup.co.za' <stephan@maranggroup.co.za>; 'pats@gidz.co.za' <pats@gidz.co.za>; 'mohudugi@gmail.com' <mohudugi@gmail.com>
Subject: Specialist Clarification

Good day Ms. Nyiko Nkosi

As per our conversation with you and Pat on the 7th of August 2018. Please find the attached letter requesting clarification regarding the specialist studies needed to be undertaken to fulfil the requirements of the EIA process for the inclusion of the MetCon facility in the JMP GIDZ project.

Please do not hesitate to contact me or Sophia if you require any further information in this regard.

Kind Regards,
Sindiso Lubisi

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tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Chief Directorate: Integrated Environmental Authorisations

Request for pre-application meeting

The information below is required to assist the Department to process your request for a pre-application meeting. All fields are compulsory. Please note that the proposed date and time will be confirmed prior to the meeting. This form must be submitted prior to lodging an application where a pre-application meeting is required. This form must be submitted prior to the lodging of an application and at least one (1) month prior to the requested meeting date. Note that the EAP is required to submit minutes of the meeting to the Department for approval as per the timeframes agreed to in the meeting. The Department reserves the right to refuse the pre application meeting based on the information provided in this request.

Any queries related to this form may be addressed to eiaadmin@environment.gov.za

Please submit the completed signed form in one of the following ways:

(1) **Post:**

The Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Private Bag X447
Pretoria
0001

(2) **Hand Deliver:**

Department of Environmental Affairs
Environment House
473 Steve Biko Road
Arcadia
Pretoria

(3) **E-mail:**

EIAAdmin@environment.gov.za

APPLICANT AND EAP INFORMATION

Company Name	**Gauteng Department of Economic Development (GDED)**	
Applicant Name	**Gauteng Industrial Development Zone (GIDZ)** Pat Sibiya	
Postal Address	**Office A1** **3rd floor East Wing** **OR Tambo International Airport**	
Telephone Number	Work: **010 001 9122**	Cell: **0833803554**
Fax Number	**N/A**	Email: **pats@gidz.co.za**

EAP	**Marang Environmental and Associates (Pty) Ltd**	
Contact Person	**Veronique Evans**	
Postal Address	**PO Box 1369** **Bromhof** **2154**	
Telephone Number	Work: **011 792 0880**	Cell: **082 825 6069**
Fax Number	**086 592 0298**	Email: **veronique@maranggroup.co.za**

MEETING DETAILS

Purpose of the meeting request	**EIA requirements and Procedure**			
Applicant Category	Application by Parastatal			
	Organ of State	√		
	Private Individual/Parties			
Application type	Application for EA	√	Application for integrated EA	
Preferred meeting date and time	Provide three suggested dates and times (note that the Department requires at least a month due to logistical arrangements)			
1	**02 July**	**10:00 or 11:00**		
2	**05 July**	**10:00 or 11:00**		
3	**09 July**	**10:00 or 11:00**		
Duration of the meeting	**1.5 hour**			
Estimated number of people attending meeting	**4 Attendees** Sophia Rosslee (Marang) Veronique Evans (Marang) Sindiso Lubisi (Marang) Pat Sibiya (GIDZ)			

Please attach a proposed agenda as **Appendix 1**. If the Applicant or EAP intends to discuss several projects in one meeting, an agenda must be drafted for each proposed project and the project details for each project. Please note that a detailed agenda is required.

PROJECT DETAIL

Project Description	**Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) process for the proposed development of a Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) precinct.**
Indicate if any screening has taken place on site	**Basic Assessment (BA)**
Physical Address where the development will take place	**Within the OR Tambo International Airport (ORTIA) precinct, in Ekurhuleni Metropolitan Municipality, Gauteng Province.** **260 6' 52.14''S 280 15' 1.73''EPrevious**
Farm name(s)/ Erf No	**OR Tambo International Airport**
Local Municipality	**City of Ekurhuleni Metropolitan Municipality**
District Municipality	**City of Ekurhuleni Metropolitan Municipality**
Reason for applying with DEA as the competent authority (in terms of Section 24C of NEMA)	The DEA has been named the competent authority as the Gauteng Department of Agriculture and Rural Development (GDARD) and the Gauteng Department of Economic Development (GDED) report to the same MEC as such there would be a conflict of interest if GDARD was the decision-making authority. Previous correspondence with the DEA has confirmed this. This was determined during an Amendment Application for the pre-existing EA for facility. The amendment was granted under 14/12/16/3/3/1/7/94/AM1. The person who was consulted at DEA was Vincent Chauke.

PROVIDE A DETAILED DESCRIPTION OF POTENTIALLY LISTED ACTIVITIES THAT IS OR MAY BE APPLICABLE TO THE PROJECT

Listed activity as described in GN R. 983, GN R. 984 and GN R.985	Description of project activity that may trigger the listed activity
e.g. GN R.983 Item XX(x): The development of bridge exceeding 100 square metres in size within a watercourse	***e.g. A bridge measuring 110 square metres will be constructed within the watercourse***
<u>GN R 984 Item 6:</u> 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	The incorporation of one of the facilities within the Gauteng Industrial Development Zone (GIDZ) requires an Air Emissions License (AEL) from the City of Ekurhuleni (CoE) before the facility can be operational. In order for them to apply for and AEL they are required to undertake an EIA and get Environmental Authorisation (EA).

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) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.	

ADDITIONAL INFORMATION IF ANY (ATTACH IF SEPARATE DOCUMENTS):

Proposed Agenda – Appendix 1
Project development Area – Appendix 2
Previous Environmental Authorisation for the GIDZ development – Appendix 3

APPENDIX 1
PROPOSED AGENDA

Item No	Agenda item
1.	Introduction
2.	History of the proposed development and status of development
3.	Previous Assessments (BA) undertaken and EA
4.	Addition of new facility which requires an AEL
5.	Way forward regarding the incorporation of new facility which needs an EIA and specialist studies.
6.	Meeting Closure

APPENDIX 2
PROPOSED PROJECT LAYOUT

stephan@maranggroup.co.za

From: Veronique <veronique@maranggroup.co.za>
Sent: Monday, 28 May 2018 10:44 AM
To: 'EIAadmin'; pats@gids.co.za
Cc: 'Vincent Chauke'; sophia@maranggroup.co.za; 'Sindiso'
Subject: RE: 14/12/16/3/3/1/7/94/AM1

Good Morning,

I am sorry for the late response regarding this email. I was out of the country on leave and have only been able to see this now.

Regarding the change of name of the ownership of the EA do we need to request a new EA from GDARD or the DEA with Pat's details on the EA or if the attached letter sufficient.

Furthermore, based on the communication with the Department as well as the response contained in the attached letter, Marang on behalf on the GIDZ will be making an EIA Application to incorporate the new triggered listed activity. We will also be requesting a pre-application meeting with the department to discuss the listed activities and specialist studies.

We shall be sending through the pre-application meeting request by COB today.

Your assistance with this matter is greatly appreciated.

Kind Regards,

MARANG environmental & associates

Veronique Evans *Cand Sci Nat* ◦ EAP
tel. +2711 792 0880 | cell. +27 82 825 6069
email. veronique@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: EIAadmin <EIAadmin@environment.gov.za>
Sent: Monday, 14 May 2018 1:24 PM
To: pats@gids.co.za; veronique@maranggroup.co.za
Cc: Vincent Chauke <VChauke@environment.gov.za>; EIAadmin <EIAadmin@environment.gov.za>
Subject: 14/12/16/3/3/1/7/94/AM1

Good day.

Please find herein the attached letter for the above mentioned.

I hope you find all in order.

Thank you.

Kind Regards,
EIA Admin
Integrated Environmental Authorisations:
Coordination, Strategic Planning and Support
Tel: (012) 399 8630 / (012) 399 8529
Email: EIAadmin@environment.gov.za

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

'Please consider the environment before you print this email'

stephan@maranggroup.co.za

From:	Veronique <veronique@maranggroup.co.za>
Sent:	Monday, 28 May 2018 2:56 PM
To:	'EIAadmin'
Cc:	'Vincent Chauke'; 'Pat Sibiya'; sophia@maranggroup.co.za; 'Sindiso'
Subject:	Request for pre-application meeting
Attachments:	EA Request For Pre-Application Meeting rev 1 28052018 VE.pdf; Appendix 3 - Origional EA 2011.pdf
Importance:	High

To Whom It May Concern,

Please find attached a request for a pre-application meeting with the DEA regarding an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) process for the proposed development of a Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) precinct.

Your assistance regarding this would be greatly appreciated.

Please feel free to contact me if you require any additional information or have any questions or queries regarding the above.

Kind Regards,

MARANG environmental & associates

Veronique Evans *Cand Sci Nat* ◦ EAP
tel. +2711 792 0880 | cell. +27 82 825 6069
email. veronique@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

Venue Booking Request Confirmation
Department of Environmental Affairs

Booking Reference Number:40743

Authorising Manager	Vincent Chauke
Authorising Manager email	vchauke@environment.gov.za
Host	Vincent Chauke
Host email	vchauke@environment.gov.za
Meeting Organiser/Contact Person	Vincent Chauke
Contact Number	0123999399
Email Address	vchauke@environment.gov.za

Booking Details:

Location to visit	L-C1-2-14-2 - C1 Second Floor 12 Seater Meeting Room 2 (Proj WB)
Date and Time of Booking	02-Jul-2018 10:00 - 02-Jul-2018 17:00
Number of Attendees	8

Booking Notes:

Booking Created By:

Booking captured by	Malebo Maditla
Booking captured at	12-Jun-2018 10:28

Appendix 5

Project Maps

28°14'30"E 28°15'0"E 28°15'30"E 28°16'0"E

26°6'0"S 26°6'30"S 26°7'0"S 26°7'30"S

GIDZ Jewellery Manufacturing Site

O. R. Tambo International Airport

Bonaero Park

Legend

GIDZ Jewellery Manufacturing Precinct

Gauteng Conservation Plan (SANBI)

Critical Biodiversity Area

Ecological Support Area

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Kilometers

MARANG environmental & associates

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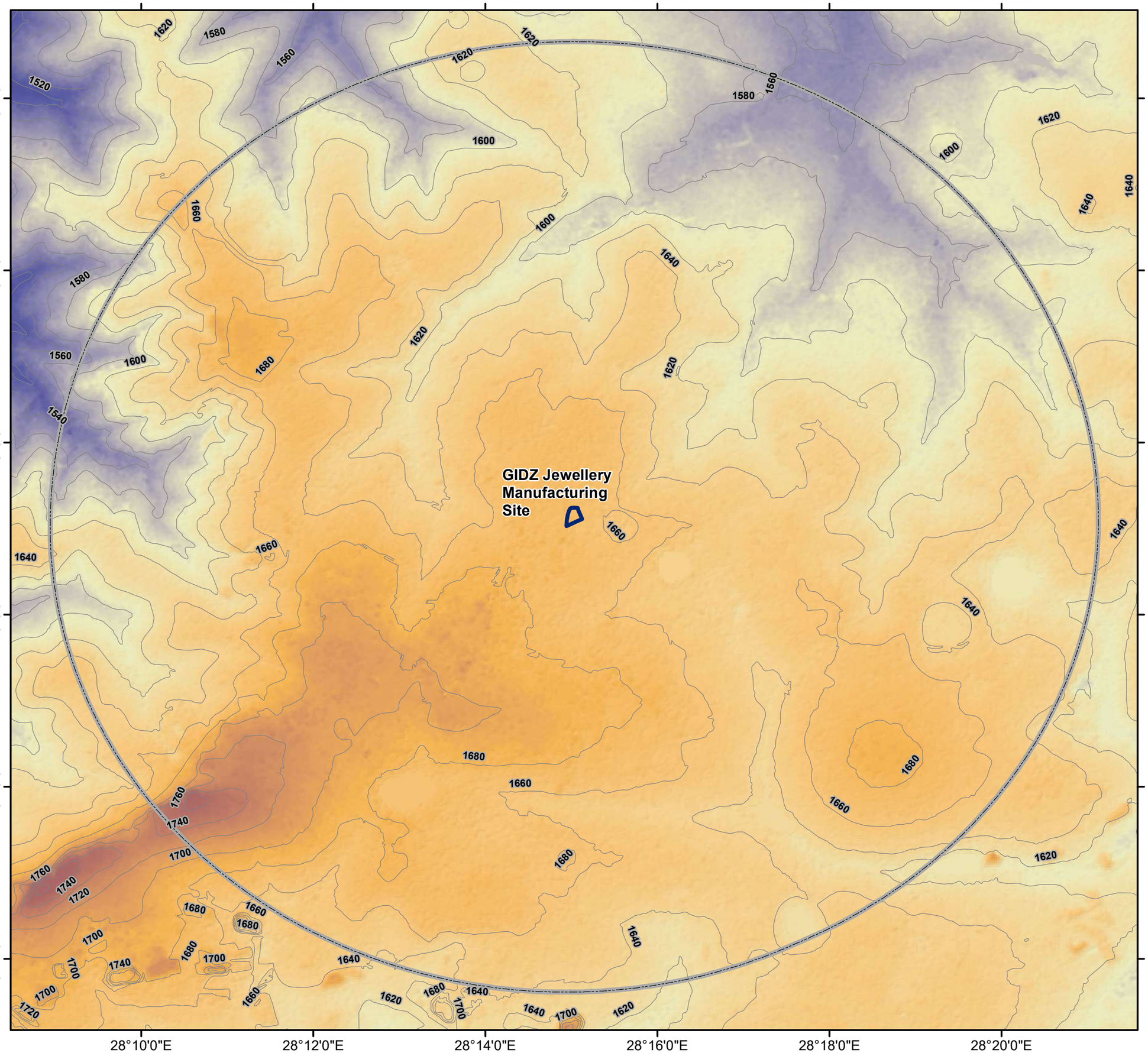

Legend

GIDZ Jewellery Manufacturing Precinct

10km Buffer from site

20m Contour

Digital Elevation Model

Elevation (mamsl)

High : 1913m

Low : 1376m

N

W E

S

0 1 2 4 Kilometers

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28°14'30"E
28°15'0"E
28°15'30"E
28°16'0"E
26°6'30"S
26°7'0"S
26°7'30"S

Soweto Highveld Grassland

GIDZ Jewellery Manufacturing Site

Rietvleiriver Highveld Grassland

Soweto Highveld Grassland

Bonaero Park

Legend

GIDZ Jewellery Manufacturing Precinct

Threatened Ecosystem Status (SANBI)

Critically Endangered

Vulnerable

N
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0 0,25 0,5 1

Kilometers

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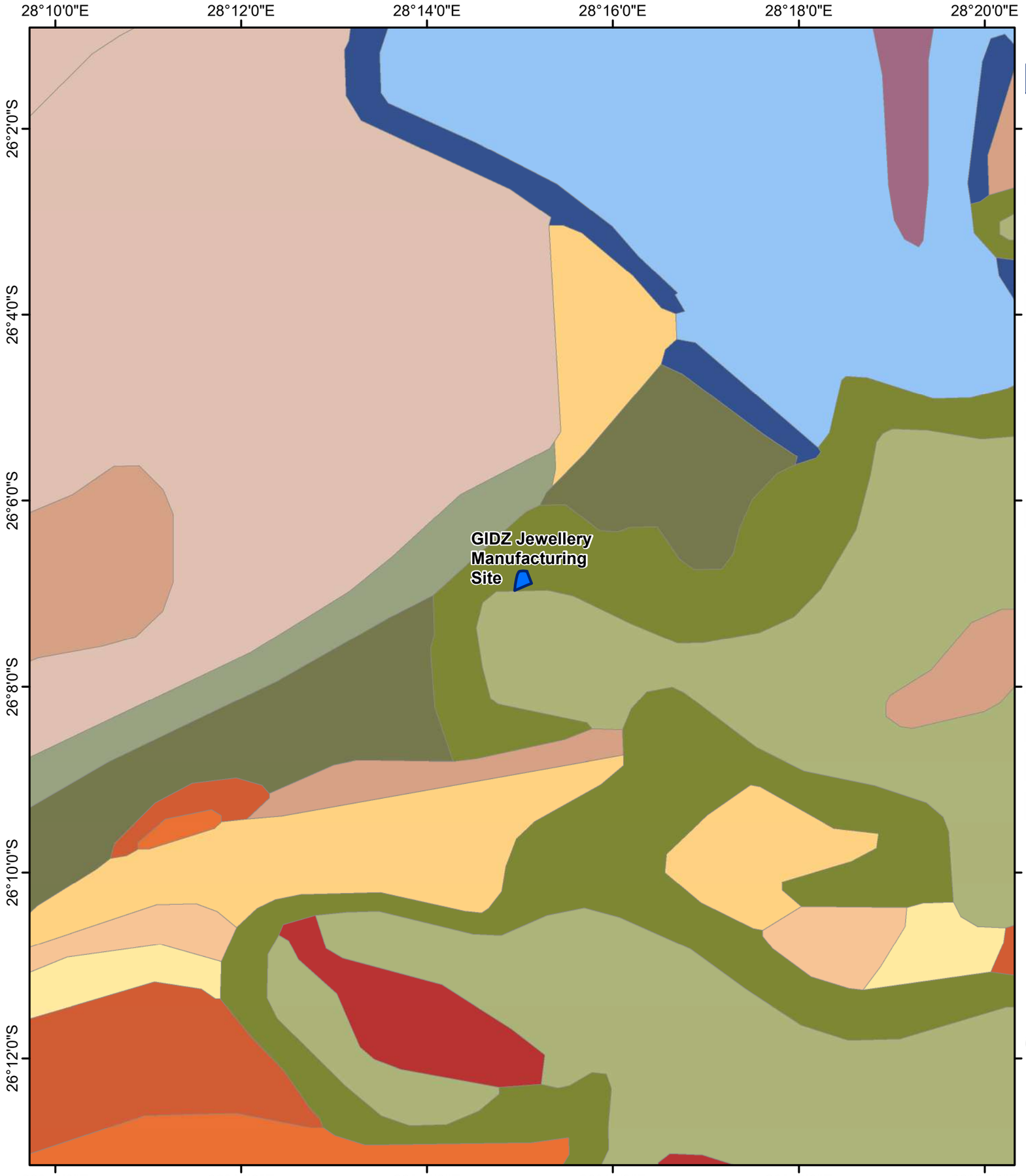

L e g end

GIDZ Jewellery Manufacturing Precinct

Geology (CGS, SA Metalurgical Map)

STRATNAME

- Karoo Dolerite Suite
- Madzaringwe Formation, Karoo Supergroup
- Dwyka Group, Karoo Supergroup
- Pretoria Group, Transvaal Supergroup
- Malmani Subgroup, Chuniespoort Group, Transvaal Supergroup
- Black Reef Formation, Transvaal Supergroup
- Platberg Group, Ventersdorp Supergroup
- Klipriviersberg Group, Ventersdorp Supergroup
- Turffontein Subgroup, Central Rand Group, Witwatersrand Supergroup
- Johannesburg Subgroup, Central Rand Group, Witwatersrand Supergroup
- Jeppestown Subgroup, West Rand Group, Witwatersrand Supergroup
- Government Subgroup, West Rand Group, Witwatersrand Supergroup
- Hospital Hill Subgroup, West Rand Group, Witwatersrand Supergroup
- Swazian Erathem
- Halfway House Granite, Swazian Erathem

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0 1 2 4 Kilometers

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28°10'0"E 28°12'0"E 28°14'0"E 28°16'0"E 28°18'0"E 28°20'0"E

26°2'0"S 26°4'0"S 26°6'0"S 26°8'0"S 26°10'0"S 26°12'0"S

Esselen Park Training College Campus

GIDZ Jewellery Manufacturing Site

Simmer and Jack Mine Houses

St Andrew's Presbyterian Church

Old Magistrate's Court

Old Post Office

Vlakplaats Farmhouse

Boksburg Conservation Areas,

St Michael and All Angels Church

Ehlanzeni
Commercia
Klipfontein View
Birch Acres
Birchleigh
Glen Marais
Chloorkop
Van Riebeeck Park
Allen Grove
Terenure
Aston Manor
Edleen
Modderfontein
Kempton Park
Pomona
Lakeside
Thornhill
Esther Park
Illiondale
Spartan
Bonaero Park
Rhodesfield
Jatniel
Country View
Benoni North AH
Brentwood
Goedeburg
Rynfield AH
Northmead
Clarens Park
Sebenza
Marais Steyn Park
Eastleigh
Klopperpark
Dunvegan
Meadowbrook
Elandsfontein Rail
Kruinhof
Sunnyrock
Impala Park
Farrarmere
Airfield
Wannenburghoogte
Ravensky
Hughes
Bardene
Lakefield
Beyers Park
Jansen Park
Kilfenora
Benoni
Berton Park
Lilianton
Ravenswood
Westdene
The Stewards
North Germiston
Germiston
Delmore Park
Georgetown
Comet
Boksburg North
Actonville
Wattville
Boksburg South
Plantation
Boksburg
Serengeti Golf Estate
O. R. Tambo International Airport
Pamula Park Nature Reserve
Sandpan Dam
Carlos Rolfes Bird Sanctuary
Homestead Dam
Kempton Park Golf Club
Modderfontein Golf Course
Avion Park
Bonaero Park Pan
Bullfrog Pan
Kruger Park
Benoni Country Club
Boksburg Cemetery

Legend

GIDZ Jewellery Manufacturing Precinct

Heritage Sites (SAHRA)

- Building
- Conservation Area

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0 1 2 4 6
Kilometers

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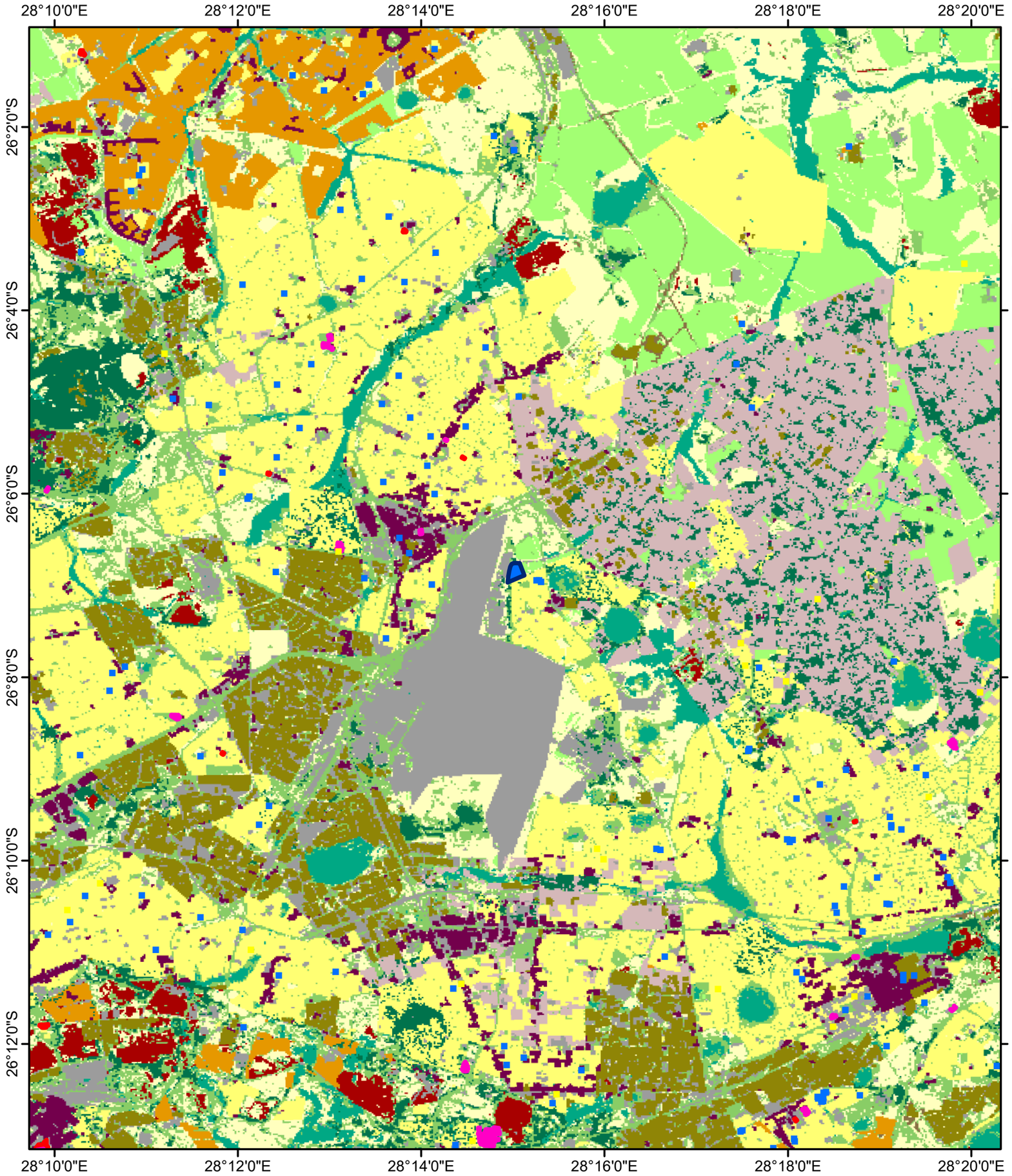

Legend

- GIDZ Jewellery Manufacturing Precinct
- Schools and Colleges
- Old Age Homes
- **Clinic**
- **Hospital**

55% Urban | 45% Rural

N
W E
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0 1 2 4 Kilometers

Land Cover Type

- Bare none vegetated
- Cultivated Land
- Subsistence Farming
- Erosion (donga)
- Grassland
- Indigenous Forest
- Natural Vegetation
- Mines
- Plantations
- Urban built-up
- Urban commercial
- Urban industrial
- Urban Informal
- Urban residential
- Urban smallholding
- Water/Wetlands

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28°15'0"E

28°15'15"E

26°6'45"S

26°7'0"S

Witkoppie 64 Ptn 30

Witkoppie 64 Ptn 69

64/38

Atlas Road

Bonaero Park Township

Bonaero Drive

Arlanda Street

Aldergrove Avenue

Cointrin Avenue

Dullies Place

Cote d'azur Avenue

Collondale Avenue

Ekuthuleni Ward 17

Ekuthuleni Ward 23

Anglo American

CEMAIR

Bonaero Park Primary School

1

3

4

5

6

7

8

9

10

L e g end

GIDZ Jewellery Manufacturing Precinct

Metcon Building

Other Buildings in Precinct

Parking Areas

Future Roads

Farm Portions

N

W

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0 100 200 Meters

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28°4'0"E
28°8'0"E
28°12'0"E
28°16'0"E
26°4'0"S
26°8'0"S
26°12'0"S

City of Johannesburg
Ekurhuleni

L e g end

GIDZ Jewellery Manufacturing Precinct

District (and Local) Municipalities

Locality

N
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0 2.5 5 Kilometers

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28°12'0"E 28°14'0"E 28°16'0"E 28°18'0"E

26°4'0"S 26°6'0"S 26°8'0"S 26°10'0"S

N W E S

GIDZ Jewellery Manufacturing Precinct Site

0 0.5 1 2 3 Kilometers

L e g end

GIDZ Jewellery Manufacturing Precinct

Soil Association (SOTER)

A2, Red and yellow, massive or weakly structured soils with low to medium base status (association of well drained Ferralsols, Acrisols and Lixisols)

A3, Red and yellow, massive or weakly structured soils with low to medium base status (association of well drained Ferralsols, Acrisols and Lixisols and one or more of Regosols, Leptosols, Calcisols and Durisols)

B1, Red, yellow and greyish soils with low to medium base status (association of Ferralsols, Acrisols, Lixisols and Plinthosols. In addition, other soils with plinthic and gleyic properties may also be present)

World Soils Harmonized World Soil Database - Hydric

Plinthsols (Poor Drainage)

Lixisols (Moderately Well Drained)

Acrisols (Poor Drainage)

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28°12'0"E
28°14'0"E
28°16'0"E
28°18'0"E
26°4'0"S
26°6'0"S
26°8'0"S
26°10'0"S

GIDZ Jewellery Manufacturing Precinct Site

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © - OpenStreetMap contributors, and the GIS User Community

Legend

GIDZ Jewellery Manufacturing Precinct

Soil Association (SOTER)

A2, Red and yellow, massive or weakly structured soils with low to medium base status (association of well drained Ferralsols, Acrisols and Lixisols)

A3, Red and yellow, massive or weakly structured soils with low to medium base status (association of well drained Ferralsols, Acrisols and Lixisols and one or more of Regosols, Leptosols, Calcisols and Durisols)

B1, Red, yellow and greyish soils with low to medium base status (association of Ferralsols, Acrisols, Lixisols and Plinthosols. In addition, other soils with plinthic and gleyic properties may also be present)

N
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0 0.5 1 2 3
Kilometers

MARANG environmental & associates

TALA SOLUTIONS
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28°14'0"E
28°14'30"E
28°15'0"E
28°15'30"E
26°6'0"S
26°6'30"S
26°7'0"S
26°7'30"S

Carletonville Dolomite Grassland

Soweto Highveld Grassland

GIDZ Jewellery Manufacturing Site

Eastern Temperate Freshwater Wetlands

Eastern Temperate Freshwater Wetlands

Legend

GIDZ Jewellery Manufacturing Precinct

Vegetation Status (SANBI)

Endangered

Vulnerable

N
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0 0,25 0,5 1

Kilometers

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28°12'0"E 28°14'0"E 28°16'0"E 28°18'0"E

26°4'0"S

26°6'0"S

26°8'0"S

26°10'0"S

A21

C21

C22

GIDZ Jewellery Manufacturing Precinct Site

Birch Acres
Glen Marais
Chloorkop
Allen Grove
Terenure
Edleen
Nimrod Park
Pomona
Esther Park
Kempton Park Golf Club
Festival Mall
Cresslawn
Spartan
Bonaero Park
Pamula Park Nature Reserve
Benoni North AH
Sebenza
Croydon
Isandovale
Goedeburg
Northmead
Rynfield A
Elandstontein
Kruinhof
Impala Park
Alphen Park
Farrarmere
Airfield
Homestead
Ravensky
Hughes
Carlos Rolfes Bird Sanctuary
O. R. Tambo International Airport
Atlas Mall

L e g end

GIDZ Jewellery Manufacturing Precinct

Rivers

Pans/Wetlands

Tertiary Catchments

N
W E
S

0 0.5 1 2 3 Kilometers

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

MARANG environmental & associates

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28°12'0"E 28°14'0"E 28°16'0"E 28°18'0"E

26°4'0"S

26°6'0"S

26°8'0"S

26°10'0"S

A21B

A21A

A21C

C21D

C22B

GIDZ Jewellery Manufacturing Precinct Site

Birch Acres
Glen Marais
Chloorkop
Allen Grove
Terenure
Edleen
Nimrod Park
Pomona
Esther Park
Kempton Park Golf Club
Festival Mall
Cresslawn
Spartan
Bonaero Park
Pamula Park Nature Reserve
Benoni North AH
Goedeburg
Northmead
Rynfield A
Sebenza
Croydon
Isandovale
Elandstontein Rail
Kruinhof
Carlos Refles Bird Sanctuary
Hughes
Homestead
Ravensky
Impala Park
Alphen Park
Farrarmere
Airfield
Atlas Mall
Northern Areas Sports Ground SC
O. R. Tambo International Airport

Legend

- GIDZ Jewellery Manufacturing Precinct
- Rivers
- Pans/Wetlands
- Quaternary Catchments

N
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0 0.5 1 2 3 Kilometers

MARANG environmental & associates

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28°14'40"E
28°15'0"E
28°15'20"E
28°15'40"E
26°6'20"S
26°6'40"S
26°7'0"S
26°7'20"S

Pom'ona Rd
Sarel Ave
Gottfried Ave
R21
M32
M45
M43
Great North Rd
Elgin St
Atlas Rd
Eldorado St
Friendship Rd
Harewood Rd
Essendon Ave
Midlanda Ave
Lanseria Rd
Bonaero Park Pan
Marignanery Ave
Glamorgan Ave
Aeroparque St
Bonaero Dr
Arranda St
Aldergrove Ave
Cote D'Azur Ave
Cointrin Ave
Collondale Ave
Barajas St
JBM Herzog Rd
Ciampino St
Ezeiza St
Esparagos St
Formebu Ave
Galeao Cres
Tempel Cres
Geldenhuys Rd
Carol Rd
O. R. Tambo International Airport

GIDZ Jewellery Manufacturing Site

Legend

- GIDZ Jewellery Manufacturing Precinct

Zoning (Ekurhuleni Municipality)

- Agriculture
- Business 2
- Business 3
- Community Facility
- Industrial
- Industrial 1
- Industrial 2
- Public Garage
- Public Open Space
- Public Services
- Residential 1
- Residential 3
- Residential 4
- Social Services
- Special
- Transportation

N
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0 100 200 400
Meters

MARANG
environmental & associates

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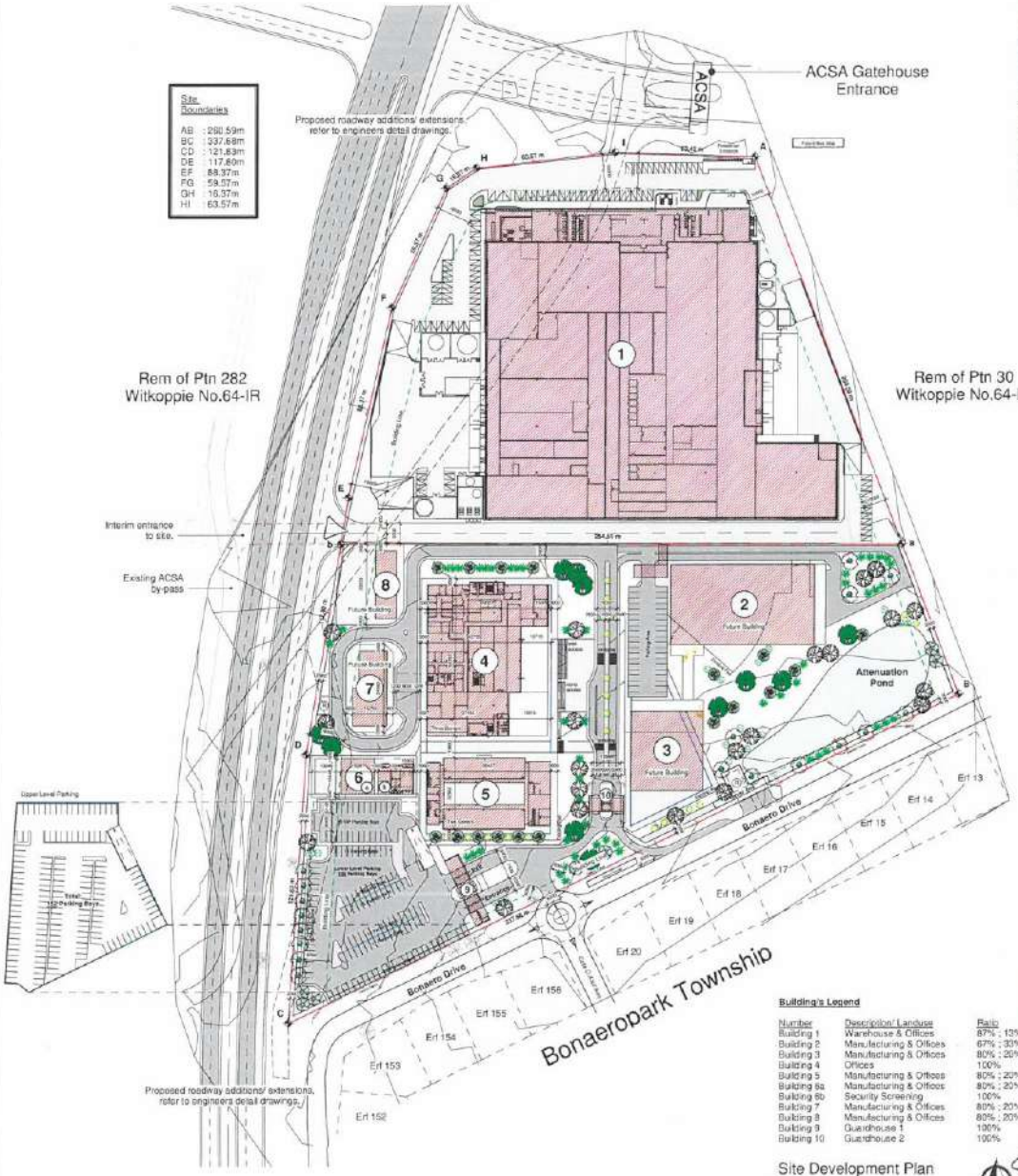

Locality Plan
N.T.S

SCHEDULE OF RIGHTS (ZONING)

Township:	Ekurhuleni Metropolitan Municipality
Erf/ Portion	Portion 282 of Witkoppie 64-IR
Street:	Bonaero Drive
Area of Erf:	74 291 m²
Building Lines:	Currently using 16m & 10m

ZONING INFORMATION

	Proposed	Provided
Use Zone	Industrial 1 & 3	Industrial
Height Zone	3 Storey's	3 Storey's
Floor Area Ration (F.A.R)	N/A	N/A
Coverage	70%	40%
Parking Ratios	1 / 100m² for Industrial 2 / 100m² for Offices	1 / 100m² for Industrial 2 / 100m² for Offices
Amendment Scheme	N/A	N/A

JEWELLERY MANUFACTURING PRECINCT

Area Schedule (incl. all floors/ storey's)

Building No.	Description	Area (m²) (ground floor)	(first floor)	(second floor)	Total Area (m²)
Building 1	Warehouse & Offices	14 061m²	2 460m²	n/a	20 760m²
Building 2	Manufacturing & Offices	2 562m²	2 562m²	n/a	5 124m²
Building 3	Manufacturing & Offices	862m²	1 162m²	1 162m²	3 176m²
Building 4	Offices	1 001m²	2 468m²	2 468m²	5 937m²
Building 5	Manufacturing & Offices	1 574m²	1 574m²	n/a	3 148m²
Building 6a	Manufacturing & Offices	240m²	240m²	n/a	480m²
Building 6b	Security Screening	217m²	n/a	n/a	217m²
Building 7	Manufacturing & Offices	674m²	674m²	674m²	1 022m²
Building 8	Manufacturing & Offices	292m²	292m²	292m²	876m²
Building 9	Guardhouse 1	28.2m²	n/a	n/a	28.0m²
Building 10	Guardhouse 2	22.2m²	n/a	n/a	22.0m²
				Grand Total	63 638m²

PARKING SCHEDULE

PARKING RATIOS
1. INDUSTRIAL : 1 PER 100 m² (GLA)
2. OFFICES : 2 PER 100 m² (GLA)

REQUIRED
1. INDUSTRIAL (LEASABLE AREA) : 20 275 m²
LEASABLE AREA / 100 m² x 1 = : 207 PARKING BAYS

2. OFFICES (LEASABLE AREA) : 11 338 m²
LEASABLE AREA / 100 m² x 2 = : 226 PARKING BAYS

PARKING BAYS REQUIRED : 433 PARKING BAYS
PARKING BAYS PROVIDED : 468 PARKING BAYS

Building's Legend

Number	Description/ Landuse	Ratio
Building 1	Warehouse & Offices	87% ; 13%
Building 2	Manufacturing & Offices	67% ; 33%
Building 3	Manufacturing & Offices	80% ; 20%
Building 4	Offices	100%
Building 5	Manufacturing & Offices	80% ; 20%
Building 6a	Manufacturing & Offices	80% ; 20%
Building 6b	Security Screening	100%
Building 7	Manufacturing & Offices	80% ; 20%
Building 8	Manufacturing & Offices	80% ; 20%
Building 9	Guardhouse 1	100%
Building 10	Guardhouse 2	100%

Site Development Plan
1:1000 | SDP/002

Ekurhuleni
APPROVED SUBJECT TO CONDITIONS
SPATIAL PLANNING
Town Planning
Establishment
T2120
See Circulation Stamp on page marked as Annexure A
DATE 11/10/2016
SIGNED
*Approval to be in conjunction with the letter dated 11/10/17 attached hereunto
*Circulation Stamp on A Plan labelled "Annexure A"

GENERAL NOTES:

FIGURED DIMENSIONS ONLY TO BE USED.

COORDINATES BASED ON WSG DATUM.

DISCREPANCIES, ERRORS AND OMISSIONS ARE TO BE REPORTED TO ENGINEERS IMMEDIATELY THEY BECOME EVIDENT.

SHOP DRAWINGS TO BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE OR INSTALLATION.

NOTES

1. Excavations for foundations and all reinforcing must be approved by the engineer before any concrete is cast.
2. All bases are symmetrical about the centre lines unless otherwise shown.
3. Specifications:
   Reinforced concrete work SABS 1200g
   Structural steel work SABS 1200H
   Formwork unpainted SABS 1200H
4. Concrete work: all brickwork are load bearing and must be constructed before commencing with the construction of the concrete slab.
5. Minimum concrete cover:
   Bases 75mm
   Columns 40mm
   Beams 25mm
   Slabs 12mm or less.
6. Concrete: all ready mixed concrete will only be approved if 5 mix design and cement grading by SABS is submitted to the engineer.
7. Test cubes: minimum must be tested by an independent soil laboratory.
8. All imported cement approved by SABS must be approved by the engineer on the bases of:
   All cement must be brought in one batch and tested to SABS 1200g.
   A mix design must be submitted.
   4 sets of 3 test cubes must be submitted with age of testing as follows:
   3 cubes @ 7days
   3 cubes @ 14days
   3 cubes @ 21days
   3 cubes @ 28days
   Concrete cube strength at 28 days:
   Blinding 15MPa
   Foundations 20MPa
   Columns 25MPa

Rv	Dat	Issued	Approve

GAUTENG PROVINCE
ECONOMIC DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

Phunga Consulting Engineers
Route 21 Corporate Park, Block C,
83 Regency Drive Irene,
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E-mail: info@phunga.co.za
Web: www.phunga.co.za

JMP SDP

Architectural Drawings

Project Name	JMP SDP
Project Number	JT/12
Project Address	Bonaero Drive, Bonaero Park Portion 282 of Witkoppie 64-IR
Project Description	Proposed New Building(s)

Building Name: Jewellery Manufacturing Precinct

Drawing Name: Site Development Plan

Drawing Number	Rev. Number
SDP/002	2
Date: 09/08/2017	Scale: As indicated

Drawn by:
Checked by:
Client Approval:

Appendix 6

Specialist Reviews & Assessments

Appendix 6A

Heritage Review

PROPOSED GIDZ JEWELLERY MANUFACTURING PRECINCT, O.R. TAMBO INTERNATIONAL AIRPORT, EKURHULENI METROPOLITAN MUNICIPALITY, GAUTENG PROVINCE

Heritage Screening Assessment – Final Report

Issue Date: **11 September 2018**

Revision No.: **1**

Project No.: **338 HIA**

PGS HERITAGE

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Offices in South Africa, Kingdom of Lesotho and Mozambique

Head Office:
906 Bergarend Streets
Waverley, Pretoria,
South Africa

Directors: HS Steyn, PD Birkholtz, W Fourie

Declaration of Independence

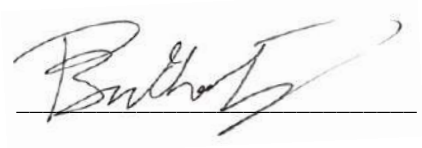
- I, Polke Birkholtz, declare that –
- General declaration:
- I act as the independent heritage practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting heritage impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

HERITAGE CONSULTANT: PGS Heritage (Pty) Ltd

CONTACT PERSON: Polke Birkholtz – Archaeologist/Heritage Specialist/Project Manager
Tel: +27 (0) 12 332 5305
Email:polke@pgsheritage.co.za

SIGNATURE: 

Report Title	Heritage Screening Assessment for the Proposed GIDZ Jewellery Precinct, O.R. Tambo International Airport, Ekurhuleni Metropolitan Municipality, Gauteng Province.		
Control	**Name**	**Signature**	**Designation**
Author	Polke Birkholtz		Heritage Specialist / Archaeologist / PGS Heritage

DETAILS OF CLIENT:

CLIENT: **Marang Environmental & Associates (Pty) Ltd**

CONTACT PERSON: **Mr Sindiso Lubisi**

The heritage impact assessment report has been compiled taking into account the NEMA Appendix 6 requirements for specialist reports as indicated in the table below.

NEMA Regs (2014) - Appendix 6	Relevant section in report
Details of the specialist who prepared the report	Page iii and Section 1.2
The expertise of that person to compile a specialist report including a curriculum vita	Section 1.2 – refer to **Appendix B**
A declaration that the person is independent in a form as may be specified by the competent authority	Page ii of the report
An indication of the scope of, and the purpose for which, the report was prepared	Section 1
The date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3
A description of the methodology adopted in preparing the report or carrying out the specialised process	Section 3
The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure	Not Appliccable
An identification of any areas to be avoided, including buffers	Not Appliccable
A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Not Appliccable
A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.3
A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment	Executive Summary & Section 6
Any mitigation measures for inclusion in the EMPr	Not Appliccable
Any conditions for inclusion in the environmental authorisation	Not Appliccable
Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Not Appliccable
A reasoned opinion as to whether the proposed activity or portions thereof should be authorised and	Executive Summary & Section 6
If the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	
A description of any consultation process that was undertaken during the course of carrying out the study	Not applicable. No public participation process was undertaken by PGS Heritage.
A summary and copies if any comments that were received during any consultation process	Not applicable. See comment above.
Any other information requested by the competent authority.	Not applicable. No consultation with the heritage authorities has as of yet taken place.

EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd was appointed by Marang Environmental & Associates (Pty) Ltd to undertake a Heritage Screening Assessment for the Proposed GIDZ Jewellery Precinct, O.R. Tambo International Airport, City of Ekurhuleni Metropolitan Municipality, Gauteng Province.

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) for a Basic Assessment (BA) that was undertaken in 2009 for the development of a jewellery manufacturing precinct near the O.R Tambo Airport. Construction work on the precinct that is authorised by the existing EA is at an advanced stage. However, the client is now required to undertake an EIA process for the inclusion of a new listed activity that will be occurring on their site. The existing EA authorised them an area 6.5 hectares in extent for the development. However, the site has been extended by 1 ha making the total extent of the site 7.5 ha. GIDZ are also including a new facility that requires an Air Emissions License (AEL). This heritage screening assessment forms part of the current environmental process as no heritage impact assessment was undertaken during the initial Basic Assessment.

A brief desktop study was undertaken which consisted of an assessment of old aerial photographs. Aerial photographs taken in 1941, 1952, 1969 and 1976 were obtained and included in the study. Neither one of these images depict any buildings or heritage sites within the study area. In 1941 a plantation was growing across the study area and its surroundings. Eleven years later, in 1952, this plantation had almost entirely been cut down. By 1969 the remaining trees from the plantation started growing and expanding again, albeit in an unmanaged way suggesting that the study area was not farmed or formally used for any particular purpose. By 1976 signs for earthworks and excavations within the study area started appearing, although sections of it still comprised trees.

The site was assessed in the field by way of a brief walkthrough undertaken by Polke Birkholtz, an experienced archaeologist / heritage specialist. The fieldwork showed that the study area is almost entirely disturbed and construction on the jewellery precinct is at an advanced stage.

The following recommendations are made:

- Despite the fact that study area was assessed by way of a detailed investigation of aerial photographs, no evidence for any buildings or heritage sites could be found on any of these old depictions of the study area. Furthermore, the walkthrough also did not reveal any evidence for archaeology or heritage, even though sections of intact soil profiles that were exposed by construction were scrutinised during the walkthrough. As a result, it is my professional opinion that there is no need for a Heritage Impact Assessment on this project.

TABLE OF CONTENTS

List of Appendices

TERMINOLOGY AND ABBREVIATIONS

Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 700 000 and 2 500 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa;

Holocene

The most recent geological time period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's, associated with iron-working and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Table 1 – List of abbreviations used in this report

Abbreviations	Description
AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
IAP	Interested and Affected Party
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
PSSA	Palaeontological Society of South Africa
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency

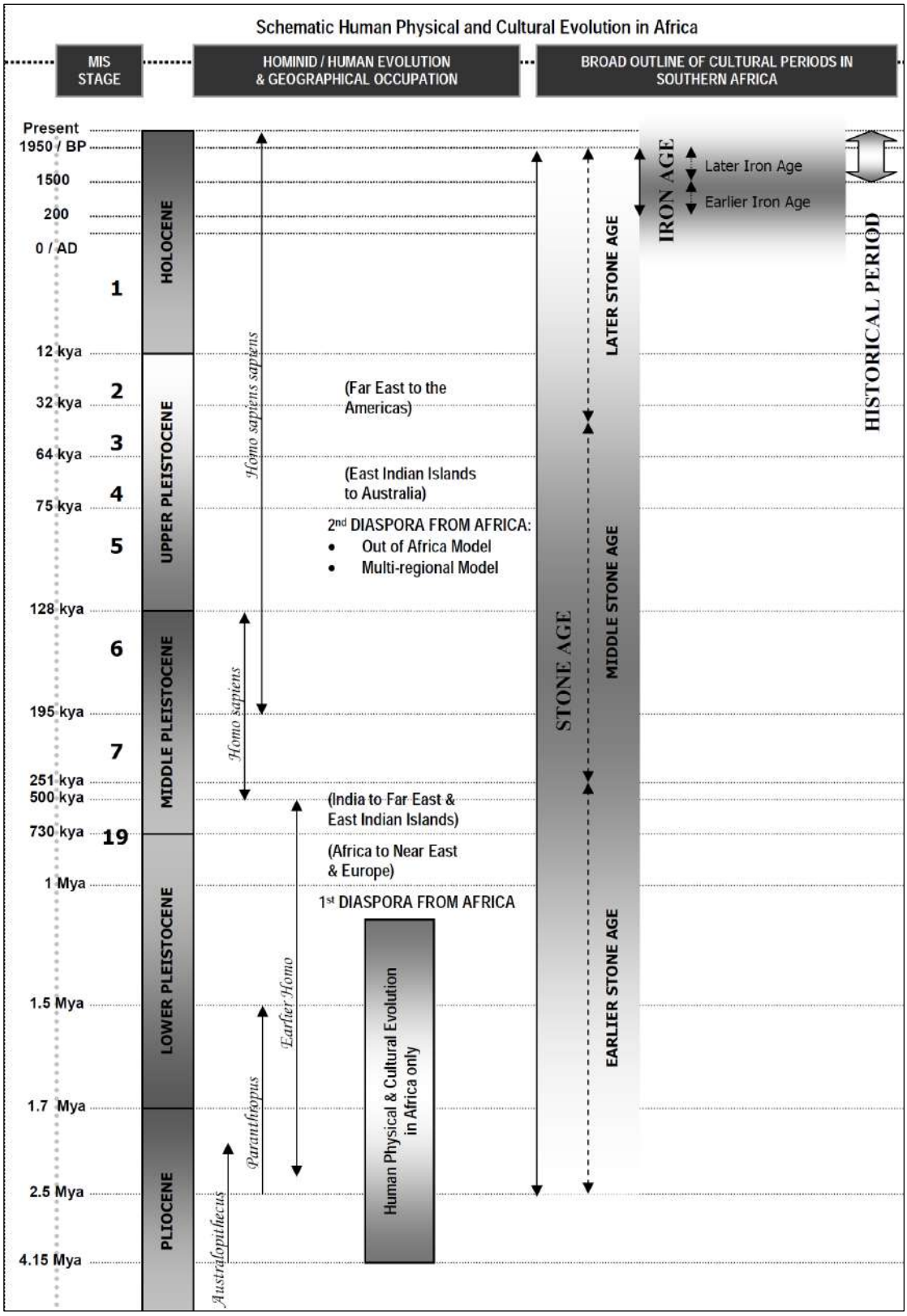


Figure 1 – Human and Cultural Timeline in Africa (Morris, 2008)

1 INTRODUCTION

PGS Heritage (Pty) Ltd was appointed by Marang Environmental & Associates (Pty) Ltd to undertake a Heritage Screening Assessment for the Proposed GIDZ Jewellery Precinct, O.R. Tambo International Airport, Ekurhuleni Metropolitan Municipality, Gauteng Province.

1.1 Scope of the Study

The aim of this Heritage Screening Assessment is to assess the potential of the study area for containing significant heritage sites and to establish whether an exemption from a Heritage Impact Assessment can be allowed.

1.2 Specialist Qualifications

This Heritage Screening Report was compiled by PGS Heritage (Pty) Ltd.

The staff at PGS has a combined experience of nearly 40 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes. PGS will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that work competently.

The following individuals were involved with this study:

- Mr Polke Birkholtz, the project manager and principal heritage specialist, is registered with the Association of Southern African Professional Archaeologists (ASAPA) as a Professional Archaeologist and is also accredited with the CRM Section of the same association. He has 18 years of experience in the heritage assessment and management field and holds a B.A. (cum laude) from the University of Pretoria specialising in Archaeology, Anthropology and History and a B.A. (Hons.) in Archaeology (cum laude) from the same institution.

1.3 Assumptions and Limitations

- This report is a Heritage Screening Assessment only. As a result, it does not represent a Heritage Impact Assessment for the proposed development, nor can it be used as such.
- As this study represents a Heritage Screening Assessment, no detailed field surveys of the proposed development area were undertaken. It is therefore necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area.

- This report and its conclusions did not assess or include any aspects relating to palaeontology.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- National Environmental Management Act (NEMA), Act 107 of 1998
- National Heritage Resources Act (NHRA), Act 25 of 1999
- Mineral and Petroleum Resources Development Act (MPRDA), Act 28 of 2002

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- National Environmental Management Act (NEMA) Act 107 of 1998
    - Basic Assessment (BEA) – Section (23)(2)(d)
    - Scoping Report (SR) – Section (29)(1)(d)
    - Environmental Impact Assessment (EIA) – Section (32)(2)(d)
    - Environmental Management Plan (EMPr) – Section (34)(b)
- National Heritage Resources Act (NHRA) Act 25 of 1999
    - Protection of Heritage Resources – Sections 34 to 36; and
    - Heritage Resources Management – Section 38
- Mineral and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
    - Section 39(3)

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the NHRA 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…” The NHRA is utilized as the basis for the identification, evaluation and management of heritage resources and in the case of CRM those resources specifically impacted on by development as stipulated in Section 38 of NHRA. This study falls under s38(8) and requires comment from the relevant heritage resources authority.

2 TECHNICAL DETAILS OF THE PROJECT

2.1 Locality

Study Area Coordinates	Northernmost point: S 26.112443 E 28.250484	Easternmost point: S 26.114889 E 28.252133
	Southernmost point: S 26.116180 E 28.249135	Westernmost point: S 26.113870 E 28.248823
Location	The study area is located east of the OR Tambo International Airport and north of Bonaero Drive. Its western and northern boundaries are defined by a service road. The study area is located within the Ekurhuleni Metropolitan Municipality, Gauteng Province.	
Property	Portion 282 of the farm Witkoppie 64 IR	
Topographic Map	2628AA & 2628AB	
Study Area Extent	The extent of the study area is approximately 9.3 hectares.	

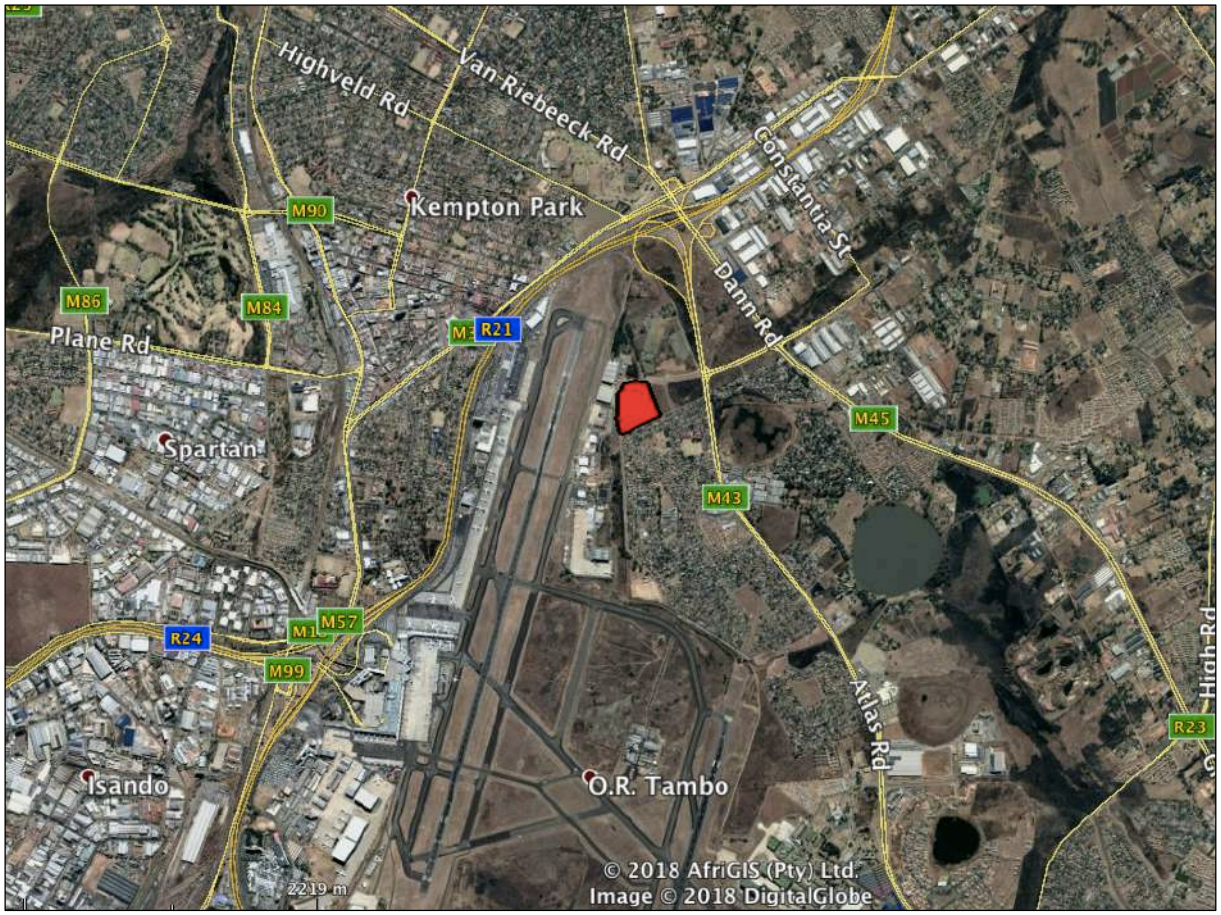


Figure 2 – Google Earth image depicting the study area within its wider surroundings.

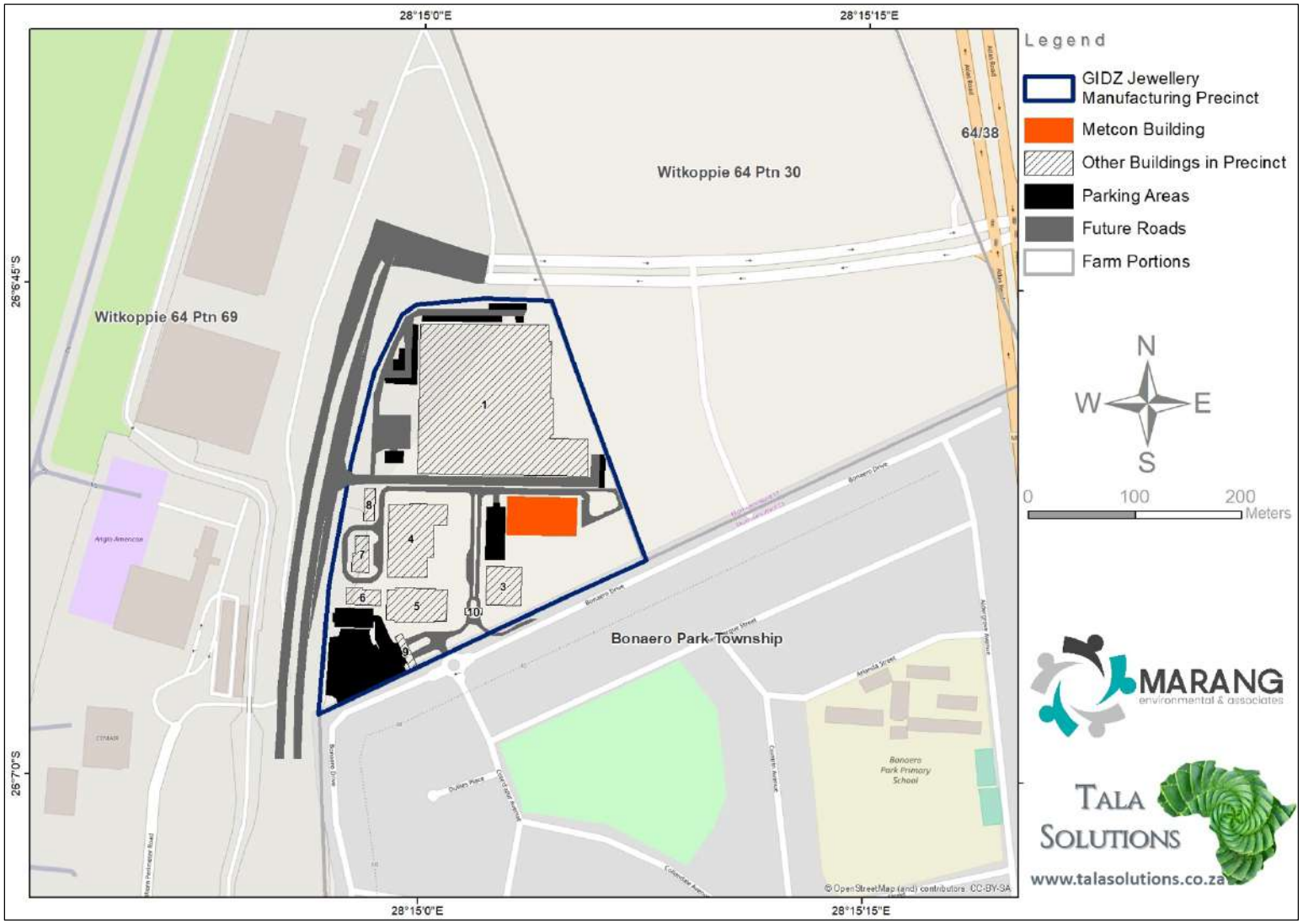


Figure 3 – This plan provided by the client depicts a closer of view of the study area and its surroundings. The study area boundary is shown in dark blue.

2.2 Technical Project Description

The following description for the proposed development was extracted from a Basic Assessment Report (File Name: 502971_JMP_BAR_20100329) that was provided by the client.

"*The proposed development entails the establishment of the first phase of an Industrial Development Zone (IDZ)…in the grounds of the OR Tambo International Airport. The IDZ was designated in 2001 by Alec Erwin, who was then the Department of Trade and Industry (DTI) minister.*

The application site… is situated on Airports Company South Africa (ACSA) Ltd land within the boundaries of OR Tambo International Airport. ACSA Ltd and the Gauteng Department of Economic Development (GDED) have signed a Heads of Agreement (HOA) with the intent of entering into a 40 year land lease. The site is adjacent to Bonaero Drive, Kempton Park, within the Ekurhuleni Metropolitan Municipality. The site is almost entirely surrounded by the OR Tambo International Airport grounds. The site is zoned "airport". Bonaero Park is the closest residential area to the project site.

The GDED are proposing the development of a Jewellery Manufacturing Precinct (JMP). The JMP will focus on the assembly of jewellery and incorporate retail outlets to benefit from the lucrative top-end of the value pipeline. It is anticipated that jewellery manufacturers from around the world shall assemble gold, diamond and other precious metal jewellery for export to the west. A training facility does not form part of this proposal. The developer intends to negotiate with existing training facilities in Gauteng where the training component can take place.

According to the Spatial Development Framework (SDF), the area in which the site is located is indicated for intense development. A feasibility study by Deloitte and Touche established the suitability of the site for a manufacturing precinct. In addition, the site is considered as adequate for an IDZ, as an IDZ requires a link to an international port. The OR Tambo International Airport is an international port, and the proximity of the JMP site to the airport will facilitate the export requirement of the development. The principle categories of input sectors expected to experience the largest impact are jewellery manufacturing equipment suppliers and the servicing thereof, as well as specialist services such as valuable assets transportation and security.

Development of the proposed project will therefore transform an undeveloped property into an investment. Not only will the development provide formalised employment after construction, but it will provide employment during its construction phase. The development would be able to provide approximately 3000 jobs during construction and about 500 specialised jobs after construction. The numbers for employment will depend on the market appetite."

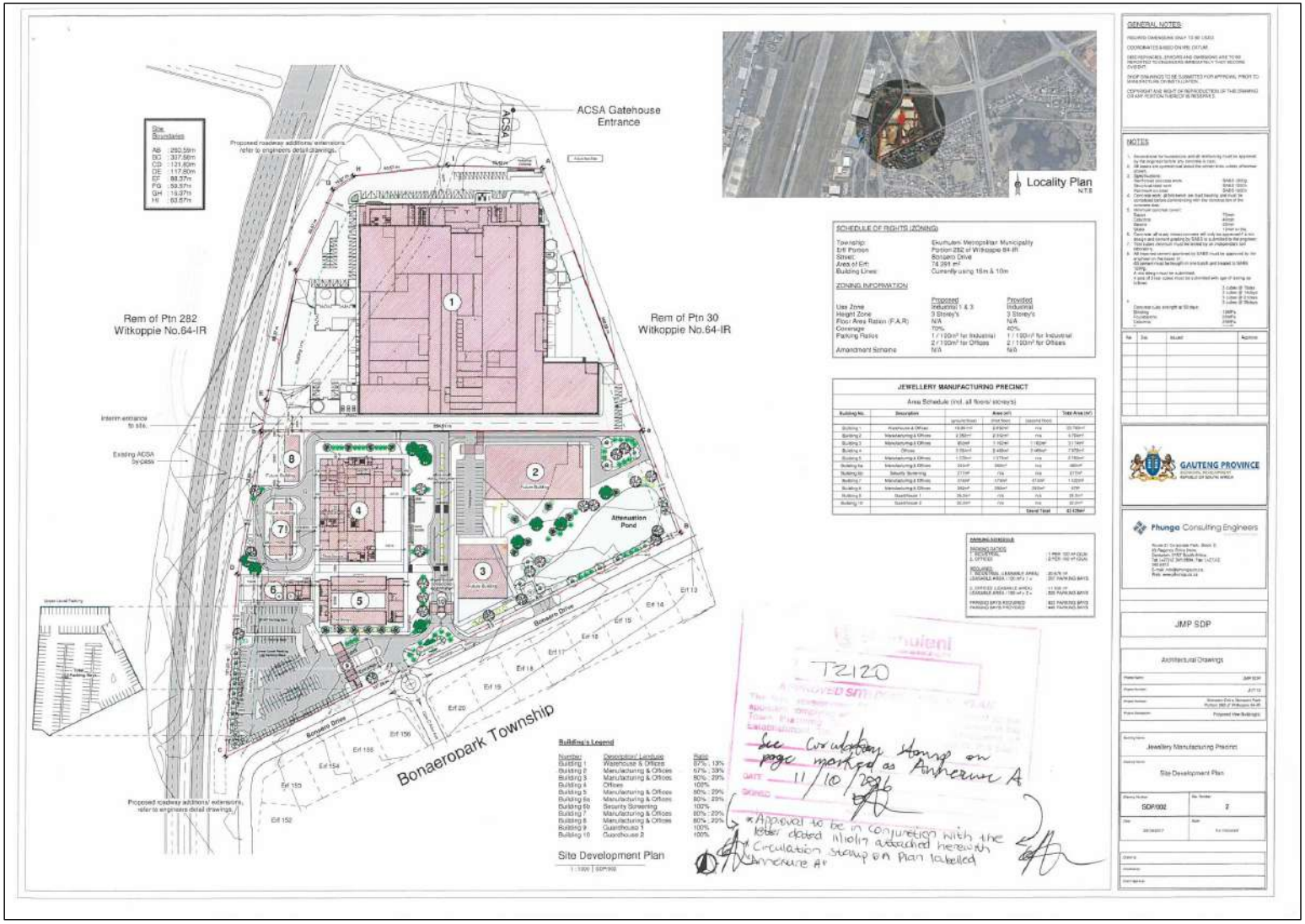


Figure 4 – Development Layout Plan for the Proposed Jewellery Precinct. Image supplied by client.

3 ASSESSMENT METHODOLOGY

3.1 Methodology for Assessing Heritage Site Significance

This report was compiled by PGS Heritage for the proposed Jewellery Precinct.

The methodology utilised for the undertaking of this Heritage Screening Assessment, will be outlined below.

Step I – Desktop Study: The desktop study focussed on the assessment of a single historic topographic sheet as a way of assessing the historic nature of the study area.

Step II – Fieldwork: A brief walkthrough of the study area was undertaken by an experienced archaeologist / heritage specialist (Polke Birkholtz). The fieldwork was undertaken on Friday, 7 September 2018. The fieldwork was aimed at establishing whether any significant heritage resources are located within the study area.

Step III – The final step involved the compilation of a Heritage Screening Assessment Report, which is this document.

The significance of heritage sites was based on five main criteria:

- site integrity (i.e. primary vs. secondary context),
- amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter)
    - Low - <10/50m2
    - Medium - 10-50/50m2
    - High - >50/50m2
- uniqueness and
- potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

A - No further action necessary;
B - Mapping of the site and controlled sampling required;
C - No-go or relocate development position
D - Preserve site, or extensive data collection and mapping of the site; and
E - Preserve site

Site Significance

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report (see **Table 2**).

Table 2 – Site significance classification as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High/Medium	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium	Recording before destruction
Generally Protected C (GP.C)	Grade 4D	Low	Destruction

3.2 Methodology for Impact Assessment

The impact assessment methodology used for the purposes of this study, was provided by Marang Environmental & Associates. Please refer **Annexure C** for an explanation of this impact assessment methodology.

4 DESKTOP STUDY FINDINGS

This brief desktop study comprises two components, namely an assessment of a historic topographic sheet to assess the historic nature of the study area as well as a brief discussion on palaeontology.

4.1 Early Farm Ownership History

The ownership history for the farm Witkoppie was located at the National Archives (National Archives, RAK, 2874). As the historic property description for the study area is not known, only the

early component of the farm ownership history will be discussed below.

The farm Witkoppie, which at the time comprised farm number 87 of the Suikerboschrand District, was first inspected on 24 April 1862 by J.G. Marais. On 13 January 1863 the farm was transferred to its first owner, Daniel Jacobus Oosthuizen. Oosthuizen remained in possession of the farm for more than five years. On 22 October 1868, the farm was transferred to Jacobus Steenkamp. Steenkamp owned the farm for only a year when, on 1 November 1869, the farm was transferred to Jan Hermanus Cronjé. For the subsequent three years, J.H. Cronjé remained in possession of the farm. On 28 February 1873 the farm was transferred to Abraham Cronjé, Johan Andries Muller and Cornelis Johannes Muller.

On 7 February 1874 a one third portion of the farm was transferred from Cornelis Johannes Muller to Daniel Wynand du Preez. On 18 April 1876, another one third portion of the farm was transferred from Abraham Cronjé to the same Daniel Wynand du Preez and on 20 February 1877 the third portion was transferred from Johan Andries Muller to Daniel Wynand du Preez. This last transaction meant that the entire farm was now owned by Daniel Wynand du Preez.

On 4 September 1886 the entire farm was transferred from Daniel Wynand du Preez to Charles Daniel Rudd, Cecil John Rhodes and Harry Stratford Caldecott. Cecil John Rhodes (5 July 1853 – 26 March 1902) was a famous British imperialist, businessman, mining magnate and politician. Charles Daniel Rudd (22 October 1844 – 15 November 1916) was a business partner of Rhodes and the two men *inter alia* were founding directors of the *De Beers Diamond Mine* (www.wikipedia.org). Harry Stratford Caldecott is known to have been a lawyer and Rudd's brother-in-law (Rotberg, 1990). The acquisition of the farm Witkoppie by mining men such as Rhodes and Rudd at this particular time was no coincidence. Seven months earlier, in February 1886, George Harrison had discovered an outcrop of the Witwatersrand Main Reef on the farm Langlaagte, a discovery which directly resulted in the Witwatersrand gold rush and establishment of Johannesburg (www.wikipedia.org). It is important to note that the acquisition of the farm Witkoppie by these three men did not mean that they had any intention of living on the farm or farming here. This acquisition was one of many that especially Rhodes and Rudd made during the rush for gold mining properties along the Witwatersrand during this time.

On 20 December 1888 three portions of the farm Witkoppie were transferred collectively from the three owners to each owner individually. In this way, Portion A was transferred to Cecil John Rhodes, Portion B to Charles Daniel Rudd and Portion C was transferred to Harry Stratford Caldecott. On 24 May 1889 the three portions were transferred from Rhodes, Rudd and Caldecott to the *Witkopje Estate and Gold Mining Company Limited*. On 31 March 1892, the three portions were transferred from the *Witkopje Estate and Gold Mining Company Limited* to Isaac Lewis. This meant that Isaac Lewis was now the owner of the entire farm Witkoppie. Lewis was an industrialist and businessman who for most of his life was in partnership with his friend and nephew Sammy

Marks under the business name *Lewis & Marks*. On 16 July 1892, the three farm portions were transferred from Isaac Lewis to the *New Witkopje Estate and Gold Mining Company Limited*.

The available farm ownership history ends with this transfer of 16 July 1892. It can be assumed that for the subsequent decades this history would have revolved around gold mining companies. Over time, individual persons would also have become owners of portions of the farm Witkoppie.

Figure 5 – This depiction of Cecil John Rhodes is a cropped section of a photograph that was published in Hammond (1935, opposite 274).

4.2 Historical Aerial Photographs

Aerial photographs provide a valuable tool in assessing the characteristics of a particular portion of land over time. A sequence of aerial photographs depicting the study area was obtained from National Geo-Spatial Information at the Department of Rural Development and Land Reform in Cape Town.

4.2.1 The 1941 Aerial Photograph

The 1941 aerial photograph (NGI, Aerial Photographs, 162_07_57193) represents the oldest aerial photograph depicting the study area that could be found. It was taken in October 1941. The following observations can be made from the depiction of the study area on this 1941 aerial

photograph:

- A plantation is located across the study area and its surroundings.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- No evidence for what is today known as the OR Tambo International Airport can be seen on the image.

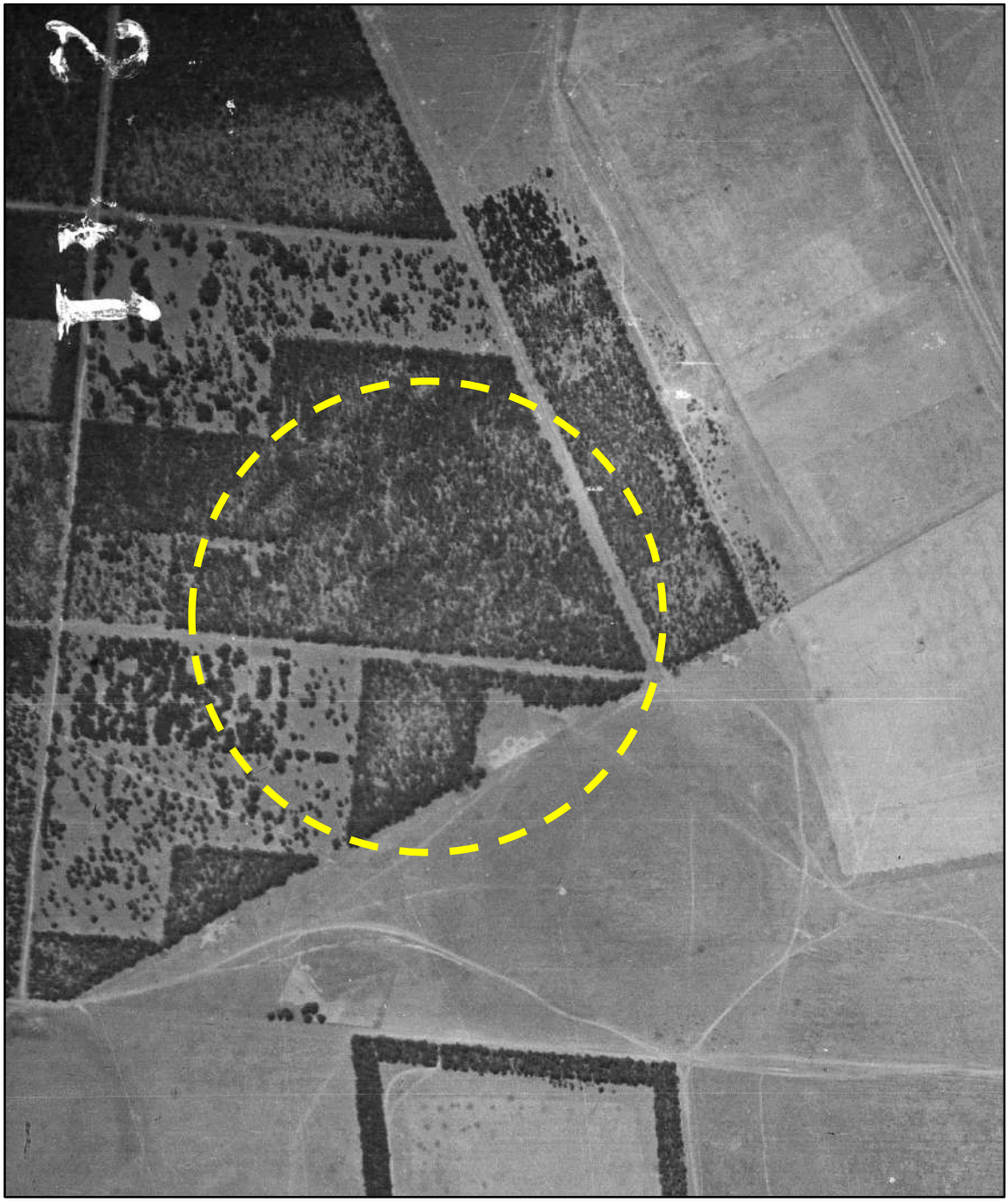


Figure 6 – Section of the 1941 photograph (NGI, Aerial Photographs, 162_07_57193) showing the study area and its surroundings. The approximate position of the study area is marked in stippled yellow line.

4.2.2 The 1952 Aerial Photograph

The 1952 aerial photograph (NGI, Aerial Photographs, 314_04_44444) represents the second oldest aerial photograph depicting the study area that could be found. This particular aerial photograph was taken on 12 March 1952. The following observations can be made from the depiction of the study area on this 1952 aerial photograph:

- The plantation which had characterised the study area on the 1941 aerial photograph, had almost entirely been removed on this 1952 aerial photograph.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- It is clear from the surroundings of the study area that construction work on what was then known as the Jan Smuts International Airport was already well underway. The main runway which at present extends some distance further to the north, was much shorter at the time (see bottom left corner of the depiction below).

Figure 7 – Section of the 1952 image (NGI, Aerial Photographs, 314_04_44444) showing the study area and its surroundings. The position of the study area is marked in stippled yellow line. The northern edge of the main runway at the airport can be seen in the bottom left-hand corner.

4.2.3 The 1969 Aerial Photograph

The 1969 aerial photograph (NGI, Aerial Photographs, 273_1969_02_7490) represents the third oldest aerial photograph depicting the study area that could be found. The following observations can be made from the depiction of the study area on this 1969 aerial photograph:

- Within the study area, the trees from the plantation which had been partially removed between 1941 and 1952, appear to have expanded in an uncontrolled way across the study area. A number of smaller saplings can be seen.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- The main runway at the airport was extended by some distance in a northern direction to its general position and length today.
- Immediately south of the study area, the residential area known as Bonaero Park is shown.

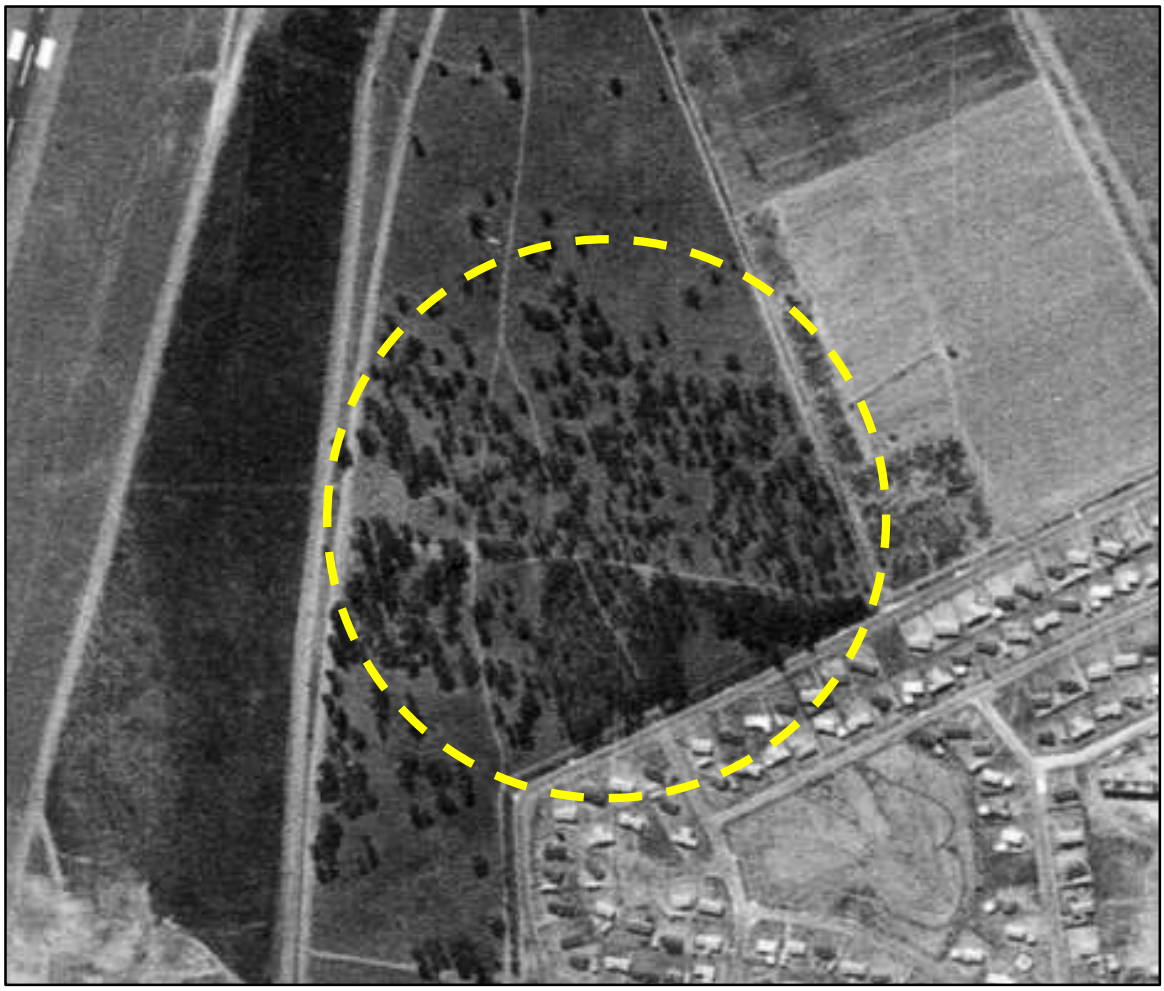


Figure 8 – Section of the 1969 photograph (NGI, Aerial Photographs, 273_1969_02_7490) showing the study area and surroundings. The position of the study area is marked in yellow stippled line. The residential area known as Bonaero Park is shown for the first time south of the study area. A section of the main runway at the airport can be seen in the top left-hand corner.

4.2.4 The 1976 Aerial Photograph

The 1976 aerial photograph (NGI, Aerial Photographs, 775_02_0282) represents the fourth oldest aerial photograph depicting the study area that could be found. This particular aerial photograph was taken on 8 June 1976. The following observations can be made from the depiction of the study area on this 1976 aerial photograph:

- Within the study area, sections of the plantation depicted on the 1941 aerial photograph, can still be seen. Some surface excavation and earthworks appear to have taken place within the study area.
- No buildings or other possible heritage features are shown within the study area or its immediate surroundings.
- In the surroundings of the study area, the first appearance of hangars on this side of the airport is shown. These first two hangars appear to be located where the hangars of the company Cem Air are located today.

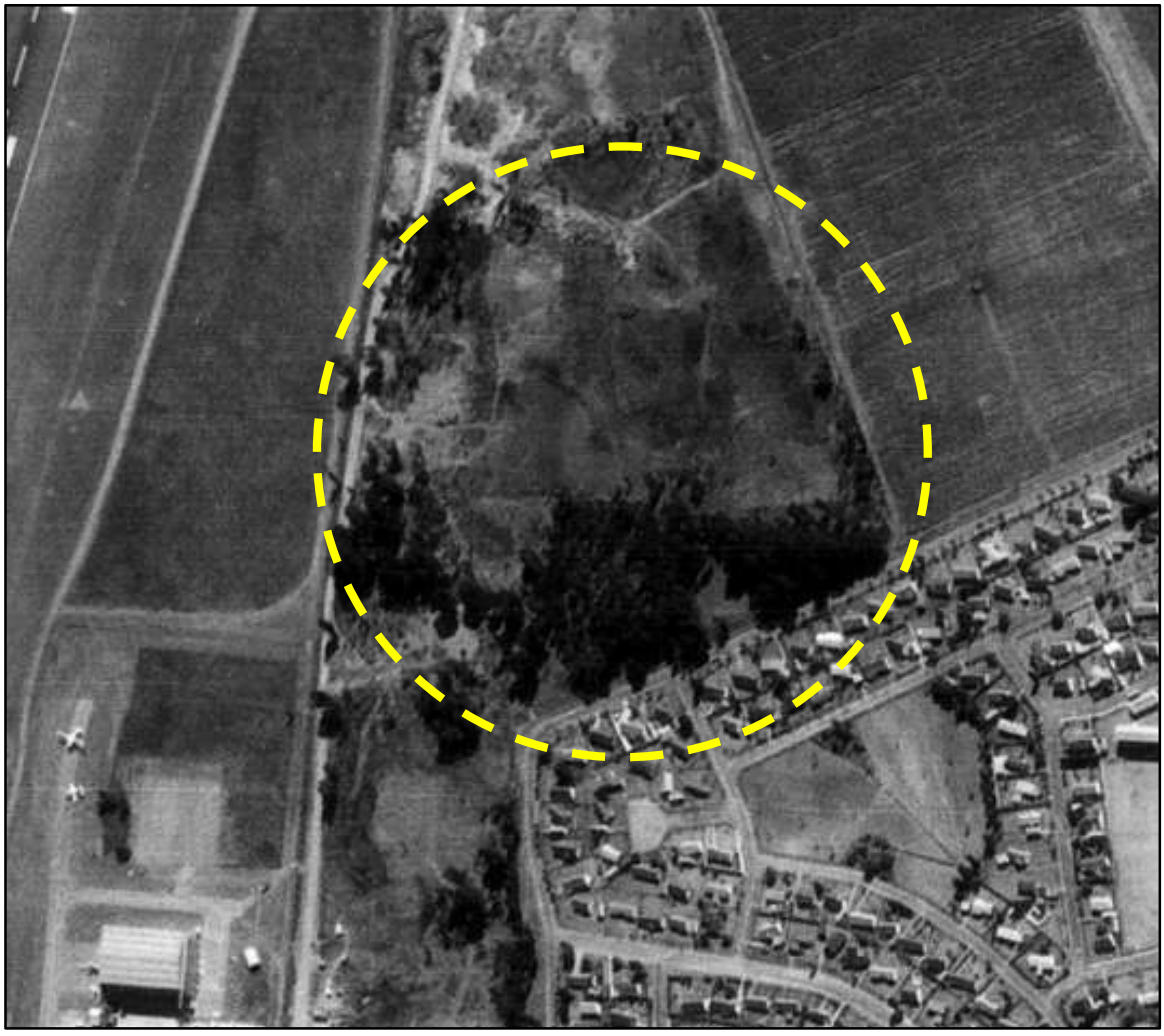


Figure 9 – Section of the 1976 photograph (NGI, Aerial Photographs, 775_02_0282) showing the study area and surroundings. The position of the study area is marked in yellow stippled line.

5 FIELDWORK FINDINGS

The fieldwork revealed that almost the entire study area can be described as disturbed. This is due to the fact that development commenced some time ago with construction now at an advanced stage.

The study area is currently characterised by a number of partially completed buildings and structures, with the remainder of the site consisting of levelled and terraced areas, a construction camp, roads, parking areas as well as a small dam.

During the walkthrough of the study area, a number of soil profiles exposed by construction work were investigated. There exposed soil profiles were especially found along the eastern and western ends of the study area.

No evidence for any archaeological or heritage sites could be found.

Figure 10 – General view of a section of the study area. The site is currently undergroing construction work

Figure 11 – General view along the western-central section of the study area.

Figure 12 – The partially completed main entrance gate located at the southern end of the study area can be seen in this image. Notice the terracing on the right.

Figure 13 – This dam is located on the south-eastern corner of the study area. Some of the houses from Bonaero Park can be seen in the back.

Figure 14 – General view across the soil profile that was exposed by construction work along the eastern boundary of the study area.

6 CONCLUSIONS AND RECOMMENDATIONS

PGS Heritage (Pty) Ltd was appointed by Marang Environmental & Associates (Pty) Ltd to undertake a Heritage Screening Assessment for the Proposed GIDZ Jewellery Precinct, O.R. Tambo International Airport, City of Ekurhuleni Metropolitan Municipality, Gauteng Province.

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) for a Basic Assessment (BA) that was undertaken in 2009 for the development of a jewellery manufacturing precinct near the O.R Tambo Airport. Construction work on the precinct that is authorised by the existing EA is at an advanced stage. However, the client is now required to undertake an EIA process for the inclusion of a new listed activity that will be occurring on their site. The existing EA authorised them an area 6.5 hectares in extent for the development. However, the site has been extended by 1 ha making the total extent of the site 7.5 ha. GIDZ are also including a new facility that requires an Air Emissions License (AEL). This heritage screening assessment forms part of the current environmental process as no heritage impact assessment was undertaken during the initial Basic Assessment.

A brief desktop study was undertaken which consisted of an assessment of old aerial photographs. Aerial photographs taken in 1941, 1952, 1969 and 1976 were obtained and included in the study. Neither one of these images depict any buildings or heritage sites within the study area. In 1941 a plantation was growing across the study area and its surroundings. Eleven years later, in 1952, this plantation had almost entirely been cut down. By 1969 the remaining trees from the plantation started growing and expanding again, albeit in an unmanaged way suggesting that the study area was not farmed or formally used for any particular purpose. By 1976 signs for earthworks and excavations within the study area started appearing, although sections of it still comprised trees.

The site was assessed in the field by way of a brief walkthrough undertaken by Polke Birkholtz, an experienced archaeologist / heritage specialist. The fieldwork showed that the study area is almost entirely disturbed and construction on the jewellery precinct is at an advanced stage.

The following recommendations are made:

- Despite the fact that study area was assessed by way of a detailed investigation of aerial photographs, no evidence for any buildings or heritage sites could be found on any of these old depictions of the study area. Furthermore, the walkthrough also did not reveal any evidence for archaeology or heritage, even though sections of intact soil profiles that were exposed by construction were scrutinised during the walkthrough. As a result, it is my professional opinion that there is no need for a Heritage Impact Assessment on this project.

7 PREPARERS

Polke Birkholtz - Project Manager / Archaeologist / Author

8 REFERENCES

8.1 Archival Sources

National Archives, RAK, 2874

8.2 National Geo-Spatial Information, Department of Rural Development

The historic aerial photographs used in this report were all obtained from National Geo-Spatial Information at the Department of Rural Development in Cape Town.

8.3 Google Earth Pro and Google Maps

All contemporary aerial views used in this report were obtained using Google Earth Pro and Google Maps.

Appendix A

Legislative Requirements – Terminology and Assessment Criteria

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation -

i. NEMA;
ii. National Heritage Resources Act (NHRA) Act 25 of 1999; and
iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002.

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

i. GNR 982 of 2014 (Government Gazette 38282) promulgated under the NEMA:
    a) Basic Assessment Report (BAR) – Regulations 19 and 23
    b) Environmental Scoping Report (ESR) – Regulation 21
    c) Environmental Impacts Report (EIR) – Regulation 23
    d) EMPr – Regulations 19 and 23
ii. NHRA:
    a) Protection of Heritage Resources – Sections 34 to 36; and
    b) Heritage Resources Management – Section 38
iii. MPRDA Regulations of 2014:
    a) Environmental reports to be compiled for application of mining right – Regulation 48.

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34 (1) of the NHRA 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…”. The NEMA (Act No 107 of 1998) states that an integrated EMP should, (23 -2 (b)) “…identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”. In accordance with legislative requirements and EIA rating criteria, the regulations of the South African Heritage Resources Agency (SAHRA) and the Association of Southern African Professional Archaeologists (ASAPA) have also been incorporated to ensure that a comprehensive legally compatible HIA report is compiled.

Appendix B

Project team CV's

POLKE DOUSSY BIRKHOLTZ

Professional Heritage Specialist / Professional Archaeologist / Director PGS Heritage

Name: *Polke Doussy Birkholtz*

Date & Place of Birth: *9 February 1975 – Klerksdorp, North West Province, South Africa*

Place of Tertiary Education & Dates Associated:

Institution: University of Pretoria
Qualification: BA (Cum Laude) - Bachelor of Arts Degree Specializing in Archaeology, History and Anthropology
Date: 1996

Institution: University of Pretoria
Qualification: BA Hons (Cum Laude) - Bachelor of Arts with Honours Degree Specializing in Archaeology
Date: 1997

Institution: National College of Photography
Qualification: Photography
Date: 1998

Qualifications:

BA	-	Degree specialising in Archaeology, History and Anthropology
BA Hons	-	Professional Archaeologist

Memberships:

Association of Southern African Professional Archaeologists (ASAPA)
Professional Member of the CRM Section of ASAPA

Overview of Post Graduate Experience:

1997 – 2000 – Member/Archaeologist – Archaeo-Info
2001 – 2003 – Archaeologist/Heritage Specialist – Helio Alliance
2000 – 2008 – Member/Archaeologist/Heritage Specialist – Archaeology Africa
2003 - Present – Director / Archaeologist / Heritage Specialist – PGS Heritage

Languages: English: Speak, Read & Write & Afrikaans: Speak, Read & Write

Total Years' Experience: 18 Years

Conference Papers:

- *Taking Small Steps in Augrabies Falls National Park. With Nico Schwartz and Lynne Simpson. South African National Parks: Towards Best Practice. Communities and Conservation. 15 – 19 May 2000. Berg en Dal Rest Camp, Kruger National Park.*

Books:

- *The Story of Voorspoed: A Historical and Archaeological appraisal of the Voorspoed Diamond Mining Company Limited (1906 -1912). Book written by Polke Birkholtz for De Beers Consolidated Mines.*

Experience Related to the Scope of Work:

- Polke has worked as a **HERITAGE SPECIALIST / ARCHAEOLOGIST / HISTORIAN** on more than 300 projects, and acted as **PROJECT MANAGER** on almost all of these projects. His experience include the following:

    - Development of New Sedimentation and Flocculation Tanks at Rand Water's Vereeniging Pumping Station, Vereeniging, Gauteng Province. Heritage Impact Assessment for *Greenline*.
    - EThekwini Northern Aqueduct Project, Durban, KwaZulu-Natal. Heritage Impact Assessment for *Strategic Environmental Focus*.
    - Johannesburg Union Observatory, Johannesburg, Gauteng Province. Heritage Inventory for *Holm Jordaan*.
    - Development at Rand Water's Vereeniging Pumping Station, Vereeniging, Gauteng Province. Heritage Impact Assessment for *Aurecon*.
    - Comet Ext. 8 Development, Boksburg, Gauteng Province. Phase 2 Heritage Impact Assessment for *Urban Dynamics*.
    - Randjesfontein Homestead, Midrand, Gauteng Province. Baseline Heritage Assessment with Nkosinathi Tomose for Johannesburg City Parks.
    - Rand Leases Ext. 13 Development, Roodepoort, Gauteng Province. Heritage Impact Assessment for *Marsh*.
    - Proposed Relocation of the Hillendale Heavy Minerals Plant (HHMP) from Hillendale to Fairbreeze, KwaZulu-Natal. Heritage Impact Assessment for *Goslar Environmental*.
    - Portion 80 of the farm Eikenhof 323 IQ, Johannesburg, Gauteng Province. Heritage Inventory for *Khare Incorporated*.
    - Comet Ext. 14 Development, Boksburg, Gauteng Province. Heritage Impact Assessment for *Marsh*.
    - Rand Steam Laundries, Johannesburg, Gauteng Province. Archival and Historical Study for *Impendulo* and *Imperial Properties*.
    - Mine Waste Solutions, near Klerksdorp, North West Province. Heritage Inventory for *AngloGold Ashanti*.
    - Consolidated EIA and EMP for the Kroondal and Marikana Mining Right Areas, North West Province. Heritage Impact Assessment for *Aquarius Platinum*.
    - Wilkoppies Shopping Mall, Klerksdorp, North West Province. Heritage Impact Assessment for *Centre for Environmental Management*.
    - Proposed Vosloorus Ext. 24, Vosloorus Ext. 41 and Vosloorus Ext. 43 Developments, Ekurhuleni District Municipality, Gauteng Province. Heritage Impact Assessment for *Enkanyini Projects*.
    - Proposed Development of Portions 3, 6, 7 and 9 of the farm Olievenhoutbosch 389 JR, City of Tshwane Metropolitan Municipality, Gauteng Province. Heritage Impact Assessment for *Marsh*.
    - Proposed Development of Lotus Gardens Ext. 18 to 27, City of Tshwane Metropolitan Municipality, Gauteng Province. Heritage Impact Assessment for *Pierre Joubert*.
    - Proposed Development of the site of the old Vereeniging Hospital, Vereeniging, Gauteng Province. Heritage Scoping Assessment for *Lekwa*.

- Proposed Demolition of an Old Building, Kroonstad, Free State Province. Phase 2 Heritage Impact Assessment for *De Beers Consolidated Mines*.
- Proposed Development at Westdene Dam, Johannesburg, Gauteng Province. Heritage Impact Assessment for *Newtown*.
- West End, Central Johannesburg, Gauteng Province. Phase 1 Heritage Impact Assessment for the *Johannesburg Land Company*.
- Kathu Supplier Park, Kathu, Northern Cape Province. Heritage Impact Assessment for *Synergistics*.
- Matlosana 132 kV Line and Substation, Stilfontein, North West Province. Heritage Impact Assessment for *Anglo Saxon Group* and *Eskom*.
- Marakele National Park, Thabazimbi, Limpopo Province. Cultural Resources Management Plan for *SANParks*.
- Cullinan Diamond Mine, Cullinan, Gauteng Province. Heritage Inventory for *Petra Diamonds*.
- Highveld Mushrooms Project, Pretoria, Gauteng Province. Heritage Impact Assessment for *Mills & Otten*.
- Development at the Reserve Bank Governor's Residence, Pretoria, Gauteng Province. Archaeological Excavations and Mitigation for the *South African Reserve Bank*.
- Proposed Stones & Stones Recycling Plant, Johannesburg, Gauteng Province. Heritage Scoping Report for *KV3*.
- South East Vertical Shaft Section of ERPM, Boksburg, Gauteng Province. Heritage Scoping Report for *East Rand Proprietary Mines*.
- Soshanguve Bulk Water Replacement Project, Soshanguve, Gauteng Province. Heritage Impact Assessment for *KWP*.
- Biodiversity, Conservation and Participatory Development Project, Swaziland. Archaeological Component for *Africon*.
- Camdeboo National Park, Graaff-Reinet, Eastern Cape Province. Cultural Resources Management Plan for *SANParks*.
- Main Place, Central Johannesburg, Gauteng Province. Phase 1 Heritage Impact Assessment for the *Johannesburg Land Company*.
- Modderfontein Mine, Springs, Gauteng Province. Detailed Archival and Historical Study for *Consolidated Modderfontein Mines.*
- Proposed New Head Office for the Department of Foreign Affairs, Pretoria, Gauteng Province. Heritage Impact Assessment for *Holm Jordaan Group*.
- Proposed Modification of the Lukasrand Tower, Pretoria, Gauteng Province. Heritage Assessment for IEPM.
- Proposed Road between the Noupoort CBD and Kwazamukolo, Northern Cape Province. Heritage Impact Assessment for *Gill & Associates*.
- Proposed Development at the Johannesburg Zoological Gardens, Johannesburg, Gauteng Province. Detailed Archival and Historical Study for *Matakoma.*

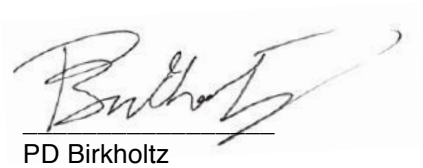
- Polke's **KEY QUALIFICATIONS:**

  - Project Management
  - Archaeological and Heritage Management
  - Archaeological and Heritage Impact Assessment
  - Archaeological and Heritage Fieldwork
  - Archival and Historical Research
  - Report Writing

- Polke's **INFORMATION TECHNOLOGY EXPERIENCE:**

    - *MS Office – Word, Excel, & Powerpoint*
    - *Google Earth*
    - *Garmin Mapsource*
    - *Adobe Photoshop*
    - *Corel Draw*

I, Polke Doussy Birkholtz, hereby confirm that the above information contained in my CV is true and correct.



PD Birkholtz

3 January 2018
Date

Appendix C

Impact Assessment Methodology

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Tel. 011 792 0880
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info@maranggroup.co.za
www.maranggroup.co.za

Marang Impact Rating Table

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken by making use of information that is available to the Environmental Assessment Practitioner (EAP) through the process of the EIA. The impact evaluation of predicted impacts will be undertaken through an assessment of the significance of the impacts. Each impact will be assessed through the **Construction**, **Operation** and **Decommissioning phases** of the prosed development. Where required, the proposed mitigation measure will be detailed.

Table 1 below provides an explanation of the parameters used to determine the significance of an impact, as well as what "significance" means in the context of this impact assessment. An example of the impact assessment table used to assess the environmental impact associated with the proposed development / activity are detailed below in **Table 2**.

Table 1: Description of parameters used to establish impact significance

Extent = E *(The area over which the proposed impact will be experienced).* **5**: International **4**: National **3**: Regional **2**: Local **1**: Site	***Reversibility = R*** *(The degree to which the proposed impact can be reversed upon completion of the proposed development/ activity).* **4**: Irreversible **3**: Barely Reversible **2**: Partly Reversible **1**: Completely Reversible
Status of Impact **+**: Positive (A benefit to the receiving environment) **N**: Neutral (No cost or benefit to the receiving environment) **-**: Negative (A cost to the receiving environment)	
Magnitude = M *(The severity of the proposed development/activity).* **5**: Very high/ don't know **4**: High **3**: Moderate **2**: Low **1**: Minor **0**: Not applicable/none/negligible	***Duration = D*** *(The timeframe for which the proposed impact will be experienced).* **5**: Permanent **4**: Long-term (ceases with the operational life) **3**: Medium-term (5-15 years) **2**: Short-term (0-5 years) **1**: Immediate **0**: Not applicable/none/negligible
Probability = P *(The likelihood / degree of certainty of the proposed impact occurring).* **5**: Definite/don't know **4**: Highly probable **3**: Medium probability **2**: Low probability **1**: Improbable	***Cumulative Effect = C*** *(The impact of the proposed development/ activity on the environmental parameter being assessed when added to other existing or potential impacts).* **4**: High Cumulative Impact **3**: Medium Cumulative Impact **2**: Low Cumulative Impact **1**: No Cumulative Impact **0**: Not applicable
Significance with be determined through the *Marang methodology for determining significance*.	

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Significance will be determined through a synthesis of the assessed impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:

(Extent + probability + reversibility + loss of resources+ duration + cumulative effect) x magnitude/intensity.

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Significance	***Environmental Significance Points***	***Colour Code***
High (positive)	>90	H
Medium (positive)	30 to 90	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -90	M
High (negative)	>-90	H

Table 2: Example of impact assessment table

IMPACT RATING TABLE FORMAT			
Item	**Description**	**Pre-mitigation impact rating**	**Post mitigation impact rating**
Environmental Parameter	Description of environmental impact		
Extent (E)	Description of the area over which the proposed impact will be experienced.	**2**	**1**
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	**4**	**2**
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	**2**	**1**
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	**4**	**1**
Duration (D)	Description of the time frame for which the proposed impact will be experience	**5**	**0**
Cumulative Effect (C)	Description of the impact of the proposed development / activity on	**4**	**0**

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	the environmental parameter being assessed when added to other existing or potential impacts.		
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	**5**	**2**
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	**- 105 (High negative)**	**10 (Low positive)**
Mitigation Measures	Detail the mitigation measures required to reduce the impacts that will arise from the proposed development / activity. The measures mentioned will be detailed in the EMPr as well.		

Appendix 6B

Surface Water / Freshwater Review

Scientific Aquatic Services

Applying science to the real world

29 Arterial Road West, Oriel, Bedfordview, 2047
Tel 011 616 7893
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www.sasenvironmental.co.za
admin@sasenvgroup.co.za

Name: Stephen van Staden
Date: Friday, 07 September 2018
Ref: SAS 218155

Marang Environmental and Associates (Pty) Ltd
Attention: Mr. Sindiso Lubisi

TECHNICAL MEMORANDUM

PEER REVIEW OF THE BASIC ASSESSMENT WITH SPECIFIC FOCUS ON FRESHWATER RESOURCE IMPACTS AND IMPACT ASSESSMENT FOR THE JEWELLERY MANUFACTURING PRECINCT NEAR THE OR TAMBO AIRPORT, GAUTENG TO DETERMINE ADEQUACY FOR DECISION MAKING ON THE AMENDMENT APPLICATION

OVERVIEW

From the results of the review, it was determined that the findings of the Basic Assessment Report (BAR) are likely to still hold true but are not absolute.

The recommendations presented in the BAR and Environmental Management Programme (EMPr) are appropriate, relevant/necessary, sensible and achievable; and the proposed mitigatory measures are considered the best options available.

Additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required have been provided in the report.

The information on the adjacent wetlands has been presented, at a high level, in the report. This information was used to inform the impact assessment undertaken according to the Marang Impact Rating methodology.

Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on the freshwater resources of the area. Due to the distance between the activities and the watercourses in the area, and the presence of existing developments between the study area and watercourses of the area, limited to negligible impact from the proposed activities on the wetlands is expected to occur.

Fulfilment of Regulation GN509 of 2016 now needs to be considered within all areas within 500m of the proposed development site. As such, the Department of Water and Sanitation (DWS) Risk Assessment Matrix as promulgated in Regulation GN509 of 2016 and the appropriate water use authorisation process will be undertaken.

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) following the undertaking of a Basic Assessment (BA) prepared in 2007 for the development of a jewellery manufacturing precinct near the O.R Tambo International Airport.

Their EA authorised them for 6 ha for the development however the site has been extended by 1.5 ha making the total site 7.5 ha. They are also including a new facility that requires an Air Emissions License (AEL), namely a Precious Metals Refinery facility. After consultation with the Department of Environmental Affairs (DEA) by the lead consultant, regarding their application, the DEA has advised that since construction has already commenced on the site that appropriately qualified specialists should be consulted to review the original BA that was undertaken to confirm if the findings in the BA still hold true at the current time.

Scientific Aquatic Services was duly appointed to review the Basic Assessment Report Prepared by Strategic Environmental Focus (SEF), 2007 considering:

1. Soil, Land use and land capability;
2. Biodiversity with specific mention of freshwater ecology; and
3. Visual impacts.

In addition, SAS deemed it appropriate to contribute to the peer review of the BAR by presenting additional information from desktop sources and national and provincial databases to assist with decision making. These results are presented in this document.

Furthermore, an impact assessment was undertaken according to the Marang Impact Rating methodology. The results of the impact assessment in this technical memorandum should be used to guide further decision making considering changes to the intended land use of the area.

It must be noted that the review of the work was undertaken purely as a desktop exercise since the site had already been cleared and thus it was deemed more beneficial to review historical digital satellite imagery than to visit the site.

The results of the desktop analysis, wetland review and Freshwater Impact Assessment are presented below.

FRESHWATER RESOURCE DESKTOP ANALYSIS

The following section contains data accessed as part of the desktop assessment and is presented as a “dashboard” report below (Table 1). The dashboard report aims to present concise summaries of the data on as few pages as possible in order to allow for integration of results by the reader to take place. Where required, further discussion and interpretation is provided, and information that was considered to be of particular importance was emboldened.

It is important to note that although all data sources used provide useful and often verifiable, high quality data, the various databases used do not always provide an entirely accurate indication of the study area’s actual site characteristics. Thus, this data was used as a guideline to inform the assessment and areas where increased conservation importance is indicated were focused on.

Table 1: Desktop data relating to the characteristics of the study area.

Aquatic ecoregion and sub-regions in which study area is located		Detail of study area in terms of the National Freshwater Ecosystem Priority Area (NFEPA) (2011) database	
Ecoregion	Highveld	River FEPA	The study area is situated within a sub-quaternary catchment considered an upstream management area, indicating that human activities need to be managed to prevent the downstream degradation of FEPAS and Fish Support Areas.
Catchment	Limpopo		
Quaternary Catchment	A21A		
WMA	Crocodile (West) and Marico	NFEPA Wetlands	The NFEPA Database indicates a natural flat wetland situated in the western portion of the study area. Additionally, one natural depression feature is situated approximately 460m east of the study area, situated within the investigation area. Furthermore, according to NFEPA these wetland features are in a heavily to critically modified ecological condition.
subWMA	Upper Crocodile		
Dominant characteristics of the Highveld Ecoregion Level 2 (11.01) (Kleynhans *et al.*, 2007)			
Dominant primary terrain morphology	Plains; low relief		
Dominant primary vegetation types	Rocky Highveld Grassland, Mixed Bushveld	NFEPA Rivers	According to the NFEPA Database there are no rivers associated with the study area, nor are there any rivers situated within a 5km radius of the study area.
Altitude (m a.m.s.l)	1300 to 1900		
MAP (mm)	500 to 700	Wetland Vegetation Type	The study area falls within the Mesic Highveld Grassland Group 3 wetland vegetation type, considered to be Least Threatened (SANBI, 2012; Mbona *et al*, 2014).
Coefficient of Variation (% of MAP)	20 to 34		
Rainfall concentration index	55 to 64	Detail of study area in terms of the Gauteng Conservation Plan (C-Plan V3.3, 2011) (Figures 7 and 8)	
Rainfall seasonality	Early to mid summer	Wetland and River Buffer	According to the Gauteng C-Plan there are no wetland or river buffers associated with the study area, however a pan buffer is associated with the investigation area (within 500m).
Mean annual temp. (°C)	14 to 18		
Winter temperature (July)	0 to 20	Ecological Support Area (ESA)	The north western corner of the study area is situated within an Ecological Support Area. ESAs are defined by GDARD as natural, near-natural, degraded or heavily modified areas required to be maintained in an ecologically functional state to support CBAs and/or Protected Areas.
Summer temperature (Feb)	12 to 30		
Median annual simulated runoff (mm)	20 to 60		
Ecological Status of the most proximal sub-quaternary reach (DWS, 2014)		Urban Edge and Gauteng Environmental Management Framework (2015)	Although rescinded as a policy document in the Gauteng Spatial Development Framework in 2011, the Urban Edge nevertheless remains a useful indicator of where concentration [of development] should occur. According to the Gauteng C-Plan (2011) and the Gauteng Environmental Management Framework (EMF, 2015), the study area is located within the Urban Edge and the eastern half of the study area is situated within the EMF Zone 5 (Industrial and large commercial focus zone).
Sub-quaternary reach	A21A – 01178 (Rietvlei River)		
Proximity to study area	±8.8km northeast of the study area		
Assessed by expert?	Yes		
PES Category Median	Largely Modified (D)		
Mean EI Class	Moderate		
Mean ES Class	Moderate		
Stream Order	1		
Default Ecological Class based on median PES and highest EI/ ES mean	Moderate (C)		

CBA = Critical Biodiversity Areas; DWS = Department of Water and Sanitation; EI = Ecological Importance; ES = Ecological Sensitivity; ESA = Ecological Support Area; m.a.m.s.l = Meters Above Mean Sea Level; MAP = Mean Annual Precipitation; NFEPA = National Freshwater Ecosystem Priority Areas; PES = Present Ecological State; WMA = Water Management Area

Figure 1: Natural wetlands associated with the study area and investigation area, according to NFEPA (2011).

Figure 2: The Ecological Support Area (ESA) associated with the study area according to the Gauteng C-Plan V3.3 (2011).

Figure 3: The pan buffer associated with the investigation area according to the Gauteng C-Plan (2011).

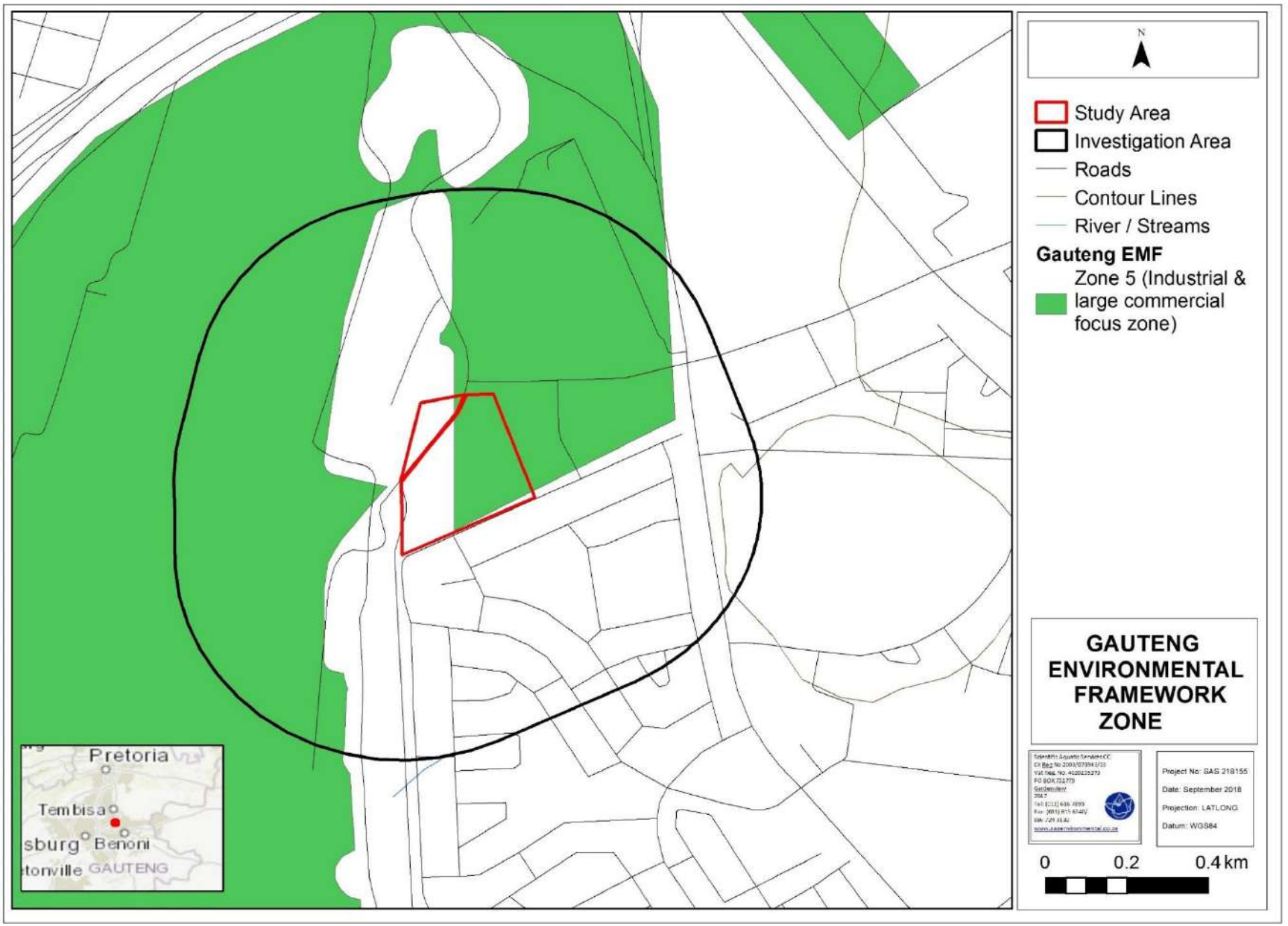

Figure 4: The Gauteng Environmental Management Framework Zone 5 applicable to the study area (Gauteng EMF, 2015).

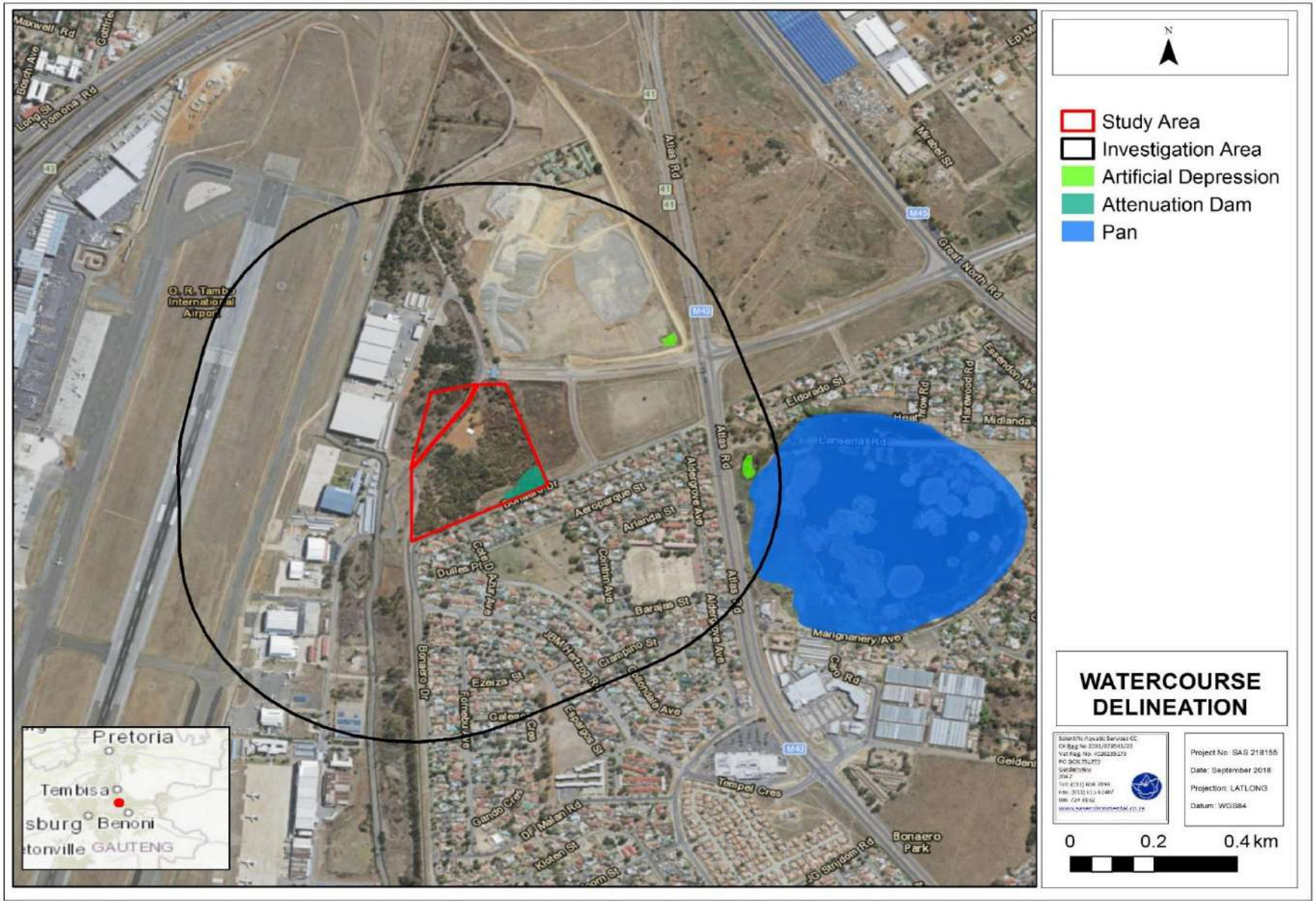

Figure 5: The watercourses identified and delineated within the investigation area, using desktop method.

PEER REVIEW OF WETLAND ASSESSMENT

Table 2: Review Outcomes of the biodiversity assessments prepared as part of the Basic Assessment Report undertaken by SEF in 2011.

ASSESSMENT CRITERION	COMMENTS
1. Determining acceptability of the terms of reference.	As far as can be determined no terms of reference were provided to a specialist to undertake a specialist biodiversity assessment and only a basic desk-based investigation and brief site investigation was undertaken by the EAP.
2. Assess the document/ report in terms of its fulfilment of the Terms of Reference set.	As far as can be determined no specialist was appointed to develop a specialist biodiversity assessment and specifically a freshwater ecological study was undertaken and the information presented in the EIA is based on desktop sources of information by the EAP. Given the nature of the development this approach was considered acceptable for the time at which the work was prepared, however in light of the requirements for the fulfilment of Regulation GN509 of 2016 wetlands now need to be considered within all areas within 500m of the proposed development site. The information presented in Appendix C has aimed to address this requirement at a high level.
3. Consider whether the report is entirely objective.	The biodiversity information presented in this study can be considered objective however it is largely based on desktop studies and brief site investigations, and important information such as dominant vegetation and observed faunal species is not presented which limits the degree to which readers of the document can formulate an accurate opinion.
4. Determining whether the methodology is clearly explained and acceptable.	Although current best practice methodologies were not utilised, the information presented can be considered acceptable to allow for reasonably informed decision making given the location and context of the development. Some information on the impact or risk of loss of biodiversity resources is lacking but this is not considered a fatal flaw to the basic assessment given the location and context of the project at the time of assessment. However, in light of the requirements for the fulfilment of Regulation GN509 of 2016 wetlands now need to be considered within all areas within 500m of the proposed development site the work produced by SEF in 2007 now has gaps which need to be filled in fulfilment water use authorisation processes.
5. Evaluate the validity of the findings and consider whether the report is technically, scientifically and professionally credible (review data evidence).	The findings presented in the BAR considering biodiversity are based on a brief desktop assessment and site observations by the EAP and were not verified by a specialist ecologist.
6. Discuss the suitability of the mitigation measures and recommendations and consider whether the recommendations presented are sensible and present the best options and identify any short comings and mitigation measures to address the short comings.	The recommendations presented are appropriate, relevant/necessary, sensible and achievable, and the proposed mitigatory measures are considered the best options available. Given that a detailed specialist biodiversity assessment was not undertaken a search and rescue for any protected species would have been appropriate and should have been included as a mitigatory measure.

ASSESSMENT CRITERION	COMMENTS
7. Indicate whether the article is well-written and easy to understand and to ensure that the work has adequately assessed the impacts of the proposed development.	The information on biodiversity is concise and easy to read; and allows for easy assimilation by the reader.
8. To provide an independent opinion of the report, whether it is well written and easy to understand and ensure the work meets current requirements/best practice and normal standards of professional practice and competence have been met.	Based on the findings of this review it is the opinion of the independent reviewer that: ➢ Although the outcome of the study and final reasoned opinion is unlikely to change substantively, the results presented in this report are based on desktop assessment and a brief field investigation by the EAP during the study, thus the technical and scientific validity of the information is not absolute; ➢ The recommendations presented are appropriate, relevant/necessary, sensible and achievable; ➢ The proposed mitigatory measures are considered the best options available; and ➢ Scientific Aquatic Services attempted to address the shortcomings by providing information from the latest databases to assist in decision making.

FRESHWATER IMPACT ASSESSMENT

Table 3 presents the significance of potential impacts on the ecology of the wetlands associated with the proposed precious metal refinery facility and its investigation area. In addition, it also indicates the required mitigatory measures needed to minimise the perceived impacts of the proposed development and presents an assessment of the significance of the impacts taking into consideration the available mitigatory measures and assuming that they are fully implemented. The Marang Impact Rating Table, which was used to undertake the Impact Assessment, is presented in Appendix B.

Consideration of impacts and application of mitigation measures

Following the assessment of the wetlands, an impact assessment (as provided by Marang, Appendix B) was applied to ascertain the significance of perceived impacts on the key drivers and receptors (hydrology, water quality, geomorphology, habitat and biota) of the assessed wetlands associated with the proposed precious metal refinery facility.

Following the impact assessment, mitigation measures were compiled to serve as guidance throughout the construction and operational phase. The points below summarise the considerations undertaken:

- None of the proposed activities associated with the precious metal refinery facility are located in near proximity to the identified wetland. However, a portion of the study area is located within the GN509 Zone of Regulation of a wetland (pan); and
- Due to the small footprint area of the proposed precious metal refinery facility within the 500m GN509 Zone of Regulation of the wetland, limited to negligible impact from the proposed activities is expected. Nevertheless, impacts such as impaired water quality due to contaminated runoff are possible.

Table 3: Results of the freshwater impact assessment.

Item	Pre-mitigation impact rating	Post-mitigation impact rating
Construction Phase		
Environmental Parameter (Activity)	Site preparation prior to construction activities related to the construction of the proposed precious metal refinery facility, including placement of contractor laydown areas and storage facilities within the 500m GN509 Zone of Regulation of a wetland.	
Potential Impacts	* Earthworks, leading to the exposure of soils, and thus to increased runoff, erosion, and the potential for sedimentation of the wetlands; * Soil stockpiling; * Increased sedimentation of the wetland habitat, leading to changes in instream habitat and potentially altering surface water quality (if present); * Decreased ecoservice provision by the wetlands; and * Proliferation of alien vegetation due to disturbances.	
Extent (E)	2	2
Probability (P)	2	1
Reversibility (R)	2	1
Loss of Resources (L)	1	1
Duration (D)	2	2
Cumulative Effect (C)	2	1
Magnitude or Intensity (M)	1	1
Environmental Significance	-11 (Low)	-8 (Low)

Item	Pre-mitigation impact rating	Post-mitigation impact rating
Mitigation Measures	* Contractor laydown areas and material storage facilities must be placed within the study area and must not be placed within 30m of the wetlands in line with GDARD and NEMA requirements; * All vehicle re-fuelling is to take place on a sealed surface within the study area and must not be permitted to occur within 30m of the wetlands; * All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is absolutely essential; * Retain as much indigenous vegetation as possible; * Excavated materials should not be contaminated, and it should be ensured that the minimum surface area is taken up, however, the stockpiles may not exceed 2m in height; * All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion and sedimentation of the wetlands; and * Immediate revegetation of all stockpiles which are to remain on site post-construction.	
Operational Phase		
Environmental Parameter (Activity)	Operation of the precious metal refinery facility.	
Potential Impacts	* Contaminated runoff may reach the wetlands resulting in impaired surface water quality.	
Extent (E)	2	2
Probability (P)	2	1
Reversibility (R)	2	2
Loss of Resources (L)	2	2
Duration (D)	1	1
Cumulative Effect (C)	2	1
Magnitude or Intensity (M)	2	1
Environmental Significance	-22 (Low)	-9 (Low)
Mitigation Measures	* Clean and dirty water management must take place in order to prevent contaminated runoff from the precious metal refinery facility creating preferential flow paths which may reach the wetlands. Clean and dirty water management systems must be implemented prior to commencement of construction; and * Suitable waste disposal facilities should be provided. These facilities should regularly be emptied and taken to a registered waste disposal facility; and * All recyclable waste should be recycled as far as possible.	

Based on the outcome of the impact assessment, all the activities associated with the construction and operational phases were determined to have a low impact significance on the wetlands, prior to and following the implementation of mitigation measures. This is mainly due to the distance between the activities and the wetlands, and the presence of existing development between the study area and wetlands. However, specific mitigation measures as provided in Table 3 are recommended to be implemented to ensure a very low impact significance and reduce overall potential impacts to the wetlands.

CONCLUSION

The GIDZ currently have an EA following the undertaking of a BA prepared in 2007 for the development of a jewellery manufacturing precinct near the O.R Tambo International Airport. The EA authorised them for 6 ha for the development however the site has been extended by 1.5 ha making the total site 7.5 ha. They are also including a new facility that requires an AEL, namely a Precious Metals Refinery facility.

After consultation with the DEA by the lead consultant, regarding their application, the DEA has advised that since construction has already commenced on the site that appropriately qualified specialists should be consulted to review the original BA that was undertaken to confirm if the findings in the BA still hold true at the current time.

Scientific Aquatic Services was duly appointed to review the BAR prepared by Strategic Environmental Focus (SEF), 2007 considering:

1. Soil, Land use and land capability;
2. Biodiversity with specific mention of freshwater ecology; and
3. Visual impacts.

From the results of the wetland assessment review, it was determined that the findings of the BAR still hold true with the following key points are highlighted:

1. Although the outcome of the study and final reasoned opinion is unlikely to change substantively, the results presented in this report are based on desktop assessment and a brief field investigation by the EAP during the study, thus the technical and scientific validity of the information is not absolute;
2. The recommendations presented are appropriate, relevant/necessary, sensible and achievable; and
3. The proposed mitigatory measures are considered the best options available.

In addition, SAS deemed it appropriate to contribute to the peer review report by presenting additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required.

Furthermore, an impact assessment was undertaken according to the Marang Impact Rating methodology. The results of the impact assessment in this technical memorandum should be used to guide further decision making considering changes to the intended land use of the area.

Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on the wetlands located in the 500m Zone of Regulation. Due to the distance between the activities and the wetlands, and the presence of existing development between the study area and wetlands, limited significant impact from the proposed activities on the wetlands is expected to occur.

Fulfilment of Regulation GN509 of 2016 now needs to be considered within all areas within 500m of the proposed development site. As such, the DWS Risk Assessment Matrix as promulgated in Regulation GN509 of 2016 and the appropriate water use authorisation process will be undertaken.

We trust we have interpreted your requirements correctly. Please do not hesitate to contact us if there are aspects of our proposal that you would like to discuss further.

Yours Faithfully,

Digital Documentation Not Signed For Security Purposes

Stephen van Staden

APPENDIX A – CV of Lead Reviewer

SCIENTIFIC AQUATIC SERVICES (SAS) – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF STEPHEN VAN STADEN

PERSONAL DETAILS

Position in Company	Managing member, Ecologist with focus on Freshwater Ecology
Date of Birth	13 July 1979
Nationality	South African
Languages	English, Afrikaans
Joined SAS	2003 (year of establishment)
Other Business	Trustee of the Serenity Property Trust and emerald Management Trust

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP);
Accredited River Health practitioner by the South African River Health Program (RHP);
Member of the South African Soil Surveyors Association (SASSO);
Member of the Gauteng Wetland Forum;
Member of International Association of Impact Assessors (IAIA) South Africa;
Member pf the Land Rehabilitation Society of South Africa (LaRSSA)

EDUCATION

Qualifications

MSc (Environmental Management) (University of Johannesburg)	2003
BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg)	2001
BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)	2000
Tools for wetland Assessment short course Rhodes University	2016

COUNTRIES OF WORK EXPERIENCE

South Africa – All Provinces
Southern Africa – Lesotho, Botswana, Mozambique, Zimbabwe Zambia
Eastern Africa – Tanzania Mauritius
West Africa – Ghana, Liberia, Angola, Guinea Bissau, Nigeria, Sierra Leone
Central Africa – Democratic Republic of the Congo

PROJECT EXPERIENCE (Over 2500 projects executed with varying degrees of involvement)

1 Mining Coal, Chrome, PGM's, Mineral Sands, Gold, Phosphate, river sand, clay, fluorspar
2 Linear developments
3 Energy Transmission, telecommunication, pipelines, roads
4 Minerals beneficiation
5 Renewable energy (wind and solar)
6 Commercial development
7 Residential development
8 Agriculture
9 Industrial/chemical

REFERENCES

- Terry Calmeyer (Former Chairperson of IAIA SA)
  Director: ILISO Consulting Environmental Management (Pty) Ltd
  Tel: +27 (0) 11 465 2163
  Email: terryc@icem.co.za

- Alex Pheiffer
  African Environmental Management Operations Manager
  SLR Consulting
  Tel: +27 11 467 0945
  Email: apheiffer@slrconsulting.com

- Marietjie Eksteen
  Managing Director: Jacana Environmental
  Tel: 015 291 4015

Yours faithfully

STEPHEN VAN STADEN

APPENDIX B – Marang Impact Rating Table

Marang Impact Rating Table

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken by making use of information that is available to the Environmental Assessment Practitioner (EAP) through the process of the EIA. The impact evaluation of predicted impacts will be undertaken through an assessment of the significance of the impacts. Each impact will be assessed through the **Construction**, **Operation** and **Decommissioning phases** of the prosed development. Where required, the proposed mitigation measure will be detailed.

Error! Reference source not found. Below provides an explanation of the parameters used to determine the significance of an impact, as well as what "significance" means in the context of this impact assessment. An example of the impact assessment table used to assess the environmental impact associated with the proposed development / activity are detailed below in Error! Reference source not found.

Table 1: Description of parameters used to establish impact significance

***Extent** = E (The area over which the proposed impact will be experienced).* **5**: International **4**: National **3**: Regional **2**: Local **1**: Site	***Reversibility** = R (The degree to which the proposed impact can be reversed upon completion of the proposed development/ activity).* **4**: Irreversible **3**: Barely Reversible **2**: Partly Reversible **1**: Completely Reversible
Status of Impact **+**: Positive (A benefit to the receiving environment) **N**: Neutral (No cost or benefit to the receiving environment) **-**: Negative (A cost to the receiving environment)	
***Magnitude** = M (The severity of the proposed development/activity).* **5**: Very high/ don't know **4**: High **3**: Moderate **2**: Low **1**: Minor **0**: Not applicable/none/negligible	***Duration** = D (The timeframe for which the proposed impact will be experienced).* **5**: Permanent **4**: Long-term (ceases with the operational life) **3**: Medium-term (5-15 years) **2**: Short-term (0-5 years) **1**: Immediate **0**: Not applicable/none/negligible
***Probability** = P (The likelihood / degree of certainty of the proposed impact occurring).* **5**: Definite/don't know **4**: Highly probable **3**: Medium probability **2**: Low probability **1**: Improbable	***Cumulative Effect** = C (The impact of the proposed development/ activity on the environmental parameter being assessed when added to other existing or potential impacts).* **4**: High Cumulative Impact **3**: Medium Cumulative Impact **2**: Low Cumulative Impact **1**: No Cumulative Impact **0**: Not applicable
***Loss of Resources** = L (The degree to which a given resource will be lost as a result of the proposed development / activity.)* **4**: Complete Loss of Resources **3**: Intermediate Loss of Resources **2**: Low loss of resources **1**: No Loss of resources	
Significance with be determined through the *Marang methodology for determining significance*. Significance will be determined through a synthesis of the assessed impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:	

(Extent + probability + reversibility + loss of resources+ duration + cumulative effect) x magnitude/intensity.

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Significance	*Environmental Significance Points*	*Colour Code*
High (positive)	>90	H
Medium (positive)	30 to 90	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -90	M
High (negative)	>-90	H

Table 2: Example of impact assessment table

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Description of environmental impact		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	1
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	4	2
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	4	1
Duration (D)	Description of the time frame for which the proposed impact will be experience	5	0
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	4	0
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	5	2
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 105 (High negative)	10 (Low positive)
Mitigation Measures	Detail the mitigation measures required to reduce the impacts that will arise from the proposed development / activity. The measures mentioned will be detailed in the EMPr as well.		

Appendix 6C

Soil and Land Capability Review

Scientific Aquatic Services

Applying science to the real world

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Fax 086 724 3132
www.sasenvironmental.co.za
admin@sasenvgroup.co.za

Name: Stephen van Staden
Date: Friday, 07 September 2018
Ref: SAS 218155

Marang Environmental and Associates (Pty) Ltd
Attention: Mr. Sindiso Lubisi

TECHNICAL MEMORANDUM

PEER REVIEW OF THE BASIC ASSESSMENT WITH SPECIFIC FOCUS ON SOIL AND LAND CAPABILITY IMPACTS AND IMPACT ASSESSMENT FOR THE JEWELLERY MANUFACTURING PRECINCT NEAR THE OR TAMBO AIRPORT, GAUTENG TO DETERMINE ADEQUACY FOR DECISION MAKING ON THE AMENDMENT APPLICATION

OVERVIEW

From the results of the review, it was determined that the findings of the Basic Assessment Report (BAR) are likely to still hold true but are not absolute.

The recommendations presented in the BAR and Environmental Management Programme (EMPr) are appropriate, relevant/necessary, sensible and achievable; and the proposed mitigatory measures outlined in this report are considered the best options available.

The study area is located within a highly industrialised and urbanised area with no active agricultural practices within or in the immediate vicinity of the study area. The eastern half of the study area is situated within the Environmental Management Framework (EMF) Zone 5 (Industrial and large commercial focus zone) (EMF, 2015). The proposed facility falls within the EMF Zone 5. In addition, the study area is currently under development and the soils have been anthropogenically transformed, thus these soils are likely to have little to no bearing on agricultural productivity. Thus, from a soil, land use and land capability point of view, the impact significance on the loss of high agricultural potential soils is anticipated to range between very low and negligible. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on soil, land use and land capability.

Additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required have been provided below.

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) following the undertaking of a Basic Assessment (BA) prepared in 2007 for the development of a Jewellery manufacturing precinct near the O.R Tambo Air Port.

Their EA authorised them for 6 ha for the development however the site has been extended by 1.5 ha making the total site 7.5 ha. They are also including a new facility that requires an Air Emissions License (AEL), namely a Precious Metals Refinery facility.

After consultation with the Department of Environmental Affairs (DEA) by the lead consultant, regarding their application, the DEA has advised that since construction has already commenced on the site that appropriately qualified specialists should be consulted to review the original BA that was undertaken to confirm if the findings in the BA still hold true now.

Scientific Aquatic Services was duly appointed to review the Basic Assessment Report Prepared by Strategic Environmental Focus (SEF), 2007 considering:

1. Soil, Land use and land capability;
2. Biodiversity with specific mention of freshwater ecology; and
3. Visual impacts.

In addition, SAS deemed it appropriate to contribute to the peer review by presenting additional information from desktop sources and national and provincial databases to assist with decision making. These results are presented below.

Furthermore, an impact assessment was undertaken according to the Marang Impact Rating methodology. The results of the impact assessment in this technical memorandum should be used to guide further decision making considering changes to the intended land use of the area.

It must be noted that the review of the work was undertaken purely as a desktop exercise since the site had already been cleared and thus it was deemed more beneficial to review historical digital satellite imagery than to visit the site. The results of the reviews are presented following the desktop analyses undertaken.

The results of the desktop analysis, soil and land capability review and impact assessment are presented below

Soil and Land Capability Desktop Analysis

The following data is applicable to the study area and the proposed mining operations, according to various data sources including but not limited to the Agricultural Geo-Referenced Information System (AGIS).

- The Mean Annual Precipitation (MAP) on the study area is estimated to range between 601 to 800mm per annum;
- The SOTER database indicates that the entire study area is comprised of slightly or moderately weathered parent material with good structural stability, classified as Plinthic Acrhisols (ACp);
- Geology 2001: According to the Geology 2001 layer the southern portion of the study area is underlain by Shale;
- The databases reviewed indicate that the entire study area is comprised High potential arable land (class II), which implies that the site has high agricultural potential for cultivated crops;
- According to the AGIS database, the livestock grazing capacity potential is estimated to be approximately 3 hectares per large animal unit (Morgenthal et al., 2005);
- The natural soil pH is estimated to be range between 5.5 and 6.4, indicating that the soils within the study area are anticipated to be slightly acidic to neutral, as interpolated from topsoil pH values obtained from the National Soil Profile Database (AGIS database);
- Soils 2001: According to the Soils 2001 Layer the entire portion of the study area is situated within an area where the soils are classified as Sandy loams dominant:

- According to the Gauteng Agricultural Potential Atlas database there no crops nor cultivation activities that were identified within the study area, however a small portion located in close proximity (east) of the study area is said to be under cultivated pastures;
- The desktop assessment indicates that there no Agricultural Hubs situated within the study area and the surrounding areas; and
- Some of the surrounding areas have been urbanized and no longer used for food production purposes.

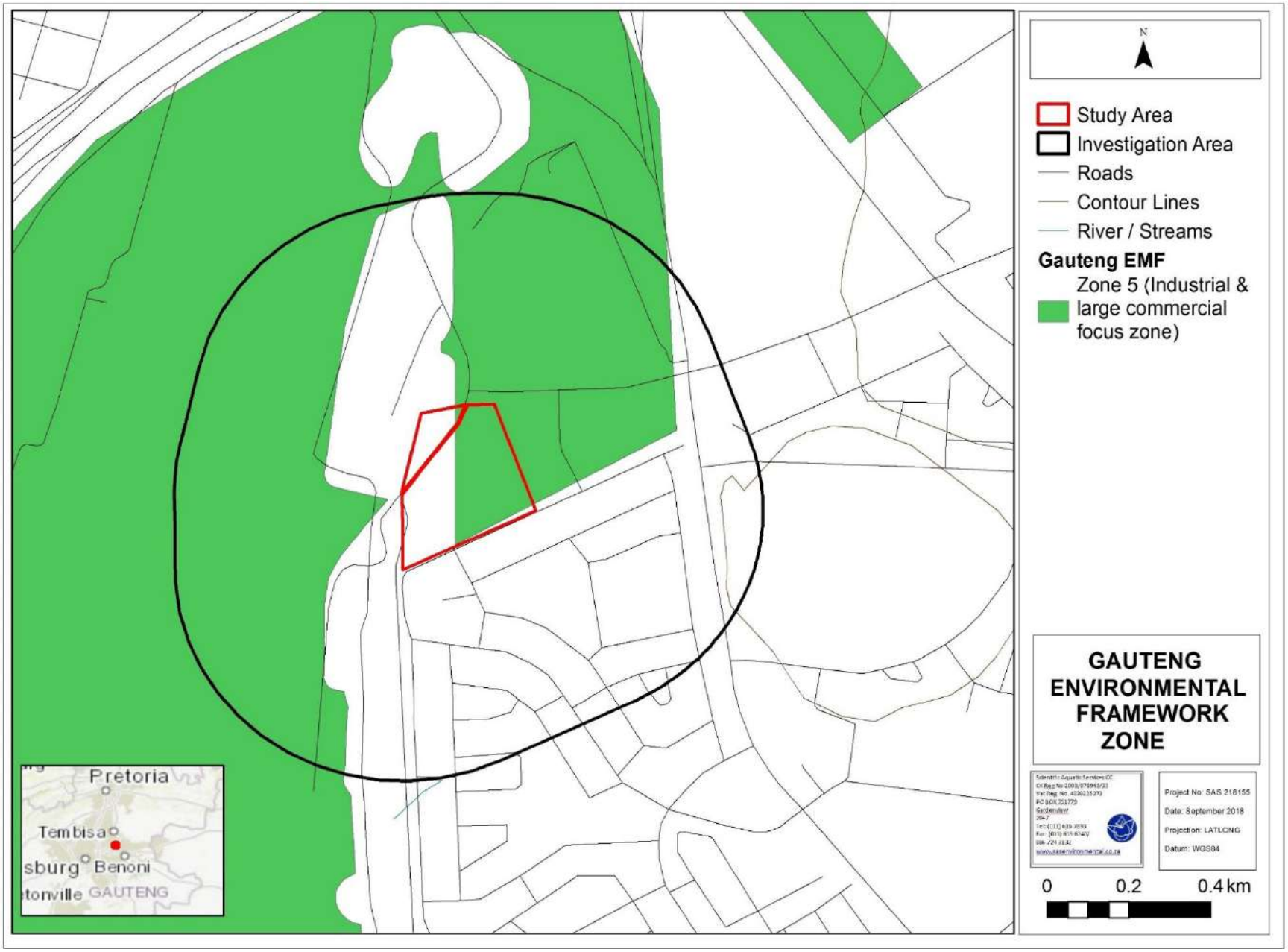

Figure 1: The Gauteng Environmental Management Framework Zone 5 applicable to the study area (Gauteng EMF, 2015).

Table 1: Review Outcomes of the soil and land capability assessment undertaken prepared as part of the Basic Assessment Report undertaken by SEF in 207.

ASSESSMENT CRITERION	COMMENTS
1. Determining acceptability of the terms of reference.	As far as can be determined no terms of reference were provided to a specialist to develop a specialist soils, land use and land capability report and only a basic desk-based investigation was undertaken by the EAP.
2. Assess the document/ report in terms of its fulfilment of the Terms of Reference set.	As far as can be determined no specialist was appointed to develop a specialist soils, land use and land capability study was undertaken and the information presented in the EIA is based on desktop sources of information by the EAP. Given the nature of the development this is considered acceptable, provided that the databases used were sufficiently accurate.
3. Consider whether the report is entirely objective.	The soil information presented in this study can be considered objective however it is largely based on desktop studies and not field verified data, and important information such as soil types and site-specific land capability are not presented which is considered a limitation which limits the ability of the reader to formulate an opinion on the impact on soils and agricultural resources.
4. Determining whether the methodology is clearly explained and acceptable.	Although current best practice methodologies were not utilised, the information presented can be considered acceptable to allow for informed decision making given the location and context of the development. Some information on the impact or risk of loss of agricultural potential is lacking but this is not considered a fatal flaw to the basic assessment given the location and context of the project.
5. Evaluate the validity of the findings and consider whether the report is technically, scientifically and professionally credible (review data evidence).	The findings presented in the BAR are largely based on a desktop assessment and were not verified using field techniques. The information presented can be considered acceptable to allow for informed decision making given the location and context of the development. Some information on loss of agricultural potential is lacking but this is not considered highly significant.
6. Discuss the suitability of the mitigation measures and recommendations and consider whether the recommendations presented are sensible and present the best options and identify any short comings and mitigation measures to address the short comings.	The recommendations presented are appropriate, relevant/necessary, sensible and achievable, and the proposed mitigatory measures are considered the best options available.
7. Indicate whether the article is well-written and easy to understand and to ensure that the work has adequately assessed the impacts of the proposed development.	The information on soil, land use and land capability is concise and easy to read.
8. To provide an independent opinion of the report, whether it is well written and easy to understand and ensure the work meets current requirements/best practice and normal standards of professional practice and competence have been met.	Based on the findings of this review it is the opinion of the independent reviewer that: ➢ Although the outcome of the study and final reasoned opinion is unlikely to change substantively, the results presented in this report are based on desktop assessment were not ground truthed during the study, thus the technical and scientific validity of the information is not absolute; ➢ The recommendations presented are appropriate, relevant/necessary, sensible and achievable; ➢ The proposed mitigatory measures are considered the best options available; and ➢ Scientific Aquatic Services attempted to address the shortcomings by providing information from the latest databases to assist in decision making.

IMPACT ASSESSMENT AND MITIGATION MEASURES

The study area is located within a highly industrialised and urbanised area with no active agricultural practices within or in the immediate vicinity of the study area. The eastern half of the study area is situated within the Environmental Management Framework (EMF) Zone 5 (Industrial and large commercial focus zone) (EMF, 2015). The proposed facility falls within the EMF Zone 5. In addition, the study area is currently under development and the soils have been anthropogenically transformed, thus these soils are likely to have little to no bearing on agricultural productivity. However, protection of these soil resources where feasible is deemed imperative. Table 2 and 3 below present the summary of anticipated activities and impacting ratings respectively

Activities

The potential impact triggers at various phases of the proposed development are presented in Table 2 below.

Table 2: Summary of the anticipated activities for the proposed development

Phase	Activities
Construction	- Topsoil stripping and stockpiling; - Establishment of surface infrastructure; and - Waste Management
Operational	- Operation of facility; and - Waste Management

Table 3: Summary of the impact assessment for construction and operational phases of the proposed development

Item	Pre-mitigation impact rating	Post-mitigation impact rating
Construction Phase		
Environmental Parameter (Activity)	Site preparation prior to construction activities related to the construction of the proposed precious metal refinery facility, including topsoil stripping, excavation and stockpiling activities.	
Potential Impacts	*Earthworks, leading to the exposure of soils, and thus leading to dust emission, erosion and potential loss of soil; *Soil compaction as a result of laydown area and construction machinery/equipment; *Spillage of hydrocarbons resulting from construction vehicles, leading to soil contamination; and *Proliferation of alien vegetation due to disturbances, leading to change of soil chemistry and quality.	
Extent (E)	2	2
Probability (P)	5	2
Reversibility (R)	2	1
Loss of Resources (L)	2	1
Duration (D)	2	2
Cumulative Effect (C)	2	1
Magnitude or Intensity (M)	1	1
Environmental Significance	-15	-9

Item	Pre-mitigation impact rating	Post-mitigation impact rating
Mitigation Measures	*All development footprint areas to remain as small as possible; *Laydown areas should be located within disturbed soils (anthrosols) to avoid compaction of natural soils *All exposed soils and temporary stockpiles must be protected for the duration of the construction phase in order to prevent erosion; *Stockpile height should not exceed 2 meters *Vehicle re-fuelling is to take place on a sealed surface within the study area; and *Contamination prevention measures should be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this should be implemented and made available and accessible at all times to the contractors and construction crew conducting the works on site for reference.	
Operational Phase		
Environmental Parameter (Activity)	Operation of the precious metal refinery facility and waste management.	
Potential Impacts	*Movement of transport vehicles off demarcated roads, thus leading to soil compaction in untarred/unpaved surfaces which consist of soil material; and *Contaminated surface runoff water resulting in soil contamination of the surrounding soils.	
Extent (E)	2	2
Probability (P)	2	1
Reversibility (R)	2	1
Loss of Resources (L)	2	2
Duration (D)	3	2
Cumulative Effect (C)	2	1
Magnitude or Intensity (M)	2	1
Environmental Significance	-26	-9
Mitigation Measures	*All vehicle should remain within demarcated roads as far as practically possible; *Stormwater management must take place in order to prevent contaminated runoff from the precious metal refinery facility; *Waste product should be recycled as best as practically possible so as to minimise sources of soil contamination; and *Contamination prevention measures should be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this should be implemented and made available and accessible at all times to the contractors and construction crew conducting the works on site for reference.	

CONCLUSION

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) following the undertaking of a Basic Assessment (BA) prepared in 2007 for the development of a Jewellery manufacturing precinct near the O.R Tambo Air Port.

Their EA authorised them for 6 ha for the development however the site has been extended by 1.5 ha making the total site 7.5 ha. They are also including a new facility that requires an Air Emissions License (AEL), namely a Precious Metals Refinery facility.

After consultation with the Department of Environmental Affairs (DEA) by the lead consultant, regarding their application, the DEA has advised that since construction has already commenced on the site that appropriately qualified specialists should be consulted to review the original BA that was undertaken to confirm if the findings in the BA still hold true now.

Scientific Aquatic Services was duly appointed to review the Basic Assessment Report Prepared by Strategic Environmental Focus (SEF), 2007 considering:

1. Soil, Land use and land capability;
2. Biodiversity with specific mention of freshwater ecology; and
3. Visual impacts.

From the results of the review, it was determined that the findings of the BAR still hold true with the following key points are highlighted:

1. Although the outcome of the study and final reasoned opinion is unlikely to change substantively, the results presented in this report are based on desktop assessment and a brief field investigation by the EAP during the study, thus the technical and scientific validity of the information is not absolute;
2. The recommendations presented are appropriate, relevant/necessary, sensible and achievable; and
3. The proposed mitigatory measures are considered the best options available.

The study area is located within a highly industrialised and urbanised area with no active agricultural practices within or in the immediate vicinity of the study area. The eastern half of the study area is situated within the Environmental Management Framework (EMF) Zone 5 (Industrial and large commercial focus zone) (EMF, 2015). The proposed facility falls within the EMF Zone 5. In addition, the study area is currently under development and the soils have been anthropogenically transformed, thus these soils are likely to have little to no bearing on agricultural productivity. Thus, from a soil and land capability point of view, the impact significance on the loss of high agricultural potential soils is anticipated to range between very low and negligible. Based on the findings of the impact assessment, the construction and operation of the proposed precious metal refinery facility poses a low significance of impact on soil and land capability.

In addition, SAS deemed it appropriate to contribute to the peer review report by presenting additional information from desktop sources and national and provincial databases to assist with decision making for the additional listed activities for which authorisation is now required.

We trust we have interpreted your requirements correctly. Please do not hesitate to contact us if there are aspects of our proposal that you would like to discuss further.

Yours Faithfully,

Digital Documentation Not Signed For Security Purposes

Stephen van Staden

APPENDIX A – CV of Lead Reviewer

SCIENTIFIC AQUATIC SERVICES (SAS) – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF STEPHEN VAN STADEN

PERSONAL DETAILS

Position in Company	Managing member, Ecologist with focus on Freshwater Ecology
Date of Birth	13 July 1979
Nationality	South African
Languages	English, Afrikaans
Joined SAS	2003 (year of establishment)
Other Business	Trustee of the Serenity Property Trust and emerald Management Trust

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP);
Accredited River Health practitioner by the South African River Health Program (RHP);
Member of the South African Soil Surveyors Association (SASSO);
Member of the Gauteng Wetland Forum;
Member of International Association of Impact Assessors (IAIA) South Africa;
Member pf the Land Rehabilitation Society of South Africa (LaRSSA)

EDUCATION

Qualifications

MSc (Environmental Management) (University of Johannesburg)	2003
BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg)	2001
BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)	2000
Tools for wetland Assessment short course Rhodes University	2016

COUNTRIES OF WORK EXPERIENCE

South Africa – All Provinces
Southern Africa – Lesotho, Botswana, Mozambique, Zimbabwe Zambia
Eastern Africa – Tanzania Mauritius
West Africa – Ghana, Liberia, Angola, Guinea Bissau, Nigeria, Sierra Leone
Central Africa – Democratic Republic of the Congo

PROJECT EXPERIENCE (Over 2500 projects executed with varying degrees of involvement)

1 Mining Coal, Chrome, PGM's, Mineral Sands, Gold, Phosphate, river sand, clay, fluorspar
2 Linear developments
3 Energy Transmission, telecommunication, pipelines, roads
4 Minerals beneficiation
5 Renewable energy (wind and solar)
6 Commercial development
7 Residential development
8 Agriculture
9 Industrial/chemical

REFERENCES

- Terry Calmeyer (Former Chairperson of IAIA SA)
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  African Environmental Management Operations Manager
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  Managing Director: Jacana Environmental
  Tel: 015 291 4015

Yours faithfully

STEPHEN VAN STADEN

APPENDIX B – Marang Impact Rating Table

Marang Impact Rating Table

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken by making use of information that is available to the Environmental Assessment Practitioner (EAP) through the process of the EIA. The impact evaluation of predicted impacts will be undertaken through an assessment of the significance of the impacts. Each impact will be assessed through the **Construction**, **Operation** and **Decommissioning phases** of the prosed development. Where required, the proposed mitigation measure will be detailed.

Error! Reference source not found. Below provides an explanation of the parameters used to determine the significance of an impact, as well as what "significance" means in the context of this impact assessment. An example of the impact assessment table used to assess the environmental impact associated with the proposed development / activity are detailed below in Error! Reference source not found.

Table 1: Description of parameters used to establish impact significance

Extent* = *E *(The area over which the proposed impact will be experienced).* **5**: International **4**: National **3**: Regional **2**: Local **1**: Site	***Reversibility* = *R*** *(The degree to which the proposed impact can be reversed upon completion of the proposed development/ activity).* **4**: Irreversible **3**: Barely Reversible **2**: Partly Reversible **1**: Completely Reversible
Status of Impact **+**: Positive (A benefit to the receiving environment) **N**: Neutral (No cost or benefit to the receiving environment) **-**: Negative (A cost to the receiving environment)	
Magnitude* = *M *(The severity of the proposed development/activity).* **5**: Very high/ don't know **4**: High **3**: Moderate **2**: Low **1**: Minor **0**: Not applicable/none/negligible	***Duration* = *D*** *(The timeframe for which the proposed impact will be experienced).* **5**: Permanent **4**: Long-term (ceases with the operational life) **3**: Medium-term (5-15 years) **2**: Short-term (0-5 years) **1**: Immediate **0**: Not applicable/none/negligible
Probability* = *P *(The likelihood / degree of certainty of the proposed impact occurring).* **5**: Definite/don't know **4**: Highly probable **3**: Medium probability **2**: Low probability **1**: Improbable	***Cumulative Effect* = *C*** *(The impact of the proposed development/ activity on the environmental parameter being assessed when added to other existing or potential impacts).* **4**: High Cumulative Impact **3**: Medium Cumulative Impact **2**: Low Cumulative Impact **1**: No Cumulative Impact **0**: Not applicable
Loss of Resources* = *L *(The degree to which a given resource will be lost as a result of the proposed development / activity.)* **4**: Complete Loss of Resources **3**: Intermediate Loss of Resources **2**: Low loss of resources **1**: No Loss of resources	
Significance with be determined through the *Marang methodology for determining significance*. Significance will be determined through a synthesis of the assessed impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:	

(Extent + probability + reversibility + loss of resources+ duration + cumulative effect) x magnitude/intensity.

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Significance	*Environmental Significance Points*	*Colour Code*
High (positive)	>90	H
Medium (positive)	30 to 90	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -90	M
High (negative)	>-90	H

Table 2: Example of impact assessment table

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Description of environmental impact		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	1
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	4	2
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	4	1
Duration (D)	Description of the time frame for which the proposed impact will be experience	5	0
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	4	0
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	5	2
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 105 (High negative)	10 (Low positive)
Mitigation Measures	Detail the mitigation measures required to reduce the impacts that will arise from the proposed development / activity. The measures mentioned will be detailed in the EMPr as well.		

Appendix 6D

Visual Review

Scientific Aquatic Services

Applying science to the real world

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Name: Stephen van Staden
Date: Wednesday, 12 September 2018
Ref: SAS 218155

Marang Environmental and Associates (Pty) Ltd
Attention: Mr. Sindiso Lubisi

TECHNICAL MEMORANDUM

PEER REVIEW OF THE BASIC ASSESSMENT WITH SPECIFIC FOCUS ON VISUAL IMPACTS AND IMPACT ASSESSMENT FOR THE JEWELLERY MANUFACTURING PRECINCT NEAR THE OR TAMBO AIRPORT, GAUTENG TO DETERMINE ADEQUACY FOR DECISION MAKING ON THE AMENDMENT APPLICATION

OVERVIEW

It was evident from the review of the Basic Assessment Report (BAR) that very little to no information was presented on visual impacts. However, based on the geographic setting of the proposed Precious Metals Refinery Facility (PMRF), the development is not likely to lead to any change in the visual character and sense of place of the surrounding environment.

Both the Environmental Management Programme (EMPr) and the Environmental Authorisation set conditions to limit the visual impact of the development. Should these conditions be adhered to, the significance of the impact on visual resources and the visual landscape are considered negligible.

The development of the proposed Precious Metals Refinery Facility (PMRF) is located within a highly industrialised and urbanised area, with the eastern portion of the proposed PMRF situated within the Industrial and Large Commercial Zone (Zone 5) of the Environmental Management Framework (EMF, 2015). Since the surrounding area has been subject to development and the proposed PMRF is situated within a footprint where buildings are already constructed, the visual character and sense of place of the area will not be significantly negatively affected. Furthermore, since the proposed PMRF is situated adjacent to the OR Tambo International Airport, none of the buildings are permitted to be higher than two storeys (approximately 12m), therefore the proposed buildings associated with the PMRF is congruous with the surrounding existing buildings from the Jewellery Manufacturing Precinct (JMP). Based on the findings of the impact assessment, the proposed PMRF poses a low significance of impact on the visual character and aesthetics of the area.

Additional information from desktop sources with emphasis on climate, topography, land uses and land cover as well as protected areas within a 10km radius from the proposed development was gathered to assist with decision making for additional listed activities for which authorisation may be required.

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) following the undertaking of a Basic Assessment (BA) prepared in 2007 for the development of a Jewellery manufacturing precinct near the O.R Tambo Air Port.

Their EA authorised them for 6 ha for the development however the site has been extended by 1.5 ha making the total site 7.5 ha. They are also including a new facility that requires an Air Emissions License (AEL), namely a Precious Metals Refinery facility (PMRF).After consultation with the Department of Environmental Affairs (DEA) by the lead consultant, regarding their application, the DEA has advised that since construction has already commenced on the site that appropriately qualified specialists should be consulted to review the original BA that was undertaken to confirm if the findings in the BA still hold true now.

Scientific Aquatic Services was duly appointed to review the Basic Assessment Report Prepared by Strategic Environmental Focus (SEF), 2007 considering:

1. Soil, Land use and land capability;
2. Biodiversity with specific mention of freshwater ecology; and
3. Visual impacts.

In addition, SAS deemed it appropriate to contribute to the peer review by presenting additional information from desktop sources with emphasis on climate, topography, land uses and land cover as well as protected areas within a 10km radius from the proposed PMRF was gathered to assist with decision making for additional listed activities for which authorisation may be required. These results are presented below (Visual Desktop Analysis).

Furthermore, an impact assessment was undertaken according to the Marang Impact Rating methodology. The results of the impact assessment in this technical memorandum should be used to guide further decision making considering changes to the intended land use of the area. Since the PMRF is situated adjacent to the OR Tambo International Airport, none of the buildings are permitted to be higher than two storeys (approximately 12m), therefore the proposed buildings associated with the PMRF is congruous with the surrounding existing buildings from the Jewellery Manufacturing Precinct (JMP). Additionally, the PMRF will comprise two stacks, where one will be connected to the Bag Filtration Plant (one gas furnace, six induction furnaces and two incinerators), and the other stack will be connected to the scrubber for general extraction from the ASSAY lab, reaction canopy and automated refiner. At the time of the Visual Impact Assessment the exact height of the stacks was not known, however the client envisaged that the stacks will be not higher than 25m.

VISUAL DESKTOP ANALYSIS

The following data is applicable to the PMRF, according to various databases including but not limited to Mucina & Rutherford (2012):

- The PMRF is situated within the Grassland Bioregion, the Mesic Highveld Grassland Bioregion and is characterised by the Soweto Highveld Grassland Vegetation Type, according to Mucina & Rutherford (See Appendix B for further detail on the climate, topography and vegetation of the Soweto Highveld Grassland Vegetation Type);
- According to the South African Protected and Conservation Areas Databases (SAPAD & SACAD, 2018) and the National Protected Areas Expansion Strategy (NPAES, 2009) the following nature reserves are within a 10km radius of the PMRF:
  - The Korsman Bird Sanctuary (Local Nature Reserve) is situated approximately 9.1km southeast of the PMRF. This Bird Sanctuary is otherwise known as the Westdene Pan Nature Reserve (Under SAPAD);
  - The Pamula Park Private Nature Reserve is situated approximately 1.5km east of the PMRF; and
  - No conservation areas are situated within a 10km radius of the PMRF.
- The eastern portion of the PMRF is situated within the Industrial and Large Commercial Zone (Zone 5) of the Environmental Management Framework (EMF, 2015) (Refer to Appendix B for the map); and

- Based on digital satellite imagery of the PMRF and surrounding area, the PMRF is situated directly east of the OR Tambo International Airport, north of the residential area Bonaero Park and Club Africa & Jubilee Guest Lodge & Golf Driving Range is situated approximately 470m north of the PMRF and open grassveld is situated east of the PMRF. The elevation profile of the area indicates gently to moderately undulating terrain. Since the surrounding area has been subject to urban and industrial development and the PMRF is situated within a footprint site where buildings are already constructed, the visual character and sense of place of the area will not be affected negatively. Furthermore, the gently to moderately undulating terrain, existing vegetation associated with the residential and industrial areas and anthropogenic structures (buildings, storage facilities, factories, powerlines, houses etc.) serve to partially or completely obscure the view toward the PMRF from various sensitive receptors in the surrounding environment.

PEER REVIEW OF VISUAL IMPACTS IN THE BAR, EA AND EMPR

Very little to no information was presented on visual impacts in the BAR of 2007. However, given the local and regional context of the proposed development, the development of the PMRF is not likely to lead to any change in sense of place and is fitting with the visual character of the area. Both the EMPr and the EA set conditions to limit the visual impact of the development. If these conditions are adhered to, the significance of the impact on visual resources and the visual landscape are considered negligible.

IMPACT ASSESSMENT AND MITIGATION MEASURES

Since the PMRF is situated adjacent to the OR Tambo International Airport, none of the buildings are permitted to be higher than two storeys (approximately 12m), therefore the proposed buildings associated with the PMRF is congruous with the surrounding existing buildings from the Jewellery Manufacturing Precinct (JMP). Additionally, the PMRF will comprise two stacks, where one will be connected to the Bag Filtration Plant (one gas furnace, six induction furnaces and two incinerators), and the other stack will be connected to the scrubber for general extraction from the ASSAY lab, reaction canopy and automated refiner. At the time of the Visual Impact Assessment the exact height of the stacks was not known, however the client envisaged that the stacks will not be higher than 25m.

The table below presents the significance of potential visual impacts that the proposed PMRF might have on the sense of place, visual character and overall aesthetics of the receiving environment. In addition, the table presents recommendations and mitigation measures have been developed which will assist in minimising the PMRF's visual impact throughout the construction and operational phases of the project and an assessment of the visual impacts taking into consideration the mitigatory measures and assuming that they are fully implemented. The Marang Impact Rating Methodology, which was used to undertake the Impact Assessment, is presented in Appendix C.

Table 1: Summary of the impact assessment for construction and operational phases of the proposed development

Item	Pre-mitigation impact rating	Post-mitigation impact rating
Construction Phase		
Environmental Parameter (Activity)	Further site preparation for construction activities related to the proposed Precious Metal Refinery Facility (PMRF), including excavation and stockpiling, laying of foundation for the buildings, construction of these buildings and associated stacks, placement of temporary contractor laydown areas and storage facilities if necessary.	
Potential Impacts	* Excavation activities for the laying of the foundation for the proposed PMRF; * Stockpiling of topsoil during excavation activities, potentially altering landform; * Dust generation due to excavation and general construction activities including movement of construction vehicles and human activity leading to dust suppression; * Construction of the Precious Metal Refinery Facilities (including the bag filtration plant and scrubber and associated stacks); * Placement of temporary contractor's laydown areas and storage facilities in higher lying areas or in close proximity to Bonaero Park, and outside the demarcated footprint area; and * Security lighting around the perimeter of the PMRF.	
Extent (E)	2	1
Probability (P)	5	5
Reversibility (R)	2	1
Loss of Resources (L)	1	0
Duration (D)	2	2
Cumulative Effect (C)	2	1
Magnitude or Intensity (M)	2	1
Environmental Significance	-28 (Low)	-10 (Low)
Mitigation Measures	* The development footprint area should remain as small as possible; * No rubble should be disposed of at random within the site, but within relevant removable bins, where recyclable and non-recyclable waste is kept separate; * Contractor's laydown areas and temporary storage facilities should be located within the development footprint and cordoned off with shade cloth to conceal and minimise the visual impact; * Any topsoil stockpiled should either be utilised during landscaping or it should be shaped and rounded to blend in with the surrounding landscape and to minimise visual contrast; * Vegetation, especially large and tall trees bordering the Bonaero Park residential area south of the PMRF should be retained if feasible; * It must be ensured that the buildings fit into its surroundings through the appropriate use of colour and material selection. Natural Colours should be used in all instances. Should the stacks comprise metal surfaces, it must be painted in a colour that blends in with the natural environment. White structures are to be avoided; * A dust management plan must be implemented to reduce dust generation. Such dust control measures may include, but is not limited to; watering of the footprint area and any access roads, speed limits of 20km/h must be adhered to and should it be practical stockpiles should be covered with a tarpaulin on windy days to avoid soil and dust being blown away; * Construction activities should be restricted to daylight hours as far as possible; * A lighting engineer may be consulted to assist in the placement of temporary and permanent light fixtures, to reduce the visual impact associated with glare and light trespass; and * No naked / unshielded light sources are to be used. It is recommended that "full cut-off" light fixtures that direct light only below the horizontal is to be used.	
Operational Phase		
Environmental Parameter (Activity)	Operation of the Precious Metal Refinery Facility (PMRF) and emissions from the stacks	
Potential Impacts	* Operational activities of the PMRF and gas emissions at the stacks; * An increase in vehicular movement and level of human activity in the area due to operational activities; * Exterior and security lighting around the buildings and parking facilities, possibly contributing to light pollution; * Potential lighting at night from operational vehicles; and * Light sources temporarily stationed for maintenance activities conducted at night, in case of emergencies.	

Item	Pre-mitigation impact rating	Post-mitigation impact rating
Extent (E)	2	1
Probability (P)	4	4
Reversibility (R)	2	1
Loss of Resources (L)	1	0
Duration (D)	2	2
Cumulative Effect (C)	1	1
Magnitude or Intensity (M)	2	1
Environmental Significance	-24 (Low)	-9 (Low)
Mitigation Measures	* It is recommended that routine maintenance on buildings and other structures be implemented, to ensure that the paint of buildings are not weathered and that the buildings fit into the colour palette of the surroundings; * In the event that a green open space is demarcated and landscaped, it must be ensured that the vegetation be maintained and controlled to reduce the risk of potential alien floral species proliferation and to keep it aesthetically appealing to the receiving environment; * It is recommended that maintenance activities should not take place at night or on weekends, unless absolutely essential; * Making use of motion detectors on security lighting at buildings and parking facilities, ensures that the site will remain in relative darkness, until lighting is required for security and maintenance purposes; * No naked / unshielded light sources are to be directly visible from a distance; and * The PMRF should be screened through the use of a clearVU fence, or equally approved, which will result in a more unified and tidy appearance	

Based on the outcome of the Visual Impact Assessment it is evident that all the activities associated with the construction and operational phases of the proposed PMRF were determined to have a low impact significance on the sense of place and visual character of the area, prior to the implementation of mitigation measures. The contributing factors to the low impact significance levels include the current land use of the surrounding area characterised by urban and industrial development, the maximum height of 12m (equivalent to two storey) of the proposed PMRF buildings not exceeding the height of the surrounding buildings and the JMP buildings already constructed. From the above-mentioned factors it can be concluded that the PMRF is in keeping with the sense of place and visual character of the area. It should however be noted that due to the height of the stacks at 25m, these structures are likely to be more visible from various viewpoints in the surrounding area, however it is not considered significantly intrusive.

However, specific mitigation measures as provided in Table 1 are recommended to be implemented to ensure an even lower impact significance and reduce overall potential visual impacts on the receiving environment.

CONCLUSION

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) following the undertaking of a Basic Assessment (BA) prepared in 2007 for the development of a Jewellery manufacturing precinct near the O.R Tambo Air Port.

Their EA authorised them for 6 ha for the development however the site has been extended by 1.5 ha making the total site 7.5 ha. They are also including a new facility that requires an Air Emissions License (AEL), namely a Precious Metals Refinery facility (PMRF).

After consultation with the Department of Environmental Affairs (DEA) by the lead consultant, regarding their application, the DEA has advised that since construction has already

commenced on the site that appropriately qualified specialists should be consulted to review the original BA that was undertaken to confirm if the findings in the BA still hold true now.

Scientific Aquatic Services was duly appointed to review the Basic Assessment Report Prepared by Strategic Environmental Focus (SEF), 2007 considering:

1. Soil, Land use and land capability;
2. Biodiversity with specific mention of freshwater ecology; and
3. Visual impacts.

It was evident from the review of the Basic Assessment Report (BAR) that very little to no information was presented on visual impacts. However, based on the geographic setting of the proposed Precious Metals Refinery Facility (PMRF), the development is not likely to lead to any change in the visual character and sense of place of the surrounding environment. Both the Environmental Management Programme (EMPr) and the Environmental Authorisation set conditions to limit the visual impact of the development. Should these conditions be adhered to, the significance of the impact on visual resources and the visual landscape are considered negligible.

In addition, SAS deemed it appropriate to contribute to the peer review by presenting additional information from desktop sources with emphasis on climate, topography, land uses and land cover as well as protected areas within a 10km radius from the proposed PMRF was gathered to assist with decision making for additional listed activities for which authorisation may be required.

The development of the proposed PMRF is located within a highly industrialised and urbanised area, with the eastern portion of the proposed PMRF situated within the Industrial and Large Commercial Zone (Zone 5) of the Environmental Management Framework (EMF, 2015). Since the surrounding area has been subject to development and the proposed PMRF is situated within a footprint where buildings are already constructed, the visual character and sense of place of the area will not be significantly negatively affected. Furthermore, since the proposed PMRF is situated adjacent to the OR Tambo International Airport, none of the buildings are permitted to be higher than two storeys (approximately 12m), therefore the proposed buildings associated with the PMRF is congruous with the surrounding existing buildings from the Jewellery Manufacturing Precinct (JMP). Based on the findings of the impact assessment, the proposed PMRF poses a low significance of impact on the visual character and aesthetics of the area.

We trust we have interpreted your requirements correctly. Please do not hesitate to contact us if there are aspects of our proposal that you would like to discuss further.

Yours Faithfully,

Digital Documentation Not Signed For Security Purposes

Stephen van Staden

APPENDIX A – CV of Lead Reviewer

SCIENTIFIC AQUATIC SERVICES (SAS) – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF STEPHEN VAN STADEN

PERSONAL DETAILS

Position in Company	Managing member, Ecologist with focus on Freshwater Ecology
Date of Birth	13 July 1979
Nationality	South African
Languages	English, Afrikaans
Joined SAS	2003 (year of establishment)
Other Business	Trustee of the Serenity Property Trust and emerald Management Trust

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP);
Accredited River Health practitioner by the South African River Health Program (RHP);
Member of the South African Soil Surveyors Association (SASSO);
Member of the Gauteng Wetland Forum;
Member of International Association of Impact Assessors (IAIA) South Africa;
Member pf the Land Rehabilitation Society of South Africa (LaRSSA)

EDUCATION

Qualifications

MSc (Environmental Management) (University of Johannesburg)	2003
BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg)	2001
BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)	2000
Tools for wetland Assessment short course Rhodes University	2016

COUNTRIES OF WORK EXPERIENCE

South Africa – All Provinces
Southern Africa – Lesotho, Botswana, Mozambique, Zimbabwe Zambia
Eastern Africa – Tanzania Mauritius
West Africa – Ghana, Liberia, Angola, Guinea Bissau, Nigeria, Sierra Leone
Central Africa – Democratic Republic of the Congo

PROJECT EXPERIENCE (Over 2500 projects executed with varying degrees of involvement)

1 Mining Coal, Chrome, PGM's, Mineral Sands, Gold, Phosphate, river sand, clay, fluorspar
2 Linear developments
3 Energy Transmission, telecommunication, pipelines, roads
4 Minerals beneficiation
5 Renewable energy (wind and solar)
6 Commercial development
7 Residential development
8 Agriculture
9 Industrial/chemical

REFERENCES

- Terry Calmeyer (Former Chairperson of IAIA SA)
  Director: ILISO Consulting Environmental Management (Pty) Ltd
  Tel: +27 (0) 11 465 2163
  Email: terryc@icem.co.za

- Alex Pheiffer
  African Environmental Management Operations Manager
  SLR Consulting
  Tel: +27 11 467 0945
  Email: apheiffer@slrconsulting.com

- Marietjie Eksteen
  Managing Director: Jacana Environmental
  Tel: 015 291 4015

Yours faithfully

STEPHEN VAN STADEN

APPENDIX B – Desktop Results

Table B1: The Soweto Highveld Grassland Vegetation type associated with the Precious Metals Refinery Facility (Mucina & Rutherford, 2012)

Climate	Summer rainfall
Altitude (m)	1420 to 1760m
MAP* (mm)	662
MAT* (°C)	14.8
MFD* (Days)	41
MAPE* (mm)	2060
MASMS* (%)	75
Distribution	Mpumalanga and Gauteng Provinces
Geology & Soils	Shale, sandstone or mudstone of the Madzaringwe Formation (Karoo Supergroup) or the intrusive Karoo Suite dolerites which feature prominently in the area. In the south, the Volksrust Formation (Karoo Supergroup) is found and in the west, the rocks of the older Transvaal, Ventersdorp and Witwatersrand Supergroups are most significant. Soils are deep, reddish on flat plains and are typically Ea, Ba and Bb land types.
Conservation	Endangered. Target 24%. Only a handful of patches statutorily conserved or privately conserved.
Vegetation & landscape features	Gently to moderately undulating landscape on the Highveld plateau supporting short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* and accompanied by a variety of other grasses such as *Elionurus muticus, Eragrostis racemosa, Heteropogon contortus* and *Tristachya leucothrix*. In places not disturbed, only scattered small wetlands, narrow stream alluvia, pans and occasional ridges or rocky outcrops interrupt the continuous grassland cover.
Floral Taxa	
Low Shrubs	*Anthospermum hispidulum, A. rigidum subsp. pumilum, Berkheya annectens, Felicia muricata, Ziziphus zeyheriana*
Graminoids	*Andropogon appendiculatus* (d), *Brachiaria serrata* (d), *Cymbopogon pospischilii* (d), *Cynodon dactylon* (d), *Elionurus muticus* (d), *Eragrostis capensis* (d), *E. chloromelas* (d), *E. curvula* (d), *E. plana* (d), *E. planiculmis* (d), *E. racemosa* (d), *Heteropogon contortus* (d), *Hyparrhenia hirta* (d), *Setaria nigrirostris* (d), *S. sphacelata* (d), *Themeda triandra* (d), *Tristachya leucothrix* (d), *Andropogon schirensis, Aristida adscensionis, A. bipartita, A. congesta, A. junciformis subsp. galpinii, Cymbopogon caesius, Digitaria diagonalis, Diheteropogon amplectens, Eragrostis micrantha, E. superba, Harpochloa falx, Microchloa caffra, Paspalum dilatatum.*
Herbaceous Climber	*Rhynchosia totta*
Herbs	*Hermannia depressa* (d), *Acalypha angustata*, *Berkheya setifera*, *Dicoma anomala*, *Euryops gilfillanii, Geigeria aspera var. aspera*, Graderia subintegra, Haplocarpha scaposa, *Helichrysum miconiifolium, H. nudifolium var. nudifolium, H. rugulosum, Hibiscus pusillus, Justicia anagalloides, Lippia scaberrima, Rhynchosia effusa, Schistostephium crataegifolium, Selago densiflora, Senecio coronatus, Vernonia oligocephala, Wahlenbergia undulata*.
Geophytic Herbs	*Haemanthus humilis subsp. hirsutus, H. montanus.*

MAP = Mean Annual Precipitation; Mat = Mean Annual Temperature; MFD = Mean Frost Days; MAPE = Mean Annual Potential for Evaporation; MASMS = Mean Annual Soil Moisture Stress; (d) = Dominant

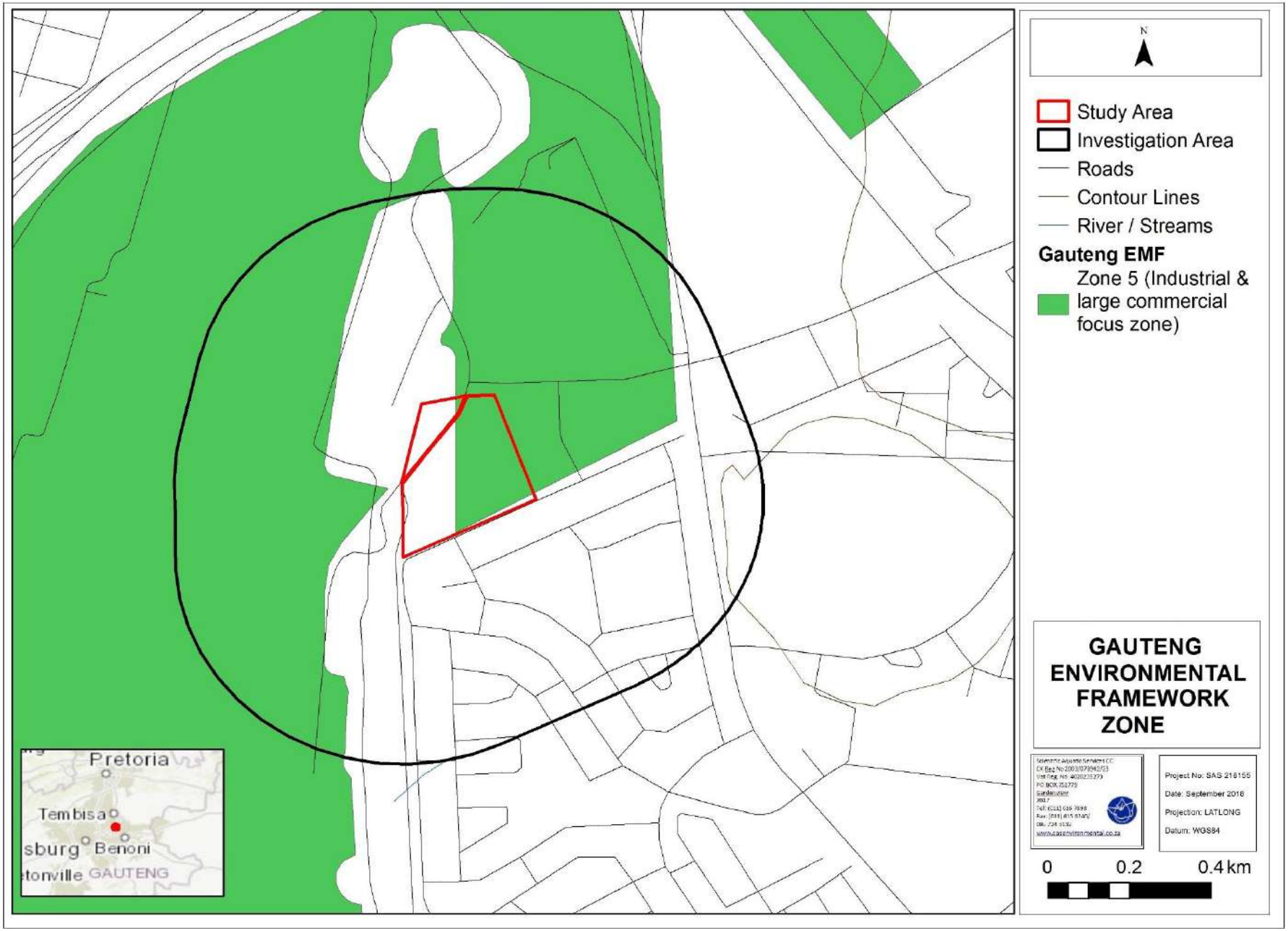


Figure B1: The Gauteng Environmental Management Framework Zone 5 applicable to the study area (Gauteng EMF, 2015).

APPENDIX C – Marang Impact Assessment Methodology

Marang Impact Rating Table

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken by making use of information that is available to the Environmental Assessment Practitioner (EAP) through the process of the EIA. The impact evaluation of predicted impacts will be undertaken through an assessment of the significance of the impacts. Each impact will be assessed through the **Construction**, **Operation** and **Decommissioning phases** of the prosed development. Where required, the proposed mitigation measure will be detailed.

Below provides an explanation of the parameters used to determine the significance of an impact, as well as what "significance" means in the context of this impact assessment. An example of the impact assessment table used to assess the environmental impact associated with the proposed development / activity are detailed below in Error! Reference source not found.

Table C1: Description of parameters used to establish impact significance

***Extent** = E (The area over which the proposed impact will be experienced).* **5**: International **4**: National **3**: Regional **2**: Local **1**: Site	***Reversibility** = R (The degree to which the proposed impact can be reversed upon completion of the proposed development/ activity).* **4**: Irreversible **3**: Barely Reversible **2**: Partly Reversible **1**: Completely Reversible
Status of Impact **+**: Positive (A benefit to the receiving environment) **N**: Neutral (No cost or benefit to the receiving environment) **-**: Negative (A cost to the receiving environment)	
***Magnitude** = M (The severity of the proposed development/activity).* **5**: Very high/ don't know **4**: High **3**: Moderate **2**: Low **1**: Minor **0**: Not applicable/none/negligible	***Duration** = D (The timeframe for which the proposed impact will be experienced).* **5**: Permanent **4**: Long-term (ceases with the operational life) **3**: Medium-term (5-15 years) **2**: Short-term (0-5 years) **1**: Immediate **0**: Not applicable/none/negligible
***Probability** = P (The likelihood / degree of certainty of the proposed impact occurring).* **5**: Definite/don't know **4**: Highly probable **3**: Medium probability **2**: Low probability **1**: Improbable	***Cumulative Effect** = C (The impact of the proposed development/ activity on the environmental parameter being assessed when added to other existing or potential impacts).* **4**: High Cumulative Impact **3**: Medium Cumulative Impact **2**: Low Cumulative Impact **1**: No Cumulative Impact **0**: Not applicable
***Loss of Resources** = L (The degree to which a given resource will be lost as a result of the proposed development / activity.)* **4**: Complete Loss of Resources **3**: Intermediate Loss of Resources **2**: Low loss of resources **1**: No Loss of resources	
Significance with be determined through the *Marang methodology for determining significance*. Significance will be determined through a synthesis of the assessed impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:	

(Extent + probability + reversibility + loss of resources+ duration + cumulative effect) x magnitude/intensity.

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Significance	*Environmental Significance Points*	*Colour Code*
High (positive)	>90	H
Medium (positive)	30 to 90	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -90	M
High (negative)	>-90	H

Table C2: Example of impact assessment table

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Description of environmental impact		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	1
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	4	2
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	4	1
Duration (D)	Description of the time frame for which the proposed impact will be experience	5	0
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	4	0
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	5	2
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 105 (High negative)	10 (Low positive)
Mitigation Measures	Detail the mitigation measures required to reduce the impacts that will arise from the proposed development / activity. The measures mentioned will be detailed in the EMPr as well.		

Appendix 6E

Noise Review

EAR
Enviro Acoustic Research

Name: Morné de Jager
Cell: 082 565 4059
E-mail: morne@eares.co.za
Date: 29 August 2018
Ref: Marang/2018

Marang Environmental & Associates
Building 2, Boskruin Office Park
President Fouche Drive
Randburg

Attention: Mr Sindiso Lubisi

Dear Sir

SPECIALIST LETTER: ENVIRONMENTAL NOISE IMPACT ASSESSMENT: PROPOSED EXTENSION OF GIDZ DEVELOPMENT AREA NEXT TO BONAERO PARK

The above-mentioned issue is of relevance.

Background and Purpose

The Gauteng Industrial Development Zone (GIDZ) currently have an Environmental Authorisation (EA) for a Basic Assessment (BA) that was undertaken in 2009 for the development of a Jewellery manufacturing precinct near the O.R Tambo Air Port. A new listed activity is proposed on the site that requires an Air Emissions License (AEL).

Metal Concentrators SA (Pty) Ltd (referred to as MetCon hereafter) propose to establish a Refinery facility within Jewellery Manufacturing precinct.

Description of activity and potential sources of noise

MetCon specializes in extracting precious and base metals from jewellery store secondary gold materials (i.e. jeweller's sweeps) through chemical treatment (Figure 1-1). The secondary gold material mainly includes sand paper, cloths and carpets. The material is placed in a gas fired roasting oven and burnt to form ash. The ash is then removed from the oven and demagnetized to remove any steel components that may be contained within the ash. The metallic material within the ash is then put through a screening process to determine the quantities within the ash sample. Once screening is complete, the ash may be returned to the jeweller or it could be further processed within MetCon to extract the precious metals using chemical treatment. In the latter case, fluxes are added to the ash sample and it is taken into the refinery where it is placed in a furnace for melting. All the emissions from this process are extracted through a single stack connected to a bag house. As soon as the melting process has been completed, the resultant bar is weighed and the remaining slag (by-product) is processed further in the refinery. The proposed location would be building 2 as depicted in **Figure 1, Annexure A.**

Based on the Air Quality Impact Assessment compiled for the project, the potential sources of noise would be:

- A baghouse Stack (with an associated blower). The stack may be 20 m high and generate 99 dBA (based on a stack diameter of 0.58 m, exit velocity of 21 m/s);
- A Scrubber Stack (with an associated blower). The stack may be 5 m high and generate 94 dBA (based on a stack diameter of 0.36 m, exit velocity of 24 m/s);
- A blowers generating 105 dBA, located on the far side of the building. This is an unmitigated scenario with the blower not enclosed (which will reduce noise levels from the blower).

These conceptual noise sources are illustrated in **Figure 1, Annexure A**. This assessment considers both the day (06:00 – 22:00) and night-time (22:00 – 06:00) scenario.

Other noise sources of significance

Other noise sources in the area include

- the ORT Airport with flights landing and taking off from around 05:00 – 24:00. The project area is within 1,000 m and noises from the airport definitely impact on this area, with the noises from planes raising the ambient sound levels every few minutes.
- The busy R21, M43 and M45 are within 2,000 m from this development area. This will raise ambient sound levels resulting in a constant drone both night and day in this development area.

Potential noise sensitive receptors

The residential suburb of Bonaero Park is located just south-east from the proposed MetCon operation with the closest residential dwellings situated within 150 m. Considering the location of the residential area as well as the developmental character of the area, it is likely that the residential area falls within the typical noise rating level for an Urban District with one or more of the following: workshops; business premises and main roads. The acceptable zone sound level is 60 and 50 dBA during the day and night-time periods respectively. It should be noted that this is higher than the noise levels recommended by the World Health Organization for residential use at night (45 dBA).

Appropriate noise limits and legal framework

The Gauteng Noise Control Regulations (GN 5479 of 20 August 1999) is based on the National Noise Control Regulations, and most of the regulations are the same. It prohibits the generation of a disturbing noise in any manner (Regulation 8) and defines and prohibits activities that can result in a noise nuisance (Regulation 9). Regulation 11(1) allows a local authority to designate a noise controlled area as well as zone sound levels for specific areas and during specific times. It is not known if the area surrounding the ORT airport was designated as a noise control area (although considered highly unlikely).

The Gauteng Provincial Noise Control Regulations define a **"disturbing noise"** as:
means a noise level that causes the ambient noise level to rise above the designated zone level, or if no zone level has been designated, the typical rating levels for ambient noise in districts, indicated in table 2 of SABS 0103[1].

[1] The latest SANS 0103 was renamed SANS 10103:2008

Typical rating levels for ambient noise in different districts are given in **Table 1** (from Table 2, SANS 10103:2008), highlighted on the following page.

It must be noted that SANS 10103:2008 does state *"for industries legitimately operating in an industrial district during the entire 24 h day/night cycle, $L_{Req,d}$ = $L_{Req,n}$ =70 dBA can be considered as typical and normal".* There is, however, no noise limits for industry and 61 dBA will be used as a reasonable noise limit at the industrial boundary closest to any residential area. This however has certain risks, especially when a residential area is located next to, in the close vicinity of an industrial area or activity. The World Health Organization recommends an outdoor noise level of 45 dBA at night to allow people acceptable quality of sleep.

Considering the developmental character of the area, as well as acceptable noise limits to allow a reasonable quality of sleep, night-time ambient noise levels (outside) should not exceed 50 dBA (the zone sound level).

Table 1: Typical rating levels for noise in districts

1	2	3	4	5	6	7
Type of district	**Equivalent continuous rating level ($L_{Req,T}$) for noise** dBA					
	Outdoors			**Indoors, with open windows**		
	Day/night $L_{R,dn}$ [a]	**Daytime** $L_{Req,d}$ [b]	**Night-time** $L_{Req,n}$ [b]	**Day/night** $L_{R,dn}$ [a]	**Daytime** $L_{Req,d}$ [b]	**Night-time** $L_{Req,n}$ [b]
a) Rural districts	45	45	35	35	35	25
b) Suburban districts with little road traffic	50	50	40	40	40	30
c) Urban districts	55	55	45	45	45	35
d) Urban districts with one or more of the following: workshops; business premises; and main roads	60	60	50	50	50	40
e) Central business districts	65	65	55	55	55	45
f) Industrial districts	70	70	60	60	60	50

Projected noise levels

Potential noise level contours are presented in **Figure 2, Annexure A**. Based on the noise contours, the first row of houses may be subject to noise levels of 45 – 49 dBA.

The preliminary significance of the noise impact

Ambient sound levels in the vicinity of the residential area would be impacted by the roads and activities as the airport. The project may be audible during the day, but, if the operation is active at night, it will be clearly audible and may raise the ambient sound levels. Mitigation may reduce the

noise levels, but the developer must consider the proposed measures during the planning stage to unsure that the recommendations are considered during this early phase.

Table 2: Impact Assessment considering daytime (06:00 – 22:00) noise levels

Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Description of environmental impact		
Extent (E)	Area over which the proposed impact will be experienced.	**2**	**2**
Probability (P)	Likelihood/degree of certainty of the proposed impact occurring.	**1**	**1**
Reversibility (R)	Degree to which the proposed impact can be revered upon completion of the proposed development / activity.	**1**	**1**
Loss of Resources (L)	Degree to which a given resource will be lost as a result of the proposed development / activity.	**1**	**1**
Duration (D)	Time frame for which the proposed impact will be experience	**4**	**4**
Cumulative Effect (C)	Impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	**2**	**2**
Magnitude or Intensity (M)	Severity of the proposed development / activity. Activity may be audible during the day.	**1**	**1**
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	**- 12 (Low negative)**	**- 12 (Low negative)**
Mitigation Measures	No additional mitigation required.		

Table 3: Impact Assessment considering night-time (22:00 – 06:00) noise levels

Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Description of environmental impact		
Extent (E)	Area over which the proposed impact will be experienced.	**2**	**2**
Probability (P)	Likelihood/degree of certainty of the proposed impact occurring.	**3**	**1**
Reversibility (R)	Degree to which the proposed impact can be revered upon completion of the proposed development / activity.	**1**	**1**
Loss of Resources (L)	Degree to which a given resource will be lost as a result of the proposed development / activity.	**2**	**1**
Duration (D)	Time frame for which the proposed impact will be experience	**4**	**4**
Cumulative Effect (C)	Impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	**2**	**2**
Magnitude or Intensity (M)	Severity of the proposed development / activity. Activity may be audible during the day.	**3**	**1**
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	**- 42 (Medium negative)**	**- 12 (Low negative)**
Mitigation Measures	If night-time activities are required, MetCon should measure the typical night-time ambient sound levels in the area prior to the project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not raise the noise levels with more than 7 dB (Noise Control Regulations), ideally, no more than 3 dB (International Finance Corporation recommendation). Other measures includes: • Minimise night-time activities that will require the use of the baghouse stack and blowers at night. • The design of the baghouse stack exit to ensure a more flared design, or the use of a silencing system at the exit. • Enclose the blowers in a structure to reduce the noise levels from this source. • The reduction of the gas exit velocities at night.		

The night-time noise level can be reduced with the implementation of the correct mitigation measures that will reduce the significance of the noise impact.

Recommendations on the way forward

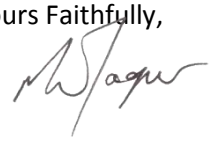
If only daytime activities are planned, no mitigation measures are recommended.

If night-time activities are planned (after 22:00 at night, before 06:00) it is recommended that MetCon:

- measure the typical night-time ambient sound levels in the area prior to the project being developed (over the full night-time period). Once operational, measurements must be repeated to confirm that the implementation of the project did not raise the noise levels with more than 7 dB (Noise Control Regulations) and ideally, does not raise the ambient sound levels with more than 3 dB (International Finance Corporation recommendation).
- select appropriate noise mitigation measures (to be considered during the planning stage) which may include:
    - Eliminating the noise source where possible at night;
    - The installation of one or more acoustical silencer(s) or enclosures;
    - Acoustical treatment of ducts and exhaust stacks;
    - A change in equipment, controlling the speed of the fans/blowers;
    - Moving the noise source further from the residential area (if possible).

Should you require any further details, or have any additional questions, please do not hesitate to call me on the above numbers.

Yours Faithfully,



Morné de Jager
Enviro-Acoustic Research cc

Annexure A

Figures and Plans

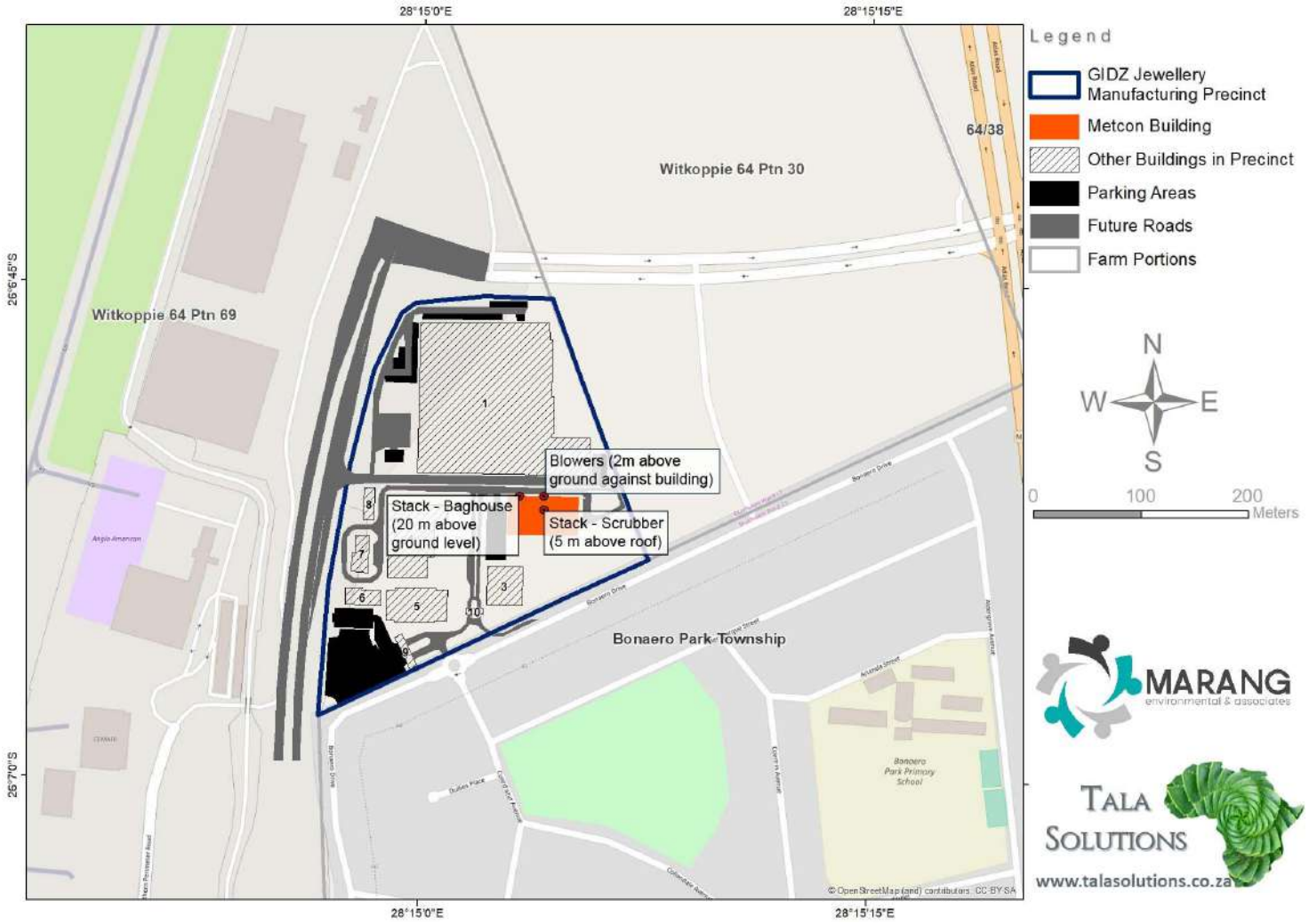


Figure 1: Description of main buildings and measurement locations

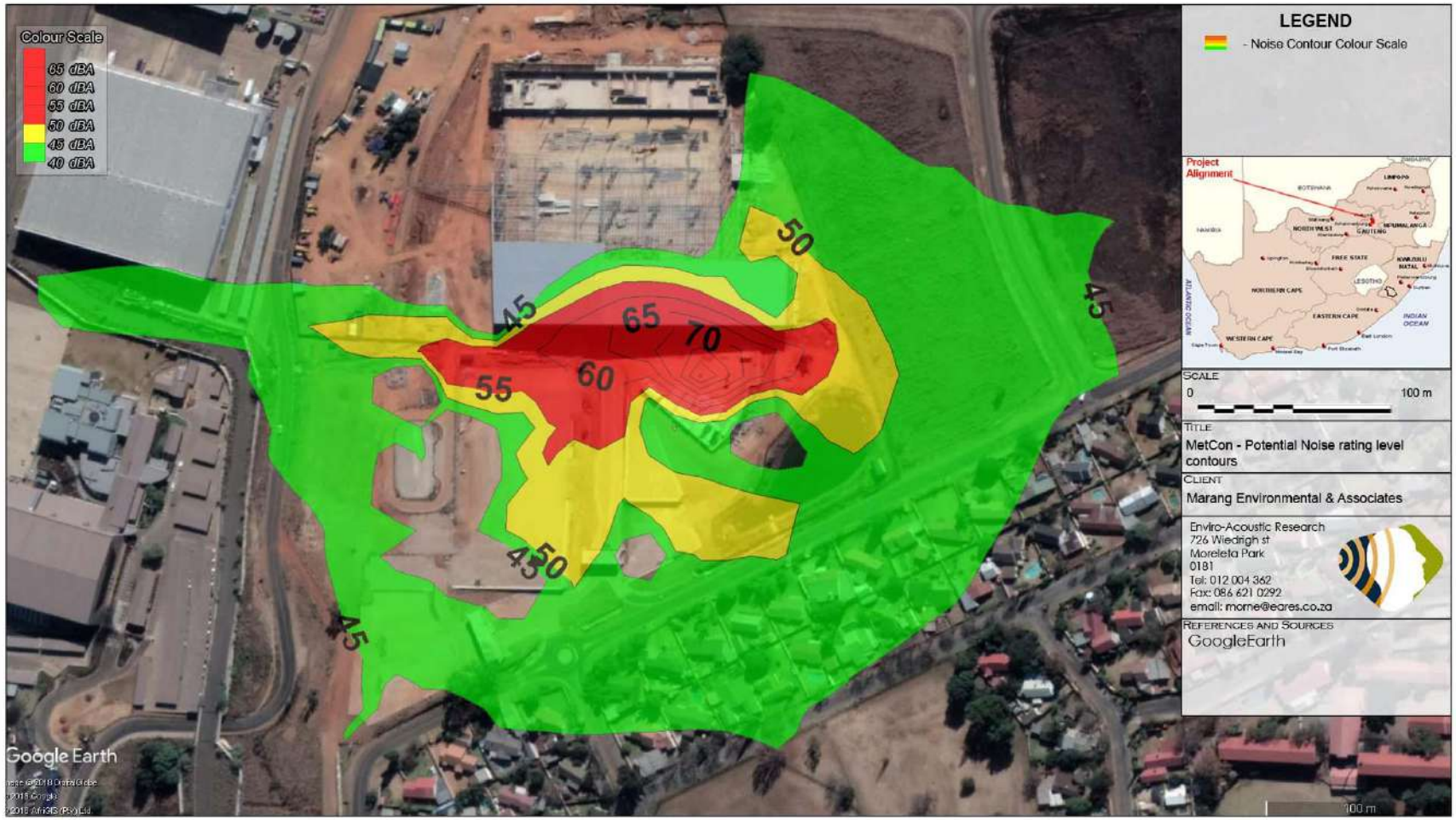


Figure 2: Potential noise rating levels in contours of constant sound levels

Annexure B

Glossary of Acoustic Terms, Definitions and General Information

A – Weighting	An internationally standardised frequency weighting that approximates the frequency response of the human ear and gives an objective reading that therefore agrees with the subjective human response to that sound.
Ambient Noise	The all-encompassing sound at a point being composed of sounds from many sources both near and far. It includes the noise from the noise source under investigation.
Ambient Sound Level	Means the reading on an integrating impulse sound level meter taken at a measuring point in the absence of any alleged disturbing noise at the end of a total period of at least 10 minutes after such a meter was put into operation. In this report the term Background Ambient Sound Level will be used.
Broadband Noise	Spectrum consisting of a large number of frequency components, none of which is individually dominant.
Controlled area (as per National Noise Control Regulations)	a piece of land designated by a local authority where, in the case of- (a) road transport noise in the vicinity of a road- (i) the reading on an integrating impulse sound level meter, taken outdoors at the end of a period extending from 06:00 to 24:00 while such meter is in operation, exceeds 65 dBA; or (ii) the equivalent continuous "A"-weighted sound pressure level at a height of at least 1,2 metres, but not more than 1,4 metres, above the ground for a period extending from 06:00 to 24:00 as calculated in accordance with SABS 0210-1986, titled: "Code of Practice for calculating and predicting road traffic noise", published under Government Notice No. 358 of 20 February 1987, and projected for a period of 15 years following the date on which the local authority has made such designation, exceeds 65 dBA; (b) aircraft noise in the vicinity of an airfield, the calculated noisiness index, projected for a period of 15 years following the date on which the local authority has made such designation, exceeds 65 dBA; or (c) industrial noise in the vicinity of an industry- (i) the reading on an integrating impulse sound level meter, taken outdoors at the end of a period of 24 hours while such meter is in operation, exceeds 61 dBA; or (ii) the calculated outdoor equivalent continuous "A"-weighted sound pressure level at a height of at least 1,2 metres, but not more than 1,4 metres, above the ground for a period of 24 hours, exceeds 61 dBA;
dB(A)	Sound Pressure Level in decibel that has been A-weighted, or filtered, to match the response of the human ear.
Disturbing noise	Means a noise level that exceeds the zone sound level or, if no zone sound level has been designated, a noise level that exceeds the ambient sound level at the same measuring point by 7 dBA or more.
Environmental issue	A concern felt by one or more parties about some existing, potential or perceived environmental impact.
Frequency	The rate of oscillation of a sound, measured in units of Hertz (Hz) or kiloHertz (kHz). One hundred Hz is a rate of one hundred times per second. The frequency of a sound is the property perceived as pitch: a low-frequency sound (such as a bass note) oscillates at a relatively slow rate, and a high-frequency sound (such as a treble note) oscillates at a relatively high rate.
Impulsive sound	A sound characterized by brief excursions of sound pressure (transient signal) that significantly exceed the ambient sound level.
Mitigation	To cause to become less harsh or hostile.

Annexure B: Glossary of Acoustic Terms and Definitions

Negative impact	A change that reduces the quality of the environment (for example, by reducing species diversity and the reproductive capacity of the ecosystem, by damaging health, or by causing nuisance).
Noise	a. Sound that a listener does not wish to hear (unwanted sounds). b. Sound from sources other than the one emitting the sound it is desired to receive, measure or record. c. A class of sound of an erratic, intermittent or statistically random nature.
Noise Level	The term used in lieu of sound level when the sound concerned is being measured or ranked for its undesirability in the contextual circumstances.
Noise-sensitive development	developments that could be influenced by noise such as: a) districts (see table 2 of SANS 10103:2008) 1. rural districts, 2. suburban districts with little road traffic, 3. urban districts, 4. urban districts with some workshops, with business premises, and with main roads, 5. central business districts, and 6. industrial districts; b) educational, residential, office and health care buildings and their surroundings; c) churches and their surroundings; d) auditoriums and concert halls and their surroundings; e) recreational areas; and f) nature reserves. In this report Noise-sensitive developments is also referred to as a Potential Sensitive Receptor
Soundscape	Sound or a combination of sounds that forms or arises from an immersive environment. The study of soundscape is the subject of acoustic ecology. The idea of soundscape refers to both the natural acoustic environment, consisting of natural sounds, including animal vocalizations and, for instance, the sounds of weather and other natural elements; and environmental sounds created by humans, through musical composition, sound design, and other ordinary human activities including conversation, work, and sounds of mechanical origin resulting from use of industrial technology. The disruption of these acoustic environments results in noise pollution.
Zone of Potential Influence	The area defined as the radius about an object, or objects beyond which the noise impact will be insignificant.
Zone Sound Level	Means a derived dBA value determined indirectly by means of a series of measurements, calculations or table readings and designated by a local authority for an area. This is similar to the Rating Level as defined in SANS 10103:2008.

Appendix 6F

Air Quality Impact Assessment (AQIA)

Metal Concentrators SA (Pty) Ltd

AIR QUALITY IMPACT ASSESSMENT - PROPOSED DEVLOPMENT AND INCLUSION OF A REFINERY PLANT IN THE GIDZ JEWELLERY MANUFACTURING PRECINT, KEMPTON PARK

Marang Report Number: MET-01-106-001-00

Marang Project Number: MAR-MET-170002

Revision: 2.0

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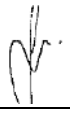
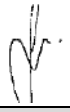
REVISION AND APPROVAL PAGE

Revision Number	**2.0**		
Marang report Number	**MET-01-106-001-00**		
Marang Project Number	**MAR-MET-170002**		
Report Title	**METAL CONCENTRATORS SA (PTY) LTD AIR QUALITY IMPACT ASSESSMENT - PROPOSED DEVLOPMENT AND INCLUSION OF A REFINERY PLANT IN THE GIDZ JEWELLERY MANUFACTURING PRECINT, KEMPTON PARK**		
	Name	**Signature**	**Date**
Author	Sophia Rosslee *(M.Sc)* *Environmental Scientist*		17 September 2018
Document Reviewer	Claire Wray *Pri.Sci. Nat* *Atmospheric Scientist*		17 September 2018
Document Authorisation	Sophia Rosslee *(M.Sc)* *Environmental Scientist*		17 September 2018

Report Submission Summary		
Report Revision Number	1.0	Date Sent: 09 March 2018
Report Revision Number	2.0	Date Sent: 17 September 2018
Report Revision Number		

DISCLAIMER

Information contained in this report was based on the last information received from Wihan Meyer (the Health and Safety Manager at Metal Concentrators SA) during the January/February 2018 period. Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Rayten Engineering Solutions CC for incomplete or inaccurate data supplied by others. We are aware of the fact that there might have been changes since this report was submitted, however this report and its findings is based on the last information received from the client on 05 February 2018. To the best of our knowledge the assumptions and findings are correct at the time of submission of the specialist reports. Should any of the assumption or findings prove to be incorrect subsequent to submission of the report we as the specialist cannot be held accountable.

Note that although every effort has been made by Rayten Engineering Solutions CC to obtain the correct information and to carry out an appropriate, independent, impartial and competent study, Rayten Engineering Solutions CC cannot be held liable for any incident which directly or indirectly relates to the work in this document and which may have an effect on the client or on any other third party.

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DECLARATION

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

(1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and

(2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

Metal Concentrators SA (Pty) Ltd, Air Quality Impact Assessment, Kempton Park Refining Facility, Jewellery Precinct

Specialist:	Marang Environmental and Associates		
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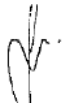
4.2 The specialist appointed in terms of the Regulations_

I, Sophia Rosslee, declare that -- General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the specialist:

Marang Environmental and Associates (Pty) Ltd

Name of company (if applicable):

17 September 2018

Date:

EXECUTIVE SUMMARY

Rayten Engineering Solutions CC (hereafter referred to as “Rayten Engineering”) was appointed by Metal Concentrators SA (Pty) Ltd (referred to as MetCon hereafter), to compile an Air Quality Impact Assessment report for the proposed refinery facility located within Jewellery Manufacturing Precinct on part of the Remainder of Portion 69 of the Farm Witkoppie 64-IR, near OR Tambo International Airport, Gauteng Province. The main objective of the Air Quality Impact Assessment is to determine the potential impact of emissions from the operational activities associated with the proposed project on ambient air quality in terms of the criteria air pollutants and dust fallout.

As part of the Air Quality Impact Assessment, a Baseline Air Quality Assessment was undertaken to determine the prevailing meteorological conditions at the site, establish baseline concentrations of key air pollutants of concern, identify existing sources of emissions and identify key sensitive receptors surrounding the project site. Meteorological data for the project area (from the Johannesburg/OR Tambo International Airport meteorological station) for the period 01 January 2014 – 31 December 2016 was used. The Air Quality Impact Assessment consisted of an emissions inventory and subsequent dispersion modelling simulations to determine PM_{10}, $PM_{2.5}$, SO_2, NO_2, CL_2, HCL, HF and NH_3 concentrations associated with proposed activities during the operational phase of the project. Comparison of the modelled concentrations was made with the South African Ambient Air Quality Standards (where available) to determine compliance.

Summary of conclusions for baseline assessment

The land immediately surrounding the proposed project site consists of a variety of land use types. In general, urban small holdings are located east of the site, with urban industrial and built-up land types concentrated south of the site. Urban residential areas are in the north-western and south-eastern sectors. Cultivated farmlands are positioned further outwards north of the site. Existing key sources of air pollution surrounding the project site have been identified to be:

- Wind erosion from exposed areas (e.g. open cast pits, stockpiles, open storage piles, exposed cultivated fields, degraded land, etc.);
- Potential veld fires;
- Agricultural activity and biomass burning;
- Refuse dumps,
- Industrial activity,
- Treatment plants;
- Township/Informal settlements;
- Vehicle emissions.

Based on the prevailing wind fields for the period January 2014 to December 2016, emissions from operations at the facility will likely be transported towards the south-east quadrant. Moderate to fast wind speeds observed during all time periods may result in effective dispersion and dilution of emissions from MetCon. Removal of pollutants via wet depositional processes would be evident during the spring and summer seasons, thus lower ambient concentrations of pollutants could be expected during these seasons. Elevated levels of pollutants would be expected during the autumn and winters seasons.

The existing air quality situation is usually evaluated using available monitoring data from permanent ambient air quality monitoring stations and dust fallout networks operated near the project site. In this report, air quality data used was from the Bedfordview air quaity monitoring station. There was inadequate data from the station to present background concentrations for PM_{10}, benzene and CO concentrations at the study site. However, there was background data available for $PM_{2.5}$, SO_2, NO_2 and O_3.

Data were analysed from January 2014 to December 2017. For the period, daily average concentrations range from 5 – 35 µg/m^3 for $PM_{2.5}$, 1 – 180 ppb (1.88 – 338.4 µg/m^3) for NO_2, 1 – 68 ppb (2.62 – 178.16 µg/m^3) for SO_2, and 5 – 65 ppb (10 – 130 µg/m^3) for O_3. Maximum hourly average concentrations were 110 µg/m^3 for $PM_{2.5}$, 375 ppb (705 µg/m^3) for NO_2, 250 ppb (655 µg/m^3) for SO_2 and 100 ppb (200 µg/m^3) for O_3. Exceedances of the daily and hourly ambient air quality standards, where applicable, were observed for $PM_{2.5}$, NO_2, SO_2 and O_3. The 2014 - 2015 period is generally characterised by higher concentrations of all pollutants; the 2016 – 2017 period is characterised by lower concentrations. Higher concentrations are generally observed over the winter to early spring seasons.

Summary of conclusions for impact assessment

Particulate and gaseous emissions are identified for operations associated with the proposed facility and will be emitted from the following key sources:

- Jewellers secondary gold material incineration in roasting oven;
- Gas (fuel) combustion installation (roasting oven);
- Chemical refining process;
- Melting of material in induction furnaces and adding fluxes
- Casting of material.

In this study two scenarios were modelled:

a) **The unmitigated scenario,** where the S21 minimum emission standard rates for new plants for sub-category 4.17 (precious and base metals production and refining) were considered for input into the model. In other words, the maximum emission rate that is allowed in terms of S21 of NEM: AQA was considered in the assessment. The emission standards were converted into emission rates for input into the model.
b) **The actual mitigated scenario,** where stack emissions monitoring results, considering the abatement equipment, were used for input into the model.

Based on the dispersion model output plots, predicted incremental concentrations for the actual mitigated scenario are predicted to be low, with no exceedances of the ambient air quality standards observed for PM_{10}, $PM_{2.5}$, NO_2 and SO_2. Predicted incremental concentrations for the unmitigated scenario, indicate no exceedances of the ambient air quality standards, except for the short term hourly limits for SO_2 and NO_2, which occur within the Precinct boundary.

Even though predicted incremental concentrations are shown to be low for the unmitigated scenario, it is still advised that abatement equipment is installed to reduce emissions as much as reasonably possible. Under the mitigated scenario, very low concentrations were observed within 2km from the facility, as the abatement equipment (scrubber and baghouse) has an associated emission control efficiency of approximately 98%. MetCon do plan to install abatement equipment, as per their current design at the MetCon Centurion Plant.

The proposed MetCon Jewellery Precinct facility will trigger sub-category 4.17 (precious and base metals production and refining). As such, the facility requires an AEL to operate. MetCon are in the process of applying for an AEL with the City of Ekurhuleni. Recommendations (provided in Table 5-13 of this report) that should be considered are listed below:

- Appoint a responsible person, such as an emission control officer or safety, health & environmental manager, to ensure compliance with the AEL;
- Comply with all conditions in the AEL;
- Any changes should be approved prior to be being made. A transfer/variation or renewal application should be submitted in this regard;
- Develop and implement a maintenance plan to ensure optimal functioning of production equipment and emission control equipment (abatement equipment);
- Conduct annual stack emissions monitoring;
- Submit annual AEL reports;
- Conduct annual NAEIS reporting;
- Maintain and submit a complaint register to authority monthly.

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LIST OF ABBREVIATIONS

AEL	Atmospheric Emissions License
AQA	Air Quality Act
AQIA	Air Quality Impact Assessment
AQMP	Air Quality Management Plan
CH_4	Methane
CL_2	Chlorine
CO	Carbon Monoxide
CO_2	Carbon Dioxide
$CO_{2\text{-eq}}$	Carbon dioxide equivalent
DEA	Department of Environmental Affairs
GHG	Greenhouse gas
GMT	Greenwich Meridian Time
HCL	Hydrogen Chloride
HF	Hydrogen Fluoride
HFC	Hydrofluorocarbons
HPA	Highveld Priority Area
NAEIS	National Atmospheric Emissions Inventory System
NEMA	National Environmental Management Act
NH_3	ammonia
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
N_2O	Nitrous Oxide
Mtpa	Million tonnes per annum
O_3	Ozone
PBL	Planetary Boundary Layer
PFC	Perfluorocarbons
PM_{10}	Particulate Matter, aerodynamic diameter equal to or size less than 10µm
$PM_{2.5}$	Particulate Matter, aerodynamic diameter size equal to or less than 2.5µm
PRIME	Plume Rise Model Enhancements
SAAQIS	South African Air Quality Information System
SF_6	Sulphur hexafluoride
SO_2	Sulphur Dioxide
TSP	Total Suspended Particles
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

1. INTRODUCTION

Rayten Engineering Solutions was appointed by Metal Concentrators SA (Pty) Ltd (referred to as MetCon hereafter), to compile an Air Quality Impact Assessment report for the proposed Refinery facility located within Jewellery Manufacturing precinct on part of the Remainder of Portion 69 of the Farm Witkoppie 64-IR.

The main objective of the Air Quality Impact Assessment is to determine the potential impact of emissions from the operational activities associated with the proposed project on ambient air quality in terms of the criteria air pollutants and dust fallout.

As part of the Air Quality Impact Assessment for the proposed facility, a baseline air quality assessment is undertaken through a review of meteorological monitoring data, available air quality monitoring data, air quality legislation and the identification of nearby sensitive receptors and existing emissions sources surrounding the project site. The potential impact of emissions from the proposed operational activities on air quality is evaluated through the compilation of an emissions inventory and subsequent dispersion modelling simulations using AERMOD. Comparison of predicted concentrations for key criteria air pollutants is made with the South African Ambient Air Quality Standards and the South African National Dust Control Regulations, where applicable.

1.1 Project Detail

Applicant	Metal Concentrators SA (Pty) Ltd – Jewellery Precinct
Physical Address	On part of the Remainder of Portion 69 of the Farm Witkoppie 64-IR, City of Ekurhuleni, RSA.
AEL number	In process of applying for an AEL application.
EA reference number	***in process of applying for the EA.*
Modelling contractor	Marang Environmental and Associates

1.2 Brief Project Description

The proposed MetCon facility will primarily specialize in extracting precious metals from secondary gold materials (i.e. dorè sourced from other refineries and mines), provide services to the jewellers in the JMP and the local South African market, and beneficiate gold, silver and platinum into finished products for export (Figure 1-1). MetCon will also undertake a minor process that will involve roasting a small amount of jeweller sweeps (mix of papers, bench sweeps, carpets and polishing residues) from manufacturing jewellers, to separate out the metallic components which will then be refined through MetCon's primary refining process. It should be noted that this minor roasting process will constitute about 1% of MetCon's turnover.

MetCon plans to operate a variety of processes and activities on the site which will aid in achieving the desired productions. These will include:

- Chemical refining and concentration of precious metals.
- Roasting of jewellers waste materials, known as jewellers sweep.
- Casting of precious metals into ingots by means of induction furnace.

- Manufacture of Jewellery
- Manufacture of products for use by manufacturing jewellers
- Cooling water by means of cooling towers.
- Storage of liquid and solid raw materials.
- Caustic soda chemical scrubbing of acid gas emissions from the chemical refining process.
- Collection of dust and particulates from the roaster and induction furnace by means of a bag filter.

The products from MetCon's facility will include refined precious metals of gold, silver and platinum which will be beneficiated and chemically refined into added value finished products such as minted bars, 1-kilogram bars, as well as jewellery pieces. Jewellery pieces and products for use by manufacturing jewellers will be sold into South Africa and some of the finished jewellery will be exported. Surplus gold will be melted into 400 oz bullion bars and exported.

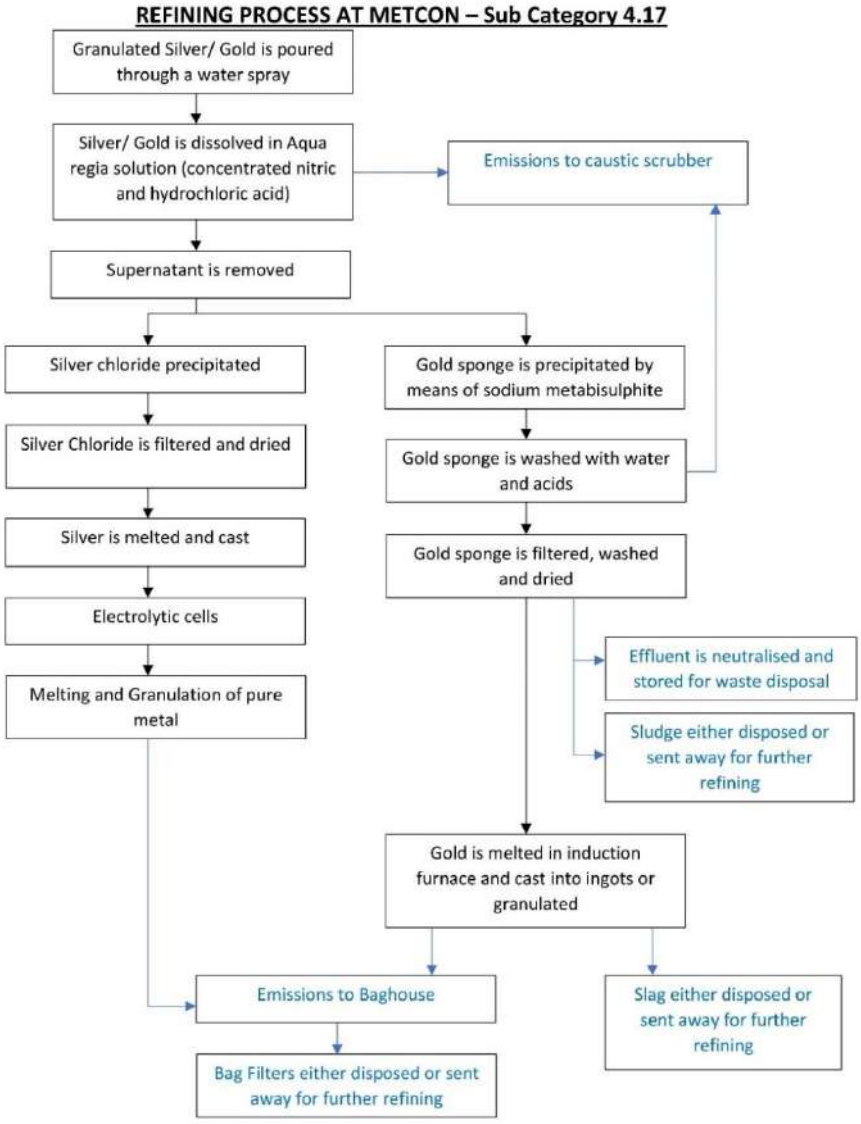

Figure 1-1: Refining Process Flow Diagram.

A basic site layout diagram for the Jewelry Precinct is given in Figure 1-2. The proposed MetCon facility will be in block 2.

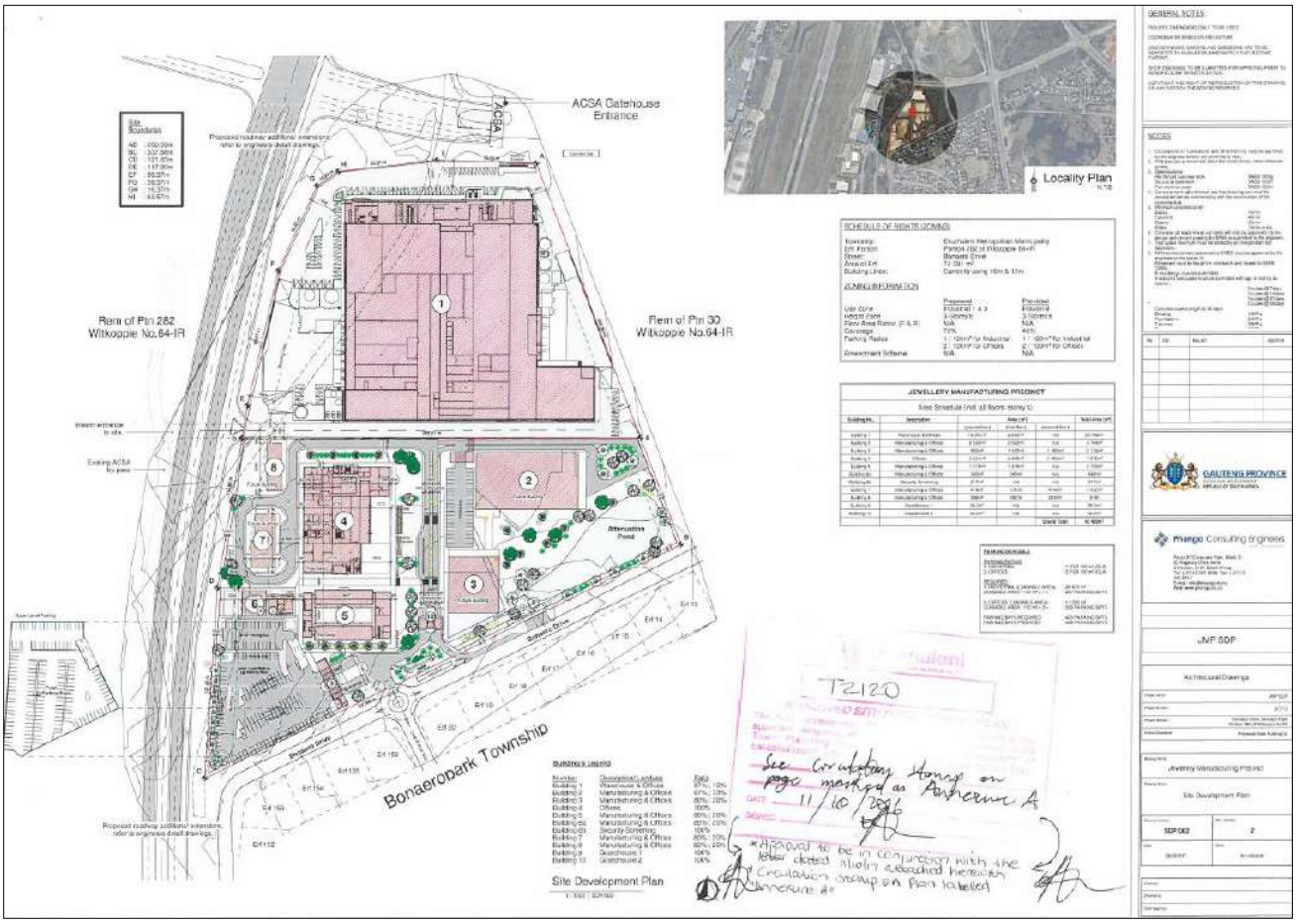

Figure 1-2:Site Layout Diagram for the Proposed Jewellery Precinct. The MetCon facility will be in block 2.

1.3 Terms of Reference

The scope of work for the Air Quality Impact Assessment is as follows:

1.3.1 Air Quality Impact Assessment

- A review of the study site and proposed activities;
- An overview of the prevailing meteorological conditions in the area which influence the dilution and dispersion of pollutants in the atmosphere;
- The identification of existing sources of emissions;
- The identification of key air pollutants of concern that may be emitted from proposed activities (criteria air pollutants);
- Characterisation of the ambient air quality within the area using available air quality monitoring data;
- A review of the current South African legislative and regulatory requirements for air quality;
- The identification of sensitive receptors, such as local communities, surrounding the study area;
- The compilation of a detailed emission inventory for key sources of emissions;

- Dispersion modeling simulations of ground level particulate and gaseous emissions for incremental impacts; and
- Provision of general recommendations for the mitigation and management of identified potential impacts. This does not include a detailed air quality management plan.

1.4 Outline of Report

An overview of the site location including surrounding receptors is given in **Section 2**. National ambient air quality standards, dust fallout regulations and associated health impacts for the relevant criteria pollutants are provided in **Section 3**. The local meteorological conditions and baseline air pollutants concentrations are provided in **Section 4**. Potential emissions and their impact on air quality associated with proposed operations are outlined in **Section 5**. Mitigation measures, recommendations and a summary report are provided in **Section 6**.

2. SITE CHARACTERISTICS

2.1 Site Location

The proposed MetCon Kempton Park Refinery facility is located within the Jewellery Precinct, on part of the Remainder of Portion 69 of the Farm Witkoppie 64-IR, City of Ekurhuleni, Gauteng Province, South Africa (-26.114489^{o} S; 28.250934^{o} E) (Figure 2-3). The proposed project area falls within the Highveld Priority Area (HPA) as shown in Figure 2-1 and Figure 2-2. A summary of the HPA Air Quality Management Plan (AQMP) is provided in Section 2.2 below. In addition, the City of Ekurhuleni contains its own Air Quality Management By-Laws which are summarised in Section 3.6.

2.2 Highveld Priority Area Air Quality Management Plan

The HPA was declared a priority area by the Minister of Environmental Affairs and Tourism on the 23 November 2007 under the National Environmental Management Air Quality Act (Act No. 39 of 2004) (Government Gazette, No. 30518 of 23 November 2007). A Priority Area is usually associated with elevated ambient concentrations of criteria air pollutants such as PM_{10}, $PM_{2.5}$, SO_2 and NO_x. Generally, a high number of emitters (industrial and non-industrial) are also concentrated in these areas. In order to meet the requirements of Air Quality Act (Act No. 39 of 2004), an Air Quality Management Plan (AQMP) was compiled for the HPA and provides as a management tool that can be used and implemented by departments and industry to ensure effective air quality management within the area. The primary aim of the AQMP is to provide a framework including short to long term strategies and programs that can be used to work towards achieving and maintaining compliance with the National ambient air quality standards within the HPA. In the HPA, industrial emitters were identified as the most significant contributor of emissions accounting for 89% of PM_{10}, 90% of NO_x and 99% of SO_2. Industrial emitters within the HPA include (DEA, 2011):

- Power generation;
- Coal mining;
- Primary & secondary metallurgical operations;
- Brick manufactures;
- Petrochemical industry;
- Ekurhuleni industrial sources (excluding the above); and

- Mpumalanga industrial sources (excluding the above).

An assessment of ambient air quality monitoring data within the HPA, allowed for the following areas to be identified as areas of concern. These areas are associated with high frequency exceedances of the PM_{10} and SO_2 ambient standards. The air quality monitoring data for the HPA also shows seasonal trends. A higher frequency of exceedances of the standards are observed during the winter season where the dispersion potential of ground level pollutants (e.g. vehicle exhaust emissions) are largely reduced due to the strengthening of surface inversions (DEA, 2011).

- Witbank 2;
- Middelburg;
- Secunda;
- Ermelo;
- Standerton;
- Balfour; and
- Komati.

A comprehensive emissions inventory was compiled for the HPA. A combination of ambient air quality monitoring and dispersion modelling results identified nine areas within the HPA as hotspot areas, where ambient concentrations of PM_{10}, SO_2 and NO_2 frequently exceed and/or were predicted to exceed the ambient standards (Table 2-1). Residential areas associated with a high level of domestic fuel burning (wood and coal) were identified to experience high concentrations of particulates and CO.

Table 2-1: HPA Air Quality Hot Spot Areas (DEA, 2011;20).

Hot Spot	PM_{10}	SO_2	NO_2
Emalahleni	✓	✓	
Kriel		✓	
Steve Tshwete	✓	✓	✓
Ermelo	✓	✓	
Secunda	✓	✓	✓
Ekurhuleni	✓	✓	
Lekwa	✓	✓	
Balfour	✓		
Delmas		✓	

In order to achieve compliance with the National air quality limits for criteria pollutants within the HPA, the AQPM for the HPA developed seven goals which are given below (DEA, 2011):

1. ***Goal 1:*** *By 2015, organisational capacity in government is optimised to efficiently and effectively maintain, monitor and enforce compliance with ambient air quality standards*
2. ***Goal 2:*** *By 2020, industrial emissions are equitably reduced to achieve compliance with ambient air quality standards and dust fallout limit values*
3. ***Goal 3:*** *By 2020, air quality in all low-income settlements is in full compliance with ambient air quality standards*

4. ***Goal 4:*** *By 2020, all vehicles comply with the requirements of the National Vehicle Emission Strategy*
5. ***Goal 5:*** *By 2020, a measurable increase in awareness and knowledge of air quality exists*
6. ***Goal 6:*** *By 2020, biomass burning and agricultural emissions will be 30% less than current*
7. ***Goal 7:*** *By 2020, emissions from waste management are 40% less than current*

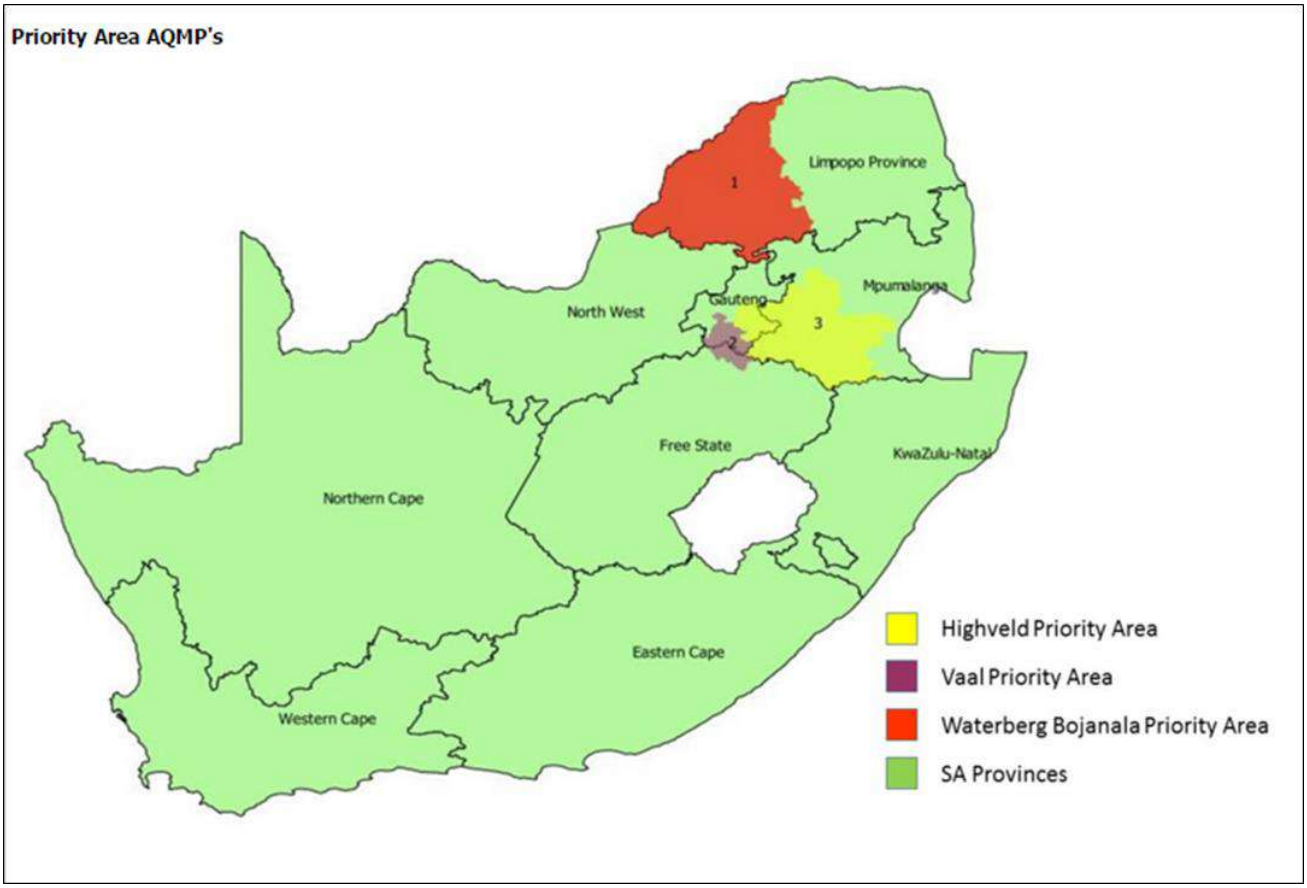

Figure 2-1: Air Quality Priority Areas.

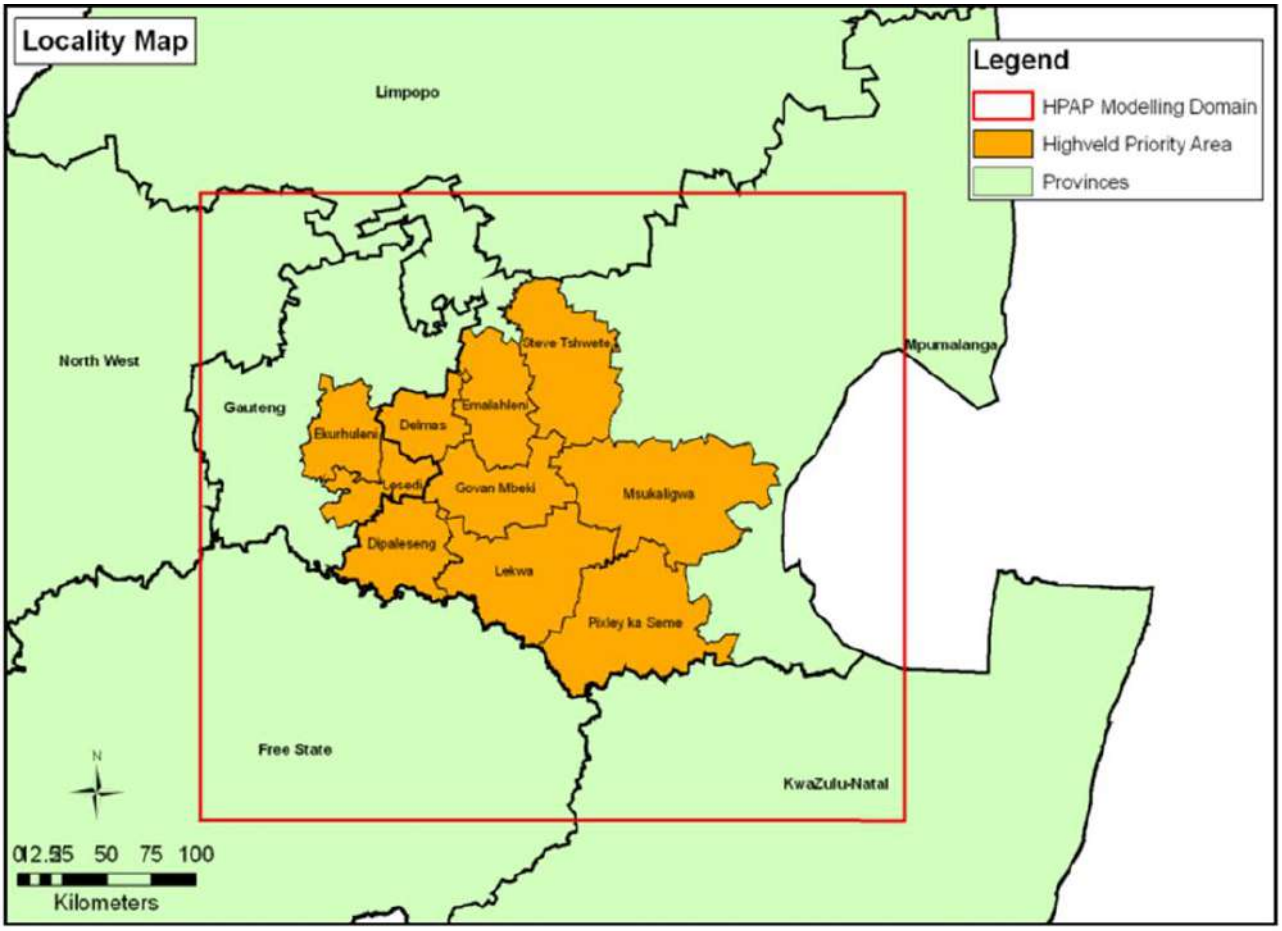

Figure 2-2: Highveld Priority Area (DEA, 2011).

2.3 Surrounding Land Use

The land immediately surrounding the proposed project site consists of a variety of land use types (Figure 2-4). In general, urban small holdings are located east of the site, with urban industrial and built-up land types concentrated south of the site. Urban residential areas are in the north-western and south-eastern sectors. Cultivated farmlands are positioned further outwards north of the site.

2.4 Topography

The topography surrounding the proposed facility is shown in Figure 2-5. Surrounding elevations range from approximately 1376 - 1913m above sea level. The proposed project site is situated approximately 1670m above sea level; with increasing elevation towards the north-west.

2.5 Sensitive Receptors

A sensitive receptor is defined as a person or place where involuntary exposure to air pollutants released by the site's activities could take place. Identified urban/residential areas which are located within 10km from the facility are given in Figure 2-6. Bonaero Park, is situated along the south-eastern border of the proposed Jewelry Precinct.

Hospitals and schools located within 5km from the site are given in Table 2-2. No old age homes were identified to be within 5km from the site (through a desktop study).

Table 2-2: Discrete receptors within 5km of proposed MetCon Jewellery Precinct Facility. Receptors were identified through a desktop study.

Receptor	Co-ordinate		Elevation	Type	Approx. Distance	Direction from project site
	x	Y	m		km	
Edu 1+2+3	-26.11687	28.25514	1669.69	Residential	0.3	E
Edu 4	-26.11042	28.23167	1666.95	Residential	1.79	WNW
Edu 5	-26.9976	28.23642	1673.96	Residential	2.58	NW
Edu 6	-26.10671	28.22901	1664.51	Residential	2.31	WNW
Edu 7	-26.11422	28.22291	1651.71	Residential	2.76	W
Edu 8	-26.11378	28.20704	1670.91	Residential	4.37	W
Edu 9+10	-26.10094	28.20106	1664.21	Residential	5.02	WNW
Edu 11	-26.08054	28.25125	1655.04	Residential	3.60	N
Hosp 1	-26.10764	28.23327	1652.32	Residential	1.96	NW
Hosp 2	-26.09377	28.24099	1671.83	Residential	2.56	NNW
Hosp 3	-26.09648	28.20458	1662.07	Residential	4.99	WNW
Hosp 4+5	-26.10953	28.21753	1651.41	Residential	3.36	W
Hosp 6	-26.09011	28.23783	1669.70	Residential	2.89	NNW
Hosp 7	-26.09314	28.24097	1671.22	Residential	2.45	NNW

Notes:
Edu = educational/training facility
Hosp = hospital / clinic
Distance = indicated from centre of site

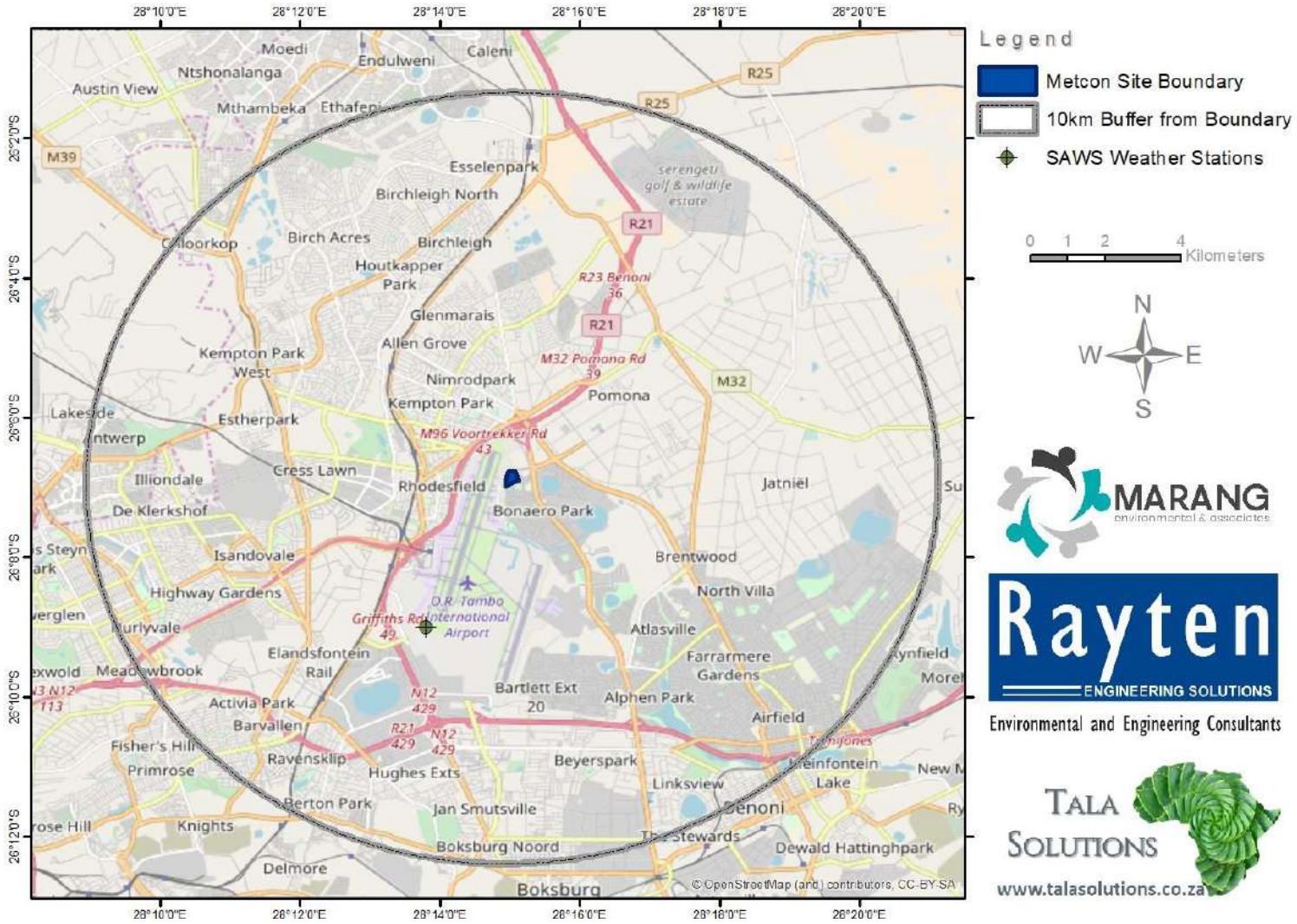

Figure 2-3: Site Locality for MetCon Jewellery Precinct Facility.

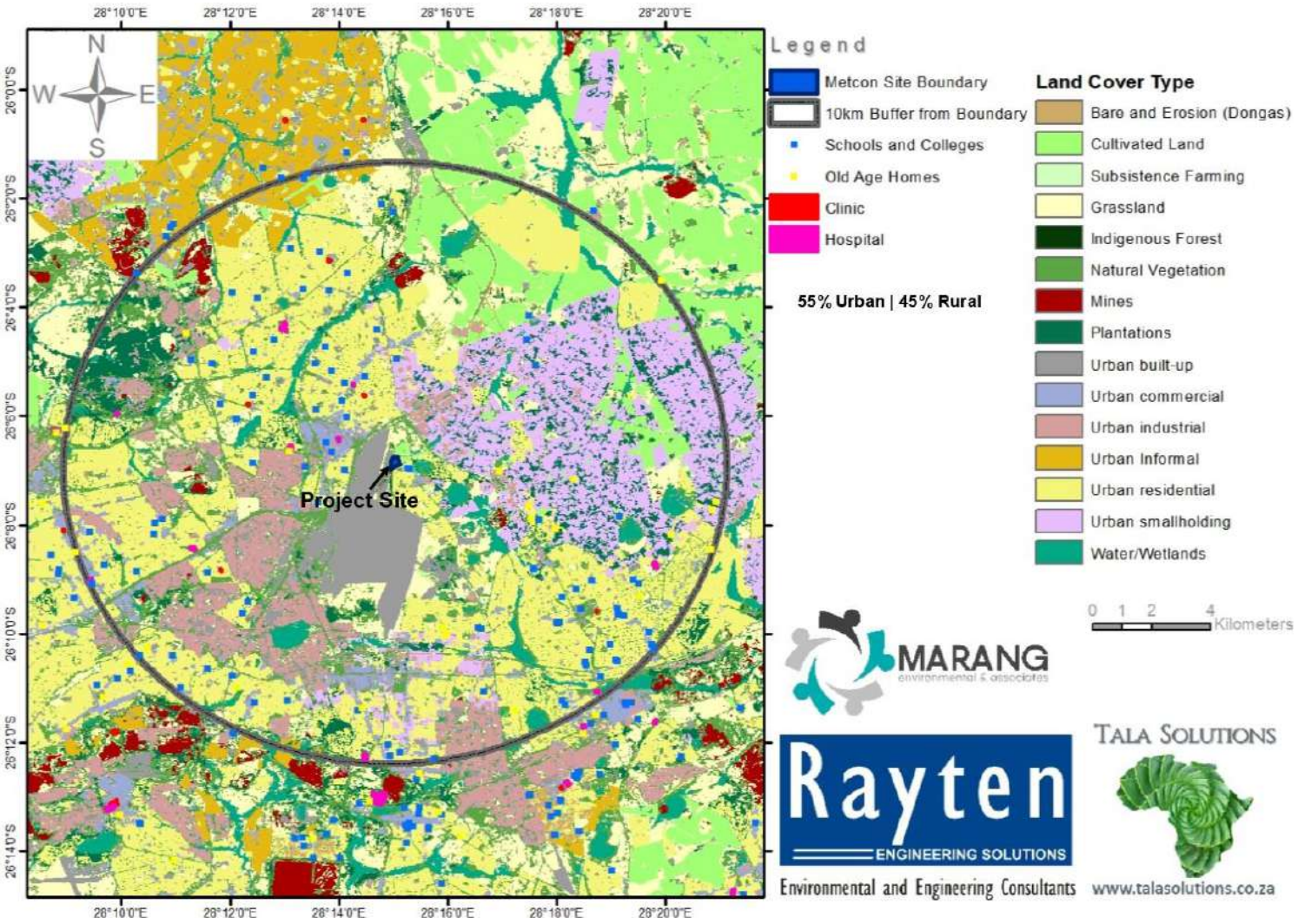

Figure 2-4: Land use surrounding MetCon Jewellery Precinct Facility.

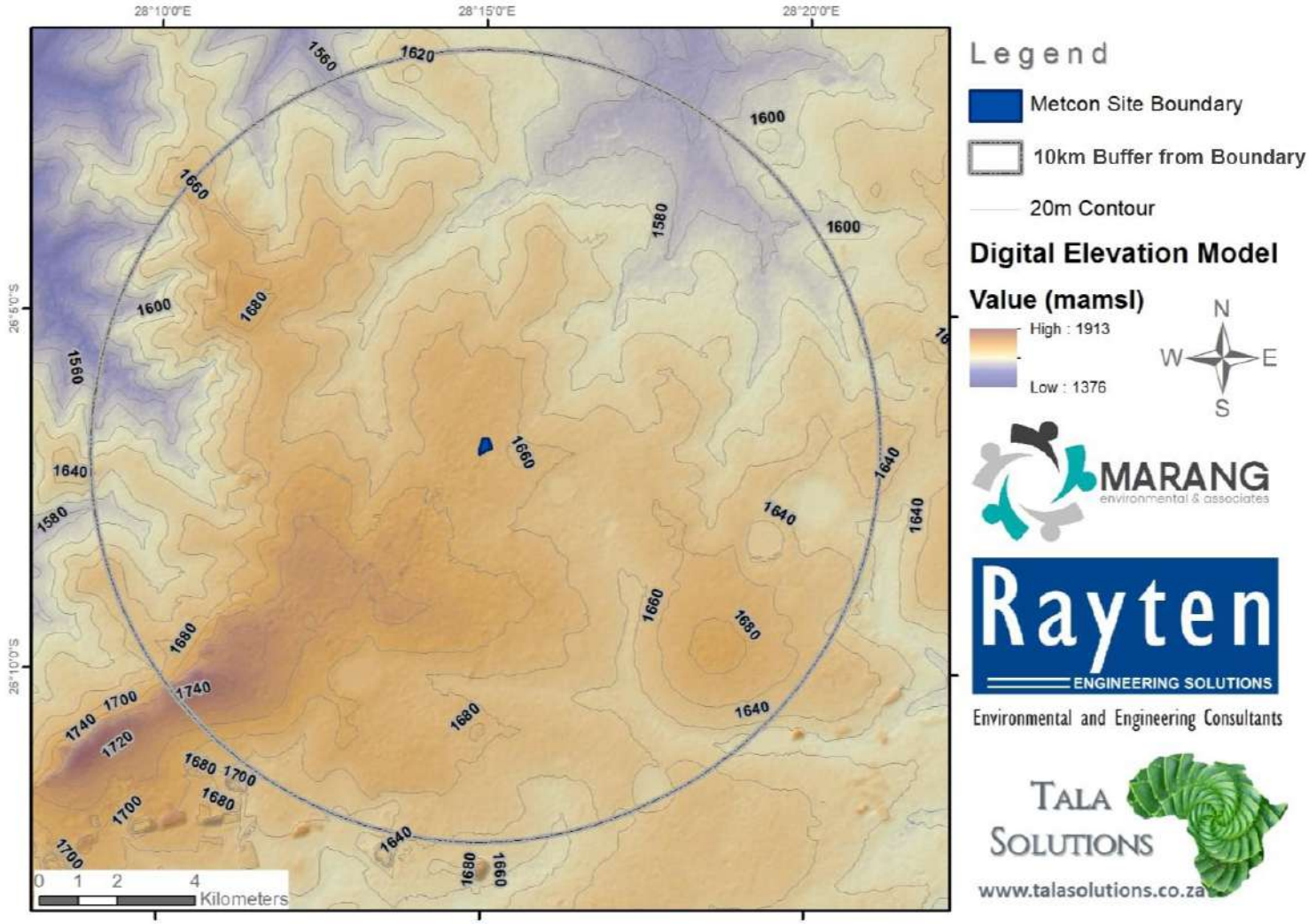

Figure 2-5: Topography surrounding MetCon Jewellery Precinct Facility.

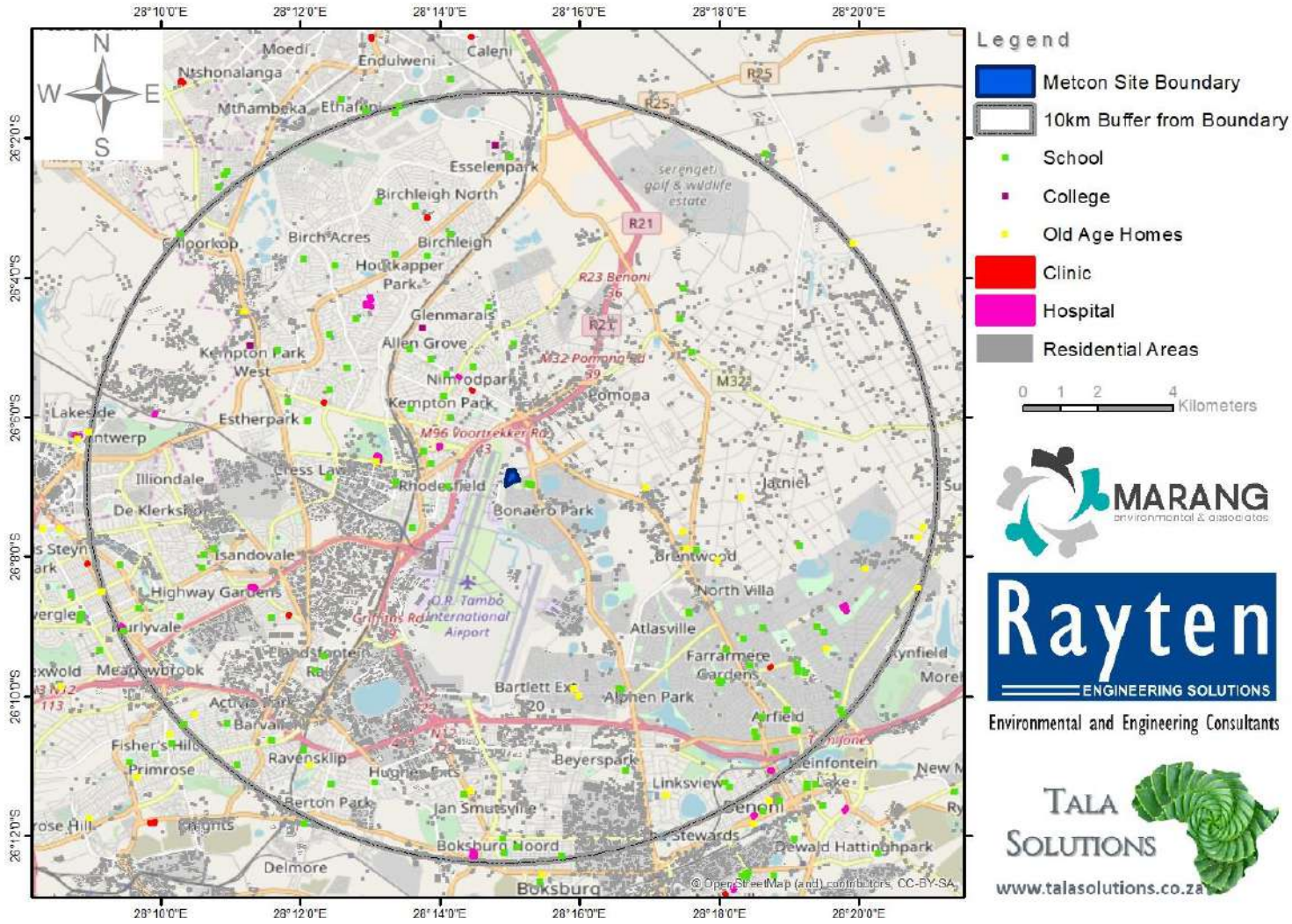

Figure 2-6: Residential receptors surrounding MetCon Jewellery Precinct Facility.

3. LEGISLATION, POLICIES AND GUIDELINES

3.1 National Environmental Management: Air Quality Act

The National Environmental Management: Air Quality Act (NEM: AQA) No. 39 of 2004, has shifted the approach of air quality management from source-based control to receptor-based control. The main objectives of the Act are to;

- Give effect to everyone's right "to an environment that is not harmful to their health and wellbeing".
- Protect the environment by providing reasonable legislative and other measures that;

  i. Prevent pollution and ecological degradation,
  ii. Promote conservation, and
  iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The Act makes provisions for the setting and formulation of National ambient air quality standards for "substances or mixtures of substances which present a threat to health, well-being or the environment". More stringent standards can be established at the provincial and local levels.

The control and management of emissions in the NEM: AQA relates to the listing of activities that are sources of emissions and the issuing of emission licences. Listed activities are defined as activities which "result in atmospheric emissions and are regarded as having a significant detrimental effect on the environment, including human health". Listed activities have been identified by the Minister of the Department of Environmental Affairs (DEA) and atmospheric emission standards have been established for each of these activities. These listed activities now require an AEL to operate. The issuing of AELs for listed activities will be the responsibility of the Metropolitan and District Municipalities.

In addition, the Minister may declare and substance contributing to air pollution as a priority pollutant. Any industries or industrial sectors that emit these priority pollutants will be required to implement a Pollution Prevention Plan. Municipalities are required to "designate an air quality officer to be responsible for co-ordinating matters pertaining to air quality management in the Municipality". The appointed Air Quality Officer is responsible for the issuing of atmospheric emission licences.

3.2 Listed Activities and Minimum Emission Standards

The NEM: AQA requires all persons undertaking listed activities in terms of Section 21 of the Act to obtain an AEL. The listed activities and associated minimum emission standards were issued by the DEA on 31 March 2010 (Government Gazette No. 33064 of 31 March 2010) and were amended in 2013 (Government Gazette No. 37054 of 22 November 2013) and 2015 (Government Gazette No. 38863 of 12 June 2015).

The MetCon Jewellery Precinct Facility will trigger the following listed activities, and require an AEL in order to operate. Minimum emission standards identified in terms of Section 21 of the National Environmental Management: Air Quality Act (Act No. 39 of 2004) and stipulated in GNR 893 must be complied with for any listed activities.

(2) *Subcategory 4.2: Combustion Installations*

Description:	Combustion installations not used for primarily for steam raising and electricity generation (except drying).		
Application:	All combustion installations (except test or experimental).		
Substance or mixture of substances		**Plant status**	**mg/Nm³ under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of nitrogen	NO_x expressed as NO_2	New	500
		Existing	2000

(a) The following special arrangements shall apply –

(i) Reference oxygen content appropriate to fuel type must be used.

(ii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(17) *Subcategory 4.17: Precious and Base Metal Production and Refining*

Description:	The production or processing of precious and associated base metals through chemical treatment (Excluding Inorganic Chemicals-related activities regulated under Category 7).		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm³ under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Chlorine	Cl_2	New	50
		Existing	50
Sulphur dioxide	SO_2	New	400
		Existing	400
Hydrogen chloride	HCl	New	30
		Existing	30
Hydrogen fluoride	HF	New	30
		Existing	30
Ammonia	NH_3	New	100
		Existing	100
Oxides of nitrogen	NO_x expressed as NO_2	New	300
		Existing	500

South Africa launched an online national reporting system, reffered to as the National Atmospheric Emissions Inventory System (NAEIS). The AQA requires all emission source groups identified in terms of the National Atmospheric Reporting Regulations (Government Gazette No. 38633 of 02 April 2015), to register and report emissions on the NAEIS. Listed Activities are classified as Group A emitters and thus are required to report annualy and comply with the National Atmospheric Reporting Regulations.

3.3 Ambient Air Quality Standards

National ambient air quality standards, including allowable frequencies of exceedance and compliance timeframes, were issued by the Minister of Water and Environmental Affairs on 24

December 2009 (Table 3-1). National standards for $PM_{2.5}$ were established by the Minister of Water and Environmental Affairs on 29 June 2012.

Table 3-1: National Ambient Air Quality Standards for Criteria Pollutants.

POLLUTANT	AVERAGING PERIOD	CONCENTRATION ($\mu g/m^3$)	FREQUENCY OF EXCEEDANCE
Sulphur dioxide (SO_2)	10 minutes	500 (191)	526
	1 hour	350 (134)	88
	24 hours	125 (48)	4
	1 year	50 (19)	0
Nitrogen dioxide (NO_2)	1 hour	200 (106)	88
	1 year	40 (21)	0
Particulate Matter (PM_{10})	24 hours	75	4
	1 year	40	0
Particulate Matter ($PM_{2.5}$)	24 hours	40(1) 25(2)	0
	1 year	20(1) 15(2)	0
Ozone (O_3)	8 hours (running)	120 (61)	11
Benzene (C_6H_6)	1 year	5 (1.6)	0
Lead (Pb)	1 year	0.5	0
Carbon monoxide (CO)	1 hour	30 000 (26 000)	88
	8 hour (calculated on 1 hourly averages)	10 000 (8 700)	11

Notes:

*Values indicated in blue are expressed in PPB.

(1) Compliance required by 1 January 2016 – 31 December 2029.

(2) Compliance required by 1 January 2030.

3.4 Dust Deposition Standards

The Department of Environmental Affairs has issued National dust control regulations on 1 November 2013 (Table 3-2). The purpose of the regulations is to prescribe general measures for the control of dust in all areas. The regulations prohibit activities which give rise to dust in such quantities and concentrations that the dust fall at the boundary or beyond the boundary of the premises where it originates exceeds -

a) 600 mg/m^2/day averaged over 30 days in residential areas measured using reference method ASTM D1739.
b) 1200 mg/m^2/day averaged over 30 days in non-residential areas measured using reference method ASTM D1739.

Table 3-2: South African Dust Fallout Regulations.

RESTRICTION AREAS	DUST FALLOUT RATE (D) [1]	REQUENCY OF EXCEEDANCE
Residential Areas	D < 600	Two within a year, no two sequential months [2]
Non-residential areas	600 < D < 1200	Two within a year, no two sequential months [2]

Notes:

(1) Averaged over 1 month (30±2-day average) (mg/m^2/day)

(2) Per dust fallout monitoring site.

Any person who has exceeded the dust fallout standard must, within three months after submission of a dust fallout monitoring report, develop and submit a dust management plan to the air quality officer for approval. The dust management plan must:

a) Identify all possible sources of dust within the affected site;
b) Detail the best practicable measures to be undertaken to mitigate dust emissions;
c) Develop an implementation schedule;
d) Identify the line management responsible for implementation;
e) Incorporate the dust fallout monitoring plan;
f) Establish a register for recording all complaints received by the person regarding dust fall, and for recording follow up actions and responses to the complainants.

The dust management plan must be implemented within a month of the date of approval. An implementation progress report must be submitted to the air quality officer at agreed time intervals.

3.5 GHG Emissions

On 14 March 2014, the following six greenhouse gases were declared as priority air pollutants in South Africa:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF_6)

National GHG Emission Reporting Regulations (Government Gazette No. 40762 of 3 April 2017), were published by the Department of Environmental Affairs. A person identified as a Category A data provider in terms Annexure 1 of these regulations, must register their facilities by filling in the form

under Annexure 2 and must submit a GHG emissions inventory and activity data in the required format given under Annexure 3 on an annual basis.

Updated draft National Pollution Prevention Plan Regulations (Draft Gazette No. 40996) were published on 21 July 2017 by the Department of Environmental Affairs (DEA). A pollution prevention plan will be required should the proposed development:

a) Undertake any of the following activities identified in Annexure A of the National GHG Emission Reporting Regulations (Government Gazette No. 40762 of 3 April 2017), which involves the direct emission of GHG in excess of 0.1 Megatonnes (Mt) annually measured as carbon dioxide equivalents ($CO_{2\text{-}eq}$); or
b) Undertake any of the following activities identified in Annexure A of the Draft National Pollution Prevention Plan Regulations (Gazette No. 40996 of 21 July 2017) as a primary activity.

Annexure A activities in terms of the Draft National Pollution Prevention Plan Regulations include:

- Coal mining
- Production and /or refining of crude oil
- Production and/or processing of natural gas
- Production of liquid fuels from coal or gas
- Cement production
- Glass production
- Ammonia production
- Nitric acid production
- Carbon black production
- Iron & steel production
- Ferro-alloys production
- Aluminium production
- Polymers production
- Pulp and paper production
- Electricity production

A person identified as a Category A data provider in terms of these regulations must register their facilities by filling in the form under Annexure 2 and must submit a GHG emissions inventory and activity data in the required format given under Annexure 3. All data must be provided annually, by the 31 March of the following year. Data providers are required to register on the NAEIS and report on their direct GHG emissions on an annual basis and comply with the reporting requirements as detailed in the National GHG Emission Reporting Regulations.

The MetCon Jewellery Precinct Facility would need to report on GHG emissions by the 31 March of every year, should the total design net heat input capacity of all the stationary fuel combustion installations, associated with their activities, fall above the 10MW threshold in terms of Annexure 1 of the National GHG emission reporting regulations (Government Gazette No. 40762 of 3 April 2017).

3.6 City of Ekurhuleni: Air Quality Management By-Law

The proposed MetCon Jewellery Precinct Facility is located within the City of Ekurhuleni (COE) which has a by-law specifically relating to air quality management. The air quality management by-law for the COE District Municipality was issued on 25 January 2005 (Provincial Gazette No. 2701 of 10 June 2016). The purpose and objective of the by-law is to enable the council and its local municipalities to

protect, intervene, regulate and control activities which emit emissions and promote the long term health, well-being and safety of people and environment within its jurisdiction area.

The by-law states that any person who is responsible for causing air pollution or creating a risk of air pollution within the municipality must take reasonable measures to:

a) Prevent any potential air pollution from occurring; or
b) Where the causing of any air pollution is permitted, not prohibited, or cannot be reasonably avoided or stopped, to minimise that pollution.

Reasonable measures, as provided by the by-law, include the following:

a) Investigate, assess and evaluate the impact of air pollution on the environment;
b) Inform and educate employees about the environmental risks of their work and how they can perform their work in order to avoid air pollution;
c) Cease, modify or control any act, activity or process causing the air pollution;
d) Contain or prevent the movement of pollutants or remedy the effects of the air pollution.

The municipality may direct any person causing significant air pollution either to cease the activity; investigate, evaluate and assess the impact of such; implement specific measures before a given date and continue with those measures in place. The municipality also has the authority to issue a directive. Should the person fail to comply with the directive, the municipality may take reasonable steps to remedy the situation or apply to court for appropriate relief.

The by-law has identified 8 priority air pollutants [particulate matter with an aerodynamic diameter of < 10 µm (PM_{10}), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), lead (Pb), benzene (C_6H_6) and dust fall] which may present a threat on the health and well-being of people in the municipal area. The municipality may add more substances to the list in the future. The by-law makes provision for the COE to develop and adopt local emissions standards for any of the identified substances. A person emitting any of the identified substances must comply with the relevant emission standards.

Under the Air Quality Management by-law for the COE Municipality there are specific provisions pertaining to the several activities or emissions sources that need to be complied with. In most instances, authorisation from the Municipality is required before the emitting activities can take place and in other instances the activity is prohibited. The relevant activities or emissions sources are summarised below:

a) Emissions from compressed ignition powered vehicles.
b) Emissions from mining operations and tailings impoundments.
c) Any activity resulting in dust emissions.
d) Road transportation emissions.
e) Open burning emission
f) Emissions from industrial and domestic waste disposal and treatment (e.g. landfill operations, incineration, sewage and waste water treatment works.
g) Emissions caused by burning of garden waste.
h) Emissions from industrial fuel burning appliances.

i) Emissions from electicity generation.
j) Emissions from aircraft engines.
k) Emissions from other sources like vehicle entrainment form unpaved roads, agricultural activities, veld burning and railway transport.

3.7 Human Health Effects

3.6.1 Dust Fallout (TSP)

Dust fallout are particles with an aerodynamic diameter greater than 20µm that have been entrained into the air by a physical process such as wind, movement of vehicles, stack emissions and from fugitive dust. These particles are generally too heavy to remain in suspension in the air for any period of time and fall out of the air over a relatively short distance depending on a combination of various factors such as particle size, density, temperature (of the air and particle), emission velocity or method, ambient wind speed and humidity. These particles are therefore commonly known as “dust fallout”. Particulates in this range are generally classified as a nuisance dust and can cause physical damage to property and physical irritation to plants, animals and humans.

3.6.2 Particulates (PM_{10} & $PM_{2.5}$)

Particles can be classified by their aerodynamic properties into coarse particles, PM10 (particulate matter with an aerodynamic diameter equal to or less than 10 µm) and fine particles, PM2.5 (particulate matter with an aerodynamic diameter equal to or less than 2.5 µm). The fine particles mostly contain secondary formed aerosols such as sulphates and nitrates, combustion particles and re-condensed organic and metal vapours. The coarse particles mostly contain earth crust materials and fugitive dust from roads and industries (Harrison *et al.,* 2014).

In terms of health impacts, particulate air pollution is associated with effects on the respiratory system (WHO, 2000). Particle size is important for health because it controls where in the respiratory system a given particle deposits. Fine particles are thought to be more damaging to human health than coarse particles as larger particles do not penetrate deep into the lungs compared to smaller particles. Larger particles are deposited into the extra thoracic part of the respiratory tract while smaller particles are deposited into the smaller airways leading to the respiratory bronchioles (WHO, 2000).

Recent studies suggest that short-term exposure to particulate matter leads to adverse health effects, even at low concentrations of exposure (below 100 µg/m^3). Morbidity effects associated with short-term exposure to particulates include increases in lower respiratory symptoms, medication use and small reductions in lung function. Long-term exposure to low concentrations (~10 µg/m^3) of particulates is associated with mortality and other chronic effects such as increased rates of bronchitis and reduced lung function (WHO, 2000). Those most at risk include the elderly, individuals with pre-existing heart or lung disease, asthmatics and children.

3.6.3 Sulphur Dioxide (SO_2)

SO_2 originates from the combustion of sulphur-containing fuels and is a major air pollutant in many parts of the world. Health effects associated with exposure to SO_2 are also associated with the

respiratory system. Being soluble, SO_2 is readily absorbed in the mucous membranes of the nose and upper respiratory tract.

Most information on the acute (short-term) effects of SO_2 is derived from short-term exposure in controlled chamber experiments. These experiments have demonstrated a wide range of sensitivity amongst individuals. Acute exposure of SO_2 concentrations can lead to severe bronchoconstriction in some individuals, while others remain completely unaffected. Response to SO_2 inhalation is rapid with the maximum effect experienced within a few minutes. Continued exposure does not increase the response. Effects of SO_2 exposure are short-lived with lung function returning back to normal within a few minutes to hours (WHO, 2000). Exposure to SO_2 over a 24-hour period has shown that when SO_2 concentrations exceed 250 µg/m^3 in the presence of PM (such as sulphates), an exacerbation of symptoms is observed in selected sensitive patients. More recent studies of health impacts in ambient air polluted by industrial and vehicular activities have demonstrated at low levels effects on mortality (total, cardiovascular and respiratory) and increases in hospital admissions. Long-term exposure to SO_2 has been found to be associated with an exacerbation of respiratory symptoms and a small reduction in lung function in children in some cases. In adults, respiratory symptoms such as wheezing and coughing are increased (WHO, 2000).

3.6.4 Nitrogen Dioxide (NO_2)

Nitric oxide (NO) is a primary pollutant emitted from the combustion of stationary sources (heating, power generation) and from motor vehicles. Nitrogen dioxide (NO_2) is formed through the oxidation of NO. Oxides of nitrogen (NO_x) are made up of NO, NO_2 and NO_x of which NO_2 is the most important from a human health point of view. NO2 is an irritating gas that is absorbed into the mucous membrane of the respiratory tract. The most adverse health effect occurs at the junction of the conducting airway and the gas exchange region of the lungs. The upper airways are less affected because NO2 is not very soluble in aqueous surfaces. Exposure to NO2 is linked with increased susceptibility to respiratory infection, increased airway resistance in asthmatics and decreased pulmonary function.

Short term exposure of NO_2, at concentrations greater than 1880 µg/m^3, results in changes in the pulmonary function of adults. Normal healthy people exposed at rest or with light exercise for less than 2 hours to concentrations above 4700 µg/m^3, experience pronounced decreases in pulmonary function (WHO, 2000). Long-term epidemiological studies have been undertaken on the indoor use of gas cooking appliances and health effects. Studies on adults and children under 2 years of age found no association between the use of gas cooking appliances and respiratory effects. Children aged 5 – 12 years have a 20% increased risk for respiratory symptoms and disease for each increase of 28 µg/m^3 NO_2 concentration, where the weekly average concentrations are in the range of 15 – 128 µg/m^3. Outdoor studies consistently indicate that children with long-term ambient NO_2 exposures exhibit increased respiratory symptoms that are of a longer duration. However, no evidence is provided for the association of long-term exposures with health effects in adults (WHO, 2000).

3.6.5 Carbon Monoxide (CO)

Carbon monoxide (CO) is a tasteless, odourless and colourless gas which has a low solubility in water. In the human body, after reaching the lungs it diffuses rapidly across the alveolar and capillary

membranes and binds reversibly with the haem proteins. Approximately 80 - 90% of CO binds to haemoglobin to form carboxyhaemoglobin. This causes a reduction in the oxygen-carrying capacity of the blood which leads to hypoxia as the body is starved of oxygen. Severe hypoxia due to acute poisoning results in headaches, nausea and vomiting, muscular weakness, loss of consciousness, shortness of breath and finally death, depending on the concentration and time of exposure. Poisoning may cause both reversible, short-lasting neurological deficits and severe, often delayed, neurological damage. Neurobehavioral effects include impaired co-ordination, tracking, driving ability, vigilance and cognitive ability (WHO, 2000).

4. BASELINE ASSESSMENT

4.1 Meteorological Overview

Meteorological processes will determine the dispersion and dilution potential of pollutants emitted into the atmosphere. The vertical dispersion of pollution is governed by the stability of the atmosphere and the depth of the surface mixing layer. Horizontal dispersion of pollution is defined by dominant wind fields. Therefore, meteorological parameters including temperature, precipitation, wind speed and wind direction are of significance as they will influence the degree to which pollution will accumulate or disperse in the atmosphere.

As per the Code of Practice for Air Dispersion Modelling in Air Quality Management in South Africa (DEA, 2014), representativeness of the meteorological data is influenced by the following four factors:

- Proximity of the meteorological site to the area being modelled;
- Complexity of the terrain;
- Exposure of the meteorological measurement site; and
- Period of data collection.

Meteorological data for the project area was obtained from the Johannesburg/OR Tambo International Airport (hereafter “OR Tambo Station” - 26.143000° S; 28.234600° E) for the period January 2014 to December 2016. Details of the meteorological data obtained is summarised in Table 4-1.

Table 4-1: Meteorological Data Details (SAWS, 2017).

Meteorological Data Details	
Met Data Information	**Description**
Source	South African Weather Services
Met data type	Surface Data
Station	OR Tambo International Airport
Latitude	26.143000 S
Longitude	28.234600 E
Time zone	UTC +2 hours
Period of record	January 2014 - December 2016
Met Station Parameters	**Description**
Anemometer height	Assumed 10m

Station base elevation	1711 m
Parameters	Wind speed, wind direction, cloud cover, temperature, relative humidity, rainfall
Format	Excel - hourly
Models used to process met data	
Model used to process data for wind roses	WR Plot
Model used to process data for AERMOD	AERMET

4.1.1 Local Wind Field

Figure 4-1 provides the period wind rose plot for the MetCon Jewellery Precinct Facility for the period January 2014 to December 2016. The predominant wind directions for the period are observed from the north-west (~14% of the time), north (~12.5% of the time) and noth-north-west (~11.2% of the time). Wind speeds for the three-year period are generally moderate to fast with calm conditions, defined as wind speeds less than 1 m/s, observed for 2.14 % of the time (Figure 4-1).

The morning (AM) and evening (PM) period wind rose plots for the period January 2014 to December 2016 are given in Figure 4-2 and show diurnal variation in the wind field data. During the morning (AM) period, high frequency winds are observed from the north, north-north-east and north-west; as opposed to the evening (PM) period, where winds are predominantly observed from the north west (Figure 4-2).

Seasonal variation in winds at the MetCon Jewellery Precinct Facility is shown in Figure 4-3. During the spring and summer seasons, winds originate predominantly from the northerly and north-westerly sectors. During the autumn season, winds originate predominantly from the north-westerly and west-north-westerly sectors. Winter months, in particular, exhibit greater variation in wind direction. with prevailing winds observed from the north-westerly, northerly and south-south-westerly quadrants.

Based on the prevailing wind fields for the period January 2014 to December 2016, emissions from operations at the facility will likely be transported towards the south-easterly, southerly, and south-south-easterly quadrants. Moderate to fast wind speeds observed during all time periods may result in effective dispersion and dilution of emissions.

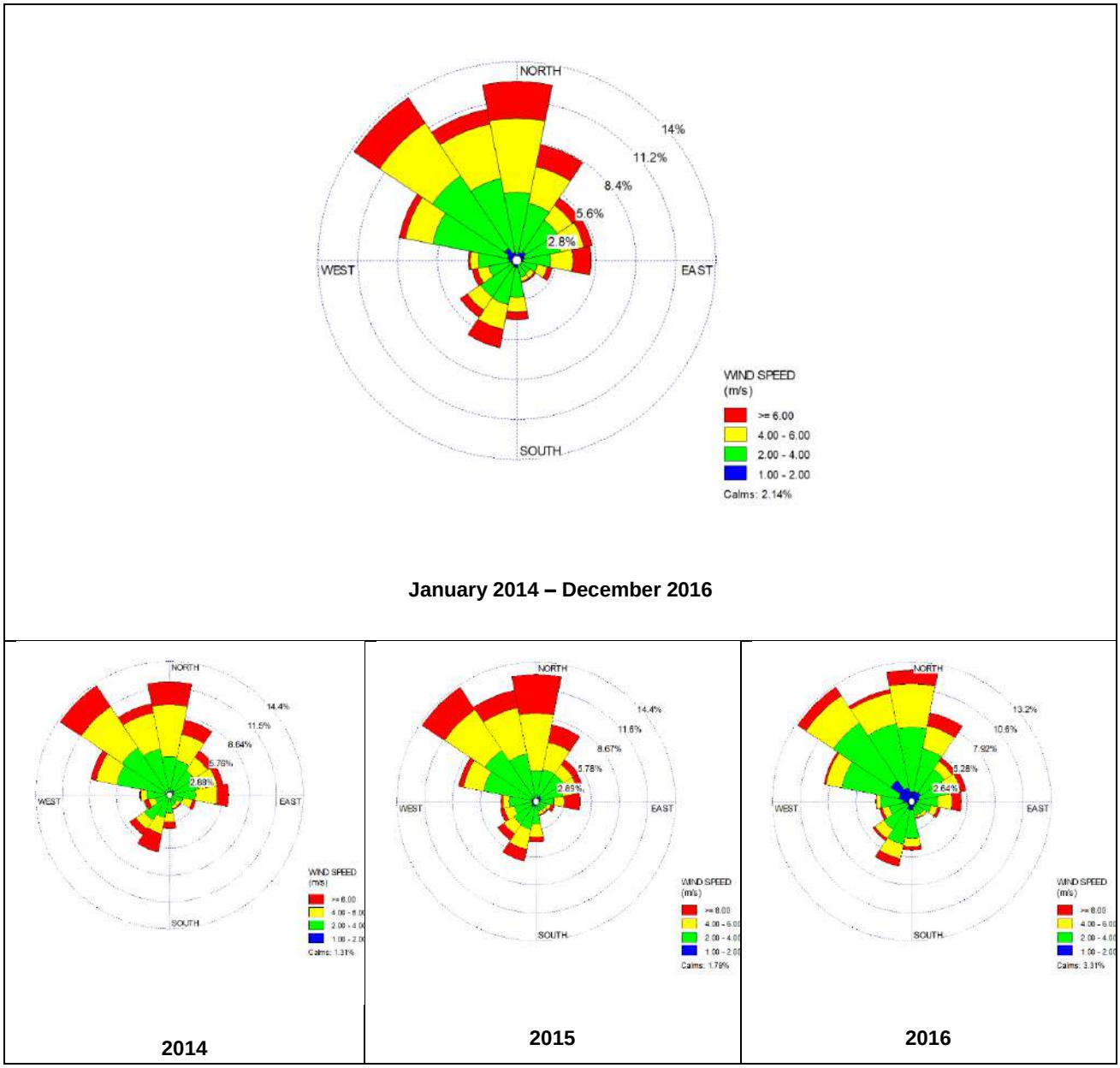

Figure 4-1: Period Wind Rose Plots for the project site for the period January 2014 - December 2016.

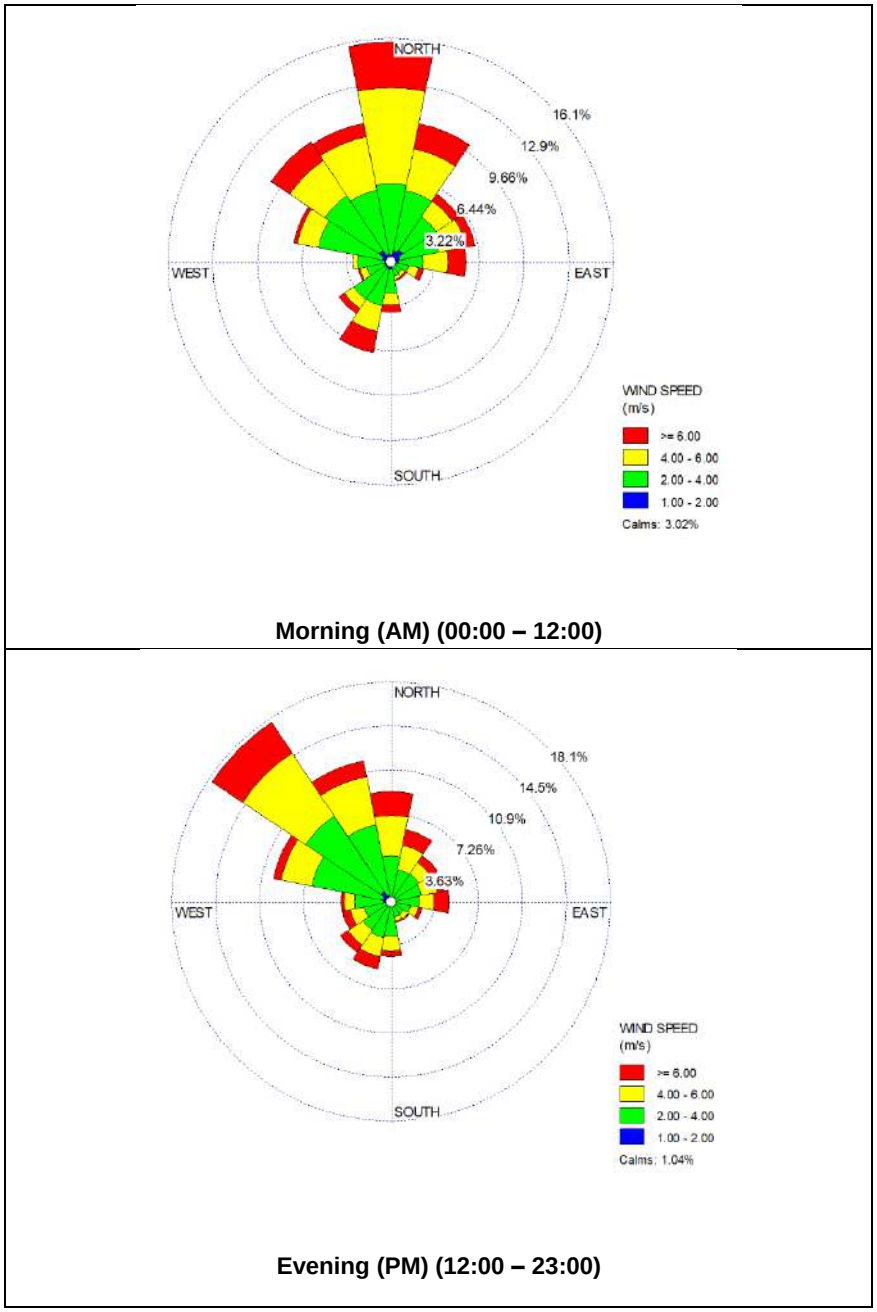

Figure 4-2: Morning (AM) (00:00 - 12:00) and Evening (PM) (12:00 - 23:00) Period Wind Rose Plots for the project site for the Period January 2014 - December 2016.

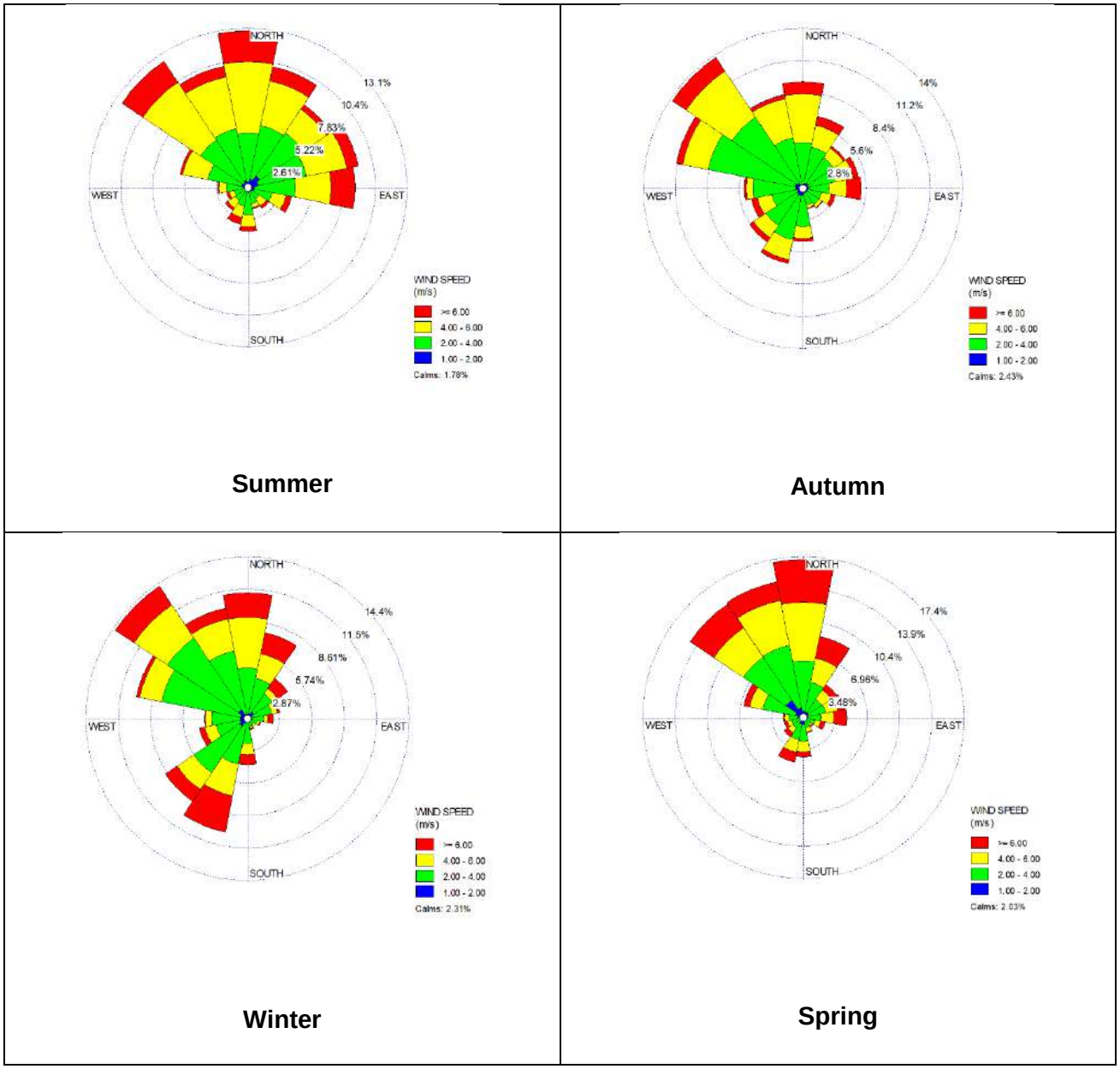

Figure 4-3: Seasonal Variation of Winds for the Project Site for the Period January 2014 - December 2016.

4.1.2 Temperature and Relative Humidity

Temperature affects the formation, action and interactions of pollutants in various ways. Temperature provides an indication of the rate of development and dissipation of the mixing layer, which is largely controlled by surface inversions. Surface temperature inversions play a major role in air quality, especially during the winter months when these inversions are the strongest. Higher ambient temperatures will facilitate the dispersion of air pollutants which can result in lower ambient concentrations.

Chemical reaction rates also tend to increase with temperature and the warmer the air, the more water it can hold and therefore the higher the humidity. When relative humidity exceeds 70%, light scattering

by suspended particles begins to increase, as a function of increased water uptake by the particles. This results in decreased visibility due to the resultant haze. Many pollutants may also dissolve in water to form acids.

Monthly average temperatures and relative humidity profiles at the project site for the period January 2014 to December 2016 are presented in Figure 4-4. Average monthly temperatures range from 11.0 – 20.7 ºC (Table 4-2). Highest temperatures are observed during the spring and summer months (September – February) and minimum temperatures are observed during the winter months (June – August). Relative humidity is highest during late spring to autumn months (i.e. November – March), and lower but consistent for the rest of the year (i.e. May – October).

Table 4-2: Hourly Minimum, Maximum and Monthly Average Temperatures for January 2014 - December 2016.

MINIMUM, MAXIMUM AND MONTHLY AVERAGE TEMPERATURES (ºC)												
	JAN	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Minimum	12.8	11.2	10.6	3.8	3.9	-1.3	-3.3	-1.9	3.3	2.8	4.4	10.5
Maximum	34.8	31	29.4	27.6	25.5	22.6	21.7	27.5	30.3	32.9	33	32.2
Average	20.7	20.7	19.0	16.9	15.1	11.4	11.0	14.5	17.7	19.6	19.0	20.8

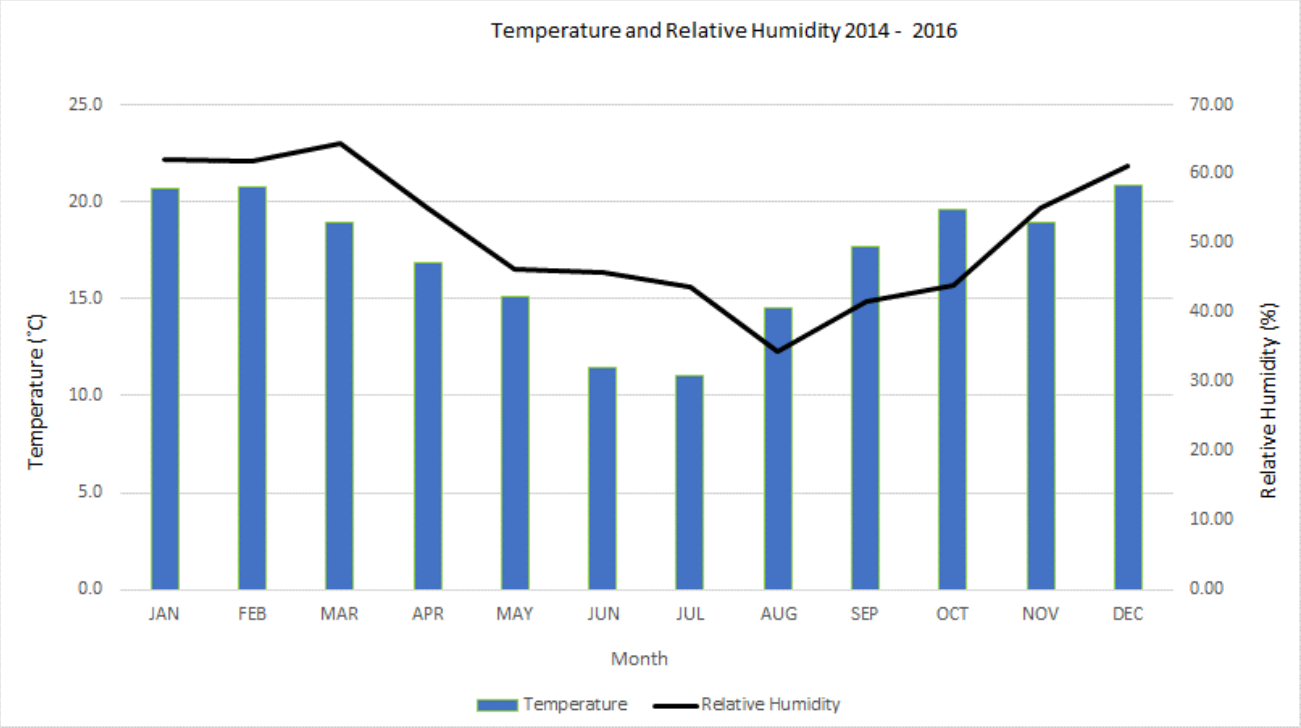

Figure 4-4: Monthly Average Temperature and Relative Humidity profiles for the project site for January 2014 - December 2016.

4.1.3 Precipitation

Precipitation has an overall dilution effect and cleanses the air by washing out particles suspended in the atmosphere. Monthly total rainfall at the project site for the period January 2014 to December 2016 is presented in Figure 4-5. The area receives most of its rainfall during the spring, summer and early autumn seasons during the months October - March. Little to no rainfall is observed during the late autumn and winter seasons from April to August (Table 4-3.) Removal of particulates via wet depositional processes would be evident during the spring and summer seasons thus lower ambient concentrations of dust could be expected during these seasons. Over the remainder of the year higher ambient concentrations of pollutants could be expected.

Table 4-3: Total Monthly Rainfall for January 2014 - December 2016.

TOTAL MONTHLY RAINFALL (mm)												
YEAR	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
2014	26.2	115.6	122.0	16.2	4.4	0.2	0.0	3.6	8.6	33.6	90.2	174.4
2015	155.0	27.8	52.2	23.2	0.0	3.4	8.2	1.4	31.2	17.6	63.0	62.4
2016	123.2	65.2	137.0	13.8	49.0	10.8	15.4	0.0	3.0	50.4	210.0	119.6

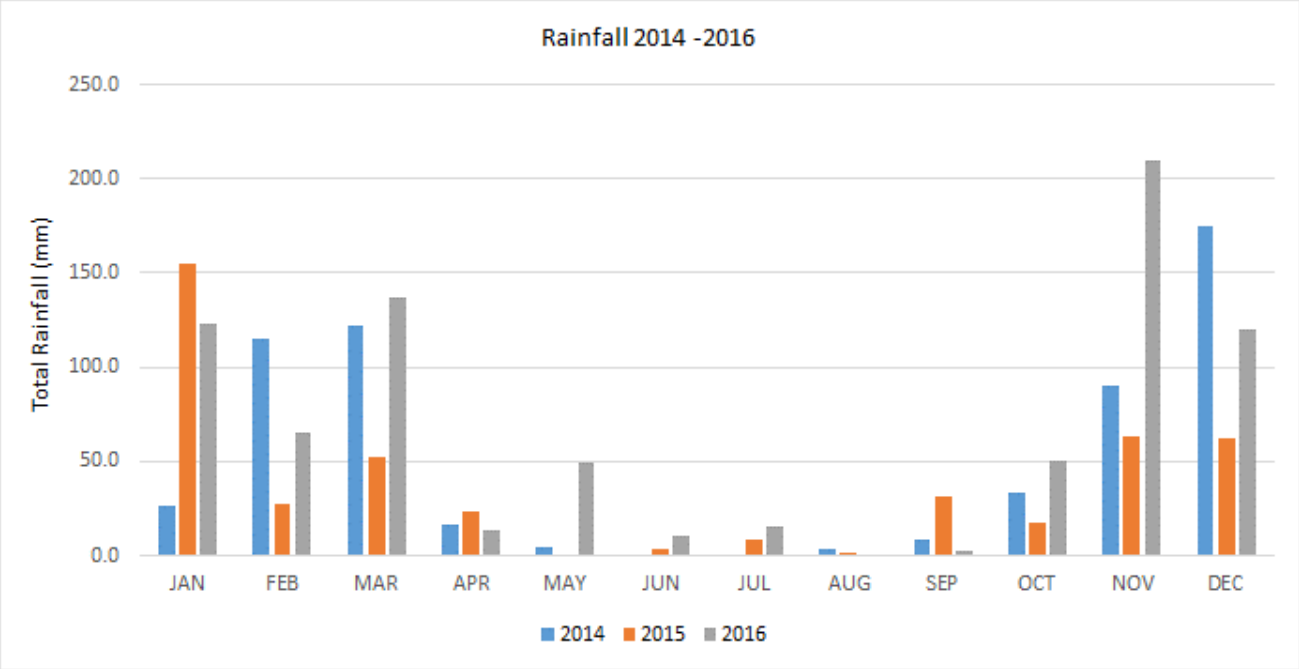

Figure 4-5: Total Monthly Rainfall (mm) for the project site for the period January 2014 - December 2016.

4.2 Baseline Air Quality Concentrations

The existing air quality situation is usually evaluated using available monitoring data from permanent ambient air quality monitoring stations and dust fallout networks operated near the project site. In this report, air quality data used was from the Bedfordview Air quaity monitoring station, which is located approximately 13km south-west of the proposed site. There was inadequate data from the station to present background concentrations for PM_{10}, benzene and CO concentrations at the study site. However, there was background data available for $PM_{2.5}$, SO_2, NO_2 and ozone, which is discussed below in section 4.2.1. Details of the station are provided in the table below.

Table 4-4: Air Quality monitoring station details.

Bedfordview	
Site Id:	192
Site Code:	1
Site Name:	Bedfordview
Provider:	Ekurhuleni Metropolitan Municipality
Network:	Ekurhuleni Metro
Description:	Traffic related pollution from adjacent N3 freeway.
Location:	N3 Freeway
Longitude:	28.133194
Latitude:	-26.178611
Data Interval:	10
Height above sea level (m):	1632
Monitoring Start Date:	2006/01/07
Province:	Gauteng
Municipality:	Ekurhuleni Metropolitan
Equipment Owner:	Ekurhuleni Metropolitan Municipality
Land Owner:	Ekurhuleni Metro
Equipment Housing:	Shelter
Monitoring Objectives:	Traffic pollution from the N3 highway
Site Topography:	Flat Terrrain
Location and Description of Emission Sources:	vehicle emissions
Site Classification:	Traffic
Technician:	Rufus Sebati
SANAS Accredited:	Yes

**Taken from http://www.saaqis.org.za/ViewSite.aspx?SiteID=192

4.2.1 Baseline $PM_{2.5}$, NO_2, SO_2 and O_3 Concentrations

Data were analysed for the period January 2014 to December 2017. For the period, daily and hourly average $PM_{2.5}$, NO_2, SO_2 and O_3 concentrations for the period 01 January 2014 – 31 December 2017 are given in Figure 4-6 - Figure 4-13. Daily average concentrations range from 5 – 35 µg/m^3 for $PM_{2.5}$, 1 – 180 ppb (1.88 – 338.4 µg/m^3) for NO_2, 1 – 68 ppb (2.62 – 178.16 µg/m^3) for SO_2, and 5 – 65 ppb (10 – 130 µg/m^3) for O_3. Maximum hourly average concentrations were 110 µg/m^3 for $PM_{2.5}$, 375 ppb (705 µg/m^3) for NO_2, 250 ppb (655 µg/m^3) for SO_2 and 100 ppb (200 µg/m^3) for O_3.

Exceedances of the daily and hourly ambient air quality standards, where applicable, were observed for $PM_{2.5}$, NO_2, SO_2 and O_3. The 2014 - 2015 period is generally characterised by higher concentrations of all pollutants; the 2016 – 2017 period is characterised by lower concentrations. Higher concentrations are generally observed over the winter to early spring seasons.

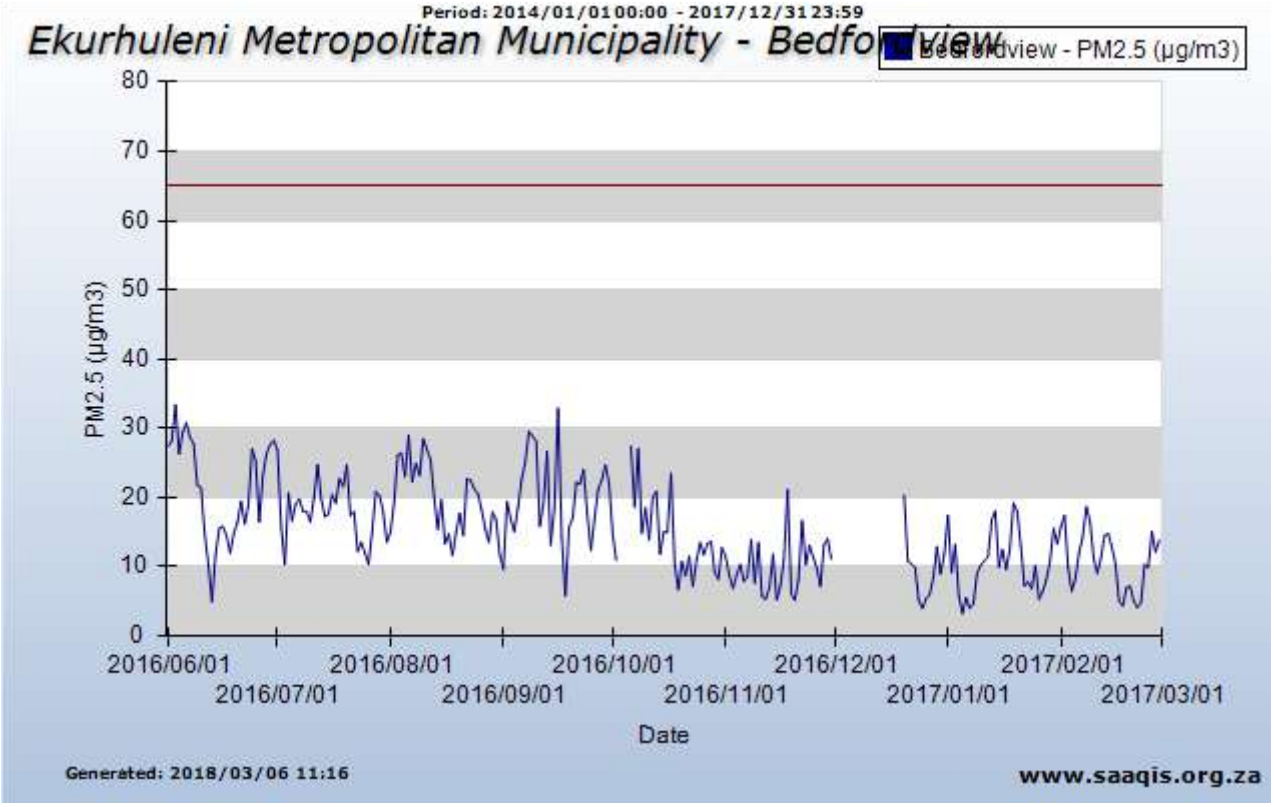

Figure 4-6: Daily average $PM_{2.5}$ concentrations for the period January 2014 and December 2017.

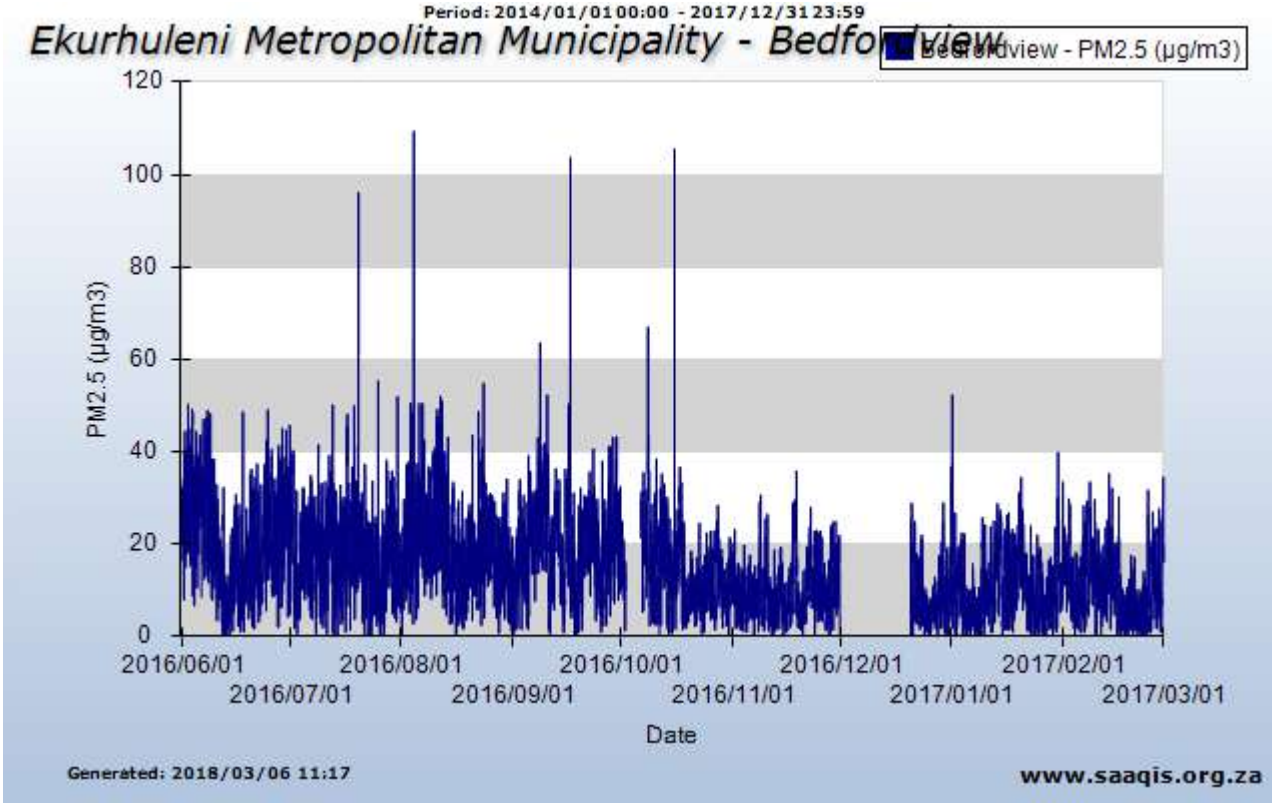

Figure 4-7: Hourly average $PM_{2.5}$ concentrations for the period 01 January - 31 December 2017.

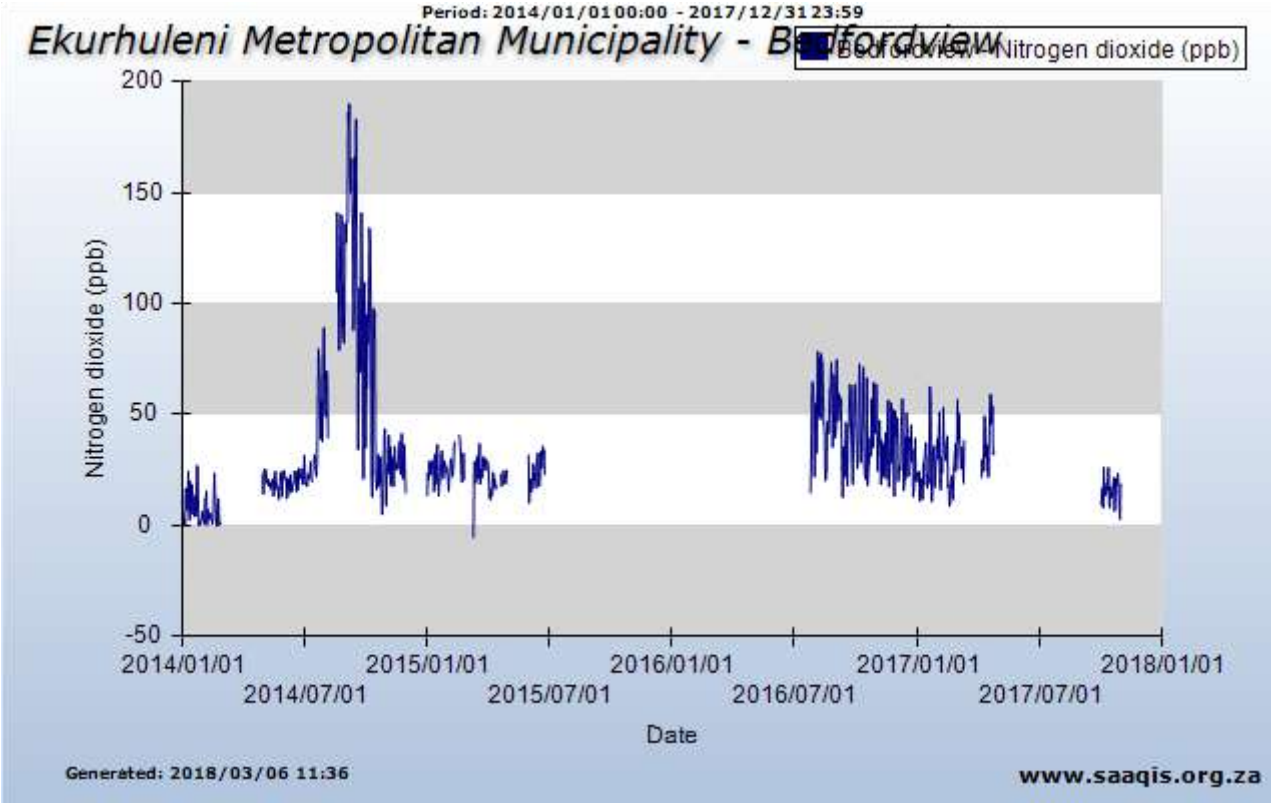

Figure 4-8: Daily average NO_2 concentrations for the period 01 January - 31 December 2017.

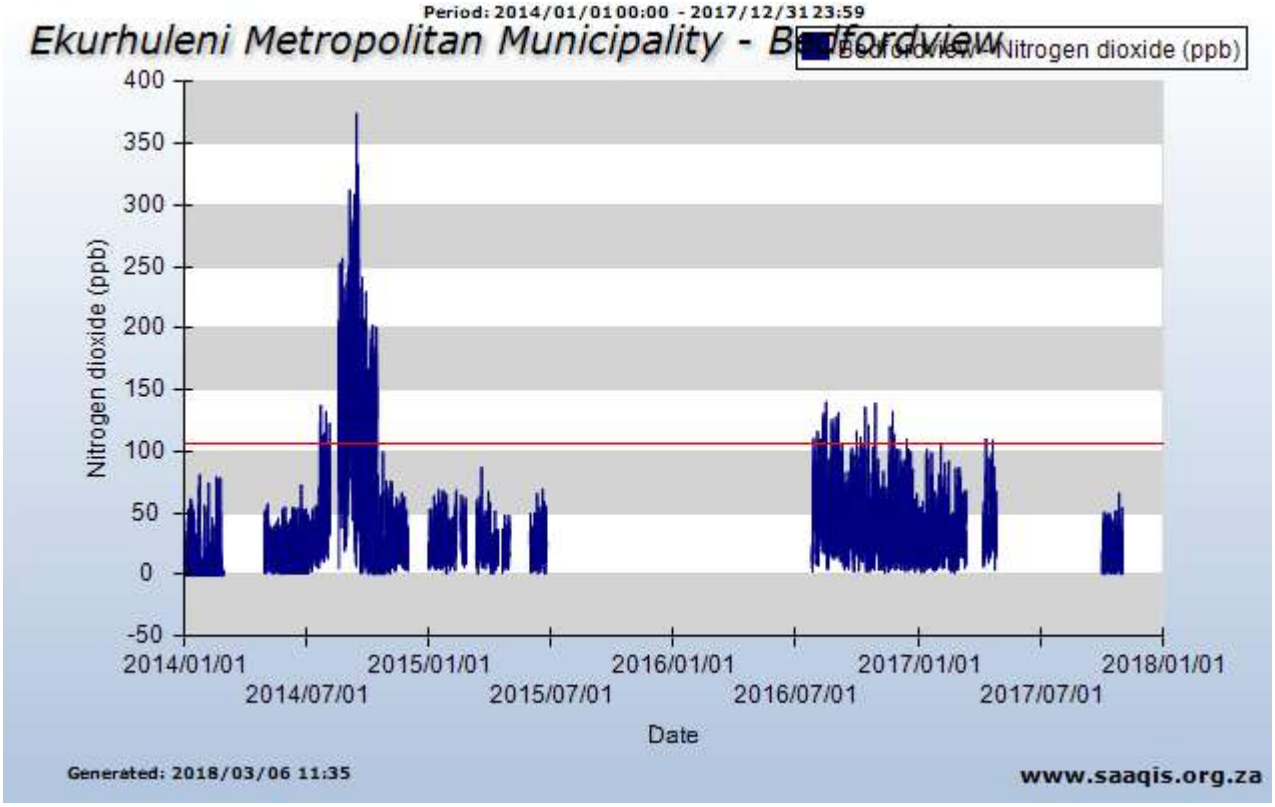

Figure 4-9: Hourly average NO_2 concentrations for the period 01 January - 31 December 2017.

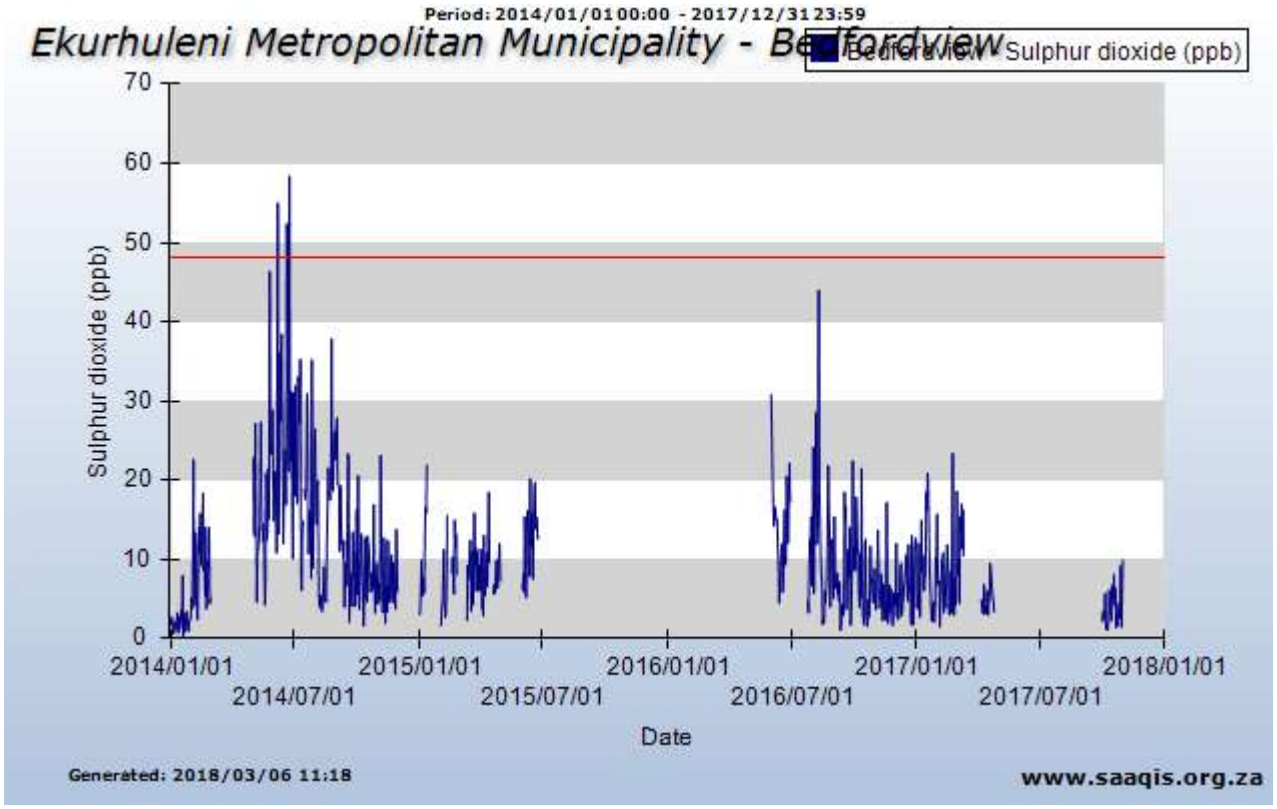

Figure 4-10: Daily average SO_2 concentrations for the period 01 January - 31 December 2017.

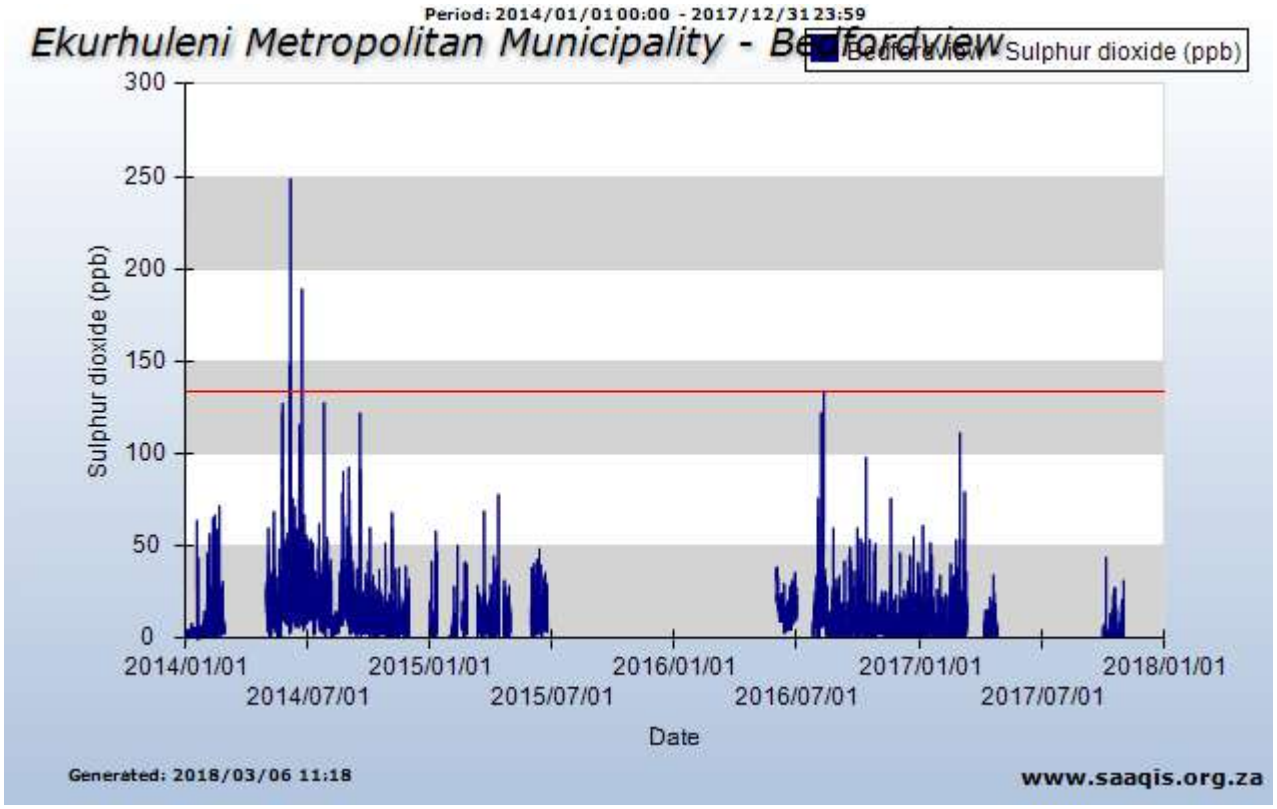

Figure 4-11: Hourly average SO_2 concentrations for the period 01 January - 31 December 2017.

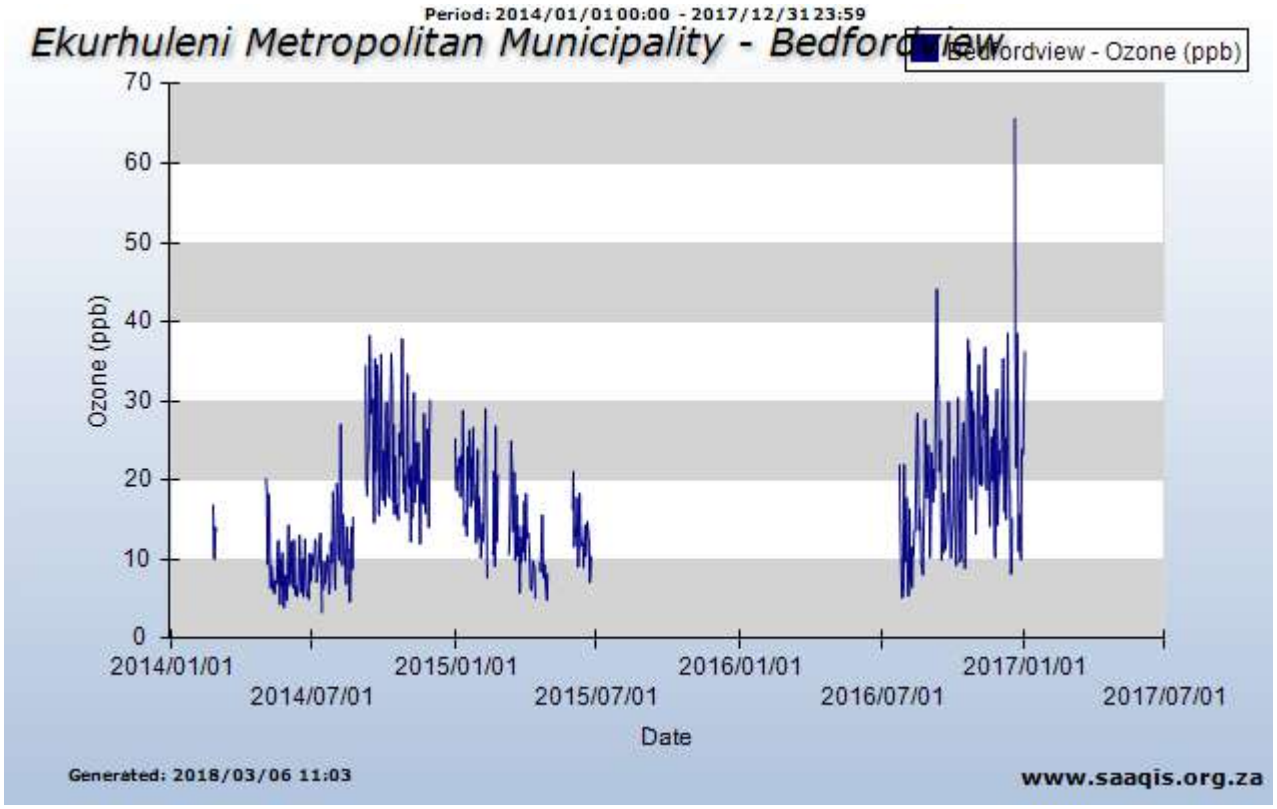

Figure 4-12: Daily average O_3 concentrations for the period 01 January - 31 December 2017.

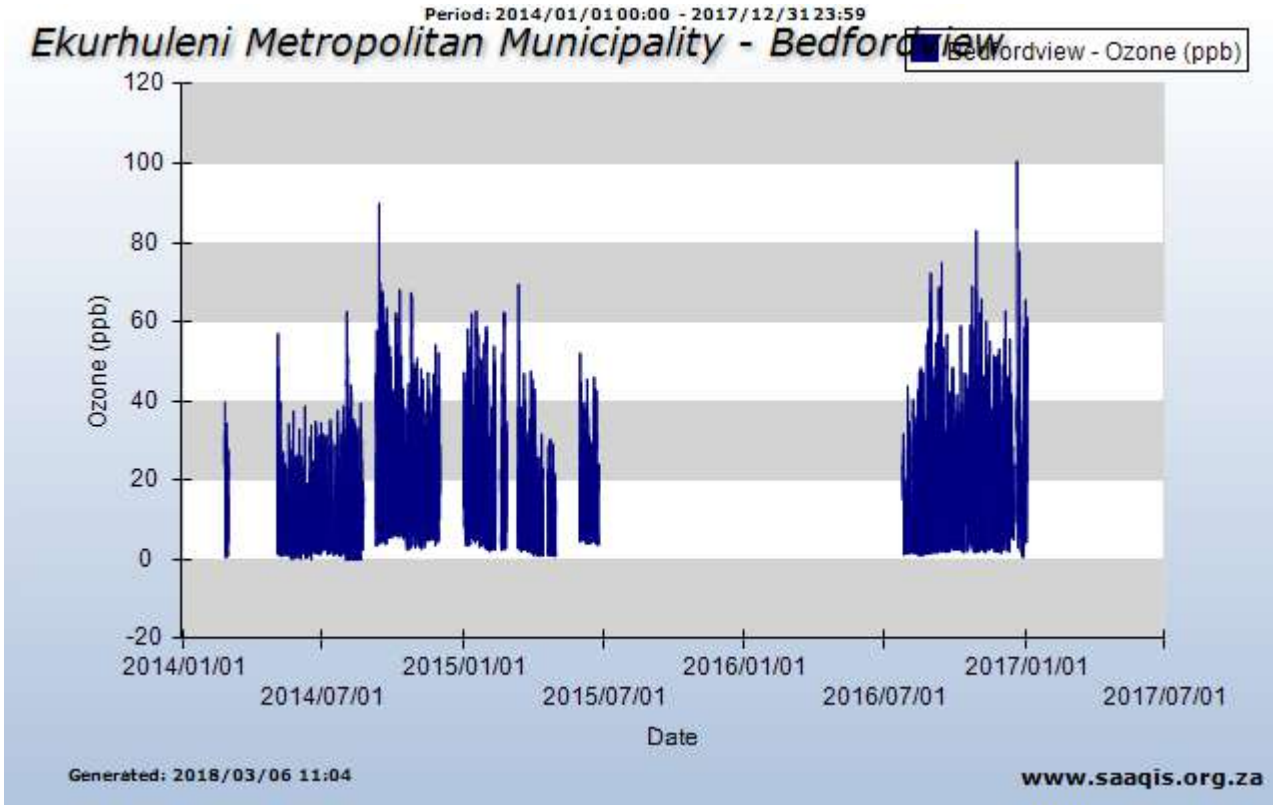

Figure 4-13: Hourly average O_3 concentrations for the period 01 January - 31 December 2017.

4.3 Surrounding Sources of Air Pollution

Existing key sources of air pollution surrounding the project site were identified during a desktop exersise and were identified to be:

- Wind erosion from exposed areas (e.g. open cast pits, stockpiles, open storage piles, exposed cultivated fields, degraded land, etc.);
- Potential veld fires;
- Agricultural activity and biomass burning;
- General waste landfill dumps,
- Industrial activity,
- Sewage treatment plants;
- Domestic fuel burning in township/informal settlements;
- Vehicle emissions.

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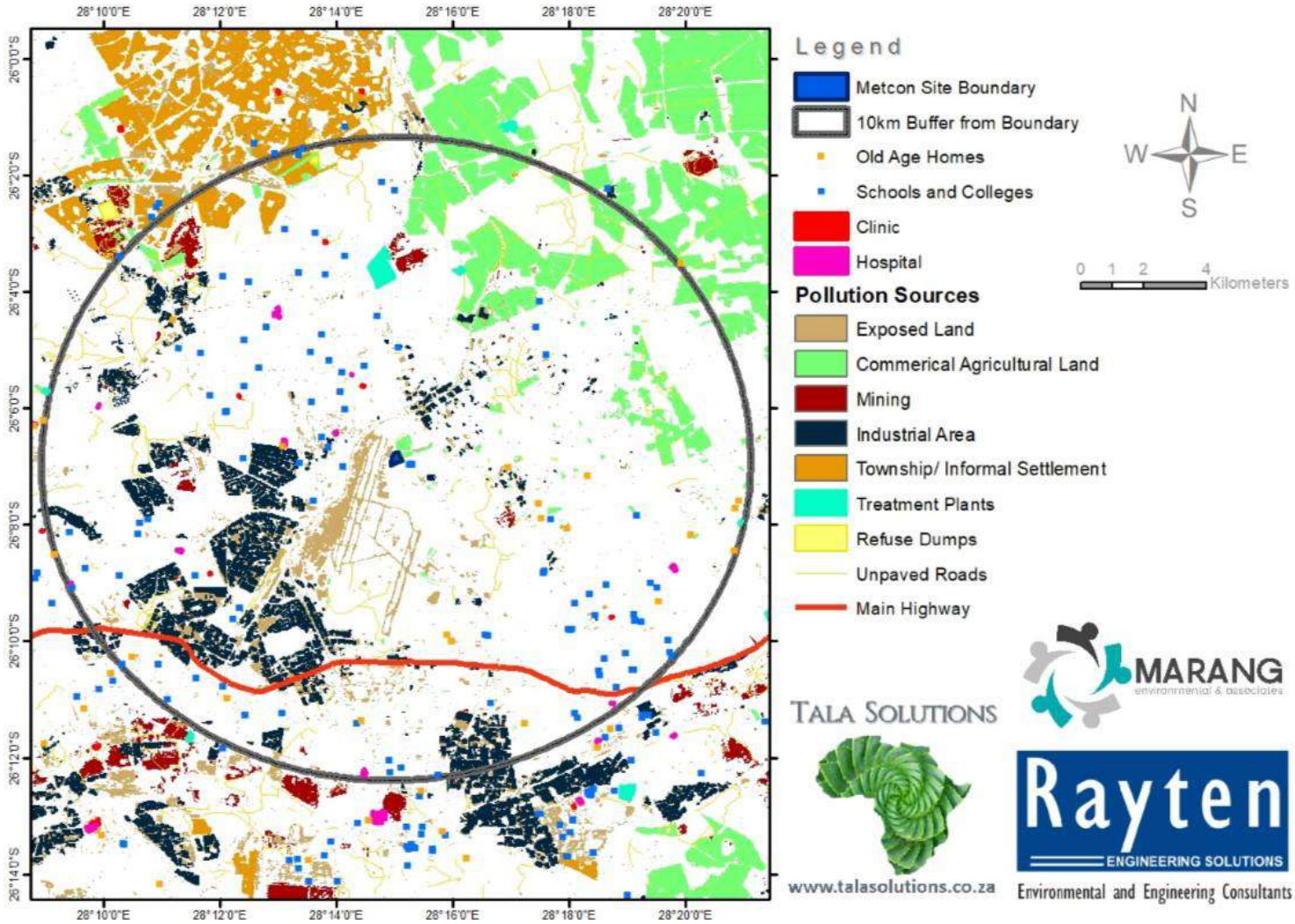

Figure 4-14: Identified surrounding emission sources within 10km of the proposed MetCon Kempton Park.

4.3.1 Wind Erosion from Exposed Areas

There are open exposed areas such as bare soil, eroded natural land, etc. and stockpiles/storage piles surrounding the proposed site which represent a source of dust in the area. Dust emissions due to the erosion of open storage piles and exposed areas occur when the threshold wind speed is exceeded. The threshold wind speed is dependent on the erosion potential of the exposed surface, which is expressed in terms of the availability of erodible material per unit area (mass/area). Any factor which binds the erodible material or otherwise reduces the availability of erodible material on the surface thus decreases the erosion potential of the surface. Studies have shown that when the threshold wind speeds are exceeded, particulate emission rates tend to decay rapidly due to the reduced availability of erodible material.

4.3.2 Veld Fires

Veld fires could occur in surrounding open areas. Veld fires are a source of air pollutants, such as particulate matter, VOCs and CO. The intensity and frequency of veld fires depends on meteorological conditions, plant material characteristics and amount of combustible material over an area. Over most parts of South Africa, a higher frequency of veld fire incidents occurs during the dry winter season, when there is a greater amount of combustible plant material (fuel load) associated with a low moisture content. In the Western Cape, veld fires are most common during the dry summer months. Although veld fires are a naturally occurring phenomenon, they are a key source of emissions that contribute to background air pollution.

4.3.3 Agricultural activity and biomass burning

There are agricultural areas north to north-east of the project site. Emissions from agricultural activities are difficult to control due to the seasonality of emissions and the large surface area producing emissions. Expected emissions resulting from agricultural activities include particulates associated with wind erosion and burning of crop residue, chemicals associated with crop spraying and odiferous emissions resulting from manure, fertilizer and crop residue. Dust associated with agricultural practices may contain seeds, pollen and plant tissue, as well as agrochemicals, such as pesticides. The application of pesticides during temperature inversions increases the drift of the spray and the area of impact.

Dust entrainment from farming vehicles travelling on gravel roads may also cause increased particulates in an area. Dust from traffic on gravel roads increases with higher vehicle speeds, more vehicles and lower moisture conditions. The seasonal burning of the veld from July to September for field clearing in preparation for planting is also a source of smoke. The nature of the activity has a potential impact on air quality in the area.

4.3.4 Domestic Fuel Combustion

There are townships/informal settlements (that were identified during the desktop study) located within a 2km radius north-west from the site, and further off in the south-eastern quadrant. Domestic fuel combustion is prevalent in informal settlements where solid fuels are mostly used for cooking and indoor heating purposes. Indoor heating occurs more frequently in the cold late autumn to early spring

months. Emissions from the solid fuels are thus expected to be high during the same months, and comparatively low during the warm spring and summer months. Combustion of domestic solid fuels results mainly in production of CO and particulates. If coal is being used, SO_2 and $H2_S$ might be additionally emitted in relatively smaller quantities.

4.3.5 Urban Industrial Activities

There are several urban industrial activity areas surrounding the project site. The following activities are some common sources of air pollutants in industrial areas:

- Boiler stack emissions
- Mobile equipment exhaust emissions (forklifts, front-end-loaders, bull dozers, etc.)
- Furnaces (e.g. foundries, metallurgical plants, etc.)
- Material handling & storage
- Fuel combustion installations & activity
- Material incineration
- Chemical treatment and processes
- Crushing & screening of dry material

Emissions from urban industrial activities can be controlled by use of suitable, specific abatement equipment and implementation of air pollution control measures. Expected emissions resulting from urban industrial activities include particulates, VOCs and gases such as NO_x, SO_2 and CO.

4.3.6 Landfill Dumps

There is a landfill dump approximately 9.5km north-north-west of the study site. The main processes associated with gas emissions at landfills are:

- evaporation of VOCs (e.g., solvents);
- chemical reactions between waste components; and
- microbial action (i.e. decomposition), during which bacteria breakdown organic waste.

Gases released from landfills include mainly CH_4 and CO_2, both of which are greenhouse gases. Trace amounts of other VOCs are also released.

4.3.7 Treatment Plants

There are sewage treatment plants approximately 7km north of the project site. Operation of such treatment plants triggers the direct emission of greenhouse gases such as CO_2, CH_4, and nitrous oxide (N_2O) from biological processes. Hydrogen sulphide is also produced as a by-product of decomposition of organic material. Sewage treatment works are generally associated with odour impacts.

5. AIR QUALITY IMPACT ASSESSMENT

Particulate and gaseous emissions are identified for operations associated with the proposed facility and will be emitted from the following key sources:

- **Particulate & Gaseous Emissions:**
  - Jewellers secondary gold material incineration in roasting oven;
  - Gas (fuel) combustion installation (roasting oven);
  - Chemical refining process;
  - Melting of material in induction furnaces and adding fluxes
  - Casting of material.

**all emissions associated with the chemical treatment process are extracted out of one stack and treated with a scrubber.*
**all emissions associated with the incineration of material, induction furnaces and gas combustion are extracted out of one stack and treated with a baghouse, to capture fine particulates.*
**no area and/or line sources are associated with the project.*

The above-mentioned sources were identified for the site based on the information provided by the client. A detailed questionnaire was given to the client prior to modelling to obtain specific details needed for input into the model and for calculation of emission rates. Please refer to Section 5.4 for more details about the assumptions made in this study.

To investigate the potential impacts of operations associated with the project on local ambient air quality, the following air pollutants were chosen in the quantification of emissions for the operational phases of the project. These pollutants were chosen based on the pollutants given under sub-category 4.17 (precious and base metals production and refining) applicable to the project. South African ambient air quality standards exist for the pollutants marked in blue.

- Particulate Matter (PM_{10} and $PM_{2.5}$);
- Sulphur Dioxide (SO_2);
- Nitrogen Dioxide (NO_2);
- Chlorine (CL_2);
- Hydrogen Chloride (HCL);
- Hydrogen Fluoride (HF);
- Ammonia (NH_3).

In this study two scenarios were modelled:

a) **The unmitigated scenario,** where the S21 minimum emission standard rates for new plants for sub-category 4.17 (precious and base metals production and refining) were considered for input into the model. In other words, the maximum emission rate that is allowed in terms of S21 of NEM: AQA was considered in the assessment. The emission standards were converted into emission rates for input into the model.

b) **The actual mitigated scenario,** where stack emissions monitoring results, considering the abatement equipment, were used for input into the model.

Modelling was conducted specifically for the operational phase of the MetCon facility, where only activities that are associated with the facility were considered. A summary of sources included in the model is given below in Table 5-1. Point source parameters are given in Table 5-2.

Table 5-1: Modelled sources of emissions due to proposed operations at MetCon Kempton Park Facility.

POLLUTANT	SOURCES OF EMISSIONS OPERATIONAL PHASE
Particulate emissions (PM_{10} and $PM_{2.5}$)	• **X1 Baghouse Stack:** ○ Jewellers secondary gold material incineration in roasting oven ○ Gas (fuel) combustion installation (roasting oven) ○ Melting of material in induction furnaces and adding fluxes ○ Casting of material • **X1 Scrubber Stack:** ○ Chemical refining process
Gases (CO, SO_2, NO_x, CL_2, HCL, NH_3, HF)	

Table 5-2: Summary of stack parameters used for input into the model.

Parameter	Model Input	
	Baghouse stack	**Scrubber stack**
Stack height (m)	20	5
Stack diameter (m)	0.58	0.36
Stack gas exit velocity (m/s)	21	24
Stack gas exit temperature (degree Celsius)	50	21
General co-ordinates	X: 625081.69m Y: 7111057.28m	X: 625066.59m Y: 7111057.53m
Note: The stack parameters were based on the values given in the 2017 stack monitoring reports for the MetCon Centurion refining facility. As a similar design is anticipated, the same stack dimensions were applied.		

5.1 Operation Phase

5.1.1 Quantification of Emissions for Actual Mitigated Emissions Scenario

In the quantification of emissions for the Actual Mitigated Emission Scenario, use was made of the stack emissions monitoring reports for the MetCon Centurion site. The proposed facility will undertake the same operational activities as the Centurion plant, thus all information needed to calculate emissions and used for input into the dispersion model were based on the information available for the Centurion plant. The emission rates used are given in Table 5-3.

Table 5-3: Summary of emission rates used for input into the model for the actual mitigated emission scenario.

Baghouse Stack			Scrubber Stack		
Pollutant	Measured Emission Rate		Pollutant	Measured Emission Rate	
	Emission rate mg/Nm^3	g/s		Emission rate mg/Nm^3	g/s
PM	2.4	0.0097	PM	27.7	0.0541
PM_{10}	Assumed to be 50% of PM	0.005	PM_{10}	Assumed to be 50% of PM	0.0271
$PM_{2.5}$	Assumed to be 5% of PM	0.0005	$PM_{2.5}$	Assumed to be 5% of PM	0.0027
SO_2	2.82	0.0114	SO_2	negligible emissions detected during stack sampling	0
NO_x expressed at NO_2	negligible emissions detected during stack sampling	0	NO_x expressed at NO_2	30.13	0.0589
HCL	0.1	0.0004	HCL	10.84	0.0212
HF	0.05	0.0002	HF	negligible emissions detected during stack sampling	0
CL_2	0.03	0.0001	CL_2	13.71	0.0268
NH_3	0.33	0.0013	NH_3	0.06	0.0001
Note: Emission results based on the 2017 stack monitoring reports for the MetCon Centurion refining facility.					

5.1.2 Quantification of Emissions for Unmitigated Emissions Scenario

In the quantification of emissions for the Unmitigated Emission Scenario, the minimum emission limits for sub-category 4.17 (precious and base metals production and refining) for new plants, were converted into emission rates and used for input into the model. This would be the maximum emission rate that the proposed MetCon Jewellery Precinct facility would be allowed to emit in terms of S21 of NEM:AQA. The converted emission rates used are given below in Table 5-4.

Table 5-4: Summary of emission rates used for input into the model for the unmitigated emission scenario.

Baghouse Stack			Scrubber Stack		
Pollutant	Minimum Emission Rate (New Plants)		Pollutant	Minimum Emission Rate (New Plant)	
	Emission rate mg/Nm3	g/s		Emission rate mg/Nm3	g/s
PM	50	0.202	PM	50	0.098
PM_{10}	Assumed to be 50% of PM	0.101	PM_{10}	Assumed to be 50% of PM	0.049

$PM_{2.5}$	Assumed to be 5% of PM	0.01	$PM_{2.5}$	Assumed to be 5% of PM	0.005
SO_2	400	1.619	SO_2	400	0.782
NO_x expressed at NO_2	300	1.214	NO_x expressed at NO_2	300	0.586
HCL	30	0.121	HCL	30	0.059
HF	30	0.121	HF	30	0.059
CL_2	50	0.202	CL_2	50	0.098
NH_3	100	0.405	NH_3	100	0.2
Note: Converted the emission standard rates to g/s using dry volumetric flow rate values given in the 2017 stack monitoring reports for the MetCon Centurion refining facility.					

5.2 Model Overview

5.3.1 AERMOD View

AERMOD, a state-of-the-art Planetary Boundary Layer (PBL) air dispersion model, was developed by the American Meteorological Society and USEPA Regulatory Model Improvement Committee (AERMIC). AERMOD utilizes a similar input and output structure to ISCST3 and shares many of the same features, as well as offering additional features. AERMOD fully incorporates the PRIME building downwash algorithms, advanced depositional parameters, local terrain effects, and advanced meteorological turbulence calculations.

The AERMOD atmospheric dispersion modelling system is an integrated system that includes three modules:

- A steady-state dispersion model designed for short-range (up to 50 km) dispersion of air pollutant emissions from stationary industrial sources.
- A meteorological data pre-processor (AERMET) for surface meteorological data, upper air soundings, and optionally, data from on-site instrument towers. It then calculates atmospheric parameters needed by the dispersion model, such as atmospheric turbulence characteristics, mixing heights, friction velocity, Monin-Obukov length and surface heat flux.

- A terrain pre-processor (AERMAP) which provides a physical relationship between terrain features and the behaviour of air pollution plumes. It generates location and height data for each receptor location. It also provides information that allows the dispersion model to simulate the effects of air flowing over hills or splitting to flow around hills.

AERMOD includes Plume Rise Model Enhancements (PRIME) building downwash algorithms which provide a more realistic handling of building downwash effects. PRIME algorithms were designed to address two fundamental features associated with building downwash; enhanced plume dispersion coefficients due to the turbulent wake and to reduce plume rise caused by a combination of the descending streamlines in the lee of the building and the increased entrainment in the wake.

AERMOD is suitable for a wide range of near field applications in both simple and complex terrain. The evaluation results for AERMOD, particularly for complex terrain applications, indicate that the model represents significant improvements compared to previously recommended models (USEPA, 2005).

AERMOD has been used in various dispersion modelling studies in the United States and around the world (Perry *et al*., 2004). Ventrakam (2003) investigated the ability of AERMOD to model the dispersion of an inert gas, released as a line source, in an urban environment. Comparing monitored and modelled concentrations at 24 receptor locations it was found that the model over predicted average 30-minute concentrations near source and under predicted concentrations further away. The study also found that at night the correlation of measured and modelled concentrations at the closest receptor points to the source were poor. However, the agreement improved with distance (Holmes and Morawska, 2006).

5.3.2 Model Requirements

The approach to this dispersion modelling study is based on the Code *of Practice for Air Dispersion Modelling in Air Quality Management in South Africa* (DEA, 2014). As per the *Code of Practice*, this assessment is a Level 2 assessment. Level 2 assessments should be used for air quality impact assessment in standard/generic licence or amendment processes where:

- The distribution of pollutant concentrations and depositions are required in time and space;
- Pollutant dispersion can be reasonably treated by a straight-line, steady-state, Gaussian plume model with first order chemical transformation. Although more complicated processes may be occurring, a more complicated model that explicitly treats these processes may not be necessary depending on the purposes of the modelling and the zone of interest.
- Emissions are from sources where the greatest impacts are in the order of a few kilometres (less than 50 km) downwind.

A summary of the key variables input into the AERMOD model is given in Table 5-5. Data input into the model includes surface meteorological data and upper air estimated data from the Johannesburg OR Tambo International Airport weather station, for the period 01 January 2014 – 31 December 2016. Terrain data at a resolution of 90 m (SRTM90) is used for input into the model, as generated by the terrain pre-processor, AERMAP. A modelling domain of 15km × 15km is used. A multi-tier grid with a grid receptor spacing of 100m to 1000m (3 tiers) is used.

Table 5-5: Key Variables to be used in the modelling study.

Parameter	Model Input
Model	**Input**
Assessment level	Level 2
Dispersion model	AERMOD Version 9.5
Supporting models	AERMET Version 9.5 AERMAP Version 9.5
Emissions	**Input**

Pollutants to be modelled	PM_{10}, $PM_{2.5}$, SO_2, NO_2, CL_2, HCL, HF and NH_3
Scenarios	Operational
Chemical transformations	N/A
Exponential decay	Urban
Settings	**Input**
Terrain setting	Elevated
Terrain data	SRTM90
Terrain data resolution (m)	90
Land characteristics	Urban
Grid receptors	**Input**
Modelling domain (km)	15km x 15km
Fine grid resolution (m)	*100 (5km from facility)*
Medium grid resolution (m)	250 (10km from facility)
Large grid resolution (m)	1000 (beyond 10km from facility)

5.3 Dispersion Modelling Results

The Code of Practice for Air Dispersion Modelling in Air Quality Management in South Africa (DEA, 2014), recommends the use of the 99th percentile concentrations for short-term assessment with the National Ambient Air Quality Standards since the highest predicted ground-level concentrations can be considered outliers due to complex variability of meteorological processes. This might cause exceptionally high concentrations that the facility may never actually exceed in its lifetime.

Isopleth plots of predicted concentrations for PM_{10}, $PM_{2.5}$, SO_2, NO_2, CL_2, HCL, HF and NH_3 for the operational phase are given in Figure 5-1and Figure 5-42. For short term averaging periods, the predicted 99^{th} percentile or 4^{th} rank concentrations are provided.

Comparison of the predicted PM_{10}, $PM_{2.5}$, SO_2 and NO_2 ambient concentrations are made with the South African National ambient air quality standards to determine compliance. In determining compliance, predicted incremental concentrations (as determined beyond the sites boundary) are compared against the applicable standards. Inside the site boundary, air pollutant concentrations are required to comply with occupational health and safety standards.There are no ambient air quality standards for CL_2, HCL, HF and NH_3 in South Africa.

5.4.1 Operation Phase

The dispersion model output plots due to emissions associated with the proposed MetCon Jewellery Precinct facility are given in Figure 5-1and Figure 5-42, for both the unmitigated and mitigated scenarios.

Predicted incremental concentrations for the actual mitigated scenario are predicted to be low, with no exceedances of the ambient air quality standards observed for PM_{10}, $PM_{2.5}$, NO_2 and SO_2. The use of abatement equipment with an associated emission control efficiency of approximately 98%,

can account for the much lower incremental concentrations observed compared to the unmitigated scenario.

Predicted incremental concentrations for the unmitigated scenario, if MetCon were to emit at the maximum permissible limit in terms of sub-category 4.17 (precious and base metals production and refining), indicate no exceedances of the ambient air quality standards, except for the short term hourly limits for SO_2 and NO_2, which occur within the Precinct boundary. Even though higher concentrations are observed for the unmitigated scenario versus the actual mitigated scenario, the predicted incremental concentrations are still shown to be relatively low beyond the Precinct boundary.

Based on the dispersion model plots, emissions are shown to disperse towards the south-east quadrant. Bonearo Park is located in close proximity south-east of the proposed MetCon facility. The maximum predicted incremental PM_{10}, $PM_{2.5}$, SO_2, NO_2, CL_2, HCL, HF and NH_3 concentrations at Bonero Park are given in Table 5-6 and Table 5-7, for both the mitigated and unmitigated scenarios. No exceedances of the ambient air quality standards are observed at Bonaero Park for predicted incremental concentrations.

The maximum concentrations at the precinct boundary for the operational phase of the project are given in Table 5-8 and Table 5-9.

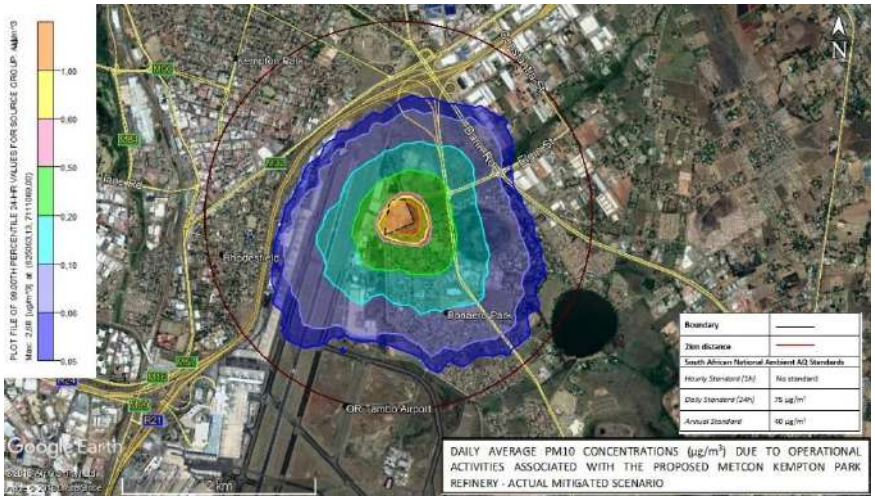

Figure 5-1: Predicted PM_{10} daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-2: Predicted PM_{10} annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

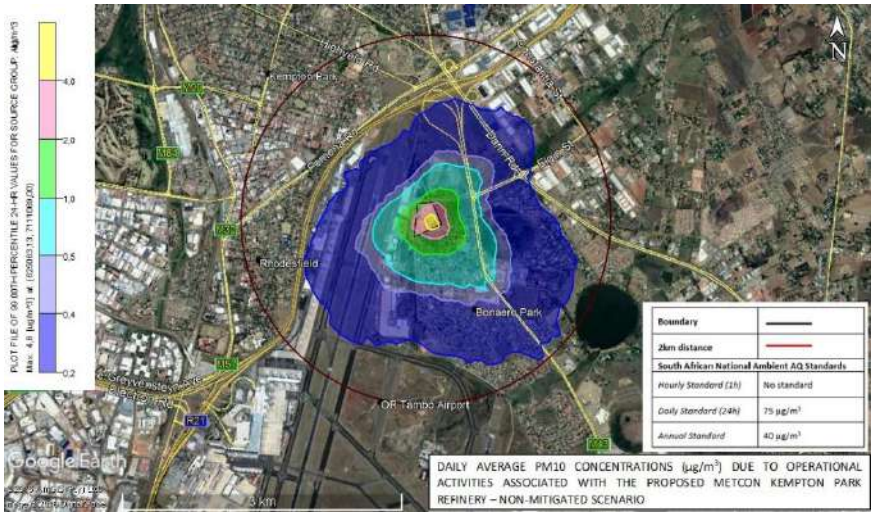

Figure 5-3: Predicted PM_{10} daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-4: Predicted PM_{10} annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

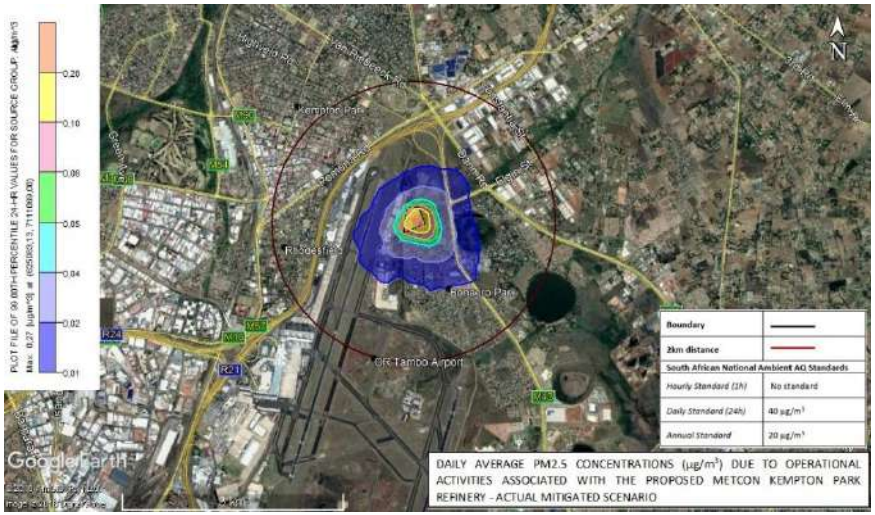

Figure 5-5: Predicted $PM_{2.5}$ daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-6: Predicted $PM_{2.5}$ annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

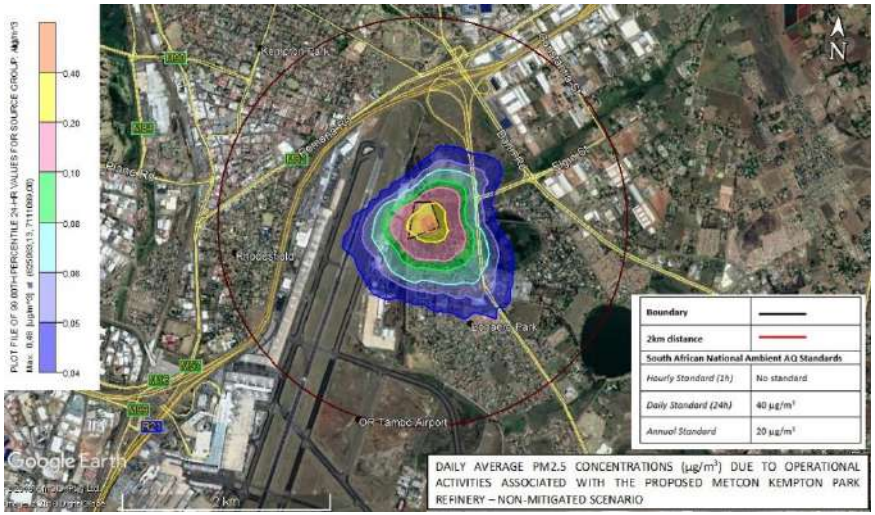

Figure 5-7: Predicted $PM_{2.5}$ daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

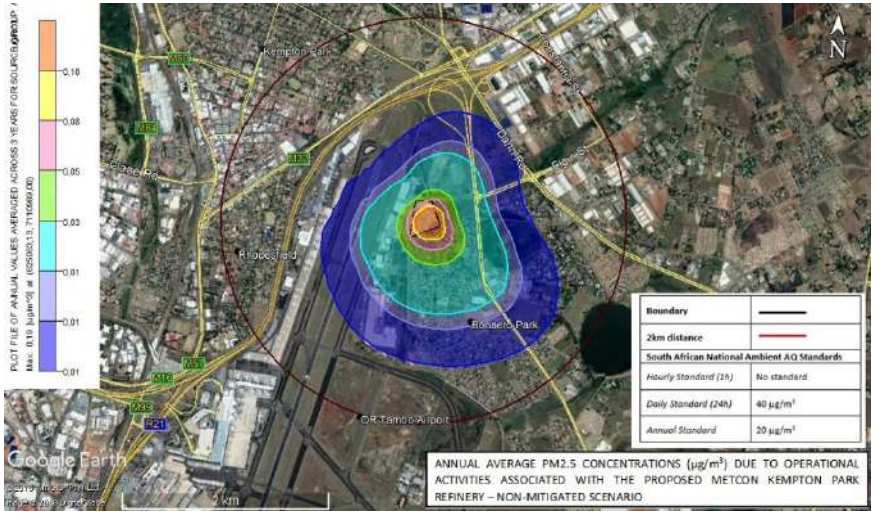

Figure 5-8: Predicted $PM_{2.5}$ annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-9: Predicted SO_2 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

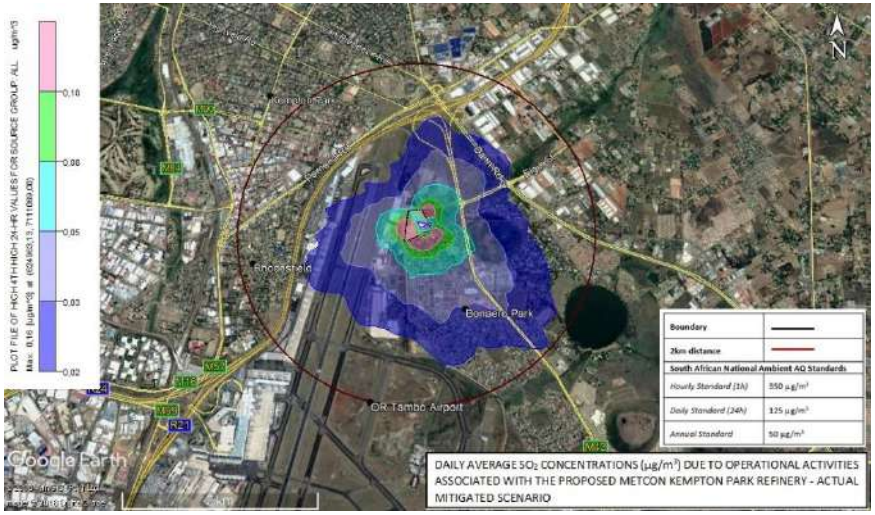

Figure 5-10: Predicted SO_2 daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

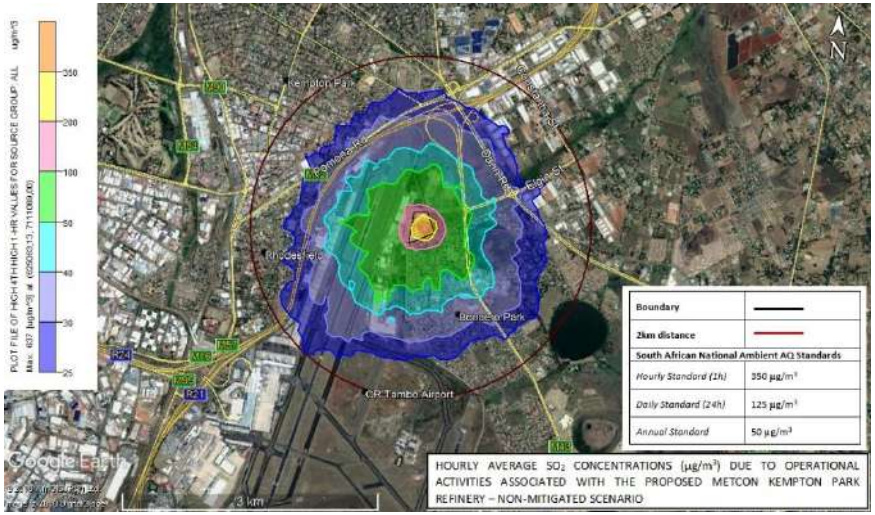

Figure 5-11: Predicted SO_2 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

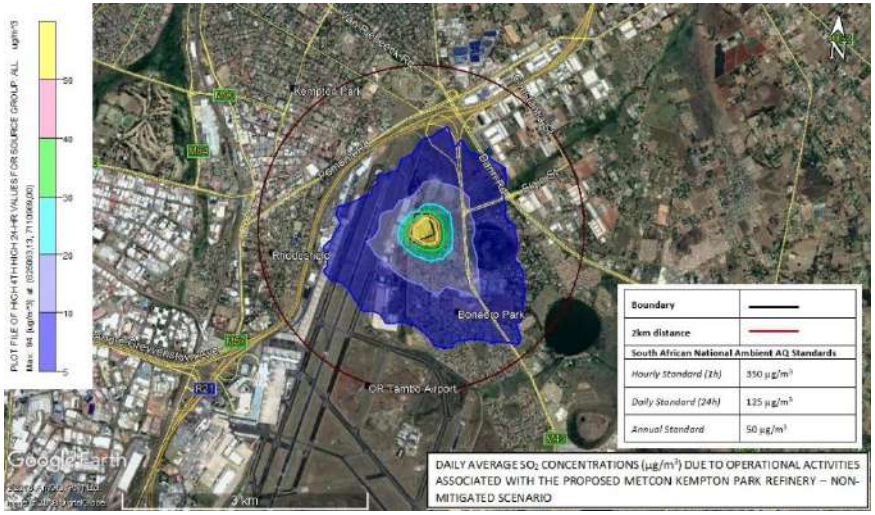

Figure 5-12: Predicted SO_2 daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-13: Predicted SO_2 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

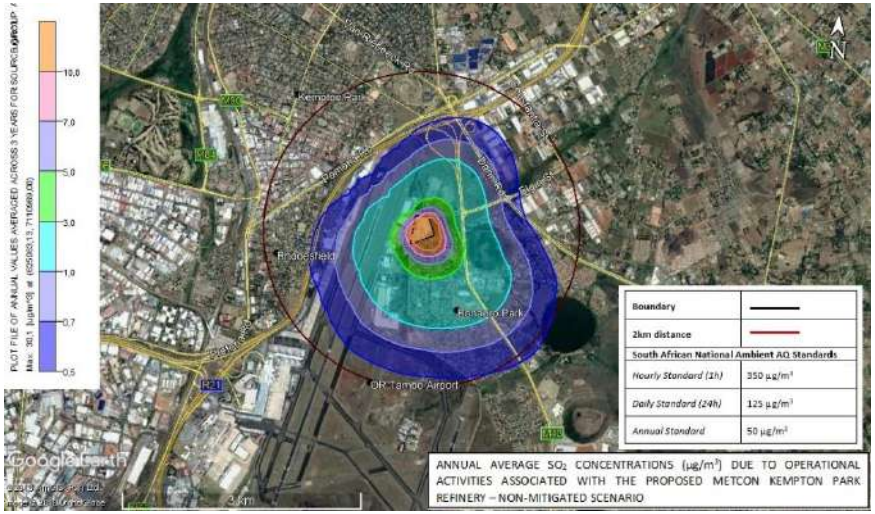

Figure 5-14: Predicted SO_2 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-15: Predicted NO_2 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

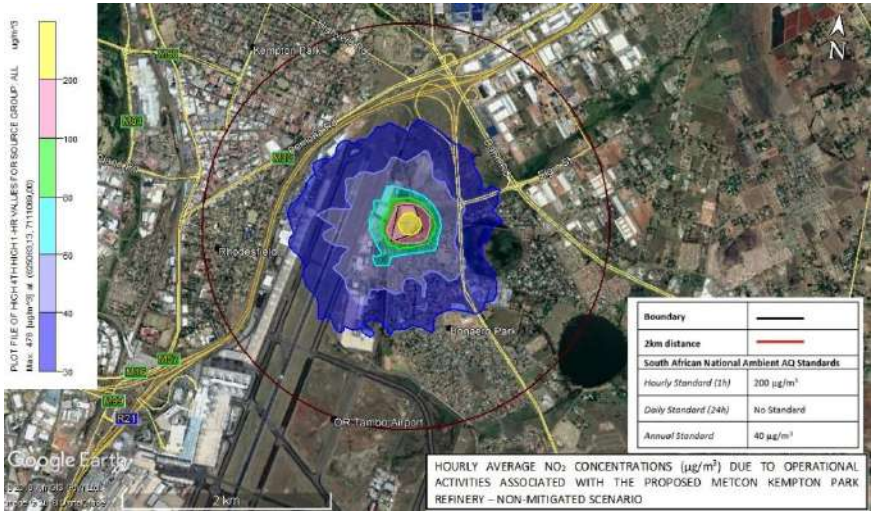

Figure 5-16: Predicted NO_2 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-17: Predicted NO_2 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-18: Predicted NO_2 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-19: Predicted CL_2 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-20: Predicted CL_2 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-21: Predicted CL_2 daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

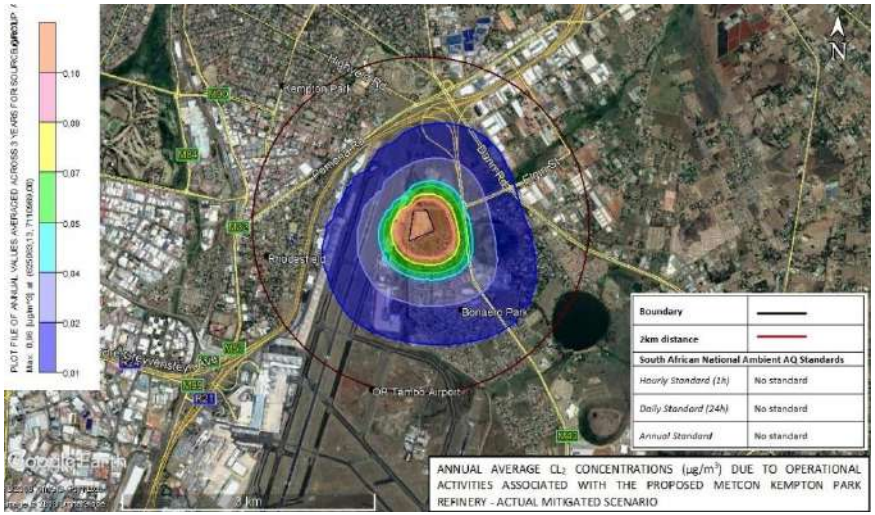

Figure 5-23: Predicted CL_2 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-22: Predicted CL_2 daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-24: Predicted CL_2 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-25: Predicted HCL hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-26: Predicted HCL hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

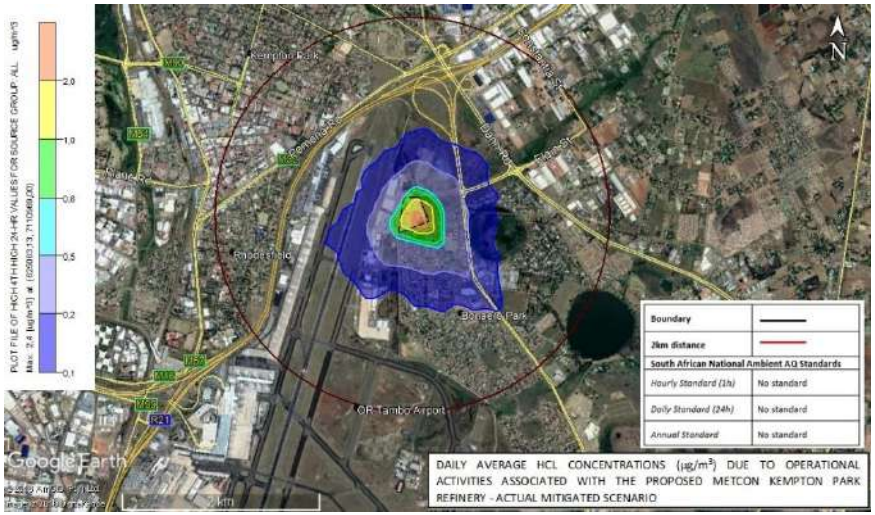

Figure 5-27: Predicted HCL daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-28: Predicted HCL daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

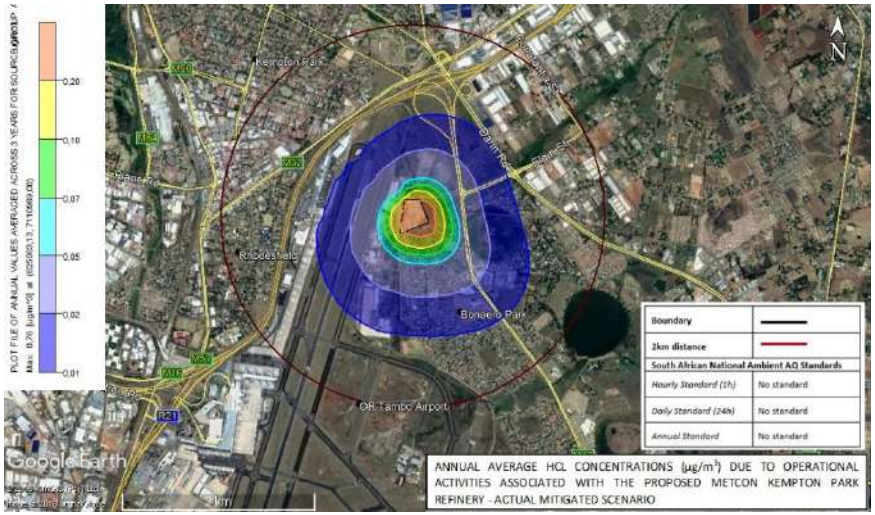

Figure 5-29: Predicted HCL annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-30: Predicted HCL annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

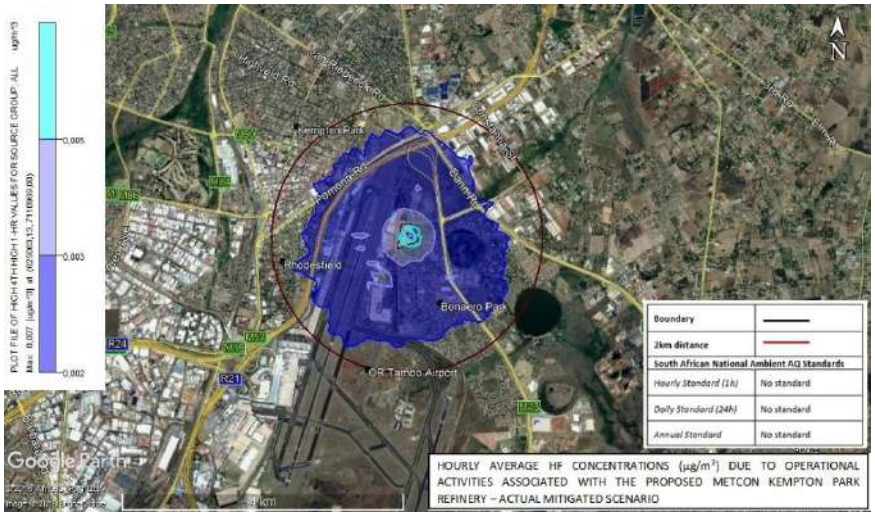

Figure 5-31: Predicted HF hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-32: Predicted HF hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

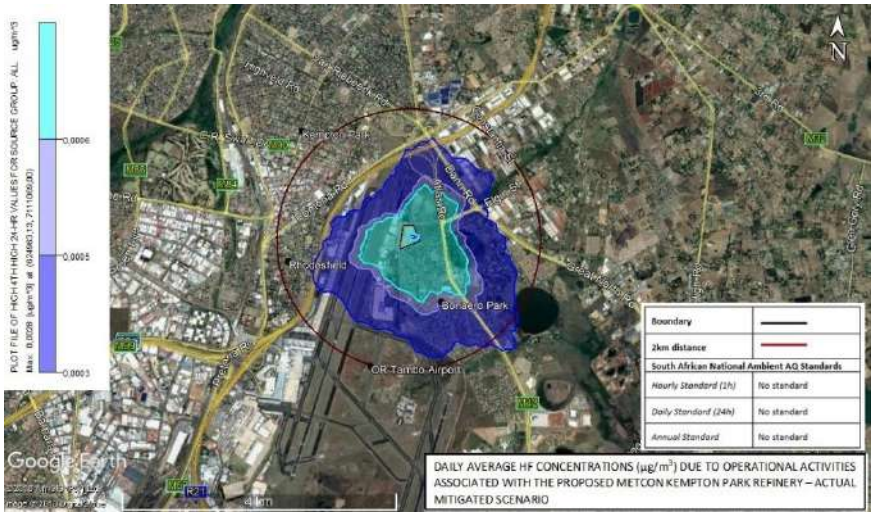

Figure 5-33: Predicted HF daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-34: Predicted HF daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-35: Predicted HF annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-36: Predicted HF annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

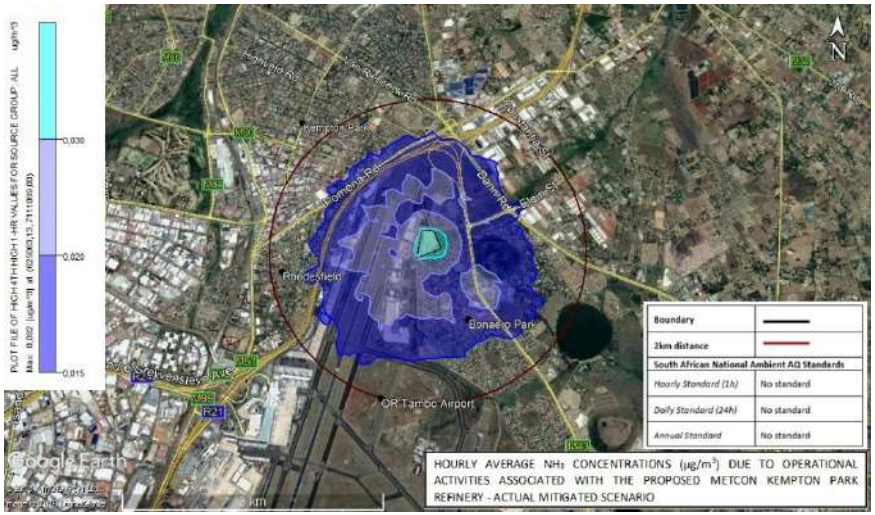

Figure 5-37: Predicted NH_3 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

Figure 5-38: Predicted NH_3 hourly average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Figure 5-39: Predicted NH_3 daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

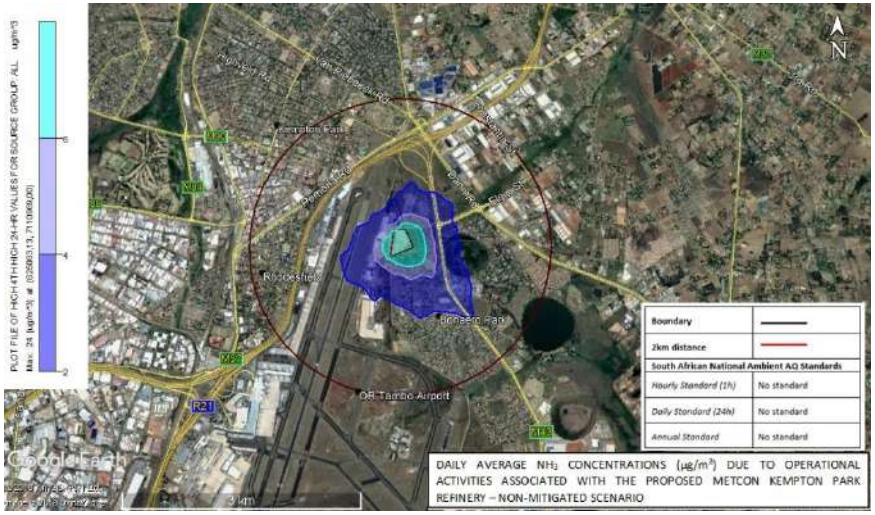

Figure 5-40: Predicted NH_3 daily average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

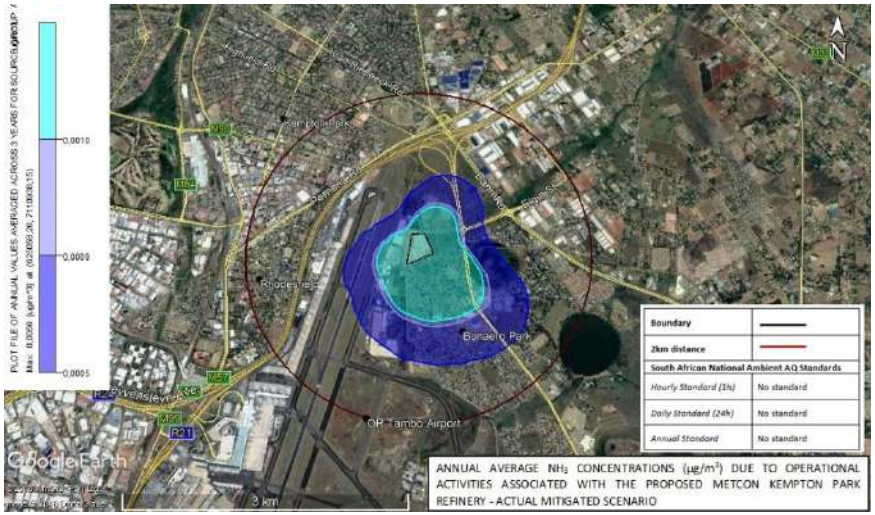

Figure 5-41: Predicted NH_3 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Actual mitigated scenario.

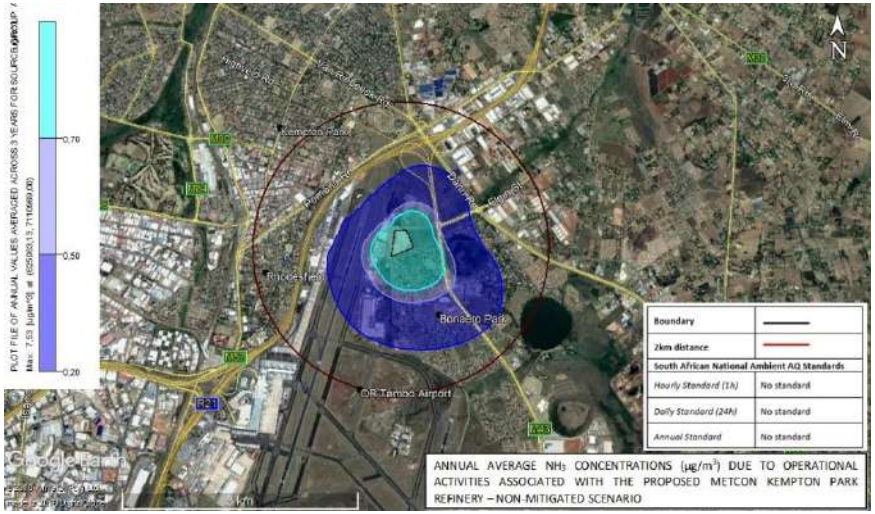

Figure 5-42: Predicted NH_3 annual average incremental concentrations for the proposed MetCon Jewellery Precinct facility – Unmitigated scenario.

Table 5-6: Maximum predicted incremental concentrations at Bonaero Park due to operations associated with the proposed MetCon Jewellery Precinct facility – Actual Mitigated Scenario.

POLLUTANT	AVERAGING TIME	MAXIMUM MODELLED CONCENTRATION (µg/m^3) (1)	COMPLIANCE (2) AIR QUALITY STANDARD (µg/m^3)
Actual Mitigated Scenario			
PM_{10}	Daily	0.01	75
	Annual	0.02	40
$PM_{2.5}$	Daily	0.01	40
	Annual	0.002	20
SO_2	Hourly	0.14	350
	Daily	0.03	125
	Annual	0.006	50
NO_2	Hourly	1.18	200
	Annual	0.04	40
CL_2	Hourly	0.54	*no SA standard*
	Daily	0.14	*no SA standard*
	Annual	0.02	*no SA standard*
HCL	Hourly	0.43	*no SA standard*
	Daily	0.11	*no SA standard*
	Annual	0.01	*no SA standard*
HF	Hourly	0.003	*no SA standard*
	Daily	0.001	*no SA standard*
	Annual	0.0001	*no SA standard*
NH_3	Hourly	0.02	*no SA standard*
	Daily	0.005	*no SA standard*
	Annual	0.001	*no SA standard*

Notes:

(1) Maximum predicted incremental concentration.

(2) Compliance assessed at Bonaero Park.

Table 5-7: Maximum predicted incremental concentrations at Bonaero Park due to operations associated with the proposed MetCon Jewellery Precinct facility – Unmitigated Scenario.

POLLUTANT	AVERAGING TIME	MAXIMUM MODELLED CONCENTRATION (µg/m^3) (1)	COMPLIANCE (2) AIR QUALITY STANDARD (µg/m^3)
Unmitigated Scenario			
PM_{10}	Daily	0.37	75
	Annual	0.08	40
$PM_{2.5}$	Daily	0.04	40
	Annual	0.01	20
SO_2	Hourly	34.96	350
	Daily	8.91	125
	Annual	1.24	50
NO_2	Hourly	27.52	200
	Annual	0.95	40
CL_2	Hourly	4.59	*no SA standard*
	Daily	1.16	*no SA standard*
	Annual	0.16	*no SA standard*
HCL	Hourly	2.75	*no SA standard*
	Daily	0.69	*no SA standard*
	Annual	0.1	*no SA standard*
HF	Hourly	2.75	*no SA standard*
	Daily	0.7	*no SA standard*
	Annual	0.1	*no SA standard*
NH_3	Hourly	9.18	*no SA standard*
	Daily	2.3	*no SA standard*
	Annual	0.32	*no SA standard*

Notes:

(1) Maximum predicted incremental concentration.

(2) Compliance assessed at Bonaero Park.

Table 5-8: Maximum predicted incremental concentrations at the Precinct Boundary – Actual Mitigated Scenario.

POLLUTANT	AVERAGING TIME	MAXIMUM MODELLED CONCENTRATION (µg/m^3) (1)	COMPLIANCE (2) AIR QUALITY STANDARD (µg/m^3)
Unmitigated Scenario			
PM_{10}	Daily	2.3	75
	Annual	0.8	40
$PM_{2.5}$	Daily	0.23	40
	Annual	0.08	20
SO_2	Hourly	0.37	350
	Daily	0.15	125
	Annual	0.03	50
NO_2	Hourly	20.99	200
	Annual	1.7	40
CL_2	Hourly	9.55	*no SA standard*
	Daily	2.92	*no SA standard*
	Annual	0.77	*no SA standard*
HCL	Hourly	7.6	*no SA standard*
	Daily	2.3	*no SA standard*
	Annual	0.6	*no SA standard*
HF	Hourly	0.01	*no SA standard*
	Daily	Negligable	*no SA standard*
	Annual	Negligable	*no SA standard*
NH_3	Hourly	0.05	*no SA standard*
	Daily	0.02	*no SA standard*
	Annual	0.01	*no SA standard*

Notes:

(1) Maximum predicted incremental concentration.
(2) Compliance assessed at Precinct Boundary.

Table 5-9: Maximum predicted incremental concentrations at the Precinct Boundary – Unmitigated Scenario.

POLLUTANT	AVERAGING TIME	MAXIMUM MODELLED CONCENTRATION (µg/m^3) (1)	COMPLIANCE (2) AIR QUALITY STANDARD (µg/m^3)
Unmitigated Scenario			
PM_{10}	Daily	4.34	75
	Annual	1.6	40
$PM_{2.5}$	Daily	0.4	40
	Annual	0.16	20
SO_2	Hourly	2.77	350
	Daily	90.8	125
	Annual	25.45	50
NO_2	Hourly	209	200
	Annual	19.13	40
CL_2	Hourly	34.8	*no SA standard*
	Daily	11.3	*no SA standard*
	Annual	3.19	*no SA standard*
HCL	Hourly	20.89	*no SA standard*
	Daily	6.85	*no SA standard*
	Annual	1.9	*no SA standard*
HF	Hourly	20.89	*no SA standard*
	Daily	6.85	*no SA standard*
	Annual	1.9	*no SA standard*
NH_3	Hourly	69.65	*no SA standard*
	Daily	22.83	*no SA standard*
	Annual	6.38	*no SA standard*

Notes:

(1) Maximum predicted incremental concentration.
(2) Compliance assessed at Precinct Boundary.

5.4.4 Cumulative Impacts

Emissions from sources need to be assessed in terms of the cumulative impacts in an area. The *Code of Practice for Air Dispersion Modelling in Air Quality Management in South Africa (DEA, 2014),* outlines the following for sources influenced by background concentrations e.g. in urban areas and priority areas:

- For annual averages, sum of the highest predicted concentration (C_P) and background concentration (C_B) must be less than the National ambient air quality standards, no exceedances allowed;
- For short-term averages (24 hours or less), sum of the 99th percentile concentrations and background C_B must be less than the National ambient air quality standards. Wherever one year is modelled, the highest concentrations shall be considered.

In determining the cumulative impacts, predicted incremental concentrations should be added to the measured concentrations for the applicable pollutant averaging periods.

Background air quality data for $PM_{2.5}$, SO_2 and NO_2 concentrations were obtained from the Bedfordview ambient air quality station located near to the MetCon Jewellery Precinct project site (please refer to section 4.2). The cumulative impact on $PM_{2.5}$, SO_2 and NO_2 is summarised in Table 5-10. No background concentrations could be sourced for PM_{10}.

Under the cumulative scenario, exceedances of the acceptable SO_2 and NO_2 standards are observed. However, it should be noted that the maximum background SO_2 and NO_2 average concentrations were considered, as per the modelling guidelines and were already in non-compliance.

Table 5-10: Summary of Cumulative Impacts at the nearest ambient air quality station, Bedfordview (located approx. 15km NW of the mine) associated with operations at MetCon Jewellery Precinct facility. Predicted concentration was assessed for the boundary.

POLLUTANT	AVERAGING PERIOD	HIGHEST CONCENTRATION (µg/m^3)		SUM OF C_B AND C_P	AIR QUALITY STANDARD
		BACKGROUND[1] (C_B)	PREDICTED[2] (C_P)		
Actual mitigated scenario					
$PM_{2.5}$	daily	35	0.23	35.23	40
SO_2	daily	178.16	0.37	178.53	125
	hourly	655	0.15	655.15	350
NO_2	hourly	705	20.99	725.99	200
Unmitigated scenario					
$PM_{2.5}$	daily	35	0.4	35.4	40
SO_2	daily	178.16	2.77	180.93	125
	hourly	655	90.8	745.8	350
NO_2	hourly	705	209	914	200

Notes:

(1) Please refer to section 4.2 for details on the background air quality data.
(2) Considered the maximum predicted concentration at the ambient air quality station, Bedfordview.

The level of impact of proposed activities associated with the MetCon Jewellery Precinct facility is assessed in Table 5-11 and Table 5-12.

Table 5-11: Description of Terms for the Impact Rating System.

Extent =E (The area over which the proposed impact will be experienced.)	***Reversibility=R (The degree to which the proposed impact can be revered upon completion of the proposed development / activity.)***
5: International	
4: National	**4:** Irreversible
3: Regional	**3:** Barely Reversible
2: Local	**2:** Partly Reversible
1: Site	**1:** Completely Reversible
Status of Impact	
+: Positive (A benefit to the receiving environment)	
N: Neutral (No cost or benefit to the receiving environment)	
-: Negative (A cost to the receiving environment)	
Magnitude:=M (The severity of the proposed development / activity.)	***Duration:=D (The time frame for which the proposed impact will be experience)***
5: Very high/don't know	5: Permanent
4: High	4: Long-term (ceases with the operational life)
3: Moderate	3: Medium-term (5-15 years)
2: Low	2: Short-term (0-5 years)
1: Minor	1: Immediate
0: Not applicable/none/negligible	0: Not applicable/none/negligible
Probability:=P (The likelihood / degree of certainty of the proposed impact occurring.)	***Cumulative Effect = C (The impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.)***
5: Definite/don't know	
4: Highly probable	4: High Cumulative Impact
3: Medium probability	3: Medium Cumulative Impact
2: Low probability	2: Low Cumulative Impact
1: Improbable	1: No Cumulative Impact
	0: Not applicable

Loss of Resources = L (The degree to which a given resource will be lost as a result of the proposed development / activity.)
4: Complete Loss of Resources
3: Intermediate Loss of Resources
2: Low loss of resoures
1: No Loss of resources

Significance	***Environmental Significance Points***	***Colour Code***
High (positive)	>90	H
Medium (positive)	20 to 90	M
Low (positive)	<20	L
Neutral	0	N
Low (negative)	<-20	L
Medium (negative)	-20 to - 90	M
High (negative)	>-90	H

Table 5-12: Rating of Air Quality Impacts associated with the proposed MetCon Jewellery Precinct facility.

POTENTIAL ENVIRONMENTAL IMPACT	APPLICABLE AREA	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION										RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION									
			E	P	R	L	D	C	M	TOTAL	STATUS	SP		E	P	R	L	D	C	M	TOTAL	STATUS	SP
AREAS: 1. Plant																							
OPERATIONAL PHASE ACTIVITIES: 1.Incineration 2. gas combustion 3. melting & casting material in furnaces 4. refinin																							
Operational Phase																							
PM10 - daily	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
PM10 - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
PM2.5 - daily	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
PM2.5 - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
SO2 - hourly	1	1, 2, 3 & 4	2	3	2	2	4	3	1	16	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
SO2 - daily	1	1, 2, 3 & 4	2	3	2	2	4	3	1	16	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
SO2 - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
NO2 - hourly	1	1, 2, 3 & 4	2	3	2	2	4	3	1	16	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
NO2 - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
CL2 - hourly	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
CL2 - daly	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
CL2 - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
HCL - hourly	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
HCL- daily	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
HCL - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
HF - hourly	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
HF - daily	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
HF - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
NH3 - hourly	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
NH3 - daily	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L
NH3 - annual	1	1, 2, 3 & 4	2	3	2	2	4	2	1	15	-	L	abatement equipment	2	3	2	2	4	1	1	14	-	L

5.4 Assumptions, Limitations and Exclusions

The following key assumptions, limitations and exclusions of the study are given below:

Assumptions

- Data/information provided by the client and used as input into the model were assumed to be accurate and complete at the time of modelling;
- Operation hours were assumed to occur for 24 hours a day for 7 days a week;
- Stack parameters were based on results given for the Centurion plant;
- Activities were assumed to be the same as for the Centurion plant;
- Mitigation measures were considered, which include the use of abatement equipment.

Limitations

- Detailed information for each emission source is required for input into the model, such as the dimensions, material throughputs, material characteristics and the exact locality of the sources. In some instances, not all these details are known at the design stages of the project. To account for the emissions, assumptions and estimates were made where necessary.
- The study is limited by the amount of detailed information that could be provided at the time of modelling.

Exclusions

Construction activity was not modelled as it was assumed that this was assessed as part of the Environmental Impact Assessment conducted for the Jewellery Precinct.

5.5 Recommendations

The proposed MetCon Jewellery Precinct facility will trigger sub-category 4.17 (precious and base metals production and refining). As such, the facility requires an AEL to operate. MetCon are in the process of applying for an AEL with the City of Ekurhuleni. The following recommendations are made to ensure compliance with the AEL and minimise emissions associated with operations on site (Table 5-13).

Table 5-13: Summary of Recommendations and Monitoring Requirements.

Recommendations	Reporting Requirements to authority	Reporting Frequency to authority *(unless otherwise stated in AEL)*
Appoint a responsible person, such as an emission control officer or safety, health & environmental manager, to ensure compliance with the AEL. This person would be responsible for the following: • Ensure compliance with all AEL conditions; • implementation of all mitigation measures; • compilation and/or storage of relevant documents (such as maintenance checklists, complaints register, etc.). These documents should be readily available in the event of a site inspection; • submitting all required reports (e.g. annual AEL report, stack monitoring reports, etc.); • submitting a summary complaints (monthly); • Notifying the relevant licensing authority when needed; Undertake/facilitate training for key personnel/contractors or staff to ensure compliance with the internal management plans and AEL conditions.	n/a	n/a
Comply with all conditions of the AEL. Should any changes be required, an application should be submitted to the relevant licensing authority prior to the changes being made. Any changes to the following will require approval: • Production processes • Production increases • Ownership • Contact details • Type and quantities of input materials • Type and quantities of products • Production equipment • Treatment facilities • Building, plant, site layout or site of works	A renewal/variation/transfer AEL application.	Prior to changes being made. Need to allow at least 90 days for approval.

Once operational, conduct stack emissions monitoring on all stacks for the relevant listed activity and ensure compliance with the minimum emission standards, with the use of abatement equipment. Ensure that monitoring is undertaken in accordance with nationally or internationally acceptable methods.	Stack emissions monitoring report for each stack.	Annually
Ensure that all unit processes & apparatus used for undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing emissions, are at all times properly maintained and operated.	Maintenance plan Maintenance checklists	As required: daily/weekly/monthly/quarterly/annually **maintenance should be carried out as per the requirements in the maintenance plan.*
Submit an annual AEL report within the required timeframe. This report should include: • Compliance audit report; • Summary of major upgrades; • Pollutant monitoring trends; • GHG emissions; • Summary of complaints; • Any other required documentation.	Annual AEL Report	Annually
Maintain and report monthly to the authority a complaint register. Should a complaint be logged, a report in the required format as per the AEL, should be submitted to the authority.	Complaint register Complaint investigation report	Complaint register to be reported monthly Complaint investigation report to be submitted if a complaint is received.
Register and report on the NAEIS. Category A (listed activities) are required to report their emissions on the NAEIS annually. The NAEIS is a national emissions inventory.	NAEIS online submission	Annually: from January – March of each year

5.6 Summary and Conclusions

Rayten Engineering Solutions CC (hereafter referred to as “Rayten Engineering”) was appointed by Metal Concentrators SA (Pty) Ltd (referred to as MetCon hereafter), to compile an Air Quality Impact Assessment report for the proposed refinery facility located within Jewellery Manufacturing Precinct on part of the Remainder of Portion 69 of the Farm Witkoppie 64-IR, near OR Tambo International Airport, Gauteng Province. The main objective of the Air Quality Impact Assessment is to determine the potential impact of emissions from the operational activities associated with the proposed project on ambient air quality in terms of the criteria air pollutants and dust fallout.

As part of the Air Quality Impact Assessment, a Baseline Air Quality Assessment was undertaken to determine the prevailing meteorological conditions at the site, establish baseline concentrations of key air pollutants of concern, identify existing sources of emissions and identify key sensitive receptors surrounding the project site. Meteorological data for the project area (from the Johannesburg/OR Tambo International Airport meteorological station) for the period 01 January 2014 – 31 December 2016 was used. The Air Quality Impact Assessment consisted of an emissions inventory and subsequent dispersion modelling simulations to determine PM_{10}, $PM_{2.5}$, SO_2, NO_2, CL_2, HCL, HF and NH_3 concentrations associated with proposed activities during the operational phase of the project. Comparison of the modelled concentrations was made with the South African Ambient Air Quality Standards (where available) to determine compliance.

Summary of conclusions for baseline assessment

The land immediately surrounding the proposed project site consists of a variety of land use types. In general, urban small holdings are located east of the site, with urban industrial and built-up land types concentrated south of the site. Urban residential areas are in the north-western and south-eastern sectors. Cultivated farmlands are positioned further outwards north of the site. Existing key sources of air pollution surrounding the project site have been identified to be:

- Wind erosion from exposed areas (e.g. open cast pits, stockpiles, open storage piles, exposed cultivated fields, degraded land, etc.);
- Potential veld fires;
- Agricultural activity and biomass burning;
- Refuse dumps,
- Industrial activity,
- Treatment plants;
- Township/Informal settlements;
- Vehicle emissions.

Based on the prevailing wind fields for the period January 2014 to December 2016, emissions from operations at the facility will likely be transported towards the south-east quadrant. Moderate to fast wind speeds observed during all time periods may result in effective dispersion and dilution of emissions from MetCon. Removal of pollutants via wet depositional processes would be evident during the spring and summer seasons, thus lower ambient concentrations of pollutants could be expected during these seasons. Elevated levels of pollutants would be expected during the autumn and winters seasons.

The existing air quality situation is usually evaluated using available monitoring data from permanent ambient air quality monitoring stations and dust fallout networks operated near the project site. In this report, air quality data used was from the Bedfordview air quaity monitoring station. There was inadequate data from the station to present background concentrations for PM_{10}, benzene and CO concentrations at the study site. However, there was background data available for $PM_{2.5}$, SO_2, NO_2 and O_3.

Data were analysed from January 2014 to December 2017. For the period, daily average concentrations range from 5 – 35 µg/m^3 for $PM_{2.5}$, 1 – 180 ppb (1.88 – 338.4 µg/m^3) for NO_2, 1 – 68 ppb (2.62 – 178.16 µg/m^3) for SO_2, and 5 – 65 ppb (10 – 130 µg/m^3) for O_3. Maximum hourly average concentrations were 110 µg/m^3 for $PM_{2.5}$, 375 ppb (705 µg/m^3) for NO_2, 250 ppb (655 µg/m^3) for SO_2 and 100 ppb (200 µg/m^3) for O_3. Exceedances of the daily and hourly ambient air quality standards, where applicable, were observed for $PM_{2.5}$, NO_2, SO_2 and O_3. The 2014 - 2015 period is generally characterised by higher concentrations of all pollutants; the 2016 – 2017 period is characterised by lower concentrations. Higher concentrations are generally observed over the winter to early spring seasons.

Summary of conclusions for impact assessment

Particulate and gaseous emissions are identified for operations associated with the proposed facility and will be emitted from the following key sources:

- Jewellers secondary gold material incineration in roasting oven;
- Gas (fuel) combustion installation (roasting oven);
- Chemical refining process;
- Melting of material in induction furnaces and adding fluxes
- Casting of material.

In this study two scenarios were modelled:

c) The unmitigated scenario, where the S21 minimum emission standard rates for new plants for sub-category 4.17 (precious and base metals production and refining) were considered for input into the model. In other words, the maximum emission rate that is allowed in terms of S21 of NEM: AQA was considered in the assessment. The emission standards were converted into emission rates for input into the model.

d) The actual mitigated scenario, where stack emissions monitoring results, considering the abatement equipment, were used for input into the model.

Based on the dispersion model output plots, predicted incremental concentrations for the actual mitigated scenario are predicted to be low, with no exceedances of the ambient air quality standards observed for PM_{10}, $PM_{2.5}$, NO_2 and SO_2. Predicted incremental concentrations for the unmitigated scenario, indicate no exceedances of the ambient air quality standards, except for the short term hourly limits for SO_2 and NO_2, which occur within the Precinct boundary.

Even though predicted incremental concentrations are shown to be low for the unmitigated scenario, it is still advised that abatement equipment is installed to reduce emissions as much as reasonably possible. Under the mitigated scenario, very low concentrations were observed within 2km from the facility, as the abatement equipment (scrubber and baghouse) has an associated emission control

efficiency of approximately 98%. MetCon do plan to install abatement equipment, as per their current design at the MetCon Centurion Plant.

The proposed MetCon Jewellery Precinct facility will trigger sub-category 4.17 (precious and base metals production and refining). As such, the facility requires an AEL to operate. MetCon are in the process of applying for an AEL with the City of Ekurhuleni. Recommendations (provided in Table 5-13 of this report) that should be considered are listed below:

- Appoint a responsible person, such as an emission control officer or safety, health & environmental manager, to ensure compliance with the AEL;
- Comply with all conditions in the AEL;
- Any changes should be approved prior to be being made. A transfer/variation or renewal application should be submitted in this regard;
- Develop and implement a maintenance plan to ensure optimal functioning of production equipment and emission control equipment (abatement equipment);
- Conduct annual stack emissions monitoring;
- Submit annual AEL reports;
- Conduct annual NAEIS reporting;
- Maintain and submit a complaint register to authority monthly.

6. REFERENCES

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APPENDIX A

AIR DISPERSION MODELLING CHECKLIST

Table A 1: Information Required in Air Dispersion Modelling Report.

Information Required in Plan of Study Report				
Description	**Included (Y/N)**	**Section**	**Page no.**	**Comments**
1. Facility and Modellers Information				
Project Identification Information				
Applicant details	Y	1.1	1	
Facility Identification	Y	1.1	1	
Physical address of facility	Y	1.1	1	
AEL number	Y	1.1	1	
EIA reference	Y	1.1	1	
Modelling contractors	Y	1.1	1	
Project Background				
Objectives of Baseline Assessment	Y	1	1&2	
Process description	Y	1.2	1&2	
Project Location				
Site layout plan	Y	1.2	3	
Regional map	Y	2	9	
Adjacent area map	Y	2	9	
Surrounding land use map	Y	2	9&10	
Elevation data (DEM)	Y	2	11	
2. Emission Characterisation				
Proposed emissions & source parameters				
All identifiable emissions listed	Y	5.1	39-41	
Parameters for each operating scenario	Y	5.1	39-41	
Proposed emissions calculations	Y	5.1	39-41	
3. Meteorological Data				
Surface Data				
Source of data	Y	4.1	21	
Seasonal wind roses	Y	4.1	23	
3-year representative data	Y	4.1	21	
Program used to process data	Y	4.1	21	
Description of station	Y	4.1	21	
Period of record	Y	4.1	21	
Spatial representativeness	Y	4.1	21	

Data complies with Code of Practice	Y	4.1	21	
Upper Air Data				
Source of data	N			Used upper air estimator in AERMET
4. Ambient Impact Analysis and Ambient Levels				
Standard Levels				
National Ambient Air Quality Standards	Y	3.3	14	
Background Concentrations				
Background values specified	Y	4.2.	28-33	
5. Modelling Procedures				
Proposed Model				
Assessment level proposed	Y	5.3.2	42	
Dispersion model to be used	Y	5.3.1	41-43	
Supporting models to be used	Y	5.3	41-43	
Version of models to be used	Y	5.3	41-43	
Proposed Emissions to be Modelled				
Pollutants specified	Y	5	38	
Scenarios to be modelled	Y	5	38	
Conversion factor utilized	N			Not used
Proposed Settings				
Settings to be utilized	Y	5.3.2	42-43	
Terrain settings	Y	5.3.2	42-43	
Land characteristics	Y	5.3.2	42-43	
Grid Receptors				
Property line resolution	Y	5.3	42-43	
Fine grid resolution	Y	5.3	42-43	
Medium grid resolution	Y	5.3	42-43	
Large grid resolution	Y	5.3	42-43	
6. Ambient Impact Results Documentation				
Tables of Modelling Results				
Pollutant	Y	5.4.1	56-59	
Averaging time	Y	5.4	56-59	
Operating scenario	Y	5.4	56-59	
Maximum modelled concentration	Y	5.4	56-59	
Receptor location	Y	2.5	8	
Receptor elevation	Y	2.5	8	
Date of maximum impact	N			Can be provided upon request
Name of output e-files	Y	Appendix B	73	
Source Impact Area Figures				
UTM co-ordinates	N			
Modelled facility	Y	5.4	45-55	

Topography features	Y	2	11	
Isopleths	Y	5.4	45-55	
Value of maximum impact	Y	5.4	45-55 & 56-59	
Value of maximum cumulative impact	Y	5.4.4	60-61	Using boundary as reference
7. Ambient Impact Supporting Documentation				
Electronic Files				
Electronic files can be provided upon request				
Input & output files for models	Y	Appendix B		name of files specified
Input & output files for pre-processors	Y	Appendix B		name of files specified
Input & output files for post-processors	Y	Appendix B		name of files specified
Digital terrain files	N			
Plot files	Y	Appendix B		name of files specified
Final report	Y			

APPENDIX B

OUTPUT E-FILES

Table C1: List of output e-files used.

Metcon Kemp Model files	2018-03-01 05:39 PM	File folder
MetconKemp Met Files	2018-02-27 12:45 PM	File folder
MetconKemp_CL2_Act	2018-03-01 02:30 PM	File folder
MetconKemp_CL2_LISTED	2018-03-01 05:25 PM	File folder
MetconKemp_HCL_Act	2018-03-01 03:03 PM	File folder
MetconKemp_HCL_LISTED	2018-03-01 05:02 PM	File folder
MetconKemp_HF_Act	2018-03-01 03:47 PM	File folder
MetconKemp_HF_LISTED	2018-03-01 05:17 PM	File folder
MetconKemp_NH3_Act	2018-03-01 04:00 PM	File folder
MetconKemp_NH3_LISTED	2018-03-01 05:32 PM	File folder
MetconKemp_NO2_Act	2018-03-01 01:37 PM	File folder
MetconKemp_NO2_LISTED	2018-03-01 04:55 PM	File folder
MetconKemp_PM10_Act	2018-03-01 12:20 PM	File folder
MetconKemp_PM10_LISTED	2018-03-01 04:12 PM	File folder
MetconKemp_PM25_Act	2018-03-01 12:59 PM	File folder
MetconKemp_PM25_LISTED	2018-03-01 04:25 PM	File folder
MetconKemp_SO2_Act	2018-03-01 01:15 PM	File folder
MetconKemp_SO2_LISTED	2018-03-01 04:42 PM	File folder

Note: a copy of the modelling files can be provided upon request.

Appendix 7

Public Participation

Appendix 7A

Proof of Site Notices

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

In terms of the National Environmental Management Act, 1998 (NEMA) (Act No.107 of 1998) as amended and the Environmental Impact Assessment (EIA) Regulations 2014, under Government Notices No. R326 and R325, promulgated on 4 December 2014 (as amended on 7 April 2017), notice is hereby given that the Gauteng Industrial Development Zone (hereafter referred to as 'GIDZ) has appointed Marang Environmental and Associates (Pty) Ltd, as the independent Environmental Assessment Practitioner (EAP), to undertake the required Environmental Impact Assessment (EIA) and Public Participation Process for the above-mentioned proposed project.

DESCRIPTION OF PROJECT:

The proposed project entails the construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) within the existing Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, City of Ekurhuleni, Gauteng Province. The total size of the existing JMP site is approximately 7.5 hectares (ha) and has already been designated as an Industrial Development Zone (IDZ) by the National Department of Trade and Industry (DTI). The proposed MetCon facility will occupy an area of approximately 0.24ha and will specialise in extracting materials through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site, which will be used for parking (vehicles) in the future.

PROJECT LOCATION:

The proposed MetCon Facility will be occupying one (1) of the blocks within the existing JMP site which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, within the ORTIA Precinct in Kempton Park, City of Ekurhuleni, Gauteng Province. In addition, the proposed development will be located at the following geographical coordinates: S26°6'52.14"; E28°15'1.73".

LEGAL REQUIREMENTS:

In terms of the NEMA, the proposed project triggers Government Notice No. R325 Listing Notice 2, Activity 6 of the EIA Regulations 2014 (as amended on 7 April 2017). As such, an EIA process is required to obtain Environmental Authorisation (EA) for the proposed project. In addition, the proposed project will involve the extraction of materials through a chemical treatment refining process and will therefore trigger sub-category 4.2 and sub-category 4.17 in terms of Section 21 of the National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004). As such, the proposed project will require an Atmospheric Emissions Licence (AEL).

INVITATION TO REGISTER AND COMMENT

To register as an Interested and/or Affected Party (I&AP) and/or to obtain additional information, please submit your name, contact details and the interest which you have in the project within thirty (30) days from the date of this notice. Please direct enquiries, in writing, to the EAP below:

Sindiso Lubisi / Stephan Jacobs

Marang Environmental and Associates (Pty) Ltd

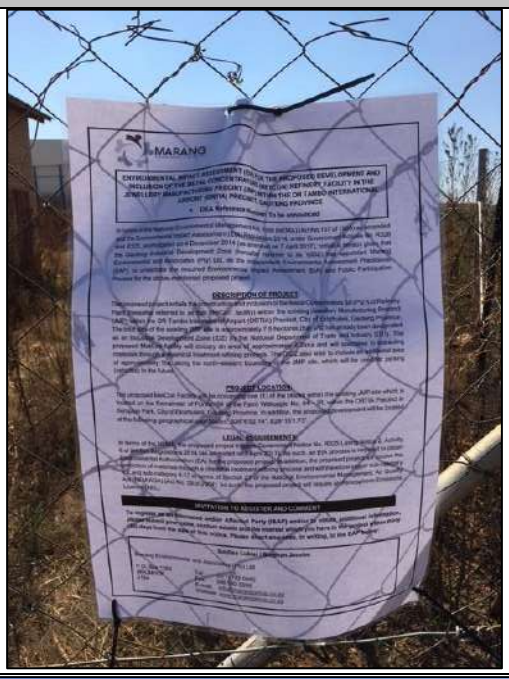
P.O. Box 1369
BROMHOF
2154

Tel: (011) 792 0880
Fax: 086 592 0298
E-mail: info@maranggroup.co.za
Website: www.maranggroup.co.za

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINCT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

EIA SITE NOTICES

Description of the location of Site Notice & GPS Coordinates	Picture / Photo
Boundary fence of JMP site, bordering Suburb of Bonaero Park **Coordinates:** S26°06'55.1" E28°15'03.3"	
Boundary fence of JMP site, bordering Suburb of Bonaero Park **Coordinates:** S26°06'53.5" E28°15'07.9"	

Description of the location of Site Notice & GPS Coordinates	Picture / Photo
	
Boundary fence of JMP site, bordering Suburb of Bonaero Park **Coordinates:** S26°06'52.1" E28°15'11.0"	

Description of the location of Site Notice & GPS Coordinates	Picture / Photo
	
Boundary fence of JMP site, bordering Suburb of Bonaero Park **Coordinates:** S26°06'58.1" E28°14'57.0"	 

Appendix 7B

Written Notices

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 10:46
To: 'engineering@baldmin.co.za'; 'linus@munot.co.za'; 'info@cerefco.co.za'; 'lance@fermax.co.za'; 'sales@securitycity.co.za'; 'mike@polymould.co.za'; 'info@cabcon.co.za'; 'admin@casrsa.co.za'; 'Fiona.hall@matasa.co.za'; 'Imanuel.joemath@ekurhuleni.gov.za'; 'slekota@environment.gov.za'; 'boniswa.belot@gauteng.gov.za'; 'flip.visser@ekurhuleni.gov.za'; 'tebogo.molokomme@gauteng.gov.za'; 'RamunenyiwaP@dws.gov.za'; 'abimbola.olowa@gauteng.gov.za'; 'musa.dlamini@airports.co.za'; 'mazibukot@dws.gov.za'; 'livhuwani.ndou@transnet.net'; 'WayleaCR@telkom.co.za'; 'BesterAD@telkom.co.za'; 'SimphiweM@atns.co.za'; 'puleng.makhetha@airport.co.za'; 'info@alustyleblinds.co.za'; 'ObstacleEvaluators@atns.co.za'; 'GeerinJH@eskom.co.za'; 'John.Gheeringh@eskom.co.za'; 'asalomon@sahara.rg.za'; 'davidkl@nda.agric.za'; 'MashuduMa@daff.gov.za'; 'MabuleR@daff.gov.za'; 'teo@dwaf.gov.za'; 'Botav@nra.co.za'; 's.mahlakwane@gifa.co.za'; 'S.Manyike@sanbi.org.za'; 'info@geda.co.za'; 'jerry.khumalo@gauteng.gov.za'; 'cr@comair.co.za'; 'khumalo@gauteng.gov.za'; 'alfred.tau@gauteng.gov.za'; 'strohl@caa.co.za'; 'malcolm.moore@in2food.co.za'; 'neville.crosse@metcon.co.za'; 'sakib@isondopm.com'; 'Dennis@Jkdsa.co.za'; 'wumba@akapo.co.za'; 'wumba@adjo.co.za'; 'mlif@netactive.co.za'; 'marc@snasia.co.za'; 'nashparag@gmail.com'; 'victorian@ekurhuleni.gov.za'; 'ruzodiam@global.co.za'; 'dave.burman@za.safdico.com'; 'info@hodcc.com'; 'jonty@diacore.com'; 'david@3diam.co.za'; 'Andre.DuPlessis@ekurhuleni.gov.za'; 'lourenco@ekurhuleni.gov.za'; 'starr@polka.co.za'; 'sharmaine@mwebbiz.co.za'; 'flieb@worldonline.co.za'; 'mark@aeroservices.co.za'; 'info@cemair.co.za'; 'marketing@safair.co.za'; 'info@bpl.za.com'; 'pshiba@safair.co.za'; 'kideoj@gmail.com'; 'info@interlinkairlines.com'
Cc: 'Stephan'; 'Sindiso'; 'Pat Sibiya'; 'maideim@gidz.co.za'; 'info@maranggroup.co.za'
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: EIA for MetCon Facility within JMP_BID.pdf

Importance: High

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 –

IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

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MARANG is a Level 2 BBBEE Contributor

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

INTRODUCTION

The Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") are proposing to develop and include the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development").

In terms of EIA Regulations 2014, promulgated in terms of Chapter 5 of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), which came into effect on 8 December 2014, and as amended on 7 April 2017, the proposed development will require an Environmental Impact Assessment (EIA) process to be undertaken in order to obtain Environmental Authorisation (EA) from the National Department of Environmental Affairs (DEA). The proposed development also triggers sub-category 4.17 and 4.2 of Section 21 of the National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004) and therefore requires an Atmospheric Emissions Licence (AEL).

Accordingly, the GIDZ has appointed Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") as the independent Environmental Assessment Practitioner (EAP), to undertake the required EIA process for the above-mentioned proposed development.

PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to inform Interested and/or Affected Parties (I&APs) about the EIA process being conducted for the proposed development. In addition, this BID will provide I&APs with the opportunity to:

- Better understand the proposed development in order to provide comments and raise issues of concern;
- Understand the EIA process in order to participate effectively;
- Make suggestions to enhance the proposed development;
- Comment on the specialist studies that will be conducted; and
- Contribute local knowledge.

BACKGROUND TO THE PROPOSED PROJECT

The GIDZ, as appointed by the Gauteng Department of Economic Development (GDED), have been given the mandate to develop the JMP within the ORTIA Precinct. The JMP aims to increase employment opportunities and foreign direct investment in the jewellery manufacturing sector. A Basic Assessment (BA) process was undertaken in 2009 to obtain EA for the development of the original JMP site. The BA was carried out in terms of the 2006 EIA Regulations. The GDED were subsequently issued with an approved EA (GDARD Ref No. GAUT002/09-10/N0021) for the original JMP development by the Provincial Authority, namely the Gauteng Department of Agriculture and Rural Development (GDARD), on 25 July 2011. The EA covers an area of approximately 6.5ha. The EA was then amended in May 2018 and included a change in the licence holder details from the GDED to the GIDZ. This amendment was subsequently granted by the DEA and the amended EA was issued on 11 May 2018 (DEA Ref No. 14/12/16/3/3/1/7/94/AM1). Construction on the JMP site (6.5ha as approved in the EA) commenced in 2013 and is still currently underway.

PROJECT TECHNICAL DETAILS

The total size of the JMP site is approximately 7.5 hectares (ha). The proposed MetCon facility will occupy an area of approximately 0.24ha within the existing JMP site and will specialise in extracting metals through a chemical treatment refining process. As such, the proposed MetCon facility has been identified as a key facility to be incorporated into the JMP site. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the proposed JMP site. The additional area will be used for parking (vehicles) in the future. However, construction of the proposed MetCon facility and above-mentioned additional 1ha area has not yet commenced. This will only commence once the necessary authorisations / approvals have been obtained.

PROJECT LOCATION

The proposed development will be located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park, as shown in the map below.

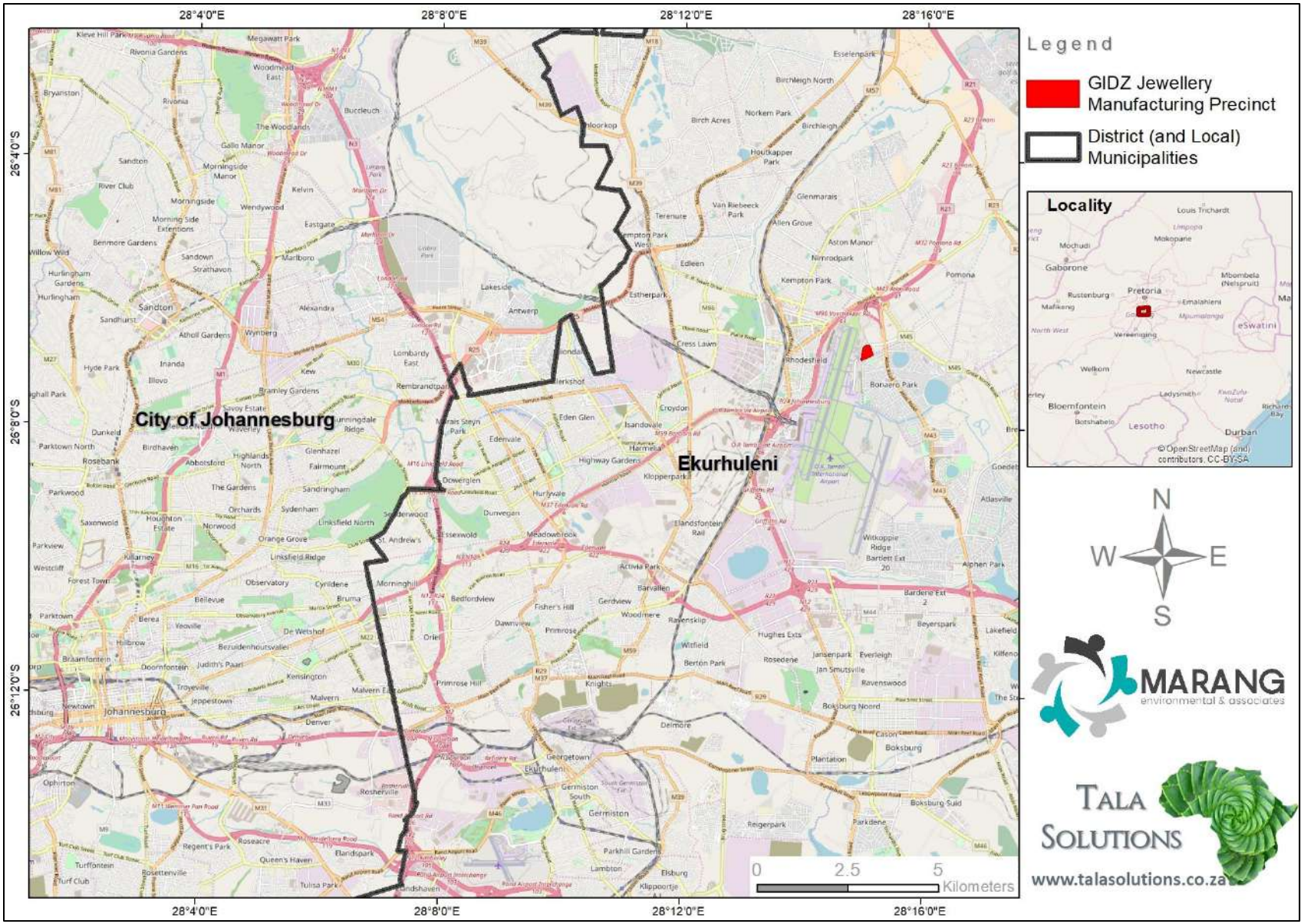


Figure 1: Locality Map

EIA PROCESS

WHAT IS AN EIA?

An EIA is a process of collecting, organising, analysing, interpreting and communicating information relevant to a proposed development to identify potential environmental impacts. EIAs are used by planning authorities/developers to obtain an independent and objective view of the potential environmental (biophysical and social) impacts that could arise during the construction and operation of the proposed development. This information provides the Competent / Decision-Making Authority with a sound basis for their decision-making regarding the issuing of an EA. The EIA process that will be followed is illustrated in **Figure 2** below.

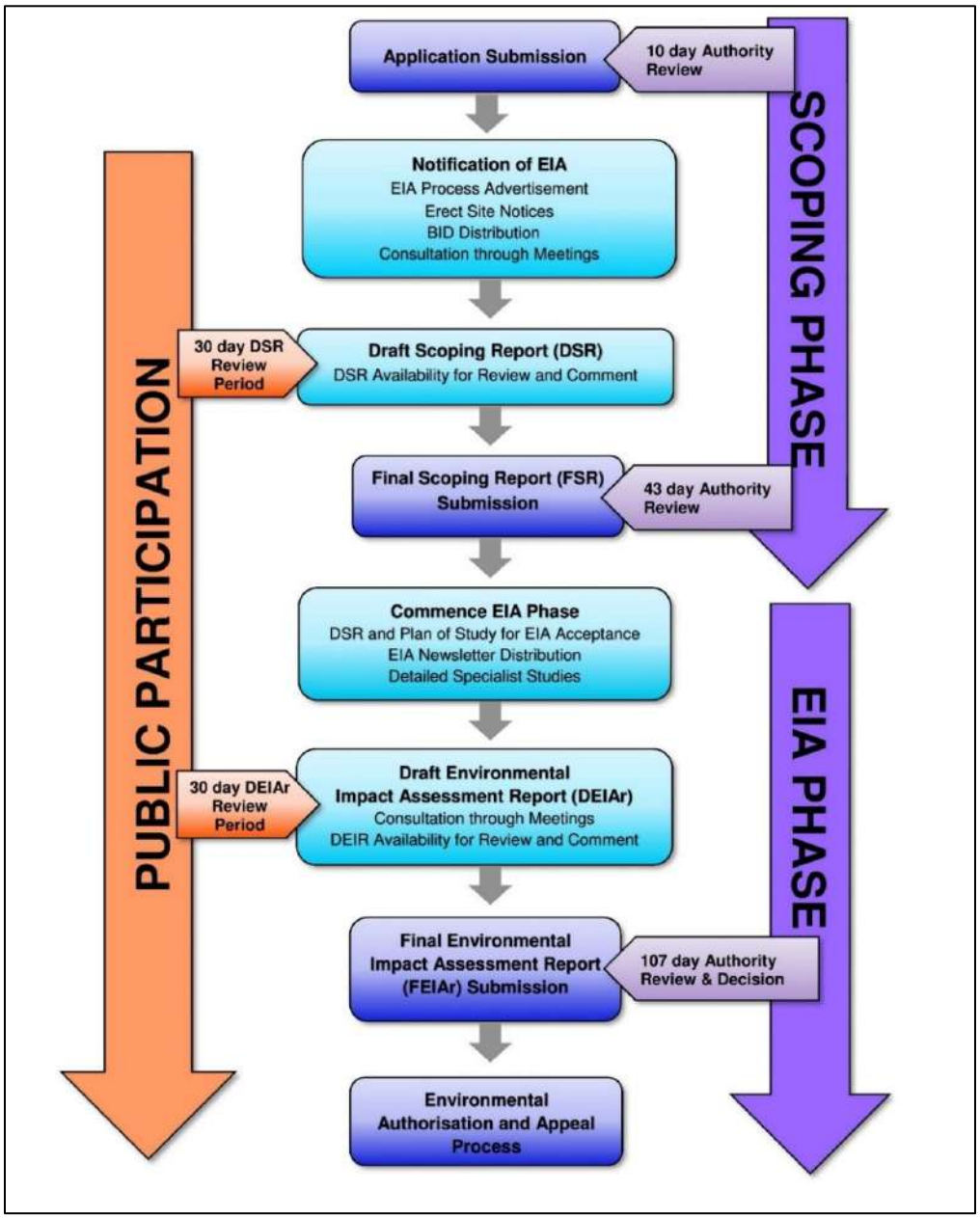


Figure 2: Typical EIA Process

LEGAL REQUIREMENTS

In terms of EIA Regulations 2014, promulgated in terms of Chapter 5 of the NEMA (Act No. 107 of 1998), which came into effect on 8 December 2014 (and as amended on 7 April 2017), certain aspects of the proposed development are considered listed activities within Listing Notice 2 (GN R. 325) of the 2014 EIA Regulations which may have an impact on the environment and therefore require EA from the DEA prior to the commencement of such activities. Additionally, as mentioned, the proposed development also triggers sub-category 4.17 and 4.2 of Section 21 of the NEM:AQA (Act No. 39 of 2004) and therefore requires an AEL.

The ultimate purpose of the EIA process is to identify environmental issues and impacts associated with the proposed activity and to assess the significance of these impacts. The following specialist studies will inform this process:

- Soil and Land Capability;
- Heritage;
- Noise;
- Freshwater Resource;
- Air Quality; and
- Visual.

PUBLIC PARTICIPATION PROCESS

Public participation is the foundation of any EIA process. The key objective of the public participation process is to ensure that all Interested and/or Affected parties (I&APs) / Stakeholders are afforded the opportunity to participate in the process. The main objective of public participation process during the EIA phase will be to provide I&APs with sufficient and relevant information and to conduct a transparent consultation process on an on-going basis, in order to ensure effective participation throughout the EIA process. As part of this public participation process you will also be provided with the opportunity to comment on the environmental findings as per the EIA reports (Scoping and Environmental Impact Assessment Reports), which will be made available for public review and comment during the EIA process.

It is important that relevant I&APs / Stakeholders are identified and involved in the public participation process from the start of the proposed development. As a registered I&AP, you will receive personal notifications (via e-mail, post, fax, and/or sms (where applicable)), notifying you of all documents available for comment, the comment periods and any upcoming meetings.

Public notification of the EIA process will include the following:

- Advertisements will be placed in a local newspaper (namely the Daily Sun);
- Distribution of a Background Information Document (BID);
- Site notices will be placed on the development site; and
- All relevant documentation will be made available on the Marang website.

In addition, the relevant reports will be made available for public review and comment. and public/focus group meetings will be held.

RESPONSIBILITIES OF I&AP

In terms of the EIA Regulations 2014 (as amended), your responsibilities as an I&AP are the following:

- Participate in the EIA and BA processes, register yourself on the project database;
- Inform any other parties (neighbours, friends, colleagues, etc.) who may be interested and/or affected by the proposed project about the EIA and BA processes and encourage them to become involved; and
- Ensure that any comments regarding the proposed project is submitted within the legislated timeframes which will be communicated to you.

RESPONSIBILITIES OF INDEPENDENT EAP

In terms of the 2014 EIA Regulations (as amended), our responsibilities in the public consultation process include:

- Ensuring that enough information regarding the proposed development is made available to you, either through the BID or providing information as and when requested;
- Ensuring that you understand the proposed project to be able to comment informatively, and to enable you to submit any concern in an informed manner; and
- Ensuring that the following actions are taken upon receiving any comments/queries/issues:
    - The contact details provided by you will be entered into the project database;
    - You will be sent all further information releases; and
    - If you send us queries or comments, we will respond in writing (either via e-mail or within the comments and response report).

HOW TO BECOME INVOLVED IN THE PROJECT

If you wish to register as an I&AP, you can do so by the following methods:

- Respond (by phone, fax, post or e-mail) to the invitation advertised in the printed media (namely the Daily Sun);
- Attend the meetings to be held throughout the course of the project. Should you register as an I&AP, you will automatically receive an invitation to these meetings;
- Contact us (by phone, fax, post or e-mail) with any queries, comments or requests for further project information; and
- Submit comments on the Draft and Final Scoping Reports (FSRs and DSRs) and the Draft Environmental Impact Assessment Report (DEIAr) within the review periods that will be stipulated.

If you consider yourself an I&AP for this proposed development, we urge you to make use of the opportunities created by the public participation process to become actively involved in the process and provide comment or concerns which affect and/or interest you, or about which you would like more information. Your input into this process forms a key part of the environmental studies and we would like to hear from you to obtain your views on the proposed project.

PLEASE NOTE THAT ALL RELEVANT PUBLIC DOCUMENTS CAN BE DOWNLOADED FROM THE MARANG WEBSITE.

We look forward to your contributions

Marang Environmental and Associates (Pty) Ltd

Contact: Sindiso Lubisi or Stephan Jacobs

P.O. Box 1369, BROMHOF, 2154

Tel: (011) 792 0880

Fax: 086 592 0298

E-mail: info@maranggroup.co.za

Website: www.maranggroup.co.za

LIST OF ACRONYMS / ABBREVIATIONS

AEL	Atmospheric Emissions Licence
BID	Background Information Document
DEA	Department of Environmental Affairs
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
GDARD	Gauteng Department of Agriculture and Rural Development
GDED	Gauteng Department of Economic Development
GIDZ	Gauteng Industrial Development Zone
Ha	Hectares
I&AP	Interested and/or Affected Party
JMP	Jewellery Manufacturing Precinct
MetCon	Metal Concentrators SA (Pty) Ltd
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004)
ORTIA	OR Tambo International Airport

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

In terms of the National Environmental Management Act, 1998 (NEMA) (Act No.107 of 1998) as amended and the Environmental Impact Assessment (EIA) Regulations 2014, under Government Notices No. R326 and R325, promulgated on 4 December 2014 (as amended on 7 April 2017), notice is hereby given that the Gauteng Industrial Development Zone (hereafter referred to as 'GIDZ) has appointed Marang Environmental and Associates (Pty) Ltd, as the independent Environmental Assessment Practitioner (EAP), to undertake the required Environmental Impact Assessment (EIA) and Public Participation Process for the above-mentioned proposed project.

DESCRIPTION OF PROJECT:

The proposed project entails the construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) within the existing Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, City of Ekurhuleni, Gauteng Province. The total size of the existing JMP site is approximately 7.5 hectares (ha) and has already been designated as an Industrial Development Zone (IDZ) by the National Department of Trade and Industry (DTI). The proposed MetCon facility will occupy an area of approximately 0.24ha and will specialise in extracting materials through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site, which will be used for parking (vehicles) in the future.

PROJECT LOCATION:

The proposed MetCon Facility will be occupying one (1) of the blocks within the existing JMP site which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, within the ORTIA Precinct in Kempton Park, City of Ekurhuleni, Gauteng Province. In addition, the proposed development will be located at the following geographical coordinates: S26°6'52.14"; E28°15'1.73".

LEGAL REQUIREMENTS:

In terms of the NEMA, the proposed project triggers Government Notice No. R325 Listing Notice 2, Activity 6 of the EIA Regulations 2014 (as amended on 7 April 2017). As such, an EIA process is required to obtain Environmental Authorisation (EA) for the proposed project. In addition, the proposed project will involve the extraction of materials through a chemical treatment refining process and will therefore trigger sub-category 4.2 and sub-category 4.17 in terms of Section 21 of the National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004). As such, the proposed project will require an Atmospheric Emissions Licence (AEL).

INVITATION TO REGISTER AND COMMENT

To register as an Interested and/or Affected Party (I&AP) and/or to obtain additional information, please submit your name, contact details and the interest which you have in the project within thirty (30) days from the date of this notice. Please direct enquiries, in writing, to the EAP below:

Sindiso Lubisi / Stephan Jacobs

Marang Environmental and Associates (Pty) Ltd

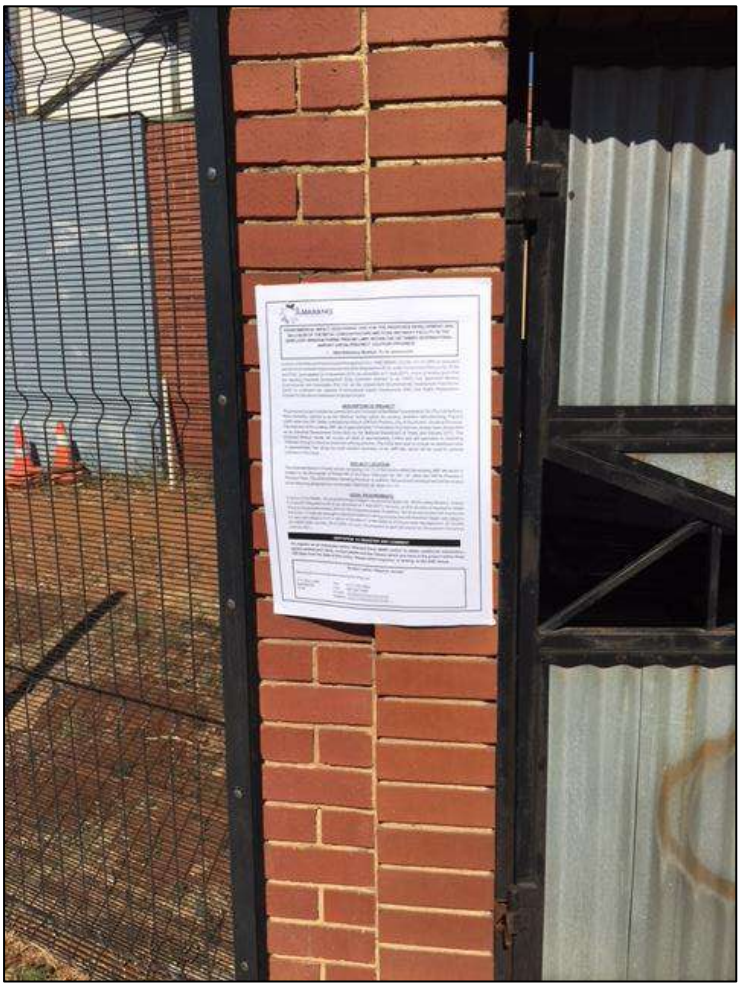
P.O. Box 1369
BROMHOF
2154

Tel: (011) 792 0880
Fax: 086 592 0298
E-mail: info@maranggroup.co.za
Website: www.maranggroup.co.za

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINCT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

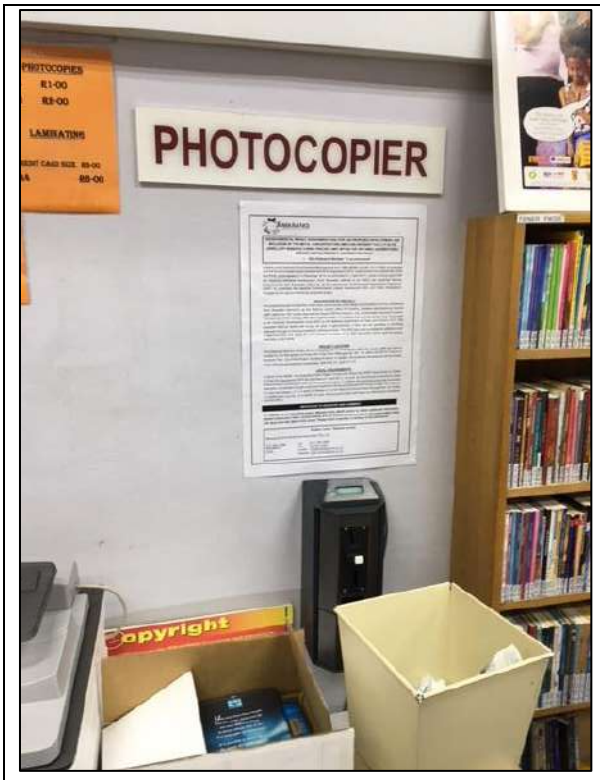
EIA PROCESS NOTICES

(erected Thursday 13 September 2018)

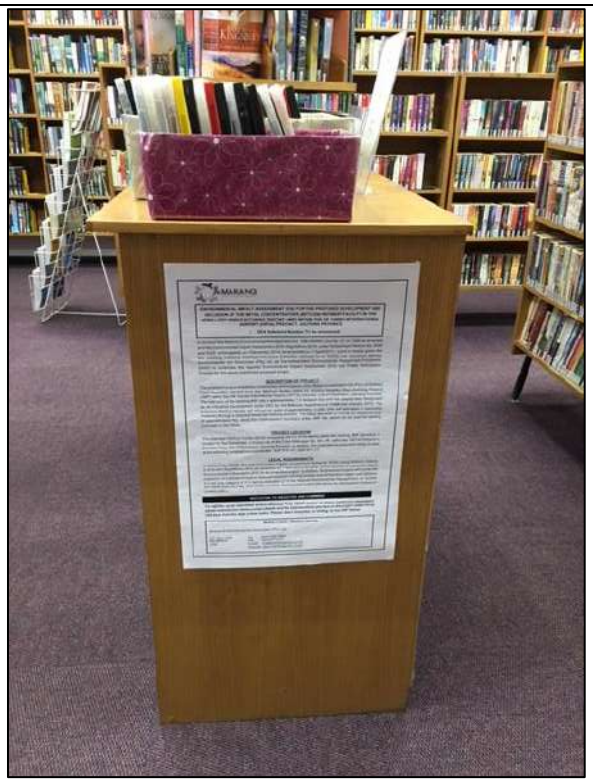
Description of the location of notice	Picture / Photo
Bonaero Park Clinic (on outside wall of clinic) **Coordinates:** S26°07'11.5" E28°15'21.8"	

Description of the location of notice	Picture / Photo
	 **EIA Process Notice on the outside wall of the Bonaero Park Clinic**

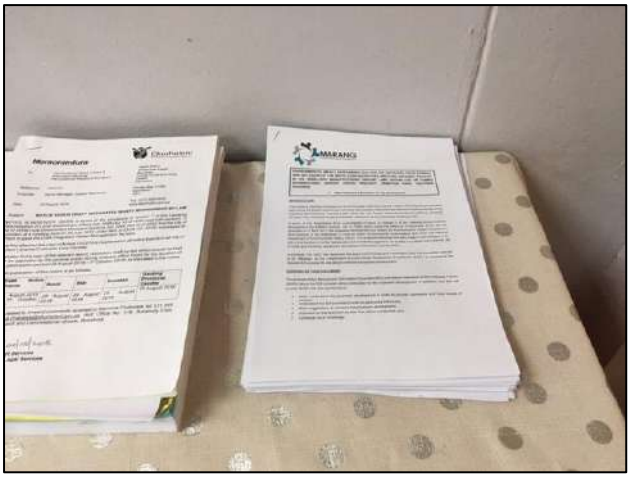
Bonaero Park Public Library - **Background Information Documents (BIDs) were also distributed here** **Coordinates:** S26°07'16.1" E28°15'21.5"	  **EIA Process Notices at the entrance of Bonaero Park Public Library**

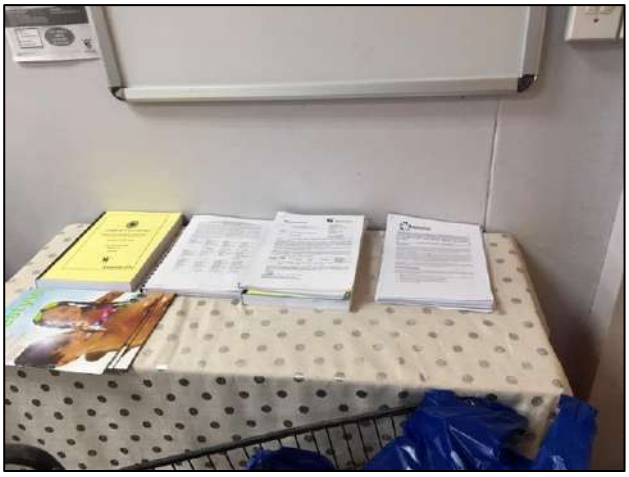


EIA Process Notice against the wall at reception at the Bonaero Park Public Library



EIA Process Notice inside of the Bonaero Park Public Library





Background Information Documents (BIDs) left at the entrance of the Bonaero Park Public Library

Appendix 7C

Proof of Adverts

Fruit seller Ellen Pilosa of Saulsville says she is tired of the dirty water in front of her business. *Photo by Aaron Dube*

Smelly water kills profits!

By AARON DUBE

THE street sellers are up in arms.

Their customers are running away and their businesses face being shut down.

It's all because stinking water is running down the street where they are trying to make a living.

The vendors at Mammogale Street near Saulsville Station, Tshwane told the People's Paper they were gatvol of the smelly water flowing in front of their businesses.

They said this has been happening for three months, making life unbearable.

Ellen Pilosa (41) said she's been selling in the area for 13 years.

"The stinking water is chasing my customers away," she said.

Ellen complained that their local councillor failed them without bothering to listen to their grievances.

"How will I survive if people don't buy my fruit and vegetables?"

Ellen said the drains near their businesses were blocked and begged the municipality to clear up the mess and to provide protection for them against the sun and rain.

Trader Johanna Maswanganyi (43) told the SunTeam the municipality must intervene and save their businesses.

"We survive by selling in the streets and need the area to be clean," Johanna said.

Tshwane mayor Solly Msimanga said the problem was being caused by street butchers selling meat and skop.

"They skin the cow heads and then the fat blocks the drainage system," he said.

Msimanga said meat traders also disposed of blood in the streets and it made the stench in the area worse.

He promised the traders the drainage problem would be fixed and said a skip bin would be provided.

GOGO IS BLIND AND TROUBLED

By NTEBATSE MASIPA

GOGO Selina Mdaku is blind, but she doesn't walk with the aid of a walking stick.

She gets to the pit toilet by holding on to a rope tied to poles between her shack and the toilet.

The 84-year-old from Emaphupheni in Etwatwa, Ekurhuleni, lives alone.

She is helped by neighbours, who told the SunTeam her children neglected her but took her grant money.

Community worker Thandi Mavuso said: "They buy her some food and take the rest of her money. We fear for the gogo's safety.

"She told us they sometimes only give her food once a day and a bottle of water. She doesn't bath often.

"We're worried because the pit toilet she uses is not stable and she could fall in."

Thandi said the gogo's kids had told her that her grant had been stopped, but they were taking the money.

Poor gogo Selina Mdaku lives alone and relies on her neighbours for help. *Photo By Phineas Khoza*

When the SunTeam visited the gogo's shack, there were holes all over it. She said she often wraps herself in blankets when it gets extremely cold.

"I go to the toilet to relieve myself and then come and sleep here in my bed," she said.

"I live in bad conditions, yet I have children. I just want to go to a home."

Her son David Madonsela denied that he was eating the gogo's money and claimed to be looking after her.

Social development spokesman Mbangwa Xaba said they would send social workers to investigate.

Blessing's lost without his dad

By EMILY MGIDI

HE needs to find his father, dead or alive!

Blessing Mathibela (18) of Kwaggafontein in Mpumalanga is looking for his dad, who left in 1999 when his mum was seven months pregnant. His father, Fannie Lebombo, used to live with Blessing's mum Zimkhona Mathibela (40) in Rethabiseng, Mpumalanga.

He worked for a construction company in the area. Zimkhona said this had badly affected her son. She said Blesssing, a grade 10 pupil at Cibiliza Secondary, was not coping with his studies.

"Fannie needs to connect with his son. Nothing is going well for him. This is even affecting him at school."

She described Blessing as intelligent.

"I can see he's a hard worker but he keeps repeating grades. He has never had behavioural problems but lately he has become short-tempered," she said.

Help Blessing Mathibela find his father.

The only information she had about Fannie was that he was from Hammanskraal, Pretoria.

Blessing and Zimkhona visited sangoma Emma Mgidi, who told them he needed to meet his father's family.

"People are different and so are ancestors of different families. This clan seems to follow strict rules for their rituals.

"If any of them skips them, they find themselves in hot water," said Mgidi. She encouraged Blessing to find his father.

Blessing told *Daily Sun:* "This is really affecting me. I'm always stressed out. This is not just about the rituals I need to go through. There are certain things in life I can't talk to my mother about."

Free Wi-Fi back on

By AARON DUBE

MORE than half of Tshwane's Wi-Fi sites are up and running again.

Selby Bokaba, executive director for strategic communications for the city, said there has been significant progress to restore the service of its much-loved Wi-Fi project known as TshWi-Fi.

"Since the appointment of a new service provider to manage the Wi-Fi operation from the beginning of August, more than 600 of the 1 051 sites are up and running," he said.

Bokaba said the team is currently busy switching on high sites and more sites are becoming active as the process to restore the service speeds up.

"There was no connectivity from the Wapadrand substation that burnt down two months ago.

"Theft and vandalism of the infrastructure in places like Mamelodi, Soshanguve and other areas have caused delays," he said.

Bokaba said any service concerns and outages related to free Wi-Fi should be sent to *tshwanefreewifi@tshwane.gov.za*.

Marang Environmental and Associates (Pty) Ltd

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINCT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

In terms of the National Environmental Management Act, 1998 (NEMA) (Act No.107 of 1998) as amended and the Environmental Impact Assessment (EIA) Regulations 2014, under Government Notices No. R326 and R325 promulgated on 4 December 2014 (as amended on 7 April 2017), notice is hereby given that the Gauteng Industrial Development Zone (hereafter referred to as 'GIDZ) has appointed Marang Environmental and Associates (Pty) Ltd, as the independent Environmental Assessment Practitioner (EAP), to undertake the required Environmental Impact Assessment (EIA) and Public Participation Process for the above-mentioned proposed project. In terms of the NEMA, the proposed project triggers Government Notice No. R325 Listing Notice 2, Activity 6 of the EIA Regulations 2014 (as amended). As such, an EIA process is required to obtain Environmental Authorisation (EA) for the proposed project.

PROJECT DESCRIPTION AND LOCATION:

- Construction and inclusion of the Metal Concentrators SA (Pty) Ltd ('MetCon') Refinery Plant within existing Jewellery Manufacturing Precinct (JMP) on part of the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR within Kempton Park, City of Ekurhuleni, Gauteng Province.
- Geographical coordinates: S26°6'52.14"; E28°15'1.73".
- Will occupy an area of approximately 0.24ha.
- Existing JMP site already designated as Industrial Development Zone (IDZ).

AVAILBILTY OF DSR FOR PUBLIC REVIEW

The Draft Scoping Report (DSR) will be available for public comment and review from **Monday 17 September 2018** to **Thursday 18 October 2018** (end of business day). Should you wish to receive an electronic copy, kindly forward your request in writing to Marang. Hard copies of the DSR can be reviewed at the following public place:

- **VENUE:** Bonaero Park Public Library
- **STREET ADDRESS:** Aero Centre, Atlas Road, Bonaero Park
- **HOURS:** Mon–Fri: 09:00–16:30 & Sat: 08:00-13:00
- **CONTACT NO.:** 011 999 4675

The DSR will also be made available on Marang's website: http://www.maranggroup.co.za/, click on '*Public Documents*' then browse for folder '*MetCon GIDZ EIA'*.

To register as an Interested and/or Affected Party (I&AP) and/or to obtain additional information, please submit your name, contact details and the interest which you have in the project within 30 days from the date of this notice. Please direct enquiries, in writing, to the EAP below:

Sindiso Lubisi or **Stephan Jacobs**

Marang Environmental and Associates (Pty) Ltd

P.O. Box 1369
BROMHOF
2154

Tel: (011) 792 0880
Fax: 086 592 0298
E-mail: info@maranggroup.co.za
Website: www.maranggroup.co.za

Appendix 7D

Correspondence -

FROM Authorities

neo@maranggroup.co.za

From: John Geeringh <GeerinJH@eskom.co.za>
Sent: Tuesday, 11 September 2018 09:28
To: stephan@maranggroup.co.za; John.Gheeringh@eskom.co.za
Cc: 'Sindiso'; neo@maranggroup.co.za
Subject: RE: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information

I do not have any comments regarding this proposal.

Regards

John Geeringh (Pr Sci Nat)
Senior Consultant Environmental Management
Land Development and Management
Group Capital
Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.
P O Box 1091, Johannesburg, 2000.
Tel: 011 516 7233
Cell: 083 632 7663
Fax: 086 661 4064
E-mail: john.geeringh@eskom.co.za

From: stephan@maranggroup.co.za [mailto:stephan@maranggroup.co.za]
Sent: 10 September 2018 12:19 PM
To: John Geeringh; John.Gheeringh@eskom.co.za
Cc: 'Sindiso'; neo@maranggroup.co.za
Subject: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information
Importance: High

Good Afternoon Mr. Geeringh,

I trust this email finds you well.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP), which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, Gauteng Province (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the existing JMP site (please refer to attached site layout plan).

The proposed MetCon facility will specialise in extracting precious and base metals from jewellery store secondary materials (i.e. jewellers sweep including sand paper, cloths and carpets) through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site. The additional area will be used for parking (vehicles) in the future. Please be advised that a Background Information Document (BID) will be forwarded to you in due course once this is available. This will contain further details about the proposed development.

Unfortunately Marang are unsure at this stage whether the site is located within an existing power utility zone. Marang will however send you this information once we have confirmed this.

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders and Organs of State with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give Organs of State (such as Eskom) the opportunity to comment and raise their concerns.

Since the proposed development is located within the City Of Ekurhuleni (CoE), and Eskom is the power supplier within this area, we would like inform you that you will be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project. Being registered as an I&AP / Stakeholder will also give you the opportunity to receive project background information (through a BID, scoping and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

In light of the above, please could you kindly respond to this email with a confirmation of your contract details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address) to ensure that we have the correct details.

Please do not hesitate to contact us should you have any queries in this regard or should your require further information.

Kind Regards,

MARANG environmental & associates

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114
email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: DanieN <DanieN@daff.gov.za>
Sent: Wednesday, 12 September 2018 08:28
To: neo@maranggroup.co.za
Subject: RE: MetCon GIDZ EIA - I&AP Database

Good morning Neo,

I forwarded your email to the relevant person, responsible for the administration of the (SALA) Subdivision of Agricultural Land Act of 1970.
The person (head of the division) is Ms Mashudu Marubini. I also carbon copied you in the email, in order for you to have her and 2 other colleques within the SALA division's email addresses for future use and if you have any questions.

Kind Regards

Danie van Nieuwenhuizen

Agricultural Scientist *Pr.Sci.Nat*
Natural Resources Inventories & Assessment (NRIA)
Directorate Land Use & Soil Management (LUSM)
Department of Agriculture, Forestry and Fisheries (DAFF)

Tel: 012 319 7547
Cell: 082 330 7868
Fax: 012 329 5938
Web: www.daff.gov.za
E-mail: DanieN@daff.gov.za

From: neo@maranggroup.co.za [mailto:neo@maranggroup.co.za]
Sent: 11 September 2018 04:06 PM
To: DanieN
Cc: stephan@maranggroup.co.za; 'Sindiso'
Subject: MetCon GIDZ EIA - I&AP Database

Good Afternoon Danie,

I trust this email finds you well.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP), which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, Gauteng Province (hereafter referred to as the 'proposed development').

The proposed MetCon facility will specialise in extracting materials through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site. The additional area will be used for parking (vehicles) in the future. Please be advised that a Background Information Document (BID) will be forwarded to you in due course once this is available. This will contain further details about the proposed development.

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders and Organs of State with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give Organs of State (such as DAFF) the opportunity to comment and raise their concerns.

In light of the above, we would like to inform the Department of Agriculture, Forestry & Fisheries (DAFF) that the Department will be registered as an I&AP / Stakeholder for this project. This will create a platform for you to raise any issues, complaints and impacts. Being registered as an I&AP / Stakeholder will also give you the opportunity to receive project background information (through a BID), scoping and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

In light of the above, please could you kindly respond to this email with a confirmation of your contract details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address) to ensure that we have the correct details.

Should you not be the correct person with regards to this, please could you kindly respond to this email with a confirmation of the contract details for the relevant person at DAFF.

Please do not hesitate to contact us should you have any queries in this regard or should your require further information.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: Flip Visser (Springs) <Flip.Visser@ekurhuleni.gov.za>
Sent: Thursday, 13 September 2018 14:44
To: neo@maranggroup.co.za
Subject: RE: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Afternoon,
Noted.
Thank you.
Flip Visser
Air Quality/ Noise Control
City of Ekurhuleni
011-999-8768

From: neo@maranggroup.co.za <neo@maranggroup.co.za>
Sent: Thursday, September 13, 2018 10:46 AM
To: engineering@baldmin.co.za; linus@munot.co.za; info@cerefco.co.za; lance@fermax.co.za; sales@securitycity.co.za; mike@polymould.co.za; info@cabcon.co.za; admin@casrsa.co.za; Fiona.hall@matasa.co.za; Imanuel Joemath <Imanuel.Joemath@ekurhuleni.gov.za>; slekota@environment.gov.za; boniswa.belot@gauteng.gov.za; Flip Visser (Springs) <Flip.Visser@ekurhuleni.gov.za>; tebogo.molokomme@gauteng.gov.za; RamunenyiwaP@dws.gov.za; abimbola.olowa@gauteng.gov.za; musa.dlamini@airports.co.za; mazibukot@dws.gov.za; livhuwani.ndou@transnet.net; WayleaCR@telkom.co.za; BesterAD@telkom.co.za; SimphiweM@atns.co.za; puleng.makhetha@airport.co.za; info@alustyleblinds.co.za; ObstacleEvaluators@atns.co.za; GeerinJH@eskom.co.za; John.Gheeringh@eskom.co.za; asalomon@sahara.rg.za; davidkl@nda.agric.za; MashuduMa@daff.gov.za; MabuleR@daff.gov.za; teo@dwaf.gov.za; Botav@nra.co.za; s.mahlakwane@gifa.co.za; S.Manyike@sanbi.org.za; info@geda.co.za; jerry.khumalo@gauteng.gov.za; cr@comair.co.za; khumalo@gauteng.gov.za; alfred.tau@gauteng.gov.za; strohl@caa.co.za; malcolm.moore@in2food.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; Dennis@Jkdsa.co.za; wumba@akapo.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; Victoria Nesengani <Victoria.Nesengani@ekurhuleni.gov.za>; ruzodiam@global.co.za; dave.burman@za.safdico.com; info@hodcc.com; jonty@diacore.com; david@3diam.co.za; Andre Du Plessis <Andre.DuPlessis@ekurhuleni.gov.za>; lourenco@ekurhuleni.gov.za; starr@polka.co.za; sharmaine@mwebbiz.co.za; flieb@worldonline.co.za; mark@aeroservices.co.za; info@cemair.co.za; marketing@safair.co.za; info@bpl.za.com; pshiba@safair.co.za; kideoj@gmail.com; info@interlinkairlines.com
Cc: 'Stephan' <stephan@maranggroup.co.za>; 'Sindiso' <sindiso@maranggroup.co.za>; 'Pat Sibiya' <pats@gidz.co.za>; maideim@gidz.co.za; info@maranggroup.co.za
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Importance: High

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
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stephan@maranggroup.co.za

From: Musa Dlamini <Musa.Dlamini@airports.co.za>
Sent: Friday, 14 September 2018 8:33 AM
To: neo@maranggroup.co.za
Cc: info@maranggroup.co.za
Subject: RE: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Good day,

I would like to register as an Interested and Affected Party in this proposed development. Please include me in your database for the purposes of the public participation process.

Regards
Musa

From: neo@maranggroup.co.za <neo@maranggroup.co.za>
Sent: Thursday, 13 September 2018 10:46
To: engineering@baldmin.co.za; linus@munot.co.za; info@cerefco.co.za; lance@fermax.co.za; sales@securitycity.co.za; mike@polymould.co.za; info@cabcon.co.za; admin@casrsa.co.za; Fiona.hall@matasa.co.za; Imanuel.joemath@ekurhuleni.gov.za; slekota@environment.gov.za; boniswa.belot@gauteng.gov.za; flip.visser@ekurhuleni.gov.za; tebogo.molokomme@gauteng.gov.za; RamunenyiwaP@dws.gov.za; abimbola.olowa@gauteng.gov.za; Musa Dlamini <Musa.Dlamini@airports.co.za>; mazibukot@dws.gov.za; livhuwani.ndou@transnet.net; WayleaCR@telkom.co.za; BesterAD@telkom.co.za; SimphiweM@atns.co.za; puleng.makhetha@airport.co.za; info@alustyleblinds.co.za; ObstacleEvaluators@atns.co.za; GeerinJH@eskom.co.za; John.Gheeringh@eskom.co.za; asalomon@sahara.rg.za; davidkl@nda.agric.za; MashuduMa@daff.gov.za; MabuleR@daff.gov.za; teo@dwaf.gov.za; Botav@nra.co.za; s.mahlakwane@gifa.co.za; S.Manyike@sanbi.org.za; info@geda.co.za; jerry.khumalo@gauteng.gov.za; cr@comair.co.za; khumalo@gauteng.gov.za; alfred.tau@gauteng.gov.za; strohl@caa.co.za; malcolm.moore@in2food.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; Dennis@Jkdsa.co.za; wumba@akapo.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; victorian@ekurhuleni.gov.za; ruzodiam@global.co.za; dave.burman@za.safdico.com; info@hodcc.com; jonty@diacore.com; david@3diam.co.za; Andre.DuPlessis@ekurhuleni.gov.za; lourenco@ekurhuleni.gov.za; starr@polka.co.za; sharmaine@mwebbiz.co.za; flieb@worldonline.co.za; mark@aeroservices.co.za; info@cemair.co.za; marketing@safair.co.za; info@bpl.za.com; pshiba@safair.co.za; kideoj@gmail.com; Interlinkairlines <info@interlinkairlines.com>
Cc: 'Stephan' <stephan@maranggroup.co.za>; 'Sindiso' <sindiso@maranggroup.co.za>; 'Pat Sibiya' <pats@gidz.co.za>; maideim@gidz.co.za; info@maranggroup.co.za
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Importance: High

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as “Marang”) has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the “GIDZ”) to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as “MetCon”)

Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
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DisclaimerV1.2

TO Authorities

stephan@maranggroup.co.za

From: John Geeringh <GeerinJH@eskom.co.za>
To: stephan@maranggroup.co.za
Sent: Monday, 10 September 2018 3:46 PM
Subject: Read: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information

Your message

To: John Geeringh
Subject: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information
Sent: Monday, September 10, 2018 12:19:21 PM (UTC+02:00) Harare, Pretoria

was read on Monday, September 10, 2018 3:44:54 PM (UTC+02:00) Harare, Pretoria.

stephan@maranggroup.co.za

From:	stephan@maranggroup.co.za
Sent:	Monday, 10 September 2018 12:19 PM
To:	'GeerinJH@eskom.co.za'; 'John.Gheeringh@eskom.co.za'
Cc:	'Sindiso'; 'neo@maranggroup.co.za'
Subject:	Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information
Attachments:	ORTJewelryLayout.pdf
Importance:	High

Tracking:

Recipient	Read
'GeerinJH@eskom.co.za'	
'John.Gheeringh@eskom.co.za'	
'Sindiso'	
'neo@maranggroup.co.za'	
neo@maranggroup.co.za	Read: 2018/09/10 12:27 PM

Good Afternoon Mr. Geeringh,

I trust this email finds you well.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP), which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, Gauteng Province (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the existing JMP site (please refer to attached site layout plan).

The proposed MetCon facility will specialise in extracting precious and base metals from jewellery store secondary materials (i.e. jewellers sweep including sand paper, cloths and carpets) through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site. The additional area will be used for parking (vehicles) in the future. Please be advised that a Background Information Document (BID) will be forwarded to you in due course once this is available. This will contain further details about the proposed development.

Unfortunately Marang are unsure at this stage whether the site is located within an existing power utility zone. Marang will however send you this information once we have confirmed this.

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders and Organs of State with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give Organs of State (such as Eskom) the opportunity to comment and raise their concerns.

Since the proposed development is located within the City Of Ekurhuleni (CoE), and Eskom is the power supplier within this area, we would like inform you that you will be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project. Being registered as an I&AP / Stakeholder will also give you the opportunity to receive project background information (through a BID, scoping

and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

In light of the above, please could you kindly respond to this email with a confirmation of your contract details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address) to ensure that we have the correct details.

Please do not hesitate to contact us should you have any queries in this regard or should your require further information.

Kind Regards,

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114
email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: stephan@maranggroup.co.za
Sent: Tuesday, 11 September 2018 10:01 AM
To: 'John Geeringh'; 'John.Gheeringh@eskom.co.za'
Cc: 'Sindiso'; 'neo@maranggroup.co.za'
Subject: RE: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information

Importance: High

Good Morning Mr Geeringh,

Thank you very much for your response. It is greatly appreciated.

Please be advised that Marang will be sending you project related information for this proposed development (such as scoping and EIA phase reports) as the development progresses.

Kind Regards,

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114
email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: John Geeringh <GeerinJH@eskom.co.za>
Sent: Tuesday, 11 September 2018 9:28 AM
To: stephan@maranggroup.co.za; John.Gheeringh@eskom.co.za
Cc: 'Sindiso' <sindiso@maranggroup.co.za>; neo@maranggroup.co.za
Subject: RE: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information

I do not have any comments regarding this proposal.

Regards

John Geeringh (Pr Sci Nat)
Senior Consultant Environmental Management
Land Development and Management
Group Capital

Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.
P O Box 1091, Johannesburg, 2000.
Tel: 011 516 7233
Cell: 083 632 7663
Fax: 086 661 4064
E-mail: john.geeringh@eskom.co.za

From: stephan@maranggroup.co.za [mailto:stephan@maranggroup.co.za]
Sent: 10 September 2018 12:19 PM
To: John Geeringh; John.Gheeringh@eskom.co.za
Cc: 'Sindiso'; neo@maranggroup.co.za
Subject: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information
Importance: High

Good Afternoon Mr. Geeringh,

I trust this email finds you well.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP), which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, Gauteng Province (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the existing JMP site (please refer to attached site layout plan).

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and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

In light of the above, please could you kindly respond to this email with a confirmation of your contract details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address) to ensure that we have the correct details.

Please do not hesitate to contact us should you have any queries in this regard or should your require further information.

Kind Regards,

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114
email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Tuesday, 11 September 2018 4:06 PM
To: Danien@daff.gov.za
Cc: stephan@maranggroup.co.za; 'Sindiso'
Subject: MetCon GIDZ EIA - I&AP Database
Attachments: ORTJewelryLayout.pdf

Good Afternoon Danie,

I trust this email finds you well.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP), which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, Gauteng Province (hereafter referred to as the 'proposed development').

The proposed MetCon facility will specialise in extracting materials through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site. The additional area will be used for parking (vehicles) in the future. Please be advised that a Background Information Document (BID) will be forwarded to you in due course once this is available. This will contain further details about the proposed development.

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders and Organs of State with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give Organs of State (such as DAFF) the opportunity to comment and raise their concerns.

In light of the above, we would like to inform the Department of Agriculture, Forestry & Fisheries (DAFF) that the Department will be registered as an I&AP / Stakeholder for this project. This will create a platform for you to raise any issues, complaints and impacts. Being registered as an I&AP / Stakeholder will also give you the opportunity to receive project background information (through a BID), scoping and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

In light of the above, please could you kindly respond to this email with a confirmation of your contract details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address) to ensure that we have the correct details.

Should you not be the correct person with regards to this, please could you kindly respond to this email with a confirmation of the contract details for the relevant person at DAFF.

Please do not hesitate to contact us should you have any queries in this regard or should your require further information.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 10:46
To: 'engineering@baldmin.co.za'; 'linus@munot.co.za'; 'info@cerefco.co.za'; 'lance@fermax.co.za'; 'sales@securitycity.co.za'; 'mike@polymould.co.za'; 'info@cabcon.co.za'; 'admin@casrsa.co.za'; 'Fiona.hall@matasa.co.za'; 'Imanuel.joemath@ekurhuleni.gov.za'; 'slekota@environment.gov.za'; 'boniswa.belot@gauteng.gov.za'; 'flip.visser@ekurhuleni.gov.za'; 'tebogo.molokomme@gauteng.gov.za'; 'RamunenyiwaP@dws.gov.za'; 'abimbola.olowa@gauteng.gov.za'; 'musa.dlamini@airports.co.za'; 'mazibukot@dws.gov.za'; 'livhuwani.ndou@transnet.net'; 'WayleaCR@telkom.co.za'; 'BesterAD@telkom.co.za'; 'SimphiweM@atns.co.za'; 'puleng.makhetha@airport.co.za'; 'info@alustyleblinds.co.za'; 'ObstacleEvaluators@atns.co.za'; 'GeerinJH@eskom.co.za'; 'John.Gheeringh@eskom.co.za'; 'asalomon@sahara.rg.za'; 'davidkl@nda.agric.za'; 'MashuduMa@daff.gov.za'; 'MabuleR@daff.gov.za'; 'teo@dwaf.gov.za'; 'Botav@nra.co.za'; 's.mahlakwane@gifa.co.za'; 'S.Manyike@sanbi.org.za'; 'info@geda.co.za'; 'jerry.khumalo@gauteng.gov.za'; 'cr@comair.co.za'; 'khumalo@gauteng.gov.za'; 'alfred.tau@gauteng.gov.za'; 'strohl@caa.co.za'; 'malcolm.moore@in2food.co.za'; 'neville.crosse@metcon.co.za'; 'sakib@isondopm.com'; 'Dennis@Jkdsa.co.za'; 'wumba@akapo.co.za'; 'wumba@adjo.co.za'; 'mlif@netactive.co.za'; 'marc@snasia.co.za'; 'nashparag@gmail.com'; 'victorian@ekurhuleni.gov.za'; 'ruzodiam@global.co.za'; 'dave.burman@za.safdico.com'; 'info@hodcc.com'; 'jonty@diacore.com'; 'david@3diam.co.za'; 'Andre.DuPlessis@ekurhuleni.gov.za'; 'lourenco@ekurhuleni.gov.za'; 'starr@polka.co.za'; 'sharmaine@mwebbiz.co.za'; 'flieb@worldonline.co.za'; 'mark@aeroservices.co.za'; 'info@cemair.co.za'; 'marketing@safair.co.za'; 'info@bpl.za.com'; 'pshiba@safair.co.za'; 'kideoj@gmail.com'; 'info@interlinkairlines.com'
Cc: 'Stephan'; 'Sindiso'; 'Pat Sibiya'; 'maideim@gidz.co.za'; 'info@maranggroup.co.za'
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: EIA for MetCon Facility within JMP_BID.pdf

Importance: High

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 –

IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Friday, 14 September 2018 11:15 AM
To: ask@ggda.co.za
Cc: 'Stephan'; 'Sindiso'
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: EIA for MetCon Facility within JMP_BID.pdf

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

MARANG environmental & associates

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA

PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: stephan@maranggroup.co.za
Sent: Friday, 14 September 2018 9:06 AM
To: 'Musa Dlamini'
Cc: 'neo@maranggroup.co.za'
Subject: RE: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Good Morning Mr. Dlamini,

Thank you for your email.

Please be advised that you have already been registered as an Interested and/or Affected Party (I&AP) on our database for the proposed development.

We have the following details for you:

Musa Dlamini: Airports Environmental Manager – OR Tambo International Airport (ORTIA)
Cell: 079 525 0025
Tel: 011 921 6262
Email: musa.dlamini@airports.co.za

Can you please confirm that the above-mentioned details are correct.

Kind Regards,

MARANG environmental & associates

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114
email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Musa Dlamini <Musa.Dlamini@airports.co.za>
Sent: Friday, 14 September 2018 8:33 AM
To: neo@maranggroup.co.za
Cc: info@maranggroup.co.za
Subject: RE: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Good day,

I would like to register as an Interested and Affected Party in this proposed development. Please include me in your database for the purposes of the public participation process.

Regards
Musa

From: neo@maranggroup.co.za <neo@maranggroup.co.za>
Sent: Thursday, 13 September 2018 10:46
To: engineering@baldmin.co.za; linus@munot.co.za; info@cerefco.co.za; lance@fermax.co.za; sales@securitycity.co.za; mike@polymould.co.za; info@cabcon.co.za; admin@casrsa.co.za; Fiona.hall@matasa.co.za; Imanuel.joemath@ekurhuleni.gov.za; slekota@environment.gov.za; boniswa.belot@gauteng.gov.za; flip.visser@ekurhuleni.gov.za; tebogo.molokomme@gauteng.gov.za; RamunenyiwaP@dws.gov.za; abimbola.olowa@gauteng.gov.za; Musa Dlamini <Musa.Dlamini@airports.co.za>; mazibukot@dws.gov.za; livhuwani.ndou@transnet.net; WayleaCR@telkom.co.za; BesterAD@telkom.co.za; SimphiweM@atns.co.za; puleng.makhetha@airport.co.za; info@alustyleblinds.co.za; ObstacleEvaluators@atns.co.za; GeerinJH@eskom.co.za; John.Gheeringh@eskom.co.za; asalomon@sahara.rg.za; davidkl@nda.agric.za; MashuduMa@daff.gov.za; MabuleR@daff.gov.za; teo@dwaf.gov.za; Botav@nra.co.za; s.mahlakwane@gifa.co.za; S.Manyike@sanbi.org.za; info@geda.co.za; jerry.khumalo@gauteng.gov.za; cr@comair.co.za; khumalo@gauteng.gov.za; alfred.tau@gauteng.gov.za; strohl@caa.co.za; malcolm.moore@in2food.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; Dennis@Jkdsa.co.za; wumba@akapo.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; victorian@ekurhuleni.gov.za; ruzodiam@global.co.za; dave.burman@za.safdico.com; info@hodcc.com; jonty@diacore.com; david@3diam.co.za; Andre.DuPlessis@ekurhuleni.gov.za; lourenco@ekurhuleni.gov.za; starr@polka.co.za; sharmaine@mwebbiz.co.za; flieb@worldonline.co.za; mark@aeroservices.co.za; info@cemair.co.za; marketing@safair.co.za; info@bpl.za.com; pshiba@safair.co.za; kideoj@gmail.com; Interlinkairlines <info@interlinkairlines.com>
Cc: 'Stephan' <stephan@maranggroup.co.za>; 'Sindiso' <sindiso@maranggroup.co.za>; 'Pat Sibiya' <pats@gidz.co.za>; maideim@gidz.co.za; info@maranggroup.co.za
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Importance: High

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

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Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

Authorities Read Receipts

neo@maranggroup.co.za

From: Musa Dlamini <Musa.Dlamini@airports.co.za>
Sent: Thursday, 13 September 2018 23:12
To: neo@maranggroup.co.za
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: Read: Development and Inclusion of MetCon facility within JMP, Kempton P... (16,4 KB)

Importance: High

[http://www.airports.co.za/SiteAssets/Images/logo.png]
Musa Dlamini
Manager Environmental Compliance
O.R. Tambo International Airport
Airports Company South Africa
Direct: +27 11 921 6079
Cell: +27 79 525 0025
E-Mail: Musa.Dlamini@airports.co.za

[ACSA Best Employers]
[Airports_way]
Airports Company South Africa Disclaimer

neo@maranggroup.co.za

From: Sagwata Manyike <S.Manyike@sanbi.org.za>
Sent: Thursday, 13 September 2018 11:01
To: neo@maranggroup.co.za
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: Read: Development and Inclusion of MetCon facility within JMP, Kempton P... (11,5 KB)

Importance: High

_____

neo@maranggroup.co.za

From: Flip Visser (Springs) <Flip.Visser@ekurhuleni.gov.za>
Sent: Thursday, 13 September 2018 13:18
To: neo@maranggroup.co.za
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: Read: Development and Inclusion of MetCon facility within JMP, Kempton ... (15,4 KB)

Importance: High

neo@maranggroup.co.za

From: Wayleave Management Section CR <WayleaCR@telkom.co.za>
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 10:53
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Wayleave Management Section CR
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: Thursday, September 13, 2018 10:46:04 AM (UTC+02:00) Harare, Pretoria


Untitled attachment 001...

was read on Thursday, September 13, 2018 10:52:26 AM (UTC+02:00) Harare, Pretoria.


Untitled attachment 001...

stephan@maranggroup.co.za

From: John Geeringh <GeerinJH@eskom.co.za>
To: stephan@maranggroup.co.za
Sent: Thursday, 13 September 2018 12:22 PM
Subject: Read: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information

Your message

To: John Geeringh
Subject: RE: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Project Information
Sent: Tuesday, September 11, 2018 10:00:51 AM (UTC+02:00) Harare, Pretoria

was read on Thursday, September 13, 2018 12:19:45 PM (UTC+02:00) Harare, Pretoria.

neo@maranggroup.co.za

From: Victoria Bota (HO) <BotaV@nra.co.za>
To: neo@maranggroup.co.za
Sent: Friday, 14 September 2018 08:27
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Victoria Bota (HO)
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: Thursday, September 13, 2018 10:46:04 AM (UTC+02:00) Harare, Pretoria

was read on Friday, September 14, 2018 8:25:55 AM (UTC+02:00) Harare, Pretoria.

neo@maranggroup.co.za

From: stephan@maranggroup.co.za
To: neo@maranggroup.co.za
Sent: Friday, 14 September 2018 11:26
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: ask@ggda.co.za
Cc: 'Stephan'; 'Sindiso'
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: 2018/09/14 11:14 AM

was read on 2018/09/14 11:25 AM.

neo@maranggroup.co.za

From: Imanuel Joemath <Imanuel.Joemath@ekurhuleni.gov.za>
Sent: Friday, 14 September 2018 15:09
To: neo@maranggroup.co.za
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: Read: Development and Inclusion of MetCon facility within JMP, Kempton ... (15,9 KB)

Importance: High

FROM I&APs

neo@maranggroup.co.za

From: Marc Friedman <marc@snasia.co.za>
Sent: Friday, 07 September 2018 12:13
To: neo@maranggroup.co.za
Cc: sophia@maranggroup.co.za; stephan@maranggroup.co.za; 'Sindiso'
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Much Appreciated

Regards
Marc

From: neo@maranggroup.co.za <neo@maranggroup.co.za>
Sent: Friday, 07 September 2018 11:59 AM
To: marc@snasia.co.za
Cc: sophia@maranggroup.co.za; stephan@maranggroup.co.za; 'Sindiso' <sindiso@maranggroup.co.za>
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Dear Marc,

Thanks for responding to our email. Marang Environmental and Associates will register you as an I&AP for the Metcon GIDZ project.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Marc Friedman <marc@snasia.co.za>
Sent: Friday, 07 September 2018 11:32
To: neo@maranggroup.co.za
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Hi

Yes we would like to be registered!

Marc Friedman
Schachter and Namdar Pty Ltd
0836331114
0113343403

marc@snasia.co.za

Position: Southern Africa COO

PO Box 1717
Highlands North
2037

Thank you

Regards
MARC FRIEDMAN
SCHACHTER & NAMDAR (PTY) LTD

Suite 619A
S.A. Jewellery Centre
Cnr. Phillip & Main Street
Johannesburg
2001

Tel: +27 11 334-3403
Fax: +27 11 334-3514
Cell: +27 83-633-1114
E-Mail: marc@snasia.co.za
Website: www.sn-asia.com

From: neo@maranggroup.co.za <neo@maranggroup.co.za>
Sent: Friday, 07 September 2018 8:52 AM
To: malcolm.moore@in2food.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; dennis@jksa.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; ruzodiam@global.co.za; dave.burman@za.safdico.com; david@3diam.co.za; info@hodcc.com; jonty@diacore.com
Cc: sophia@maranggroup.co.za; 'Sindiso' <sindiso@maranggroup.co.za>; stephan@maranggroup.co.za
Subject: Metcon GIDZ EIA:I&AP's Database

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,

MARANG environmental & associates

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: Marc Friedman <marc@snasia.co.za>
Sent: Friday, 07 September 2018 11:32
To: neo@maranggroup.co.za
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Hi

Yes we would like to be registered!

Marc Friedman
Schachter and Namdar Pty Ltd
0836331114
0113343403

marc@snasia.co.za

Position: Southern Africa COO

PO Box 1717
Highlands North
2037

Thank you

Regards
MARC FRIEDMAN
SCHACHTER & NAMDAR (PTY) LTD

Suite 619A
S.A. Jewellery Centre
Cnr. Phillip & Main Street
Johannesburg
2001

Tel: +27 11 334-3403
Fax: +27 11 334-3514
Cell: +27 83-633-1114
E-Mail: marc@snasia.co.za
Website: www.sn-asia.com

From: neo@maranggroup.co.za <neo@maranggroup.co.za>
Sent: Friday, 07 September 2018 8:52 AM
To: malcolm.moore@in2food.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; dennis@jksa.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; ruzodiam@global.co.za; dave.burman@za.safdico.com; david@3diam.co.za; info@hodcc.com; jonty@diacore.com
Cc: sophia@maranggroup.co.za; 'Sindiso' <sindiso@maranggroup.co.za>; stephan@maranggroup.co.za
Subject: Metcon GIDZ EIA:I&AP's Database

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,

MARANG
environmental & associates

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: Malcolm Moore <malcolm.moore@in2food.co.za>
Sent: Monday, 10 September 2018 07:26
To: neo@maranggroup.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; dennis@jksa.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; ruzodiam@global.co.za; dave.burman@za.safdico.com; david@3diam.co.za; info@hodcc.com; jonty@diacore.com
Cc: sophia@maranggroup.co.za; 'Sindiso'; stephan@maranggroup.co.za; Tim Groucott
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Good day Neo

Your email below refers.

In2food Group (Pty) Ltd wishes to register as an I&AP / Stakeholder.

Our contact details are as follows:

Name:	Malcolm Moore
Company Represented:	In2food Group (Pty) Ltd
Position at Company:	Group Project & Risk Manager
Contact number:	082 940 5787
Postal address:	P.O. Box 26331, East Rand. 1462
Physical address:	In2food construction site, Jewellery Manufacturing Precinct (JMP), Acsa Park, Bonaero Park.
Email address:	malcolm.moore@in2food.co.za

Regards

Malcolm Moore
Group Project & Risk Manager

in2food
Inspiring beyond food

Telephone: 011 918 3951
Mobile: 082 940 5787
Email: malcolm.moore@in2food.co.za
Website: www.in2food.co.za

Service is not a department – it's an Attitude!

From: neo@maranggroup.co.za [mailto:neo@maranggroup.co.za]
Sent: Friday, 07 September 2018 8:52 AM
To: Malcolm Moore; neville.crosse@metcon.co.za; sakib@isondopm.com; dennis@jksa.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; ruzodiam@global.co.za; dave.burman@za.safdico.com; david@3diam.co.za; info@hodcc.com; jonty@diacore.com
Cc: sophia@maranggroup.co.za; 'Sindiso'; stephan@maranggroup.co.za
Subject: Metcon GIDZ EIA:I&AP's Database

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,

MARANG
environmental & associates

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

Disclaimer

neo@maranggroup.co.za

From: Wumba Kapo <wumba@akapo.co.za>
Sent: Thursday, 13 September 2018 10:38
To: neo@maranggroup.co.za
Cc: labi@akapo.co.za
Subject: Re: Metcon GIDZ EIA:I&AP's Database

Good Morning Neo

Thank you for the brief discussion we had a couple days ago concerning the e-mail below.

1. Our company name: Akapo Jewels (PTY)Ltd
2. Represented: Wumba Kapo
3. Position: Managing Director
4. Contact Numbers : Cell +27742543139/ Office:011 038 3130
5. P.O.Box 413616 Craighall 2024
6. wumba@akapo.co.za/labi@akapo.co.za

Kind Regards
Wumba Kapo

Managing Director
Akapo Jewels (PTY)Ltd
+27742543139

From: <neo@maranggroup.co.za>
Date: Friday, 07 September 2018 at 08:51
To: <malcolm.moore@in2food.co.za>, <neville.crosse@metcon.co.za>, <sakib@isondopm.com>, <dennis@jksa.co.za>, <wumba@adjo.co.za>, <mlif@netactive.co.za>, <marc@snasia.co.za>, <nashparag@gmail.com>, <ruzodiam@global.co.za>, <dave.burman@za.safdico.com>, <david@3diam.co.za>, <info@hodcc.com>, <jonty@diacore.com>
Cc: <sophia@maranggroup.co.za>, 'Sindiso' <sindiso@maranggroup.co.za>, <stephan@maranggroup.co.za>
Subject: Metcon GIDZ EIA:I&AP's Database

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed

development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,

MARANG environmental & associates

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

I&APs Read Receipts

neo@maranggroup.co.za

From: mark@aeroservices.co.za
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 13:27
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Unknown
Subject:

neo@maranggroup.co.za

From: Jonty Alexander <jonty@diacore.com>
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 11:03
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Jonty Alexander
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: Thursday, September 13, 2018 10:46:04 AM (UTC+02:00) Harare, Pretoria

was read on Thursday, September 13, 2018 11:05:49 AM (UTC+02:00) Harare, Pretoria.

neo@maranggroup.co.za

From: Dennis Camberg <Dennis@Jkdsa.co.za>
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 11:41
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Dennis Camberg
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: Wednesday, September 12, 2018 8:46:04 PM (UTC-12:00) International Date Line West

was read on Wednesday, September 12, 2018 9:40:35 PM (UTC-12:00) International Date Line West.

neo@maranggroup.co.za

From: Linus Eveleigh <linus@munot.co.za>
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 11:03
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Unknown
Subject:

neo@maranggroup.co.za

From: Malcolm Moore <malcolm.moore@in2food.co.za>
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 11:00
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Malcolm Moore
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: 13 September 2018 10:46:04 AM (UTC+02:00) Harare, Pretoria

was read on 13 September 2018 10:59:36 AM (UTC+02:00) Harare, Pretoria.

neo@maranggroup.co.za

From: Gerrit Terol <gterol@safair.co.za>
To: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 19:53
Subject: Read: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID

Your message

To: Gerrit Terol
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Sent: Thursday, 13 September 2018 10:46:04 AM (UTC+02:00) Harare, Pretoria

was read on Thursday, 13 September 2018 7:53:19 PM (UTC+02:00) Harare, Pretoria.

TO I&APs

stephan@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Thursday, 06 September 2018 11:41 AM
To: bonaero@live.co.za
Cc: stephan@maranggroup.co.za; 'Sindiso'; sophia@maranggroup.co.za
Subject: Interested Affected Parties Database

Dear Mr Balala,

I spoke to your colleague on Thursday the 6th Sep 2018.To inform her that Marang Environmental and Associates is undertaking a public participation process(PPP) which involves interested and affected parties(I&AP's) to give responses and comments regarding the GIDZ project that is currently underway within the OR Tambo International Airport facilities . I believe the project is close to **Bonaero Primary School** and it is our responsibility as an Independent Environmental and Consulting Company to comply a database and give the you the opportunity to raise your concerns. I contacted school to inform them about the Jewellery Manufacturing Precinct(JMP) that is under construction at the airport facilities. And give you the opportunity to be registered as an Interested & Affected Party (on behalf of the school)creating a platform for you to raise any issues, complaints and impacts regarding this project.

Should there be any queries please don't hesitate to contact me. Your feedback would be highly appreciated.

Kind Regards,

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: Mail Delivery System <Mailer-Daemon@antispam5-jnb1.host-h.net>
Sent: Friday, 07 September 2018 08:53
To: neo@maranggroup.co.za
Subject: Mail delivery failed: returning message to sender
Attachments: details.txt; Untitled attachment 00012.txt

This message was created automatically by mail delivery software.

A message that you sent could not be delivered to one or more of its recipients. This is a permanent error. The following address(es) failed:

dennis@jksa.co.za
Unrouteable address

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Friday, 07 September 2018 08:52
To: 'malcolm.moore@in2food.co.za'; 'neville.crosse@metcon.co.za'; 'sakib@isondopm.com'; 'dennis@jksa.co.za'; 'wumba@adjo.co.za'; 'mlif@netactive.co.za'; 'marc@snasia.co.za'; 'nashparag@gmail.com'; 'ruzodiam@global.co.za'; 'dave.burman@za.safdico.com'; 'david@3diam.co.za'; 'info@hodcc.com'; 'jonty@diacore.com'
Cc: 'sophia@maranggroup.co.za'; 'Sindiso'; 'stephan@maranggroup.co.za'
Subject: Metcon GIDZ EIA:I&AP's Database
Attachments: ORTJewelryLayout.pdf

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za

Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Friday, 07 September 2018 12:44
To: 'puleng.makhetha@airports.co.za'; 'musa.dlamini@airports.co.za'
Cc: 'stephan@maranggroup.co.za'; 'sophia@maranggroup.co.za'; 'Sindiso'
Subject: Metcon GIDZ EIA:I&AP's Database

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since the OR Tambo International Airport is located adjacent to the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

Being registered as an I&AP will also give you the opportunity to receive project background information (through a Background Information Document (BID)), scoping and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

To register as a potential I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,
Neo

MARANG environmental & associates

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA

PO Box 1369, Bromhof, 2154

MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Monday, 10 September 2018 09:34
To: 'Malcolm Moore'
Cc: 'Stephan'
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Dear Malcom,

Thanks for responding to our email. Marang Environmental and Associates will register you as an I&AP for the Metcon GIDZ project.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Malcolm Moore <malcolm.moore@in2food.co.za>
Sent: Monday, 10 September 2018 07:26
To: neo@maranggroup.co.za; neville.crosse@metcon.co.za; sakib@isondopm.com; dennis@jksa.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; ruzodiam@global.co.za; dave.burman@za.safdico.com; david@3diam.co.za; info@hodcc.com; jonty@diacore.com
Cc: sophia@maranggroup.co.za; 'Sindiso' <sindiso@maranggroup.co.za>; stephan@maranggroup.co.za; Tim Groucott <tim.groucott@in2food.co.za>
Subject: RE: Metcon GIDZ EIA:I&AP's Database

Good day Neo

Your email below refers.

In2food Group (Pty) Ltd wishes to register as an I&AP / Stakeholder.

Our contact details are as follows:

Name: Malcolm Moore
Company Represented: In2food Group (Pty) Ltd
Position at Company: Group Project & Risk Manager
Contact number: 082 940 5787
Postal address: P.O. Box 26331, East Rand. 1462
Physical address: In2food construction site, Jewellery Manufacturing Precinct (JMP), Acsa Park, Bonaero Park.
Email address: malcolm.moore@in2food.co.za

Regards

Malcolm Moore
Group Project & Risk Manager

Telephone: 011 918 3951
Mobile: 082 940 5787
Email: malcolm.moore@in2food.co.za
Website: www.in2food.co.za

Service is not a department – it's an Attitude!

From: neo@maranggroup.co.za [mailto:neo@maranggroup.co.za]
Sent: Friday, 07 September 2018 8:52 AM
To: Malcolm Moore; neville.crosse@metcon.co.za; sakib@isondopm.com; dennis@jksa.co.za; wumba@adjo.co.za; mlif@netactive.co.za; marc@snasia.co.za; nashparag@gmail.com; ruzodiam@global.co.za; dave.burman@za.safdico.com; david@3diam.co.za; info@hodcc.com; jonty@diacore.com
Cc: sophia@maranggroup.co.za; 'Sindiso'; stephan@maranggroup.co.za
Subject: Metcon GIDZ EIA:I&AP's Database

Good day ,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed

development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,

MARANG
environmental & associates

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: Andre Du Plessis <Andre.DuPlessis@ekurhuleni.gov.za>
Sent: Tuesday, 11 September 2018 5:43 PM
To: stephan@maranggroup.co.za
Subject: Read: Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Request to be registered as an I&AP
Attachments: Read: Proposed MetCon Refinery Facility adjacent to the OR Tambo Interna... (13,8 KB)

Importance: High

stephan@maranggroup.co.za

From:	stephan@maranggroup.co.za
Sent:	Monday, 10 September 2018 2:17 PM
To:	'andre.duplessis@ekurhuleni.gov.za'
Cc:	'Sindiso'; 'neo@maranggroup.co.za'
Subject:	Proposed MetCon Refinery Facility adjacent to the OR Tambo International Airport - Request to be registered as an I&AP
Attachments:	ORTJewelryLayout.pdf; ORTJewelryLocality.jpg
Importance:	High

Good Afternoon Mr Du Plessis,

I trust this email finds you well.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development') on part of the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR in Kempton Park, City of Ekurhuleni, Gauteng Province (please refer to attached locality and layout maps).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since the proposed project will be located adjacent to the suburb of Bonaero Park, which is located within Ward 23 of the Ekurhuleni Metropolitan Municipality (for which you are the Ward Councillor), we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder in order to be actively involved in the project. This will create a platform for yourself and the affected community to raise any issues, complaints and impacts regarding this project. Please see attached project maps for the location of the proposed project.

Being registered as an I&AP will also give you the opportunity to receive project background information (through a Background Information Document (BID)), scoping and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.

In light of the above, Marang will be including you in our I&AP / Stakeholder database for this project. I trust this is in order.

Should you be happy with this, please could you kindly respond to this email with a confirmation of your contract details to ensure that we have the correct details.

Please do not hesitate to contact us should you have any queries in this regard.

Kind Regards,

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114

email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Monday, 10 September 2018 14:08
To: 'Dennis@Jkdsa.co.za'
Cc: 'Stephan'; 'Sindiso'
Subject: Metcon GIDZ EIA:I&AP
Attachments: ORTJewelryLayout.pdf

Good day Dennis,

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

Since company / business is located within the existing JMP site and might be affected by the proposed development, we would like to provide you with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,
Neo

MARANG environmental & associates

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154

MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: stephan@maranggroup.co.za
Sent: Wednesday, 12 September 2018 11:52
To: sharmainelabuschagne@gmail.com
Cc: 'Sindiso'; neo@maranggroup.co.za
Subject: MetCon GIDZ EIA Project in Jewellery Manufacturing Precinct (JMP), Kempton Park - Registration as I&AP

Importance: High

Good Afternoon Mrs Labuschagne,

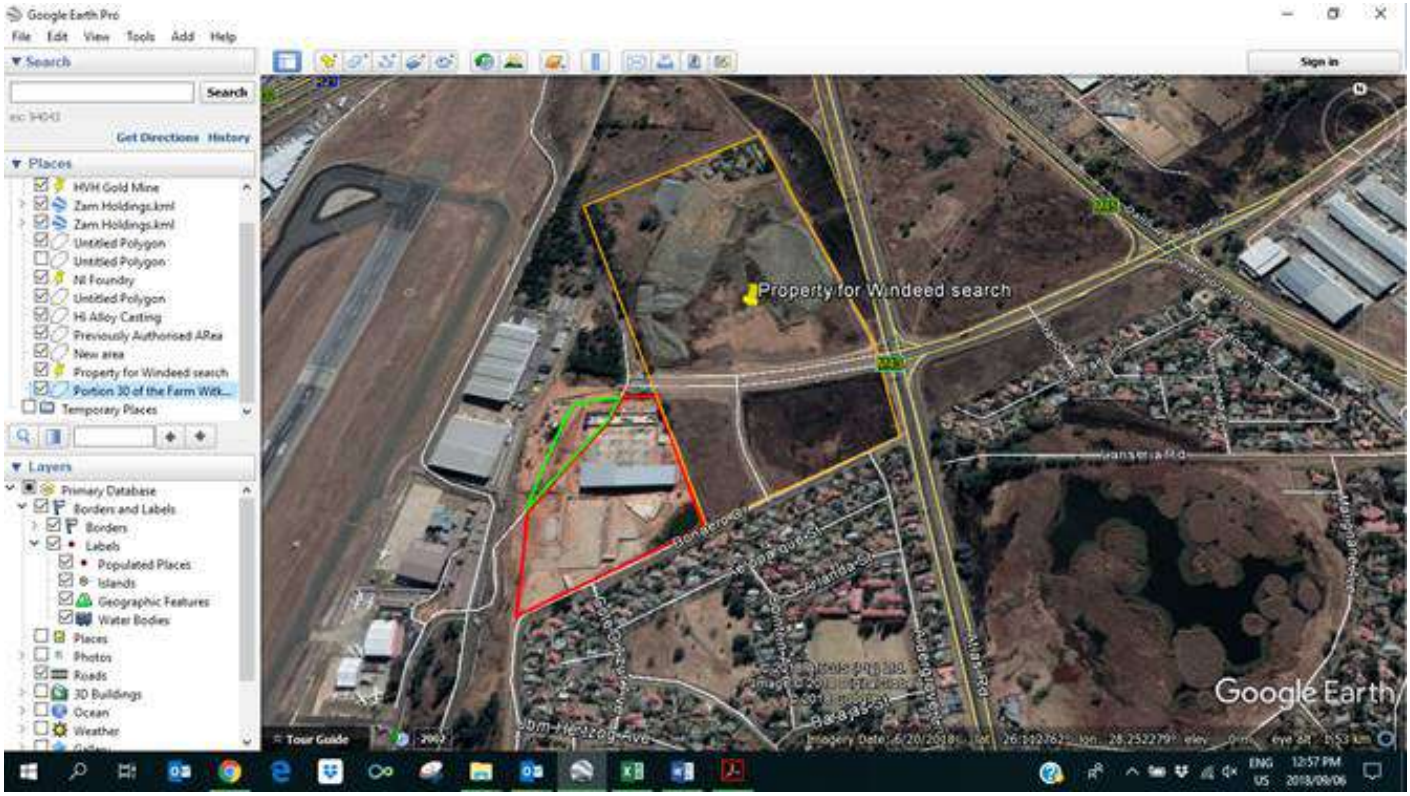
Thank you very much for taking my call this morning and for all your assistance.

As requested, this email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction and inclusion of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP), which is located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR, Kempton Park, Gauteng Province (hereafter referred to as the 'proposed development').

The proposed MetCon facility will specialise in extracting materials through a chemical treatment refining process. The GIDZ also wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site. The additional area will be used for parking (vehicles) in the future. Please be advised that a Background Information Document (BID) will be forwarded to you in due course. This will contain further details about the proposed development.

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

As your property / farm (Portion 30 of the Farm Witkoppie No. 64 IR) is situated adjacent to the proposed project site (please see screenshot below), we would like to provide you with the opportunity to be registered as an I&AP for this project. This will create a platform for you to raise any issues, complaints and impacts. Being registered as an I&AP will also give you the opportunity to receive project background information (through a BID), scoping and impact phase reports and attend any public / stakeholder meetings Marang conducts throughout the course of the project.



In light of the above, please could you kindly respond to this email confirming whether or not you would like to be registered as an I&AP, along with your contract details (Property name, Contact numbers, Postal and email address) to ensure that we have the correct details.

Please do not hesitate to contact us should you have any queries in this regard or should your require further information.

Kind Regards,

Stephan Jacobs *(B.Sc. (Hons) Environmental Management and Analysis)* ◦ EAP
tel. +27 11 792 0880 | cell. +27 72 737 2114
email. stephan@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
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neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Thursday, 13 September 2018 10:46
To: 'engineering@baldmin.co.za'; 'linus@munot.co.za'; 'info@cerefco.co.za'; 'lance@fermax.co.za'; 'sales@securitycity.co.za'; 'mike@polymould.co.za'; 'info@cabcon.co.za'; 'admin@casrsa.co.za'; 'Fiona.hall@matasa.co.za'; 'Imanuel.joemath@ekurhuleni.gov.za'; 'slekota@environment.gov.za'; 'boniswa.belot@gauteng.gov.za'; 'flip.visser@ekurhuleni.gov.za'; 'tebogo.molokomme@gauteng.gov.za'; 'RamunenyiwaP@dws.gov.za'; 'abimbola.olowa@gauteng.gov.za'; 'musa.dlamini@airports.co.za'; 'mazibukot@dws.gov.za'; 'livhuwani.ndou@transnet.net'; 'WayleaCR@telkom.co.za'; 'BesterAD@telkom.co.za'; 'SimphiweM@atns.co.za'; 'puleng.makhetha@airport.co.za'; 'info@alustyleblinds.co.za'; 'ObstacleEvaluators@atns.co.za'; 'GeerinJH@eskom.co.za'; 'John.Gheeringh@eskom.co.za'; 'asalomon@sahara.rg.za'; 'davidkl@nda.agric.za'; 'MashuduMa@daff.gov.za'; 'MabuleR@daff.gov.za'; 'teo@dwaf.gov.za'; 'Botav@nra.co.za'; 's.mahlakwane@gifa.co.za'; 'S.Manyike@sanbi.org.za'; 'info@geda.co.za'; 'jerry.khumalo@gauteng.gov.za'; 'cr@comair.co.za'; 'khumalo@gauteng.gov.za'; 'alfred.tau@gauteng.gov.za'; 'strohl@caa.co.za'; 'malcolm.moore@in2food.co.za'; 'neville.crosse@metcon.co.za'; 'sakib@isondopm.com'; 'Dennis@Jkdsa.co.za'; 'wumba@akapo.co.za'; 'wumba@adjo.co.za'; 'mlif@netactive.co.za'; 'marc@snasia.co.za'; 'nashparag@gmail.com'; 'victorian@ekurhuleni.gov.za'; 'ruzodiam@global.co.za'; 'dave.burman@za.safdico.com'; 'info@hodcc.com'; 'jonty@diacore.com'; 'david@3diam.co.za'; 'Andre.DuPlessis@ekurhuleni.gov.za'; 'lourenco@ekurhuleni.gov.za'; 'starr@polka.co.za'; 'sharmaine@mwebbiz.co.za'; 'flieb@worldonline.co.za'; 'mark@aeroservices.co.za'; 'info@cemair.co.za'; 'marketing@safair.co.za'; 'info@bpl.za.com'; 'pshiba@safair.co.za'; 'kideoj@gmail.com'; 'info@interlinkairlines.com'
Cc: 'Stephan'; 'Sindiso'; 'Pat Sibiya'; 'maideim@gidz.co.za'; 'info@maranggroup.co.za'
Subject: Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments: EIA for MetCon Facility within JMP_BID.pdf

Importance: High

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 –

IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From:	neo@maranggroup.co.za
Sent:	Friday, 14 September 2018 10:31
To:	'bonaero@live.co.za'
Cc:	'Stephan'; 'Sindiso'
Subject:	Development and Inclusion of MetCon facility within JMP, Kempton Park – EIA Commencing & BID
Attachments:	EIA for MetCon Facility within JMP_BID.pdf

Dear Interested and/or Affected Party / Stakeholder,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED DEVELOPMENT AND INCLUSION OF THE METAL CONCENTRATORS (METCON) REFINERY FACILITY IN THE JEWELLERY MANUFACTURING PRECINT (JMP) WITHIN THE OR TAMBO INTERNATIONAL AIRPORT (ORTIA) PRECINCT, KEMPTON PARK, GAUTENG PROVINCE

- **DEA Reference Number: To be announced**

Please be advised that Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") has been appointed as the Independent Environmental Assessment Practitioner (EAP) by the Gauteng Industrial Development Zone (hereafter referred to as the "GIDZ") to undertake the Environmental Impact Assessment (EIA) process for the proposed development and inclusion of the Metal Concentrators SA (Pty) Ltd (hereafter referred to as "MetCon") Refinery facility in the Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct, Kempton Park, Gauteng Province (hereafter referred to as the "proposed development"). The proposed development is located in the existing JMP site (located on the Remainder of Portion 69 of the Farm Witkoppie No. 64 – IR), within the ORTIA Precinct in Kempton Park, Gauteng Province. It should further be noted that the proposed development site is located adjacent to the suburb of Bonaero Park.

In light of the above, please find attached for your attention a Background Information Document (BID) which provides more details regarding the proposed development for your convenience.

Kindly note that the EIA process for the above-mentioned proposed development will therefore be commencing. The Draft Scoping Report (DSR) will be made available for public review and comment on Monday the 17th of September 2017. You will be notified about the DSR's availability accordingly.

Please do not hesitate to contact us should you have any queries.

We look forward to hearing from you in this regard.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za

Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

neo@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Friday, 14 September 2018 10:29
To: 'bonaero@live.co.za'
Cc: 'Stephan'; 'Sindiso'
Subject: Metcon:I&AP Datatbase
Attachments: Bonaero Primary school.pdf; ORTJewelryLayout.pdf

Good day Head Master,

I hope this email finds you well.

On Thursday the 6th Sep 2018, I spoke to your colleague and she said I should direct this email to a "Mr Balabala" which is the schools governing body(please see attachment of sent email below).
This morning (14 Sep 2018) I spoke to the schools admin lady ,she asked to resend this email to the correct contact person which is the Head Master of Bonaero Primary & Pre-primary School.

This email serves to inform you that Marang Environmental and Associates (hereafter referred to as 'Marang') has been appointed by the Gauteng Industrial Development Zone (GIDZ) to undertake an Environmental Impact Assessment (EIA) process for the proposed construction of the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the existing Jewellery Manufacturing Precinct (JMP) (hereafter referred to as the 'proposed development'). It should be noted that the proposed facility will occupy block 2 of the JMP site (please refer to attached site layout plan).

As part of the EIA process for the above-mentioned proposed development, Marang is undertaking a public participation process (PPP). This process involves providing Interested and/or Affected Parties (I&AP's) / Stakeholders with an opportunity to provide comments and raise any concerns regarding the above-mentioned proposed development. As an Independent Environmental Assessment Practitioner (EAP) and Consulting Company, it is our responsibility to compile a database and give the public the opportunity to comment and raise their concerns.

We would like to provide the Bonareo Primary & Pre-primary school with the opportunity to be registered as an I&AP / Stakeholder. This will create a platform for you to raise any issues, complaints and impacts regarding this project.

To register as an I&AP / Stakeholder, please kindly respond to this email indicating whether or not you would like to be registered along with contact details (Name, Company Represented, Position at Company, Contact numbers, Postal and email address). Your feedback would be highly appreciated.

Please do not hesitate to contact us should you have any queries in this regard.

Have a lovely day.

Kind Regards,
Neo

Neo Moruthane B.Sc. Environmental Science ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za

Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: neo@maranggroup.co.za
Sent: Monday, 20 August 2018 3:37 PM
To: Fiona.hall@matasa.co.za
Cc: 'Stephan'; sophia@maranggroup.co.za; 'Sindiso'
Subject: Interested & affected Parties Database

Good day Fiona,

I spoke to your colleague on Monday the 20th Aug 2018 at 14h35.I was Informing her that Marang Environmental and Associates is undertaking a public participation process(PPP) which involves interested and affected parties(I&AP's) to give responses and comments regarding the GIDZ project that is currently underway. I believe the project is **692.95m** from the Academy and it is our responsibility as an Independent Environmental and Consulting Company to comply a database and give the public the opportunity to raise their concerns. I contacted MATASA to inform you on GIDZ project and give you the opportunity to be registered as an Interested & Affected Party (on behalf of the Academy)creating a platform for you to raise any issues, complaints and impacts regarding this project.

Should there be any queries please don't hesitate to contact me. Your feedback would be highly appreciated.

Have a lovely day.

Kind Regards,

Neo Moruthane ◦ Junior Environmental Consultant - Intern
tel. +2711 792 0880 | cell. +27 062 033 7338
email. neo@maranggroup.co.za | web. www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

Appendix 7E

Comments and Response Report (C&RR) – To be included in Final Scoping Report (FSR)

Appendix 7F

I&AP Database

Name	Surname	Company/Department	Position
Surrounding Business(es)/ School(s)			
Fiona	Visser	Mega Aero Training Academy (Pty)Ltd	MATASA Manger
Lizette	Louw	Bonaero Primary & Pre-Primary	Principal
N/A		BR-Cleaning Dervices	N/A
N/A		Spartan Clinic	N/A
N/A		Aero Services	N/A
N/A		CemAir	N/A
N/A		Bidvest Panalpina Logistics Warehouse	N/A
N/A		Gobal Airways	N/A
N/A		Safairs	N/A
N/A		B-Clean Bonaero	N/A
N/A		Lala' Creation	N/A
N/A		Alustyle Blinds	N/A
N/A		Solenta Aviation AMO	N/A
N/A		Interlinks	N/A
N/A		UNIQ Society SA	N/A
Jewellery Manufacturing Precinct (JMP) Investors			
Malcom	Moore	The In2 Food Group (Pty)Ltd	Group Project & Risk Manager
Neville	Crosse	Metal Concentrators	N/A
Danie	Camberg	Julius Klein	N/A
Wumba	Kapo	Akapo	Managing Director
		Diarough	N/A
Marc	Friedman	Schatter	N/A
Nash	Parag	Break even	N/A
Ruzow	Diam	Ruzow Diamonds	N/A
Dave	Burman	SAFDICO	N/A
Mohamed	Ahmed	Hall of Diamonds	N/A
Jonty	Alexander	Diacore &ST Diamonds	N/A
David	Greenberg	3Diam	N/A
Landowner(s)			
Sharmaine	Labuschagne	Landowner	N/A

Organs of State / Authorities

Name	Surname	Company/Department	Position	Email Address
City of Ekurhuleni (CoE)				
André	Du Plessis	CoE	DA: 23Ward Councillor	Andre.DuPlessis@ekurhuleni.gov.za
Tracey	Bulter	CoE	DA: 17Ward Councillor	starr@polka.co.za
Flip	Visser	CoE	Air Quality Official	flip.visser@ekurhuleni.gov.za
Imanuel	Joemath	CoE	Environmental Health Practitioner	Imanuel.joemath@ekurhuleni.gov.za
Gauteng Department of Agriculture and Rural Development (GDARD)				
Boniswa	Berlot	GDARD	Enforcement-Section 24G	Boniswa.belot@gauteng.gov.za
Abimbola	Olowa	GDARD	Chief Director: Compliance and Enforcement	abimbola.olowa@gauteng.gov.za
David	Klien	GDRAD	N/A	davidkl@nda.agric.za
Department of Water & Sanitation (DWS)				
Portia	Ramanenyiwa	DWS	Acting Chief Director: Gauteng	RamunenyiwaP@dws.gov.za
Thokozani	Mazibuko	DWS	Deputy Director: Compulsory Licensing	mazibukot@dws.gov.za
SM	Matsheka	DWS	N/A	MatshekaS@dwa.gov.za
Justice	Maluleka	DWS		teo@dwaf.gov.za
Airports Company South Africa (ACSA)/ OR Tambo International Airport (ORTIA)				
Puleng	Makhetha	ACSA	Airports Planner	puleng.makhetha@airports.co.za
Musa	Dlamini	ORTIA	Environmental Manger	musa.dlamini@airports.co.za
South African Civil Aviation Authority (SACAA)				
Robert	Harry	SACAA		Robertsh@caa.za
Lizelle	Strohl	SACAA		strohl@caa.co.za
Air Traffic & Navigation Services				
Simphiwe	Masilela	ATNS	Obstacle Evaluator	ObstacleEvaluators@atns.co.za
TELKOM				
Bester	Amanda	Telkom	N/A	BesterAD@telkom.co.za
Transnet				
Livhuwani	Ndou	Transnet	N/A	livhuwani.ndou@transnet.net
Gauteng Province Economic Development (GDED)				
Jerry	Khumalo	GDED	N/A	jerry.khumalo@gauteng.gov.za
Alfred	Tau	GDED	N/A	alfred.tau@gauteng.gov.za
SANRAL				

Victoria	Bota	Sanral	N/A	Botav@nra.co.za
Gauteng Growth and Development (GGDA)				
				info@geda.co.za
Gauteng Infrastructure Financing Agency (GIFA)				
Sophie	Mahlakwane		N/A	s.mahlakwane@gifa.co.za
Subdivision of Agricultural Land Act (SALA)				
Mashudu	Marubini	SALA	Landuse & Soil Manger	MashuduMa@daff.gov.za
South African Heritage Resources Agency (SAHRA)				
Andrew	Salomon	SAHRA		asalomon@sahara.rg.za
Provincial Heritage Resource Authority Gauteng (PHRAG)				
Tebogo	Molokomme	PHRAG	Heritage Officer	tebogo.molokomme@gauteng.gov.za
ESKOM				
John	Geeringh	Eskom	Chief Planner	John.Gheeringh@eskom.co.za
Department of Environmental Affairs: Biodiversity and Conservation Branch				
Seoka	Lekota	DEA: Biodiversity	N/A	slekota@environment.gov.za
South African National Biodiversity Institute (SANBI)				
Sagwata	Mnayike	SANBI	N/A	S.Manyike@sanbi.org.za

Appendix 7G

Minutes of Meetings

P.O Box 1369
Bromhof 2188
Tel. 011 792 0880
Fax 086 592 02980
info@maranggroup.co.za
www.maranggroup.co.za

MINUTES OF MEETING:

PURPOSE OF MEETING:	EIA Pre-application Meeting
DATE OF MEETING:	02 July 2018
TIME:	10:00 am
LOCATION:	DEA, 473 Steve Biko, Arcadia, Pretoria
VENUE:	Second Floor 12-Seater Meeting Room 2
BOOKING REFERNCE NO.:	40743

ATTENDANCE

Vincent Chauke	DEA
Nyiko Nkosi	DEA
Chulumanco Myataza	DEA
Pat Sibiya	Gauteng Industrial Development Zone (GIDZ)
Veronique Evans	Marang environmental and Associates (Pty) Ltd
Sindiso Lubisi	Marang environmental and Associates (Pty) Ltd
Sophia Rosslee	Marang environmental and Associates (Pty) Ltd

RECORD OF MEETING

1.	**Welcome & Introductions**
2.	**Attendance**
3.	**Adoption of agenda**
4.	**Background**
	• GIDZ was founded in 2009 by the Gauteng Growth & Development Agency (GGDA), which forms part of the Gauteng Department of Economic Development (GDED). • The GIDZ is in the process of developing a Jewellery Manufacturing Precinct (JMP) in the City of Ekurhuleni to increase employment opportunities and foreign direct investment in the jewellery manufacturing sector. • The proposed GIDZ JMP site is approximately 7.5ha in total and is located within the OR Tambo International Airport Precinct on part of the remainder of portion 69 of the farm Witkoppie 64-IR, within the City of Ekurhuleni Municipality, Gauteng Province. • A Basic Assessment (BA) process was undertaken in 2009 to obtain Environmental Authorisation (EA) for the proposed GIDZ JMP development. The BA was carried out in terms of the 2006 EIA Regulations. A basic geo-technical assessment was conducted during the BA process in 2009. Thereafter, two specialist studies, including a traffic impact assessment and a more detailed geotechnical assessment, were conducted in 2015-2016 to supplement the process. No other specialist studies were completed as part of the BA process. • The GDED were issued with an approved Environmental Authorisation (EA) (Ref No. GAUT002/09-10/N0021) for the JMP development, by the Gauteng Department of Agriculture and Rural Development (GDARD) on 25 July 2011. The EA covers an area of 6.5ha. • The EA was then amended on 11 May 2018, to include the change in licence holder details from the GDED to the GIDZ. The GIDZ have been appointed by the GDED to oversee the JMP development project. • Construction on site commenced in 2013 and is still currently underway.

P.O Box 1369
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Tel. 011 792 0880
Fax 086 592 02980
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5.	**Proposed project**	
	• The GIDZ intend to include the Metal Concentrators SA (Pty) Ltd Refinery Plant (hereafter referred to as the 'MetCon' facility) in the JMP. The proposed facility will occupy block 2 of the JMP site layout plan. • The proposed MetCon facility will specialise in extracting precious and base metals from jewellery store secondary gold materials (i.e. jewellers sweep including sand paper, cloths and carpets) through a chemical treatment refining process. • The proposed activities trigger sub-category 4.2 (combustion installations) and sub-category 4.17 (precious and base metal production and refining) in terms of S21 of the NEM:AQA (Act No. 39 of 2004) and will therefore require an Atmospheric Emissions Licence (AEL). • The proposed MetCon facility also triggers the NEMA (Act No. 107 of 1998) GNR 984 Listing Notice 2, Activity 6 and therefore are required to undertake an EIA process.	
6.	**Current Status**	

	• The existing EA for the JMP development project does not include Activity 6 in terms of the GNR 984 Listing Notice 2. Furthermore, the EA cannot be amended to include this activity as an EIA process is required. As such, an EA is required specifically for the proposed MetCon facility.
	• Construction of the proposed MetCon facility has not started yet and is waiting for the relevant environmental approvals.
	• The GIDZ have appointed Marang Environmental and Associates (Pty) Ltd (referred to as Marang hereafter) as the independent EAP to undertake the EIA process for the proposed MetCon facility.
	• Marang are in the process of compiling the EIA application form.
	• The objective of the EIA pre-application meeting was to:
	  ○ confirm the triggered listed activities (i.e. Activity 6 in terms of GNR 984 Listing Notice 2),
	  ○ discuss the way forward regarding the incorporation of a new facility into the JMP development project, which also requires an AEL.
	• During the pre-application meeting, it was noted that the existing EA for the JMP site only covers a total area of 6.5ha. The GIDZ wish to include an additional area of approximately 1ha, along the north-western boundary of the JMP site. The additional area will be used for parking in the future. No construction has taken place over this area, however a boundary fence is there. The area was already cleared and consisted of bare soil when the GIDZ were given the land to incorporate into their JMP development.
	• So far three specialist studies have been completed:
	  ○ Two specialist studies, including a traffic impact assessment and a geotechnical assessment, were conducted in 2015-2016 to supplement the BA process for the JMP development project site. These assessments were conducted for the whole JMP site (7.5ha), including the block 2 section in which the proposed MetCon facility will be located.
	  ○ The third study includes an Air Quality Impact Assessment (AQIA) which was completed in March 2018. The AQIA was compiled specifically for the proposed MetCon facility.	

7.	**Discussion**	
	Proceedings	*Responses*

Vincent	• Which specialists are required?
	  ○ Is there proof in the BA report for any reasons why no specialists were done?
	  ○ The other studies can be done as a confirmation, assessing the current state of each.
		• *Veronique:* No Specialist reports are available for the BA. After significant contact with the consultancy/ company, Strategic Environmental Focus (SEF), that completed the BA, Marang discovered that

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	○ Specialists can include statements to certify that the specialist assessments done in the BA still apply and can include any other recommendations. ○ Just a letter to say that the specialists were assessed still apply. ○ The new extension will require its own authorization. • Marang should stick to timeframes. • Do the studies and reports and submit all at the same time so that DEA can come up with a decision and to also make it easier also with all the I&APs. • PPP will need to be grouped according to objection types. I.e. Political and/or EIA related.	GIBB had acquired SEF. Also, the project manager of the initial BA, Sumesin Naidoo (former Technical Manager at SEF), had left the company. GIBB (SEF) stated that they could not find any records of the BA project in their archives and therefore, could not provide any information or documentation in this regard. • *Veronique:* Draft and application will be submitted together.
Sophia	• No construction on the site which requires AEL yet. • Size of the site requiring AEL is about 2ha.	• DEA: noted
Nyiko	• Which specialist have been identified? • What about heritage? • GIDZ should apply for expansion and get Authorization. • Get confirmation from SAHRA. – This information can be applicable to the Heritage assessments. • Marang can also motivate while referring to the specialist reports/letters that detailed specialist assessments are not required (if the specialist statement support this). • Two specialist studies were done as part of the BA. Marang must communicate with GDARD if they still have information in their archives, to check for documents submitted as part of BA.	• *Veronique:* Specialist statements will be obtained for the relevant environmental sensitivities, soil, wetland, etc. • *Pat:* will look at what documents were submitted to GDARD • *Veronique:* Heritage should have been done in the initial assessment. A specialist statement will be obtained for Heritage as construction on the JMP site has already commenced.
Pat	• Noise would be far less than the current noise as generated by the airport. • Agro processing North and Metcon South-East, West of the wetland. – These are less than 1 ha. • Construction has already commenced but the Wetland has been identified on the South-East within the site boundary which will be mitigated. • What if MEC/ legislation changes. Who will be the competent authority? • Do we have to go through the whole EIA process? • Site is now 7.5 ha. Have acquired an extra hectare on the North-West of the previous boundary line.	• *Nyiko:* Will all depend but normally communicate with GDARD. • *Vincent:* Yes, Full EIA process must be followed. • *Nyiko:* the extra 1ha needs to be included in the EIA application
8.	**Way Forward**	

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	• As there were only two specialist studies completed as part of the BA process, specialist statement letters are required to confirm that the findings and recommendations of the BA report for the JMP development project will not change with the incorporation of the proposed MetCon Facility and additional 1ha. Statement letters are required for the following fields:
	  ○ Heritage,
	  ○ Noise,
	  ○ Soil and land capability,
	  ○ Wetland, and
	  ○ Visual.
	• Marang will need to confirm if the findings of the traffic impact and geotechnical assessment specialist studies that were completed recently will need to be changed, with the incorporation of the proposed MetCon facility. These assessments already covered the total area size of 7.5ha.
	• DEA requires that the proposed additional 1ha be included in the EIA application.
	• DEA requires that the regulated EIA timeframes are strictly adhered to.

9.	**Meeting Closed**
	• Attendees thanked for their time and consideration

Appendix 7H

Landowner Consent

SECOND ADDENDUM TO THE LEASE AGREEMENT

entered into between

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
Registration number: 1993/004149/30

(the "**Lessor**")

and

GAUTENG PROVINCIAL GOVERNMENT

In its Department of Economic Development

(the "**Lessee**")

1. INTRODUCTION

1.1 The Lessor and the Lessee entered into a Notarial Deed of Lease on or about 30 March 2015 ("the Lease Agreement") and signed an addendum to the Lease Agreement during September 2016 ("the First Addendum").

1.2 The Lease Agreement contains certain errors which the Parties have agreed should be rectified by this addendum ("the Second Addendum") prior to the Lease Agreement being registered.

1.3 The Parties agree to amend the paragraphs of the Lease Agreement referred to hereunder.

2. AMENDMENTS

2.1 Paragraph 8 of Annexure 1 to the Lease Agreement is deleted and replaced with the following paragraph:-

"8 **The Property**

That portion of the Airport as indicated on the Lease Diagram attached hereto as Annexure 2, and also designated on the diagram in Annexure "**5**" as area 1, area 2, area 3 and area 4 to be let by the Lessor to the Lessee under this lease, measuring 7, 5303 hectares."

2.2 Reference to the portion of land constituting the lease area as reflected on the Lease Diagram is deleted and replaced with the following:-

"LEASE AREA OVER REMAINDER OF PORTION 282 OF THE FARM WITKOPPIE NO 64-IR"

3. The parties confirm that all the terms and conditions of the notarial deed of lease shall remain unchanged save for the amendments that are contained in the first addendum, read alongside the letter dated 16 February 2017 and amendments contained in this second addendum.

Signed at Bedfordview on this 13th day of February 2018 for and on behalf of the **Lessor**, who warrants his/her authority to sign:

Name and Surname

Haroon Jeena Signature _____

Name and Surname

Bongani Andrew Maseko Signature _____

AS WITNESSES:

Name and Surname

BADISA MATSHEGO Signature _____

Name and Surname

Khanyisile Nene Signature _____

Signed at Johannesburg on this 06 day of March 2018 for and on behalf of the **Lessee,** who warrants his/her authority to sign:

Name and Surname
Lebogang Maile

Signature _____

Name and Surname

_____

Signature _____

AS WITNESSES:

Name and Surname
Sibusiso Mahlangu

Signature _____

Name and Surname
Arthuza Van Rooy

Signature _____

ANNEXUR 2

LEASE DIAGRAM

	SIDES Metres	ANGLES OF DIRECTION		CO-ORDINATES Y System: WG 29° X	
		Constants:		± 0,00	± 0,00
AB	63,06	263 17 50	A	+75 028,64	2 889 531,90
BC	63,42	271 53 40	B	+74 966,01	2 889 524,54
CD	260,59	339 07 00	C	+74 902,62	2 889 526,64
DE	337,68	63 50 00	D	+74 809,73	2 889 770,11
EF	121,83	183 27 40	E	+75 112,80	2 889 919,02
FG	117,80	189 04 20	F	+75 105,44	2 889 797,41
GH	88,37	192 35 40	G	+75 086,87	2 889 681,08
HJ	59,57	205 07 30	H	+75 067,60	2 889 594,84
JA	16,37	236 36 40	J	+75 042,31	2 889 540,91
	TRIGONOMETRICAL BEACONS				
		BODES 08	△	+73 458,57	2 884 524,56
		PRE 43	△	+70 704,22	2 891 059,60

S.G. No.

Approved

for SURVEYOR-GENERAL

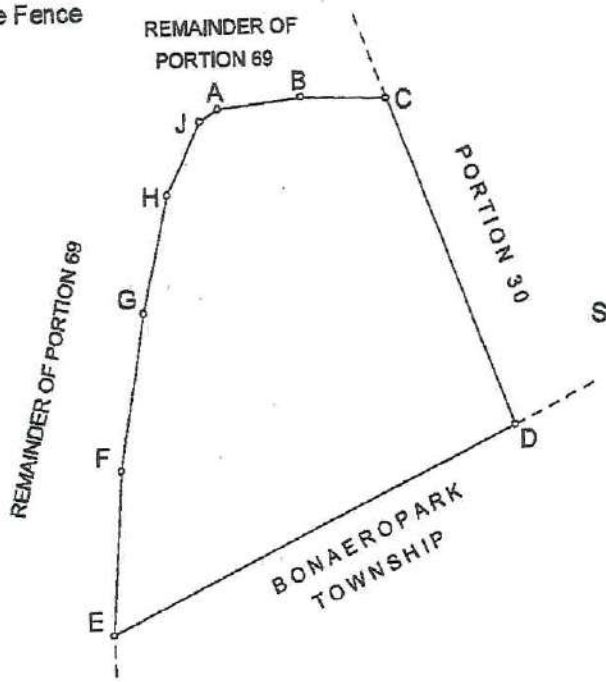
Description of Beacons

A, H, J : Iron Standard

B, F, G : 12mm Iron Peg

C, D : Round Iron Fence Post

E : Corner Concrete Fence



Scale: 1:5000

A B C D E F G H J A

The figure represents 7,5303 hectares of land being

LEASE AREA OVER REMAINDER OF PORTION 69 OF THE FARM WITKOPPIE No. 64-IR

Province of Gauteng.

Surveyed in October 2014 by me.

Z. O. Onyekwuluje
Professional Land Surveyor
Registration Number: PLS 1199.

This diagram is annexed to No.	The original diagram is	File:
d.d.	S.G. No. A 1281/1948	S.R.
i.f.o.	Transfer	G.P.
Registrar of Deeds Pretoria	Grant	Comp. IR1A-25B,D IRNG 124

7670 legal

VWB
C:\NrPortbl\WS_JHB\KATEJ\2017271_1.DOC
30/11/2009

Prepared by me

CONVEYANCER
McINTOSH MC

J.C. VAN DER VYVER

SEELREG
STAMP DUTY R.....
FOOI
FEES R 110,00

VERMOOR ARN LEASED TO
Fedlink (Pty) Ltd. PPI/000979/07
VIR FOR 49 1/6/1992
K 853/2010 L
REGISTRATEUR/REGISTRAR

T 011459/10

CERTIFICATE OF CONSOLIDATED TITLE

Issued under the provisions of Section 40 of
the Deeds Registries Act, 1937 (Act 47 of 1937)

WHEREAS

AIRPORTS COMPANY SOUTH AFRICA LIMITED
Registration Number 1993/004149/06

has applied for the issue to it of a Certificate of Consolidated Title under the provisions of Section 40 of the Deeds Registries Act, 1937;

LODGED
03 MAR 2011
CAPTURED

And whereas the said -

AIRPORTS COMPANY SOUTH AFRICA LIMITED

is the registered owner of –

1. PORTION 281 (A PORTION OF PORTION 260) OF THE FARM WITKOPPIE NO. 64
REGISTRATION DIVISION IR
PROVINCE OF GAUTENG;

   Held by Deed of Transfer about to be registered;

2. PORTION 279 (A PORTION OF PORTION 116) OF THE FARM WITKOPPIE NO. 64
REGISTRATION DIVISION IR
PROVINCE OF GAUTENG

   Held by Deed of Transfer about to be registered

3. PORTION 280 (A PORTION OF PORTION 258) OF THE FARM WITKOPPIE NO. 64
REGISTRATION DIVISION IR
PROVINCE OF GAUTENG

   Held by Deed of Transfer about to be registered

4. REMAINING EXTENT OF PORTION 69 OF THE FARM WITKOPPIE NO. 64
REGISTRATION DIVISION IR
PROVINCE OF GAUTENG

   Held by Certificate of Amended Title on Consolidation No. T24826/1952

which properties have been consolidated into the land hereinafter described.

Now therefore, pursuant to the provisions of the said Act, I the Registrar of Deeds at Pretoria do hereby certify that the said –

AIRPORTS COMPANY SOUTH AFRICA LIMITED
Registration Number 1993/004149/06

its successors in title or assigns,

is the registered owner of -

PORTION 282 OF THE FARM WITKOPPIE NO. 64
REGISTRATION DIVISION IR
PROVINCE OF GAUTENG;

Measuring 1279,4044 (ONE THOUSAND TWO HUNDRED AND SEVENTY NINE COMMA FOUR ZERO FOUR FOUR) hectares;

As will appear from Diagram SG No 4106/2002 hereto annexed;

SUBJECT to the following conditions –

A. PORTION 69 of the farm Witkoppie 64, Registration Division IR., Transvaal (of which the property hereby transferred forms a portion), is entitled to the following rights:

(a) the right of use, on occasions of rains, of certain pan located on the servient tenement, as and by way of a ponding area for and in connection with the control of run-off flood waters from the site of Jan Smuts Airport; and

(b) the right of inundation of the said servient tenement on occasions of rain as referred to in paragraph (a) over Portion 46 of Rietfontein 18, district Benoni, held under Certificate of Consolidated Title T21877/1950, as will more fully appear from Notarial Deed of Servitude No. 533/1954S.

B. That Portion of the former Remaining Extent of Portion 69 of the Farm Witkoppie No. 64 indicated by the figures ABCDEFGHJKLMNPQRSTUVWXYZ A'B'C'D'E'F'G'H'q'n'C'"R'S'T'U'V'"W'"X'"V'W'X'Y'Z'A"B"C"D"E"F"G"H"J"A and the figure G'"H'"J'"K'"L'"M'"N'"P'"Q'"R'"S'"T'"U'"G'" and excluding the figures K"L"M"N"P"Q"R"K" and S"T"U"V"W"S" and X"Y"Z"A'"X" and B'"C'"D'"E'"F'"B'" on Diagram SG No. 4106/2002 annexed hereto is subject to the following conditions:

1. That Portion of the former Remaining Extent of Portion 69 of the Farm Witkoppie No. 64 indicated by the figures q"" r"" s"" t"" u"" and p"" m"" n"" L t"" s"" r"" q"" referred to on Diagram SG. No. 4106/2002 annexed hereto is subject to the following conditions.

   (a) The Transferee shall not, without the written consent of the New Consolidated Gold Fields Limited (hereinafter referred to as "the Company") open or allow to be opened upon the said land, any canteens, hotel, club, beer hall, restaurant, place for the sale of wines or spirituous or malt liquors or place of business or store whatsoever.

   (b) The Storm Ditch at present existing on the said Farm, and running to the Pan, which may traverse the said land, shall be left undisturbed and the flow of water shall not be interfered with, the Company reserving the right to enter upon the said land at any time for the purpose of cleaning the Storm Ditch so as to allow a free flow of water to the Pan. The Company undertakes not in any way to cause damage to the registered owner's property.

   (c) The Company further reserved the right to lay and maintain power lines and pipe lines over the said land, for the purpose of pumping water from the Pan, the water in the Pan being entirely reserved to the Company.

   A Cession of Real Rights in respect of Conditions (a), (b) and (c) above was issued to Consolidated Gold Fields Limited under Deed of Cession 1462/1966S.

   (d) The figure q"" r"" s"" t"" u"" is further subject to the following condition as will more fully appear from Notarial Deed of Servitude No. 646/1949S dated the 29th August 1949, registered on 6th September 1949.

   "The said transferee shall not without the written consent of the New Consolidated Gold Fields Limited (hereinafter referred to as "the

Company") subdivide the said land for the purpose of a Township or otherwise, or erect thereon more than one dwelling house, with the necessary outbuildings and appurtenances."

2. The figure p''''' m''''' n''''' L t''''' s''''' r''''' q''''' referred to on Diagram SG No. 4106/2002 annexed hereto is further subject to the following condition as will more fully appear from Notarial Deed of Servitude No. 666/1949S dated 1st September 1949, registered 14th September 1949:

   "The said transferee shall not without the written consent of the New Consolidated Gold Fields Limited (hereinafter referred to as "the Company") subdivide the said land for the purpose of a Township or otherwise, or erect thereon more than one dwelling house, with the necessary outbuildings and appurtenances."

3. Porton 47 of portion of the farm Witkoppie No. 7 (of which the figure Z' A'' v''''' referred to on Diagram No. 4106/2002 annexed hereto forms a portion) is subject to the special condition in favour of the East Rietfontein Syndicate Limited, or its successors in title or assigns as owners of the remaining extent of portion of the farm Witkoppie No. 7, measuring as such 609,7266 hectares under Deed of Transfer No. 652/1895, that no Township may be laid out or established on the land hereby transferred as aforesaid without the consent in writing of the East Rietfontein Syndicate Limited as created in Deed of Transfer No. 13248/1939 dated 26th July 1939.

4. The Remaining Extent of the farm Witkoppie No. 7 situate in the District of Boksburg, measuring as such 533,8763 hectares (of which the figure Z' v''''' w''''' Y' referred to on Diagram SG No. 4106/2002 annexed hereto forms a portion) is entitled to a servitude of roadway over (1) Portion of Portion 15 of Portion Witkoppie No. 7 District Boksburg lettered ECGD on diagram thereof (2) Portion A of Portion 13 of Portion of the said farm (3) Portion S1 of Portion 4 of Portion of the said farm (4) Portion S1 of Portion 1 of Portion A of Portion 2 of Portion of Rietfontein No. 9, District of Germiston, held under Deeds of Transfer Nos. 9318/1939, 20665/1938 and 7617/1934, as will more fully appear from reference of Notarial Deed of Servitude No. 490/1939S dated 2nd February 1939 and registered on 27th May 1939.

5. The Remaining Extent of portion of the Farm Witkoppie No. 7 district of Boksburg, measuring 1210,4253 hectares hectares (of which the figure Z' v''''' w''''' Y' referred to on Diagram SG No. 4106/2002 annexed hereto forms a portion) is entitled to a servitude of right to public roadway over Portions S1 of Portion 7 of Portion and Portions S1 and S2 of Portion 8 of Portion of hereinmentioned farm as described in Deed of Servitude No. 308/1926S registered on 14th May 1926.

6. Subject, insofar as the figure A' X Y Z referred to on Diagram SG No. 4106/2002 annexed hereto is concerned, to the following conditions:

   (a) The Government of the Union of South Africa, in its Railways and Harbours Administration (hereinafter called "the Transferee") shall not, without the written consent of the Consolidated Gold Fields of South Africa Limited subdivide the said land for the purpose of a Township or otherwise.

   (b) The Transferee shall not, without the written consent of the Consolidated Gold Fields of South Africa Limited, open or allow to be opened upon the said land any Canteen, Hotel, Club, Beer Hall, Restaurant or place for the sale of wines or spirituous liquors or malt liquors whatsoever.

7. SUBJECT, insofar as the figure W e''''' V referred to on Diagram SG No. 4106/2002 annexed hereto is concerned to the following conditions.

   (a) The transferee shall not, without the written consent of the NEW CONSOLIDATED GOLD FIELDS LIMITED open or allow to be opened upon the said land any canteen, hotel, club, beer hall, restaurant, place for the sale of wines or spirituous or malt liquors or place of business or store whatsoever

   A cession of Real Rights in respect of condition (a) above was issued to Consolidated Gold Fields Limited under Deed of Cession No. 1462/1966S.

(b) The figure W e""" V is further subject to the following condition as will more fully appear from Notarial Deed of Servitude No. 653/1949S dated 1st September 1949, registered on 8th September 1949 -

"The Transferee shall not, without written consent of the New Consolidated Gold Fields Limited, subdivide the said land for the purpose of a township or otherwise, or erect thereon more than two dwelling houses with the necessary outbuildings and appurtenances."

8. Subject, insofar as the figure C""" U f""" referred to on Diagram SG No. 4106/2002 annexed hereto is concerned, to the following special conditions-

(a) The Transferee shall not, without the written consent of the NEW CONSOLIDATED GOLD FIELDS LIMITED, it's successors in title or assigns, (hereinafter called "the Company"), open or allow to be opened upon the said land any canteen, hotel, club, beer hall, restaurant, place for the sale of wines or spirituous or malt liquors or place of business whatsoever.

A Cession of Real Rights in respect of Condition (a) above was issued to Consolidated Gold Fields Limited under Deed of Cession No. 1462/1966S.

(b) The figure C""" U f""" is further subject to the following condition as will more fully appear from Notarial Deed of Servitude No. 651/1949S dated 27th June 1949, registered 7th September 1949.

"The said transferee shall not without the written consent of the New Consolidated Gold Fields Limited, its successors-in-title or assigns subdivide the said land for the purpose of a Township or otherwise, or erect thereon more than one dwelling house with the necessary outbuildings and appurtenances."

9. That Portion of the former Remaining Extent of Portion 69 of the Farm Witkoppie No. 64 indicated by the figures cdefghjklmnc' and pqrstuvwxyp on Diagram SG No. 4106/2002 annexed hereto is subject to the following condition:

   Leased to South African and International Hotel Association (Proprietary) Limited for a period of 52 years by Deed of Lease No. K31/1971L.

10. Die restant van die binnegemelde eiendom groot 1417,7800 hektaar is onderworpe aan 'n ewigdurende serwituut van waterleiding deur middle van 'n pyplyn soos angedui deur die figuur p" q" r" s" T a" b'" X Y Z p" en die figuur v" w" N x" y" z" S t" u" v" op Kaart SG Nr 4106/2002 hieraangeheg ten gunste van die Munisipaliteit van Kempton Park, soos meer volledig sal blyk van Notariele Akte Nr 1079/1968S.

11. The remainder of the withinmentioned property measuring 1417,4846 hectares has, in terms of Notarial Deed No. K3010/1978S, granted the right to ESKOM to convey electricity over the property hereby conveyed, indicated by the figure s' t' N'" P'" s' and the figure u' v' w' x' y' z' a" b" c" d" W e" f' g" h" j" k" B' u' on Diagram SG No. 4106/2002 annexed hereto, together with ancillary rights, and subject to conditions as will more fully appear on reference to the said Notarial Deed and Diagram grosse whereof is annexed.

12. Subject to a perpetual servitude of right of way 3,9996 hectares in extent as indicated by the figure m'" n'" p'" q'" r'" s'" t'" u'" v'" w'" x'" y'" z'" a'" b'" K" R" Q" a c'"' d'"' e'"' f'" g'"'h'"' j'"' k'"' l'"' m'"' n'"' p'"' q'"' r'"' s'"' m'" excluding the figures t'"' u'"' v'"' w'"' x'"' y'"' z'"' a'"' b'"' c'"' b'"' e'"' f'"' g'"' h'"' j'"' k'"' l'"' t'"' on Diagram SG No. 4106/2002 in favour of the Remaining Extent of Portion 260 of the farm Witkoppie No. 64, Registration Division IR, Province of Gauteng, measuring 10,1978 hectares as will more fully appear from Notarial Deed of Servitude No. K 855/2010 S/~~2869~~

13. By virtue of Deed of Cession of Servitude K8039/1995S the withinmentioned property is subject to a servitude area which is represented by the figure x'"' y'"' z'"' a'"' Z x'"' on Diagram SG No.

4106/2002 annexed hereto as will more fully appear from the said notarial deed.

C. That Portion of the former Portion 279 (a Portion of Portion 116) of the Farm Witkoppie No. 64, Registration Division IR, Province of Gauteng indicated by the figure R' B''' F''' E''' D''' n' p' r' J' K' L' N' P' Q' R' on Diagram SG No. 4106/2002 annexed hereto is subject to the following condition:

Subject to a perpetual Servitude of Right of Way 3395 square metres in extent, indicated by the figure R' z' a' b' c' d' e' f' g' h' j' k' l' m' Q' R' on Diagram SG No. 4106/2002 in favour of Portion 126 (a Portion of Portion 116) of the Farm Witkoppie No. 64, Registration Division IR, Province of Gauteng as will more fully appear from Notarial Deed of Servitude K 00854 10~~/2009~~. (6)

D. The former Portion 280 (a portion of portion 258) of the Farm Witkoppie No. 64, Registration Division IR, Province of Gauteng as indicated by the figure p' q' H' r' p' on Diagram SG No. 4106/2002 annexed hereto is subject to the following condition -

Subject to a Servitude Area in favour of Eskom to convey electricity over the property hereby transferred together with ancillary rights as will more fully appear from Notarial Deed of Servitude K3010/1978S which servitude area is represented by the figure MpqLM on Diagram SG No. A2015/1993 annexed to Deed of Transfer No. T70685/1993. '

AND SUBJECT FURTHER to such conditions as are mentioned or referred to in the aforesaid Deeds.

And that by virtue of these presents the said –

AIRPORTS COMPANY SOUTH AFRICA LIMITED

its successors in title or assigns now is and henceforth shall be entitled thereto conformably to local custom, the State, however, reserving its rights.

IN WITNESS WHEREOF I, the said REGISTRAR have subscribed to these presents and have caused the Seal of Office to be affixed thereto.

THUS DONE AND EXECUTED at the Office of the REGISTRAR OF DEEDS at Pretoria on 26 02 10

REGISTRAR OF DEEDS

REGISTRAR OF DEEDS
REGISTRATEUR VAN AKTES
PRETORIA

(2) TG

SURVEYOR-GENERAL : PRETORIA
DEPARTMENT OF LAND AFFAIRS
REPUBLIC OF SOUTH AFRICA

Private Bag X291, PRETORIA, 0001 – Tel (012) 303 1600
Central Government Building, cnr. Vermeulen and Bosman Street, PRETORIA

CAVEAT

Telephone : +27 (0) 12 303 1627
Fax : +27 (0) 12 323 1527
e-✉ : HFSchultz@012lg.pwv.gov.za

Enquiries : H-C Frank-Schultz
Reference : IR-64/19 & 135

The Registrar of Deeds
PRETORIA

Copy to L S.

2002.08.21

CONSOLIDATION DIAGRAM SG NO 4106/2002 OF PORTION 282 THE FARM WITKOPPIE NO 64-IR

The area of component 4 on the above-mentioned diagram was calculated by subtracting the area of **Portion 225** (SG No A6274/1985) from the **Remainder of Portion 69 of the farm Witkopple No 64-IR**. As Portion 225 has not as yet been registered it is important that the certificate of consolidated title should only be finalised **after the registration of this portion.**

Attached please find a copy of Diagram SG No A6274/1985.

Yours faithfully

H-C Frank-Schultz
for Surveyor-General: Pretoria

Enclosure:
Copy of diagram SG No A6274/1985

Appendix 7I

Distribution to Organs of State

Table 8-1: GIDZ JMP EIA Organs / Authorities of States

Name	Surname	Company/Department	Position	Email Address
City of Ekurhuleni (CoE)				
André	Du Plessis	CoE	DA: 23Ward Councillor	Andre.DuPlessis@ekurhuleni.gov.za
Tracey	Bulter	CoE	DA: 17Ward Councillor	starr@polka.co.za
Flip	Visser		Air Quality Official	flip.visser@ekurhuleni.gov.za
Imanuel	Joemath	CoE	Environmental Health Practitioner	Imanuel.joemath@ekurhuleni.gov.za
Gauteng Department of Agriculture and Rural Development (GDARD)				
Boniswa	Berlot	GDARD	Enforcement-Section 24G	Boniswa.belot@gauteng.gov.za
Abimbola	Olowa	GDARD	Chief Director: Compliance and Enforcement	abimbola.olowa@gauteng.gov.za
David	Klien	GDRAD	N/A	davidkl@nda.agric.za
Department of Water & Sanitation (DWS)				
Portia	Ramanenyiwa	DWS	Acting Chief Director: Gauteng	RamunenyiwaP@dws.gov.za
Thokozani	Mazibuko	DWS	Deputy Director: Compulsory Licensing	mazibukot@dws.gov.za
SM	Matsheka	DWS	N/A	MatshekaS@dwa.gov.za
Justice	Maluleka	DWS		teo@dwaf.gov.za
Airports Company South Africa (ACSA)/ OR Tambo International Airport (ORTIA)				
Puleng	Makhetha	ACSA	Airports Planner	puleng.makhetha@airports.co.za
Musa	Dlamini	ORTIA	Environmental Manger	musa.dlamini@airports.co.za
South African Civil Aviation Authority (SACAA)				
Robert	Harry	SACAA		Robertsh@caa.za
Lizelle	Strohl	SACAA		strohl@caa.co.za
Air Traffic & Navigation Services				
Simphiwe	Masilela	ATNS	Obstacle Evaluator	ObstacleEvaluators@atns.co.za
TELKOM				
Bester	Amanda	Telkom	N/A	BesterAD@telkom.co.za
Transnet				
Livhuwani	Ndou	Transnet	N/A	livhuwani.ndou@transnet.net
Gauteng Province Economic Development (GDED)				
Jerry	Khumalo	GDED	N/A	jerry.khumalo@gauteng.gov.za
Alfred	Tau	GDED	N/A	alfred.tau@gauteng.gov.za
SANRAL				
Victoria	Bota	Sanral	N/A	Botav@nra.co.za
Gauteng Growth and Development (GGDA)				
				info@geda.co.za
Gauteng Infrastructure Financing Agency (GIFA)				
Sophie	Mahlakwane		N/A	s.mahlakwane@gifa.co.za
Subdivision of Agricultural Land Act (SALA)				
Mashudu	Marubini	SALA	Landuse & Soil Manger	MashuduMa@daff.gov.za
South African Heritage Resources Agency (SAHRA)				
Andrew	Salomon	SAHRA		asalomon@sahara.rg.za
Provincial Heritage Resource Authority Gauteng (PHRAG)				
Tebogo	Molokomme	PHRAG	Heritage Officer	tebogo.molokomme@gauteng.gov.za
ESKOM				

John	Geeringh	Eskom	Chief Planner	John.Gheeringh@eskom.co.za
Department of Environmental Affairs: Biodiversity and Conservation Branch				
Seoka	Lekota	DEA: Biodiversity	N/A	slekota@environment.gov.za
South African National Biodiversity Institute (SANBI)				
Sagwata	Mnayike	SANBI	N/A	S.Manyike@sanbi.org.za

Appendix 8

Previous Authorisations

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA · 0001· Environment House · 473 Steve Biko, Arcadia· PRETORIA
Tel (+ 27 12) 399 9372

DEA Reference: 14/12/16/3/3/1/7/94/AM1
Enquiries: Mr Vincent Chauke
Telephone: (012) 399 9399 **E-mail:** vchauke@environment.gov.za

Ms Pat Sibiya
Gauteng Industrial Development Zone
14th Floor 124 Main Street
Johannesburg
Marshalltown
2000

Tel: (010) 001 9122
Email: pats@gidz.co.za

PER E-MAIL / MAIL

Dear Ms Sibiya

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION ISSUED ON 25 JULY 2011 FOR THE ESTABLISHMENT OF A JEWELLERY MANUFACTURING PRECINCT ON PART OF THE REMAINDER OF PORTION 69 OF THE FARM WITKOPPIE 64 – IR [GAU 002/09 – 10/N0021]

The Environmental Authorisation (EA) issued for the above-mentioned application on 25 July 2011, the application for amendment of the EA dated 13 February 2018 and received by the Department on 27 February 2018, and the additional information received by the Department respectively on 04 April 2018 and 08 May 2018, refer.

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Chapter 5 of the Environmental Impact Assessment Regulations, 2014 as amended, has decided to amend the EA dated 25 July 2011, as follows:

Amendment 1:

The amendment relate to changing the authorised listed activities under the 2006 Environmental Impact Assessment Regulations, (EIA) to incorporate activities as per the Environmental Impact Assessment Regulations, 2014 as amended. Reason for amendment is that, the activities originally applied for and authorised on the EA dated 25 July 2018 have been delisted and replaced with 2014 EIA Regulations, as amended.

Response

Please note that the proposed amendment (amendment 1) as indicated above **is here by refused.** The reason for refusal is that, the EA was issued in terms of 2006 EIA Regulations and the EA cannot be amended to include a similar listed activities as per the EIA Regulation 2014. Further there is a new listed activity which is triggered by the proposed development in terms of the EIA Regulation 2014, as amended and this activity is activity 6 of GN R984.

Regulation 31. (a and b) of the Environmental Impact Assessment Regulations, 2014 as amended state that

"An environmental authorisation may be amended by following the process prescribed in this Part if the amendment will result in a change to the scope of a valid environmental authorisation where such change will result in an increased level or change in the nature of impact where such level or change in nature of impact was not—

a) Assessed and included in the initial application for environmental authorisation; or
b) Taken into consideration in the initial environmental authorisation;

And the change does not, on its own, constitute a listed or specified activity."

Based on the above, Since the proposed amendment constitute a new listed activity, The EA cannot be amended to include this activity, as such a new application for EA must be lodged with this Department to obtain an EA. Please note that no activity may commence prior to an environmental authorisation being granted by the Department.

Amendment 2:

The amendment relate to the change in the holder and contact details of the EA.

Current contact details:

Ms Nomawethu Makwela
Head: Economic Development
Gauteng Provincial Government
Private Bag X091
MARSHALLTOWN
2107

Facsimile: (011) 634 7090
Telephone: (011) 634 7066

Is here by amended to:

Ms Pat Sibiya
Gauteng Industrial Development Zone
14th Floor 124 Main Street
Johannesburg
Marshalltown
2000

Tel: (010) 001 9122
Cell: (083) 380 3554
Email: pats@gidz.co.za

Reason for amendment:

The Gauteng Department of Economic development has appointed Gauteng Industrial Development Zone as an agency the Department and has been given mandate to develop the proposed project on behalf of Gauteng Department of Economic Development. The applicant applied for an amendment to amend the holder and contact details of the EA due to internal restructuring.

This letter must be read in conjunction with the EA dated 25 July 2011.

In terms of Regulation 4(2) of the National Environmental Management Act: the Environmental Impact Assessment Regulations, 2014, as amended (the EIA Regulations), you are instructed to notify all registered interested and affected parties, in writing within 14 (fourteen) days of the date of this EA, of the Department's decision as well as the provisions regarding the submission of appeals that are contained in the Regulations.

In terms of the Promotion of Administrative Justice Act, 2000 (Act No 3 of 2000), you are entitled to the right to fair, lawful and reasonable administrative action; and to written reasons for administrative action that affects you negatively. Further your attention is drawn to the provisions of the Protection of Personal Information Act, 2013 (Act no. 4 of 2013) which stipulates that the Department should conduct itself in a responsible manner when collecting, processing, storing and sharing an individual or another entity's personal information by holding the Department accountable should the Department abuses or compromises your personal information in any way.

Your attention is drawn to Chapter 2 of National Environmental Management Act, 1998 (Act No. 107 of 1998) National Appeal Regulations published under Government Notice R993 in Government Gazette No. 38303 dated 08 December 2014 (National Appeal Regulations, 2014), which prescribe the appeal procedure to be followed. Kindly include a copy of this document (National Appeal Regulations, 2014) with the letter of notification to interested and affected parties in this matter.

Should any person wish to lodge an appeal against this decision, he/she must submit the appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party, and any organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the registered interested and affected parties by the applicant; or the date that the notification of the decision was sent to the applicant by the Department, whichever is applicable.

Appeals must be submitted in writing in the prescribed form to:

Director: Appeals and Legal Review of this Department at the below mentioned addresses.

By email: appealsdirectorate@environment.gov.za;

By hand:
Environment House
473 Steve Biko Street
Arcadia
Pretoria
0083; or

By post:
Private Bag X447
Pretoria
0001

Please note that in terms of Section 43(7) of the NEMA, the lodging of an appeal will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with any activity authorised in the EA until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appealsdirectorate@environment.gov.za.

Yours faithfully.

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Date: 11/5/2018

cc:	Ms Veronique Evans	Marang Environmental & Associates (Pty) Ltd	Email: veronique@maranggroup.co.za

DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

Diamond Corner Building, 68 Eloff & Market Street, Johannesburg
P O Box 8769, Johannesburg, 2000

Telephone: (011) 355-1900
Fax: (011) 355-1000
Email: gdard@gauteng.gov.za
Website: http://www.gpg.gov.za

Enquiries: Mulibana Eric
Telephone: 011-355 1705

FAX COVER SHEET

Receiver's Details		**Sender's Details**	
To:	Ms. Nomawethu Makwela	From:	Mulibana Eric
Company:	Gauteng Department of Economic Development	Section:	Environment
Fax no.	(011) 634 7090	Floor:	8th Glencairn
Tel no.	(011) 634 7066	Tel:	(011) 355 1705
Date:		Pages:	14 (including this fax cover sheet)
Re:	**Positive Environmental Authorisation:** PROPOSED ESTABLISHEMENT OF JEWELLERY MANUFACTURING PRENCINCT ON PART OF THE REMAINDER OF PORTION 69 OF THE FARM WITKOPPIE 64 - IR: 002/09 –10/N0021		

CC:	Strategic Environmental Focus (Pty) Ltd	Attn: Funke Asaolu Tel: (012) 349 1307 Fax: (012) 349 1229
	Ekurhuleni Metropolitan Municipality	Attn: Lebohang Raliapeng Tel: (011) 456 0389 Fax: (011) 456 0114
	Director: Environmental Compliance Monitoring (GDARD)	Attn: Cecilia Petlane Tel: (011) 355 1993 Fax: (011) 355 1850

agriculture and rural development
Department: Agriculture and Rural Development
GAUTENG PROVINCE

Diamond Corner Building, 68 Eloff & Market Street, Johannesburg
P O Box 8769, Johannesburg, 2000
Telephone: (011) 355-1900
Fax: (011) 337-2292

Reference:	Gaut 002/09-10/N0021
Enquiries:	Mr. Mulibana Eric
Telephone:	011 355 1705
Email:	Eric.Mulibana@gauteng.gov.za

Ms Nomawethu Makwela
Head: Economic Development
Gauteng Provincial Government
Private Bag X091
MARSHALLTOWN
2107

Facsimile: (011) 634 7090
Telephone : (011) 634 7086

PER FACSIMILE AND REGISTERED MAIL

Dear Madam,

APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED ESTABLISHMENT OF A JEWELLERY MANUFACTURING PRENCINCT ON PART OF THE REMAINDER OF PORTION 69 OF THE FARM WITKOPPIE 64 - IR [GAUT 002/09 –10/N0021]

With reference to the abovementioned application, please be advised that the Department has decided to grant authorisation. The Environmental Authorisation and reasons for the decision are attached herewith.

In terms of Regulation 10(2) of the Environmental Impact Assessment Regulations, 2010 ("the Regulations"), you are instructed to notify all Registered Interested and Affected Parties, in writing and within twelve (12) days of the date of this letter, of the Department's decision in respect of your application as well as the provisions regarding the making of appeals that are provided for in the Regulations.

Your attention is drawn to Chapter 7 of the Regulations which regulates appeal procedures. Should you wish to appeal any aspect of the decision, you must, *inter alia*, lodge a Notice of Intention to Appeal with the Member of the Executive Council

(MEC) within twenty (20) days of the date of this letter, by means of one of the following methods:

By facsimile:	(011) 333 0620;
By post:	P.O. Box 8769, Johannesburg 2000; or
By hand:	16th Floor, Diamond Corner Building, 68 Eloff Street, Johannesburg.

Should you decide to appeal, you must serve a copy of your Notice of Intention to Appeal to all Registered Interested and Affected Parties as well as a Notice indicating where, and for what period, the appeal submission will be available for inspection. The appeal form is available on the Department's website: www.gdard.gpg.gov.za .

Yours faithfully

Ms. S. Sekgobela
Head: Agriculture and Rural Development

Date: 25/7/2011

CC:

Strategic Environmental Focus (Pty) Ltd	Attn:	Funke Asaolu
	Tel:	(012) 349 1307
	Fax:	(012) 349 1229
Ekurhuleni Metropolitan Municipality	Attn:	Lebohang Raliapeng
	Tel:	(011) 456 0389
	Fax:	(011) 456 0114
Director: Environmental Compliance Monitoring (GDARD)	Attn:	Cecilia Petlane
	Tel:	(011) 355 1993
	Fax:	(011) 355 1850

ORIGINAL

GDARD
Office of the HOD
11 -07- 25 0000 18

agriculture and rural development
Department: Agriculture and Rural Development
GAUTENG PROVINCE

Environmental Authorisation

Authorisation register number:	*Gaut 002/09-10/N0021*
Holder of authorisation:	*Gauteng Department of Economic Development*
Location of activities:	*Part of the Remainder of Portion 69 of the Farm Witkoppie 64 - IR*

Part @ WIDZ . 10.2a.

Definitions

"Activity" means an activity identified –

(a) In Government Notice No. R. 386 and No. R. 387 of 2006 as a listed activity; or

(b) In any other notice published by the Minister or MEC in terms of section 24D of the Act as a listed activity or specified activity;

"Alternatives" in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to –

(a) The property on which or location where it is proposed to undertake the activity;

(b) The type of activity to be undertaken;

(c) The design or layout of the activity;

(d) The technology to be used in the activity; and

(e) The operational aspects of the activity;

"Applicant" means a person who has submitted or intends to submit an application;

"Cumulative impact", in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area;

"Environmental impact assessment" means a process of examining the environmental effects of the development;

"Environmental management plan" means an environmental management plan in relation to identified or specified activities envisaged in Chapter 5 of the Act and described in Regulation 34;

"Mitigation" means measures designed to avoid reduce or remedy adverse impacts;

"Positive impact" means a change that improves the quality of the environment;

"Public participation process" means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters;

"Significant impact" means an impact that, by its magnitude, duration or intensity alters an important aspect of the environment;

"Department" means Department of Agriculture and Rural Development.

Decision

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this Environmental Authorisation, that the applicant should be authorised to undertake the activities specified below.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1 attached hereto.

Activities authorised

By virtue of the powers conferred on it by the National Environmental Management Act , 1998 (Act 107 of 1998 ("the Act") and the Environmental Impact Assessment Regulations, 2006 ("the Regulations") the Department hereby authorises the **Gauteng Department of Economic Development** with the following contact details–

Ms. Nomawethu Makwela
Private Bag X091
MARSHALLTOWN
2107

Facsimile: 011 634 7090

to undertake the following: -

The establishment of the proposed Jewellery Manufacturing Precinct which involves various listed activities on part of the Remainder of Portion 69 of the Farm Witkoppie 64 - IR, listed as Activities 1k, 1o, 1v, 14, 15, 16 and 19 of Government Notice R. 386 to the Regulations which falls within the jurisdiction of Ekurhuleni Metropolitan Municipality, hereafter referred to as "the Site".

The granting of this Environmental Authorisation is subject to the conditions set out below.

Conditions

Scope of Authorisation

1.1 Authorisation of the activity is subject to the conditions contained in this Environmental Authorisation, which conditions form part of the Environmental Authorisation and are binding on the holder of the Environmental Authorisation.

1.2 The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.

1.3 The activities which is authorised may only be carried out at the property indicated above.

1.4 Any changes to, or deviations from, the project description set out in this Environmental Authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder to apply for further authorisation in terms of the Regulations.

1.5 This activity must commence within a period of two (2) years from the date of issue of this authorisation. If commencement does not occur within that period, the Environmental Authorisation lapses and a new application for Environmental Authorisation must be made in order for the activity to be undertaken.

1.6 This Environmental Authorisation does not negate the holder's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

Appeal of Authorisation

1.7 The holder of the authorisation must notify every Registered Interested and Affected Party, in writing and within twelve (12) days, of receiving notice of the Department's decision to authorise the activity.

1.8 The notification referred to in 1.7 must –

1.8.1 specify the date on which the Environmental Authorisation was issued;

1.8.2 inform the Registered Interested and Affected Party of the appeal procedure provided for in Chapter 7 of the Regulations; and

1.8.3 advise the Registered Interested and Affected Party that a copy of the Environmental Authorisation and reasons for the decision will be furnished on request.

Management of the Activity

1.9 The Environmental Management Plan (EMP) submitted as part of the application for Environmental Authorisation has been accepted and as a condition of this authorisation must be complied with and implemented.

Recording and Reporting to the Department

1.10 This Department and the Department of Water Affairs (DWA) must be informed of any environmental and pollution incidents relating to the proposed activities within twenty four (24) hours of such incidents occurring.

1.11 The holder must notify the Department within twenty four (24) hours if any condition of this Environmental Authorisation cannot, or is not, adhered to. The notification must be supplemented with reasons for non-compliance and proposed remedial steps.

1.12 The holder of the authorisation must compile an environmental audit report. These reports must be kept on record and made available to the Department on written request. This audit must be conducted by an Independent Consultant and the environmental audit report must at least refer to the following:

- Compliance with the requirements of the Occupational Health and Safety Act,85 of 1993;
- Proof that an Emergency Response Plan was approved by Ekurhuleni Metropolitan Municipality;
- Confirmation that industry standards and SANS codes are being complied with; and
- Confirmation that records of waste disposed/removed from the Site in terms of the manifest systems are being kept by the Gauteng Department of Economic Development.

The first environmental audit report must also include verification of the following:

- Confirmation that:

- all construction activities were carried out in accordance with the relevant SANS standards. This must include a discussion on the pollution prevention measures implemented;
- basic firefighting equipment is available on site;
- the personnel have been trained in fire response by a representative of the Gauteng Department of Economic Development; and
- all permits or licenses applicable to the proposed development were obtained from the relevant authorities.

- Update of emergency and fire drills as required by the Occupational Health and Safety Act, 85 of 1993.

Construction and Commissioning of the Activity

1.13 Thirty (30) days written notice must be given to the Department that the activities will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activities will commence.

1.14 All invasive and alien plant species on site should be identified and removed prior to construction activities.

1.15 Proof that Gauteng Department of Transport and Roads and the Department of Labour were informed of the proposed development must be submitted prior to the commencement of the proposed activities.

1.16 A stormwater management plan approved by the Ekurhuleni Metropolitan Municipality must be submitted to this Department thirty (30) days prior to the commencement of the activities.

1.17 Stormwater must be managed to prevent erosion and stormwater related damage to the Site during the pre-construction and construction phases when an increase in built surface coverage over the entire site will occur.

1.18 An effective stormwater drainage system separating clean stormwater from dirty stormwater must be installed to reduce surface water contamination.

1.19 Mixing of concrete or chemicals must be performed within specific bermed areas on an impermeable surface.

1.20 Contaminated water ingress into the ground must be avoided at all times during or after construction.

1.21 Dust suppression measures must be implemented during construction processes.

1.22 The Gauteng Department of Economic Development must comply with the requirements of the Gauteng Noise Control Regulations, 1999.

1.23 No stockpile material must be stored or placed within any drainage line on site.

1.24 All fuels and lubricants used during construction must be stored within SANS compliant bunded areas.

1.25 Suitable signage to warn the public about hazards must be erected on site.

1.26 It must be mandatory for all personnel and construction team members to wear appropriate Personal Protective Equipment (PPE).

1.27 Access roads to the construction site must be designed to accommodate 1 in 20 year flood events.

1.28 All waste (including building rubble) generated during construction must be well managed and disposed off in a permitted landfill site.

1.29 Construction vehicles must be kept in good working condition so as not to generate excessive noise.

1.30 Surrounding residents must be notified in advance of construction schedule especially if blasting is to be undertaken.

1.31 All issues raised by interested and affected parties must be taken into consideration during the construction and operational phases of the proposed project.

1.32 If any soil contamination is noted during the construction phase of the facility, the contaminated soil must be removed to a suitable waste disposal facility and the site

must be rehabilitated to the satisfaction of this Department and DWA. The opportunity for the on-site remediation and re-use of contaminated soil must be investigated prior to disposal and the Department must be informed in this regard.

1.33 An Environmental Control Officer (ECO) must be appointed to ensure that regular audits are performed during construction and commissioning phases to ensure implementation of mitigation and management measures. Furthermore, an ECO must monitor the applicant's compliance with all the conditions of this authorisation.

Operation of the Activity

1.34 The Department will hold Gauteng Department of Economic Development liable for any damage that may be caused to the environment which results from any activities related to the construction and operation of the proposed development.

1.35 Repairs to vehicles must not take place on site during all phases of the development.

1.36 The visual impact created by the illumination of buildings and infrastructure associated with the development must be minimized.

1.37 Lighting should be limited to boundary lights and security lights.

1.38 Security lighting must be effectively designed so as not to spill unnecessarily outward into the eyes of oncoming traffic or into the yards or buildings of neighboring properties.

1.39 All effluents must meet the relevant local authority and DWA requirements before discharge into a municipal sewer or water treatment system for disposal.

1.40 Only waste transporters with the appropriate authorisation must be used to remove hazardous waste material from the site. The Gauteng Department of Economic Development must maintain records of Safe Disposal Certificates for all wastes leaving the site. These records must be made available on request within seven (7) days.

1.41 All waste streams must be managed in accordance with the hierarchy of waste management principles and disposal at a licensed landfill site must be the last option.

1.42 Where engine oil, diesel or solvent materials are accidentally spilled on the ground, the contaminated soil must be immediately excavated and remediated using appropriate and applicable methods or removed to a suitable waste disposal facility and the site must be rehabilitated to the satisfaction of this Department and DWA.

1.43 All access roads and off loading zones must be paved.

1.44 During operation, the full identity and contact details of the security personnel must be made available to the Body Corporate of the neighboring factories.

1.45 Gauteng Department of Economic Development must ensure compliance with the requirements of the Occupational Health and Safety Act 85 of 1993.

1.46 Gauteng Department of Economic Development must ensure that basic firefighting equipment is available on site at all times.

Site Closure and Decommissioning

1.47 A Decommissioning plan must be submitted to the Department for approval at least thirty (30) days prior to the decommissioning of the facility. The decommissioning plan must include discussions on the management of all possible environmental impacts envisaged during the closure of the facility.

General

1.48 A copy of this authorisation must be kept at the Site where the activity will be undertaken. The Environmental Authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder who works or undertakes work at the Site.

1.49 Where any of the holder's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the holder must apply for amendment of the EA as soon as the new details become known to the holder.

1.50 The holder must notify the Department, in writing and within twenty four (24) hours, if conditions 1.9 to 1.49 of this Environmental Authorisation cannot be or is not adhered to. In all other cases, the holder must notify the Department, in writing, within seven (7) days if a condition of this Environmental Authorisation is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.

1.51 Non-compliance with a condition may result in criminal prosecution or other actions provided for in the NEMA and the Regulations.

Date of Environmental Authorisation 25/7/2011

Ms. S. Sekgobela
Head: Agriculture and Rural Development

GRAD
11-07-25 000039

Annexure 1: Reasons for Decision

1. Background

The applicant, Gauteng Department of Economic Development, applied for authorisation to carry on the following:

The proposed jewellery manufacturing precinct on part of the Remainder of Portion 69 of the Farm Witkoppie 64 - IR, Ekurhuleni Metropolitan Municipality.

The applicant appointed Strategic Environmental Focus (Pty) Limited to undertake an Environmental Impact Assessment process.

Summary of process followed:
a) Application form; and
b) Basic Assessment Report.

2. Information Considered

The Department took, *inter alia*, the following into consideration -
a) The information contained in the
   i) Application form; and
   ii) Basic Assessment Report.
b) Relevant information contained in the Departmental information data base including -
   - Geographic Information System.
c) Relevant legislation, policies and guidelines such as
   - Section 2 of the National Environmental Management Act 107 of 1998.

3. Key Factors Considered

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

a) The possible impacts that could result from the activities and mitigation measures as discussed in the Environmental Impact Assessment Report.
b) Need and desirability of the proposed activities as outlined below.

4. Findings

Having considered the information and factors listed above, the Department made the following findings -

a) The proposed site is situated on the property of the Airports Company of South Africa (ACSA) Limited , within the boundaries of OR Tambo International Airport, on part of the Remainder of Portion 69 of the Farm Witkoppie 64 – IR and within the area of jurisdiction of Ekurhuleni Metropolitan Municipality.
b) The proposed development entails the establishment of a jewellery manufacturing precinct.
c) The proposed development will only focus on the assembling of already refined jewellery to be designed for final consumption.
d) The proposed development will incorporate retail outlets where refined gold will be assembled.
e) The proposed development will be a three-storey structure and will be built on the Site with a 5m perimeter buffer left free of structures except for security installations.

f) All potential impacts associated with the proposed activities have been identified.
g) The Public Participation Process was conducted in accordance with the Department's requirements.
h) An Environmental Management Plan (EMP) is provided in the Environmental Impact Assessment Report which takes into consideration possible environmental impacts that could arise during all the phases on the proposed activities and mitigation measures were provided.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the Environmental Authorisation, the proposed activities will not conflict with the general objectives and principles of integrated environmental management laid down in Chapter 5 of the NEMA and that any potentially detrimental environmental impacts resulting from the proposed activities can be mitigated to acceptable levels.

The application is accordingly granted.

No. R. 386 21 April 2006

LIST OF ACTIVITIES AND COMPETENT AUTHORITIES IDENTIFIED IN TERMS OF SECTIONS 24 AND 24D OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998

The Minister of Environmental Affairs and Tourism has in terms of sections 24 and 240 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), listed the activities in the Schedule.

This Notice comes into effect on the date of commencement of the Environmental Impact Assessment Regulations, 2006, made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006.

Definitions

1. In this Notice, any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned, and unless the context otherwise indicates -

"agri-industrial" means an undertaking involving the production, processing, manufacture, packaging or storage of agricultural produce and includes battery farm operations that are under roof;

"aquaculture" means the farming of animals or plants in an aquatic environment;

"asbestos" means any fibrous mineral silicates, including actinolite, amosite, anthophyllite, chrysotile, crocodolite or tremolite;

"associated structures or infrastructure" means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility;

"canal" means an open structure that is lined or reinforced for the conveying of a liquid or that serves as an artificial watercourse;

"channel" means an excavated hollow bed for running water or an artificial underwater depression to make a water body navigable or to improve the flow of water in a natural stream, river or the sea;

"concentration of animals" means the keeping of animals in a confined space or structure, including a feedlot, where they are fed in order to prepare them for slaughter or to produce secondary products such as milk or eggs;

"construction" means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such facility, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure;

"dangerous goods" means goods that are capable of posing a significant risk to the health and safety of people or the environment and which are listed in South African National Standard No.10228 designated "The identification and classification of dangerous goods for transport", SANS 10228:2003, edition 3, published by Standards South Africa, ISBN 0-626-14417-5, as may be amended from time to time;

"expansion" means the modification, extension or alteration of a facility, structure or infrastructure at which an activity takes place in such a manner that the production, treatment, storage or capacity of the facility is increased;

"floodplain" means a discernable flat landscape feature next to a river or stream that was created by weathering and sedimentation over time;

"high-water mark" means the highest line reached by the water of the sea during ordinary storms occurring during the most stormy period of the year, excluding exceptional or abnormal floods;

"infill development" means urban development, including residential, commercial, retail, institutional, educational and mixed use development, but excluding industrial development, in a built up area which is at least 50 percent abutted by urban development and which can be readily connected to municipal bulk infrastructure services;

"mariculture" means the culture or husbandry of fish in sea water;

"mine" when used as a noun or a verb as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mineral" means a mineral as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) ;

"mining area" means an area as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mining permit" means a permit as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mixed use", with regard to an activity, means the presence of two or more types of land use in an area;

"petroleum" means any liquid, solid hydrocarbon or combustible gas as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"phased development" means an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent or his or her successors.

"prospecting" means prospecting as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002);

"prospecting area" means an area as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"prospecting right" means a right as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"reconnaissance permit" means a permit as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"retention area" means an area as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"retention permit" means a permit as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"sea" means the water and the bed of the sea and the subsoil thereof, below the high-water mark, including the water and the bed of any tidal river and tidal lagoon;

"South African Manual for Outdoor Advertising Control" means the Department of Environmental Affairs and Tourism and the Department of Transport publication titled "South African Manual for Outdoor Advertising Control", published by the Department of Environmental Affairs and Tourism, April 1998, **ISBN:** 0-621-27343-0;

"the Act" means the National Environmental Management Act, 1998 (Act No. 107 of 1998); and

"the regulations" means the Environmental Impact Assessment Regulations, 2006.

SCHEDULE

ACTIVITIES IDENTIFIED IN TERMS OF SECTION 24(2)(*a*) AND (*d*) OF THE ACT, **WHICH** MAY NOT COMMENCE WITHOUT **ENVIRONMENTAL AUTHORISATION** FROM THE COMPETENT AUTHORITY AND IN RESPECT **OF** WHICH THE INVESTIGATION, ASSESSMENT AND COMMUNICATION OF POTENTIAL IMPACT OF ACTIVITIES MUST FOLLOW THE PROCEDURE AS DESCRIBED IN REGULATIONS 22 TO 26 **OF** THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2006, PROMULGATED IN TERMS OF SECTION 24(5) OF THE ACT -

Activity number	Activity description	Identification of competent authority
1	The construction of facilities or infrastructure including associated structures o infrastructure, for – (a) the generation of electricity where the electricity output is more than 10 megawatts but less than 20 megawatts; (b) the above ground storage of 1 000 tons or more but less than 100 000 tons of ore; (c) the storage of 250 tons or more but less than 100 000 tons of coal; (d) resorts, lodges, hotels or other tourism and hospitality facilities in a protected area contemplated in the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ; (e) any purpose where lawns, playing fields or sports tracks covering an area of more than three hectares, but less than 10 hectares, will be established; (f) sport spectator facilities with the capacity to hold 8 000 spectators or more; (g) the slaughter of animals with a product	The competent authority in respect of the activities listed in this part of the schedule is the environmental authority in the province in which the activity is to be undertaken unless it is an application for an activity contemplated in section 24C(2) of the Act, in which case the competent authority is the Minister or an organ of state with delegated powers in terms of section 42(1) of the Act, as amended.

	throughput of 10 000 kilograms or more pe year; (h) the concentration of animals for the purpose of commercial production in densities that exceed - (i) 20 square metres per head o cattle and more than 500 head of cattle per facility per year; (ii) eight square meters per sheep and more than 1 000 sheep per facility per year: (iii) eight square metres per pig and more than 250 pigs per facility per year excluding piglets that are not yet weaned; (iv) 30 square metres per crocodile at any level of production, excluding crocodiles younger than 6 months; (v) three square metres per head of poultry and more than 250 poultry per facility at any time, excluding chicks younger than 20 days; (vi) three square metre per rabbit at and more than 250 rabbits per facility at any time; or (vii) 100 square metres per ostrich and more than 50 ostriches per facility per year or 2500 square metres per breeding pair; (i) aquaculture production, including mariculture and algae farms, with a product	

throughput of 10 000 kilograms or more per year;

(j) agri-industrial purposes, outside areas with an existing land use zoning for industrial purposes, that cover an area of 1 000 square metres or more;

(k) the bulk transportation of sewage and water, including storm water, in pipelines with -

(i) an internal diameter of 0,36 metres or more; or

(ii) a peak throughput of 120 litres per second or more;

(l) the transmission and distribution of electricity above ground with a capacity of more than 33 kilovolts and less than 120 kilovolts;

(m) any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including -

(i) canals;

(ii) channels;

(iii) bridges;

(iv) dams; and

(v) weirs;

	(n) the off-stream storage of water, including dams and reservoirs, with a capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of the activity listed in item 6 of Government Notice No. R. 387 of 2006; (o) the recycling, re-use, handling, temporary storage or treatment of general waste with a throughput capacity of 20 cubic metres or more daily average measured over a period of 30 days, but less than 50 tons daily average measured over a period of 30 days; (p) the temporary storage of hazardous waste; (q) the landing, parking and maintenance of aircraft including - (i) helicopter landing pads, excluding helicopter landing facilities and stops used exclusively by emergency services; (ii) unpaved aircraft landing strips shorter than 1,4km; (iii) structures for equipment and aircraft storage; (iv) structures for maintenance and repair; (v) structures for fuelling and fuel storage; and (vi) structures for air cargo handling;	

	(r) the outdoor racing of motor powerec vehicles including- (i) motorcars; (ii) trucks; (iii) motorcycles; (iv) quad bikes; (v) boats; and (vi) jet skis; (s) the treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres; (t) marinas and the launching of watercraft on inland fresh water systems; (u) above ground cableways and funiculars; (v) advertisements as defined in classes 1(a), 1(b), 1(c), 3(a), 3(b), 3(i) of the South African Manual for Outdoor Advertising Control.	

2	Construction or earth moving activities in the sea or within 100 metres inland of the high water mark of the sea, in respect of – **(a)** facilities for the storage of material and the maintenance of vessels; **(b)** fixed or floating jetties and slipways; **(c)** tidal pools; (d) embankments; **(e)** stabilising walls; **(f)** buildings; or (g) infrastructure.	
3	The prevention of the free movement of sand, including erosion and accretion, by means of planting vegetation, placing synthetic material on dunes and exposed sand surfaces within a distance of 100 metres inland of the high-water mark of the sea.	
4	The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.	
5	The removal or damaging of indigenous vegetation of more than 10 square metres within a distance of 100 metres inland of the high-water mark of the sea.	
6	The excavation, moving, removal, depositing or compacting of soil, sand, rock or rubble covering an area exceeding 10 square metres in the sea or within a distance of 100 metres inland of the high-water mark of the sea.	

7	The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres but less	
8		The competent authority for this part of the schedule is the Minister or an organ of state with delegated powers in terms of section 42(1) of the Act, as amended.
9		
0		The competent authority in respect of the activities listed in this part of the schedule is the snvironmental
1		

12	The transformation or removal of indigenou vegetation of 3 hectares or more or of any siz where the transformation or removal woul occur within a critically endangered or ar endangered ecosystem listed in terms o section 52 of the National Environmenta Management: Biodiversity Act, 2004 (Act No. 10 of 2004).	authority in the province in which the activity is to be undertaken unless it is an applicatio for an activit contemplated i section 24C(2) o the Act, in whic case the competent authority is the Minister or an organ of state with delegated powers n terms of section 42(1) of the Act, as amended.
13	The abstraction of groundwater at a volume where any general authorisation issued in terms of the National Water Act, 1998 (Act No. 36 of 1998) will be exceeded.	
14	The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding - (a) masts of 15 metres and lower exclusively used (i) by radio amateurs; or (ii) for lighting purposes (b) flag poles; and (c) lightning conductor poles.	
5	The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.	

16	The transformation of undeveloped, vacant or derelict land to – (a) establish infill development covering an area of 5 hectares or more, but less than 20 hectares; or (b) residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.	
17	Phased activities where any one phase of the activity may be below a threshold specified in this Schedule but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.	
18	The subdivision of portions of land 9 hectares or larger into portions of 5 hectares or less.	
19	The development of a new facility or the transformation of an existing facility for the conducting of manufacturing processes, warehousing, bottling, packaging, or storage, which, including associated structures or infrastructure, occupies an area of 1 000 square **metres** or more outside an existing area zoned for industrial purposes.	
20	The transformation of an area zoned for use as public open space or for a conservation purpose to another use.	

21	The release of genetically modified organisms into the environment in instances where assessment is required by the Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997) or the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).	
22	The release of any organism outside its natural area of distribution that is to be used for biological pest control.	
23	The decommissioning of existing facilities or infrastructure, other than facilities or infrastructure that commenced under an environmental authorisation issued in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, for - (a) electricity generation; (b) nuclear reactors and storage of nuclear fuel; (c) industrial activities where the facility or the land on which it is located is contaminated or has the potential to be contaminated by any material which may place a restriction on the potential to re-use the site for a different purpose; (d) the disposal of waste; (e) the treatment of effluent, wastewater and sewage with an annual throughput capacity of 15 000 cubic metres or more;	

	(f) the recycling, handling, temporary storage or treatment of general waste with a daily throughput capacity of 20 cubic metres or more; or (g) the recycling, handling, temporary storage or treatment of hazardous waste.	
24	The recommissioning or use of any facility or infrastructure, excluding any facility or infrastructure that commenced under an environmental authorisation issued in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, after a period of two years from closure or temporary closure, for - (a) electricity generation; (b) nuclear reactors and nuclear fuel storage; or (c) facilities for any process or activity, which require permission, authorisation, or further authorisation, in terms of legislation governing the release of emissions, pollution, effluent or waste prior to the facility being recommissioned.	
25	The expansion of or changes to existing facilities for any process or activity, which requires an amendment of an existing permit or license or a new permit or license in terms of legislation governing the release of emissions, pollution, effluent.	

Appendix 9

Previous Specialist Studies & Assessments

Appendix 9A

2010 Scoping Geotechnical Assessment Report

Our reference: 2009-0076

P O Box 24614
GEZINA
0031 Pretoria

477 Indiana Ave
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0043 Pretoria

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31 March 2010

Gauteng Department of Economic Development

Email: ntombi.radebe@gauteng.gov.za

Attention: Ms Ntombi Radebe

Dear Madam

REPORT: ORT INTERNATIONAL IDZ: RECONNAISSANCE GEOTECHNICAL INVESTIGATION OF 6,1 HA PROPOSED JEWELLERY MANUFACTURING PRECINCT

Locality and general description

The site is located near to the northeastern corner of OR Tambo Airport and on the northern side of Bonaero Drive as shown on the attached Figure 1. It should be noted that the Google image used to prepare the figure is now almost four years old, and that some minor infrastructural changes, as well as the removal of trees between the factories opposite the site and the site itself that were noted during the site reconnaissance do not show on the image.

Occasional evidence of minor dumping of building material in the past was observed in the form of weathered fragments of concrete slabs and there was about 1 m of building rubble encountered over a very small area in the southern half of the site along the western boundary.

Three drainage trenches were observed at the site as shown on the accompanying Figure 1. These trenches are briefly discussed below

- An approximately north-south aligned trench up to about 1,5 m deep is present at the western border and contains water that appears to be almost stagnant. The sides of this trench have a soil profile indicating that the site is underlain by Karoo Sequence sandstone, with a cover of sandy residual soil overlying sandstone bedrock. Up to 0,3 m of sandy transported soil with a thin basal gravel layer was present in the trench sides, and had a potentially collapsible grain structure.

- A second trench that runs northwest-southeast through the site is present roughly in the middle of the site. It contains running water drained from the properties adjacent to the western boundary via a large box culvert passing beneath the tar road at the western boundary. The water in this fairly substantial drainage trench discharges into a roughly triangular area as shown of Figure 1, this area being a very wet, almost marshy triangular portion of ground. No test pit excavation will be feasible in this very wet area.

- A third trench runs in a northeasterly direction parallel to the western boundary of the site, but is no more than about 800 mm deep and only contains a little water where it discharges at the northern apex of the site.

Topography

The site has generally gentle slopes to the southeast in the southern half of the site, and generally almost flat slopes over most of the northern half of the site.

Vegetation

The site is undeveloped and generally covered by closely spaced trees, the majority of which are eucalyptus trees indigenous to Australia. The vegetation outside the areas of closely spaced trees contains veld grasses that extend into the areas of scattered trees, however the grass cover becomes much thinner where tree cover is thickest.

Geology

The 1:250 000 scale geological map of the general area (Sheet 2628 East Rand) shows the site to be underlain by Karroo Sequence sandstone and shale in turn resting on andesitic lava of the Klipriviersberg Group, part of the Ventersdorp Supergroup. The Karoo sandstone is expected to give rise to sandy soils, as observed at the site, whereas andesitic lava of the Klipriviersberg Group, part of the Ventersdorp Supergroup normally gives rise to potentially expansive silty to clayey soils at shallow depth. It must be emphasized however that potentially expansive residual soils derived from lava are not expected at the site due to the Karroo bedrock cover - the lava is not expected to have soil developed between it and the sandstone and/or shale of the Karoo Sequence rocks. Any weathered or decomposed Karoo shale at the site may however give rise to potentially expansive soils.

Surface and Groundwater

Surface water drainage is expected to follow the general surface slopes toward the eastern and southeastern site boundaries. Some surface water does pond at the ends of the two drainage trenches. In the case of the largest trench that receives water from the factories opposite the western boundary, ponding occurs at the junction between the trench and the very wet triangular area. In the case of the trench in the northern half of the site, a little water ponds at the extreme northern end of this trench at the northern apex of the site.

With regard to groundwater, we have not seen evidence of boreholes on or near the site. It is probable that the Karoo sandstone and shale will contain water at some depth, however we doubt at this stage that the water table is very shallow, of the order of less than 5 or 6 m.

Engineering Geological considerations

We expect that the sandy transported soil at the site will possess the open texture typical of so-called potentially collapsible grain structure. This grain structure results in loosely packed sand grains that area not all in point to point contact and containing abundant clay and silt “bridges” between soil grains. Whilst such a soil is in a dry to slightly moist state, any settlement of foundations placed upon them will be rapid and

essentially elastic. Should the material become wet to saturated as a result of leaking water pipes or ponding of surface water next to foundations, the shear strength of the soil bridges is reduced to near zero. The result is that the founding load can now compress the soil further. Additional and often substantial settlement results, and since in most cases it is localised, significant to severe cracking of conventionally founded masonry structures is often the result. This problem can however, be circumvented at the construction stage by appropriate founding measures.

Conclusions

With the foregoing information in mind, we conclude that there are no fatal flaws at the site from a geotechnical viewpoint and that the proposed development can proceed to the detailed geotechnical investigation and engineering design stage once the positions and extent of any proposed infrastructure has been decided.

The only current constraint from a geotechnical point of view is the presence of the large trench that discharges to the triangular very wet area as already noted. This situation can however be addressed by appropriate civil engineering design of site drainage, possibly by piping the water entering the site to the local storm water system, possibly linking up at Bonaero Drive. The very wet area has, of course, an elevated water table that is at surface in the area where it is being discharged on surface and becoming ever deeper with distance from the surface water area. Once the discharge has been stopped this water will drain away over time and the natural groundwater table is expected to stabilize at a depth below surface that should not hamper development of the site.

We suspect that any masonry structures to be built at the site could, once the results of a detailed geotechnical investigation are compiled, require soil improvement below foundation level to prevent unwanted differential settlement due to a potentially collapsible grain structure and/or low soil density below conventional founding depth. Soil improvement is a commonly applied and economical solution to the potential problems outlined in this report.

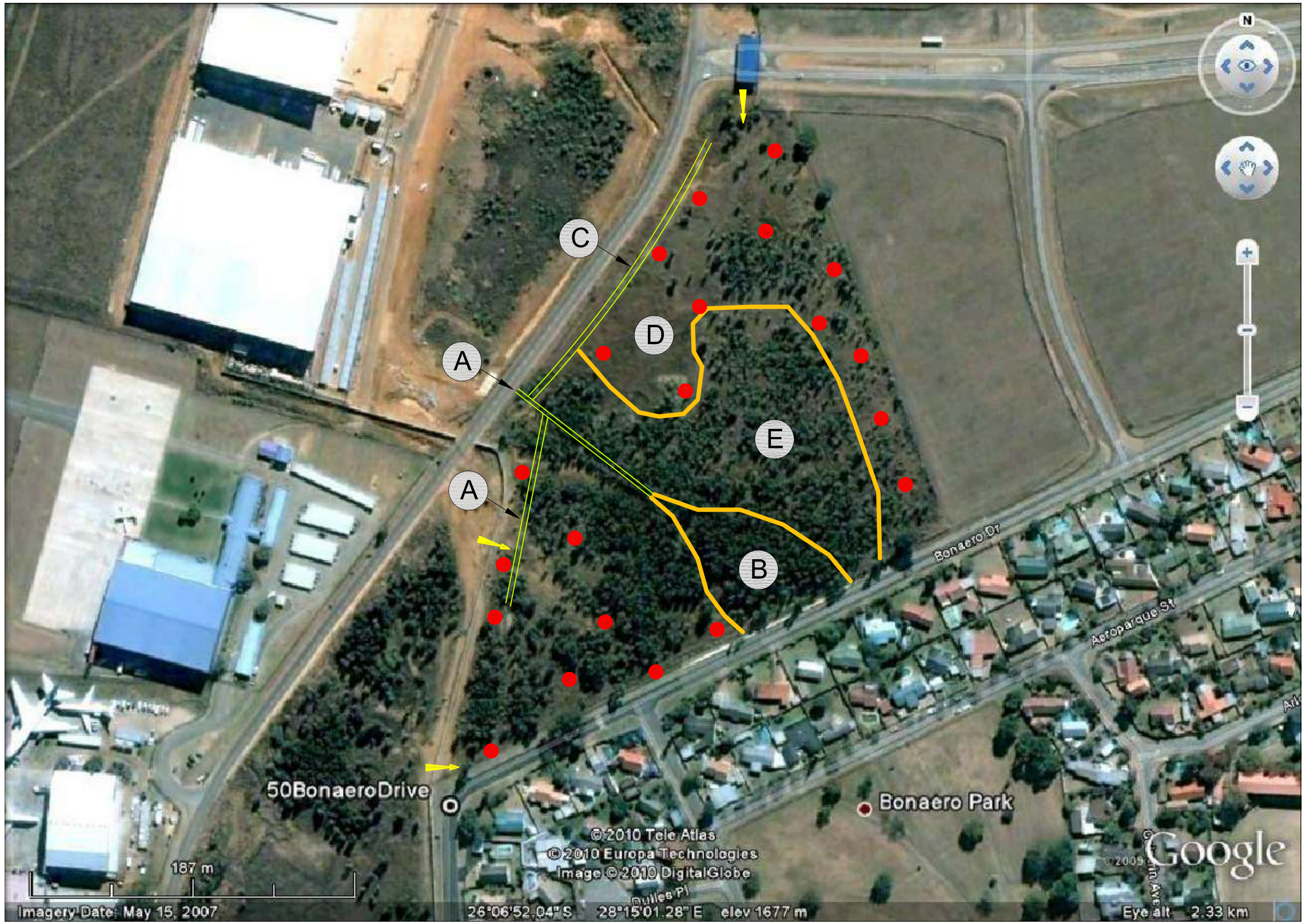
We trust that the foregoing information satisfies your requirements for this project. Should further information be required, please contact the author of this document at one of the contact details in the header of this document.

Yours faithfully

C J Gunter Pr Sci Nat

p.p. Blue Rock Consulting

Attached: Figure 1: Site map



LEGEND:

- (A) DRAINAGE TRENCH
- (B) VERY WET ALMOST MARSHY GROUND SURFACE
- (C) SHALLOW MOSTLY DRY DRAINAGE DITCH
- (D) GENERALLY ACCESSIBLE TO TLB FOR TEST PITTING
- (E) ONLY HAND DUG TEST PITS POSSIBLE
- POSSIBLE DIGGING POSITIONS FOR TLB
- ACCESS TO SITE FOR TLB

PROJEK / PROJECT	ORT IDZ JEWELLERY MANUFACTURING FACILITY
TITEL / TITLE	FIGURE 1
DATUM / DATE	MARCH 2010
SKAAL / SCALE	N.T.S.
TEK Nr / DWG No	2009-0076

Appendix 9B

2015 Preliminary Geotechnical Assessment Report

GAUTENG INDUSTRIAL DEVELOPMENT ZONE

GEOTECHNICAL INVESTIGATIONS REPORT FOR: JEWELLERY MANUFACTURING PRECINCT

PRELIMINARY REPORT

April 2015

Prepared By:

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Document Properties

Attribute	Value
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Document Status	Preliminary
Referenced as	Geotechnical Investigation Report
Authors	Lukhanyo Gqobo
Reviewed By	Basi Modisane
Approval	Solly Shabangu
Access Rights	This document serves to provide information of work undertaken during the geotechnical investigation for the above detailed project. The following role players have access to the document for information and action, as stipulated. • Gauteng Industrial Development Zone • Phunga Consulting Engineers

Change History

Version	Revision Date	Revised By	Description
1	-	-	-

Distribution List

Name & Title	Purpose
Gauteng Industrial Development Zone	Information and Retention
Phunga Consulting Engineers	Information and Retention

Approval

The signatories hereof, being duly authorized thereto, by their signatures hereto confirm their acceptance of the contents hereof.

Name	Designation	Signature	Date
Solly Shabangu	Pr Tech Eng		28/04/2015

Table of Contents

LIST OF ANNEXURES:

1. INTRODUCTION

1.1 General

Earthinv Lab was appointed by Phunga Consulting Engineers to carry out a geotechnical investigation to identify subsurface features that will affect the design and construction of the roads, water, sewer and stormwater systems for the proposed Jewellery and Manufacturing Precinct for The Gauteng Industrial Development Zone (IDZ) located at OR Tambo International Airport.

The geotechnical data, discussions and recommendations of this report includes a field reconnaissance, data review and field explorations. The investigation comprised a desk study, site walkover and fieldwork.

The information in this report will inform to the planning, design and construction precautions to be considered during the implementation of the proposed civil services, thus reducing the risk of structural failure and construction damage where adverse conditions may occur.

1.2 Terms of Reference

The terms of reference for this report, which included a site walk over have been obtained from Phunga Consulting Engineers.
The main offices are located at the following address:

Route 21 Corporate Park
Bock D Sovereign Drive
Irene Centurion
0157

The Phunga Consulting Engineers representative for this order is Mr. Mbulelo Kona

1.3 Scope of Investigation

The investigation has the following aim:

- Review existing geotechnical reports, geologic maps, studies, ground water and soil maps, regional seismic and geological data.
- Review available subsurface information in the project vicinity
- Identification geologic hazards within the internal roads locations
- Evaluation of potential construction constraints and development of possible mitigation.
- Provide relevant information for the planning and design of the internal roads' flexible pavement structure.

1.4 Information Provided

The site layout plan of the area was supplied to Earthinv Lab by Phunga Consulting Engineers. The physical conditions encountered on site correspond with the indicated layout plan.

2. SITE INFORMATION

2.1 Site Description

The area under investigation is within the boundaries of OR Tambo International Airport (ORTIA). ORTIA is located adjacent to the residential suburb of Bonaero Park, which is within the Kempton Park suburb. Kempton Park fall is in Ekurhuleni Metropolitan Municipality.
The IDZ under investigation is accessed off Atlas Road either travelling north or south along the R21 Highway..
The aerial photograph is given as Figure 1 below.

The longitude and latitude co-ordinates for area are as follow: 26° 6.742'S and 28° 15.051'E respectively with an altitude of approximately 1676 m above sea level mark the beginning point of the site under investigation.

The area of the parking under investigation approximately 2.5 hectares.

The site's topography comprises of a flat to a slightly rolling terrain through the length of the area under investigation.

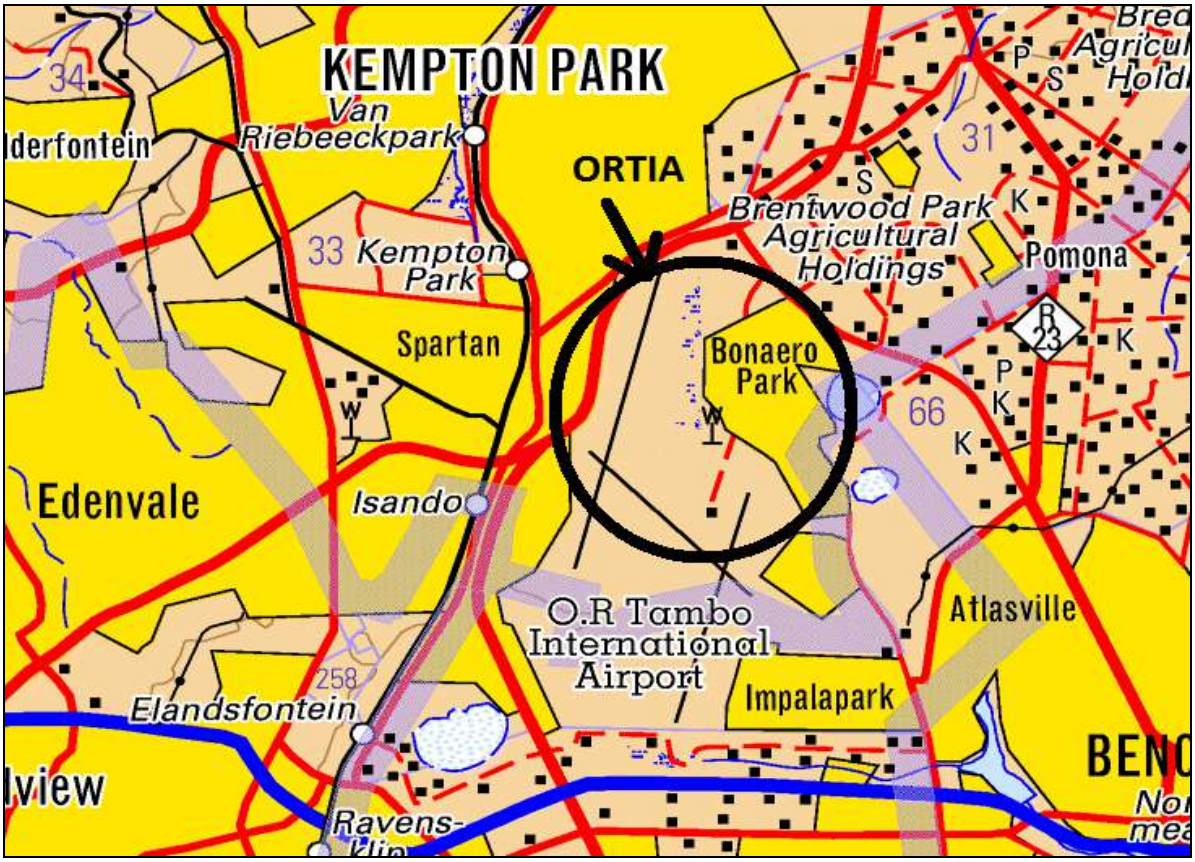

Figure 1 – Site Locality Map. *Refer to **Annexure A** for the Locality Map*

2.2 Existing Infrastructure

Possible Construction Constraints

The site is a developed industrial park with formal structures (offices and warehouses). The existing internal roads are all surfaced with asphalt.

The proposed works will be with the boundaries of ORTIA which is a national key point, thus access to the site will have to be arranged prior to any works starting. During our investigations there were no municipal services encountered within the proposed area, however there is a stream traversing across the site and the close eucalyptus trees restricts easy access to certain areas. Existing municipal services may be a cause of construction constraint, It is also recommended that all way-leaves or service detection be performed prior to any commencement of works/excavation, to avoid services interruption. *Photos 2, 3, 4 shows the existing services. Photo 1* shows the business stand.

Photo 1 – Entrance to the IDZ

Photo 2 –Stream running through the site

Photo 3 –Neighboring firms

Photo 4 – Eucalyptus Trees on site

The way-leaves may be attained as shown on below table 1:

Table 1: Services Information

Name of Institution	Type of Service
Petronet	Chemical
Eskom	Electricity
Telkom, Vodacom, MTN, Neotel, etc	Telecommunications
Sasol Gas	Chemical
Municipality or responsible government entities	Water & Sanitation
Municipality or responsible government entities	Roads, Transport & Civil Works

2.3 Local Geology

The lithology of the area is formed of sandstone, shale, and coal beds of the Vryheid formation of the Ecca group in the Karoo supergroup. These rocks were formed during the Carboniferous age.

The lithology of this area is underlain by the rocks of the Dwyka formation which are diamictite and shale in the Ecca group. These were formed during the Permian age. This geological formation was observed and confirmed during the site investigation.

Enclosed is **Annexure B** for the geological map extract.

2.4 Climatic Conditions

Climate

Kempton Park normally receives about 549mm of rain per year, with most rainfall occuring during summer. The chart below (lower left) shows the average rainfall values for Kempton Park per month. It receives the lowest rainfall (0mm) in June and the highest (106mm) in January.

The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Kempton Park range from 16.8°C in June to 26°C in January. The region is the coldest during July when the mercury drops to 0.9°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures.

The high altitude of Kempton Park ensures favorable weather throughout the year. Summer days are pleasantly hot, evenings are comfortably cool and brief thundershowers are characteristic of rainy seasons. Winter days are warm, up to 25°C and evenings are cold with frequent frosts. **See Figure 2**

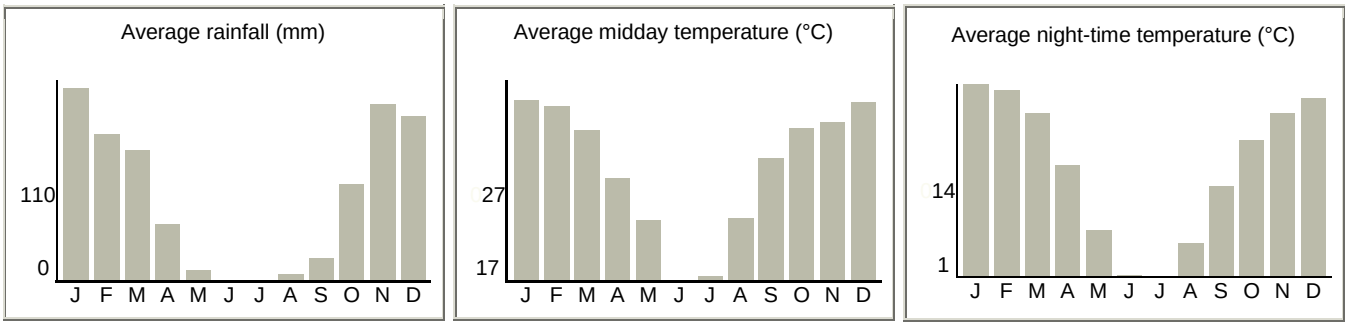

Figure 2 –Kempton Park Climate

Climate determines the mode of weathering and rate of weathering. The effect of climate on the weathering process (i.e. soil information) is determined by the climatic N-value defined by Weinert.

The N-value for the Kempton Park area is 2.4, which implies a moderate climate, and is an indication that both chemical decomposition and mechanical disintegration can occur as the rock weathering mode though chemical decomposition predominates.

''*These materials tend to have relatively high plasticity and are moisture sensitive. Basic igneous rocks are often not durable and prone to degradation in service. Careful attention should be paid to the internal and external drainage of pavement''. LVSR Guidelines*

Climate Data indicates that construction would be better suited between the months of March and September, as there is less rain which can hamper a construction program. The months of June, July and August are in particular favorable as there is very little or no rain.

Table 2

Climate Zone	Arid	Semi-Arid	Sub Humid	Humid
Weinert N-Value	>10	5-10	2-5	<2
Mean Annual Rainfall (mm)	< 250	250-500	500-800	800

3. METHOD OF INVESTIGATION AND OBSERVATIONS

3.1 Test Pits Fieldwork

Field work consisted of a total of fourteen (14) test pits, ten (10) test pits for the proposed roads, and 4 test pits for the proposed sewers lines and stormwater systems. The work was carried out on the 8th and 9th of April 2015. The tests pits were located at intervals in such a way as to obtain general information for entire area. The test positions were coordinated with a Garmin E-trex 10 instrument, and are given in the Table 3, below.
Also see Enclosed as **Annexure C** are the Test Pit Positions Map

Table 3: Co-ordinates Position

Position	Co-ordinates	Position	Co-ordinates
TP 1	28°14'59.61"E & 26° 6'50.42"S	TP 8	28°15'0.41"E & 26° 6'52.28"S
TP 2	28°15'1.44"E & 26° 6'49.19"S	TP 9	28°14'58.60"E & 26° 6'55.34"S
TP 3	28°15'3.94"E & 26° 6'49.27"S	TP 10	28°15'0.72"E & 26° 6'56.06"S
TP 4	28°15'4.38"E & 26° 6'51.66"S	TP A	26° 6'55.55"S & 28°14'57.60"E
TP 5	28°14'59.76"E & 26° 6'51.13"S	TP B	28°15'4.38"E & 26° 6'52.90"S
TP 6	28°15'1.54"E & 26° 6'50.62"S	TP C	28°15'2.30"E & 26° 6'52.29"S
TP 7	28°14'58.60"E & 26° 6'52.17"S	TP D	28°15'5.85"E & 26° 6'50.62"S

These tests pits were profiled by a Materials Engineering Technologist according to the standard profiling parameters as per SAICE Reference 7.1 and were profiled according to the standardized profiling method proposed by Jennings et al. 1973.

Enclosed as **Annexure C** are the Test Pit Positions Map and **Annexure D** for Site Photos"

3.2 Laboratory Testing

Soil samples of the in-situ soils were retrieved and delivered to a Soil Civil Engineering Laboratory for material testing to determine materials classification and properties. The following tests are currently being undertaken:

Roads

- Grading Analysis
- Atterberg Limits
- MOD
- CBR

Sewer & Stormwater system

- Grading Analysis
- Atterberg Limits
- MOD
- CBR
- pH
- Consolidation tests

Furthermore, the tests will determine materials suitability for usage as road layers or flexible pavement layers, or bedding material. Laboratory results will follow with the final Geotechnical Report.

3.3 Dynamic Cone Penetrometer (DCP) Tests and Analysis

The dynamic cone penetrometer (DCP) tests were carried out during the field investigations at every test pit in the area under investigation. This method of testing was used to evaluate and analyze the thickness and bearing capacity of the in situ subgrade layers.

This method of testing was used to estimate the in-situ CBR for the subgrade layers, evaluated in sections of 200mm up to the depth limits of the instrument.

The following model that has been adapted from "The use and interpretation of the dynamic cone penetrometer (DCP) test" by P Paige-Green and L Du Plessis refers:

If DN > 2 mm/blow CBR = $410 \times DN^{-1.27}$
If DN < 2 mm/blow CBR = $(66.66 \times DN^2) - (330 \times DN) + 563.33$

DN (the rate of cone penetration)

The results are tabulated on the graph indicating a stable founding material with an average CBR of 77.42 % at all test pits.

*Refer to **Annexure C DCP Data***

4. GENERAL GEOTECHNICAL ASSESSMENT

4.1 Geological Evaluation

The sub surface features over the proposed development area are summarised below. As mention above in 2.2 above the area is covered with grass and eucalyptus trees and streams. The profile has been evaluated as follows.

Talus
The area is underlain by a horizon of light brown, loose to medium dense, pin holed fine grained gravels. This horizon has scattered roots and is of a collapsible grain structure. This horizon ranges from 0 to about 1.6 mm

This classification indicates loose to medium dense excavation conditions

Residual Sandstone
The talus horizon is followed by a horizon of slightly moist, dark red, medium-dense to dense, tightly packed fine graded gravel of residual sandstone. The horizon ranges from a depth of about 1m.

This classification indicates medium dense excavation conditions.

Residual Shalestone
The sandstone is followed by a horizon of slightly moist, dark yellow, dense to very dense, bedded shalestones of residual sandstone. The shalestone horizon was encountered at tp 07 & 09. Refusals were also encountered at these areas.

Trial Pits were dug to a depth of 2.0 m for roads, 3 m for sewer and stormwater areas or refusal.

"See **Annexure F –** Test Pit/Soil Profiles"

4.2 Surface Densification for Access

The area under consideration is within a developed business park as stipulated on items 2.1 and 2.2 with paved roads, intermediary intersections, and stormwater system, water reticulations, telecoms and electricity services.

4.3 Excavatability of Ground

The excavation characteristics of the different soil horizons encountered have been evaluated according to the Guidelines for Soil and Rock Logging in South Africa, 2nd Impression 2002.

In terms of this classification and the in-site soil/rock consistencies as profiled, the relationships given below are extracted from Section 1, Guide to Soil Profiling for Civil Engineering Purposes, Table 2 – Consistency of Granular Soils and Table 3 – Consistency of Cohesive Soils.

Consistency is a measure of the hardness or toughness of the soil and is an observation based on the effort required to dig the soil. The consistency of the soil is as tabulated below:

Table 6: Consistency of Soil

Zone / TP	Classification of Soils	Average Consistency
1-10 & A-D	Table 2 – Consistency of Granular Soils	Loose to Medium Dense

The above was also confirmed by the Materials Technologist with a geological pick during the investigation on site whereby, there was considerable resistance to penetration by sharp end of geological pick and at times very high resistance to penetration of sharp end of geological pick, requiring many blows of hand pick for excavation.

Dynamic cone penetrometers tests were performed on site to assist determine the consistencies as mentioned in the table above. The DCP results may also be related of the excavation efforts findings.

Enclosed as **Annexure E** are the DCP Test Results, and **Annexure F –** Test Pit/Soil Profiles"

4.4 Hydrological Conditions and Dewatering Needs

Hydrological Conditions (Water Seepage)

The investigations were done to an approximate depth of 3.0 meters, also dependent on excavation refusal. No water seepage or groundwater table was encountered. Seasonal fluctuations may also be expected.

Dewatering Needs

There is an existing stream flowing across the site, ponding water was also observed.

After backfilling of the stormwater pipe trenches or side drains the surrounding ground surface must be levelled out to ensure free surface run-off of storm water and prevent ponding of run-off along or near the trench as this could lead to softening of the backfill or even, in extreme conditions on steep slopes, the inducing of localised slope stability challenges by the excessive ingress of moisture into the backfilled subsoils.

4.5 Flooding and Erosion Potential

The 1:50 and 1: year flood line was not determined as it falls outside the scope of this report, but it should 100 be established as a matter of course.

4.6 Borrow Pits and Dump Site

Borrow Pits and Quarries

Information relating borrow pits, quarries and dump sites will follow with the final Geotechnical Report

4.7 Settlement

From the visual assessment and fields exploration, no problems of significant settlement or differential settlement is expected over much of the areas for the roads development as the areas are underlain by fairly dense granular materials (as opposed to loose dune sands, for example).

5. DESIGNS ANALYSIS AND RECOMMENDATIONS

5.1 Pavement Design Proposed Options

The options below tabulated (Table 7) for the proposed pavement designs below are determined from the visual inspections, soil profiling, and DCP tests during the investigation. Final analysis will follow with the final Geotechnical Report.

Table 7: Flexible Pavement Design

Area	Layers/Surface	Thickness	AASHTO classification	Material Description	Material Source
IDZ	Surface/Base	80mm	-	80mm Interlocking Block Paving	Commercial Source
	Bedding	30mm	-	Course River Sand	Commercial Source
	Sub Base	150mm	C4	Gravel Material (stabilized gravel material) compacted to 97% Mod AASHTO.	Borrow Material for Borrow Areas
	Road-bed	150 - 200mm	G7/8	Gravel Material (un-stabilized gravelly material) compacted to 93% Mod AASHTO.	In-situ Material

Table 8: Flexible Pavement Design

Area	Layers/Surface	Thickness	AASHTO classification	Material Description	Material Source
IDZ	Black Top Surface	40mm	-	Asphalt	Commercial Source
	Base	125mm	G2	Gravel Material (un-stabilized gravel material) compacted to 93% Mod AASHTO.	Commercial Source
	Sub Base	150mm	C3	Gravel Base Material (chemically stabilized) compacted to 97% Mod. AASHTO.	Commercial Source
	Road-bed	150mm	G7/8	Gravel Material (un-stabilized gravel material) compacted to 93% Mod AASHTO.	In-situ material

5.2 Stormwater Drainage Proposed

Due to the fact that the proposed development is occurring inside the premises of Bicacon Engineering Consultants, paving the entire parking area will increase run off and may result in over flooding the existing stormwater system in the business park.

Stormwater drainage system will also need to be catered for, either open or closed channels. Closed channels are constructed to drain off stormwater into them. There is a high possibility of silting up, thus a maintenance program should also be drawn up. The proposed system is also subject to the design run-offs and area stormwater master plan.

The excavation of the trenches for subsurface drains shall comply with the requirements specified. The trench shall be backfilled with approved impermeable material preferably obtained from the excavations, in layers not exceeding 100mm and compacted to 90% of modified AASHTO density, unless otherwise ordered by the Engineer.

5.3 Site Clearance and Earthworks

Site Clearance

Normally borrow areas and the portions of the site on which excavations are to be made and embankments, fences and structures are to be constructed, shall be cleared grubbed as per the Engineers specification.

Earthworks

Prior to starting any excavations, construction-bed preparations, or fill construction, the Contractor shall obtain instructions from the Engineer regarding any stripping of topsoil or any clearing and grubbing that might be required.

It is recommended that all earthworks be carried out in accordance with SANS 1200 (latest version). Excavations in the surrounding existing pavement layers shall be backfilled with approved material in horizontal layers not exceeding 150 mm in depth after compaction, to the level of design drawings.

Each layer shall be moistened or dried to the optimum moisture content for the material and be compacted to a density of not less than 90% of modified AASHTO density, except in the road prism, where the materials shall be compacted to densities of not less than 93% of modified AASHTO.

6. CONCLUSION

From the available information, visual assessment, field explorations and laboratory results, the geotechnical conditions on site are generally favourable for the proposed roads and stormwater development.

We trust that this report will assist you in the planning and design of the proposed development. Earthinv Lab appreciates the opportunity of providing our services on this project and we look forward to working with you in future projects as you may see necessary.

REFERENCES

Jennings JE et al. “Revised Guide to Soil profiling for Civil Engineering Purposes in Southern Africa” – Civil Engineer in South Africa, January 1973

Guidelines for Soil and Rock Logging in South Africa – AEG – SA section, SAICE, SAIEG – 2002

SAICE’s Guidelines for Urban Engineering Geological Investigations

TRH 4 – Structural Design of Road Pavements, CSRA, (1996)

TRH 14 – Guidelines for Road Construction Materials, CSRA, (1985)

P Paige-Green et al. “The Use and Interpretation of the Dynamic Cone Penetrometer (DCP) Test”, September 2009

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E Horak (Professor and Heads of Department of Civil and Biosystems Engineering, University of Pretoria

Annexure A
Locality Map

Annexure B
Geological Map Extract

Annexure C
Test Pit Positions

Annexure D
Site Photos

Annexure E
DCP Tests Analysis & Results

Annexure F
Test Pit/Soil Profiles

Appendix 9C

2016 Traffic Impact Assessment Report

PROPOSED JEWELLERY MANAUFACTURING PRECINCT

TRAFFIC IMPACT ASSESSMENT

FINALREPORT DRAFT 1

SEPTEMBER 2016

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ANNEXURES

1. INTRODUCTION

1.1 BACKGROUND / COMMISSION

Phunga Holdings Pty Ltd commissioned **Tsibong Consulting Engineers** to review and revise a Traffic Impact Study (TIS) for a Proposed Jewellery Manufacturing Precinct (JMP) prepared in May 2014.The proposed development is located O.R. Tambo International Airport precinct on the south western side of the R21 and Atlas Road, within Ekurhuleni Metropolitan Municipality. The proposed site has approximately 6.5 Ha (65 000m^2) area in size.

1.1.1 Ekurhuleni Municipal Council - Development Conditions

According to the study , an application for the establishment of a township to formalize the ORT IDZ has been submitted to the Kempton Park (Municipal Offices) and was approved by council decision on 23rd 2011". ***Based on this approval the following conditions were imposed by council:***

- **Township name** : ASCA Park
- **Coverage** : Not applicable
- **Height** : Not applicable
- **FAR** : Not applicable
- **Parking requirements** : Manufacturing: 1 parking / 100m2
  Office: 2 parking bays / 100m2
- **Training and Exhibition** : Local Authority confirm
- **Warehousing** : Local Authority to confirm

The proposed development will consist of the following Land Uses:

Proposed Land Use	:	**Expected Gross Leasable Area**
Manufacturing	:	11 894m^2
Conference Centre	:	1 000m^2
Warehousing	:	11 885m^2
General Offices	:	1 607m^2

This report presents the findings and makes recommendations regarding the road upgrade that may be required due to the proposed development.

2. OBJECTIVES OF THE STUDY

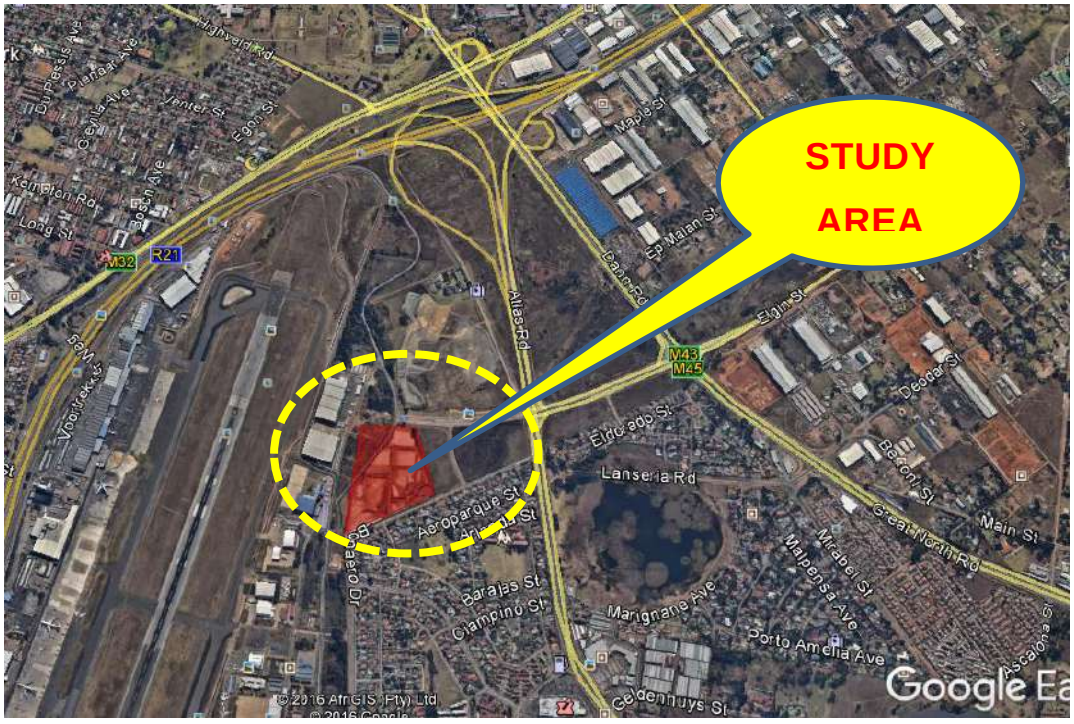
The primary study objectives are stated below:

- To review and validate the existing traffic impact study undertaken in May 2014
- The determine an impact that the proposed development on the existing surrounding road network (e.g. road capacity, intersection capacity)
- To the evaluate the impact of the re-assign the traffic on the existing and future network
- To evaluate the requirement of the new access to the development

3. STUDY AREA

The proposed study area is bounded by the R21 freeway to the north and Atlas Road to the Eastern side of the site. Bonaero Drive forms an immediate east and southern boundary to the development. Figure 1 below, depicts the site location and the surrounding roadnetwork.

Figure 1: Local Context (Study Area)



4. STUDY METHODOLOGY

In essence, this study could be regarded as a conventional traffic engineering study. The following major tasks were undertaken:

- Preliminary Evaluation of Transportation System
- Data collection and consolidation
- Traffic analysis
- Findings and Recommendations

4.1 Preliminary Evaluations of Transportation System

4.1.1 Road network consideration

4.1.1.1 Existing Road Network

The study area is surrounded by the two major roads, the R21 freeways forming the northern boundary and Atlas Road forming the Eastern boundary to the proposed development. **(Refer to Figure 2)**

R21 Freeway: Class 1 road, serving in the North / Southern directions. The road is located on the northern side of the proposed development, functions as a strategic link between the Kempton Park and major nodes / cities e.g. Pretoria and Johannesburg. R21 Freeways also provides access between O.R Tambo Airport and the Southern African countries. The highway has been improved / upgraded in recent years to increase the mobility between the Metropolitans. It carries high traffic volumes during the AM and PM peak hours.

Atlas Road (M43): A class 2 road serving traffic in the Eastern / Western direction. This is a major route linking two major towns within Ekurhuleni Metropolitan Municipality Kempton Park and Benoni. M43 is a dual carriageway with two lanes on each direction and most of the intersections along this road are signalised. It intersects with the R21 Freeway and the N12 on the northern and Southern side of the development respectively. The road carries high traffic volumes during the AM and PM peak hours.

Great North Road (M45): A class 2 road serving traffic in the Eastern / Western direction. This is a major route linking two major towns within Ekurhuleni Metropolitan Municipality Kempton Park and Benoni. M45 is a dual carriageway with two lanes on each direction and most of the intersections along this road are signalised. The road carries high traffic volumes during the AM and PM peak hours.

Bonaero Road/Elgin Street: Class 3/4 road serving traffic in the Eastern / Western direction. This is a 2-lane Municipal road intersecting with Atlas Road and Great North Road on the Eastern side on the development. It carries a reasonable amount of traffic volumes during the AM and PM peak hours.

4.1.1.2 Future Road Network

The future road network characteristics are discussed based on the future network planning acquired from previous studies in the study area and Gautrans route planner and SANRAL. **(Refer to Figure 3)**

Proposed K90 (Provincial Road): Based on the ORTIA Mater Plan 2006 the Gauteng Department of Public Transport & Works investigated three (3) alternatives for the K90 route. The three alternatives discussed in the document were recommendation(s):

- Alternative 1 – is the one which tunnels the centre of ORTIA between existing runways;
- Alternative 2 – is the one that runs along outskirts of the eastern side of the ORTIA premises;
- Alternative 3 – would be the one stopping the K90 south of the midfield terminal and north of the cargo terminal without constructing the tunnel.

NB: **Alternative 1** also talks to ACSA long and medium planning which indicate an additional passenger terminal which is needed on the south of ACSA's midfield land. Access to the midfield terminal can also be gained through the implementation of the K90 South, providing connectivity between the new midfield terminal and the N12 Freeway.

R21 Corridor Expressway: According to DPTR&W, investigation of PWV15 and Road Network at Pomona the R21 Expressway is a planned metropolitan route parallel to and east of the R21 Freeway intended to provide good accessibility to the R21

Corridor developments and connectivity to ORTIA in the south from the Tshwane Region. This proposed road provides support to the R21 Freeway.

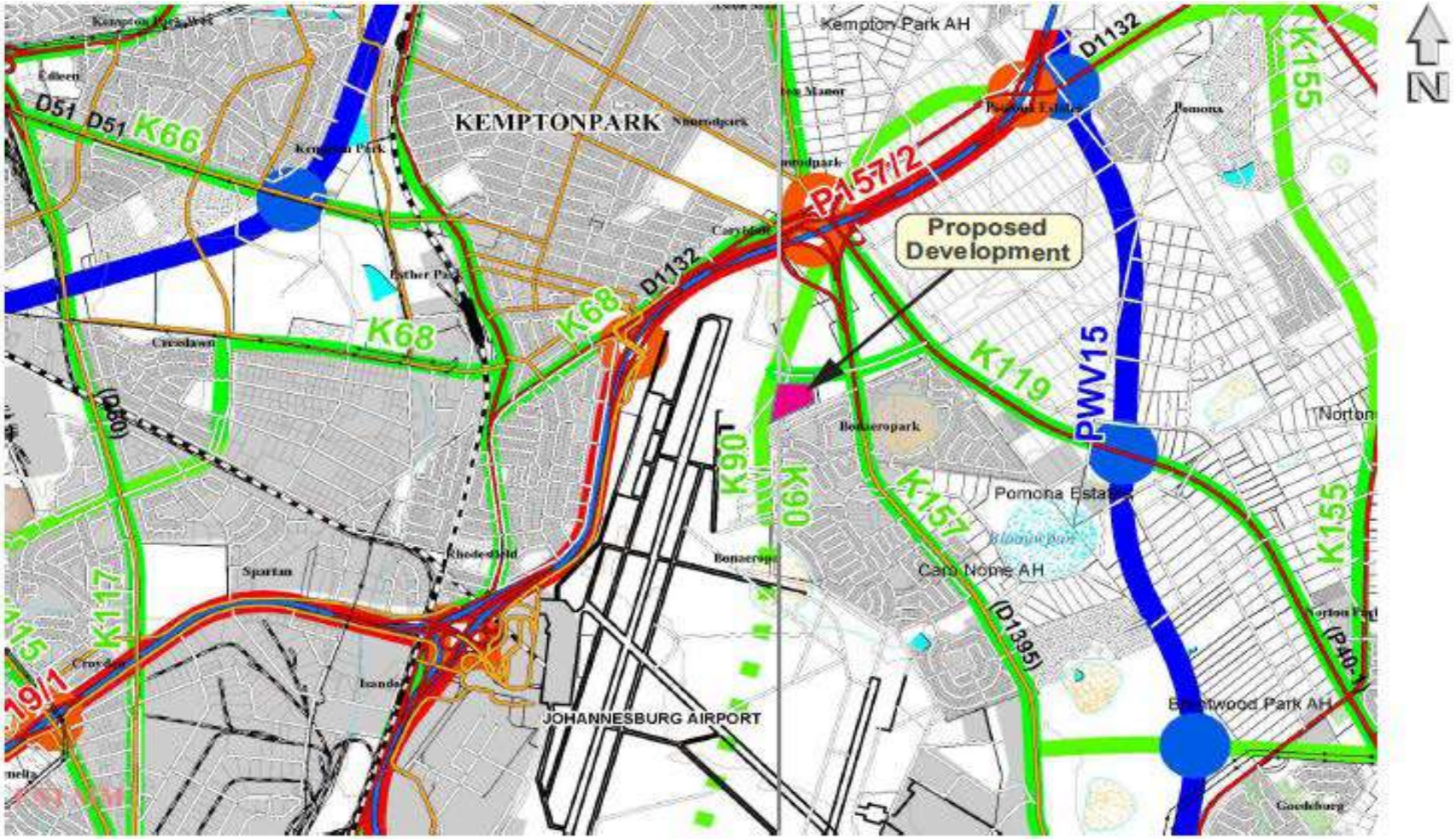
PWV3: The proposed PWV3 is expected to serve as an alternative to the N12 Freeway. This road will reduce traffic on the N12 Freeway. It will increase mobility in the eastern and western direction and will be located north of ORTIA. The proposed PWV3 will serve Gauteng's biggest regions (Tshwane, Ekurhuleni and Johannesburg) and to ensure ease of movement between the three.

PWV13: The proposed PWV 13 it will be an important link that will open up development potential within EMM. The planned route will link southern Johannesburg via M2 Freeway, Germiston and EMM Central Activity Belt to ORTIA and the R21 Freeway. The proposed road will run east / west and will be located south of the proposed development (JMP).

The guideline Road Access Management in South African, 2005 (RAM) and the Road Infrastructure Strategic Framework in South Africa, 2006 (RIFSA) will be used to evaluate the surrounding road network and the function of the current network.

Figure 2: Existing Road Network with the study area

Figure 3: Future Road Network (PWV)



4.2 Data collection and processing

The data collection entails site visits, visual inspection of the site and classified traffic counts at Five (5) critical intersections. The site visit and fieldwork (surveys) were conducted on the 30th and 31th August 2016 respectively. The traffic counts conducted Wednesday. The traffic counts were conducted during the AM (06h00-09h00) and the PM (14h00-18h00) peak periods in the standard 15min intervals. **Annexure A** provides the summary traffic counts.

The observed traffic data were captured in an MS Excel spreadsheet format. The basic analysis of the datasets was conducted providing the following information for further traffic analysis:

- Morning peak-hour volumes per approach and traffic movement at each intersection
- Peak-hour Factor (PHF)
- Percentage of heavy vehicles for each turning movement at all intersections
- Total peak-period vehicle volumes
- Vehicle volumes by vehicle type (Light and heavy vehicles)

The summary of the above analysis is provided in Table 1 and 2 below. Figures 4 depict the position of the critical intersection identified.

Table 1: Summary of intersection Control

No.	Intersection Name	Intersection Description
1	Englin Street (M43) and Link Road	Two-way stop controlled, with priority along M43
2	East: Eglin Street_Main Access Road and Service Road	Access Controlled, and priority along Link Rd
3	Link Rd and Service Road	Single stop controlled, with priority along Link Rd
4	Bidvest Unit 2 Access and Link Rd	Single stop controlled, with priority along Link Rd 2
5	Bidvest Unit 1 Access and Link Rd	Single stop controlled, with priority along Link Rd 2

Table 2: Summary of intersection analysis

No.	Intersection Name		Weekday AM Peak Hr			Weekday PM Peak Hr			
		Vol	Period	% HV	PHF	Vol	Period	% HV	PHF
1	Englin Street (M43) and Link Road	850	06:45 - 07:45	2%	0,92	622	16:00-17:00	3%	0,96
2	East: Eglin Street_Main Access Road and Service Road	285	07:15 - 08:15	2%	0,84	304	16:00-17:00	6%	0,64
3	Link Rd and Service Road	78	07:45 - 8:45	15%	0,45	72	15:45-16:45	28%	0,64
4	Bidvest Unit 2 Access and Link Rd	70	08:00 - 09:00	17%	0,17	39	15:45-16:45	51%	0,28
5	Bidvest Unit 1 Access and Link Rd	33	07:45 - 08:45	15%	0,52	16	15:45-16:45	44%	0,57

Figures 4 : Critical Intersection within the study area

4.3 Traffic analysis

The traffic analysis will entail the establishment and analysis of the following traffic flow scenarios:

- ***Scenario 0**: Base Year Status Quo scenario (**2016**) – the current traffic flow scenario as observed in the traffic surveys*
- **Scenario 1**: Base Development Completion scenario – the traffic flow scenario in a year projected for the proposed development completion. In this case, the projected development completion is (**2017**) and therefore a traffic growth of 3% per annum was applied to the Scenario 0 traffic flows to project the traffic flow in this scenario.
- **Scenario 2:** Base Development Scenario (**2017**) – the traffic flow defined in Scenario 1 adjusted for the development-related traffic.
- **Scenario 3**: Future 5-year Base scenario (**2022**) – traffic growth (3% per annum) equivalent to five years applied to the traffic flow in Scenario 2
- ***Scenario 4**: Future 5-year Development scenario (**2022**) – the traffic flow defined in Scenario 3 adjusted for the development-related traffic*

The traffic analysis will follow the conventional traffic modelling process consisting of the Trip Generation (Modal Split), Trip Distribution and Trip Assignment tasks and then entailed the analysis of the current and projected traffic conditions at the intersections as defined in the above scenarios.

4.4 Trip Generation

The traffic generated for the development was based on the trip generation rates provided by the *"TMH 17 Volume 1, South African Trip Data Manual (Version 1, 2012)".* Relevant directional split of outbound and inbound in the AM peak Hour and vice versa during the PM peak hour were applied. According to the currently trips rates of applied, the development is expected to generate **939 vph, with** a 75% and 25% directional split. This translates to **869 vph and 70 vph**, Table 3 provides the summary of the JMP peak hour trip generation calculations.

Table 3: Summary of Trip Generations Calculations for the JMP

Land Use Type	Size	Unit	Trip Rate	Vehicle Occupation	Directional Split						Total			Total
					AM Peak		PM Peak		AM Peak			PM Peak		
					In	Out	In	Out	In	Out		In	Out	
Manufacturing	11 894	100msq/GLA	0.9	1.9	75	25	25	75	80	27	107	27	80	107
Conference Centre	1 000	delegates	0.7	1.5	100			100	700	0	700	0	700	700
Warehousing	11 885	100msq/GLA	0.8	1.8	60	40	40	60	57	38	95	38	57	95
General Offices	1 607	100msq/GLA	2.3		85	15	15	85	31	6	37	6	31	37
TOTAL									869	70	939	70	869	939

Source: Mpotseng Infrastructure- Traffic Impact Study for the Proposed Jewellery Manufacturing Precinct (JMP)

5. TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The trip distribution followed the analogy method; this took into account the existing traffic counts to determine the travel patterns.

The trip re-assignment was carried out following the trip distribution patterns and taking into consideration specific characteristics of the traffic scenarios as defined earlier in the report e.g. positions of the proposed access points to the development sites.

It is expected that **30% new trips (290vph)** will use the new A**ccess 3** via the ACSA Main Gate. The remaining 70**% new trips (649vph)** will be split between **Accesses 1 and 2**. Given the type of development (Jewel Manufacturing) and the observed traffic formation in the area, it is estimated that **10%** of the new development traffic will comprise heavy vehicle which is **90 trucks / delivery vehicles.** It is also expected that **20%** of the of the light-delivery vehicles will use the New Access 3 via ACSA Main Gate. **Annexure B** of this report provides the Trip Assignment and Development Scenarios.

6. PARKING REQUIREMENT

The parking - related assessment was undertaken to establish the minimum number of parking spaces which should be provided within the proposed development. Provision of parking on the site should be according to conditions by Ekurhuleni Metropolitan Municipality contain under **section 1.1.1** of this report

7. CAPACITY ANALYSIS OF INTERSECTIONS

The existing peak hour traffic volumes were used to determine the (LOS) at which the intersection is presently operating. The capacity analysis were be done according to the method as contained in the aaSIDRA 5 Capacity Analysis Software Package, which defines the operation of an intersection in terms of LOS.

The LOS of a traffic light controlled intersection is defined in terms of average total vehicle delay (not average stop delay), where delay is a measure of driver discomfort, frustration, fuel consumption and lost travel time. However, for an unsignalised intersection the average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation.

The intersection analysis will be conducted using the SIDRA software and the operating conditions were evaluated on the basis of the LOS and other relevant parameters e.g. average vehicle delay, volume-capacity ratio, etc.

Site 1: Eglin Street (M43) and Link Road

Summary of SIDRA analysis

Approach	Without Development and without Improvement								With Development and With Improvements (Signalised)							
	Scenario 0_ 2016 AM				Scenario 0_ 2016 PM				Scenario 4_ 2022 AM				Scenario 4_ 2022 PM			
	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS
South: Link Road_S	466	0,898	36,4	LOS E	122	0,248	16,5	LOS C	634	0,540	17,9	LOS B	837	0,702	19,2	LOS B
East: Eglin Street_E	420	0,098	3,4	LOS B	272	0,126	6,6	LOS B	1450	0,743	11,2	LOS B	411	0,278	9,3	LOS A
North: Link Road_N	3	0,005	13,7	LOS B	3	0,005	14,3	LOS C	3	0,007	13,5	LOS B	3	0,006	12,7	LOS B
West: Eglin_ ACSA Main Gate	42	0,016	3,7	LOS A	258	0,076	1,5	LOS A	89	0,099	11,8	LOS B	630	0,665	13,2	LOS B
All Vehicles	**932**	**0,898**	**20**	**NA**	**655**	**0,248**	**6,5**	**NA**	**2176**	**0,743**	**13,2**	**LOS B**	**1882**	**0,702**	**15**	**LOS B**

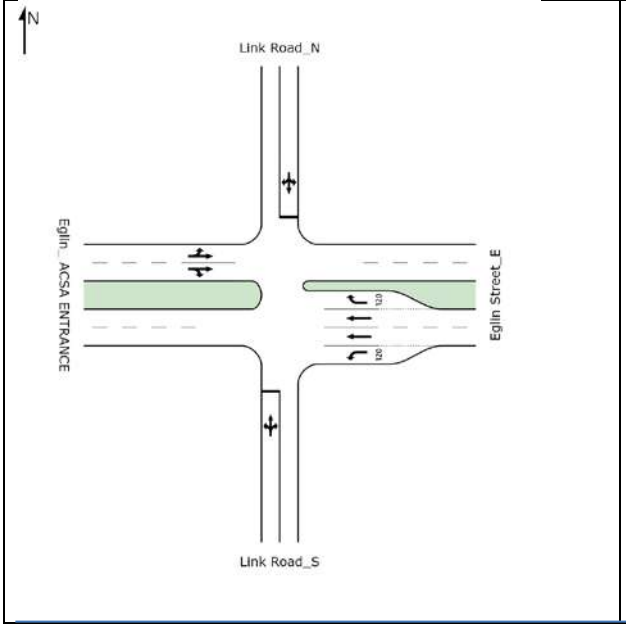
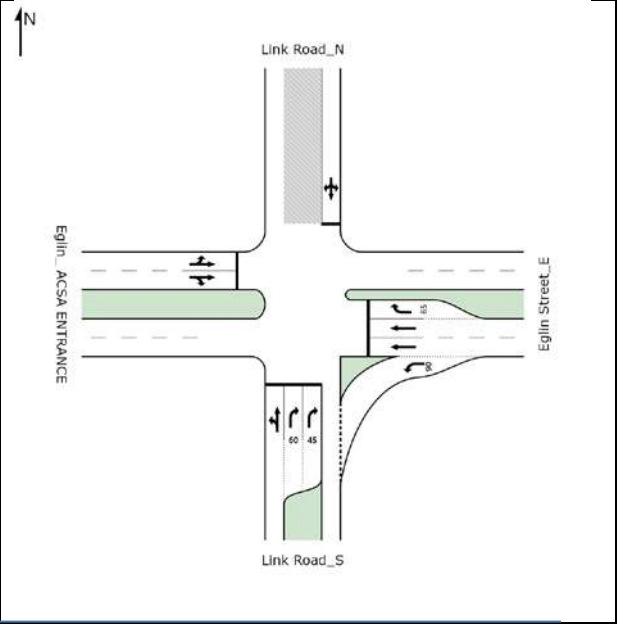
Interpretation

This is currently a two-way stop controlled intersection comprising of Eglin Street (M43) and Bonaero Link Street. According to the Sidra capacity analyses, the critical stop approach at this intersection, the right-turn movement from Link Road (Bonaero Street) operates at a poor LoS E in AM peaks in the current. For this worst case scenario, the right-turning movement performs extremely poor due to the development traffic and traffic growth.

Recommendations

- Change the control of the intersection to a traffic signal.
- Provide an exclusive slip lane on the Eastern approach.
- Provide two right turning lanes on the Southern approach.

The proposed layout of the intersection is shown in the figure 5 below;

Current Layout (2017)	Proposed Layout_ Required Upgrades
	

Site 2: Eglin Street (M43) and Service Road

Summary of SIDRA analysis

Approach	Without Development and without Improvement								With Development and Without Improvements							
	Scenario 0_ 2016 AM				Scenario 0_ 2016 PM				Scenario 4_ 2022 AM				Scenario 4_ 2022 PM			
	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS
South: Service Road_S	35	0,702	7,6	LOS A	266	0,702	8,2	LOS A	26	0,702	7,9	LOS A	322	0,702	10,3	LOS B
East: Eglin Street_Main Access Road	289	0,187	10,9	LOS B	62	0,043	12	LOS B	623	0,367	11,3	LOS B	92	0,167	16,2	LOS C
North: Link Road_N	15	0,008	7,6	LOS A	36	0,019	8	LOS A	73	0,040	8,1	LOS A	360	0,196	8,2	LOS A
All Vehicles	**339**	**0,187**	**10,4**	**NA**	**363**	**0,190**	**8,8**	**NA**	**721**	**0,367**	**10,9**	**NA**	**773**	**0,325**	**10**	**NA**

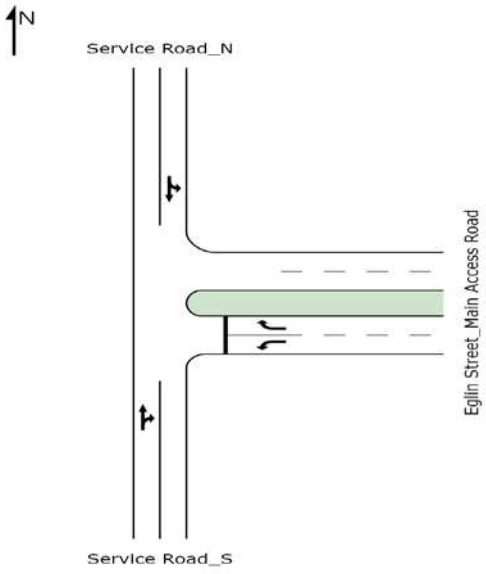
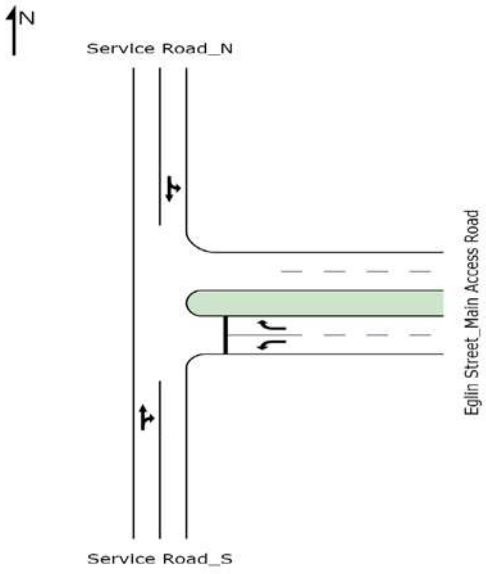
Interpretation

This is currently a T-Junction stop controlled intersection comprising of Eglin Street (M43) towards Main Gate to ACSA and internal Service Road. According to the Sidra capacity analyses, the intersection is operating a high LoS for both AM and PM peaks in the current and the future base year.

Recommendations

- No Geometric Upgrades required at this stage

The proposed layout of the intersection is shown in the figure 6 below;

Current Layout (2017)	Proposed Layout_ Required Upgrades
	

Site 3 : Link Rd and Service Road

Summary of SIDRA analysis

Approach	Without Development and without Improvement								With Development and Without Improvements							
	Scenario 0_ 2016 AM				Scenario 0_ 2016 PM				Scenario 4_ 2022 AM				Scenario 4_ 2022 PM			
	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS
South: Link Road_S	31	0,702	12,3	LOS B	58	0,702	12,5	LOS B	120	0,702	16,9	LOS C	470	0,702	18,3	LOS C
East: Service Road_E	127	0,080	8,5	LOS A	39	0,027	8,6	LOS A	567	0,356	8,6	LOS A	92	0,063	8,8	LOS A
North: Link Road_N	20	0,014	3,6	LOS A	14	0,009	1,3	LOS A	24	0,025	7,8	LOS B	17	0,012	1,4	LOS A
All Vehicles	**178**	**0,080**	**8,6**	**NA**	**111**	**0,076**	**9,7**	**NA**	**711**	**0,356**	**10**	**NA**	**580**	**0,726**	**16,3**	**NA**

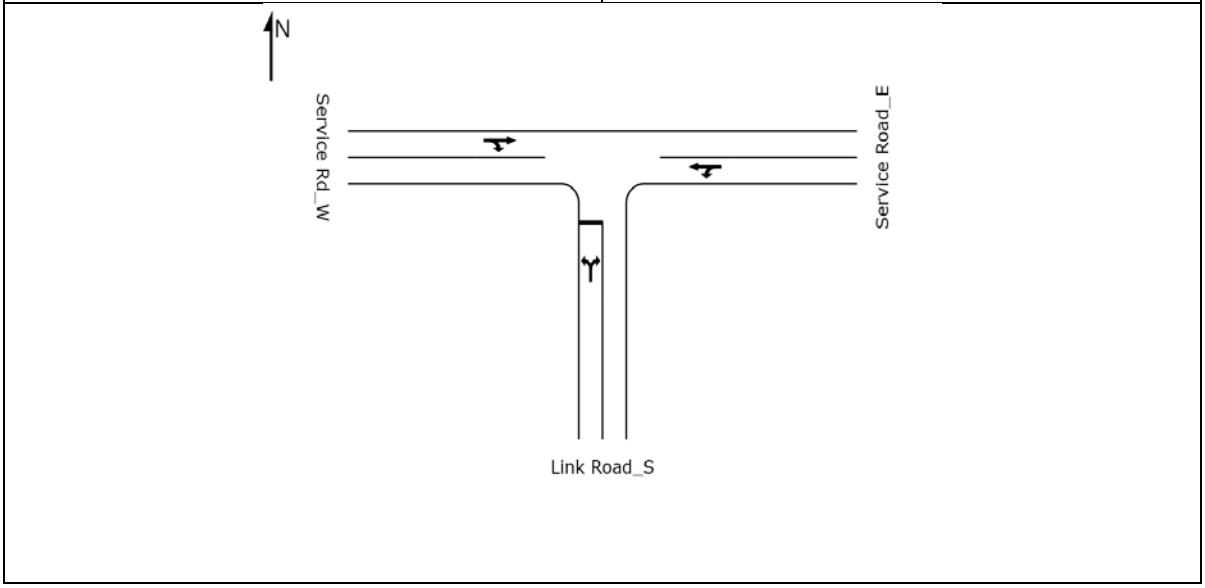
Interpretation

This is currently a T-Junction stop controlled, with priority along the Service Road. The intersection comprises of Links Road (Bidvest) and internal Service Road. According to the Sidra capacity analyses, the intersection is operating a high LoS for both AM and PM peaks in the current and the future base year.

Recommendations

- No Geometric Upgrades required at this stage

The proposed layout of the intersection is shown in the figure 7 below;

Current Layout (2017)	Proposed Layout_ Required Upgrades
	

Site 4 : Bidvest Unit 2 Access and Link Rd

Summary of SIDRA analysis

Approach	Without Development and without Improvement								With Development and Without Improvements							
	Scenario 0_ 2016 AM				Scenario 0_ 2016 PM				Scenario 4_ 2022 AM				Scenario 4_ 2022 PM			
	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS
South: Link Rd_S	5	0,702	12,4	LOS B	39	0,702	13,5	LOS B	90	0,702	13,1	LOS B	522	0,702	13,7	LOS B
North: Link Rd_N	133	0,082	4,1	LOS A	53	0,035	6,3	LOS A	602	0,364	1,1	LOS A	139	0,091	2,4	LOS A
West: Bidvest Unit 2 Access	33	0,020	11,7	LOS B	37	0,021	12,3	LOS B	40	0,024	12,4	LOS D	45	0,025	12,5	LOS B
All Vehicles	**171**	**0,082**	**5,8**	**NA**	**129**	**0,035**	**10,2**	**NA**	**733**	**0,364**	**3,2**	**NA**	**706**	**0,334**	**11,4**	**NA**

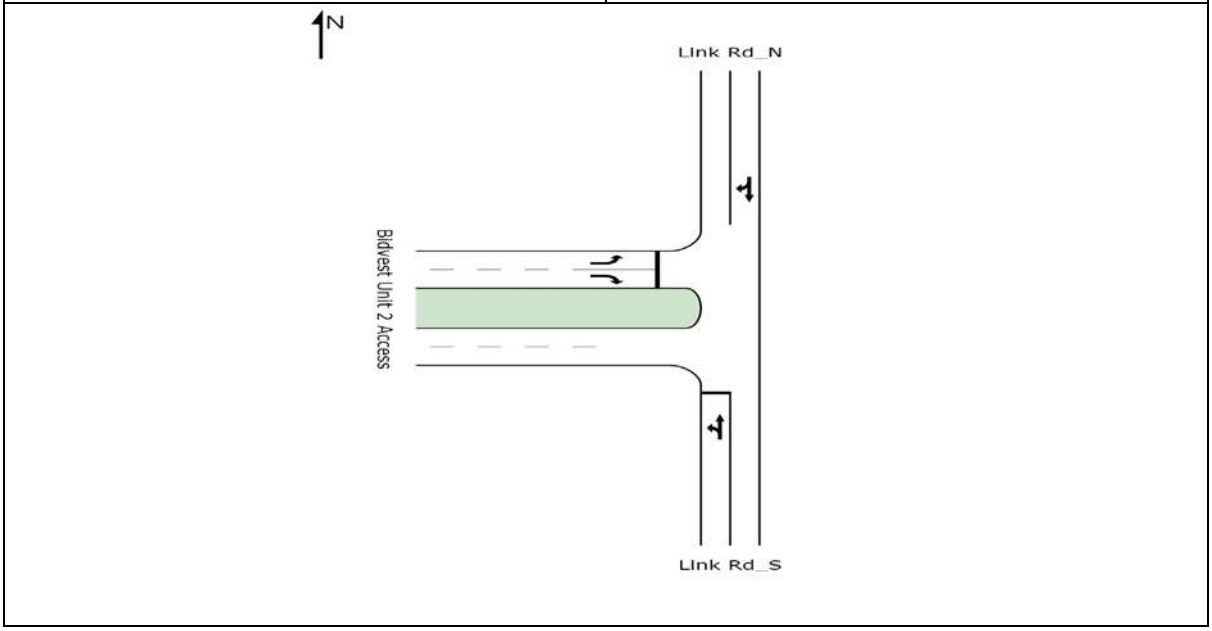
Interpretation

This is currently a T-Junction stop controlled, with priority along the Link Road. The intersection comprises of Links Road and Bidvest (unit 2) Access Road. According to the Sidra capacity analyses, the intersection is operating a high LoS for both AM and PM peaks in the current and the future base year.

Recommendations

- No Geometric Upgrades required at this stage

The proposed layout of the intersection is shown in the figure 8 below;

Current Layout (2017)	Proposed Layout_ Required Upgrades
	

Site 5 : Bidvest Unit 1 Access and Link Rd

Summary of SIDRA analysis

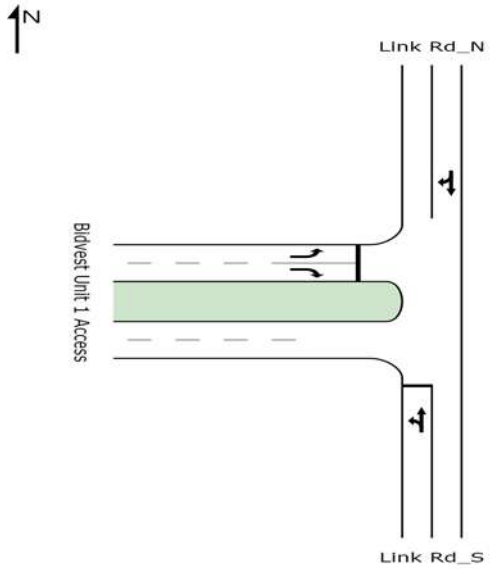
Approach	Without Development and without Improvement								With Development and Without Improvements							
	Scenario 0_ 2016 AM				Scenario 0_ 2016 PM				Scenario 4_ 2022 AM				Scenario 4_ 2022 PM			
	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS	Veh/hr	v/c	Delay (S)	LOS
South: Link Rd_S	4	0,000	12,2	LOS B	4	0,000	13,6	LOS B	62	0,000	12,9	LOS B	467	0,000	14,2	LOS B
North: Link Rd_N	54	0,034	7,4	LOS A	14	0,010	7,8	LOS A	425	0,254	1,1	LOS A	104	0,073	1,2	LOS A
West: Bidvest Unit 1 Access	12	0,006	11,6	LOS B	16	0,010	13	LOS B	13	0,007	12,4	LOS C	33	0,029	14,1	LOS C
All Vehicles	**69**	**0,034**	**8,3**	**NA**	**33**	**0,010**	**10,9**	**NA**	**500**	**0,254**	**2,9**	**NA**	**604**	**0,325**	**12**	**NA**

Interpretation

This is currently a T-Junction stop controlled, with priority along the Link Road. The intersection comprises of Links Road and Bidvest (unit 1) Access Road. According to the Sidra capacity analyses, the intersection is operating a high LoS for both AM and PM peaks in the current and the future base year.

Recommendations

The proposed layout of the intersection is shown in the figure 9 below;

Current Layout (2017)	Proposed Layout_ Required Upgrades
	

8. ACCESS CONSIDERATION

8.1.1 General Access Consideration

Accessibility is one of the key factors to be considered in the approval of the development. Accessibility of both vehicular and pedestrians were assessed to unsure minimum interruptions to the prevailing travel patterns. The access evaluation was based on the "*TRH 26South African Road Classification and Access Management Manual, August 2012*".

The proposed development has three accesses, two (2) located Bonearo Drive (vehicles and Delivery) and One (1) along Service Road (ACSA Main Gate).

Access 1: Bonaero Dr and Cote D - **Staff and Visitors Access**
Access 2: Bonaero Dr (100m west of Access 1) – **Delivery Vehicle only**
Access 3: Service Road (South of ACSA Main Gate) - **Staff and Visitors Access**

Figure 10: Proposed Position of Access to Site

The analysis for **Access 1 and Access 2** recommendations should be maintained as per the traffic study done in 2014. The analysis for Access 3 is as contained under section 7 of this report (Site 2: Eglin Street Main Access Road and Service Road).

9. PUBLIC TRANSPORT CONSIDERATION

In terms of the National Land Transport Act, 2009, it is also required to carry out public transport assessment for all new developments.

The assessment of public transport needed to address aspects such as the number of new employment opportunities that will be created by the development, expected travelling patterns of these users, as well as the impact it may have on the existing public transport network.

9.1 Proposed Public Transport Infrastructure

It is expected that some of the employees/patrons of the proposed development will also rely on public transport and walking as an alternative modes of transport to that of a private vehicles.

Bonaero Road is foreseen to be a public transport link to the proposed site. Pedestrian sidewalk from the public transport lay-bays to the proposed development is proposed. A pedestrian gate is also proposed to shorten the walking distance from the drop- off area.

10. CONCLUSION AND RECOMMENDATIONS

10.1 Conclusion

Phunga Holdings Pty Ltd commissioned Tsibong Consulting Engineers to review and revise a Traffic Impact Study (TIS) for a Proposed Jewellery Manufacturing Precinct (JMP) prepared in May 2014.This traffic study assessed the background and future background development traffic volumes.

The objective of this report was to assess the traffic impact and the access requirements of the proposed Noordgesis Primary School Re-development and the following key conclusions and recommendations were made:

1. The proposed JMP development will consist of 11 894 m² Manufacturing, 1 000 m² Conference Centre, 11 885 m² Warehousing and 1 607 m² General Offices GLA.

2. A total of 939 new trips will be generated by the proposed development during both the AM (In: 869 and Out: 70) and PM (In: 70 and Out: 869) weekday peak hours.

The following three accesses are proposed:

3. **Access 1 (Main Staff):** The main access is proposed along Bonaero Drive to form a fourth leg where Bonaero Drive intersects with Cote D Azur Avenue. A traffic circle is proposed at this intersection.

4. **Access 2: Delivery access**: is proposed along Bonaero Drive approximately 30m west of Access 1.

5. ***Access 3: Visitors and Staff: proposed access located 60m south of the ACSA Main Gate on the Service Road.***

6. Public transport facilities are proposed along Bonaero Road as well as pedestrian sidewalk.

7. The recommendations and proposed road upgrades as contained in section 7 of this report should be implemented to accommodate future traffic and the expected development traffic.

8. The implementation of K90 will be important to reduce pressure on the future road network (Atlas Road, Great North Road, R21 Freeway towards the ORTIA and other major roads within the vicinity).

10.2 RECOMMENDATIONS

Based on the conclusions of the study, if the road upgrades proposed in this development are implemented, the surrounding road network will accommodate the development traffic at an acceptable LOS, and therefore it is recommended that the development be approved from a traffic point of view.

No.	Intersection Name	Intersection Description	Required Upgrades
1	**Englin Street and Link Road**	**Two-way stop controlled, with priority along Eglin Street**	• **Provide an exclusive slip lane on the Eastern approach.** • **Provide two right turning lanes on the Southern approach.** • **Change the control of the intersection to a traffic signal.**
2	Eglin Street_Main Access Road and Service Road	Access Controlled, and priority along Link Rd	No geometric upgrade required
3	Link Rd and Service Road	Single stop controlled, with priority along Link Rd	No geometric upgrade required
4	Bidvest Unit 2 Access and Link Rd	Single stop controlled, with priority along Link Rd 2	No geometric upgrade required
5	Bidvest Unit 1 Access and Link Rd	Single stop controlled, with priority along Link Rd 2	No geometric upgrade required

11. REFERENCES

1. TMH 16 Volume 1 South African Traffic Impact Study Assessment Manual Rev1.0, August 2012, COTO
2. TMH 16 Volume 2 South African Traffic Impact Study Assessment Requirements Manual Rev1.01, February 2014, COTO
3. TRH 17 South African Road Trip Data Manual Version 1.01, September 2013, COTO
4. Wepener DA, Engelbrecht RJ and Kruger P; **Guideline for Traffic Impact Studies; PR93/635; Department of Transport; Pretoria (1995)**
5. Stander HJ, Kruger P, Coetzee JL, and Lambrecht TJ; **South African Trip Generation Rate; 2nd Edition; Report Number PR92/228; Department of Transport; Directorate: Transport Economic Analysis; Pretoria (March 1994)**
6. Australian Research Board Ltd; **aaSIDRA Version 4.1**; Victoria; Australia; 2000-2010
7. National Department of Transport; **South African Road Traffic Signs Manual (Volume 3): Traffic Signal Design; date April 2001**
8. Institute of Transportation, Transportation **and Traffic Engineering Handbook; 2nd Edition.**
9. Committee of Urban Transport Officials (CUTA); **Geometric Design of Urban Local Residential Street (Draft UTG 7); Date 1989.**
10. **South African Road Access Management guidelines**

ANNEXURE A

TRAFFIC COUNTS

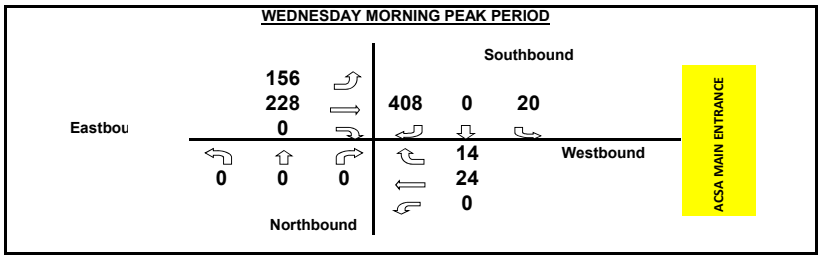
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS - SITE 1

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Englin Street (M43) and Link Road
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEDNESDAY MORNING PEAK PERIOD

Starting Time	Bonearo Dr Northbound				ACSA Access Eastbound				Bonearo Dr Southbound				ACSA Access Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
5:45	0	0	0	0	0	0	0	0	0	0	14	14	0	1	4	5	**19**	
6:00	0	0	0	0	10	19	0	29	1	0	31	32	0	6	0	6	**67**	
6:15	0	0	0	0	16	32	0	48	4	0	31	35	0	5	1	6	**89**	175
6:30	0	0	0	0	20	66	0	86	3	0	77	80	0	10	1	11	**177**	352
6:45	0	0	0	0	26	42	0	68	2	0	125	127	0	13	0	13	**208**	541
7:00	0	0	0	0	38	48	0	86	6	0	113	119	0	3	3	6	**211**	685
7:15	0	0	0	0	42	61	0	103	4	0	80	84	0	4	8	12	**199**	795
7:30	0	0	0	0	50	77	0	127	8	0	90	98	0	4	3	7	**232**	850
7:45	0	0	0	0	47	70	0	117	6	0	54	60	0	0	0	0	**177**	819
8:00	0	0	0	0	36	65	0	101	2	0	38	40	0	1	1	2	**143**	751
8:15	0	0	0	0	27	44	0	71	0	0	27	27	0	3	4	7	**105**	657
8:30	0	0	0	0	12	39	0	51	3	0	36	39	0	3	0	3	**93**	518
8:45	0	0	0	0	8	29	0	37	0	0	11	11	0	8	1	9	**57**	398
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	255
Total	0	0	0	0	332	592	0	924	39	0	727	766	0	61	26	87	1777	
Peak Hour	**0**	**0**	**0**	**0**	**156**	**228**	**0**	**384**	**20**	**0**	**408**	**428**	**0**	**24**	**14**	**38**	**850**	
Peak 15 min	0	0	0	0	50	77	0	127	8	0	125	127	0	13	8	13	232	
PHF				#DIV/0!				0,76				0,84				0,73	0,92	

Intersection Summary

Peak Hour:	**06:45 - 07:45**
Peak Hour Volume:	**850**
Peak 15 minute Volume:	**232**
PHF	**0,92**
% HV	**2%**



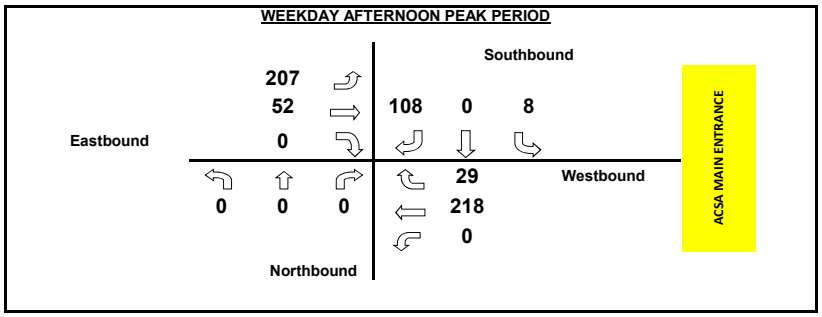
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Englin Street (M43) and Link Road
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEEKDAY AFTERNOON PEAK PERIOD

Starting Time	Bonearo Dr Northbound				ACSA Access Eastbound				Bonearo Dr Southbound				ACSA Access Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	0	0	0	16	19	0	35	0	0	16	16	0	26	5	31	82	
15:15	0	0	0	0	23	24	0	47	1	0	7	8	0	6	0	6	61	
15:30	0	0	0	0	14	16	0	30	1	0	12	13	0	35	2	37	80	
15:45	0	0	0	0	25	17	0	42	0	0	18	18	0	56	10	66	126	349
16:00	0	0	0	0	42	15	0	57	3	0	23	26	0	55	7	62	145	412
16:15	0	0	0	0	48	9	0	57	0	0	28	28	0	67	8	75	160	511
16:30	0	0	0	0	53	23	0	76	4	0	39	43	0	35	8	43	162	593
16:45	0	0	0	0	64	5	0	69	1	0	18	19	0	61	6	67	155	622
17:00	0	0	0	0	68	5	0	73	1	0	19	20	0	22	4	26	119	596
17:15	0	0	0	0	46	2	0	48	1	0	17	18	0	18	3	21	87	523
17:30	0	0	0	0	52	5	0	57	3	0	19	22	0	8	2	10	89	450
17:45	0	0	0	0	37	1	0	38	0	0	0	0	0	0	0	0	38	333
Total	0	0	0	0	488	141	0	629	15	0	216	231	0	389	55	444	1304	
Peak Hour	**0**	**0**	**0**	**0**	**207**	**52**	**0**	**259**	**8**	**0**	**108**	**116**	**0**	**218**	**29**	**247**	**622**	
Peak 15 min	0	0	0	0	64	23	0	76	4	0	39	43	0	67	8	75	162	
PHF				#DIV/0!				0,85				0,67				0,82	**0,96**	

Intersection Summary

Peak Hour:	**16:00-17:00**
Peak Hour Volume:	**622**
Peak 15 minute Volume:	**162**
PHF	**0,96**
% HV	**3%**



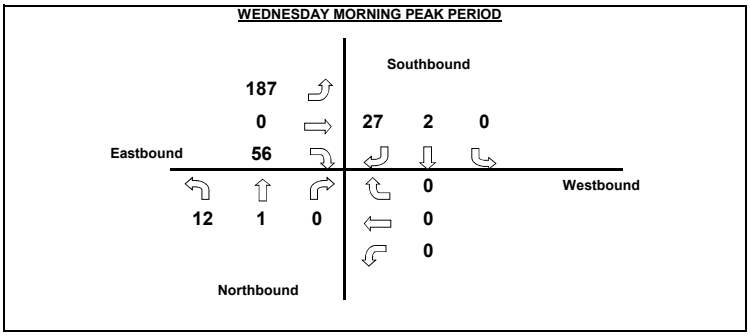
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS - SITE 2

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: East: Eglin Street_Main Access Road and Service Road
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEDNESDAY MORNING PEAK PERIOD

Starting Time	ACSA Access Northbound				ACSA Access Eastbound				ACSA Access Southbound				ACSA Access Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
6:00	0	0	0	0	17	0	0	17	0	0	10	10	0	0	0	0	**27**	
6:15	2	0	0	2	33	0	3	36	0	0	2	2	0	0	0	0	**40**	67
6:30	1	0	0	1	50	0	4	54	0	1	7	8	0	0	0	0	**63**	130
6:45	1	0	0	1	41	0	3	44	0	0	6	6	0	0	0	0	**51**	181
7:00	0	0	0	0	22	0	8	30	0	0	6	6	0	0	0	0	**36**	190
7:15	1	0	0	1	47	0	7	54	0	0	4	4	0	0	0	0	**59**	209
7:30	0	0	0	0	44	0	7	51	0	1	7	8	0	0	0	0	**59**	205
7:45	6	0	0	6	49	0	24	73	0	0	6	6	0	0	0	0	**85**	239
8:00	5	1	0	6	47	0	18	65	0	1	10	11	0	0	0	0	**82**	285
8:15	5	0	0	5	25	0	3	28	0	1	13	14	0	0	0	0	**47**	273
8:30	4	0	0	4	33	0	14	47	0	0	8	8	0	0	0	0	**59**	273
8:45	3	0	0	3	23	0	5	28	0	0	10	10	0	0	0	0	**41**	229
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	147
Total	28	1	0	29	431	0	96	527	0	4	89	93	0	0	0	0	649	
Peak Hour	**12**	**1**	**0**	**13**	**187**	**0**	**56**	**243**	**0**	**2**	**27**	**29**	**0**	**0**	**0**	**0**	**285**	
Peak 15 min	6	1	0	6	49	0	24	73	0	1	10	11	0	0	0	0	85	
PHF				0,54				0,83				0,66				#DIV/0!	0,84	

Intersection Summary

Peak Hour:	**07:15 - 08:15**
Peak Hour Volume:	**285**
Peak 15 minute Volume:	**85**
PHF	**0,84**
% HV	**2%**



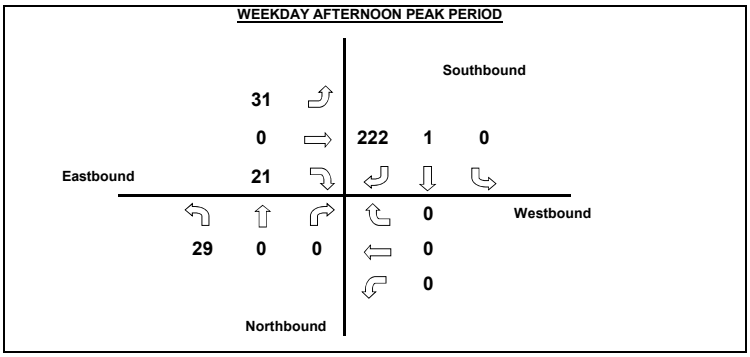
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: East: Eglin Street_Main Access Road and Service Road
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEEKDAY AFTERNOON PEAK PERIOD

Starting Time	ACSA Access Northbound				ACSA Access Eastbound				ACSA Access Southbound				ACSA Access Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	4	1	0	5	17	0	11	28	0	1	43	44	0	0	0	0	77	
15:15	4	0	0	4	4	0	0	4	0	0	12	12	0	0	0	0	20	
15:30	11	0	0	11	12	0	4	16	0	0	29	29	0	0	0	0	56	
15:45	2	0	0	2	10	0	5	15	0	0	38	38	0	0	0	0	55	208
16:00	8	0	0	8	8	0	7	15	0	0	95	95	0	0	0	0	118	249
16:15	5	0	0	5	4	0	7	11	0	1	39	40	0	0	0	0	56	285
16:30	15	0	0	15	8	0	4	12	0	0	50	50	0	0	0	0	77	306
16:45	1	0	0	1	11	0	3	14	0	0	38	38	0	0	0	0	53	304
17:00	5	0	0	5	10	0	3	13	0	0	16	16	0	0	0	0	34	220
17:15	5	0	0	5	6	0	4	10	0	0	29	29	0	0	0	0	44	208
17:30	3	0	0	3	5	0	2	7	0	2	8	10	0	0	0	0	20	151
17:45	3	0	0	3	4	0	3	7	0	0	11	11	0	0	0	0	21	119
Total	66	1	0	67	99	0	53	152	0	4	408	412	0	0	0	0	631	
Peak Hour	**29**	**0**	**0**	**29**	**31**	**0**	**21**	**52**	**0**	**1**	**222**	**223**	**0**	**0**	**0**	**0**	**304**	
Peak 15 min	15	0	0	15	11	0	7	15	0	1	95	95	0	0	0	0	**118**	
PHF				0,48				0,87				0,59				#DIV/0!	**0,64**	

Intersection Summary

Peak Hour:	**16:00-17:00**
Peak Hour Volume:	**304**
Peak 15 minute Volume:	**118**
PHF	**0,64**
% HV	**6%**



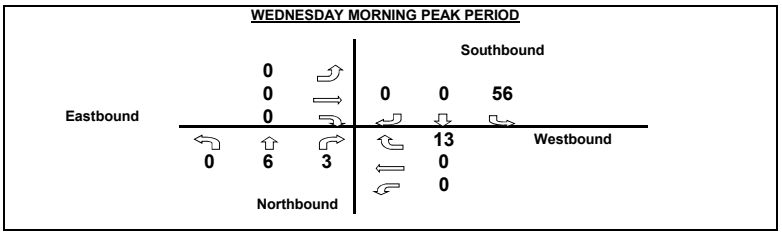
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS - SITE 3

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Link Rd and Service Road
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEDNESDAY MORNING PEAK PERIOD

Starting Time	Main Road Northbound				Access 1 n 2 acceess Eastbound				#REF! Southbound				Access 1 n 2 acceess Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
6:15	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	**2**	2
6:30	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	**4**	6
6:45	0	1	0	1	0	0	0	0	2	1	0	3	0	0	0	0	**4**	10
7:00	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	**4**	14
7:15	0	0	0	0	0	0	0	0	5	1	0	6	0	0	0	0	**6**	18
7:30	0	1	0	1	0	0	0	0	3	1	0	4	0	0	0	0	**5**	19
7:45	0	1	1	2	0	0	0	0	39	0	0	39	0	0	2	2	**43**	58
8:00	0	3	0	3	0	0	0	0	6	0	0	6	0	0	6	6	**15**	69
8:15	0	2	2	4	0	0	0	0	0	0	0	0	0	0	3	3	**7**	70
8:30	0	0	0	0	0	0	0	0	11	0	0	11	0	0	2	2	**13**	78
8:45	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**2**	37
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	22
Total	0	9	5	14	0	0	0	0	69	9	0	78	0	0	13	13	105	
Peak Hour	**0**	**6**	**3**	**9**	**0**	**0**	**0**	**0**	**56**	**0**	**0**	**56**	**0**	**0**	**13**	**13**	**78**	
Peak 15 min	0	3	2	4	0	0	0	0	39	0	0	39	0	0	6	6	43	
PHF				0,56				#DIV/0!				0,36				0,54	0,45	

Intersection Summary

Peak Hour:	**07:45 - 8:45**
Peak Hour Volume:	**78**
Peak 15 minute Volume:	**43**
PHF	**0,45**
% HV	**15%**



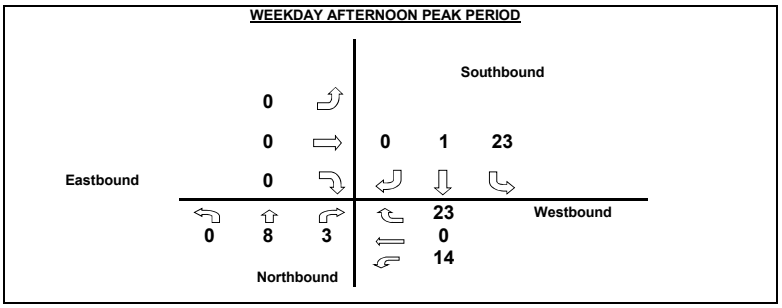
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Link Rd and Service Road
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEEKDAY AFTERNOON PEAK PERIOD

Starting Time	Main Road Northbound				Access 1 n 2 acceess Eastbound				#REF! Southbound				Access 1 n 2 acceess Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	1	0	1	0	0	0	0	6	3	0	9	0	0	0	0	10	
15:15	0	0	1	1	0	0	0	0	5	0	0	5	0	0	0	0	6	
15:30	0	0	1	1	0	0	0	0	3	1	0	4	0	0	0	0	5	
15:45	0	1	0	1	0	0	0	0	2	1	0	3	2	0	3	5	9	30
16:00	0	3	2	5	0	0	0	0	8	0	0	8	1	0	2	3	16	36
16:15	0	2	1	3	0	0	0	0	6	0	0	6	4	0	6	10	19	49
16:30	0	2	0	2	0	0	0	0	7	0	0	7	7	0	12	19	28	72
16:45	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3	66
17:00	0	5	0	5	0	0	0	0	2	1	0	3	0	0	0	0	8	58
17:15	0	0	0	0	0	0	0	0	5	2	0	7	0	0	0	0	7	46
17:30	0	0	0	0	0	0	0	0	4	1	0	5	0	0	0	0	5	23
17:45	0	1	0	1	0	0	0	0	2	0	0	2	0	0	0	0	3	23
Total	0	17	5	22	0	0	0	0	51	9	0	60	14	0	23	37	**119**	
Peak Hour	**0**	**8**	**3**	**11**	**0**	**0**	**0**	**0**	**23**	**1**	**0**	**24**	**14**	**0**	**23**	**37**	**72**	
Peak 15 min	0	3	2	5	0	0	0	0	8	1	0	8	7	0	12	19	**28**	
PHF				0,55				#DIV/0!				0,75				0,49	**0,64**	

Intersection Summary

Peak Hour:	**15:45-16:45**
Peak Hour Volume:	**72**
Peak 15 minute Volume:	**28**
PHF	**0,64**
% HV	**28%**



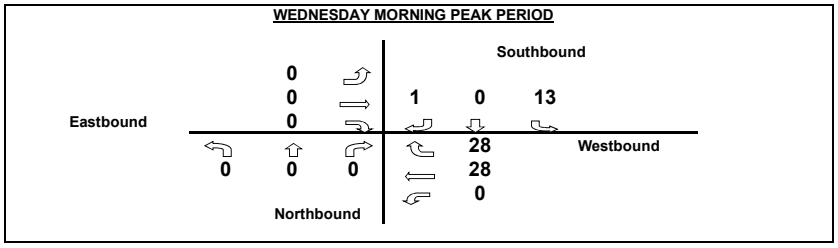
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS - ACCESS 1

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Bidvest Unit 2 Access and Link Rd
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEDNESDAY MORNING PEAK PERIOD

Starting Time	Minor Road Northbound				Access 2 Eastbound				Minor Road Southbound				Access 2 Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
6:00	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	**2**	
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	2
6:30	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	**4**	6
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	**3**	9
7:00	0	0	0	0	0	0	0	0	2	0	0	2	0	1	2	3	**5**	12
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	**4**	16
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	6	**6**	18
7:45	0	0	0	0	0	0	0	0	1	0	0	1	0	1	3	4	**5**	20
8:00	0	0	0	0	0	0	0	0	2	0	1	3	0	19	20	39	**42**	57
8:15	0	0	0	0	0	0	0	0	6	0	0	6	0	3	3	6	**12**	65
8:30	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	**3**	62
8:45	0	0	0	0	0	0	0	0	2	0	0	2	0	6	5	11	**13**	70
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	28
Total	0	0	0	0	0	4	0	4	16	0	1	17	0	37	41	78	**99**	
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**1**	**14**	**0**	**28**	**28**	**56**	**70**	
Peak 15 min	0	0	0	0	0	0	0	0	6	0	1	6	0	19	20	39	**42**	
PHF				#DIV/0!				#DIV/0!				0,58				0,36	**0,42**	

Intersection Summary

Peak Hour: **08:00 - 09:00**
Peak Hour Volume: **70**
Peak 15 minute Volume: **42**
PHF **0,42**
% HV **17%**



TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS

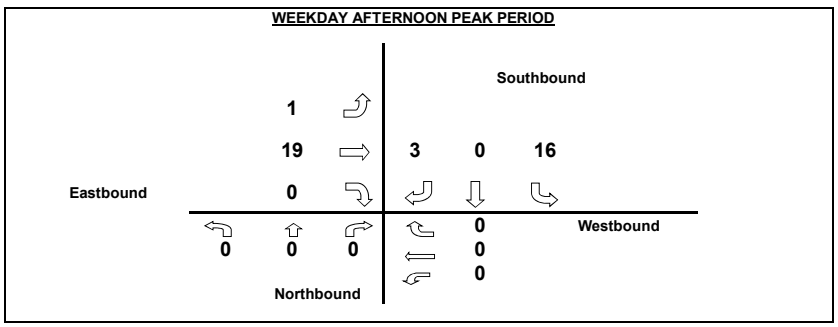
Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Bidvest Unit 2 Access and Link Rd
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEEKDAY AFTERNOON PEAK PERIOD

Starting Time	Minor Road Northbound				Access 2 Eastbound				Minor Road Southbound				Access 2 Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	0	0	0	0	3	0	3	6	0	1	7	0	0	0	0	10	
15:15	0	0	0	0	1	2	0	3	3	0	4	7	0	0	0	0	10	
15:30	0	0	0	0	0	3	0	3	6	0	0	6	0	0	0	0	9	
15:45	0	0	0	0	0	2	0	2	3	0	0	3	0	0	0	0	5	34
16:00	0	0	0	0	0	2	0	2	1	0	3	4	0	0	0	0	6	30
16:15	0	0	0	0	1	4	0	5	4	0	0	4	0	0	0	0	9	29
16:30	0	0	0	0	0	11	0	11	8	0	0	8	0	0	0	0	19	39
16:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	35
17:00	0	0	0	0	0	1	0	1	2	0	0	2	0	0	0	0	3	32
17:15	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2	25
17:30	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	5	11
17:45	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	3	13
Total	**0**	**0**	**0**	**0**	**2**	**30**	**0**	**32**	**42**	**0**	**8**	**50**	**0**	**0**	**0**	**0**	**82**	
Peak Hour	0	0	0	0	1	19	0	20	16	0	3	19	0	0	0	0	**39**	
Peak 15 min	0	0	0	0,00	1	11	0	11,00	8	0	3	8,00	0	0	0	0,00	**19,00**	
PHF				#DIV/0!				0,45				0,59				#DIV/0!	0,51	

Intersection Summary

Peak Hour: **15:45-16:45**
Peak Hour Volume: **39**
Peak 15 minute Volume: **19**
PHF **0,51**

% HV **28%**



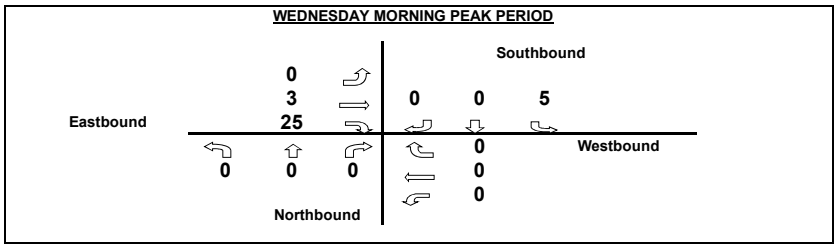
TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS - ACCESS 2

Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Bidvest Unit 1 Access and Link Rd
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEDNESDAY MORNING PEAK PERIOD

Starting Time	Minor Road Northbound				Access 1 Eastbound				Minor Road Southbound				Access 1 Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
6:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	**1**	1
6:30	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	**2**	3
6:45	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	**2**	5
7:00	0	0	0	0	0	0	2	2	2	0	0	2	0	0	0	0	**4**	9
7:15	0	0	0	0	0	0	1	1	2	0	0	2	0	0	0	0	**3**	11
7:30	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	**1**	10
7:45	0	0	0	0	0	1	6	7	2	0	0	2	0	0	0	0	**9**	17
8:00	0	0	0	0	0	0	14	14	2	0	0	2	0	0	0	0	**16**	29
8:15	0	0	0	0	0	2	3	5	1	0	0	1	0	0	0	0	**6**	32
8:30	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	**2**	33
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	24
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	8
Total	0	0	0	0	0	3	33	36	10	0	0	10	0	0	0	0	**46**	
Peak Hour	**0**	**0**	**0**	**0**	**0**	**3**	**25**	**28**	**5**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**33**	
Peak 15 min	0	0	0	0	0	2	14	14	2	0	0	2	0	0	0	0	**16**	
PHF				#DIV/0!				0,50				0,63				#DIV/0!	**0,52**	

Intersection Summary

Peak Hour: **07:45 - 08:45**
Peak Hour Volume: **33**
Peak 15 minute Volume: **16**
PHF **0,52**
% HV **15%**



TSIBONG CONSULTING ENGINEERS
INTERSECTION COUNTS

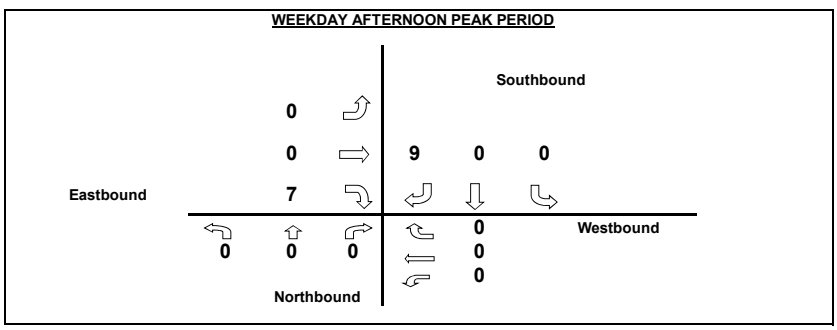
Project: JEWELLERY MANUFACTURING PRECINCT
Project No.: TS1024
Intersection: Bidvest Unit 1 Access and Link Rd
Day & Date WEDNESDAY 31 AUGUST 2016
Time Period WEEKDAY AFTERNOON PEAK PERIOD

Starting Time	Minor Road Northbound				Access 1 Eastbound				Minor Road Southbound				Access 1 Westbound				Intersection	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	0	0	0	0	0	3	3	0	0	3	3	0	0	0	0	6	
15:15	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2	
15:30	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	2	
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
16:00	0	0	0	0	0	0	1	1	0	0	4	4	0	0	0	0	5	9
16:15	0	0	0	0	0	0	4	4	0	0	3	3	0	0	0	0	7	14
16:30	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	13
16:45	0	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	3	16
17:00	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2	13
17:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	7
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	4
Total	**0**	**0**	**0**	**0**	**0**	**1**	**13**	**14**	**0**	**0**	**16**	**16**	**0**	**0**	**0**	**0**	**30**	
Peak Hour	0	0	0	0	0	0	7	7	0	0	9	9	0	0	0	0	16	
Peak 15 min	0	0	0	0	0	0	4	4	0	0	4	4	0	0	0	0	7	
PHF				#DIV/0!				0,44				0,56				#DIV/0!	0,57	

Intersection Summary

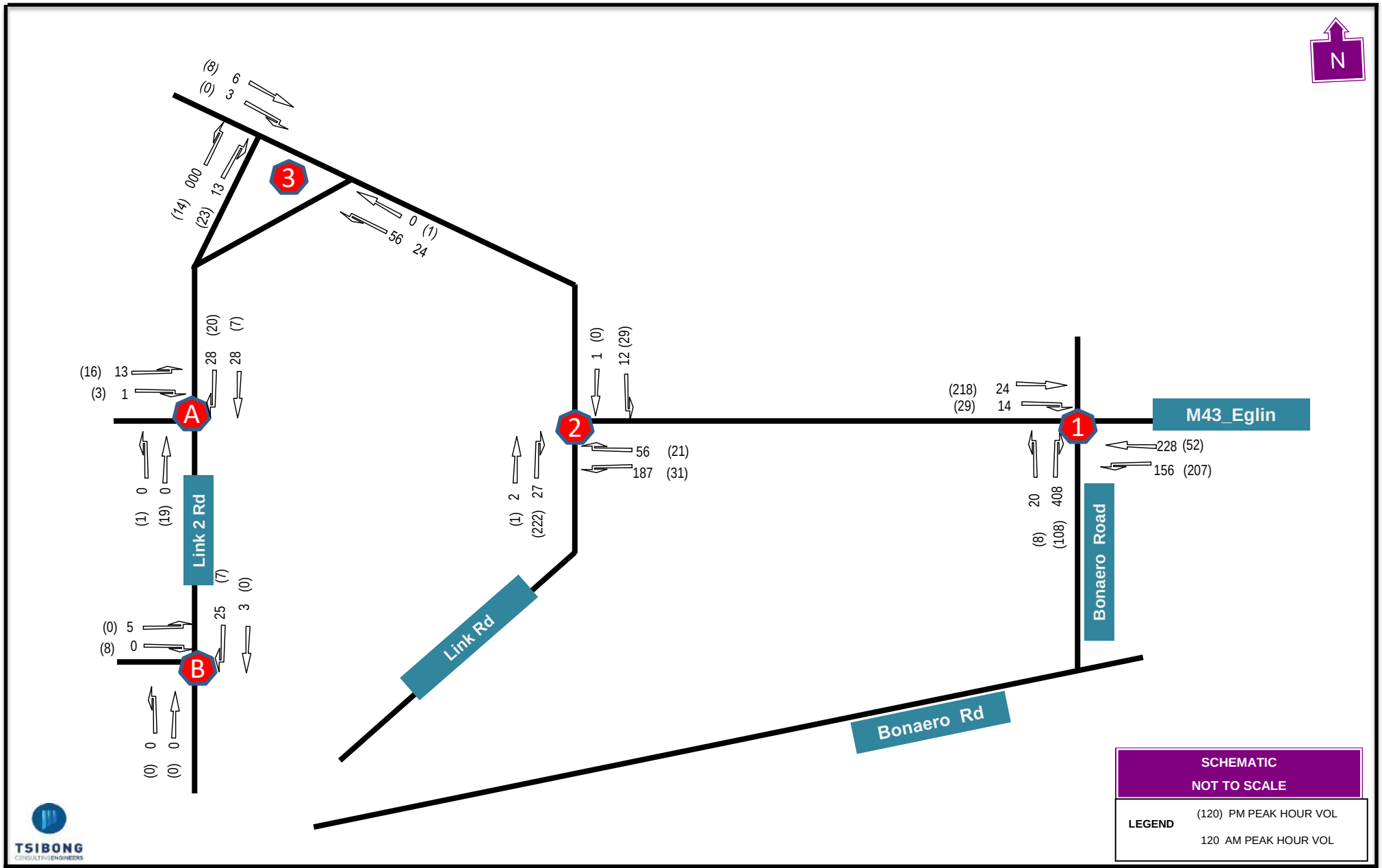
Peak Hour: **15:45-16:45**
Peak Hour Volume: **16**
Peak 15 minute Volume: **7**
PHF **0,57**

% HV **44%**

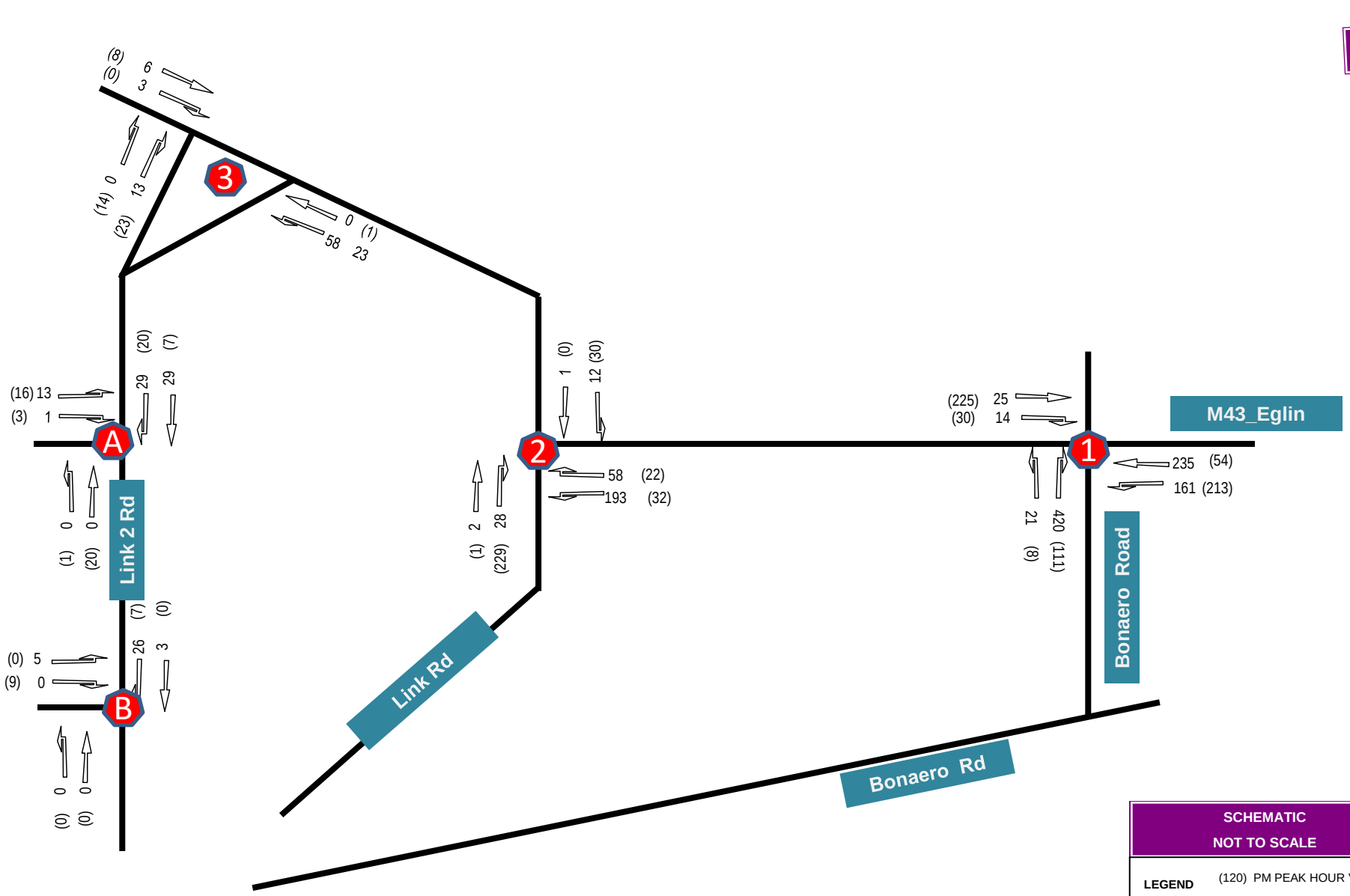


ANNEXURE B

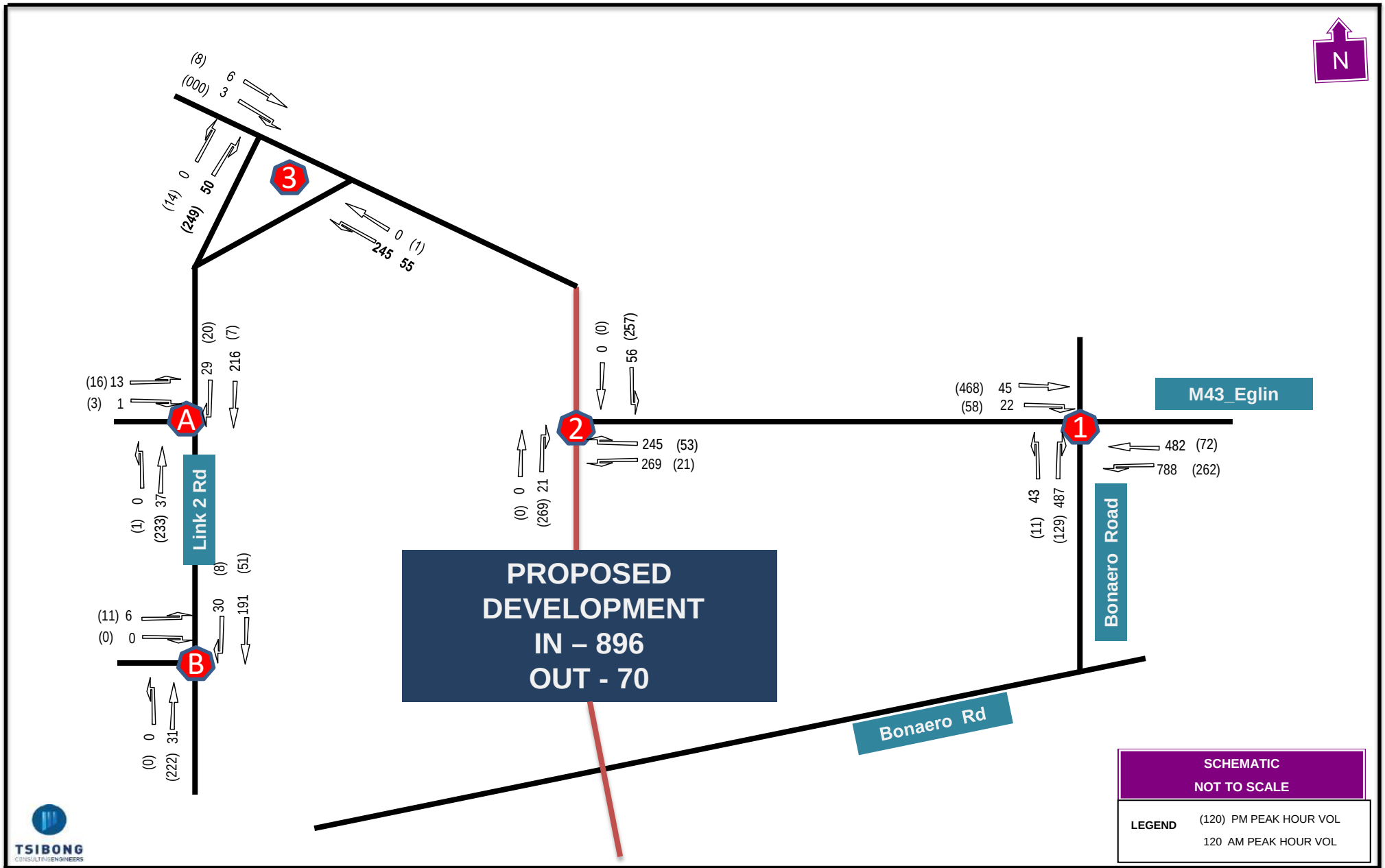
DEVELOPMENT SCENARIOS



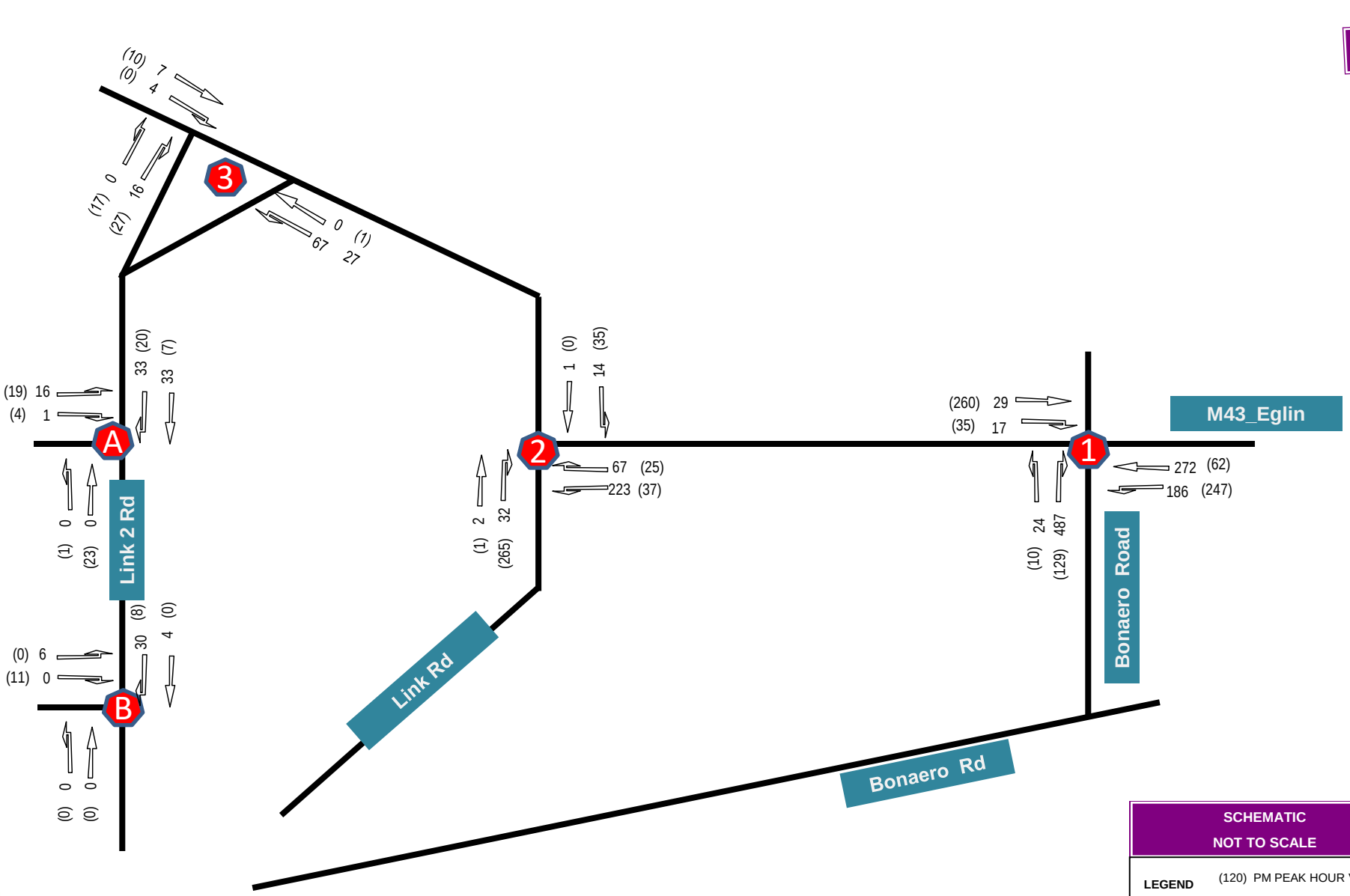
SCENARIO 0 : 2016 EXISTING LAND USE (OBSERVED AM / PM TRAFFIC COUNTS)



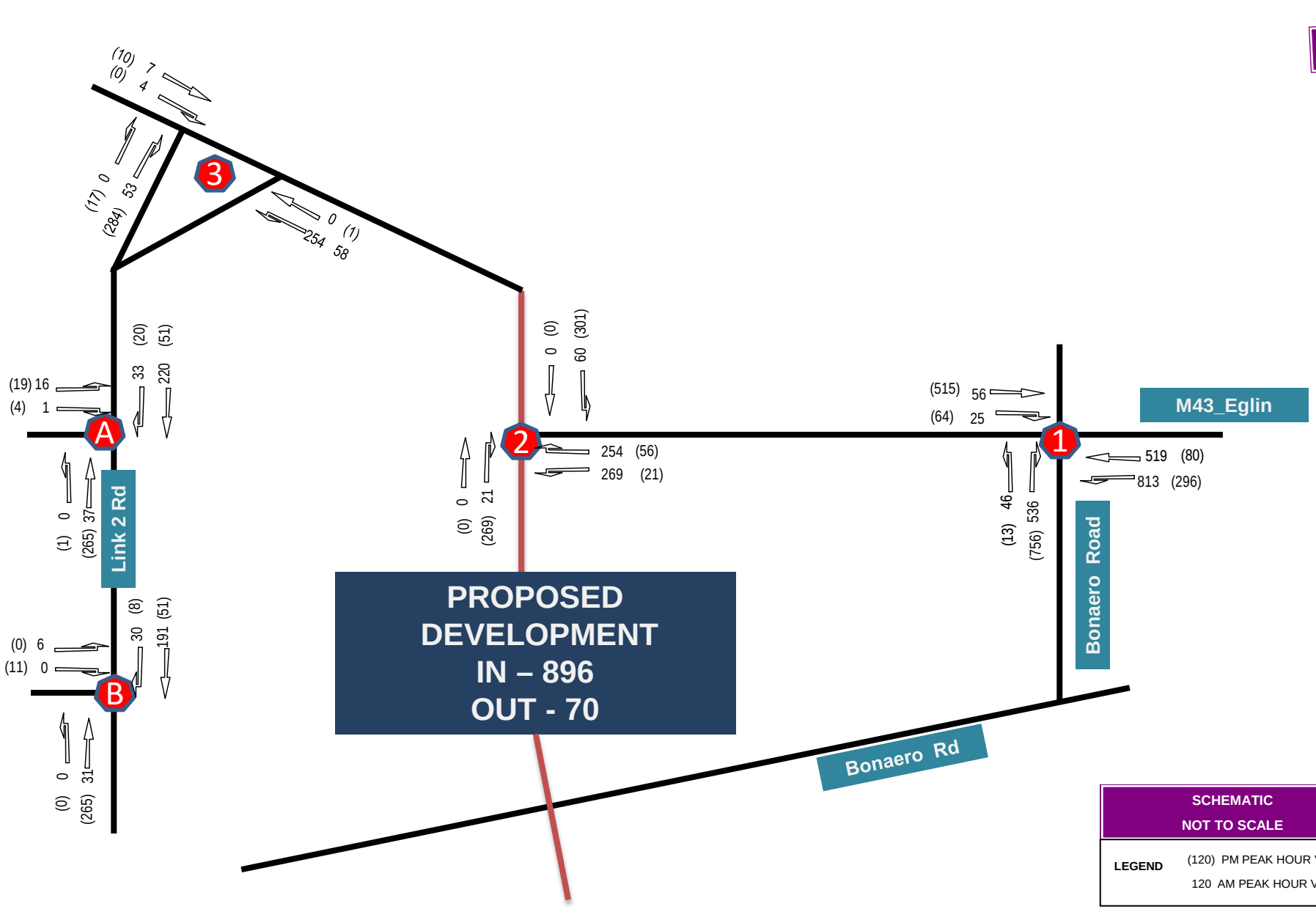
SCENARIO 1 : 2017 OPENING YEAR WITH 3% ANNUAL GROWTH RATE APPLIED ON BASE YEAR TRAFFIC



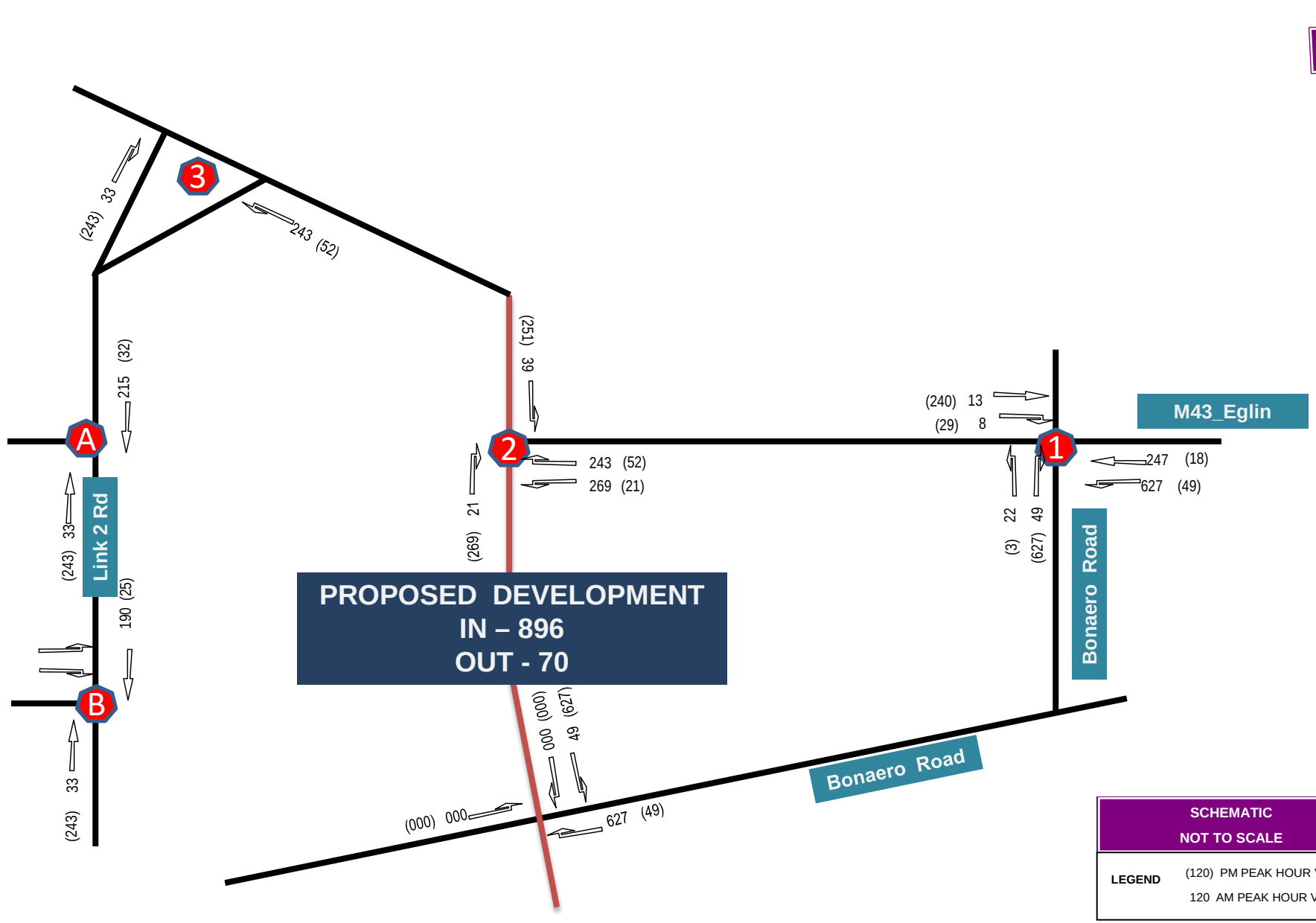
SCENARIO 2: SCENARIO 1 + WITH THE ADDITION OF THE DEVELOPMENT TRAFFIC (2017)



SCENARIO 3 : FUTURE 5 -YEAR BASE SCENARIO (2022) – TRAFFIC GROWTH (3% PER ANNUM) WITHOUT DEVELOPMENT



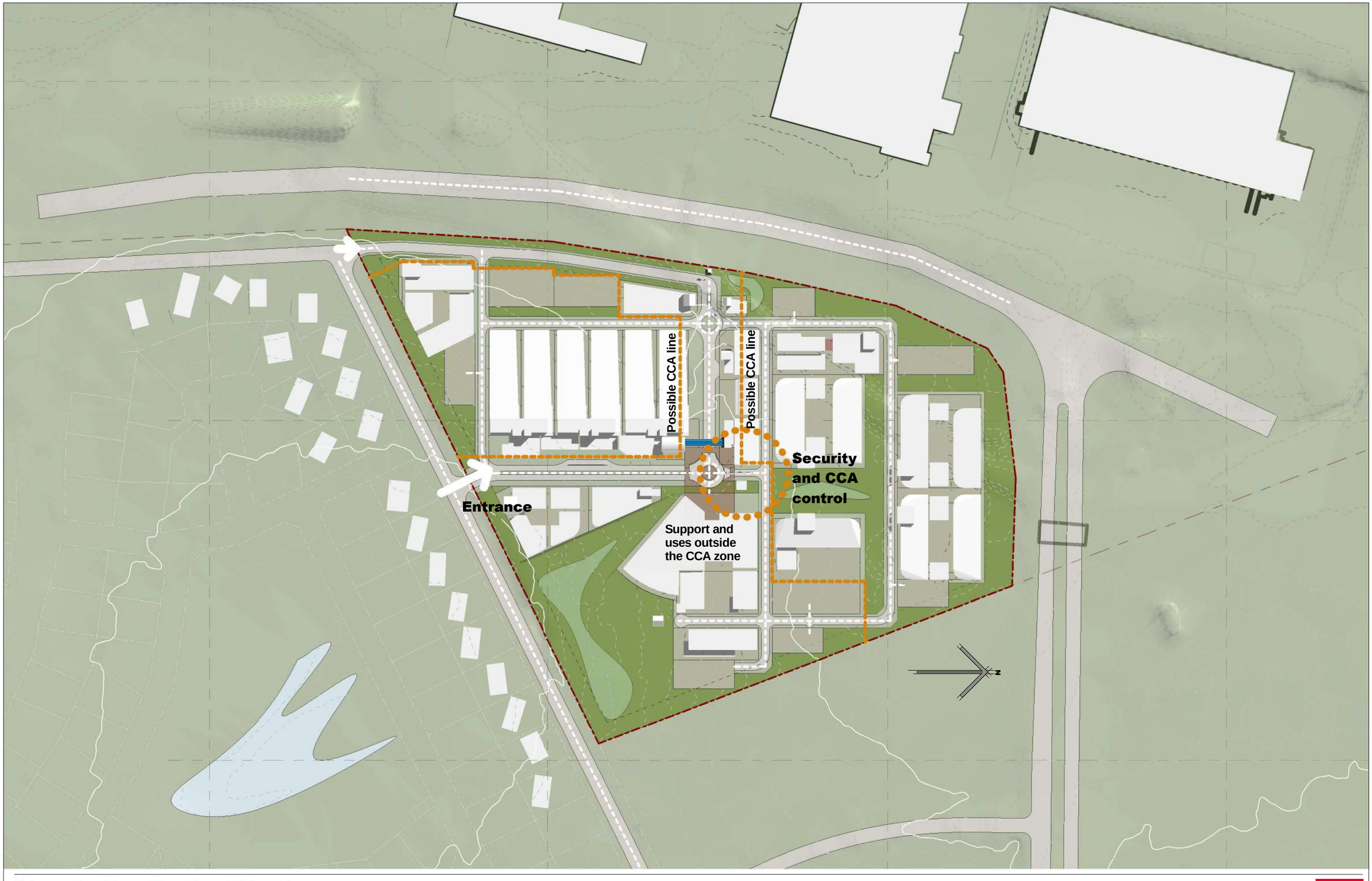
SCENARIO 4 : SCENARIO 3 + WITH THE ADDITION OF THE DEVELOPMENT TRAFFIC (2022)



TRIP ASSIGNMENT – 2017_NEW

ANNEXURE C

APPROVED SITE DEVELOPMENT PLAN



Stauch Vorster Architects

Architecture | Urban Design

Dubai | Durban | Cape Town | Johannesburg | Maputo | Port Elizabeth | Windhoek

Project | Gauteng IDZ
JMP Master Plan

Title | Movement and security diagram

Drawing Number | UD151

Revision | 2

Scale | 1 : 1000 @ A1

Location Cape Town

Stauch Vorster Architects

04/16/14

Appendix 9D

Request for Specialist Confirmation Proof

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Monday, 06 August 2018 1:51 PM
To: info@phunga.co.za
Cc: pats@gidz.co.za; sophia@maranggroup.co.za; 'Stephan'
Subject: Request For Confirmation Letter
Attachments: Jewellery Manufacturing Precinct_TIA (ACSA by pass).zip; JMP Masterplan - Original TIA.ZIP

Good day.

We (Marang) have been appointed by GIDZ to conduct an EIA process for the construction of a Metal Concentrators SA (MetCon) facility within the OR Tambo Jewellery Precinct.

The MetCon facility:

1. Will be a small refinery extract precious metals from jewellery waste.
    a. MetCon specialises in extracting precious and base metals from jewellery store secondary gold materials (i.e. jeweller's sweeps) through chemical treatment. The secondary gold material mainly includes sand paper, cloths and carpets.
2. Will occupy one of the buildings already assessed as part of the GIDZ project
3. There won't be any major truck deliveries, etc.
4. Will be a relatively small operation
5. No wastewater discharge.

We understand that your company conducted the initial Traffic Impact Assessment (Report attached) at the site. Please send us a letter confirming that the findings of the Traffic assessment report will not be changed by the inclusion of the MetCon facility in the GIDZ development.

Please feel free to contact me or Sophia (Cc'd) if you have any queries in this regard.

Kind Regards,

Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Monday, 06 August 2018 1:30 PM
To: admin@earthinv.co.za
Cc: pats@gidz.co.za; sophia@maranggroup.co.za; 'Stephan'
Subject: Request For Confirmation Letter
Attachments: JMP - Geotechnical Report.zip

Good day.

We (Marang) have been appointed by GIDZ to conduct an EIA process for the construction of a Metal Concentrators SA (MetCon) facility within the OR Tambo Jewellery Precinct.

The MetCon facility:

1. Will be a small refinery extract precious metals from jewellery waste.
    a. MetCon specialises in extracting precious and base metals from jewellery store secondary gold materials (i.e. jeweller's sweeps) through chemical treatment. The secondary gold material mainly includes sand paper, cloths and carpets.
2. Will occupy one of the buildings already assessed as part of the GIDZ project
3. There won't be any major truck deliveries, etc.
4. Will be a relatively small operation
5. No wastewater discharge.

We understand that your company conducted the initial Geotechnical Studies (Report attached) at the site. Please send us a letter confirming that the findings of the Geotechnical assessment report will not be changed by the inclusion of the MetCon facility in the GIDZ development.

Please feel free to contact me or Sophia (Cc'd) if you have any queries in this regard.

Kind Regards,

Sindiso Lubisi

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stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Tuesday, 21 August 2018 12:57 PM
To: info@phunga.co.za
Cc: sophia@maranggroup.co.za; 'Stephan'
Subject: Traffic Impact For GIDZ/JMP
Attachments: Jewellery Manufacturing Precinct_TIA (ACSA by pass).zip; JMP Masterplan - Original TIA.ZIP

Good day

Marang is investigating the inclusion of a MetCon Facility in one of the Blocks in the Jewellery Manufacturing Precinct (JMP) project at OR Tambo International Airport (ORTIA).
We understand that your company undertook a Traffic Impact Assessment (attached) for the total JMP project site in 2015/16.

The MetCon facility chemically refines precious metals, namely gold, silver and rhodium from jeweller's waste materials and casts the metals it into ingots.

We would like to know from you whether or not the inclusion of the MetCon facility would have any influence and/ or changes, if any, to your Traffic Impact study findings regarding the site in question or not.

We would really appreciate your response. Please do not hesitate to contact me if you have any further questions or require further information in this regard.

Kind Regards,
Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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PO Box 1369, Bromhof, 2154
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stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Tuesday, 21 August 2018 12:46 PM
To: admin@earthinv.co.za
Cc: sophia@maranggroup.co.za; 'Stephan'
Subject: Geotechnical Study For GIDZ/JMP
Attachments: JMP - Geotechnical Report.zip

Good day

Marang has been appointed to undertake an EIA for the inclusion of a MetCon Facility in one of the Blocks in the Jewellery Manufacturing Precinct (JMP) project at OR Tambo International Airport (ORTIA).
We understand that your company undertook a Geotechnical Study (attached) for the total JMP project site in 2015.

The MetCon facility chemically refines precious metals, namely gold, silver and rhodium from jeweller's waste materials and casts the metals it into ingots.

We would like to know from you whether or not the inclusion of the MetCon facility would have any influence and/ or changes, if any, to your Geotechnical study findings regarding the site in question or not.

We would really appreciate your response. Please do not hesitate to contact me if you have any further questions or require further information in this regard.

Kind Regards,
Sindiso Lubisi

MARANG
environmental & associates

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Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Wednesday, 05 September 2018 3:58 PM
To: info@phunga.co.za; admin@tsibongconsulting.co.za
Cc: 'Pat Sibiya'; sophia@maranggroup.co.za; 'Stephan'
Subject: Request For Confirmation
Attachments: Traffic_Request For Confirmation Letter SIN.pdf; JewelManufacturingPrecinct_TIA.Draft1.pdf

Good day

Please refer to the attached "Traffic_Request For..pdf" document for your attention. If you can, we kindly request that you reply with a letter.

We really appreciate your assistance in this regard.

Kind Regards,

Sindiso Lubisi

MARANG environmental & associates

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Wednesday, 05 September 2018 3:51 PM
To: admin@earthinv.co.za
Cc: 'Pat Sibiya'; 'Stephan'; sophia@maranggroup.co.za
Subject: Request For Confirmation
Attachments: Geotech_ Request For Confirmation Letter SIN.pdf; 2015-04-28_Preliminary Geotechnical Report_IDZ.pdf

Good day

Please refer to the attached "Geotech_Request For..pdf" document for your attention. If you can, we kindly request that you reply with a letter.

We really appreciate your assistance in this regard.
Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Tuesday, 11 September 2018 2:32 PM
To: admin@tsibongconsulting.co.za
Cc: 'Stephan'; sophia@maranggroup.co.za
Subject: RE: Request For Confirmation
Attachments: JewelManufacturingPrecinct_TIA.Draft1.pdf; Site Layout.pdf

Hi Bonginkosi

As per our conversation over the phone. Please find the attached Updated Site Layout.

We really appreciate your time.

Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
Building 2, Boskruin Office Park, President Fouche Drive, Randburg, RSA
PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Wednesday, 5 September 2018 3:58 PM
To: 'info@phunga.co.za' <info@phunga.co.za>; 'admin@tsibongconsulting.co.za' <admin@tsibongconsulting.co.za>
Cc: 'Pat Sibiya' <pats@gidz.co.za>; 'sophia@maranggroup.co.za' <sophia@maranggroup.co.za>; 'Stephan' <stephan@maranggroup.co.za>
Subject: Request For Confirmation

Good day

Please refer to the attached “Traffic_Request For..pdf” document for your attention. If you can, we kindly request that you reply with a letter.

We really appreciate your assistance in this regard.
Kind Regards,
Sindiso Lubisi

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PO Box 1369, Bromhof, 2154

MARANG is a Level 2 BBBEE Contributor

stephan@maranggroup.co.za

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Tuesday, 11 September 2018 2:44 PM
To: lukhanyo@earthinv.co.za
Cc: sophia@maranggroup.co.za; 'Stephan'
Subject: FW: Request For Confirmation
Attachments: Geotech_ Request For Confirmation Letter SIN.pdf; 2015-04-28_Preliminary Geotechnical Report_IDZ.pdf

Hi Lukhanyo

Please refer to the email below.

We really appreciate your time.

Kind Regards,
Sindiso Lubisi

Sindiso Lubisi ◦ Environmental Scientist
tel. +2711 792 0880 | **cell.** +2761 468 7782 | **Fax.** +2786 592 0298
email. sindiso@maranggroup.co.za | **web.** www.maranggroup.co.za
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PO Box 1369, Bromhof, 2154
MARANG is a Level 2 BBBEE Contributor

From: Sindiso <sindiso@maranggroup.co.za>
Sent: Wednesday, 5 September 2018 3:51 PM
To: 'admin@earthinv.co.za' <admin@earthinv.co.za>
Cc: 'Pat Sibiya' <pats@gidz.co.za>; 'Stephan' <stephan@maranggroup.co.za>; 'sophia@maranggroup.co.za' <sophia@maranggroup.co.za>
Subject: Request For Confirmation

Good day

Please refer to the attached “Geotech_Request For..pdf” document for your attention. If you can, we kindly request that you reply with a letter.

We really appreciate your assistance in this regard.
Kind Regards,
Sindiso Lubisi

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P.O Box 1369
Bromhof 2188
Tel. 011 792 0880
Fax 086 592 02980
info@maranggroup.co.za
www.maranggroup.co.za

Marang Project Number: MAR-MET-180017
Date: 05 September 2018

ATT: Mr Bonginkosi Msiya
Email: info@phunga.co.za
Tel: 012 345 6694/6784,

Good day,

REQUEST FOR A CONFIRMATION ON ANY POSSIBLE CHANGES TO THE CONCLUSIONS OF THE TRAFFIC IMPACT ASSESSMENT UNDERTAKEN FOR THE GAUTENG INDUSTRIAL DEVELOPMENT ZONE JEWELLERY MANUFACTURING PRECINCT AT THE OR TAMBO INTERNATIONAL AIRPORT.

Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") was appointed by the Gauteng Industrial Development Zone (hereafter referred to as "GIDZ") to conduct an Environmental Impact Assessment (EIA) for the inclusion of a proposed refinery plant in the GIDZ Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct.

The proposed facility will chemically refine precious metals, namely gold, silver and rhodium from jeweller's waste materials and cast it into ingots.

- **BACKGROUND INFORMATION**

The proposed refinery plant will occupy block 2 as per the site layout diagram (FIGURE 1). The facility will specialise in extracting precious and base metals from jewellery store secondary gold materials (i.e. jewellers sweep including sand paper, cloths and carpets) through a chemical treatment refining process. The facility triggers GN R. 325 Listing Notice 2, Activity 6 of the 2014 EIA Regulations, as amended April 2017, in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), and therefore requires an EIA process to be undertaken, as well as an Atmospheric Emissions License (AEL).

- **REQUEST**

Marang requests your opinion on whether the inclusion of the refinery facility will influence any of the findings and / or conclusions you made during you Traffic Assessment which was completed in 2016. Please refer to the attached report.

Please do not hesitate to contact me if you require any additional information or queries regarding the above.

Yours sincerely

Sindiso Lubisi *BSc Hon. Env. Sciences*
Marang Environmental and Associates (Pty) Ltd
Contact Number: 011 792 0880
Email Address: info@maranggroup.co.za

P.O Box 1369
Bromhof 2188
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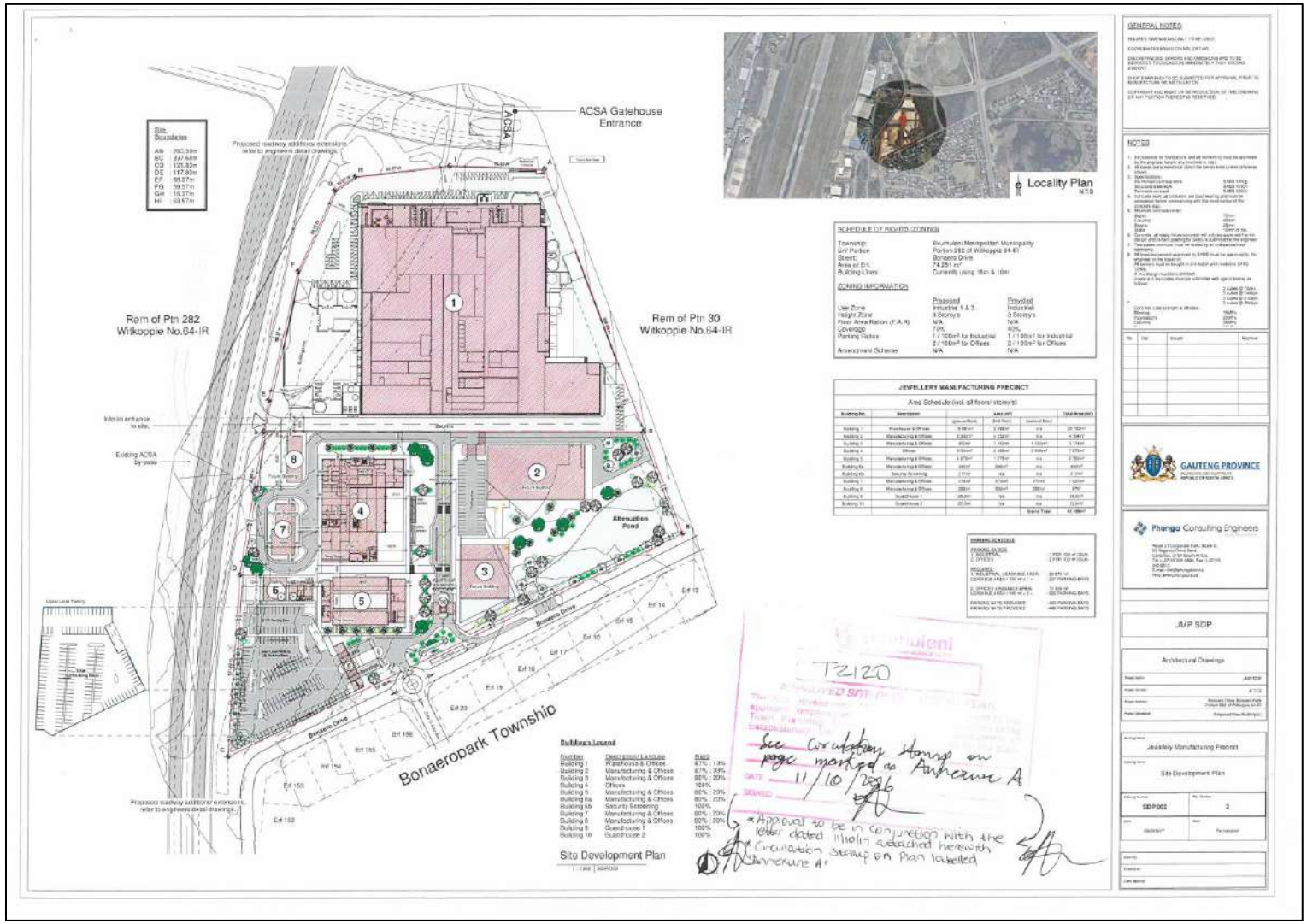

P.O Box 1369
Bromhof 2188
Tel. 011 792 0880
Fax 086 592 02980
info@maranggroup.co.za
www.maranggroup.co.za

Marang Project Number: MAR-MET-180017
Date: 05 September 2018

ATT: Lukhanyo Gqobo / Basi Modisane / Solly Shabangu
Email: admin@earthinv.co.za
Tel: 012 372 3708/ 061 473 1190

Good day,

REQUEST FOR A CONFIRMATION ON ANY POSSIBLE CHANGES TO THE CONCLUSIONS OF THE GEOTECHNICAL STUDY UNDERTAKEN FOR THE GAUTENG INDUSTRIAL DEVELOPMENT ZONE JEWELLERY MANUFACTURING PRECINCT AT THE OR TAMBO INTERNATIONAL AIRPORT.

Marang Environmental and Associates (Pty) Ltd (hereafter referred to as "Marang") was appointed by the Gauteng Industrial Development Zone (hereafter referred to as "GIDZ") to conduct an Environmental Impact Assessment (EIA) for the inclusion of a proposed refinery plant in the GIDZ Jewellery Manufacturing Precinct (JMP) within the OR Tambo International Airport (ORTIA) Precinct.

The proposed facility will chemically refine precious metals, namely gold, silver and rhodium from jeweller's waste materials and cast it into ingots.

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- **REQUEST**

Marang requests your opinion on whether the inclusion of the refinery facility will influence any of the findings and / or conclusions you made during you Geotechnical Assessment which was completed in 2015. Please refer to the attached report.

Please do not hesitate to contact me if you require any additional information or queries regarding the above.

Yours sincerely

Sindiso Lubisi *BSc Hon. Env. Sciences*
Marang Environmental and Associates (Pty) Ltd
Contact Number: 011 792 0880
Email Address: info@maranggroup.co.za

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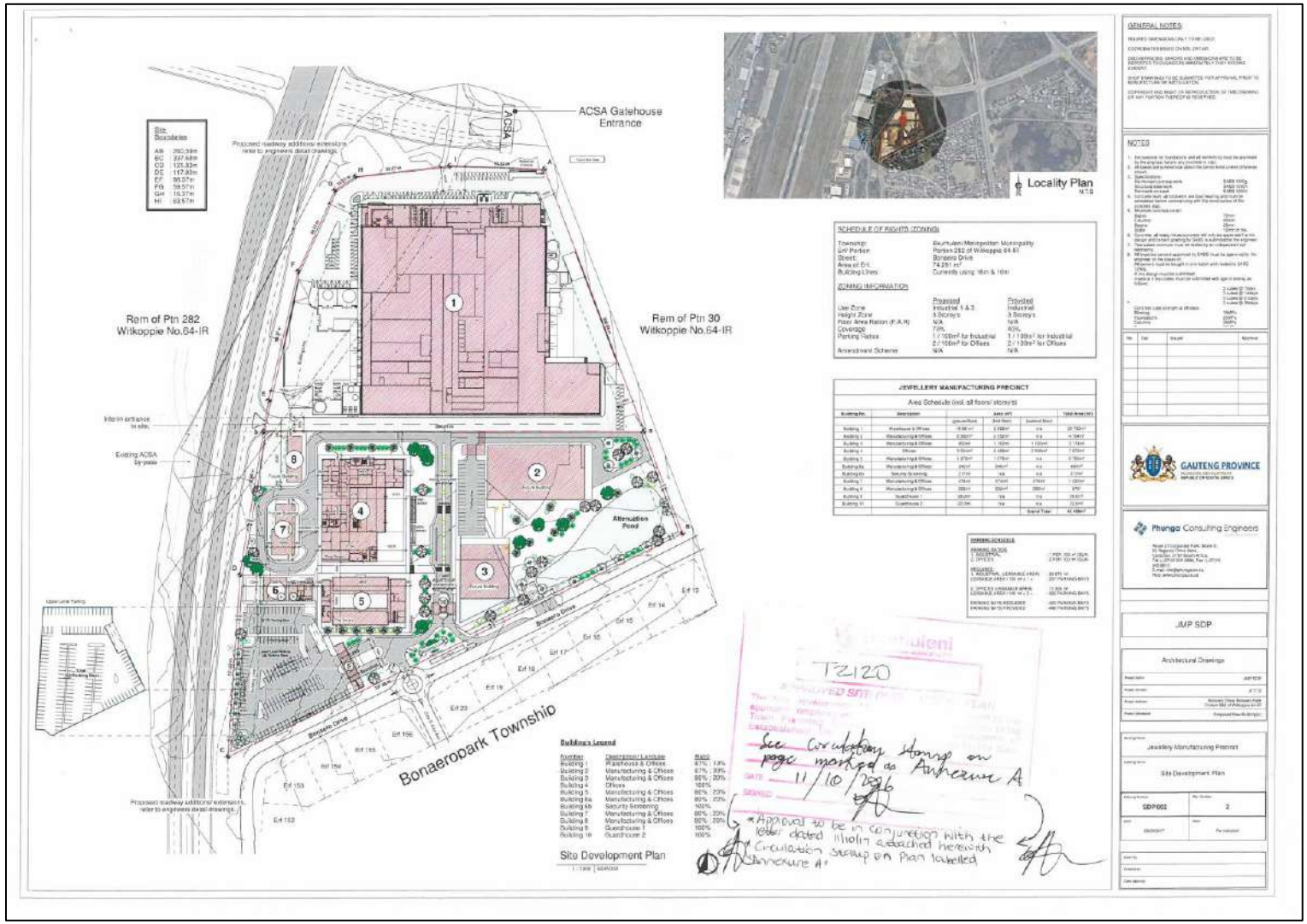

Appendix 10

Marang Impact Rating Methodology

Marang Impact Rating Table

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken by making use of information that is available to the Environmental Assessment Practitioner (EAP) through the process of the EIA. The impact evaluation of predicted impacts will be undertaken through an assessment of the significance of the impacts. Each impact will be assessed through the **Construction**, **Operation** and **Decommissioning phases** of the prosed development. Where required, the proposed mitigation measure will be detailed.

Error! Reference source not found. below provides an explanation of the parameters used to determine the significance of an impact, as well as what "significance" means in the context of this impact assessment. An example of the impact assessment table used to assess the environmental impact associated with the proposed development / activity are detailed below in Error! Reference source not found..

Table 1: Description of parameters used to establish impact significance

Extent = E *(The area over which the proposed impact will be experienced).* **5**: International **4**: National **3**: Regional **2**: Local **1**: Site	***Reversibility = R*** *(The degree to which the proposed impact can be reversed upon completion of the proposed development/ activity).* **4**: Irreversible **3**: Barely Reversible **2**: Partly Reversible **1**: Completely Reversible
Status of Impact **+**: Positive (A benefit to the receiving environment) **N**: Neutral (No cost or benefit to the receiving environment) **-**: Negative (A cost to the receiving environment)	
Magnitude = M *(The severity of the proposed development/activity)*. **5**: Very high/ don't know **4**: High **3**: Moderate **2**: Low **1**: Minor **0**: Not applicable/none/negligible	***Duration = D*** *(The timeframe for which the proposed impact will be experienced).* **5**: Permanent **4**: Long-term (ceases with the operational life) **3**: Medium-term (5-15 years) **2**: Short-term (0-5 years) **1**: Immediate **0**: Not applicable/none/negligible
Probability = P *(The likelihood / degree of certainty of the proposed impact occurring).* **5**: Definite/don't know **4**: Highly probable **3**: Medium probability **2**: Low probability **1**: Improbable	***Cumulative Effect = C*** *(The impact of the proposed development/ activity on the environmental parameter being assessed when added to other existing or potential impacts).* **4**: High Cumulative Impact **3**: Medium Cumulative Impact **2**: Low Cumulative Impact **1**: No Cumulative Impact **0**: Not applicable
Loss of Resources = L *(The degree to which a given resource will be lost as a result of the proposed development / activity.)* **4**: Complete Loss of Resources **3**: Intermediate Loss of Resources **2**: Low loss of resources **1**: No Loss of resources	
Significance with be determined through the *Marang methodology for determining significance*. Significance will be determined through a synthesis of the assessed impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula:	

(Extent + probability + reversibility + loss of resources+ duration + cumulative effect) x magnitude/intensity.

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Significance	***Environmental Significance Points***	***Colour Code***
High (positive)	>90	H
Medium (positive)	30 to 90	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -90	M
High (negative)	>-90	H

Table 2: Example of impact assessment table

IMPACT RATING TABLE FORMAT			
Item	Description	Pre-mitigation impact rating	Post mitigation impact rating
Environmental Parameter	Description of environmental impact		
Extent (E)	Description of the area over which the proposed impact will be experienced.	2	1
Probability (P)	Description of the likelihood/degree of certainty of the proposed impact occurring.	4	2
Reversibility (R)	Description of the degree to which the proposed impact can be revered upon completion of the proposed development / activity.	2	1
Loss of Resources (L)	Description of the degree to which a given resource will be lost as a result of the proposed development / activity.	4	1
Duration (D)	Description of the time frame for which the proposed impact will be experience	5	0
Cumulative Effect (C)	Description of the impact of the proposed development / activity on the environmental parameter being assessed when added to other existing or potential impacts.	4	0
Magnitude or Intensity (M)	Description of the severity of the proposed development / activity.	5	2
Environmental Significance Points	Description of the importance of the proposed impact which indicates the Mitigation required	- 105 (High negative)	10 (Low positive)
Mitigation Measures	Detail the mitigation measures required to reduce the impacts that will arise from the proposed development / activity. The measures mentioned will be detailed in the EMPr as well.		