DRAFT BASIC ASSESSMENT REPORT FOR THE APPLICATION FOR A WASTE MANAGEMENT LICENSE TO DECOMMISSION THE EVERITE ASBESTOS SITE, ERF 18354, BRACKENFELL

1/24/2022

DFFE Application Ref No. 14/12/16/3/3/1/2473

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Abbreviations

The following abbreviations are used in this report:

Chand	Chand Environmental Consultants cc
DFFE	Department of Forestry, Fisheries and Environment (National Department)
DWS	Department of Water and Sanitation (National Department)
NEMA	National Environmental Management Act (no. 107 of 1998)
NEM: WA	National Environmental Management: Waste Act (no. 59 of 2008)
NID	Notification of Intent to Develop
NWA	National Water Act (no. 36 of 1998)
SIP	Strategic Infrastructure Project
WML	Waste Management License
WUL	Water Use License

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EXECUTIVE SUMMARY

INTRODUCTION

This is the post-application Draft Basic Assessment Report which is being circulated for public review and comment. This report has been compiled as part of the Basic Assessment process for the application for a Waste Management License in terms of the National Environmental Management Waste Act (No. 59 of 2008) (NEMWA) and application for Environmental Authorisation in terms of the National Environmental Management Act (No. 107 of 1999), as amended (NEMA) and the associated Environmental Impact Assessment (EIA) Regulations, 2014 (as amended). The application is for the closure/ capping of the Everite Asbestos waste site and redevelopment thereon.

It provides information on the proposed closure/capping and re-development, Listed Activities triggered (which determines the need for a Waste Management License and associated Environmental Authorisation), the site and various natural, built, cultural, and social environmental considerations, as well as specialist studies undertaken, their findings and recommendations.

Note that there was previous Basic Assessment process for the same site and closure thereof in 2013, but the application lapsed, hence the need to re-initiate it through a new process (i.e. this Basic Assessment process). This report also addresses comments from Interested and Affected Parties (which include local residents, state departments, civic interest groups, etc.) received as part of the aforementioned previous process undertaken in 2013.

Following this public review period, the Basic Assessment Report will be updated with comments received from I&APs as part of this Basic Assessment process, finalised, and submitted to the competent authority, namely the National Department of Forestry, Fisheries and Environment (DFFE), for decision-making. Note that DFFE is the competent authority for this application because it involves closure of a site containing hazardous waste (i.e. asbestos).

Proposal

The Everite Factory in Brackenfell was established on site in 1945 and closed in October 2000. During its operation, the factory produced asbestos wastes in the form of sludges, broken sheeting and reject pipes which would be disposed of at a site created for this purpose alongside the factory. A wastewater dam on site was also used by the Everite factory for the disposal of its effluent. Since closure of the factory in 2000, the site was used to dispose of waste generated during the factory clean-up process. In 2001 the asbestos waste site was reshaped, capped, and had vegetation established on it and is currently not used.

Duro Brick Company (Pty) Ltd ("Duro Brick") intends to decommission the site (Erf 18354, Brackenfell – refer to Figure I) in the form of permanent capping, with further development of a light industrial park thereon. The intention is to make use of the existing contours/ slope of the site and to keep any excavations to a minimum. A critical part of the capping/ closure of the site to ensure that the asbestos is firmly in place is the proposed development as some of the roadways and foundations would form part of the capping layers and would be constructed on top of the capping.

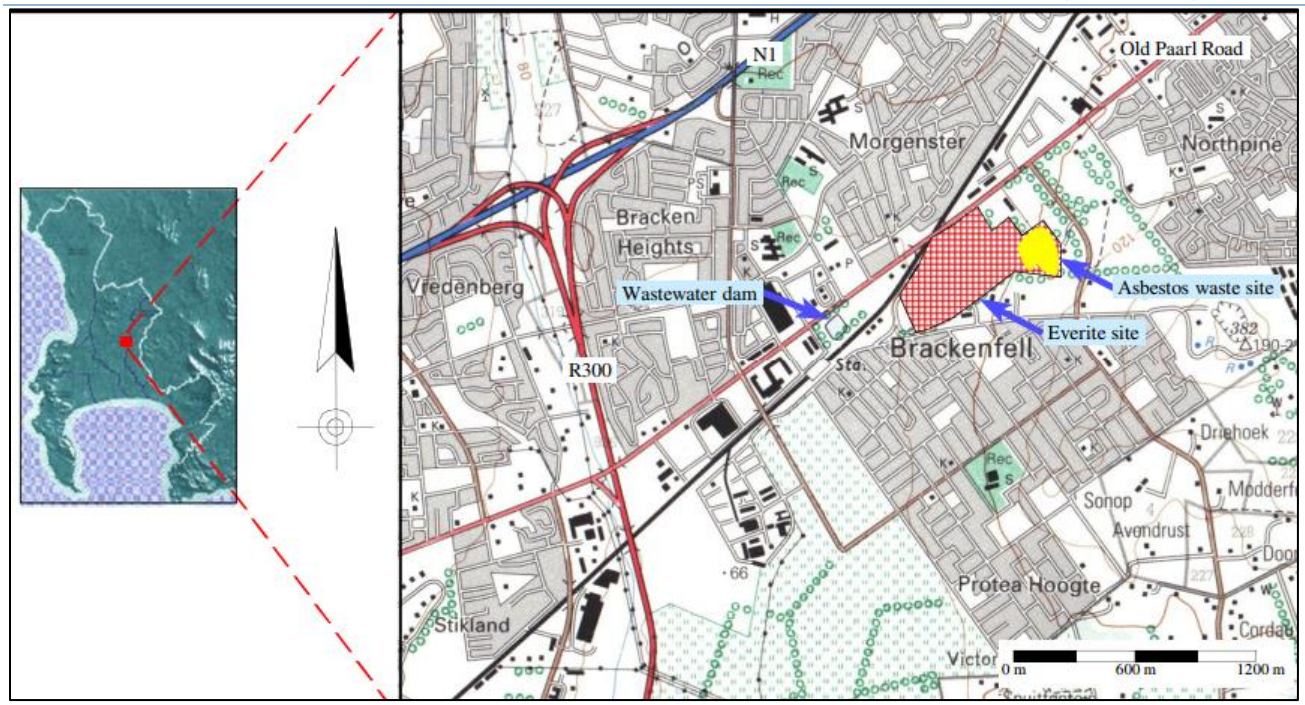

FIGURE I: LOCALITY MAP OF THE EVERITE SITE IN BRACKENFELL, INDICATING THE POSITION OF THE WASTEWATER DAM AND THE ASBESTOS WASTE SITE (THE ASBESTOS WASTE SITE IS THE SUBJECT OF THIS APPLICATION)

The preferred alternative (i.e. Alternative 2) proposes the capping of the full extent of the site, except for the retention pond and associated buffer area, as well as redevelopment on the site (which would provide a further capping layer).

The proposal has three key elements:

- Total capping proposed of up to approximately 95,000 m²;
- Redevelopment, with some occurring on top of the capping layer, of up to approximately 50,096 m²; and
- Retention pond and associated buffer area of approximately 14,250.9 m².

Note that the proposed development footprint can be divided into an area for roads and parking of approximately 18,091m² and building footprints of approximately 32,005 m².

The intention is to have as limited excavation on the site as possible, in order to limit disturbance to the asbestos. There are different capping strategies proposed for different areas of the site as they relate to the proposed industrial development. These areas include:

- Green/ Landscaped Areas (i.e. the areas surrounding the proposed development structures, to be landscaped);
- Roads;
- Building Platforms;
- Services; and
- The Stormwater Pond.

In sections where there would be no infrastructure (i.e. roads and buildings), like the green/landscaped areas, the capping layer would be more robust, while areas which would house development would

have a thinner capping layer, with the layer works for the roads and foundations and platforms for the buildings providing an additional capping layer on top of the engineered capping layer or replacing certain of the capping layers. Furthermore, in efforts to reduce the disturbance of asbestos on site as much as possible, the proposed capping and development would require minimal excavation, with compaction and importing of fill to realise the levels required.

The proposed end-use of the site would be a secure industrial estate comprising a combination of larger portions ranging from around 6095 m^2 to 10800 m^2 and smaller portions averaging 1500 m^2 with an internal road network (refer to below), some green areas and a stormwater detention (refer to Figure ii). The proposed industrial park would be fenced around the perimeter, and have a single entrance and exit gate, which would be controlled by security personnel. The existing access road from Virgo Close, off Gemini Road in Brackenfell Industria. would be used.

Figure ii: Proposed Development Plan (SOURCE: CHAMELEON ARCHITECTS, 2020)

Services

The proposed development has existing water, sewer, and stormwater connections to the property. Internal reticulation would need to be installed for the proposed development and there would be a

stormwater pond in the north-west corner of the site. The City of Cape Town has confirmed available services capacity for refuse, electricity, potable water, and sewer.

The proposed services would largely be located within the proposed earthworks and/or capping layers. The services would be located within roads or parking areas, or traverse across areas where no bulk earthworks would need to occur (i.e. the green/landscaped areas)

The existing stormwater pond would need to be extended in length and widened, and this would require excavation into the existing pond embankment. The pond would include a drainage layer of 500 mm thick, clean drainage sand. Armorflex grass blocks would line the bottom and side slopes of the pond. The drainage layer would contain a series of 100 mm diameter subsoil drains. There would also be planting in the pond.

Landscaping

A vegetated buffer (i.e. a green area) would be provided around the pond and would be capped as per the "Green Areas." Planting of landscaping vegetation as per a Landscape Plan would occur following capping.

Road Upgrades

An additional right-turn lane is proposed at the Okavango Road/Old Paarl Road intersection, to be provided westbound along Old Paarl Road. The northern approach would be widened to provide a new northbound acceleration lane along Okavango Road for the eastbound left-turn slip. A 2 m wide sidewalk would also be provided along Old Paarl Road. It is also recommended that a sidewalk should be provided along the southern side of Leo Close and sidewalks should also be provided along the major internal roads.

Legal Triggers

The proposal triggers Activity 14 of Category A of the NEMWA Listed Activities for the closure of a facility/site which contains hazardous waste (i.e. this requires a Waste Management License) and it also triggers Listed Activity 31 of Listing Notice 1 of the EIA Regulations, 2014 for the formal decommissioning of the site and Listed Activity 12 of Listing Notice 2 of the EIA Regulations, 2014 for indigenous vegetation clearing of a Critically Endangered vegetation type.

There is also an existing permit for the site that was issued in terms of the Environmental Conservation Act (Act 73 of 1989) (ECA), which requires the holder to notify the Regional Director of closure and to submit final rehabilitation plans at least 60 days prior to the intended closure of the site.

The capping proposed is detailed above and this constitutes the "closure", "rehabilitation" and "decommissioning" of the site as denoted in the legislation.

SPECIALIST FINDINGS

Traffic

In terms of existing traffic, all relevant intersections currently operate at an acceptable Level of Service (LOS) except the Old Paarl Road/Orion Street intersection (Krogsheepers & Arangie, 2012). The congestion at this intersection is however due to rat-run traffic avoiding congestion elsewhere on the network. Motorist do have the opportunity to access Old Paarl Road via the signalised Kruisfontein Road intersection.

It is anticipated that the development will generate approximately 346 trips during the a.m. peak hour and p.m. peak hours. Based on the capacity analyses, all the study intersections will operate at an acceptable LOS during the weekday peak hours with the proposed development completed, apart from the Old Paarl Road/Orion Street intersection which will operate at a LOS F. No upgrades are however recommended at this intersection as motorists have the opportunity to access Old Paarl Road via the signalised Kruisfontein Road intersection (Krogsheepers & Arangie, 2021). It is however recommended that at the Okavango Road/Old Paarl Road intersection, that an additional right-turn lane be provided westbound along Old Paarl Road and the northern approach should be widened to provide a new northbound acceleration lane along Okavango Road for the eastbound left-turn slip. A 2 m wide sidewalk would also be provided along Old Paarl Road.

Existing Non-Motorised Transport and public transport facilities in the site vicinity are sufficient and access is proposed via the existing Leo Close off Gemini Street. Krogsheepers & Arangie (2021) concludes that the proposed development can be accommodated with the implementation of proposed mitigation measures.

Geotechnical

Morris et al (2011) confirm that the previous capping on the site has been compromised by mole activity and that it is hosts much alien vegetation. They also note that there were no unacceptable airborne exposure risks at the time, which has been corroborated by OHMS (2021). Development of light industrial facilities on the site would be possible, but the site would require re-engineering for development and there would be some long-term annual maintenance and management required for the site (Morris et al, 2011). The re-engineering and re-development would require an EIA process and input from civil engineers, asbestos specialists, and town planners in order to execute it in terms of applicable law.

Most of Lower Platform 1 area, including the adjacent (north side) slopes comprises asbestos wastes (Morris et al, 2011). Lower platform 2 area is mostly clean, other than some spill-over and minor surface contamination along the toe of the slopes up to the Platform 1 area (Morris et al, 2011). The site is generally underlain by fill and waste deposits overlying in situ subsoil deposits of Quaternary Age. The above is underlain by residual soils that grade with depth into weathered granite bedrock of the Cape Granite Suite.

Groundwater

Detailed hydrogeological investigations into groundwater contamination resulting from historic activities at the greater historic Everite site were conducted between 1998 and 2005 (Parsons & Associates, 2015). Groundwater contamination was detected and the extent thereof delineated, but it was not possible to distinguish or separate that contamination emanating from the Everite asbestos waste site (which is the site under this application) (Parsons & Associates, 2015). No groundwater users had been impacted by the contamination from the Everite site in general and the Everite asbestos waste site (i.e. the "site" for this application) in particular (Parsons & Associates, 2015). It has been confirmed that asbestos is practically immobile in the subsurface and so asbestos is not considered a groundwater contaminant of significance (Parsons & Associates, 2015). The identified contaminants from historic uses, along with an associated increase in EC are potassium and sulphate, which are not considered particularly harmful contaminants, particularly at the concentrations observed during the groundwater investigations (Parsons & Associates, 2015). As such, groundwater would not be impacted.

Biodiversity (Flora)

It has been confirmed that although the proposed site would previously have comprised Cape Flats Sand Fynbos, which is Critically Endangered and is therefore a conservation priority, the site is now highly infested with alien invasive species, predominantly *Acacia saligna* (Port Jackson) and *Pennisetum clandestinum* (Kikuyu grass) (Turner, 2012). However, a severely degraded Cape Flats Sand Fynbos vegetation community does still exist in the extreme north-eastern corner of the site (Turner, 2012), corresponding with the area that was identified as generally asbestos-free in the geotechnical assessment (See Appendix J3). Five indigenous plant taxa were identified in this area of which one (*Lampranthus explanatus*) is IUCN Endangered and restoration of this vegetation patch would be most desirable from a botanical perspective, relocation of the sensitive species to the nearby reserve is acceptable (Turner, 2012). 'Taaibos' occurs on the south-western site boundary and an indigenous grass was identified in the north-western and western portions of the site, which was likely introduced for soil stabilisation purposes (Turner, 2012).

Biodiversity (Fauna)

With respect to fauna found on the site, indigenous and alien birds, as well as the Cape dune molerat have been identified on site, especially in the north-western portion of the site in the vicinity of the stormwater pond (Turner, 2012). Turner (2012) notes that such corridors or "islands" of vegetation can provide important ecosystem services for especially birds, especially given the pace of habitat destruction in the SW Cape lowlands, as well as climate change which impacts bird migrations, e.g. Southern Double-collared Sunbirds have been recorded up to 34 km distant from ringing sites (Hockey et al, 2005).

Freshwater/ Surface Water

A freshwater assessment determined that there is a large artificial pond in the northwestern corner of the site which was previously constructed to manage stormwater runoff from the site. Numerous drains have been constructed on the elevated portion of the site to channel stormwater into this pond and there is a small drainage channel along the outer edge of the norther and eastern portion of the property (Belcher, 2012). The stormwater pond is overgrown with bulrush (*Typha capensis*) and while it has little significance in terms of biodiversity, it does play an important role in stormwater management on the site (Belcher, 2012).

Heritage

It has been confirmed that the site holds no heritage value (Baumann, 2012). As such, heritage will not be impacted.

Surface Asbestos

OHMS (2021) confirmed that there is indeed asbestos on the site, but at present it is only on the ground and there is no airborne asbestos.

ALTERNATIVES AND COMPARISON

Two closure alternatives have been formally assessed in this process namely only capping of the site (in areas where there is asbestos and mole activities), and capping and redevelopment of the site. The no-go alternative has also been assessed, which comprises the site remaining as is.

The preferred alternative would be to cap/close the site and to re-develop thereon (whereby the foundations and slabs laid for the proposed development, in fact, form part of the capping in the areas of the site where roads and buildings would be located).

The impacts of the two development alternatives under consideration are largely similar (and are generally low to very low, negative, which is considered acceptable), but for the Medium (+) socio-economic impact that the preferred alternative would provide through the creation of jobs and contribution to light industry, which is a pertinent consideration during the COVID-19 pandemic, which has shaken the local and global economy. There is no such positive impact for the development alternative as merely capping the site would not generate income for the community or the Applicant. The No-Go alternative does not have many impacts, however there is a significant High (-) impact that continued, unfettered spread of asbestos could have on the local community (and this would also not be legally permissible under the Asbestos regulations), therefore it is imperative that this be controlled. The preferred alternative is preferred over the development alternative as merely capping the site without further development would not be economically viable and, given that hard-capping is required to prevent extrusion of asbestos, the site would have to have a hard covering, which would not be aesthetically pleasing, or aligned with the socio-economic spatial planning intentions for the area.

The preferred alternative is also preferred over the no-go alternative because not capping the site would result in further disturbance and subsequent erosion through mole activity, and furthermore, is not legally acceptable in terms of the Asbestos Regulations, 2001, which require that asbestos and risk of exposure be effectively managed and controlled. Therefore, the No-Go alternative is not a feasible alternative for implementation given, not only the potential future risk to human health, but also when one considers the asbestos regulations which mandate the management and control of asbestos. The assessment of this is therefore largely included in this Basic Assessment process in response to the procedural requirements indicated in the EIA Regulations, 2014 (as amended).

IMPACTS

The impacts (with mitigation) of the two development alternatives under consideration are largely similar (and are generally low to very low, negative, which is considered acceptable), but for the Medium (+) socio-economic impact that the preferred alternative would provide through the creation of jobs and contribution to light industry, which is a pertinent consideration during the COVID-19 pandemic, which has shaken the local and global economy. There is no such positive impact for the development alternative as merely capping the site would not generate income for the community or the Applicant. The No-Go alternative does not have many impacts, however there is a significant High (-) impact that continued, unfettered spread of asbestos could have on the local community (and this would also not be legally permissible under the Asbestos regulations), therefore it is imperative that this be controlled. The preferred alternative is preferred over the development alternative as merely capping the site without further development would not be economically viable and, given that hard-capping is required to prevent extrusion of asbestos, the site would have to have a hard covering, which would not be aesthetically pleasing, or aligned with the socio-economic spatial planning intentions for the area.

MITIGATION AND RESPONSE

The findings and recommendations of the specialist studies have been recorded in the Environmental Management Programme (EMPr) to ensure effective planning, design, development, and operational management of the proposed development.

The preferred alternative is aligned with spatial and environmental planning intentions and is preferred from the Applicant's perspective because the costs associated with the capping and closure of the site could be offset with the income generated by the proposed light industrial park, with a view to making a profit on this in time. The proposed capping would tie-in with the proposed end use and would serve to secure the safety of the site from the underlying asbestos permanently. The way this is proposed in terms of limiting excavation, development in response to the existing platforms, and importing fill for the site is aligned with the intention to limit disturbance of asbestos as much as possible and to cap and development on top of it, rather than within in. The preferred alternative is also preferred from a geotechnical perspective as the specialist has stated that simply capping and re-shaping the site with a cover material is considered inadequate because mole activity would continue in future, and would also do so within any soil capping layer, and the vegetation currently protecting the site is seasonal and may not always prevent the spread of asbestos around the site and off-site. The proposed capping is aligned with the geotechnical recommendation for an engineered, hardened cap. Given that there are no sensitive freshwater features on site which require protection, the preferred alternative is also acceptable from that perspective (Belcher, 2012) as it accommodates the primary requirement to retain the stormwater pond and buffer around it. Although the preferred alternative is not preferred from a botanical perspective (because the most sensitive vegetation area on the site would be developed on) it would be acceptable with the proposed relocation of the Endangered Cape Flats Sand Fynbos species to the Bracken Nature Reserve as well as to other specialists to create an ex-situ population. The proposed green/ landscaped areas of the site would also serve to provide some vegetation "islands" within the industrial area and surrounding context. The proposal for the light industrial park is also found to be acceptable from a servicing, transport, and access perspective.

Overall, all the mitigation measure recommended by the team of specialists involved in this project and assessment are considered important and have been included in the EMPr.

PUBLIC PARTICIPATION

Given the triggers in terms of the NEMA and NEMWA, the public participation process has been integrated and has covered the requirements of both Acts.

The PPP to-date has been in accordance with the minimum legislative requirements prescribed in regulation 41 of the EIA Regulations, 2014 (as amended) and has include the following activities (noting that no alternative sites have been considered in this impact assessment process):

- Advertisement (through site notices, a mail-out a knock-and-drop to adjacent landowners and adverts in Tygerburger and Die Burger) of the proposed development and Basic Assessment process including the distribution of the post-application Draft Basic Assessment Report (BAR) for public comment and opportunity to register as an I&AP (30 days have been provided for the comment period);
- With respect to the written notice to the owners and persons in control of the site, note that the applicant is the landowner so no notice in this regard is required;
- Note that there are no legitimate "occupiers" on the site, but anyone trying to get onto the site (which would have been illegally, given that the site is secure) would have been able to see the site notices;
- Written notice to the municipal councillor of the ward in which the site is located was done;
- Written notice to the municipality (Local and District Municipality) which has jurisdiction in the area was done as part of the notification and BAR distribution above; and

- Written notice to any organ of state having jurisdiction in respect of any aspect of the activity was done as part of the notification and BAR distribution above.

Comments received during the current public review process will be incorporated into the final BAR for submission to DFFE for their decision-making.

Following the issue of DFFE's decision, registered I&APs would be notified of the outcome, reasons for decision and opportunity to appeal.

There was previous public engagement carried out in a similar process for the same site and closure thereof in 2013, and comments from I&APs from that process have been addressed in this BAR.

SYNOPSIS AND CONCLUSION

The site conditions and local context have been considered through this process and the proposed capping and redevelopment provides a balances consideration of these, with a key aspect of the proposal being the closure/ rehabilitation of the asbestos consolidation site in order to eliminate the human health risks currently posed by the asbestos on the site surface, and that which could be spread in a future scenario where this is unmanaged, should the asbestos become airborne.

The preferred alternative responds appropriately to these considerations and, on the whole, compares more favourably to the alternative for merely just capping the site and for the no-go alternative. The adverse impacts of the preferred alternative can me managed and mitigated to acceptable levels.

Overall, the proposal is aligned with the site conditions and context and the impacts anticipated can be controlled to acceptable levels.

The decision for the authorisation lies with the Competent Authority and should be taken based on the information provided. It is believed that there is presently insufficient information contained in this report to make the decision because the report does not contain the evidence of- and comments received during the public review period. This is because this report is currently out for public review and so comments received during this process will be incorporated into the final report for decision-making.

REPORT CONTENTS

This draft Basic Assessment Report has been written in terms of, and in order to fulfill, the requirements of Appendix 1 of the EIA Regulations, 2014 (as amended). For ease of reference, the table below cross references the content requirements and related section number in this report.

NO.	REQUIREMENTS:	INCLUDED THIS IN REPORT:	SECTION REFERENCE
a	Details of the EAP who prepared the report, including the expertise of the EAP, including a curriculum vitae.	✓	2 Appendix E
b(i)	The location of the activity, including the 21-digit Surveyor General code of each cadastral land parcel	✓	2
(ii)	The physical address and farm name of the activity	✓	2
(iii)	(where the required information in (i) and (ii) is not available), the coordinates of the boundary of the property or properties	✓	2 Note that coordinates of boundary points are not required in this case because (i) and (ii) are available, however the coordinates for the central point of the site are provided
c	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	✓	4 Appendix B
d	A description of the scope of the proposed activity, and a description of the activities to be undertaken including associated structures and infrastructure	✓	4 5 Appendix B
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 have been considered in the preparation of the report and how the proposed activity complies with	✓	7 10

	and responds to the legislation and policy context, plans, guidelines, tools, frameworks, and instruments.		
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	✓	10
g	A motivation for the preferred site, activity, and technology alternative	✓	13
h(if)	A full description of the process followed to reach the proposed preferred alternative within the site, including details of all the alternatives considered	✓	13
(ii)	Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs	✓	12 Appendix L
(iii)	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	✓	12 Appendix L Note that these sections would be updated with feedback from I&APs following the current public review period of this draft Basic Assessment Report
(iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	✓	8 □
(v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed, or mitigated;	✓	14
(vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	✓	14 Appendix N
(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	✓	14

(viii)	The possible mitigation measures that could be applied and level of residual risk	✓	14 Appendix M
(ix)	A full description of the process followed to reach the proposed preferred alternative within the site, including the outcome of the site selection matrix	X	Note that no site alternatives are applicable as the subject site is the one which has asbestos on it and requires closure
(x) (xi)	A full description of the process followed to reach the proposed preferred alternative within the site, including if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such, as well as a concluding statement indicating the preferred alternatives, including preferred location of the activity	✓	14
I(i)	A full description of the process and methodology used to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including a description of all environmental issues and risks that were identified during the environmental impact assessment process;	✓	14 Appendix N
J	An assessment of each identified potentially significant impact and risk, cumulative impacts, the nature, significance, and consequences of the impact and risk, the extent and duration of the impact and risk, the probability of the impact and risk occurring, the degree to which the impact and risk may be reversed, the degree to which the impact and risk may cause irreplaceable loss of resources and the degree to which the impact and risk can be avoided, managed or mitigated	✓	14
k	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report	✓	14 Appendix J
l	An environmental impact statement which contains a summary of the key findings of the environmental impact assessment and a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	✓	14 15
m	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr	✓	14 Appendix M
n	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	✓	15

o	A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed	✓	3
p	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	✓	14 15
q	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised.	✓	1
r	An undertaking under oath or affirmation by the EAP in relation to the correctness of the information provided in the reports, the inclusion of comments and inputs from stakeholders and I&APs, the inclusion of inputs and recommendations from the specialist reports where relevant and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.	✓	Appendix D Note that comments from I&APs will be included in the final Basic Assessment Report as this report is currently under public review
s	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	**X** Note that "rehabilitation/closure" is the proposed capping of the site required to allow for proposed development	
t	Any specific information that may be required by the competent authority	Not Applicable as yet	
u	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	Not Applicable	

Draft Basic Assessment Report for the Application for a Waste Management License to Decommission the Everite Asbestos Site, Erf 18354, Brackenfell

DFFE APPLICATION REF NO. 14/12/16/3/3/1/2473

1. APPLICATION

An Application for Environmental Authorisation (EA) and a Waste Management License (WML) has been submitted on 6 January 2022. Refer to Appendix P and Q respectively.

Details pertaining to the validity period of the EA and WML are provided in Table 1, for consideration by Department of Forestry, Fisheries and Environment (DFFE). Note that the listed activities triggered in terms of the National Environmental Management Act (Act No. of 1998) (NEMA) and the National Environmental Waste Act (Act No. of 1998) (NEMWA) apply only to the decommissioning and construction phase, therefore there are no operational components to the proposal which would require approval or management in terms of NEMA and NEMWA.

TABLE 1 DETAILS PERTAINING TO VALIDITY OF THE EA AND WML, IF GRANTED

Period for which Environmental Authorisation is required	The standard five-year validity period for and EA and WML for commencement of the proposed capping would be sufficient.
The date on which the activity would be concluded	The capping would be concluded within two years of the issuing of the EA and WML. The top-structures would be completed within two to three years of the capping.
The date post-construction monitoring requirements would be finalised	Post construction monitoring, as per the EMPr, would be required in terms of a single audit to take place within two months of completion of the capping. No further post-construction monitoring would be required.

2. ADMINISTRATIVE DETAILS: APPLICANT, EAP AND SITE

Highlight the Departmental Region in which the intended application will fall	DFFE: Waste Management	
Name of proponent:	Duro Brick Company (Pty) Ltd represented by Mr. Pieter Smith	
RSA Identity/ Passport Number:	7907125019082	
Name of contact person for applicant (if other):	As above	
RSA Identity/ Passport Number:	7907125019082	
Company/ Trading name (if any):	Duro Brick Company (Pty) Ltd	
Company Registration Number:	1929/001280/07	
Postal address:	The Picton, 134 King Edward Road	
	Parow	Postal code: 7500
Telephone:	083 700 4294	Cell: 083 700 4294
E-mail:	pieter@hanocron.co.za	Fax:
Company of Environmental Assessment Practitioner (EAP):	Chand Environmental Consultants cc	
EAP name:	Marielle Penwarden & Claudette Muller	
Postal address:	PO Box 238	
	Plumstead	Postal code: 7801
Telephone:	(021)762 3050	Cell:
E-mail:	claudette@chand.co.za	Fax: (021) 762 3240
EAP Qualifications:	Marielle Penwarden: BSc Honours Environmental Management (UNISA) BSc Environmental Management- Zoology (UNISA) Claudette Muller: MPhil in Environment, Society & Sustainability (UCT) BSc Honours in Environmental Science (Rhodes) Refer to Appendix E for the CV of the EAPs	
EAP Registrations/Associations:	Marielle Penwarden: EAPASA: Registered EAP (2019/1988) & SACNASP Candidate Natural Scientist (600001/15)	
Name of landowner:	Duro Brick Company (Pty) Ltd	
Name of contact person for landowner (if other):	Mr. Pieter Smith	

Postal address:	As above		
	As above	Postal code: As above	
Telephone:	As above	Cell: As above	
Name of Person in control of the land:	Mr. Pieter Smith		
Name of contact person for person in control of the land:	As above		
Municipality in whose area of jurisdiction the proposed activity will fall:	City of Cape Town: Northern Planning District		
Contact person:	Pat Titmus		
Postal address:	Milnerton Municipal Offices		
	87 Pienaar Road, Milnerton	Postal code: 7441	
Telephone	021 444 0597	Cell: 083 701 4318	
E-mail:	Pat.Titmuss@capetown.gov.za	Fax:	
Property location of all proposed sites:	Brackenfell		
Farm/Erf name(s) & number(s) (including portion) of all proposed sites:	ERF 18354		
Property size(s) (m^2) of all proposed sites:	109,250.9m^2		
Development footprint size(s) in m^2:	109,250.9m^2		
SG Digit code(s) of all proposed sites:	C06700040001835400000		
Coordinates of the site: Latitude (S)	33°	52‘	29.30“
Longitude (E)	18°	42‘	4.57“
Street address of all proposed sites:	ERF 18354, Virgo Close (off Gemini Street), Everite Industrial Park, Brackenfell.		
Magisterial District or Town:	Western Cape		
Closest City/Town:	Brackenfell	Distance	Approx. 1.6km
Current zoning of all proposed sites:	General Industrial 1		
Is a rezoning application required?	**Yes** - Subdivision and rezoning applications will be submitted to the City of Cape Town in line with the proposed development of the Industrial Park.		
Is a consent use application required?	**No**		
Locality map:	Refer to Appendix A		

Landowner(s) Consent:	Not required, landowner is the applicant, refer to Appendix F for proof of ownership
Project Plan (e.g. Gantt chart)	Refer to Appendix C

Is this a strategic infrastructure projects ("SIPs") as contemplated in the Infrastructure Development Act, 2014 (Act No. 23 of 2014)?	**No**
The proposed development entails the capping and closure of the old Everite asbestos facility in terms of the existing Waste Management License	
Is the proposed site(s) a brownfield of greenfield site?	
The site is a brownfields site which was previously used as a factory which produced asbestos wastes in the form of sludges, broken sheeting and reject pipes which would be disposed of at a site created for this purpose alongside the factory. The site now needs to be decommissioned and redeveloped.	
Note applicable category in terms of the national sector classification list	
Services/Waste Management Services/Disposal Facilities – Hazardous	

3. ASSUMPTIONS, LIMITATIONS AND GAPS IN KNOWLEDGE

In general, the primary assumption by the EAP and specialists is that the proposal would generally be executed as described in section 4 of this report and also indicated in the Site Plan (refer to Appendix B2), within the limits of the developable footprint contained therein (noting that detailed design within these limits is anticipated to still occur following this Basic Assessment process).

The second key assumption/aspect which is conditional to the findings of the specialists and this EAP is the assumption that the mitigation measures will be carried out as stipulated by each professional/specialist.

Specialist assessments undertaken during the previous Basic Assessment process from 2012 to 2015 have been used in this assessment. Updated declarations have been obtained from specialists (dated September 2021) and have been included.

The hydrogeological assessment was based on a site visit and reports from previous hydrogeological investigations of the Everite site between 1998 and 2005. It was assumed that the information is still valid. It was further assumed that most – if not all – of the well points installed during the previous studies no longer exist and cannot be resampled.

The hydrogeological investigations of the Everite site focused on the unconsolidated sand or primary aquifer system.

For the geotechnical assessment, in an attempt to determine some of the engineering properties, shear box, Triaxial and standard oedometer tests were scheduled on selected undisturbed samples of the asbestos sludge. It must be appreciated that the above tests were devised for soils and, in some cases weathered bedrock, and have been proven over the years to provide reasonably accurate results for the prediction of soil behavior under various stress conditions. An attempt has been made here to come

up with some parameters for the asbestos sludge that could give an indication of how this material would behave under various stress conditions. The properties of the sludge are very different to those of a soil and hence these results must be interpreted with caution.

It is uncertain whether the Contractor would implement the EMPr as required, however there are legal mechanisms in place to ensure that the requirements thereof must be adhered to (i.e. it would be a condition of approval for the EA and WML) and the EMPr (and EIA Regulations, as amended) includes a requirement for auditing during the decommissioning/construction phase as well as a single audit following completion thereof.

It is assumed the assessments and information provided in the specialist reports (contained in Appendix J) are true and correct.

In terms of gaps in knowledge, this draft report does not contain any comments from Interested and Affected Parties (I&APs) as they relate to this Basic Assessment process. The report is currently out for a 30-day public review period, after which, the next iteration thereof would include comments from I&APs and responses thereto.

4. ACTIVITY DESCRIPTION

Background

The Everite Factory in Brackenfell was established in 1945 and closed in October 2000. During its operation, the factory produced asbestos wastes in the form of sludges, broken sheeting and reject pipes which would be disposed of at a site created for this purpose alongside the factory. The total site covered an area of about 70 ha, while the asbestos waste site covers an area of some 9 ha. The sited included various activities including the factory itself, the wastewater dam, the AC Pipes area, the moulded goods yard and the asbestos waste disposal site (Parsons & Associates, 2015).

The wastewater dam was used by the Everite factory both for the disposal of its effluent as well as a source of water. It was estimated some 30 000 m^3 used to be abstracted from the dam each month for use in the factory. The volume of effluent discharged into the dam was not measured. The property around the dam was sold in 2000 and water is no longer abstracted from the dam. Though no longer used as a source of water, the wastewater dam still forms part of the municipal stormwater management system of the area. Subsurface drainage from the site continues to flow into the dam. Discharged product and other waste generated by the factory were disposed in the waste disposal site directly east of the factory. The site was classified as a GCB+ facility and was issued with a permit by DWAF on 12 August 1992. Since closure of the factory in 2000, the site was used to dispose of waste generated during the factory clean-up process 2. In 2001 the asbestos waste site was reshaped, capped, and had vegetation established on it and is currently not used.

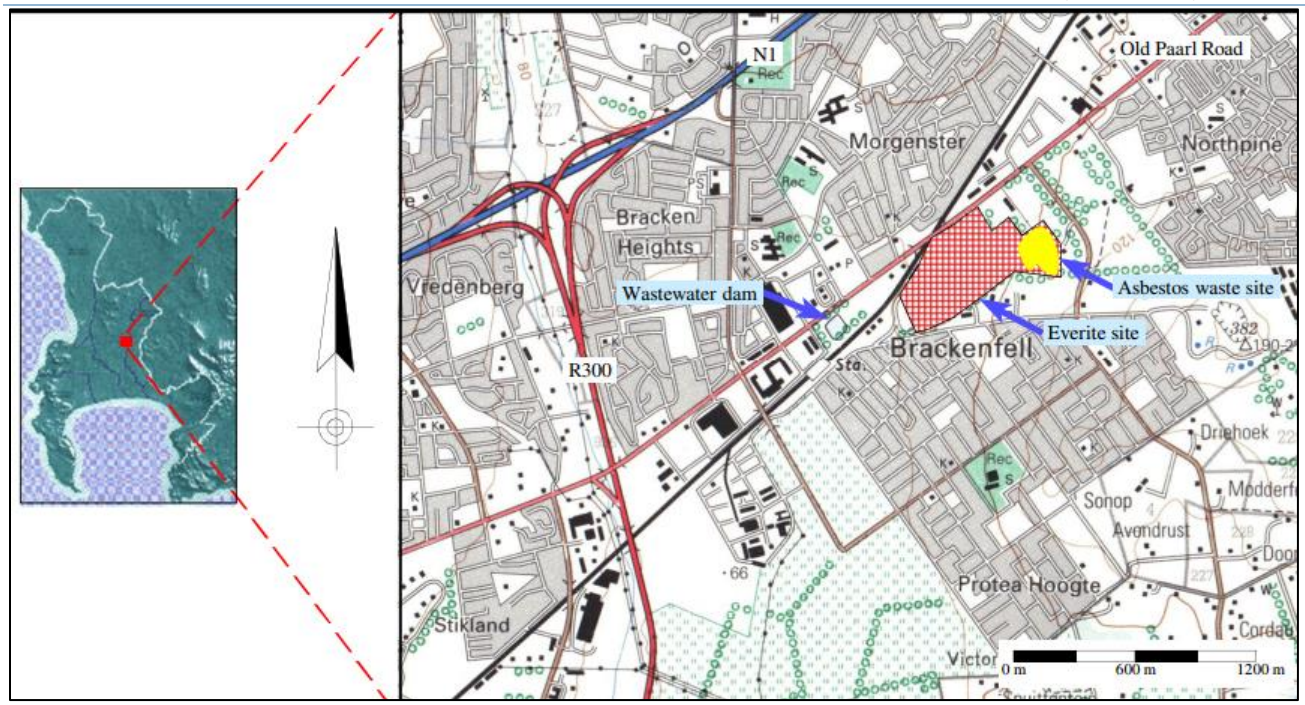

FIGURE 1 LOCALITY MAP OF THE EVERITE SITE IN BRACKENFELL, INDICATING THE POSITION OF THE WASTEWATER DAM AND THE ASBESTOS WASTE SITE (THE ASBESTOS WASTE SITE IS THE SUBJECT OF THIS APPLICATION)

FIGURE 2 RECENT AERIAL IMAGE OF EVERITE SITE, SHOWING THE POSITION OF THE WASTEWATER DAM AND ASBESTOS WASTE SITE (THE ASBESTOS WASTE SITE IS THE SUBJECT OF THIS APPLICATION)

The disposal area was the upper platform area in Figure 3 below. Upon commencement of the decommissioning process in 2000, parts of the factory that had been contaminated with asbestos were

deposited in the existing disposal area as well as in a lower section of the site. The findings of a geotechnical assessment indicate that asbestos wastes are up to a maximum of ~8 m thick on the lower platform and ~6.5 m thick on the upper platform which, combined, cover about 10.29 Ha. This area is now referred to as the "Asbestos Waste Consolidation Site" (or "Asbestos Consolidation Area in Figure 3). It can be assumed for calculation purposes, and being conservative, the volume of asbestos waste on site is approximately 145,000 m^3 and the mass is about 250,000 tons. Subsequent to the consolidation of asbestos waste in the area in question, the site was capped with soil and secured with formalized drainage channels. However, official closure of the site with a closure permit from the regulatory authorities was never completed. Over the years that followed, the covering has been undermined through mole activity and asbestos wastes are being pushed to the surface.

A geotechnical assessment in 2011 confirmed that there is an existing capping layer of silty sand and builders' rubble ranging from 0.2 m to 1.5 m below surface over the asbestos waste areas. In the lower platform, this layer is underlain by a further capping layer comprising clayey sand with ferruginised gravel, extending to depths in the range of 0.4 m to 1.0 m below existing ground level.

FIGURE 3 THE OLD EVERITE FACTORY AREA (~MID 1990'S) SOURCE: MEGA GEOTECHNICAL ASSESSMENT, 2011

Group Five commissioned the geotechnical investigation in 2010 in order to understand the latest condition of the site and identify opportunities and constraints to decommissioning and possible redevelopment. A Basic Assessment process and Waste Management License (WML) application was also carried out at the time, with a final report being submitted the then Department of Environmental Affairs (DEA) and the Department of Environmental Affairs and Development Planning (DEA&DP) in 2014. The Application lapsed as feedback from the then Department of Water and Sanitation on the final design was outstanding. The 2010 to 2014 investigations and assessments revealed a number of land use

possibilities in terms of the proposed redevelopment and culminated in an authority feedback workshop to gauge the initial sentiment regarding the proposed redevelopment. In principle, future development of the site was agreed to by all authority representatives at the workshop. However, in order to ensure that any future development of the site is environmentally acceptable, it was agreed that the land should be 'capped' to prevent mole activity from exposing the buried asbestos waste.

Duro Brick Company (Pty) Ltd ("Duro Brick") owns the land (refer to the Title Deed in Appendix G) and they intend to decommission the site (Erf 18354, Brackenfell) in the form of permanent capping, with further development of a light industrial park thereon. The intention is to make use of the existing contours/ slope of the site and to keep any excavations to a minimum. A critical part of the capping/ closure of the site to ensure that the asbestos is firmly in place is the proposed development as some of the roadways and foundations would form part of the capping layers and would be constructed on top of the capping. The proposed capping design has been crafted in the context of the proposed end-use of the site.

This closure of the site requires a WML in terms of the existing WML for the facility, which was issued in terms of the National Environmental Management: Waste Act (No. 59 of 2008). The WML must come from the National Department of Environment, Forestry and Fisheries (DFFE), in consultation with their colleagues at the National Department of Water and Sanitation (DWS).

Note that, while the previous 2010-2014 Basic Assessment process required Environmental Authorisation from the provincial DEA&DP in terms of the National Environmental Management Act (No. 107 of 1998), as amended, this is no longer the case because the EIA Regulations have since been amended and the Listed Activities triggered at the time are no longer applicable.

It is intended that Duro Brick would develop and manage the site. Individual units would not be sold but be managed through long term leases.

Proposed Activity (Alternative 2- Preferred Alternative)

The preferred alternative (i.e. Alternative 2) proposed entails the capping of the full extent of the site, except for the retention pond and associated buffer area, as well as redevelopment on the site (which would provide a further capping layer).

The proposal has three key elements:

- Total capping proposed of up to approximately 95,000 m²;
- Redevelopment, with some occurring on top of the capping layer, of up to approximately 50,096 m²; and
- Retention pond and associated buffer area of approximately 14,250.9 m².

Note that the proposed development footprint can be divided into an area for roads and parking of approximately 18,091 m² and building footprints of approximately 32,005 m².

The intention is to have as limited excavation on the site as possible, in order to limit disturbance to the asbestos. The methodology and associated drawings are provided in Appendix B and described below.

I&AP Comment addressed from previous process: Concerns related to risk and safety with regards to the removal of asbestos waste

There are different capping strategies proposed for different areas of the site as they relate to the proposed industrial development. In sections where there would be no infrastructure (i.e. roads and buildings), like the green/landscaped areas, the capping layer would be more robust, while areas which would house development would have a thinner

capping layer, with the layer works for the roads and foundations and platforms for the buildings providing an additional capping layer on top of the engineered capping layer or replacing certain of the capping layers.

Furthermore, in efforts to reduce the disturbance of asbestos on site as much as possible, the proposed capping and development would require minimal excavation, with compaction and importing of fill to realise the levels required. The method of compaction would also be undertaken using the best practice for minimising the risk of spread of asbestos during these works.

The EMPr contains measures for executing the works in a way that disturbs as little asbestos at any one time and includes measures such as clearing of the vegetation for specific areas of works at a time such that the entire site does not remain clear all in one go, use of an asbestos-certified Contractor, limiting access during the site, monitoring for airborne asbestos, external monitoring and reporting against conditions of approval throughout construction, etc. Refer to the EMPr in Appendix M for more detail in this regard.

Compaction for In-Situ Conditions

The in-situ terrain would be compacted before any fill and/or capping layers are placed and said terrain would be compacted to 95 % MOD AASHTO (Walters, 2020).

Proposed Capping

The capping layerworks to be undertaken in depend on the total fill required to achieve the final earthworks levels required for the proposed development (i.e. different components thereof, such as roads or building platforms, would need different levels) (Walters, 2020). Therefore, there is a different capping strategy proposed for each of the following areas:

- Green/ Landscaped Areas (i.e. the areas surrounding the proposed development structures, to be landscaped);
- Roads;
- Building Platforms;
- Services; and
- The Stormwater Pond.

The approach for each of these is described below.

Green Areas

I&AP Comment addressed from previous process: Clearing vegetation and conserving natural remnants of vegetation

Existing vegetation would be cleared from these areas and the proposed capping layer works would be constructed directly onto the compacted in-situ material (Walters, 2020). Vegetation clearing specifications (i.e. site clearing) have been included in the EMPr (refer to Appendix M). Note, that the required search and rescue of certain plants would take place in conjunction with the vegetation clearing. The capping layer is depicted in Figure 4 and would comprise the following:

- A cement stabilized layer to a thickness of 300 mm;
- A graded crushed stone layer to a thickness of 150 mm and cover this layer with another woven geotextile; and
- Loosely place a 200 mm layer of topsoil that will promote vegetation in the green areas.

As mentioned above, planting of landscaping vegetation as per Landscape Plan (noting that the final Landscape Plan would be approved as part of the Spatial Development Plan approval from the City of Cape Town Municipality) would then occur. The Draft Landscape Plan is included as Appendix B3.

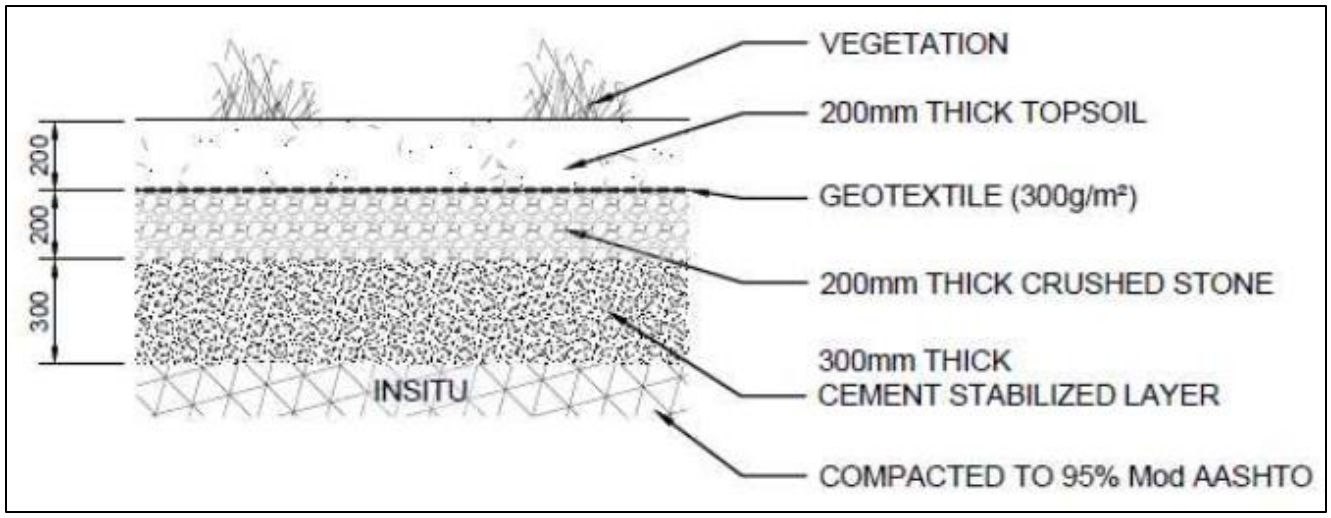

FIGURE 4 PROPOSED CAPPING LAYERWORKS FOR THE GREEN AREAS (SOURCE: WALTERS, 2020)

Due to the presence and thickness of this existing capping material as described above, J&W finds that an additional capping layer (barrier) of 500 mm is sufficient. Furthermore, one of the recommendations from the geotechnical assessment stated, *"Due to the likely compressible nature of the materials present on site, it is recommended that the platform levels remain more or less the same i.e. fills greater than 500 mm must not be constructed."*

There would be instances where services would need to be installed across green areas. Refer to "Services" below for a description thereof.

Furthermore, given the mole activity, which is prevalent on site, a rodent barrier would be installed along the entire perimeter of the site (Walters, 2020). This would entail the excavation of 1 m deep trench that would be lined with a HDPE geomembrane and backfilled with a cement stabilised material (Walters, 2020). The geomembrane would continue across the top of the trench and be place 100 mm up against the property boundary (Walters, 2020). The typical cross section of the proposed rodent barrier is indicated in Figure 5

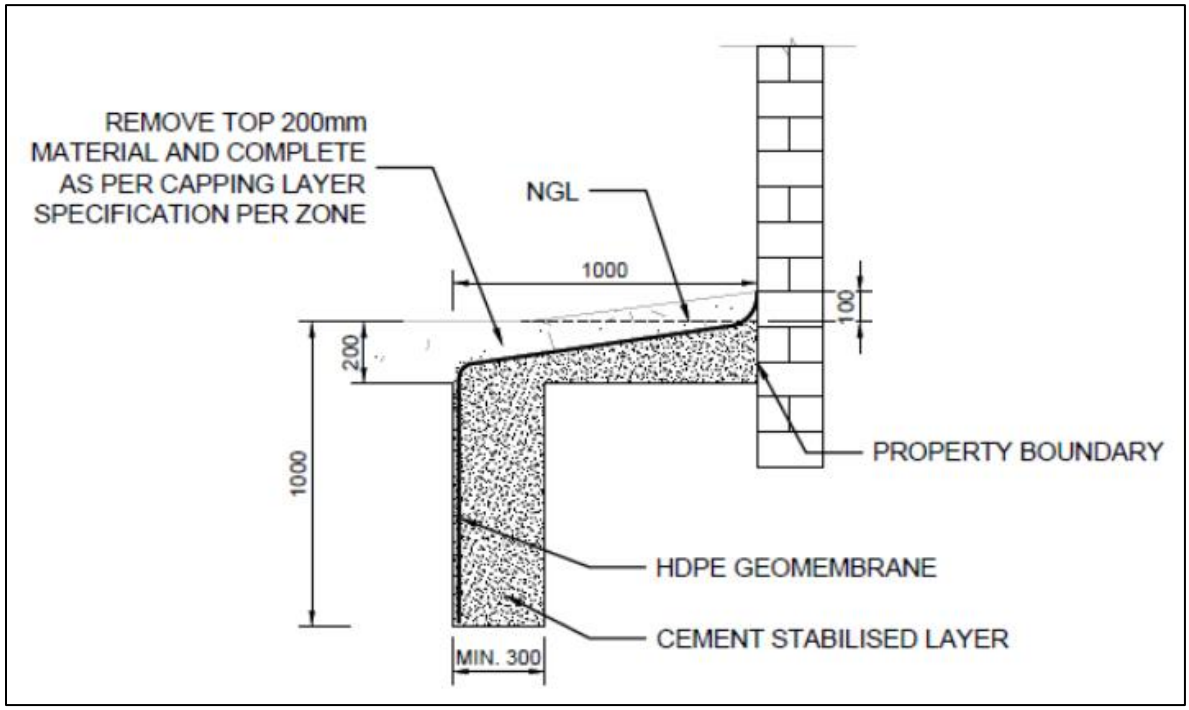

FIGURE 5 TYPICAL CROSS-SECTION OF PROPOSED RODEN BARRIER (SOURCE: WALTERS, 2020)

Roads

Walters (2020) explains that the roads can be classified into two categories, based on the proposed layerworks, namely main access roads (asphalt finish) and internal parking areas (brick paved finish). Typical road sections are shown in Figure 6 and Figure 7.

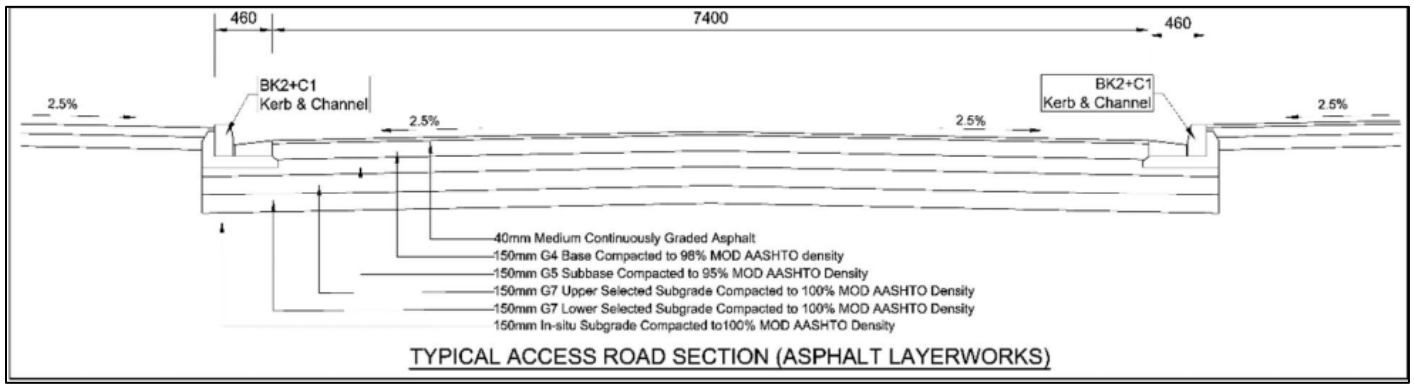

FIGURE 6 PROPOSED ROAD LAYERWORKS: ASPHALT- 640MM TOTAL THICKNESS (SOURCE: WALTERS, 2020)

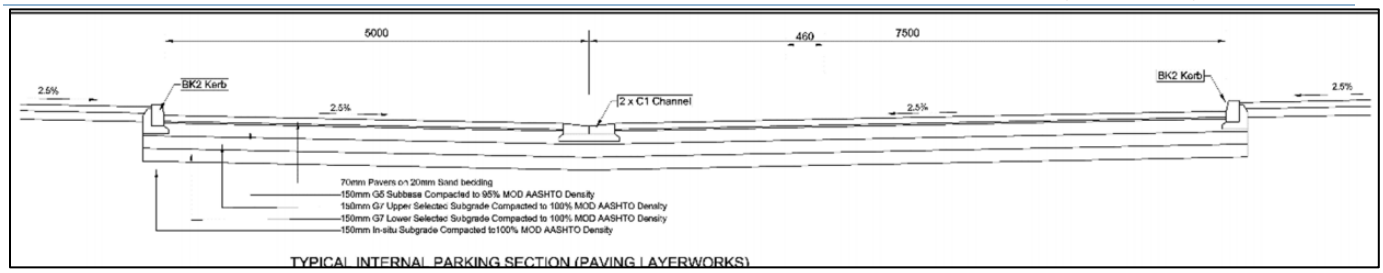

FIGURE 7 PROPOSED ROAD LAYERWORKS: BRICK PAVING- 540MM TOTAL THICKNESS (SOURCE: WALTERS, 2020)

The proposed road layerworks with the asphalt finish include the following layers:

- 40 mm Premix
- 150 mm G4
- 150 mm G5
- 150 mm Upper Selected
- 150 mm Lower Selected

Under the asphalt roads, the proposed capping as described above would be replaced by the abovementioned road layerworks (Walters, 2020). Where the total fill required to achieve final level is less than the proposed road layerworks thickness, excavation would be required into the in-situ material (Walters, 2020). This is illustrated in Figure 8 (also refer to Appendix B1), where the final level is approximately 70 mm below the existing level (Walters, 2020). This scenario would only be limited to a 135 m² area (Walters 2020) as the intention is to limit excavation into the asbestos as much as possible.

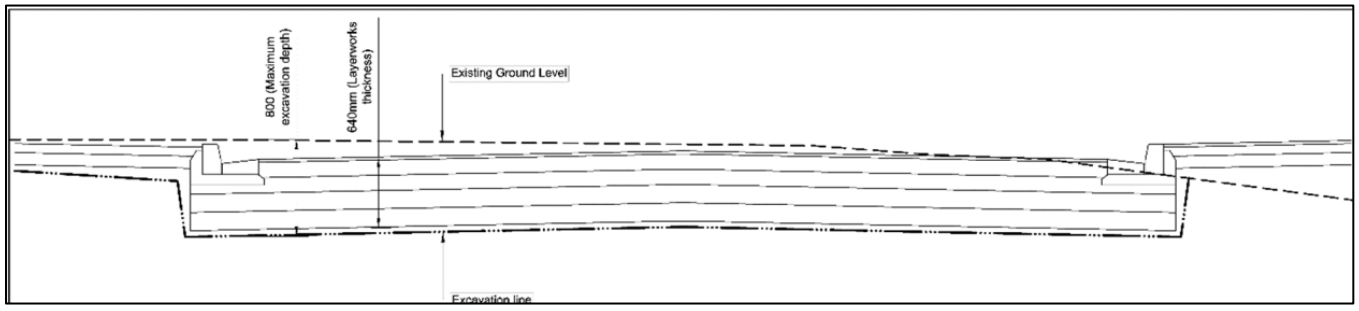

FIGURE 8 EXCAVATION FOR ROAD LAYERWORKS AT DEPTH (SOURCE: WALTERS, 2020)

The proposed road layerworks with the brick paving finish include the following layers:

- 70 mm Paver on 20 mm sand bedding
- 150 mm G5
- 150 mm Upper Selected
- 150 mm Lower Selected

Where the brick paving final earthworks, levels are close to the existing ground and excavation is required, the 200 mm thick crushed stone layer of the abovementioned proposed capping layerworks would be placed underneath the bricking paving layerworks are constructed (Walters, 2020).

Building Platforms

Walters (2020) indicates that the proposed building platform areas can be categorised into the following three capping scenarios:

A. Final at, or just below the existing level (maximum excavation into the asbestos would be required here- refer to Figure 9);
B. Final level between 0 mm and 700 mm above existing level (intermediate excavation into the asbestos would be required here- refer to Figure 9); and
C. Final level more than 700 mm above existing level (no excavation into the asbestos would be required here).

Each scenario would entail varying degrees of excavation into the existing ground, from 700 mm excavation to no excavation into the existing ground (Walters, 2020) (refer to Appendix B4). Excavation of 700 mm into the existing ground would require capping with no additional fill (scenario A above, refer to Figure 10) while the scenario with no excavation would not require capping layerworks and only bulk earthworks (scenario C above) (Walters, 2020). These bulk earthworks would comprise of competent material constructed in 200 mm thick layer and compacted to 95% MOD AASHTO (refer to Figure 9) (Walters, 2020).

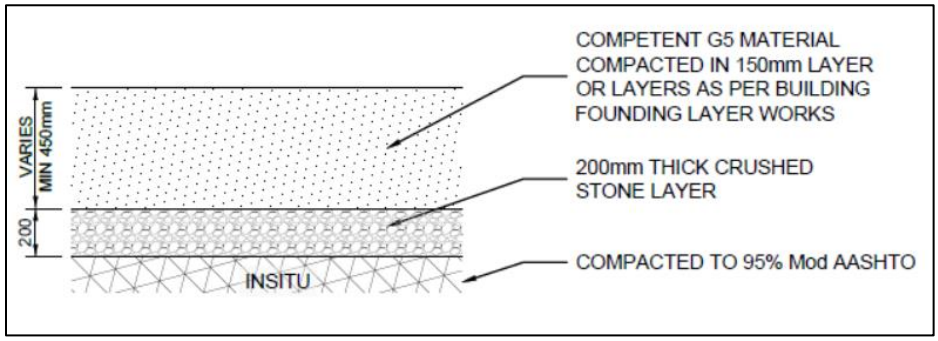

FIGURE 9 EXCAVATION FOR ROAD LAYERWORKS AT DEPTH (SOURCE: WALTERS, 2020)

The area where maximum excavation is required for building platforms would be limited to 25 m². Hence, Figure 9 is applicable for scenarios A and B described above and depicted in Figure 10 and Figure 11 respectively.

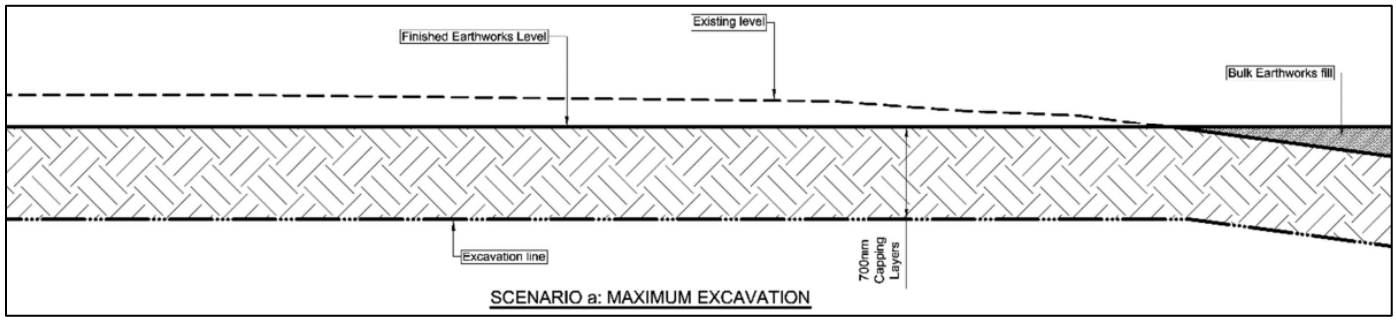

FIGURE 10 MAXIMUM EXCAVATION SCENARIO (SOURCE: WALTERS, 2020)

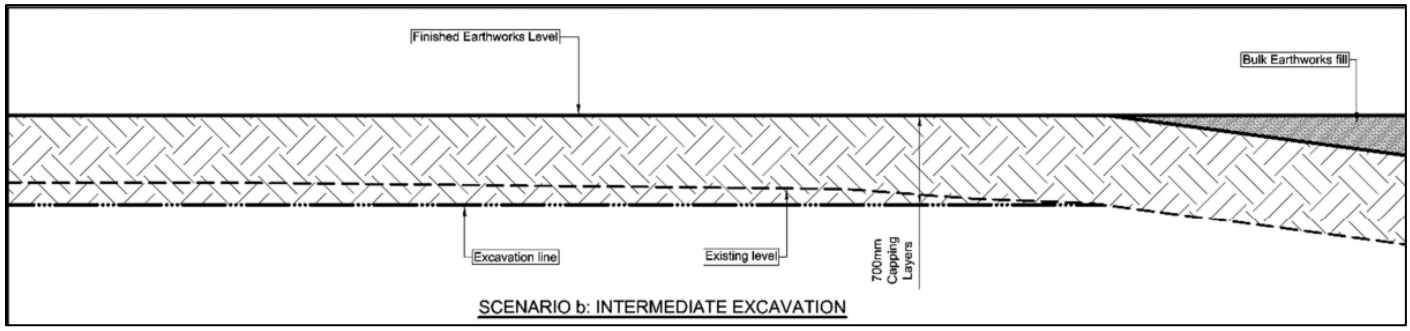

FIGURE 11 INTERMEDIATE EXCAVATION SCENARIO (SOURCE: WALTERS, 2020)

Services

The proposed services would largely be located within the proposed earthworks and/or capping layers as described above (Walters, 2020). They would generally be to a maximum depth of 1 m (Walters, 2020).

The services would be located within roads or parking areas, or traverse across areas where no bulk earthworks would need to occur (Walters, 2020). It is in areas such as those where no bulk earthworks would be necessary (i.e. the green/landscaped areas) that the proposed services would be deeper than the proposed capping layers and so excavation into the existing ground and asbestos would be required (Walters, 2020).

However, there are instances where this would not be possible and so Walters (2020) provides three scenarios relevant to the proposed services, namely:

A. Deeper that the proposed capping layer, in areas of no bulk earthworks/roadworks (refer to Figure 12);
B. Within the existing ground under roads/parking (refer to Figure 13); or
C. Within the bulk earthworks fill, under roads/parking (refer to Figure 14).

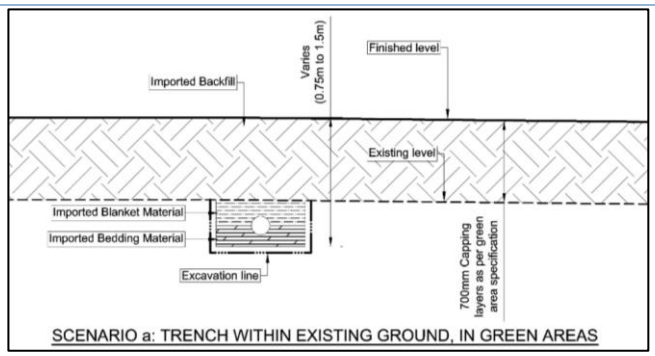

FIGURE 12 SCENARIO A: SERVICES- TRENCH WITHIN EXISTING ROUND (GREEN AREAS) (SOURCE: WALTERS, 2020)

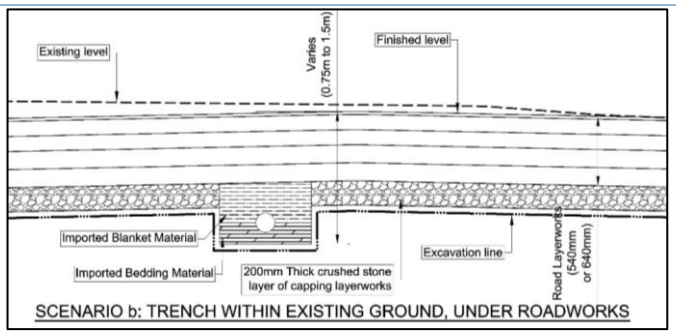

FIGURE 13 SCENARIO B: SERVICES- TRENCH WITHIN EXISTING ROUND (UNDER ROAD WORKS) (SOURCE: WALTERS, 2020)

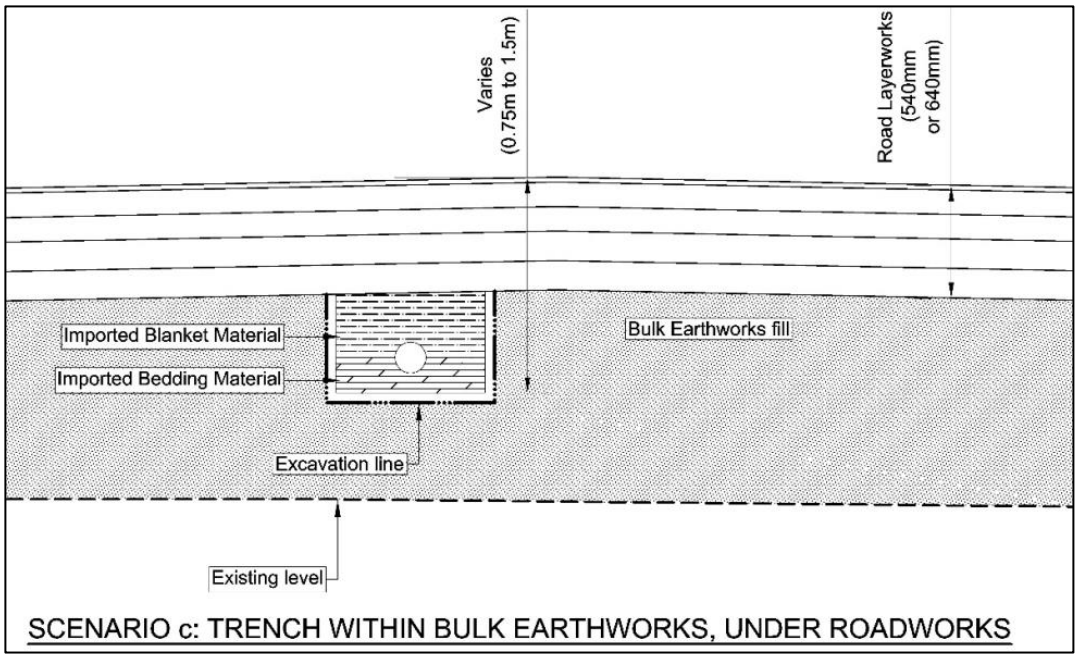

FIGURE 14 SCENARIO C: SERVICES- TRENCH WITHIN BULK EARTHWORKS (UNDER ROADWORKS) (SOURCE: WALTERS, 2020)

Stormwater Pond

I&AP Comment addressed from previous process: Stormwater management.

The existing stormwater pond would need to be extended in length and widened (refer to Appendix B1) (Walters, 2020), and this would require excavation into the existing pond embankment. The pond would include a drainage layer of 500 mm thick, clean drainage sand (Walters, 2020). Armorflex grass blocks would line the bottom and side slopes of the pond (Walters, 2020). The drainage layer would contain a series of 100 mm diameter subsoil drains (refer to Appendix B1). There would also be planting in the pond.

A vegetated buffer (i.e. a green area) would be provided around the pond and would be capped as per the "Green Areas" described above.

I&AP Comment addressed from previous process: Conserving natural remnants of vegetation

The total extent of capping proposed would be 95,000 m^2.

Refer to Appendix B for the proposed capping plans.

Access

There is currently access to the site.

The existing access road would be used, and the site is only accessible via that single point/ gate (which is currently locked and accessed controlled). The site is accessed from Virgo Close, off Gemini Road in Brackenfell Industria.

Access to the site is also restricted to personnel who are registered asbestos contractors or those who have been appropriately trained and passed the asbestos medicals required to access the site.

Proposed End Use

The proposed development would be a secure industrial estate comprising a combination of larger portions ranging from around 6095 m^2 to 10800 m^2 and smaller portions averaging 1500 m^2 with an internal road (refer to below) network, some green areas and a stormwater detention pond (refer to Figure 15 as well as Appendix B2). Refer to Figure 16 and Figure 17 below for images of larger and smaller units respectively. The proposed industrial park would be fenced around the perimeter, and have a single entrance and exit gate, which would be controlled by security personnel.

It is intended that when portions are sold, there would be a title deed condition (as well as an estate rule) which does not permit any future excavations be allowed.

The proposed capping would not, therefore, be a final layer but rather the proposed roads, paved areas and factory floors (typically comprising concrete and cement slabs) would be developed on top of it with a view to adding further capping layers and that this would also physically limit and deter future excavations.

I&AP Comment addressed from previous process: Queries around the possibility of purchasing portions of the rehabilitated land

Note that, Given the history of the site as a hazardous waste disposal facility, there are restrictions in place which prevents the sale of individual plots. The developer (Durobrick "(Pty) Ltd) is required to

continue to manage the property as a whole. Individual erven would likely be rented to prospective tenants.

FIGURE 15 PROPOSED DEVELOPMENT PLAN (SOURCE: CHAMELEON ARCHITECTS, 2020)

FIGURE 16 ARTIST RENDER OF SMALL UNITS (SOURCE: P. SMITH, 02/09/2020)

FIGURE 17 ARTIST RENDER OF LARGER UNITYS (SOURCE: P. SMITH, 02/09/2020)

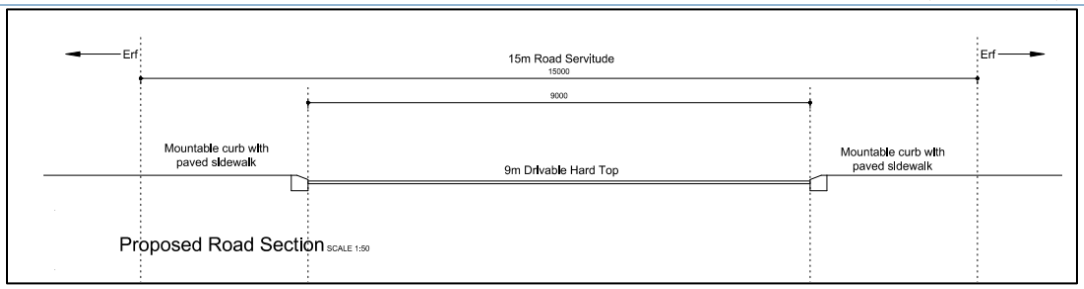

FIGURE 18 PROPOSED ROAD CROSS-SECTION (SOURCE: CHAMELEON ARCHITECTS, 2020)

Servicing

I&AP Comment addressed from previous process: Stormwater management.

The proposed development has existing water, sewer, and stormwater connections to the property. Internal reticulation would need to be installed for the proposed development and there would be a stormwater pond in the north-west corner of the site (refer to Figure 19 and Appendix B1). The City of Cape Town has confirmed available services capacity for refuse, electricity, potable water, and sewer (refer to Appendix S for the confirmation thereof).

Note that none of the proposed services trigger Listed Activities in terms of the EIA Regulations, 2014 (as amended) because the site is located in an urban area, which is an exclusion for these activities.

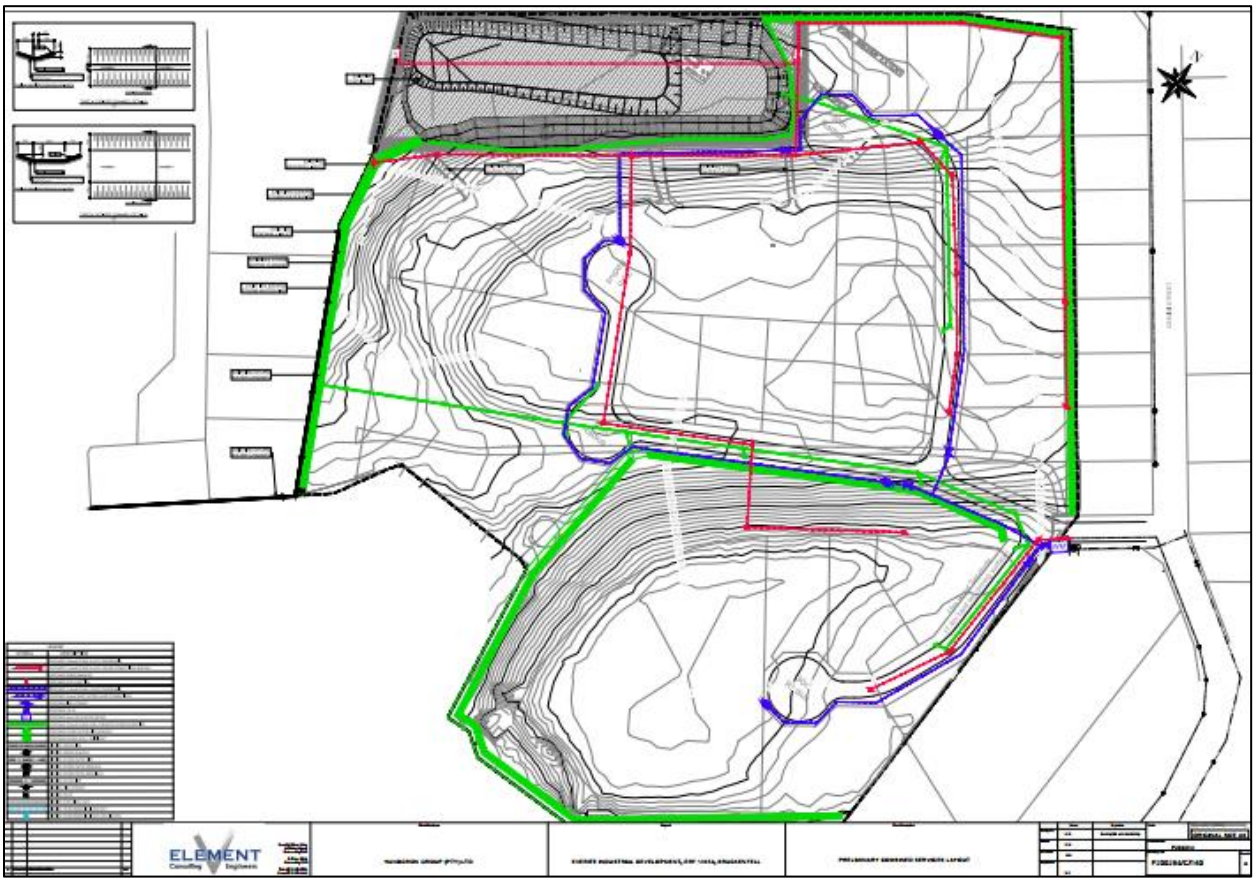

FIGURE 19 PROPOSED SERVICES, COMBNED (SOURCE: ELEMENT CONSULTING ENGINEERS, 2020)

I&AP Comment addressed from previous process: Concerns related to risk and safety with regards to the removal of asbestos waste.

Trenches for services would also not be excavated into the asbestos as much as possible, but rather into the new, imported fill and road layer works, in order to limit disturbance of asbestos on site. However, there would be certain instances where excavation into the ground would be necessary. Refer to "Services" under the proposed capping description above.

Proposed Road Upgrades

It is proposed that an additional right-turn lane is provided at the Okavango Road/Old Paarl Road intersection, westbound along Old Paarl Road (Refer to Figure 20). The northern approach would be widened to provide a new northbound acceleration lane along Okavango Road for the eastbound left-turn slip. A 2 m wide sidewalk would also be provided along Old Paarl Road. It is also recommended that a sidewalk should be provided along the southern side of Leo Close and sidewalks provided along the major internal roads.

FIGURE 20: PROPOSED UPGRADES AT OKAVANGO ROAD/OLD PAARL ROAD INTERSECTION (SOURCE: KROGSHEEPERS & ARANGIE, 2021)

5. LISTED ACTIVITIES APPLIED FOR

National Environmental Management: Waste Act

Application would be made for the decommissioning and closure of the site in terms of the National Environmental Management: Waste Act 2008, (Act No.59 of 2008) ("NEM: WA").

I&AP Comment addressed from previous process: Why is a Basic Assessment process being undertaken for a hazardous waste?

The Listed Activity in this regard is **Category A: Activity 14**: The decommissioning of a facility for a waste management activity in Category A or B to this schedule. The land was previously used to dispose of hazardous waste. Triggering this Listed Activity requires a Basic Assessment process to apply for a Waste Management License.

Furthermore, in terms of the Section 20 Permit (Permit No. B33/2/720/154/P19) issued in terms of the Environmental Conservation Act (Act 73 of 1989), the holder is required to notify the Regional Director of closure and to submit final rehabilitation plans at least 60 days prior to the intended closure of the site.

National Environmental Management Act

Listed Activity 31 of Listing Notice 1 (GN No. 327 of 7 April 2017) of the EIA Regulations, 2014 (as amended) is also triggered by the proposed development as DFFE has confirmed that a Part 8 of the NEM:WA does not apply to the proposed capping and redevelopment (pers comms, M. Govender, DFFE, 24/08/2020). Should Part 8 be triggered, then this Listed Activity would not be triggered as decommissioning covered by Part 8 of the NEM: WA is listed as an exclusion under this Listed Activity. Formal confirmation is therefore requested from DFFE that Part 8 of the NEM: WA is not triggered.

Listed Activity 12 of Listing Notice 3 for the clearance of approximately 1,800 m^2 of Critically Endangered Cape Flats Sand Fynbos is triggered. Triggering this Listed Activity requires a Basic Assessment process to apply for Environmental Authorisation.

Note that, while Listed Activity 19 of Listing Notice 1 of the EIA Regulations, 2014 (as amended) was contemplated, and it is proposed that this activity is **not triggered**, because a stormwater pond is not a watercourse and is a man-made structure. This has been confirmed by the DWS in their comment on the previous Basic Assessment process (refer to Appendix S). There are no watercourses on the site.

I&AP Comment addressed from previous process: DWS

confirms that the stormwater pond is a stormwater pond and not a

Furthermore, with respect to the proposed upgrade of the Okavango Road/Old Paarl Road intersection, Listed Activity 56 of Listing Notice 1 related to road widening were considered by the EAP but is **not triggered** given the urban context which is an exclusion of this activity.

With regards to Listed Activity 4 & 18 of Listing Notice 3, road widening would mostly remain within an existing road reserve (apart from a section on Okavango Road which will encroach into a property appropriately zoned for Transport use) and there would be no widening into Public Open Space. There are also not environmentally sensitive areas or areas zoned for conservation use along the road where widening would take place. As such these activities are **not triggered**. Given the above, the proposed upgrading of this intersection is not further contemplated in this report or the application.

6. SPECIALIST INPUT AND PROTOCOLS

The Draft protocols were released following the compilation of the various specialist reports, which is evidence in the dates on the reports as well as the details of site visits and associated dates referenced within those reports. Therefore, the protocols do not apply to this process.

However, a Site Sensitivity Verification Report has been prepared (refer to Appendix H) and the way the issues raised in the Screening Tool Report have been addressed are detailed in this section of the report.

The following assessments/sensitivities were raised in the Screening Tool Report:

- Agricultural Impact Assessment
- Landscape/ Visual Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Paleontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Hydrology Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Climate Impact Assessment
- Health Impact Assessment
- Socio-economic Assessment
- Ambient Air Quality Impact Assessment
- Seismicity Assessment
- Animal Species Assessment

The way each of the above has been addressed in response to the applicable protocols is indicated in Table 2.

TABLE 2 PROTOCOLS AND APPLICATION IN THIS ASSESSMENT

No.	Assessment	Applicable Protocol	Response
1.	Agricultural Impact Assessment	Protocol for the assessment and reporting of environmental impacts on agricultural resources (GG 45421 of 10/05/2019) _DRAFT	The screening tool denoted the site as medium sensitivity. In general, land with medium sensitivity is not recommended for agriculture and, specifically for this site, the land is not arable at all because it is contaminated with asbestos and excavation and planting of crops therein would result in significant disturbance to the asbestos, which is highly undesirable. Therefore, no further consideration of the site's potential for agriculture is required.
2.	Landscape/ Visual Assessment	No specific protocol- consider general	A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a Notification of Intent to Develop

No.	Assessment	Applicable Protocol	Response
		requirements (GG 45421 of 10/05/2019) _DRAFT	(NID) in terms of Section 38(1) & (8) of the National Heritage Resources Act (NHRA). Among other aspects, the NID contemplates landscapes and natural features of cultural significance and it has been confirmed that there are no such sensitivities on the site. In response to the NID, HWC confirmed same. Therefore, no further consideration in this regard is required. Refer to Appendix J4 for the NID and Appendix O1 for the response from HWC.
3.	Archaeological and Cultural Heritage Impact Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a Notification of Intent to Develop (NID) in terms of Section 38(1) & (8) of the National Heritage Resources Act (NHRA). Among other aspects, the NID contemplates archaeological and cultural heritage features of cultural significance and it has been confirmed that there are no such sensitivities on the site. In response to the NID, HWC confirmed same. Therefore, no further consideration in this regard is required. Refer to Appendix J4 for the NID and Appendix O1 for the response from HWC.
4.	Palaeontology Impact Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a Notification of Intent to Develop (NID) in terms of Section 38(1) & (8) of the National Heritage Resources Act (NHRA). Among other aspects, the NID contemplates palaeontological features and it has been confirmed that there are no such sensitivities on the site. In response to the NID, HWC confirmed same. Therefore, no further consideration in this regard is required. Refer to Appendix J4 for the NID and Appendix O1 for the response from HWC.
5.	Terrestrial Biodiversity Impact Assessment	3(a) Protocol for the assessment and reporting of environmental impacts on terrestrial biodiversity (GG 45421 of 10/05/2019) _DRAFT	The Screening Tool has marked the site as Very High Sensitivity. A botanical impact assessment has been carried out for the site (refer to Appendix J1) and the impact assessment is included in the Basic Assessment Report. Recommendations from the report have been included in the site plan (in the form of retaining the water catchment area and a buffer, as well as the inclusion of relocation of certain species, landscaping measures and a green landscaped area) and the EMPr.
6.	Aquatic Biodiversity Impact Assessment	3(b) Protocol for the assessment and reporting of environmental impacts on aquatic biodiversity (GG 45421 of 10/05/2019) _ DRAFT	The Screening Tool has marked the site as Low Sensitivity. A Freshwater Impact Assessment has been carried out (refer to Appendix J2) and it describes the baseline conditions of the site and has considered the impacts applicable to the site and development proposal. It has also guided the proposed development footprint/site plan with the requirements for retention of the stormwater pond

No.	Assessment	Applicable Protocol	Response
			and a 15m buffer zone (which is implicit in the proposed site plan). Mitigation measures from the assessment have been included in the EMPr as well.
7.	Hydrology Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	The screening tool has not assigned a sensitivity rating to hydrology. The hydrology on site has been contemplated and addressed from a variety of angles through the following specialist assessments (which are included in this Basic Assessment Report): • Hydrogeology Assessment (refer to Appendix J5) • Geotechnical Assessment (refer to Appendix J3); • Freshwater Impact Assessment (refer to Appendix J2); and • Services Assessment and Stormwater Management Design (refer to Appendix J5). Requirements from these assessments have been responded to in the proposed layout as well as through specifications in the EMPr.
8.	Noise Impact Assessment	Protocol for the assessment and reporting of noise impacts (GG 45421 of 10/05/2019) _DRAFT	The screening tool has not assigned a sensitivity rating to noise. Noise impacts have been contemplated in this Basic Assessment Report and measures have been included in the EMPr to mitigate noise impacts during construction. However, the site is not considered to be a noise-sensitive environment given that it is located in an industrial area and surrounded by industrial use (the area is also zoned for industrial use). Therefore, no further considerations in this regard are applicable.
9.	Traffic Impact Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	A traffic study was conducted (refer to Appendix J6) and the findings thereof are included in the Basic Assessment Report and the EMPr. **I&AP Comment addressed from previous process: Traffic and the need for Traffic Impact Assessment**
10.	Geotechnical Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	A traffic study was conducted (refer to Appendix J6) and the findings thereof are included in the Basic Assessment Report and the EMPr.
11.	Climate Impact Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	No climate assessment has been done, however various flood events as per the City of Cape Town SUDS policy have been accommodated in the Stormwater Management Plan.
12.	Health Impact Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	Risks to human health have been considered in the asbestos report (Appendix J7) in terms of the likelihood of human exposure to asbestos. Presence of asbestos in groundwater has been confirmed to be unlikely in the groundwater assessment (refer to Appendix J5). Furthermore, measures to limit exposure risk of asbestos to humans have been included in the EMPr
13.	Socio-Economic Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	The socio-economic aspects of the site and proposal have been considered and addressed in the Basic Assessment Report through inclusion of the following:

No.	Assessment	Applicable Protocol	Response
			• Socio-economic profile of the community around the site; and • Detailing the financial contribution of the project to the economy as well as to previously disadvantaged individuals.
14.	Ambient Air Quality Impact Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	Ambient air quality monitoring for airborne asbestos has been undertaken (and continues to be undertaken on site), with the findings thereof detailed in the Asbestos Report (Appendix J7). No airborne asbestos has been detected and so no further air quality impact assessment is required. However, monitoring for airborne asbestos will continue until closure of the site.
15.	Seismicity Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	No seismicity assessment specifically has been; however, the geotechnical report (refer to Appendix J3) has made recommendations pertaining to appropriate foundings which would withstand earthquakes as well as other factors.
16.	Animal Species Assessment	No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT	A list of potential species which could be found on site is included in the Botanical Impact Assessment (refer to Appendix J1). This is further addressed in the EMPr which provides measures to protect any fauna found on site and the retention of the stormwater pond area and provision of green buffer areas would also serve to provide some faunal habitat.

7. OTHER LEGISLATIONS/APPROVALS

Note that it is not intended to apply for exemption from any provision of the NEMA and EIA Regulations, 2014 (as amended). Other environmental legislation is contemplated below.

Does the proposed development require a Coastal Waters Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act (NEM: ICMA)?	**NO**
Will the proposed development require the reclamation of land in terms of NEM: ICMA?	**NO**
Does the proposed project require an application for a water use license in terms of the National Water Act, 1998 (Act No. 36 of 1998)?	**NO**
Confirmation from the Department of Water and Sanitation indicating that the stormwater retention pond is not considered a "watercourse" in terms of the National Water Act (No. 36 of 1998) was provided in the previous Basic Assessment process.	
Does the proposed project require an application for an Atmospheric Emission License in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)?	**NO**
No emissions are anticipated as part of this development proposal, given the nature of the light industrial activities anticipated. However, should future users of the site conduct activities that produce emissions, it will be the responsibility of these users to obtain the necessary statutory approvals. This will be enforced through the EMP.	

Is the National Environmental Management Protected Areas Act, 2003 (Act No. 57 of 2003 ('NEMPAA") applicable to your proposed development?	**NO**
The Site is not located in a Protected Area.	
Does the proposed development require a permit in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)?	**NO**

Note that, although the proposal bears relevant to aspects of Section 38 (1) of the NHRA, Baumann (2012) as well as HWC has concluded that no further heritage assessment is required as there are no heritage resources on the site. Therefore, the necessary steps in terms of confirming applicability of the NHRA have been undertaken. Refer to Appendix J4 for the NID and to Appendix O1 for the HWC comment thereon.

Existing approvals

In terms of existing approvals linked to the property, refer to Appendix I for the existing ECA permit from 1992. The proposed capping is the next step beyond the existing ECA permit and so would need to be licensed through this Basic Assessment process.

The proposed industrial park would also require a subdivision and SDP approval application.

Relevant Legislation, Policies and Guidelines Applied

Title of legislation, policy, or guideline:	How this has been applied
National Environmental Management Act (107 of 1998), as amended (NEMA), DFFE (then DEA), 1998	This application for Environmental Authorisation is undertaken in line with the requirements of NEMA.
EIA Regulations 2014, as amended, DFFE (then DEA), 2014/2017	This application for Environmental Authorisation is undertaken in line with the requirements of the EIA Regulations, in terms of both process and the application of the listed activities.
National Environmental Management: Waste Act (10 of 2008), as amended (NEMWA), DFFE (then DEA); D: EA&DP, 2008	This application for a Waste Management License is undertaken in line with the requirements of NEMWA.
National Environmental Management: Biodiversity Act (10 of 2004), DFFE (then DEA); D: EA&DP, 2004	The NEM:BA does not apply to the proposed development in terms of triggering the need for permits under Section 87 of the NEM:BA, however the underlying approach to protection of sensitive biodiversity resources as well as the use and management of listed invasive species would be applied in the proposed development, both in the conceptual design as well as in the Environmental Management Programme (EMPr). Part of the site falls within a Critically Endangered Ecosystem type, namely Cape Flats Sand Fynbos and therefore, the necessary consideration applied by an independent botanist in the previous Basic Assessment process will be used for this one

National Water Act (No. 36 of 1998) (NWA), DWS 1998	The NWA was contemplated in the previous Basic Assessment process and confirmation that Section 21 is not triggered was provided by the DWS (refer to Appendix S). **I&AP Comment addressed from previous process: DWS confirms that the stormwater pond is a stormwater pond and not a wetland.**
National Heritage Resources Act (25 of 1999), SAHRA, Heritage Western Cape, 1999	The NHRA was contemplated in the previous Basic Assessment process and confirmation that there are no heritage sensitivities on the site and no further assessment in terms of the NHRA is necessary (refer to Appendix J4 for the NID and Appendix O1 for the HWC response).
Guideline on Alternatives, D: EA&DP, 2013	Used to guide and inform this Basic Assessment process and the proposed alternatives assessed therein.
Guideline on Public Participation, DFFE (then DEA), D: EA&DP, 2013 and 2017	These documents guided the development of this Basic Assessment process and Basic Assessment Report, noting that where relevant, allowance was made to align with the 2017 amended EIA regulations. Each aspect of the report (i.e. public participation, need and desirability, alternatives, etc.) was carefully considered and comprehensively addressed with a view to promoting sustainable development throughout the process.
Guideline on Need and Desirability, D: EA&DP, 2013	Used to guide and inform this Basic Assessment process and the consideration of the proposal within the local, regional, and national social and planning context.
Guideline for Determining the Scope of Specialist Involvement in EIA Processes, D: EA&DP, 2005	Applied in the previous and current Basic Assessment when contemplating and involving professional expertise in the process.
Western Cape Provincial Spatial Development Framework, Western Cape Provincial Government, 2009	Consulted to inform development of the site, particularly with regard to the end use thereof.
Cape Town Spatial Development Framework, City of Cape Town, 2012	Consulted to inform development of the site from a town planning, transport, and general land use perspective
Northern District Spatial Development Plan and Environmental Management Framework, City of Cape Town, 2012	Consulted to inform development of the site from a town planning, transport, and general land use perspective
DWAF Resource Directed Measures for Water Resources: Wetland Ecosystems method (DWAF, 1999b), DWS (then DWAF), 1999	Used by the freshwater ecologist when assessing the Environmental Importance and Sensitivity (EIS) categories to the wetlands nearby. The full freshwater report can be found in Appendix J2.
Department of Water Affairs and Forestry. (2007). *River Eco classification: Manual for Ecostatus Determination (Version 2)*. Riparian Vegetation Response Index, Water Research Commission	Used by the freshwater ecologist when conducting assessment. The full freshwater report can be found in Appendix J2.

Report Number KV 168/05. Pretoria.	
Dickens, C. Kotze, D. Mashigo, S. MacKay H. & Graham M. Guidelines for integrating the protection, conservation, and management of wetlands into catchment management planning (Report TT220/04)	Used by the freshwater ecologist when conducting assessment. The full freshwater report can be found in Appendix J2.
Kotze, D., Marneweck, G.C., Batchelor, A.L., Lindley, D.S. And Collins, N.B. 2005: *WET-EcoServices: A technique for rapidly assessing ecosystem services supplied by wetlands.* Dept. Tourism, Environmental and Economic Affairs, Free State.	Used by the freshwater ecologist when conducting assessment. The full freshwater report can be found in Appendix J2.
Guideline for involving Heritage Specialists in EIA processes (2005), DFFE (then DEA), 2005	Applied in the NID to guide the scope and requirements thereof
Committee of Transport Officials, South African Trip Data Manual, TMH17, Version 1.1 (2013)	Considered in methodology employed in the TIA (e.g. trip generation calculations)
Provincial Administration Western Cape, Road Access Guidelines (2001)	Considered in the TIA
Transportation Research Board, Highway Capacity Manual (HCM), Quality and Level-of-Service Concepts (2015)	Considered in the TIA

8. DESCRIPTION OF THE RECEIVING ENVIRONMENT

Refer to Appendix K for site photographs.

Groundwater, soil, slope, and geological stability of site

The site is located on the Cape Flats Aquifer and underlain by 20 m of clay resulting from the weathering of granites (refer to Figure 21). Granite accounts for the hill on which much of the suburb of Brackenfell has developed. In places, the granite is highly weathered with BH126 encountering 20 m of clay interpreted to represent weathered granite. The granite - unconsolidated sand contact is in the vicinity of the Everite asbestos waste site. Unconsolidated sands cover much of the flat-lying area to the north and west of the site. As a result, little is known about the underlying bedrock. The published 1: 50 000 geological map indicates much of the area to be underlain by sediments belonging to the Malmesbury Group with sand thickness ranging from 3 m to almost 25 m. The geology (and hydrogeology) of the underlying hard rock aquifer system is unknown. This includes the lithology of the Malmesbury Group, the degree of weathering and the presence and position of the contact zone. Based on the generalised conceptual model of the Cape Flats Aquifer system, it was assumed the hydraulic properties of the unconsolidated sand are significantly greater than those of the underlying hard rock aquifer system. As a result, the hydrogeological investigations of the Everite site focused on the unconsolidated sand or primary aquifer system.

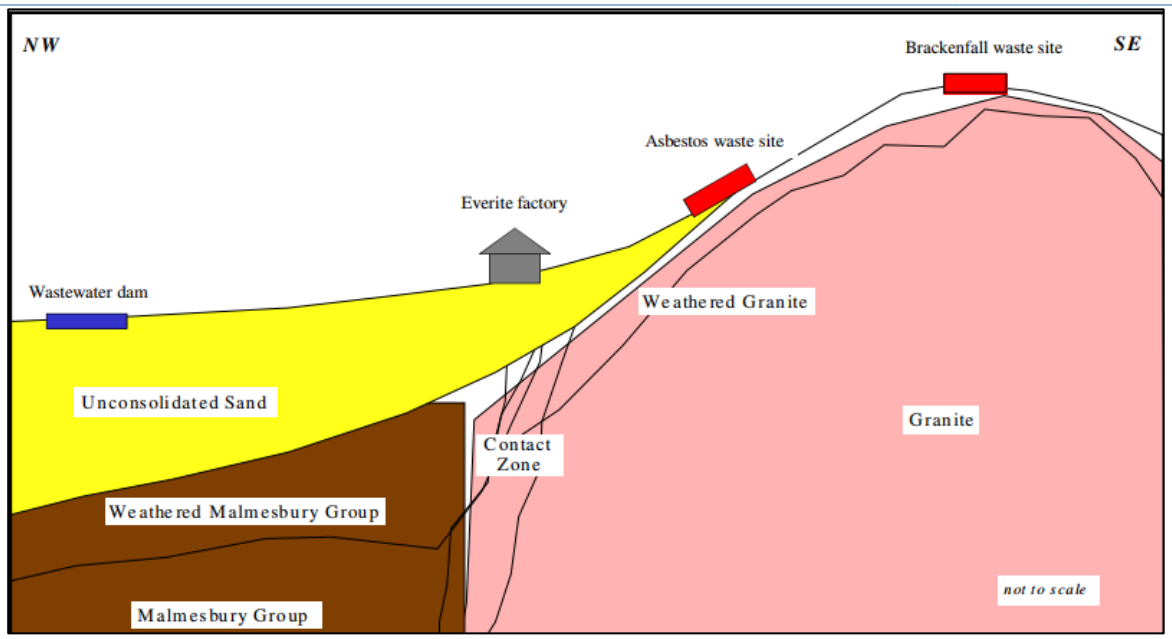

FIGURE 21 SCHEMATIC GEOLOGICAL SECTION (SOURCE: PARSONS & ASSOCIATES, 2015)

The study area is located on the northeastern extremities of the Cape Aquifer system, described in detailed Henzen (1973), Wright and Conrad (1995), Seyler (2008) and others. This aquifer is classified as a major aquifer system; but such a classification would not be applicable to the Everite asbestos waste site as (a) it is located on the transition between the minor granitic aquifer and the primary aquifer and (b) the saturated thickness of the sand is limited. A minor aquifer system classification is considered appropriate. Based on the generalized conceptual model of the Cape Flats Aquifer system it was assumed the hydraulic properties of the unconsolidated sand are significantly greater than those of the underlying hard rock aquifer system. Unconsolidated sands are considered transmissive and have hydraulic conductivities between 1 m/d and 5 m/d. The hydraulic conductivity of the underlying bedrock is expected to be an order of magnitude lower.

The primary aquifer has a more "Ca Alk" character with a lower EC and higher pH than that of groundwater from the granitic secondary aquifer (Figure 17). The granitic aquifer has a Na Cl character, a higher EC and is more acidic.

Based on a groundwater assessment in 2001, widespread groundwater contamination was detected across the site, with elevated electrical conductivity (EC) levels and concentrations of potassium (K) and sulphate (SO_4) being characteristic (Parsons & Associates, 2015). It was noted, however, that the elevated concentrations were not considered harmful substances (Parsons & Associates, 2015). It was not possible to delineate discrete plumes from individual sources of contamination and the extent of contamination could not be defined (Parsons & Associates, 2015). A further assessment was then undertaken in 2002 to delineate the extent of contamination and the study allowed for ambient groundwater quality to be defined, the nature of groundwater contamination to be characterised and the extent of the contamination plume to be delineated. No groundwater users were located down gradient of the Everite site. It was found that the plume had migrated 1 km west of the wastewater dam, but that no groundwater users had been impacted. Groundwater contamination has been detected in the area and the extent delineated, but it is not possible to distinguish between contamination emanating from the Everite site and the surrounding area (noting that it is an industrial area) (Parsons & Associates, 2015).

The extent of contamination at the Everite site was delineated in 2002 based on the maps presented in Figure 22 and Figure 23. The extent of contamination resulting from historic activities is demarcated in Figure 24. It is noted contamination emanating from the asbestos waste site could not be individually delineated because that contamination could not be differentiated from that caused by other activities on the Everite site.

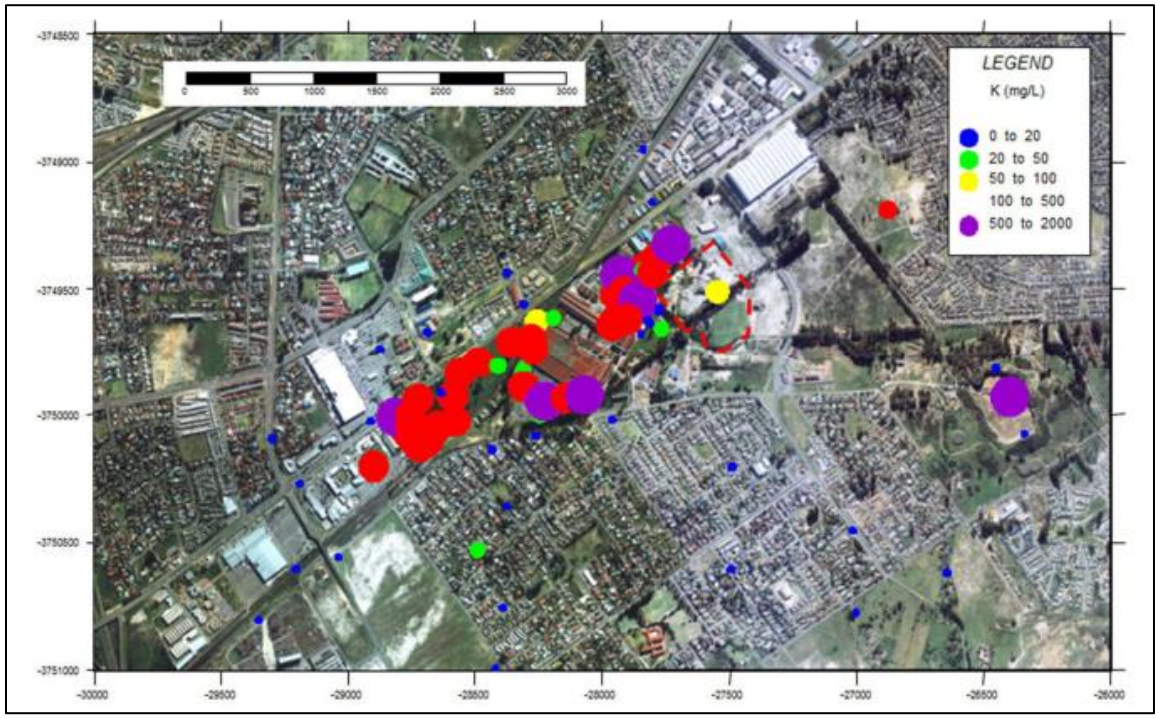

FIGURE 22 DISTRIBUTION OF POTASSIUM CONCENTRATIONS AT THE EVERITE SITE (SOURCE: PARSONS & ASSOCIATES, 2015)

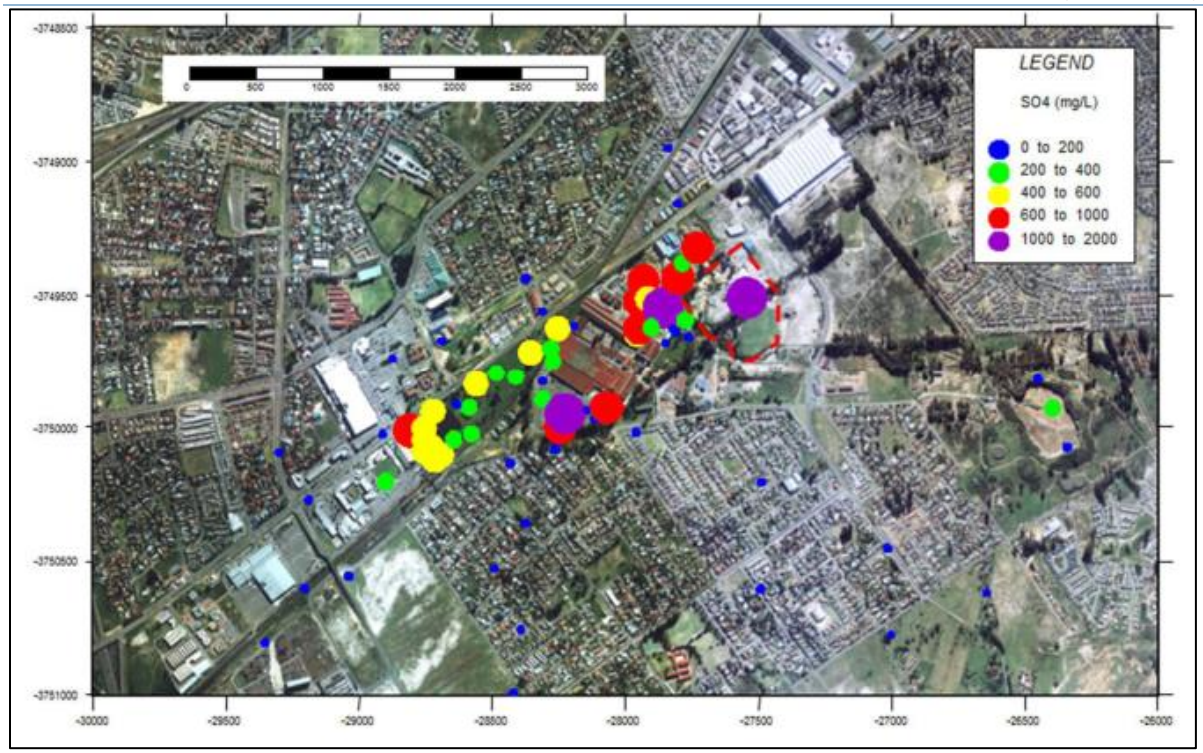

FIGURE 23 DISTRIBUTION OF SO4 CONCENTRATIONS AT THE EVERITE SITE (SOURCE: PARSONS & ASSOCIATES, 2015)

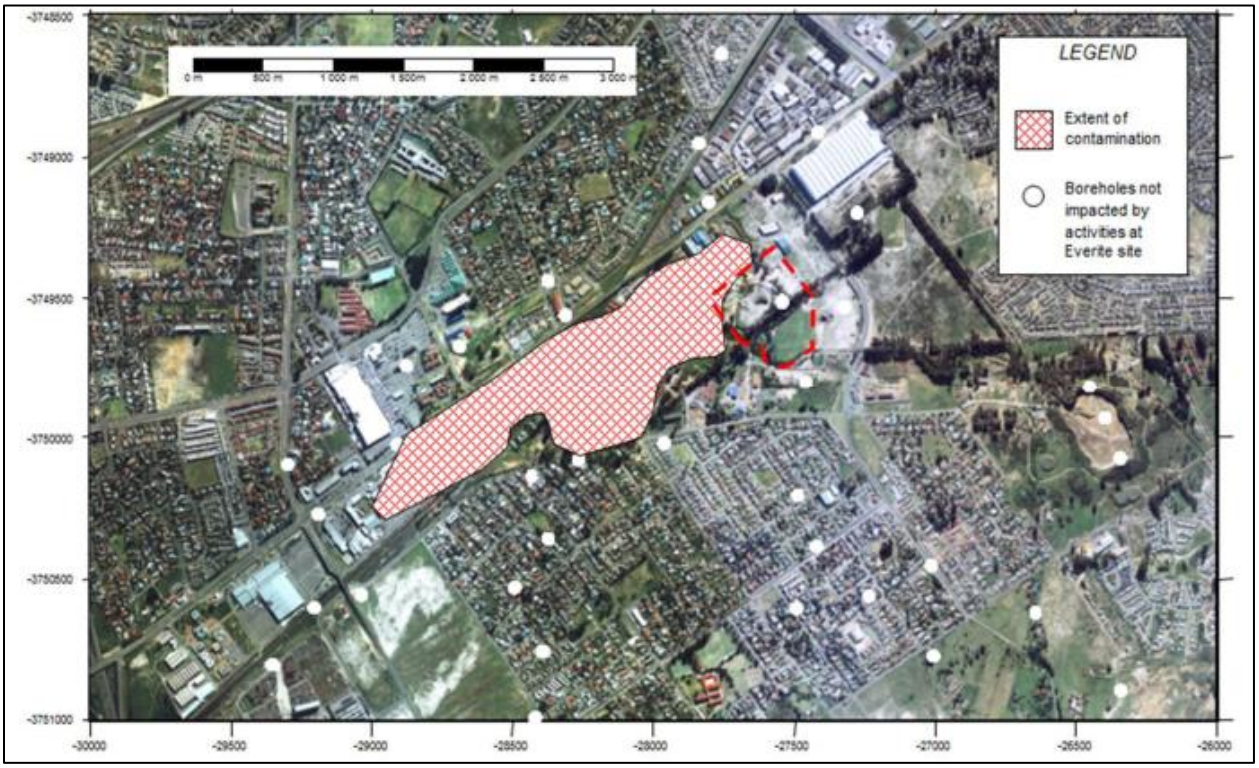

FIGURE 24 EXTENT OF GROUNDWATER CONTAMINATION RESULTING FROM HISTORIC ACTIVITIES AT THE EVERITE SITE (SOURCE: PARSONS & ASSOCIATES, 2015)

Potassium (K) and Sulphate (SO_4) – with an associated increase in EC – were identified as the groundwater contaminants resulting from historic activities across the site 4. Neither of these contaminants are considered particularly harmful, particularly at the concentrations observed during the various groundwater investigations

It is documented in the literature that asbestos is practically immobile in the subsurface. The fibres are retarded from moving as they cannot pass through interstitial pores spaces in the subsurface. The expected migration rate of an asbestos fiber through soils by the forces of groundwater is approximately 1 to 10 cm per 3 000 to 40 000 years (NHDES, 2015). Thus, asbestos is not considered a groundwater contaminant of any significance 3. It is for this reason that asbestos was not specifically analysed for during the groundwater investigations of the Everite site

There are no natural watercourses or shallow water table present on site. There is a man-made stormwater pond and some associated stormwater channels on the site (Belcher, 2012).

The natural gradient of the site has been altered to an artificial state by the deposition of asbestos wastes. Most of Lower Platform 1 area, including the adjacent (north side) slopes comprises asbestos wastes (Morris et al, 2011). Lower platform 2 area is mostly clean, other than some spill-over and minor surface contamination along the toe of the slopes up to the Platform 1 area (Morris et al, 2011). Refer to Figure 25 and Figure 26 for an indication of the levels of the platforms and asbestos below them. The site is generally underlain by fill and waste deposits overlying in situ subsoil deposits of Quaternary Age. The above is underlain by residual soils that grade with depth into weathered granite bedrock of the Cape Granite Suite. Over the asbestos waste areas there is a capping layer of greyish brown, loose, silty SAND with builder's rubble but with minor asbestos contamination (Morris et al, 2011). This layer extends to depths in the range 0.2 to 1.5 m below EGL (Morris et al, 2011). In the lower platform, this layer is underlain by a further capping layer comprising an orange, brown, medium dense, slightly clayey to clayey SAND with ferruginised gravel, extending to depths in the range 0.4 to 1.0 m below existing ground level (Morris et al, 2011). The fill below the capping layers generally comprises asbestos waste deposits in the form of sludge – both dry and wet, builder's rubble (pipes, bricks, etc.) and broken asbestos pieces mostly in a sandy matrix (Morris et al, 2011). However, in numerous inspection pits a compressible asbestos sludge layer was identified (Morris et al, 2011). The asbestos sludge ranges in thickness from ~ 0.6 to >4 m and forms a large part of the waste mix (Morris et al, 2011). The fill comprising asbestos products and sludges was observed to extend to depths of approximately 8.5 m below EGL in one of the boreholes sampled. Thereafter, the in-situ sub-soils commonly comprise a layer of loose to medium dense, sandy subsoils alternating with bands of clayey layers. Residual sub-soils were encountered at depths in the range 11.3 to 25.6 m below EGL and generally comprised a reddish orange-brown, to orange yellow, stiff to very stiff, silty clay to clayey silt (Morris et al, 2011). Weathered bedrock was only identified in one of the boreholes at a depth of 27.2 m below EGL and generally comprised an orange yellow stained red, completely to highly weathered, moderately to highly fractured, extremely soft to very soft rock granite of the Cape Granite Suite (Morris et al, 2011). Groundwater seepage was not noted at levels higher than 5 m during the geotechnical assessment, but groundwater was identified in three boreholes at 9 m, 11.2 m ad 7.45 m below existing ground level and it was noted that groundwater may occur over the solidified layers of asbestos sludge in the more porous (loose) zones (Morris et all, 2011).

The original fall of the site was approximately 1:21. Refer to the cross section of the site in Figure 25 below.

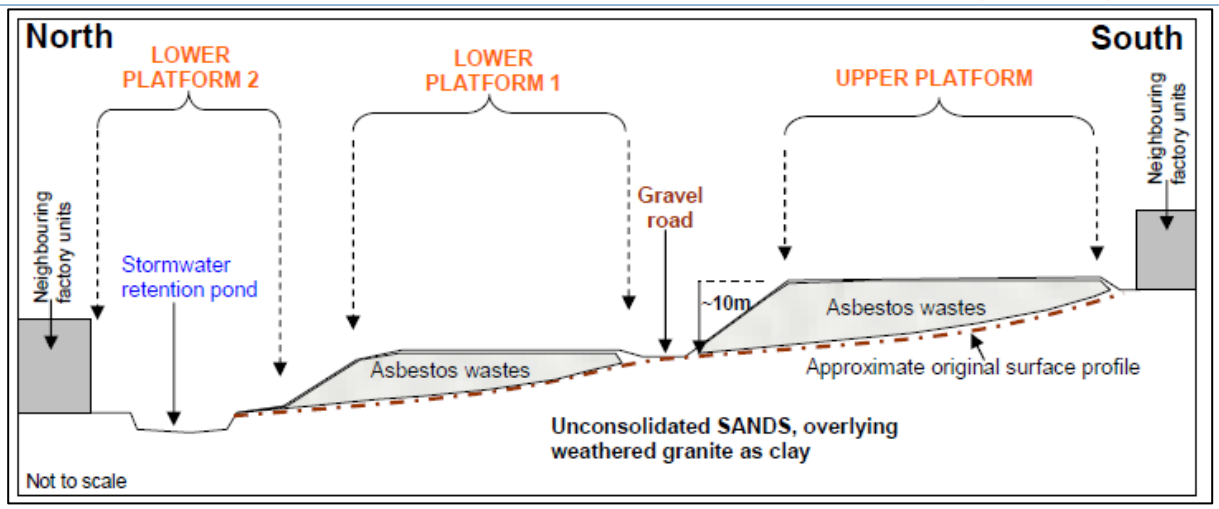

FIGURE 25 NORTH-SOUTH CROSS SECTION OF THE ASBESTOS WASTE CONSOLIDATION AREA (*SOURCE: MEGA GEOTECHNICAL ASSESSMENT, 2011)*

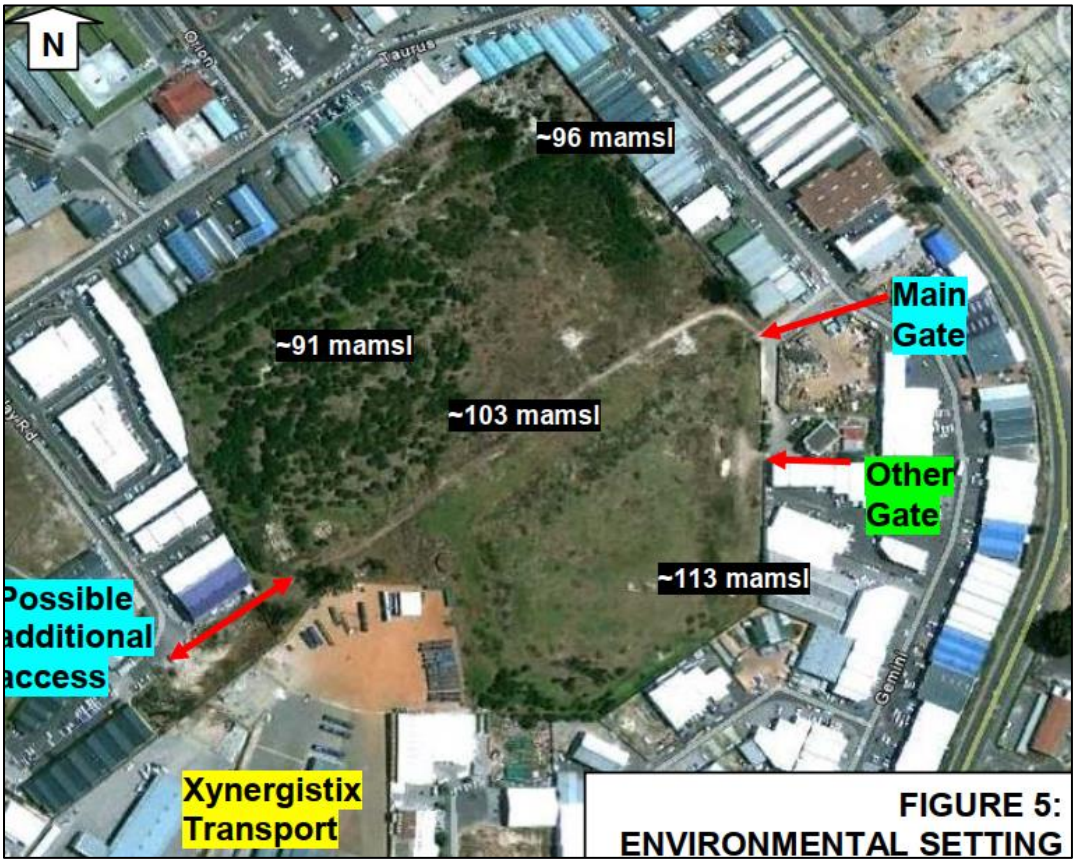

FIGURE 26 IMAGE INDICATING LEVELS OF THE PLATFORMS (SOURCE: MORRIS ET AL, 2011)

The site uses an artificial fill to dispose of asbestos waste and, in its current state, is sensitive to erosion. This would be resolved by the capping and redevelopment of the site. It should be noted that the soil is already contaminated by the previous disposal activities on the site.

With regard to its location in the landscape, the site would historically have been of the lower end of the side slope of a hill, however that has been altered through the creation of the various platforms as described above.

Morris *et al* (2011) confirm that the previous capping on the site has been compromised by mole activity and that it is hosts much alien vegetation. They also note that there were no unacceptable airborne exposure risks at the time, which has been corroborated by OHMS (2021). Development of light industrial facilities on the site would be possible, but the site would require re-engineering for development and there would be some long-term annual maintenance and management required for the site (Morris *et al*, 2011). The re-engineering and re-development would require an EIA process and input from civil engineers, asbestos specialists, and town planners in order to execute it in terms of applicable law.

Most of Lower Platform 1 area, including the adjacent (north side) slopes comprises asbestos wastes (Morris *et al*, 2011). Lower platform 2 area is mostly clean, other than some spill-over and minor surface contamination along the toe of the slopes up to the Platform 1 area (Morris *et al,* 2011). The site is generally underlain by fill and waste deposits overlying in situ subsoil deposits of Quaternary Age. The above is underlain by residual soils that grade with depth into weathered granite bedrock of the Cape Granite Suite.

Alternative 1 is not preferable from a geotechnical perspective as mole activity would continue and asbestos would be brought to the surface again eventually, and the vegetation on site could be a fire hazard from time to time (and at certain times of the year) which may also lead to further asbestos exposure risks (Morris *et al*, 2011).

The areas considered suitable and unsuitable for development have been provided through the geotechnical assessment and this is indicated in Figure 27, with the white areas being unsuitable for normal industrial development.

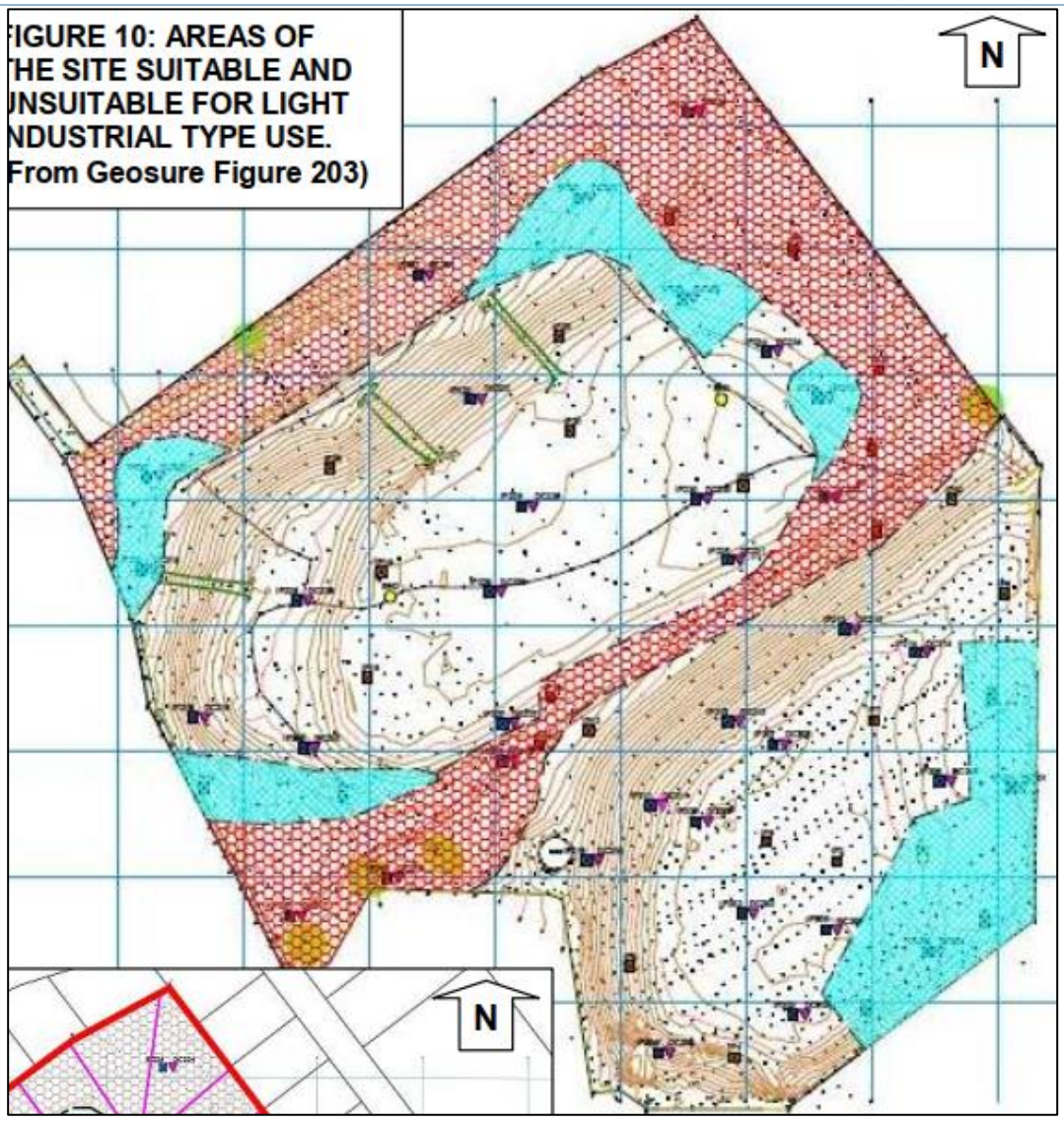

FIGURE 27 AREAS CONSIDERED UNSUITABLE FOR NORMAL INDUSTRIAL DEVELOPMENT INDICATED IN WHITE (SOURCE: MORRIS ET AL, 2011)

A summary of other characteristics of the site is provided in Table 3.

TABLE 3 SUMMARY OF GEOLOGICAL CHARACTERISTICS OF THE SITE

Shallow water table (less than 1.5 m deep)	No Groundwater levels range from surface in the low-lying areas near the dam to 4.7 m below ground level, with an average depth of 1.8 m below surface. At the asbestos waste site, depth to groundwater ranges between 0.5 m and 2.5 m below ground level. Groundwater flows in a general westerly direction with an average hydraulic gradient of 0.025

Dolomite, sinkhole, or doline areas	No
Seasonally wet soils (often close to water bodies)	No
Unstable rocky slopes or steep slopes with loose soil	No
Dispersive soils (soils that dissolve in water)	No
Soils with high clay content (clay fraction more than 40%)	No
Any other unstable soil or geological feature	Yes- artificial fill of the site by disposing of asbestos waste
An area sensitive to erosion	Yes- in its current state, the site is sensitive to erosion. This will be resolved by the capping and redevelopment of the site

Existing Capping Layer

There is capping currently in place on the site which was completed in 2001/2002. The intention of the capping at the time was to provide a high integrity, sustainable cover to prevent the exposure of asbestos-containing waste, to prevent uncontrolled access to the site as well as to make provision for the continued monitoring and maintenance of the site after closure. The end use of the site, at the time, was envisaged to be a green area with strict access control.

The capping comprises a 300 mm compacted sand layer, followed by a 200 mm compacted clay layer and a 200 mm top-soil layer (refer to Figure 28).

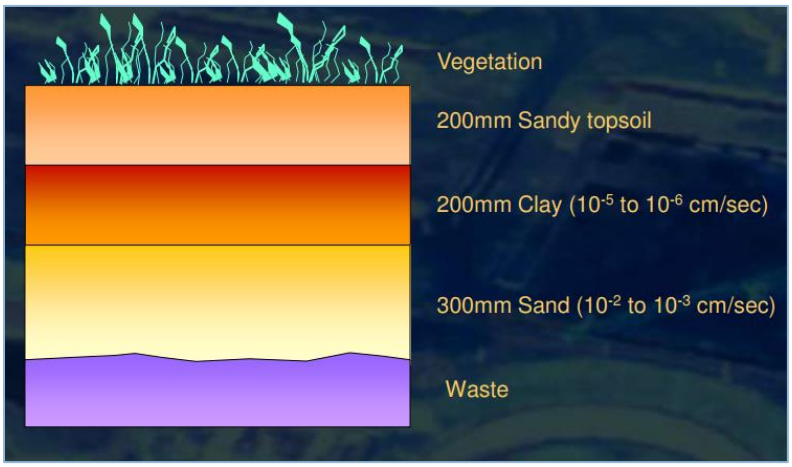

FIGURE 28 CURRENT CAPPING ON SITE (SOURCE: J&W)

There was some reshaping that was undertaken on site and then the capping was carried out. Refer to Figure 29 and Figure 30 for images of what the disposal area and the north slope looked like before the reshaping, as well as to Figure 31 for what the slope looked like following reshaping. Figure 32, Figure 33 and Figure 34 shows the capping in progress while Figure 35 and Figure 36 show the vegetation on the surface.

FIGURE 29 OLD SLUDGE DISPOSAL AREA

FIGURE 30 NORTH SLOPE PRIOR TO RESHAPING

FIGURE 31 FLATTENED SLOPE

FIGURE 32 COVERING OF SLOPE

FIGURE 33 NORTH SLOPE AFTER RESHAPING

FIGURE 34 COMPLETED CAPPING

FIGURE 35 VEGETATION

FIGURE 36 GRASSED SITE

Surface water

There is a large artificial pond in the north-western corner of the site which was previously constructed to manage stormwater runoff from the site (Belcher, 2012). Numerous drains have been constructed on the elevated portion of the site to channel stormwater into this pond and there is a small drainage channel along the outer edge of the northern and eastern portions of the property (Belcher, 2012). Refer to Figure 37. There are, therefore, no natural systems on the site and this has been confirmed by DWS as well (refer to their comment in Appendix S).

I&AP Comment addressed from previous process: DWS confirms that the stormwater pond is a stormwater pond and not a wetland.

FIGURE 37 SURFACE WATER ON SITE (SOURCE: BELCHER, 2012)

The stormwater pond is overgrown with bulrush (*Typha capensis*), and it has little significance in terms of biodiversity but is important to the functioning of the site as a stormwater management measure and provides habitat for a number of birds (Belcher, 2012). The drainage lines hold no particular importance (Belcher, 2012). Belcher (2012) recommends that a buffer of 15 m be maintained between the delineated edge of the retention pond and any development. This recommendation is incorporated into the proposed development plan for the industrial park (refer to Figure 15).

Biodiversity

This site contains consists of natural veld with a heavy infestation of alien species and is dominated by alien species (see Appendix J1 for a map which illustrates the areas of the site which contain sensitive indigenous vegetation) (Turner, 2012).

The proposed site would previously have comprised Cape Flats Sand Fynbos, which is Critically Endangered and is therefore a conservation priority (Turner, 2012). The site is now highly infested with alien invasive species, predominantly *Acacia saligna* (Port Jackson) and *Pennisetum clandestinum* (Kikuyu grass) however, a severely degraded Cape Flats Sand Fynbos vegetation community does still exist in the extreme north-eastern corner of the site (Turner, 2012) (refer to Figure 38). This portion of the site corresponds with the area that was identified as generally asbestos-free in the geotechnical assessment (Turner, 2012).

Five indigenous plant taxa were identified in this area of which one (*Lampranthus explanatus*) is IUCN Endangered (Turner, 2012). While Turner (2012) indicates that restoration of this vegetation patch would be most desirable from a botanical perspective, it is concluded that relocation of the sensitive species to the nearby would be acceptable (Turner, 2012).

FIGURE 38 GOOGLE IMAGE WITH EXISTING WATER CATCHMENT AREA (RED), CONTAINMENT POOL (BLUE) AND REMNANT CFSF VEGETATION COMMUNITY (GREEN), WHICH IS ABOUT 1,800M² IN EXTENT (SOURCE: TURNER, 2012)

Should the proposed development be approved, *Lampranthus explanatus* plants would be relocated to the nearby Bracken Nature Reserve and should also be provided to other specialists to create an *ex-situ* population, to provide the best option in terms of the likelihood of long-term survival of these species and the population strain found on the site.

Retention of the vegetation on the site is not possible, given the need to secure the site from existing mole activity bringing asbestos to the surface. The only area in which capping need not be applied is the stormwater pond (void of mole activity). Vertical mole barriers will prevent lateral movement of moles and related exposure of asbestos around the stormwater pond. The capping technique proposed is not compatible with the retaining of this portion of vegetation.

I&AP Comment addressed from previous process: Conserving natural remnants of vegetation

Turner (2012) also indicates that 'taaibos' occurs on the south-western site boundary and an indigenous grass was identified in the north-western and western portions of the site, noting that it is likely that this species was introduced for soil stabilisation purposes.

With respect to fauna found on the site, indigenous Southern Double-collared Sunbirds (*Cinnyris chalybeus)* and Cape Weavers (*Ploceus capensis*) have been identified on site, especially in the north-western portion of the site in the vicinity of the stormwater pond (Turner, 2012). Cape Weavers were observed making use of *A. saligna* plants for nest-building, surrounding this pool (Turner, 2012). Turner (2012) notes that such corridors or "islands" of vegetation can provide important ecosystem services for especially birds, especially given the pace of habitat destruction in the SW Cape lowlands, as well as climate change which impacts bird migrations, e.g. Southern Double-collared Sunbirds have been recorded up to 34 km distant from ringing sites (Hockey et al, 2005). The Cape dune mole-rat is another

indigenous species which is active on the site (Turner, 2012). Alien fauna, such as Guinea Fowl, also make use of the site (Turner, 2012).

Heritage/ Cultural/ Historical Features

I&AP Comment addressed from previous process: HWC confirms that no heritage sensitivities are on site and no further assessment is required.

The specialist found no heritage resources on the site (Baumann, 2012). Therefore, there are no signs of culturally or historically significant elements on the site in terms of Section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999) (NHRA) and no triggers in terms of Section 38 of the NHRA (Bauman, 2012, HWC, 2012). There are also no structures older than 60 years which would be affected.

A Notification of Intent to Develop was submitted to HWC. HWC issued a Record of Decision which can be found in Appendix O1.

Asbestos on Site: On the Ground and in the Air

Given the disturbance of the site by moles (the moles bring the asbestos to the surface through burrowing and then the asbestos flattens around the mole hill over time) and birds (birds dust bathe and in some cases this occurs in the asbestos around the mole hills, which spreads it further), asbestos in the form of conglomerate debris as well as fibre and asbestos chip (debris for asbestos items e.g. Roof sheets, gutters and rainwater pipes etc.) has made its way to the surface of the site in certain areas (OHMS, 2021). The sandy areas, in particular, therefore reveal large quantities of asbestos debris and the areas where most asbestos debris were observed is the high lying area to the south of the site (OHMS, 2021). There was also asbestos debris observed in the central area of the property, these areas are not compacted soil but generally loose soil (OHMS, 2021). Other areas of the property are compacted with a type of hardcore backfill and clay deposits are visible (OHMS, 2021).

The asbestos is currently in a stable state but will release regulated asbestos fibres if disturbed or if extensive weathering takes place (OHMS, 2021). The grass, weeds and shrub growth which covers most of the property currently assists with natural encapsulation of asbestos fibres for this moment in time (thereby reducing risk of airborne asbestos) (OHMS, 2021).

Air samples for asbestos have been taken on the property which tested negative under normal prevailing weather conditions (all air samples taken have tested negative), and so no wetting process is required at this moment time (OHMS, 2021). It has, however, been recommended that continuous weekly air monitoring for asbestos on the site be carried out to scientifically prove that there is no release of asbestos into the environment, and if asbestos in air is detected, mitigating controls will be recommended. This has been undertaken and the most recent results are included in Appendix T.

Refer to Appendix J7 for the full report for asbestos on site.

Existing Road Network and Traffic Conditions

The existing road network surrounding the site is depicted in Figure 39 and includes:

- Old Paarl Road (MR189): Provincial Main Road, Class 3 Secondary Arterial, two lanes per direction with a kerbed median, paved shoulders and sidewalks in the site vicinity, 60 km/h.
- Kruis Road (DR1081): The section between Kruin Street and Bottelary road is a Provincial Divisional Road, Class 2 Primary Arterial, undivided two lanes per direction between Reservoir Street and

Kruin Street and one lane per direction between Kruin Street and Bottelary Road, 60 km/h, gravel shoulders and partial sidewalk.

- Kruisfontein Road: Class 2 - Undivided two lanes per direction, 60 km/h, no
- medians, gravel shoulders and partial sidewalk.
- Northpine Drive: Class 4 Collector, one lane per direction with partial sidewalks.
- Taurus Street: Class 5 Local Street, one lane per direction, parking allowed.
- Gemini Street: Class 5 Local Street, one lane per direction, parking allowed.
- Orion Street: Class 5 Local Street, one lane per direction, parking partially allowed.

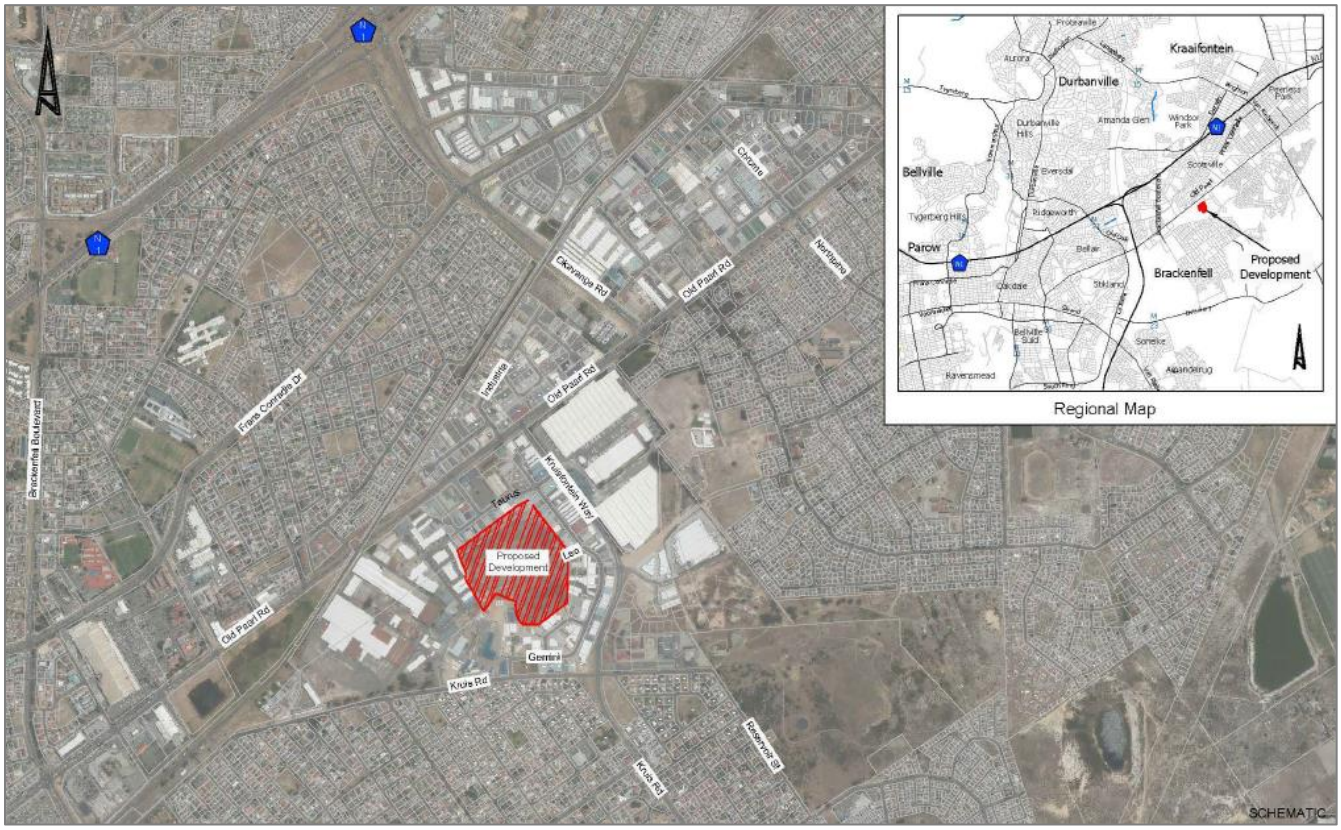

FIGURE 39: MAP OF EXISTING ROAD NETWORK (SOURCE: KROGSHEEPERS & ARANGIE, 2012)

An analysis of existing traffic conditions (current intersection geometries, controls and traffic volumes) indicates that all the intersections in the vicinity of the site are currently operating at an acceptable Level of Service (LOS), except for the Old Paarl Road/Orion Road Intersection (Krogsheepers & Arangie, 2012). The high northbound left-turn volume during the a.m. peak hour at this intersection is however due to rat-run traffic trying to avoid congestion elsewhere on the network. Motorist do have the opportunity to access Old Paarl Road via the signalised Kruisfontein Road intersection (Krogsheepers & Arangie, 2012).

9. DESCRIPTION OF THE SURROUNDING ENVIRONMENT

Table 4 summarises the land uses and/or prominent features surrounding the site, within approximately 500 m thereof as well as how they have been considered in the proposal.

TABLE 4 SURROUNDING LAND USES

Medium density residential	The site is secured around the entire perimeter and located within an industrial area and would, therefore, not encroach into the medium density residential area. The intention is also to secure the asbestos on site in order to eliminate risk of the asbestos becoming airborne, which would be beneficial to the surrounding residential communities.
High density residential	The site is secured around the entire perimeter and located within an industrial area and would, therefore, not encroach into the high-density residential area. The intention is also to secure the asbestos on site in order to eliminate risk of the asbestos becoming airborne, which would be beneficial to the surrounding residential communities.
Retail, commercial and warehousing	The site is secured around the entire perimeter and located within an industrial area and would, therefore, not encroach into the retail, commercial and warehousing area. The intention is also to secure the asbestos on site in order to eliminate risk of the asbestos becoming airborne, which would be beneficial to the employees who work in the surrounding area.
Light industrial	The proposal is congruent with light industrial use and would, therefore, not affect the surrounding light industrial area, but rather add to it. The intention is also to secure the asbestos on site in order to eliminate risk of the asbestos becoming airborne, which would be beneficial to the employees who work in the surrounding area.
Government building- Note that this refers to the traffic department	The proposal would not affect the traffic department.
Railway Line	Given the existing industrial development between the site and the railway line, it is unlikely that any impacts on the railway line would occur as a result of the proposed development.
Landfill - As described above, the site itself was previously used as a dumpsite for asbestos containing wastes, so this is not so much a surrounding land use, as it is a previous land use for the site	The proposal would serve to contain the asbestos on site and eliminate risk of the spread thereof.
Nature Conservation Area- the Bracken Nature Reserve is located approximately 800 m southeast of the site.	The proposal would serve to contain the asbestos on site and eliminate risk of the spread thereof.
Protected Area- Bracken Nature Reserve, as above	The proposal would serve to contain the asbestos on site and eliminate risk of the spread thereof.

10. NEED AND DESIRABILITY

Spatial Planning/ Contextual and Sense of Place Considerations

Is the activity permitted in terms of the property's existing land use rights?	
While the site is zoned with the intended use, the property would need to be subdivided according to the proposed layout and an SDP would need to be approved by the City of Cape Town.	
Will the activity be aligned with the following?	
The Provincial Spatial Development Framework (PSDF)	**YES**
The Western Cape Provincial Spatial Development Framework identifies development objectives and strategies for the Western Cape and outlines a number of policies and plans for achieving these. The proposed development is in line with the following objectives: (i) socio-economic development in areas where this will generate the highest socio-economic returns; (ii) urban restructuring through infill development to ensure that growth remains within the urban edge and through clustering different land uses such that living and working areas can be kept in reasonable proximity to each other; and (iii) environmental sustainability by minimising the consumption of scarce environmental resources (e.g. land) as far as possible. The proposed site falls within an existing industrial area and is surrounded by industrial development on all sides. There are a number of major mobility routes in close proximity to the site (Kruisfontein Road, Old Paarl Road, Okavango Road and the N1) in addition to a railway system with links to Bellville, the Cape Town CBD and Paarl/Wellington. As such, the proposed development would promote economic growth at an accessible location. In addition, a diverse range of neighborhoods occur in the nearby vicinity (Northpine, Scottsdene, Protea Village, Ruwari and Protea Hoogte) which would promote the objective of integrated urban areas whereby employment can be pursued within close proximity to homes. Through rehabilitating already contaminated land, the proposed development directly minimises consumption of additional undeveloped land and is thus more sustainable (i.e. a brownfields development as opposed to a greenfields development). The scarcity of land that is suitable for industrial type activities should also be considered in this regard.	
The edge of the built environment for the area	**YES**
The proposed site is situated within an existing industrial area, inside the urban edge.	
The Integrated Development Plan of the Local Municipality	**YES**
See below	
The Spatial Development Framework of the Local Municipality	**YES**
The proposed capping and industrial park are aligned with the local spatial planning. It is located in an area marked as existing industrial use (refer to Figure 40 as well as Appendix L), within an urban area and within the urban edge. The site is also located beyond an aquifer and agricultural area (refer to Figure 41) and beyond any environmentally sensitive areas (refer to Figure 42, Figure 43, and Figure 44). The proposed site is bordered by industrial development on all sides and would not compromise any environmentally sensitive areas earmarked for conservation in terms of the Environmental Management Framework. The proposed development is in line with the objectives of the Cape Town SDF in that it would create employment-generating activities along the accessibility grid, contributing to the strategy of improved access to economic opportunities. Further to an increase in job opportunities and economic development, the proposed redevelopment would result in the removal of alien species and the preservation of endangered natural vegetation (provided appropriate	

mitigation is followed). In addition, the decommissioning of the site prior to redevelopment would ensure that risks of exposure to asbestos are considerably reduced in comparison to the current situation.

The proposed capping and redevelopment would, therefore, be in synergy with the surrounding context and not set an inappropriate precedent for future development (because there are several similar developments in the area). The long-terms benefits would also outweigh the short-terms adverse impacts (with implementation of mitigation measures). The proposed decommissioning would result in a healthier environment for occupiers of the site and surrounds, by reducing potential for exposure to asbestos wastes. This promotes the right of access to an environment that is not harmful to health and well-being as captured in Section 24(1)(a) of The Constitution.

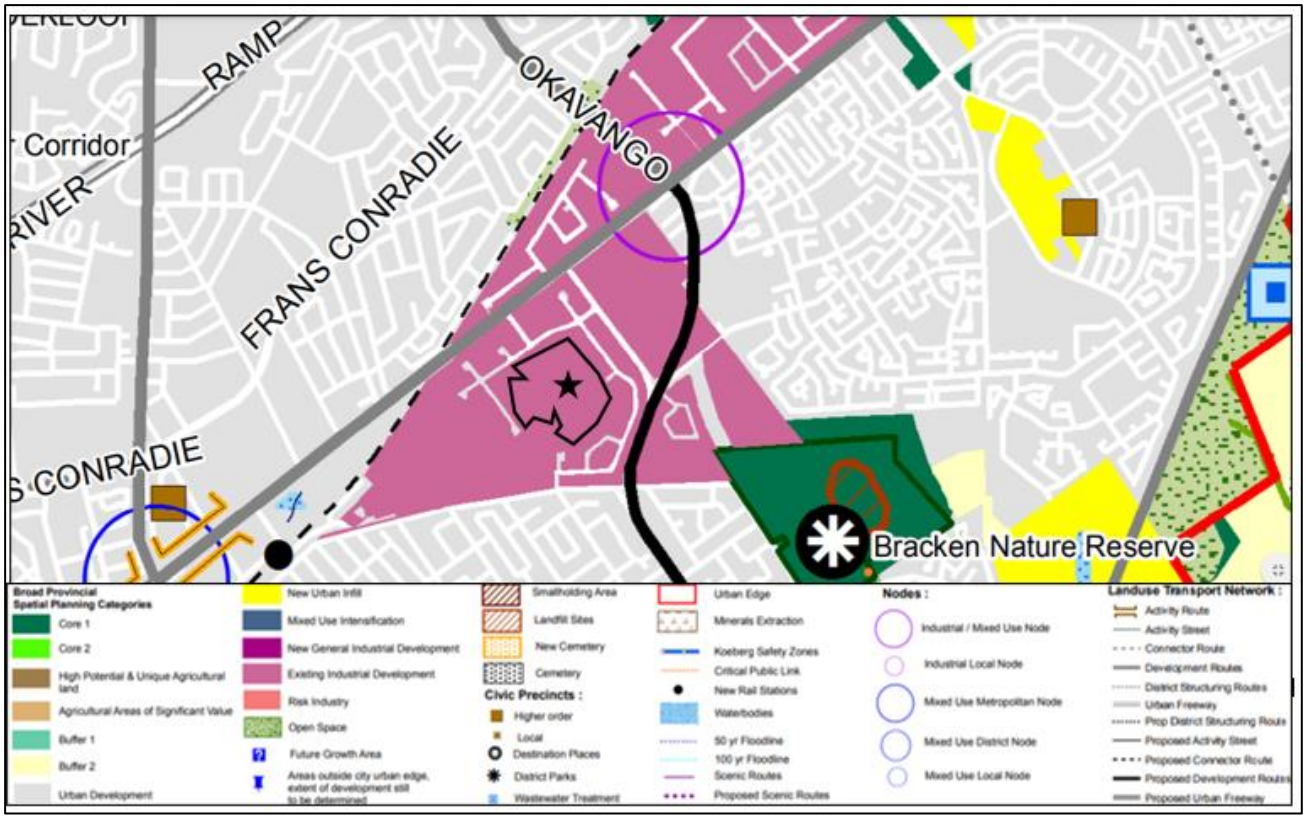

FIGURE 40 EXTRACT FROM SPATIAL DEVELOPMENT PLAN, SITE OUTLINE IN BLACK WITH STAR

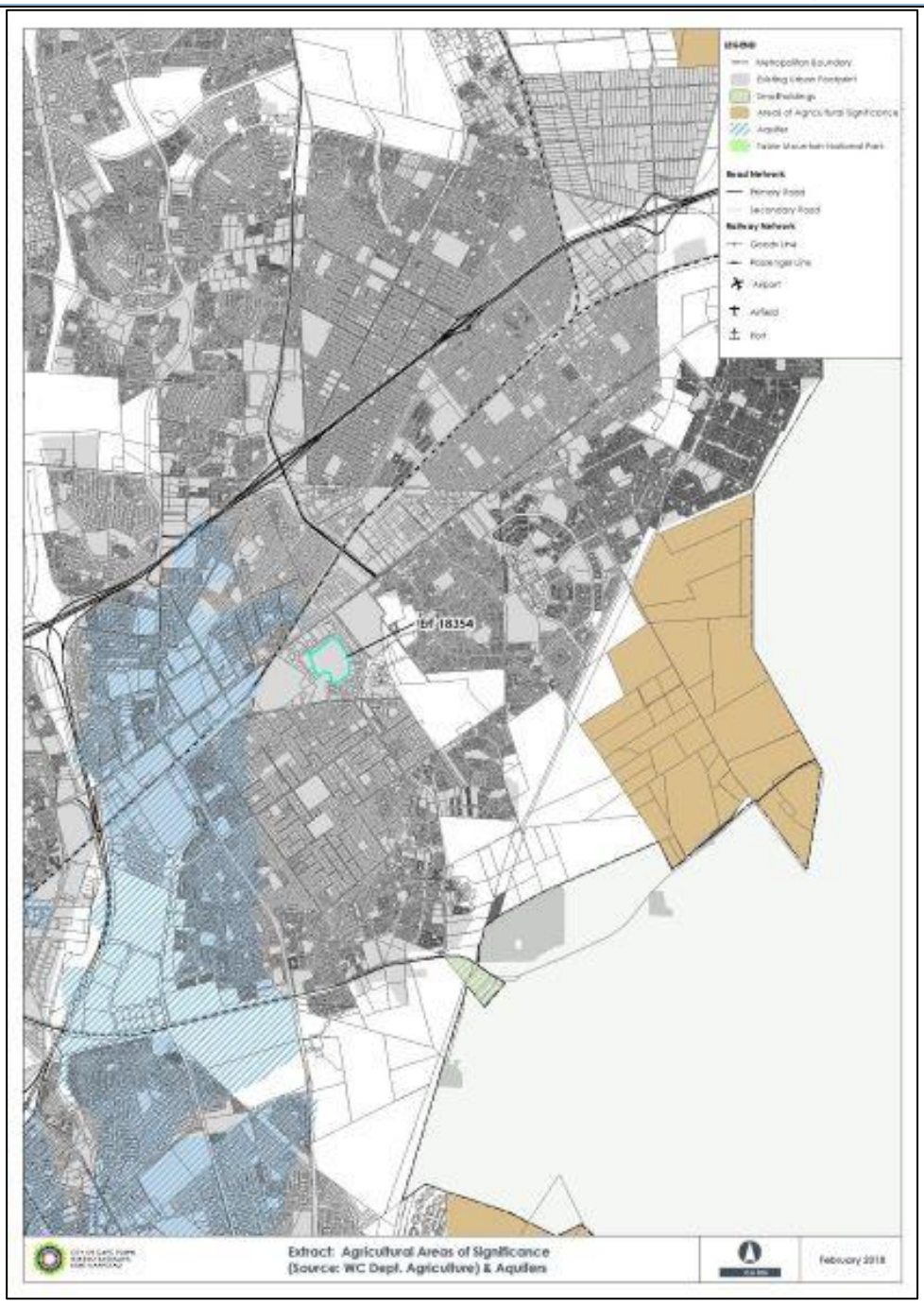

FIGURE 41 AREAS OF AGRICULTURAL SIGNIFICANCE AND AQUIFERS (SOURCE: MSDF, 2018)

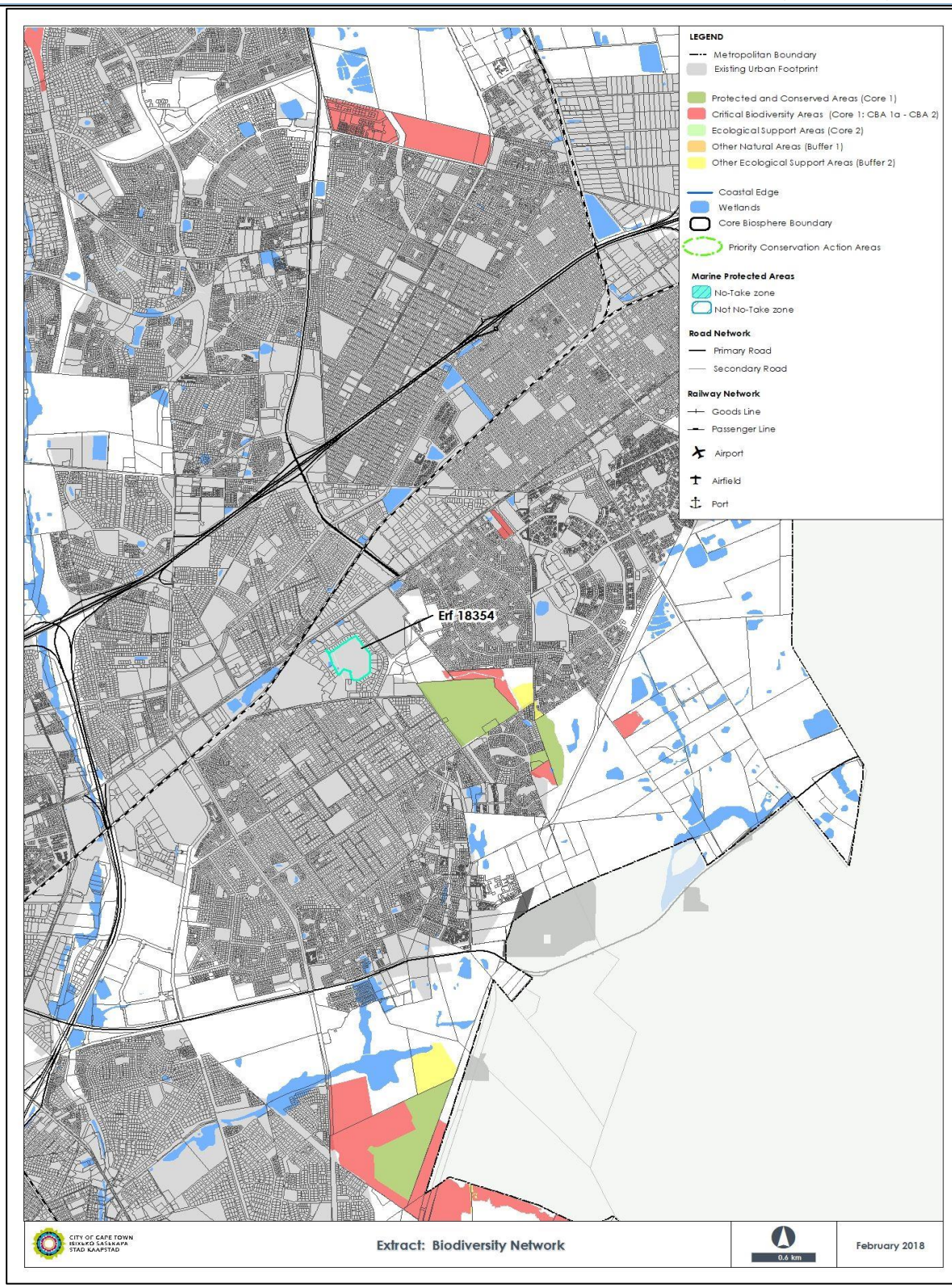

FIGURE 42 BIODIVERSITY NETWORK (SOURE: MSDF, 2018)

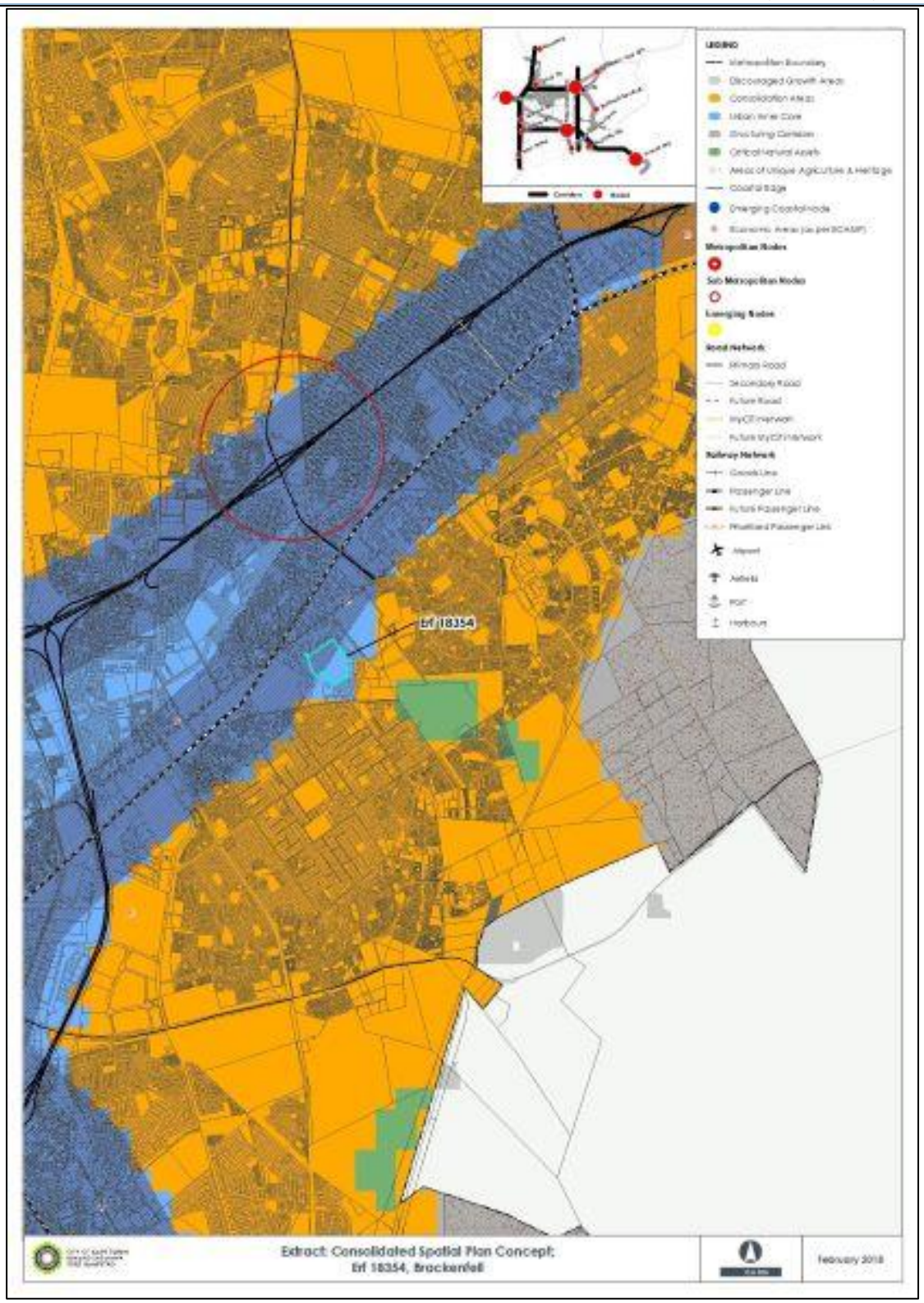

FIGURE 43 CONSOLIDATED SPATIAL PLAN (SOURCE: MSDF, 2018)

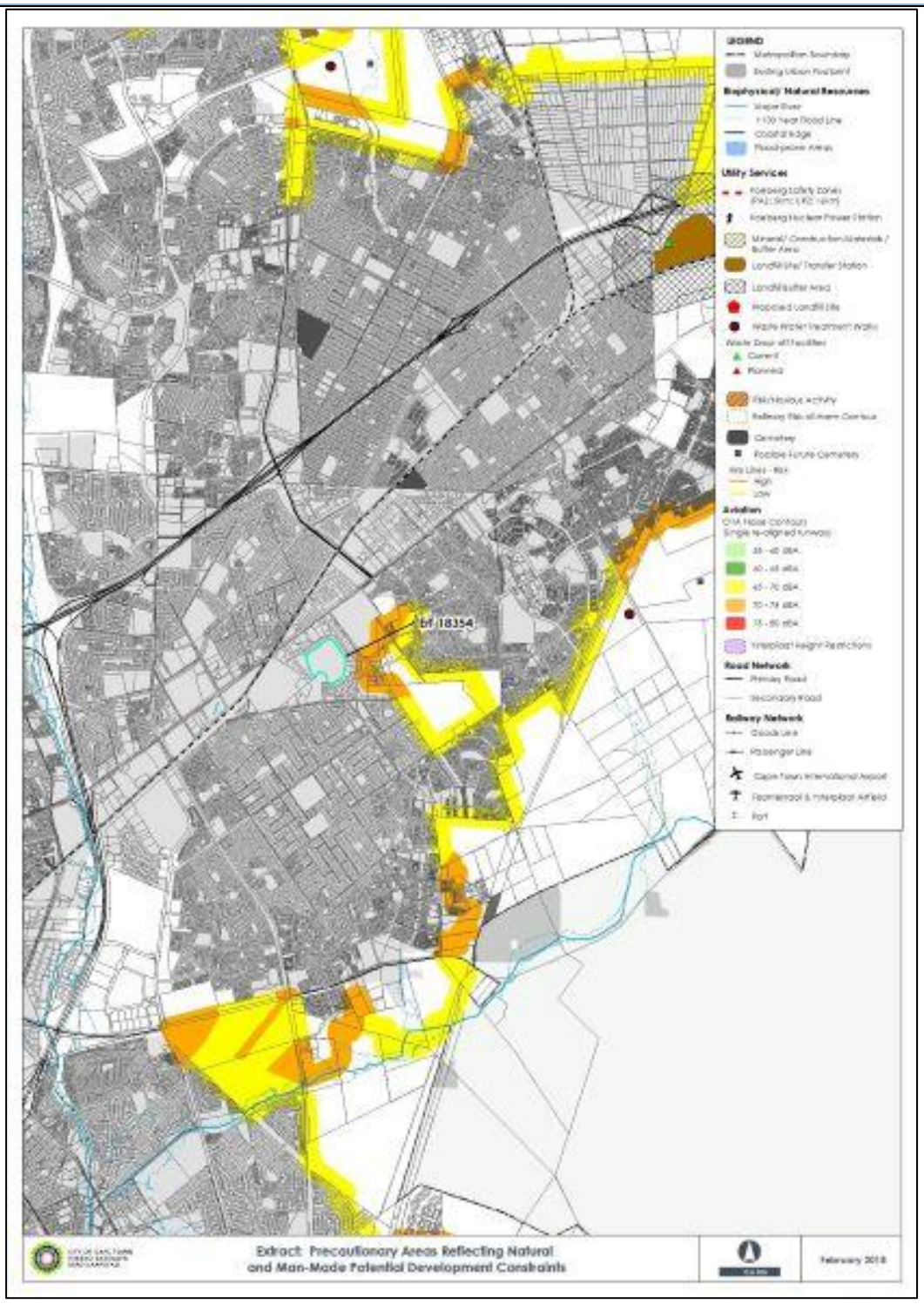

FIGURE 44 PRECAUTIONARY AREAS (SOURCE: MSDF, 2018)

Given that the proposed closure and redevelopment would be located in an industrial area and would serve to eliminate the risk of asbestos spread, it is not believed that it would have an impact on the 'sense of place' and it would not be setting a precedent given that there are a number of similar developments already in the area. The proposed decommissioning would result in a healthier environment for occupiers of the site and surrounds, by

reducing potential for exposure to asbestos wastes. This promotes the right of access to an environment that is not harmful to health and well-being as captured in Section 24(1)(a) of The Constitution.	
An Environmental Management Framework (EMF)	**YES**
The site is not located in any areas earmarked for environmental conservation in the EMF, refer to the location of the site in an existing industrial area indicated in Figure 40 and is also outside of any environmentally sensitive areas as evidenced in Figure 41, Figure 42, Figure 43, and Figure 44.	
Any other Plans	**NO**
Are any Amendments of the above-mentioned required?	**NO**
Will the proposed development lie within coastal public property, the coastal protection zone, or coastal access land as defined in terms of the NEM: ICMA, 2008?	**NO**

Socio-Economic Aspects

The socio-economic aspects of the proposal are presented below.

What is the expected capital value of the activity on completion?	Capping: R 25 million Industrial development: R450 million
What is the expected yearly income that will be generated by or as a result of the activity?	R35 million, based on preliminary estimates of potential rental income only. The potential income to individual businesses establishing themselves in the development is excluded.
Will the activity contribute to service infrastructure?	**Yes** – road upgrades including sidewalk construction
Is the activity a public amenity?	**No**
How many new employment opportunities will be created in the development phase of the activity?	Professional services: 10 Construction Works: 120 (this is based on the resource usage on similar types and size of construction works).
What is the expected value of the employment opportunities during the development phase?	R80m
What percentage of this will accrue to previously disadvantaged individuals?	80-90%
How many permanent new employment opportunities will be created during the operational phase of the activity?	40 000m² of new industrial space is being developed, depending the use of the units the expected employment should be in excess of 300 positions.

What is the expected current value of the employment opportunities during the first 10 years?	Total over 10 years of R342m (300 new employment opportunities, Average salary of R9 500 per month, annual salary of R114 000.)
What percentage of this will accrue to previously disadvantaged individuals?	80-90%

Note that the EMPr contains a requirement that local labour be used for the proposal, as much as possible.

Strategic Development Information and GIS Department (SDI&GIS), City of Cape Town provide information on the suburb.1 Note that the information is based on data from the 2011 census.

Brackenfell comprises 29 sub-places, with the site being located within the sub-place Brackenfell South 2 (refer to Figure 46). Although there are no residential areas around the site (as it is located in an industrial area), the population size of Brackenfell as a whole is approximately 53,185, with a total of around 18,105 households.

There are more females (51.8%) than males in the suburb, with the majority of the population being of working age, and with population numbers steadily declining from the "25-29" age cohort (refer to Figure 45).

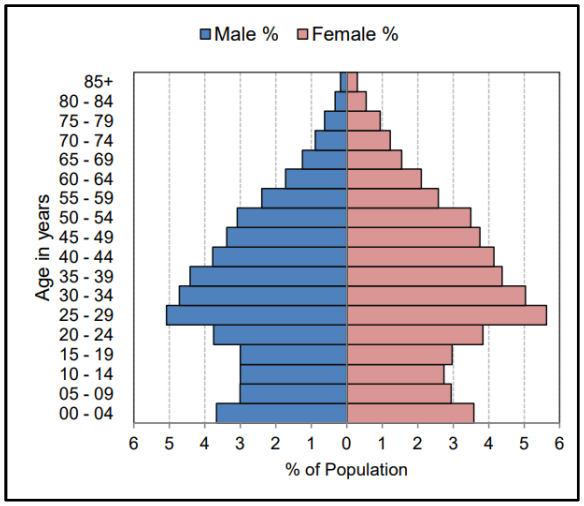

FIGURE 45 AGE PYRAMID FOR BRACKENFELL (SOURCE: SDI&GIS, 2013)

The largest segment of the population is White (63%), with the second largest group being Coloured (25.9%). Most people speak Afrikaans (71.1%), while the second most widely spoken language is English (20.8%)[2].

[1] https://resource.capetown.gov.za/documentcentre/Documents/Maps%20and%20statistics/2011_Census_CT_Suburb_Brackenfell_Profile.pdf [accessed 26 November 2020]

[2] http://www.statssa.gov.za/?page_id=4286&id=309 [accessed 26 November 2020]

Most of the population has access to the internet either from home, work, or their cell phones, but there is a significant percentage (25.3%) which does not have access to the internet[3]. Note, however, that this number is likely to be reduced, given the results of the census are based on data from nine years ago.

Key features (as listed by SDI&GIS, 2013) of the suburb include the following:

- The population is predominantly White (63%).
- 78% of those aged 20 years and older have completed Grade 12 or higher.
- 94% of the labour force (aged 15 to 64) is employed.
- 15% of households have a monthly income of R3 200 or less.
- 99% of households live in formal dwellings.
- 99% of households have access to piped water in their dwelling or inside their yard.
- 99% of households have access to a flush toilet connected to the public sewer system.
- 98% of households have their refuse removed at least once a week.
- 99% of households use electricity for lighting in their dwelling.

Most residents (42.5%) have an education level of Grade 12, with slightly fewer than that with a qualification higher than Grade 12 (35.7%). Overall, most people in the suburb are educated at Grade 12 level or higher and there is a total of approximately 0.3% of people with no education at all.

The unemployment rate in the area is at 6.04%, however a significant segment of the labour force is not economically active. There is a range of incomes obtained by households in the suburb, with 8.7% of households receiving no income. 14.1% of households receive minimal income (R1 to R6,400 per month) and a significant proportion of the population rests in the middle of the range with 16.5% earning R6,401 to R12,800 per month, 27.6% of households earning R12,801 to R25,600 and the remaining 33.1% earning more than that. There is also a segment of the population (10.8%) which has no income. 99.1% of residents live in a formal dwelling and most (65.2%) are paying off or already own a home, with a significant proportion of renters (33%). Almost all homes have access to services such as piped water, refuse removal and sewage system connections. Electricity for lighting, cooking, and heating is dominant, with a small portion (5.7% to 7.9%) which uses gas.

[3] http://www.statssa.gov.za/?page_id=4286&id=309 [acceded 26 November 2020]

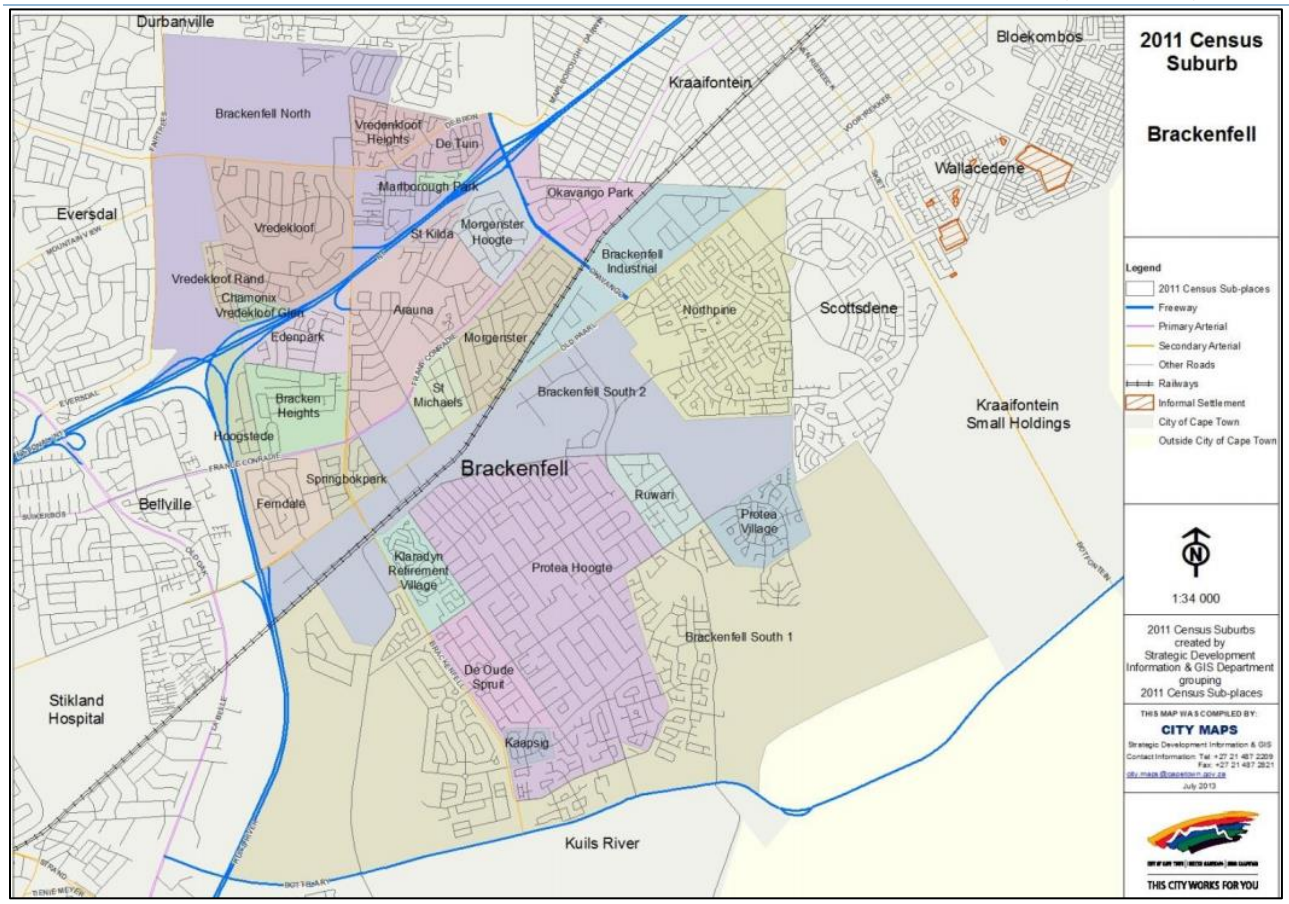

FIGURE 46 SPATIAL EXTENT OF BRACKENFELL, NOTING THAT THE SITE FALLS WITHIN BRACKENFFELL SOUTH 2 (SOURCE: SDI&GIS, 2013)[4]

Effect on Local Communities

The benefits to be realised by the proposal are presented below.

Will the land use / development have any benefits for society in general?	**YES**
The sustainable use of land (in this case, provision of infill development on land that is appropriate for industrial development) would benefit society in general. The individual industrial use stands that would comprise the site would provide an opportunity for both new and existing businesses specialising in light industry/ warehousing to start-up. Industrial development of the site would in turn create job opportunities during both construction and operational phases.	
Will the land use / development have any benefits for the local communities where it will be located?	**YES**
As mentioned previously, the proposed decommissioning would involve permanently capping the site. This would secure the site as the current situation is such that asbestos fibres could be released. The proposed	

4 https://resource.capetown.gov.za/documentcentre/Documents/Maps%20and%20statistics/2011_Census_CT_Suburb_Brackenfell_Profile.pdf [accessed 26 November 2020]

capping will significantly decrease the potential for the release of asbestos fibres from the site and thus provide a benefit for the local community by reducing the potential health risks associated with exposure to respirable asbestos fibres. In addition, the proposed redevelopment would provide employment opportunities for the surrounding local community, as well as individuals from further afield.

11. WASTE, EFFLUENT AND NOISE MANAGEMENT

Solid Waste Management

Construction Phase

The proposal would produce solid waste during the construction/initiation phase in the order of approximately 500 m^3 per month.

In terms of the way solid waste would be dealt with, in accordance with the EMP, the Contractor will separate recyclable materials from other general waste. Waste will be stored in designated waste areas/ skip and taken to licensed municipal landfill by an approved waste contractor at regular intervals.

I&AP Comment addressed from previous process: Concerns related to risk and safety with regards to the removal of asbestos waste

The earthworks would not entail any excavation works or digging into the existing surface areas on the site. Any asbestos containing wastes uncovered in the process of removing vegetative cover would be handled separately and disposed of via an approved waste contractor at an existing hazardous landfill site (Vissershok). The handling and disposal of asbestos wastes would be in accordance with the relevant method statement to be drawn up by an accredited asbestos inspection authority, as specified in the EMPr. It is noted that cleared vegetation may also be considered hazardous waste as asbestos waste may be caught up in this matter; thus, this will also be regarded as hazardous waste and disposed of accordingly.

It should be noted that in terms of the applicable listed activities published under the National Environmental Management: Waste Act (No. 59 of 2008), the proposed activities fall under Category A i.e. a Basic Assessment is required. Asbestos is considered a Hazardous Waste. The proposal is for the closure of the site, and not for any solid waste handling or treatment facility.

I&AP Comment addressed from previous process: Why is a Basic Assessment process applied to a hazardous waste?

Operational Phase

The proposal would produce solid waste during the construction/initiation phase in the order of approximately 554 m^3 per month.

The reduce, reuse, recycle approach will be implemented on site during operations. All non-recyclable general waste will be disposed of through the municipal waste stream. While large quantities of hazardous waste are not expected to be generated (in line with general operations at light industrial facilities), any hazardous waste would be disposed of via an approved waste collection company at a licensed landfill site capable of receiving hazardous waste (Vissershok). It is not anticipated that asbestos wastes would be uncovered during the operational phase; title deed restrictions will be applied to prevent any excavation in the area during the operational phase. The solid waste will be disposed of in

the municipal waste stream, at a licenced municipal landfill site. Please refer to Appendix S for confirmation of capacity for solid waste removal.

Effluent

There would be no effluent produced or resulting from the proposal other than the sewage mentioned in the project description in section 4. Note that confirmation of capacity has been provided by the City of Cape Town in this regard (refer to Appendix S).

Emissions

No emissions are anticipated as part of this development proposal, given the nature of the light industrial activities anticipated. However, should future users of the site conduct activities that produce emissions which trigger Listed Activities in terms of the National Environmental Management: Air Quality Act (No. 39 of 2004), it will be the responsibility of these users to obtain the necessary statutory approvals. This would be enforced through the EMPr.

Noise

There would be some noise, commensurate with an industrial area, associated with the operational phase of the proposal.

Note that "disturbing noise" is defined in the Western Cape Noise Control Regulations, 2013 as:

"*Disturbing noise means a noise, excluding the unamplified human voice, which-*

a) *Exceeds the rating level by 7dB(A)*
b) *Exceeds the residual noise level where the residual noise level is higher than the rating level;*
c) *Exceeds the residual noise level by 3dB(A) where the residual noise level is lower than the rating level; or*
d) *In the case of low frequency noise, exceeds the level specified in Annex B of SANS 10103*."

The only mention of industrial areas within the Western Cape Noise Control Regulations, 2013 is as follows: "*A person may not construct, erect, upgrade, change the use of or expand any building that will house a noise sensitive activity in a predominantly commercial or industrial area, unless he or she insulates the building sufficiently against external noise so that the sound levels inside the building will not exceed the appropriate maximum rating levels for indoor ambient noise specified in SANS 10103*". This indeed refers not to industrial development, but rather development of noise-sensitive uses within an industrial area and so, it is inferred that noise is an anticipated component of an industrial area, and therefore, the site and proposed development in question. However, given that light industrial use is proposed, comparatively less noise than heavier industrial use is anticipated.

Although there are no restrictions in terms of the Western Cape Noise Control Regulations, 2013 to prevent noise nuisances for industrial areas, disturbing noise as defined above can be reported to the City of Cape Town Noise Control Administration.

During the construction phase the nature of noise generated would be typical of that associated with construction activities. Necessary mitigatory measures have been included in, and would need to be enforced through, the EMPr to ensure that potential noise impacts are kept to a minimum. As the site is

positioned within an established industrial area, the noise levels that would be generated by the light industrial activities on the site during operations, would not be out of context in the surrounding area.

The EMPr also notes that noise complaints received by the City of Cape Town Noise Control Administration outside the allocated times as stipulated in the National Building Regulations will be dealt with in terms of the Western Cape Noise Control Regulations, 2013. Should there be a need to work outside these hours, an application for noise exemption needs to be submitted to the nearest City of Cape Town Health Office for consideration.

Water Use

As mentioned in the project description in section 4, there would be potable water requirements from Municipal supply for the proposed development. Refer to Appendix S for confirmation of capacity in this regard from the City of Cape Town.

Please refer to the Appendix S which contains a comment received from the Department of Water Affairs confirming that a water use license is not required.

Energy Efficiency

As mentioned in the project description in section 4, there would be electrical requirements from Municipal supply for the proposed development. Refer to Appendix S for confirmation of capacity in this regard from the City of Cape Town.

The bulk electrical infrastructure would be designed in line with the standards of the City of Cape Town. The City of Cape Town requires that energy efficiency measures be incorporated into the design of individual units on the site. These measures would be based on SANS 10400-XA:2011 (This standard concerns the application of the national building regulations with respect to environmental sustainability and energy usage in buildings).

Alternative energy sources have not been incorporated into the design. Please refer above which describes the measures that have been taken to ensure that the electricity design is energy efficient.

12. PUBLIC PARTICIPATION

The public participation process will fulfil the requirements outlined in the EIA Regulations, 2014 (as amended) and will take into account any applicable guidelines published in terms of Section 24J of NEMA, namely the Public Participation Guidelines of 2013 and 2017.

A preliminary database of Interested and Affected Parties (I&APs) was compiled based on the previous process undertaken for this site in 2013 and additional research was undertaken through a site visit which the EAP also noted surrounding business names, as well as some research thereon online for updated contact information of local businesses as well as ward councillors and other state departments and relevant contact officials/representatives. Further registrations submitted during the public review of this Basic Assessment Report will be added to the I&AP database. The preliminary I&AP database is available in Appendix L. Note that, to protect the privacy of I&APs, contact information is not available, but the full database will be provided to DFFE with the final Basic Assessment Report for decision-making.

This report has also been drafted to address I&AP comments raised previously and a summary of how these issues have been dealt with is included in Table 5. There are also text boxes throughout the draft Basic Assessment Report which refer to how these previous issues have been addressed. The text boxes look like this:

I&AP Comment addressed from previous process: [note on comment]

TABLE 5 ISSUED RAISED IN THE 2013 BASIC ASSESSMENT PROCESS AND HOW THEY HAVE BEEN ADDRESSED

No.	Issue	How the issue has been dealt with
1	Queries around the possibility of purchasing portions of the rehabilitated land.	Given the history of the site as a hazardous waste disposal facility, there are restrictions in place which prevents the sale of individual plots. The developer (Durobrick "(Pty) Ltd) is required to continue to manage the property as a whole. Individual erven would likely be rented to prospective tenants.
2	Support for the development.	This is merely noted and does not require further response.
3	Concerns relating to risk and safety with regards to the removal of asbestos waste.	It should be noted that the full body of asbestos would not be removed, and a site capping exercise would secure the site into the future. The proposed capping layerworks and re-development has been devised in such a way as to limit the amount of excavation required. Note, however, that in certain cases the removal of asbestos would be required and under those circumstances, a method statement will be drawn up for the handling and disposal of asbestos related waste would need to be compiled by the Contractor. This is specified in the EMPr. Furthermore, the EMPr has included mitigation measures from an Accredited Asbestos Inspection Authority.
4	Recommendations for the handling and disposal of asbestos waste and asbestos-contaminated land during the construction/decommissioning phase.	Recommendations have been included in the EMPr (refer to Appendix M) and provided by an Accredited Asbestos Inspection Authority.
5	Traffic and the need for a traffic impact assessment.	An updated Traffic Impact Assessment was done for this Basic Assessment process. It is included in Appendix J6 of the draft BAR.
6	Recommendations/options for conservation of natural vegetation remnants.	Retention of the vegetation on the site is not possible, given the need to secure the site from existing mole activity bringing asbestos to the surface. The capping technique proposed is not compatible with the retaining of this portion of vegetation. Should development be approved, *Lampranthus explanatus* plants would be relocated to the nearby Bracken Nature Reserve and also be provided to specialists to create an ex-situ population, to provide the best option in terms of the likelihood of long term survival of these species and the population strain found on the site. This is explained as a requirement in the BAR and is also included in the EMPr (refer to Appendix M).

7	Recommendations in terms of alien clearing and rehabilitation.	The EMPr (refer to Appendix M) includes measures for alien clearing and rehabilitation, particularly in terms of the landscape plan.
8	Stormwater management.	The proposed stormwater management is described in the project description and a draft stormwater management plan is appended to the Draft BAR in Appendix M.
9	Recommendations with regard to waste, pollution and dust management.	The EMPr (refer to Appendix M) includes measures to control waste, pollution and dust.
10	Process-related issues (regarding the Basic Assessment process being followed when there is hazardous waste).	The waste licence application is for the decommissioning of an existing waste site. The listed activities triggered and the need for a Basic Assessment process is explained in the draft BAR.
11	Confirmation from the DWS indicating that the stormwater retention pond is not considered a "watercourse" in terms of the National Water Act (No. 36 of 1998).	This has been noted in the Draft BAR. No further response is required.
12	Heritage: HWC confirmed that the NHRA does not apply as there is no reason to believe that the proposed development would impact on heritage resources.	This has been noted in the Draft BAR. No further response is required.
13	Comments received by I&APs mistaking the proposal for another proposed development in the area by the same developer (The Brackenfell Development Framework).	This is merely noted as a previous issue but does not pertain to this process, so no further response is necessary.

Table 6 provides an indication of the public participation followed in this Basic Assessment and WML process as it relates to the EIA Regulations, 2014 (as amended).

TABLE 6 PUBLIC PARTICIPATION PROCESS AS IT RELATES TO THE EIA REGULATIONS, 2014 (AS AMENDED)

1. In terms of regulation 41 of the EIA Regulations, 2014 -	
(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -	
(i) the site where the activity to which the application relates is or is to be undertaken; and ***An English and Afrikaans signboard has been placed at the site entrance.***	**YES**
(ii) any alternative site ***Note that there are no alternative sites applicable to the proposal as the site houses asbestos which needs to be capped and closed.***	**Not Applicable**
(b) giving written notice, in any manner provided for in section 47D of the NEMA, to –	

(i) the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; ***Note that this is Not Applicable because there are no legal occupiers of the site, given that the applicant is the owner of the site and would need to obtain the WML for the closure of the site before being able to occupy it.***	**Not Applicable**
(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; ***A knock-and-drop exercise and email notification of the availability of this report has been undertaken.***	**YES**
(iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area; ***Email notification of the availability of this report has been undertaken.***	**YES**
(iv) the municipality (Local and District Municipality) which has jurisdiction in the area; ***Email notification of the availability of this report has been undertaken.***	**YES**
(v) any organ of state having jurisdiction in respect of any aspect of the activity; and ***Email notification of the availability of this report has been undertaken.***	**YES**
(vi) any other party as required by the Department; ***No additional parties have been raised by the Department as yet, however any further engagement recommended by them would be taken on-board.***	**N/A**
(c) placing an advertisement in -	
one local newspaper ***Advertisements were placed in Die Burger (a regional newspaper) and Die Tygerburger (a local newspaper), one of which was in English and the others in Afrikaans.***	**YES**
(ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	**N/A**
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken	**N/A**
(e) using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to— (i) illiteracy;(ii) disability; or (iii) any other disadvantage. ***No further methods have been required by the Department.***	**N/A**
2. The NEM: AQA and NEM: WA requires that a notice must be placed in at least two newspapers.	
If applicable, have/will an advertisement be placed in at least two newspapers?	**YES**
Advertisements were placed in Die Burger (a regional newspaper) and Die Tygerburger (a local newspaper), one of which was in English and the others in Afrikaans.	

The public participation process undertaken has been executed in accordance with legislated requirements. Furthermore, it is believed that public participation undertaken to date has been appropriate and commensurate with the nature of the application. Given the nature of the comments received during public review of the Draft BAR in the previous Basic Assessment process (undertaken in 2013), additional public engagements over and above those required by legislation has not been deemed to be necessary.

Refer to Appendix L for the Comments and Response Report, which provides more information on the Public Participation Process. That report (as well as this BAR) will be updated with the comments received during the current public review period.

Note that this post-application draft Basic Assessment Report is currently under public review, for a period of 30 days.

Comments received during the current public review process will be incorporated into the final BAR for submission to DFFE for their decision-making. Following the issue of DFFE's decision, registered I&APs would be notified of the outcome, reasons for decision and opportunity to appeal.

List of State departments/organs of State which have been notified of the availability of the Basic Assessment Report for comment

Department: Environment, Forest & Fisheries: Chemicals & Waste Management: Chief Directorate
Mishelle Govender
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Department of Human Settlements
Head of Department
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13. ASSESSMENT OF ALTERNATIVES

Summary of Alternatives Assessed

Refer to Table 7 for the alternatives assessed.

TABLE 7 ALTERNATIVES ASSESSED

Alternative	Summary	Relevant Extents
Alternative 1 Development Alternative	Capping of the site only, no development	Capping: The total extent of the site would be capped, with the exception of the retention pond area and associated buffer area. This is estimated at 95,000 m^2. Redevelopment: 0 m^2
Alternative 2 **Preferred Alternative**	**Capping of the site and development for light industrial use (an indicative layout is provided)**	**Capping: As above** **Redevelopment:** **Building footprints: approximately 32,005 m^2 (3.2 ha).** **Roads and parking: approximately 18,091 m^2 (1.8ha)**
Alternative 3 No-Go Alternative	No-go option, the status quo of the site would remain.	Capping: 0 m^2 Redevelopment: 0 m^2

Refer to Appendix N for the methodology used to determine impact significance.

Preferred Alternatives and Motivation

The preferred alternative is as per the description provided in the Activity Description in section 4. This provides for a detailed capping methodology, which would, in certain components of the site, be incorporated with the proposed end use, namely a light industrial facility.

The proposed capping design, intentions for establishment of foundations and platforms as well as the proposed development footprint have been crafted in response to various site informants, with the dominant one being the consolidated asbestos below the ground and the stormwater pond.

The preferred alternative is aligned with spatial and environmental planning intentions and is preferred from the Applicant's perspective because the costs associated with the capping and closure of the site could be offset with the income generated by the proposed light industrial park, with a view to making a profit on this in time. The proposed capping would tie-in with the proposed end use and would serve to secure the safety of the site from the underlying asbestos permanently. The way this is proposed in terms of limiting excavation, development in response to the existing platforms, and importing fill for the site is aligned with the intention to limit disturbance of asbestos as much as possible and to cap and development on top of it, rather than within in. The preferred alternative is also preferred from a

geotechnical perspective as the specialist has stated that simply capping and re-shaping the site with a cover material is considered inadequate because mole activity would continue in future, and would also do so within any soil capping layer, and the vegetation currently protecting the site is seasonal and may not always prevent the spread of asbestos around the site and off-site. The proposed capping is aligned with the geotechnical recommendation for an engineered, hardened cap. Given that there are no sensitive freshwater features on site which require protection, the preferred alternative is also acceptable from that perspective (Belcher, 2012) as it accommodates the primary requirement to retain the stormwater pond and buffer around it. Although the preferred alternative is not preferred from a botanical perspective (because the most sensitive vegetation area on the site would be developed on) it would be acceptable with the proposed relocation of the Endangered Cape Flats Strand Fynbos species to the Bracken Nature Reserve as well as to other specialists to create an *ex-situ* population. The proposed green/ landscaped areas of the site would also serve to provide some vegetation "islands" within the industrial area and surrounding context. The proposal for the light industrial park is also found to be acceptable from a servicing, transport, and access perspective.

The impacts of the two development alternatives under consideration are largely similar (and are generally low to very low, negative, which is considered acceptable), but for the Medium (+) socio-economic impact that the preferred alternative would provide through the creation of jobs and contribution to light industry, which is a pertinent consideration during the COVID-19 pandemic, which has shaken the local and global economy. There is no such positive impact for the development alternative as merely capping the site would not generate income for the community or the Applicant. The No-Go alternative does not have many impacts, however there is a significant High (-) impact that continued, unfettered spread of asbestos could have on the local community (and this would also not be legally permissible under the Asbestos regulations), therefore it is imperative that this be controlled. The preferred alternative is preferred over the development alternative as merely capping the site without further development would not be economically viable and, given that hard-capping is required to prevent extrusion of asbestos, the site would have to have a hard covering, which would not be aesthetically pleasing, or aligned with the socio-economic spatial planning intentions for the area.

The preferred alternative is also preferred over the no-go alternative because not capping the site would result in further disturbance and subsequent erosion through mole activity, and furthermore, is not legally acceptable in terms of the Asbestos Regulations, 2001, which require that asbestos and risk of exposure be effectively managed and controlled. Therefore, the No-Go alternative is not a feasible alternative for implementation given, not only the potential future risk to human health, but also when one considers the asbestos regulations which mandate the management and control of asbestos. The assessment of this is therefore largely included in this Basic Assessment process in response to the procedural requirements indicated in the EIA Regulations, 2014 (as amended).

Alternatives not assessed and associated rationale for not assessing them

Note that no **site alternatives** have been considered and assessed because the site in question is the one which requires closure due to asbestos emerging to the ground surface.

No **layout alternatives** have been assessed as the proposed layout for the light industrial park responds appropriately with the need to limit the development on site to "lighter" development (in terms of the founding conditions of the site) and keeps development located largely on the most appropriate and stable in terms of founding conditions, and also remains out of the stormwater pond and includes an open green area to accommodate some (albeit minimal) biodiversity in an industrial area. The "layout" for capping must be driven by the location of the asbestos in order to contain it safely and effectively, therefore alternatives in this regard are not necessary and would not be prudent.

No **technology alternatives** were formally assessed, however the best practice measures in terms of capping layers, ground compaction and foundation preparation, asbestos safety, handling, management and monitoring, as well as resource use efficiency would be employed during the planning, construction, and operation of the proposed development. This would be controlled by the relevant specifications (which have been informed by specialists and the EAP) contained in the EMPr (refer to Appendix M) as well as any conditions of authorisation stemming from this Basic Assessment process and WML.

Operational alternatives have also been assessed, and this is linked to the activity alternative discussed, because the operational aspect of Alternative 1 would be linked to an open site and that with Alternative 2, would be linked with the capping and proposed redevelopment. No further operational aspects have been assessed herein as the best use, which would fit within the context of the site would be industrial, however the use of the site for heavy industrial use is not preferred given the stability of the founding conditions as a result of the asbestos consolidation and capping required.

14. IMPACT ASSESSMENT, MANAGEMENT AND MITIGATION

Impact Assessment Methodology

Refer to Appendix N for the methodology used, as prescribed by the National DEA (now DFFE).

Impact Assessment Tables

It is not believed that there would be any adverse impacts on sense of place for the operational phase, as the proposed closure and site redevelopment would be located within an industrial area and would be visually in synergy with the surrounding context.

It is also believed that there would be improvements to human health risks (i.e. lower risk) through the formal closure of the asbestos on site as this would eliminate pathways for asbestos to reach people on- and off-site.

It has been confirmed by HWC that there are no sensitive heritage resources on site, therefore there are no impacts on heritage and cultural aspects anticipated as a result of the proposed capping and redevelopment.

The identified environmental impacts are presented in the impact tables below.

Potential impacts during the planning, decommissioning (i.e. the proposed capping) and construction phase (Note: the construction phase is only applicable to Alternative 2).

IMPACT: Biological: Loss of Botanical Resources	
ALTERNATIVE 1 AND 2 (PRFERRED)	
Extent	Local
Duration	Long-term
Nature	Negative

Consequence of impact risk	Less representation of Critically Endangered Cape Flats Sand Fynbos
Magnitude	high (-)
Probability of occurrence	high
Degree to which the impact may cause irreplaceable loss of resources	Medium
Degree to which the impact the impact can be reversed	Low
Significance prior to mitigation	High (-)
Confidence	high
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Medium (-)

Mitigation:

- Relocation of Critically Endangered Cape Flats Sand Fynbos species to the Bracken Nature Reserve as well as to other specialists to create an ex-situ population. This must be done under the supervision of a representative of the Nature Reserve and a botanist.
- Restoration and maintenance of the stormwater retention pond area

Cumulative Impacts:

Given that Cape Flats Sand Fynbos is Critically Endangered, no further losses of this vegetation type should occur. Any losses, especially of the IUCN threatened *L. explanatus* would be deemed to have a negative cumulative impact. It should be noted that this species will be relocated, loss of the species and this population would therefore not occur.

ALTERNATIVE 3 (NO GO)	
Extent	Local
Duration	Long-term
Nature	Positive
Consequence of impact risk	Continued existence of Critically Endangered Cape Flats Sand Fynbos on site, noting the threat of alien invasives and fires on site
Magnitude	medium (-)
Probability of occurrence	high
Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Reversable

Significance prior to mitigation	Medium (-)
Confidence	high
Degree to which the impact can be avoided	Low (given that a hard capping is required for control of asbestos)
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Low (+)
Mitigation: • Restoration and maintenance of Cape Flats Sand Fynbos in the north eastern corner of the site • Clearing of alien vegetation on the remainder of the site	
Cumulative Impacts: Cumulative impact would be neutral, given that no further losses of Cape Flats Strand Fynbos would occur under this option.	

IMPACT: Geographical and Physical: Stormwater quality impairment	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Local
Duration	Short-term
Nature	Neutral
Consequence of impact risk	Additional hard surfacing and construction activities on the site would result in additional hard areas for surface water, which could contain potential contaminants such as cement would run off the site and percolate into the ground
Magnitude	Medium-Low
Probability of occurrence	medium
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Medium
Significance prior to mitigation	Low (-)
Confidence	high
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High

Degree to which the impact can be mitigated	High
Significance after mitigation	Low (-) to negligible
Mitigation: • Contaminated runoff from the construction site must be prevented from flowing directly into the • stormwater system • Construction should take place in the dry season to limit the volume of runoff on site • Construction areas should be covered with suitable vegetation cover as soon as possible after construction is completed • Specifications for the management of runoff to be included in the construction EMP	
Cumulative Impacts: A decline in water quality would have an impact on aquatic features in the surrounding area. However, given that the stormwater management plan will be designed and implemented in line with the City of Cape Town's stormwater policy, significant changes in the characteristics of stormwater leaving the site are not anticipated.	
ALTERNATIVE 3 (NO GO)	
No water quality impairment impacts are associated with the no-go alternative, noting that groundwater contamination has likely been caused as a result of previous activities, but ongoing monitoring should be carried out, nonetheless.	

IMPACT: Biological: Modification of wetland habitat	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Local
Duration	Short-term
Nature	Negative to Neutral
Consequence of impact risk	Changes to the "wetland" habitat would change the nature of the local floral and faunal community and result in low losses in biodiversity
Magnitude	low
Probability of occurrence	low
Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Low
Significance prior to mitigation	Low (-)
Confidence	high
Degree to which the impact can be avoided	High
Degree to which the impact can be managed:	High

Degree to which the impact can be mitigated	High
Significance after mitigation	Very low (-) to negligible.
Mitigation: • A buffer of 15m from the delineated edge of the retention pond should be implemented and identified as a no-go area in the Construction EMPr • No construction activity must take place within the retention pond area; however, mole barriers will have to be installed around the buffer area • All alien vegetation should be cleared around this area • Refrain from introducing landscaping in this area so that it can naturally recover, however the botanical specialist indicated a number of appropriate species that may be introduced in this area. • Stormwater must not be discharged directly into the retention pond but should first be allowed to dissipate through the buffer area. • Sewage and water pipelines should be located outside of the retention pond and buffer area	
Cumulative Impacts: None	
ALTERNATIVE 3 (NO GO)	
No modification of wetland habitat will occur under the no-go alternative.	

IMPACT: Socio-economic: Provision of jobs during decommissioning/construction	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Local
Duration	Short-term
Nature	Positive
Consequence of impact risk	Creation of employment opportunities as a result of development/ construction of the proposed development for a period of approximately 14 months
Magnitude	Low
Probability of occurrence	high
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Low
Significance prior to mitigation	Low (+)
Confidence	medium
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High

Degree to which the impact can be mitigated	Positive impact – no mitigation required
Significance after mitigation	Low (+)
Mitigation: n/a	
Cumulative Impacts: Expected to be Low given that the number of employment opportunities is directly linked to the size of the development.	
ALTERNATIVE 3 (NO GO)	
No employment opportunities are associated with the no-go alternative, note that the positive impact anticipate as a result of the proposed development would be forgone under the no-go alternative.	

IMPACT: Nuisance Impacts: Dust and Noise associated with decommissioning/construction works	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Local
Duration	Short-term
Nature	Negative
Consequence of impact risk	The land clearing, capping, and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing. Localised increased dust on surfaces and possible respiratory / sinus concerns for land users adjacent to the site.
Magnitude	Low
Probability of occurrence	high
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Low (-)
Confidence	High
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Low (-)
Mitigation: Noise and dust during the construction phase will be monitored by the Environmental Control Officer. All	

contractors would need to comply with the specifications of the EMPr. Noise and dust specifications would inter alia include:

- Working hours to be restricted to daily normal working hours;
- All noise and sounds generated by machinery must adhere to SABS 0103 specifications for the maximum permissible noise levels for residential areas as well as any local by-laws;
- Machinery to be fitted with silencers and no sound amplification equipment such as sirens, loud hailers and hooters may be used on site except in emergencies;
- Covering of loads during transport;
- Watering or use of dust control measures on site; and
- Limited land clearing only for areas where works will take place in the short-term.

Cumulative Impacts:

Noise and dust generated by construction would make a minimal contribution to the existing noise in the area given that the surrounding land use is predominantly industrial.

ALTERNATIVE 3 (NO GO)

No noise impacts are associated with the no-go alternative given that no construction activity would take place on site.

IMPACT: Nuisance and Physical: Visual associated with decommissioning/construction works	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Local
Duration	Short-term
Nature	Negative
Consequence of impact risk	Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces). Construction areas would look comparatively unsightly for a short period of time and may detract from the overall rural, scenic experience of the farm in that particular area
Magnitude	Low
Probability of occurrence	high
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Reversible
Significance prior to mitigation	Low (-)
Confidence	High
Degree to which the impact can be avoided	Medium (given limited visibility of the site)

Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Low (-)

Mitigation:

Construction Phase impacts will be managed through the implementation of the EMP which will be monitored by an Environmental Control Officer.

- Construction is to be of limited duration to be determined in the architectural guidelines and environmental management plan. This is to ensure that the area does not become a permanent building site.
- No intrusion by construction activities or workers into the retention pond area
- Any trees that are to be kept are to be marked off and protected from damage by the construction machinery or activities of the workers such as the gathering of firewood.
- All stockpiles of buildings materials are to be protected against dispersion into the surrounding terrain.
- All builders' rubble is to be removed from the site timeously and dumped at a registered dump site. The retention pond area is not to be used for dumping under any circumstances.
- All construction scars are to be rehabilitated immediately after construction is complete.
- The generation of dust is to be strictly limited.

Cumulative Impacts:

No cumulative impacts of significance identified.

ALTERNATIVE 3 (NO GO)

No visual impacts are associated with the no-go alternative given that no construction activity would take place on site.

IMPACT: Social: Health impacts associated with the handling of asbestos during the decommissioning works – note that removal of asbestos and excavation into the asbestos would be avoided as far as possible as the proposed capping would entail importing of material and covering the surface of the site. Removal of the vegetative cover on site might however expose some asbestos waste.

ALTERNATIVE 1 AND 2 (PREFERRED)

Extent	Local
Duration	Short-term
Nature	Negative
Consequence of impact risk	Spread of asbestos off the site to surrounding communities and adverse effects on their health. Noting that, at present, even under high wind conditions, the asbestos has not become airborne and has not left the site.
Magnitude	High
Probability of occurrence	unknown

Degree to which the impact may cause irreplaceable loss of resources	High
Degree to which the impact the impact can be reversed	Low
Significance prior to mitigation	Medium (-)
Confidence	High
Degree to which the impact can be avoided	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Low (-)

Mitigation:

Impacts (if applicable) would be managed through the implementation of the EMP which will be monitored by an Environmental Control Officer (ECO). An ECO will be permanently based on the site for monitoring purposes during the initial vegetation removal and capping phase of the development. All of the mitigation measures outlined in the Asbestos Regulations of 2001 as well as the Occupational Health and Safety Act must be strictly adhered to. These mitigation measures must be implemented as part of the EMPr for the decommissioning activity as it relates to any handling of asbestos. The mitigation measures outlined in the relevant legislation should form part of the conditions of environmental authorization. Further measures as indicated (and provided by an asbestos specialist) in the EMPr would require implementation.

Cumulative Impacts:

No cumulative impacts of significance identified.

ALTERNATIVE 3 (NO GO) – note that the current status quo will be maintained if the no-go alternative is implemented. This would result in continued exposure as the existing capping will likely continue to deteriorate, noting that at present the asbestos has not been airborne. Note also that the no-go alternative would not be permitted under asbestos regulations as the asbestos needs to be controlled.

Extent	Local
Duration	Long-term
Nature	Negative
Consequence of impact risk	Spread of asbestos off the site to surrounding communities and adverse effects on their health. Noting that, at present, even under high wind conditions, the asbestos has not become airborne and has not left the site.
Magnitude	Medium
Probability of occurrence	Low

Degree to which the impact may cause irreplaceable loss of resources	High
Degree to which the impact the impact can be reversed	Low
Significance prior to mitigation	Medium (-)
Confidence	High
Degree to which the impact can be avoided	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated	High – however this would result in implementation of alternatives 1 or 2, which would negate this as the no-go alternative.
Significance after mitigation	N/a. While the significance will be reduced with the implementation of Alternatives 1 or 2, as per the above, this would no longer render this option the no-go.
Mitigation: • Undertake capping of the site (i.e. implement Alternative 1 or 2).	
Cumulative Impacts: No cumulative impacts are associated with this alternative.	

IMPACT: Social and Physical: Risks during the transportation of asbestos during the decommissioning works (noting that all attempts would be made to keep this to an absolute minimum)	
ALTERNATIVE 1, 2 (PREFERRED) AND NO-GO	
Extent	Beyond the site boundary
Duration	Short-term
Nature	Negative
Consequence of impact risk	Spillage and spread of asbestos off-site and adverse health effects on people who come into contact with it
Magnitude	High
Probability of occurrence	Low
Degree to which the impact may cause irreplaceable loss of resources	High
Degree to which the impact the impact can be reversed	Low

Significance prior to mitigation	Medium (-)
Confidence	High
Degree to which the impact can be avoided	Medium- High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Low (-)

Mitigation:

All of the relevant mitigation measures described in the Asbestos Regulations of 2001 as well as the

SANS code 10229 must be strictly adhered to and form part of the mitigation measures of the EMPr. Furthermore, this must be written into the environmental authorization as conditions to be complied with.

These mitigation measures, amongst others, should include inter alia the following:

- Loads on trucks must be securely covered.
- Trucks must display the necessary hazardous waste signage.
- No dust is to be released during the transportation of the waste. Airtight containers must be used
- to prevent airborne dust contamination.
- All employees involved in the transport of the waste material must wear the relevant protective clothing.
- All employees must be trained to act accordingly in the event of a spill or accident.
- The landfill where the asbestos is disposed of must comply with the provision of the Asbestos
- Regulations of 2001.

Cumulative Impacts:

No cumulative impacts of significance identified.

ALTERNATIVE 3 (NO GO) note: given that there is asbestos on the surface of the site, it would need to be removed as it cannot remain on the site in perpetuity, therefore, if no further work is done on the site, and asbestos keeps being forced up by moles from underground, eventually there would be a lot more asbestos on site and it could become airborne. This situation would result in the need for immediate removal of asbestos from the site.

IMPACT: Physical and Resource Use: Depletion of hazardous landfill space as a result of generation of solid and liquid hazardous waste – wash water from rinsing of Personal Protective Equipment and workers during the decontamination/capping process, solid asbestos waste and cleared vegetation.

ALTERNATIVE 1 AND 2 (PREFERRED)

Extent	Regional
Duration	Permanent
Nature	Neutral
Consequence of impact risk	Taking up additional landfill space.

Magnitude	Low (depends on the volume of hazardous waste generated during decommissioning).
Probability of occurrence	High
Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Medium (-)
Confidence	High
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated	Medium
Significance after mitigation	Low (-)
Mitigation: • Test vegetative cover removed off the site to determine whether this is deemed hazardous; • Limiting the number of workers involved in the process so as to limit the volume of wash-water generated by the decontamination process.	
Cumulative Impacts: No cumulative impacts of significance identified.	
ALTERNATIVE 3 (NO GO)	
Extent	Regional
Duration	Permanent
Nature	Neutral
Consequence of impact risk	Taking up additional landfill space.
Magnitude	Low
Probability of occurrence	High
Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Irreversible

Significance prior to mitigation	Low (-)
Confidence	High
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	Low
Degree to which the impact can be mitigated	Low
Significance after mitigation	Very Low (-)
Mitigation: • Continue with regular air quality monitoring and remove asbestos waste should it become airborne	
Cumulative Impacts: No cumulative impacts of significance identified.	

IMPACT: Natural Resource Use: Depletion of Natural Resources through use as material in the development/construction phase	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Widespread beyond site boundary
Duration	Short-term
Nature	Negative
Consequence of impact risk	Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc.
Magnitude	Low
Probability of occurrence	High
Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Low (-)
Confidence	Medium
Degree to which the impact can be avoided	Low

Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated	Medium
Significance after mitigation	Low (-)
Mitigation: • Implementation of the specifications in this regard contained in the EMPr (Appendix M).	
Cumulative Impacts: Very low impacts of significance identified.	
ALTERNATIVE 3 (NO GO)	
No such impacts associated with the no-go alternative	

IMPACT: Contamination of soil and groundwater

It should be noted that the soil is already contaminated by the previous disposal activities on the site.

During the decommissioning activity, which may include some handling of asbestos contaminated materials, it is possible that only localized surface water could be impacted, i.e. runoff water used for the wetting process during excavation could contain asbestos fibres. A procedure must be developed to capture this water and control the wetting process so that excess runoff does not occur. The extent of this is unknown, however it is advised that the asbestos Inspection Authority draw up a procedure in this regard. It should however be noted that asbestos does not dissolve as it is a mineral that is indestructible. As such, groundwater will not be impacted.

The possibility of this impact is considered very low. For this reason, this impact has not been further assessed.

Potential impacts during the operational phase

IMPACT: Geographical and Physical: Modification of stormwater flow on the site	
ALTERNATIVE 1 AND 2 (PREFFERED)	
Extent	Local
Duration	Lifetime of project
Nature	Neutral
Consequence of impact risk	Additional hard surfaces would result in additional hard surfaces for run-off as well as less permeability and would provide for increased run-off from the site, which poses flooding risks to the site and surrounding areas if improperly managed
Magnitude	Low to medium
Probability of occurrence	high

Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Low (-) to medium (-)
Confidence	high
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Neutral
Mitigation: • Implementation of a stormwater management plan which includes specifications for reducing runoff through the use of surfaces that allow infiltration • Development activities should not occur within the 1:50 year flood line	
Cumulative Impacts: The increase in stormwater flow generated by the addition of hard surfaces to the site could contribute to an increase in stormwater quantity in the area. However, given that the stormwater management plan will be designed and implemented in line with the City of Cape Town's stormwater policy, significant changes in the characteristics of stormwater leaving the site are not anticipated.	
ALTERNATIVE 3 (NO GO)	
No flow modification impacts are associated with the no-go alternative.	

IMPACT: Physical: Water quality impairment from chemicals or hazardous substances used by industry. Sedimentation resulting from increased runoff due to increased hard surfaces that may lead to erosion.	
ALTERNATIVE 1 AND 2 (PREFERRED)	
Extent	Local
Duration	Lifetime of project
Nature	Negative
Consequence of impact risk	This could lead to the deterioration in condition of the artificial "aquatic habitat".
Magnitude	Low

Probability of occurrence	high
Degree to which the impact may cause irreplaceable loss of resources	Low
Degree to which the impact the impact can be reversed	Medium
Significance prior to mitigation	Low (-)
Confidence	high
Degree to which the impact can be avoided	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Low (-) to negligible
Mitigation: A stormwater management plan must be implemented. This should address the following aspects: • Suitable indigenous wetland vegetation and habitat diversity should be introduced in the stormwater system • Stormwater channels should preferably not be piped, but created drainage channels • Litter should be prevented from entering the stormwater pond • Measures to reduce the volume of runoff should be implemented to reduce erosion of soils	
Cumulative Impacts: A decline in water quality would have an impact on aquatic features in the surrounding area. However, given that the stormwater management plan be designed and implemented in line with the City of Cape Town's stormwater policy, significant changes in the characteristics of stormwater leaving the site are not anticipated.	
ALTERNATIVE 3 (NO GO)	
No water quality impairment impacts are associated with the no-go alternative	

IMPACT: Socio-economic: Provision of job opportunities	
ALTERNATIVE 2 (PREFERRED)	
Extent	Medium (beyond the site boundary)
Duration	Lifetime of project
Nature	Positive
Consequence of impact risk	Creation of employment opportunities as a result of operation of the proposed development. Buying power of certain members in the local

	communities, as well as indirect income to local communities increases
Magnitude	Medium
Probability of occurrence	High
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Medium (+)
Confidence	High
Degree to which the impact can be avoided	None, noting that avoidance of this impact is undesirable
Degree to which the impact can be managed:	Refer above.
Degree to which the impact can be mitigated	No need to mitigate a positive impact
Significance after mitigation	Medium (+)
Mitigation: None	
Cumulative Impacts: Positive knock on effect of additional employment opportunities in related downstream industries.	
ALTERNATIVE 1 AND 3 (NO GO)	
No employment opportunities associated with Alternative 1 and 2 given that there would be no operational activities associated with these options.	

IMPACT: Aesthetics: Visual and sense of place	
ALTERNATIVE 2 (PREFERRED)	
Extent	Local
Duration	Lifetime of project
Nature	Neutral
Consequence of impact risk	The site would house a light industrial area, which is contextually appropriate for the zoning of the site and surrounding area, as well as the land uses in the surrounding area

Magnitude	Low
Probability of occurrence	High
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Reversible
Significance prior to mitigation	Low (-)
Confidence	High
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High
Significance after mitigation	Neutral
Mitigation: • Restrict the height of buildings to 12m measured from the augmented ground level to the highest point of the building.	
Cumulative Impacts: Given that the surrounding area is predominantly industrial in nature, cumulative impacts on visual and/or sense of place aspects are considered insignificant and in alignment with the surrounds.	
ALTERNATIVE 1 AND 3 (NO GO)	
No visual or sense of place aspects under these options, given that no top structure development would occur.	

IMPACT: Nuisance Impacts: Noise	
ALTERNATIVE 2 (PREFERRED)	
Extent	Local
Duration	Lifetime of project
Nature	Negative
Consequence of impact risk	Some noise disturbance to surrounding land users
Magnitude	Low
Probability of occurrence	High

Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Low (-)
Confidence	High
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	Medium
Significance after mitigation	Very Low (-)
Mitigation: • Where possible, activities which would result in noise levels above the acceptable levels for industrial areas, should be undertaken during normal business hours; • Implementation of no-idling zones for delivery/heavy vehicles	
Cumulative Impacts: The noise generated by this development would marginally increase the ambient noise levels in the area, but would not be significant, given the context of the site surrounded by the existing industrial area.	
ALTERNATIVE 1 AND 3 (NO GO)	
No noise associated with these options given that there would be no operational activity on site.	

IMPACT: Social and Physical: Traffic	
ALTERNATIVE 2 (PREFERRED)	
Extent	Beyond the site boundary (Medium)
Duration	Lifetime of project
Nature	Negative
Consequence of impact risk	Potential additional congestion on the local network
Magnitude	Low (-)
Probability of occurrence	High
Degree to which the impact may cause irreplaceable loss of resources	None
Degree to which the impact the impact can be reversed	Irreversible
Significance prior to mitigation	Low (-)

Confidence	High
Degree to which the impact can be avoided	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated	Medium
Significance after mitigation	Low (-)

Cumulative impacts and mitigation:

The traffic assessment took account of all roadways in the vicinity of the site as well as future proposed road networks and road planning. Considering development of the broader area comprising the Brackenfell Development Framework Plan, capacity constraints were identified at a number of intersections, and associated recommendations for upgrades were made in this regard.

In terms of recommended mitigation actions for traffic impacts related to the Everite site, the assessment assumed that the road upgrades proposed for the remainder of site development in terms of the Brackenfell Development Framework Plan will be implemented. The following mitigation measures are recommended.

- Okavango Road/Old Paarl Road intersection: additional right-turn lane to be provided westbound along Old Paarl Road and the northern approach should be widened to provide a new northbound acceleration lane along Okavango Road for the eastbound left-turn slip lane. Also a sidewalk along Old Paarl Road.
- It is recommended that a sidewalk should be provided along the southern side of Leo Close and sidewalks should also be provided along the major internal roads.

ALTERNATIVE 1 AND 3 (NO GO)

No traffic associated with only the capping of the site or the no-go alternative.

IMPACT: Social: Negative effects of possible airborne asbestos fibres exposed by mole activity on human health (should capping not occur).

ALTERNATIVE 3 (NO GO)

Extent	Local and possibly beyond the site limits in future
Duration	Long-term
Nature	Negative
Consequence of impact risk	Health impacts on people surrounding the site
Magnitude	Medium
Probability of occurrence	Low
Degree to which the impact may cause irreplaceable loss of resources	High
Degree to which the impact the impact can be	Irreversible

reversed	
Significance prior to mitigation	High (-)
Confidence	High
Degree to which the impact can be avoided	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated	High (but only with implementation of a hard-cap, i.e. b implemented Alternative 1 or 2)
Significance after mitigation	High (-). It should also be noted that no airborne asbestos h been detected as yet, but this could change with further mo activity pushing more asbestos above-ground.
Mitigation: • Undertake capping of the site – i.e. implementation of Alternatives 1 or 2 (Preferred).	
Cumulative Impacts: Cumulative health impacts may result for person working on the site or in close vicinity of the site.	
ALTERNATIVE 1 AND 2 (PREFERRED)	
The proposed capping approach would prevent undermining by moles and resultant exposure of buried asbestos wastes, thus no public health risk from exposure is associated with these options (if executed with mitigation measures provided through this Basic Assessment process and associated EMPr).	

Specialist Findings and Recommendations

This section of the report provides a summary of the findings and impact management measures identified in the specialists and associated reports which provided input into the consideration of the proposed development. It is also explained herein how these findings and recommendations have been responded to in the proposal and/or this report/Basic Assessment process.

Note that all mitigation measures provided by the specialists as these relate to the design, construction and operation phases of the proposal have been included in the EMPr (refer to Appendix M).

Traffic

Findings

Krogsheepers & Arangie (2012) looked at the existing transport conditions within the site vicinity and assessed the transport impact of the proposed development on the surrounding road network.

I&AP Comment addressed from previous process: Traffic and the need for Traffic Impact Assessment

In terms of existing traffic, all relevant intersections currently operate at an acceptable LOS except the Old Paarl Road/Orion Street intersection. The congestion at this intersection is due to rat-run traffic avoiding congestion elsewhere on the network. Motorist do have the opportunity to access Old Paarl Road via the signalised Kruisfontein Road intersection.

It is expected that the development will generate approximately 346 trips during the a.m. peak hour and p.m. peak hours. Based on the capacity analyses, all the study intersections will operate at an acceptable LOS during the weekday peak hours with the proposed development completed, apart from the Old Paarl Road/Orion Street intersection which will operate at a LOS F. No upgrades are however recommended at this intersection. Motorists have the opportunity to access Old Paarl Road via the signalised Kruisfontein Road intersection (Krogsheepers & Arangie, 2012).

It is however recommended that at the Okavango Road/Old Paarl Road intersection, that an additional right-turn lane be provided westbound along Old Paarl Road and the northern approach should be widened to provide a new northbound acceleration lane along Okavango Road for the eastbound left-turn slip lane (refer to Figure 47). A 2 m wide sidewalk is also proposed along Old Paarl Road.

FIGURE 47: PROPOSED UPGRADES AT OKAVANGO ROAD/OLD PAARL ROAD INTERSECTION (SOURCE: KROGSHEEPERS & ARANGIE, 2021)

Existing Non-Motorised Transport and Public Transport facilities in the site vicinity is sufficient. (Krogsheepers & Arangie, 2021). It is however recommended that a sidewalk should be provided along the southern side of Leo Close and sidewalks should also be provided along the major internal roads.

Access is proposed via the existing Leo Close off Gemini Street.

The specific parking requirements for each erf will be confirmed during SDP applications stage and should be provided in accordance with the latest City of Cape Town zoning scheme requirements

Krogsheepers & Arangie (2021) concludes that the proposed development can be accommodated with the implementation of the proposed mitigation measures.

Response

The required road upgrades recommended by the traffic report have been included in the project scope and will be implemented to ensure that the current service capacity of the road network is maintained.

Mitigation

All recommendations made by the traffic report (Krogsheepers & Arangie (2021) have been included in the EMPr, as follows:

- It is recommended that an additional right-turn lane be provided westbound along Old Paarl Road and the northern approach should be widened to provide a new northbound acceleration lane along Okavango Road for the eastbound left-turn slip lane.
- Sidewalks should be provided along the southern side of Leo Close and sidewalks should also be provided along the major internal roads.
- Parking should be provided in accordance with the latest City of Cape Town zoning scheme requirements.
- Access is proposed via the existing Leo Close off Gemini Street.

Geotechnical

Findings

Morris et al (2011) confirm that the previous capping on the site has been compromised by mole activity and that it is hosts much alien vegetation. They also note that there were no unacceptable airborne exposure risks at the time, which has been corroborated by OHMS (2021). Development of light industrial facilities on the site would be possible, but the site would require re-engineering for development and there would be some long-term annual maintenance and management required for the site (Morris et al, 2011). The re-engineering and re-development would require an EIA process and input from civil engineers, asbestos specialists, and town planners in order to execute it in terms of applicable law.

Most of Lower Platform 1 area, including the adjacent (north side) slopes comprises asbestos wastes (Morris et al, 2011). Lower platform 2 area is mostly clean, other than some spill-over and minor surface contamination along the toe of the slopes up to the Platform 1 area (Morris et al, 2011). The site is generally underlain by fill and waste deposits overlying in situ subsoil deposits of Quaternary Age. The above is underlain by residual soils that grade with depth into weathered granite bedrock of the Cape Granite Suite.

Alternative 1 is not preferable from a geotechnical perspective as mole activity would continue and asbestos would be brought to the surface again eventually, and the vegetation on site could be a fire hazard from time to time (and at certain times of the year) which may also lead to further asbestos exposure risks (Morris et al, 2011).

The geotechnical assessment also provided a plan indicating area which would be suitable and unsuitable for development (refer to Figure 27).

Response

The proposed capping responds to the requirement for re-engineering of the site and this Basic Assessment process meets the recommendations for the need for Environmental Authorisation and licensing as well as stakeholder engagement (particularly with certain state departments, as recommended by Morris et al, 2011).

The proposed development plan is largely aligned with the areas which would be suitable and unsuitable for development, as per the findings of the geotechnical report and the measures for ensuring appropriate compaction and founding have been included in the EMPr, noting that compaction is proposed as part of the proposed closure and capping methodology. Note also that normal industrial development is not proposed, but only light industrial development.

Mitigation

All recommendations from the geotechnical report are included in the EMPr, as follows:

- Ensure that all contractors required to perform work at the asbestos waste consolidation site be informed about the potential asbestos exposure risks and the requirement to wear at minimum suitable and approved dust masks (i.e. type FFP2).
- Any excavation work must be supervised from a health and safety perspective by an accredited asbestos inspection authority and it will be necessary to compile a method statement plus inform the Department of Labour of the intended activities.
- If future, should a decision regarding the future securing of the site through re-engineering and/or development be delayed for 6 months or more, consideration must then be given to clearing the existing vegetation and establishing a proper capping or hard surfacing of the site so as to stop mole activity from exposing subsurface asbestos. This will make a major contribution in stopping the further exposure and contamination risk posed by exposed asbestos.
- In the interim and with intervals not exceeding 6 months (i.e. winter and summer seasonal monitoring), background airborne asbestos monitoring should be implemented and performed under various wind conditions to establish whether unacceptable asbestos fibre distribution does not occur. This is prudent due to the slow deterioration of friable asbestos sludge with time and also given the precarious vegetation cover.
- The excavation and handling of asbestos wastes requires special attention to manage the health and safety issues, and thus it will be necessary to include the services of a suitably experience contaminant hydrogeologist in the design and project execution phases. There are many 'tricks and traps' to work of this nature that will govern the success of compliance to health and safety needs and the success of the engineering works.
- The presence of snakes on the site must also be considered when working in this area, particularly Cape cobras, boomslangs and puff adders. Several snakes (Cape cobra) were seen during the site assessment work.
- The level of the groundwater in the boreholes should thus be re-measured into the future – this however is not a crucial issue at this stage for this report and future planning.
- In order to prevent excessive settlement of surface beds, the loadings of these buildings will need to be restricted. Regular periodic maintenance of surface beds not suspended is considered likely. The remainder of the platforms and embankments could be covered with a hard-standing for parking etc.

- Planning and urban design needs:
    - A market survey of land use and facility requirements in the area. This should consider the need for additional small industrial type units, need for vehicle parking – given the close proximity of the large Shoprite warehouses, there may be a need for an area to park the distribution trucks that service this warehouse, need for small storage units – given the expansion of residential areas along the N1, plus the proximity to the Okavango fly-off to the N1, the site may be desirable for small storage units. The purpose of the market survey is to establish what sort of mix of light industrial use would be best to accommodate in the available areas of the site and to determine what the financial returns would be on such.
    - Based on the above, and informed by specific engineering needs (next point, 6.2), it will be necessary to refine the site layout plans taking into consideration services and road access (traffic) issues.
    - It will also be necessary to consider land use zoning issues. The land is currently zoned industrial, thus these fits with the recommended way forward.
- Environmental needs- undertake the necessary process in terms of NEMA.
- Engineering needs:
    - It is considered that the following foundation options will be suitable for light industrial type structures:

Ground Improvement

Ground improvement can be considered for the red hatched area shown in Figure 27 where fills are generally in the range 0 to 2 m thick and limited asbestos contamination is present. These areas were restricted to the toe of the upper platform and to the north and east of the lower platform.

The following can be considered:

Undercut site to a maximum depth of 1.6 m such that most or the entire fill contaminated with asbestos waste has been removed. Localised sections may require excavations to go down to at least 2 m in order to remove all asbestos waste. Note: a large part of this area is not contaminated with asbestos.

Excavations should extend to at least 2 metres beyond the footprint of the proposed structure.

Care must be taken not to destabilise the embankments when undercutting and construction may need to progress in limited sections (e.g. strip-mining) in order to promote stability of these.

The undercut asbestos waste will need to be disposed to a licensed landfill site or alternatively, dependent on the design of embankments, used as backfill with a clean cover behind retaining walls.

The bottom of the excavation should then be compacted to at least 95% Modified AASHTO dry density.

Carefully sort material from excavation to be used in backfill. Only granular soils must be used in backfill. The maximum particle size should not exceed 75 mm, as this tends to negatively affect compaction.

Import a G7 material or better to make up deficit due to material being spoiled.

Backfill may consist of selected granular material from the excavations or imported G7 material compacted to not less than 95% of Maximum Mod AASHTO dry density.

These should be replaced in layers not exceeding 250 mm (depending on energy of compaction equipment being used) and should be compacted to at least 95% Modified AASHTO dry density to +2% of OMC.

Footings will need to be founded at 600 mm below ground level. There should be at least 1.0 m of re-compacted material beneath the underside of footing. A maximum nett allowable bearing pressure of 75 kN/m^2 is considered applicable for the above foundation treatment. Settlement of a 1m wide footing is likely to be in the range 10 to 20 mm, with differential settlement taken as 50%.

Strict quality assurance will be required throughout this process.

Alternatively, ground improvement can be restricted for individual footings where re-compacted soils to at least 1.5 times the plan dimension of the footings to at least 1.6 m depth can be constructed (localised section may require depths of up to 2 m in order to remove all compressible asbestos waste). The advantage of this latter method is that disposal volumes of asbestos waste will be considerably less. However, the downside of this method is that loading of floor slabs may need to be restricted and these may be prone to excessive settlement and may require higher maintenance costs.

One consideration for the above is that permission be sought to encapsulate below the concrete slabs and roadways any asbestos material that may be present in the soils, as long as appropriate compaction occurs when layering – this is a feasible option as the hazards and risks can be managed. Services can be installed during the earthworks and title deed restriction can place restrictions on any excavation in the area.

Piled Foundations

Pressure grouted CFA piles: It is considered that conventional CFA piles will not be suitable for this site due to the presence of asbestos pipes and other waste products that will obstruct piling. However, this can be overcome by excavating at each pile position and disposing the waste material to a licenced landfill. The excavation should then be filled with a clean granular backfill free of boulders and rubble in which a CFA pile can be installed. The minimum pile diameter should be restricted to 300 mm.

DCI Piles: It would be important to ensure that DCI are not founded in compressible clay layers. Vibration associated with the driving of these piles can cause damage to nearby structures. There are means of overcoming these negative features and this should be discussed with the piling contractor and addressed in the detailed pile design. DCI piles are rated as fair to good in handling boulders. However, should the rubble present in the fill obstruct piling then excavation and removal of the rubble followed by replacement with a granular soil free of rubble and boulders will be required (as described for the CFA pile). The driving of DCI piles may cause liquefaction in the subsoils and this will need to be carefully monitored by installing piezometers that measure pore pressures. Typical pile sizes and working loads are given as a guideline for budgeting purposes only in the geotechnical report as 355 mm diameter with a typical working load of 500 kN, 410 mm diameter with a typical working load of 750 kN, and a 520 mm diameter with a typical working load of 1200 kN. The minimum pile diameter should be 355 mm.

Percussion Piles: This pile type has excellent penetration ability through boulders and hence should penetrate the rubble easily. However, it is noted that this pile is not particularly suited to soft ground conditions and the suitability of this pile should be discussed with the piling contractor. Another negative

feature is that the pile is relatively expensive when compared to the above piles. It is considered that an unlined pile will be suitable for the site conditions (i.e. the pile will be formed with a temporary casing that will then be removed once the concreting/grouting operations are completed). A summary of the allowable load capacities for various diameters are given in Figure 48.

Diameter (mm)	Typical Working Load (kN)
250	300
300	450
350	600
400	800

FIGURE 48 SUMMARY OF ALLOWABLE PILE LOADS FOR ROTAPILES (SOURCE: MORRIS ET AL, 2011)

Pile Testing Requirements

A detailed pile design must be carried out by the piling contractor It is considered good practice to carry out pile load tests, which is the only reliable means of determining a pile's load capacity. Whereas a pile load test on such a project will only be carried out on possibly two piles, integrity tests are relatively inexpensive and should be carried out on all the piles. It must be noted that the integrity tests check the integrity of the pile shaft for any structural defects but do not indicate the load settlement characteristics. For smaller diameter piles, the frequency response test method is recommended and for larger diameter piles, cross-hole sonic logging is recommended. All aspects of integrity testing should be discussed with the relevant professional prior to finalising in the tender or contract documents.

- Trenchability Assessment-

Soft excavation in terms of SANS 1200 is generally anticipated at this site to at least the depth of the field tests carried out. However, the presence of builder's rubble and asbestos may result in slower excavation rates. Hence, consideration will need to be given to making an allowance for intermediate and hard excavations.

- General Earthworks-
  - It is recommended that all earthworks be carried out in accordance with SANS 1200 (current version). All vegetation should be cleared from areas over which fills are to be built.
  - Fills should be placed in layers not exceeding 200 mm loose layer thickness and compacted to a minimum of 95% maximum Modified AASHTO dry density. Boulders and rubble larger than 75 mm should not be included in the fill material. Large boulders and rubble within the fill could affect compaction, cause piping within the fill and may also affect foundation excavations. Density control of fill material should be undertaken at regular intervals during fill construction.
  - The material should be worked within a close range of the Optimum Moisture Content (OMC) level, i.e. -2% to +2% of optimum, otherwise if the material's moisture content is well above the OMC, (particularly in clayey soils) it will heave under construction traffic. The asbestos sludge if exposed at surface soils may be impassable to construction traffic particularly if it has high moisture contents.

- Where fill is required it should be placed on horizontal benches cut into the existing slope when it is steeper than 1 vertical in 6 horizontals, with a minimum bench width of 3 metres.
- Unstable sidewall conditions were observed in several inspection pits. Thus, all temporary excavations formed will need to be battered back at least 1 in 1 (45º) or preferably shored particularly when deeper than 1.5 m. All excavations must be inspected and approved for stability before workers enter.

- Drainage-
  - The most important factor in the promotion of a stable site is the control and removal of surface water from the site. It is important that the design of the stormwater management system allow for the drainage of accumulated surface water.
  - Surface water on the platforms should be directed to and collected in open lined drains or piped off the site into the stormwater reticulation system. Run-off from roofs should be piped from gutters through downpipes and discharged into the stormwater reticulation system.
  - Both during and after construction, the site should be well graded to permit water to readily drain away and to prevent ponding of water anywhere on the surface of the ground. All terraces and earthworks in general should be sloped to a gradient to prevent ponding and ingress of water into the subsurface soils.
  - The use of earth bunds along fill edges is recommended. This prevents stormwater from overtopping and damaging fill embankments.
- Dynamic Compaction-
  - During discussion with various professionals involved, dynamic compaction was discussed as a way of improving the founding characteristics of the site. This method is considered high risk for the following reasons:
    - It is understood that the upper and lower platforms have been constructed in a similar manner to mine tailings dams albeit in a more haphazard manner in that there are pockets of coarse rubble interspersed with finer sludge (slurry) and fine to medium-grained sands.
    - The sludge has a high moisture content (>100%) with in many cases void ratios in excess of 4 with a concomitant low bulk density. These are not typical of soils and the behaviour of these cannot be easily predicted using soil mechanic models.
    - Compacting this waste body will squeeze out the pore water thus saturating layers and may lead to liquefaction of fines and possibly failure of the embankments. Hence, dynamic compaction or any other form of compaction over the central waste body in both platforms is not recommended.
    - There are ways of preventing liquefaction during dynamic compaction such as the formation of stone columns that will readily drain saturated soils. However, this is now becoming more of a complex geotechnical solution for the site and tends to lose the primary focus, which is to secure the asbestos waste safely, and thereby preventing human exposure.

- It must be borne in mind that the more complex the geotechnical solution for the site, the higher the risk of failure and thus exposure to asbestos. Notwithstanding the higher cost implication.

- Note that there are some planning and design measures included in the geotechnical report that have not been included in the EMPr for the reason that they deal with the process of appointing the necessary specialists, drawing up plans, preparing reports, etc. These aspects have been addressed through the appointment of a professional team to develop the plan for the proposed development (as seen in Appendix B2), this Basic Assessment process and any necessary town planning process.

Groundwater

Findings

Detailed hydrogeological investigations into groundwater contamination resulting from historic activities at the greater historic Everite site were conducted between 1998 and 2005 (Parsons & Associates, 2015). Groundwater contamination was detected and the extent thereof delineated, but it was not possible to distinguish or separate that contamination emanating from the Everite asbestos waste site (which is the site under this application) (Parsons & Associates, 2015). No groundwater users had been impacted by the contamination from the Everite site in general and the Everite asbestos waste site (i.e. the "site" for this application) in particular (Parsons & Associates, 2015). It has been confirmed that asbestos is practically immobile in the subsurface and so asbestos is not considered a groundwater contaminant of significance (Parsons & Associates, 2015). The identified contaminants from historic uses, along with an associated increase in EC are potassium and sulphate, which are not considered particularly harmful contaminants, particularly at the concentrations observed during the groundwater investigations (Parsons & Associates, 2015). As such, groundwater would not be impacted.

Response

Given that the risk of contamination of groundwater by asbestos on the site is not significant, no further response in terms of the proposal is necessary. However, historic activities on the greater Everite site have resulted in some contamination (which is off of the "site" as contemplated in this submission) and so monitoring activities for a two-year period have been recommended and included in the EMPr.

Mitigation

No remedial activities have been recommended by Parsons & Associates (2015), but the following recommendations have been made regarding monitoring, which have been included in the EMPr:

Monitored natural attenuation remains the preferred method of remediating the detected impacts (Parsons & Associates, 2015). It is recommended that 3 monitoring boreholes be re-established at the asbestos waste site and quarterly sampling be undertaken for 2 years to define seasonal variation (Parsons & Associates, 2015). Thereafter, the need for further monitoring can be assessed in light of observations to that point (Parsons & Associates, 2015).

Botanical

Findings

It has been confirmed that although the proposed site would previously have comprised Cape Flats Sand Fynbos, which is Critically Endangered and is therefore a conservation priority, the site is now highly infested with alien invasive species, predominantly *Acacia saligna* (Port Jackson) and *Pennisetum clandestinum* (Kikuyu grass) (Turner, 2012). However, a severely degraded Cape Flats Sand Fynbos vegetation community does still exist in the extreme north-eastern corner of the site (Turner, 2012), corresponding with the area that was identified as generally asbestos-free in the geotechnical assessment (See Appendix J3). Five indigenous plant taxa were identified in this area of which one (*Lampranthus explanatus*) is IUCN Endangered and restoration of this vegetation patch would be most desirable from a botanical perspective, relocation of the sensitive species to the nearby reserve is acceptable (Turner, 2012). 'Taaibos' occurs on the south-western site boundary and an indigenous grass was identified in the north-western and western portions of the site, which was likely introduced for soil stabilisation purposes (Turner, 2012).

Even though the no-go alternative offers the least destructive alternative to the CFSF remnant, when considered against long-term maintenance and potential contribution that this area could make to the CFSF population, development of the site with the exception of the CFSF area has been found to be most desirable. The preferred alternative, however, would also be acceptable from a botanical perspective, but this would require relocation of the SCCs (Turner, 2012).

The retention of the water catchment area and a buffer would be ideal as it could provide a green corridor, water containment and refuge for some fauna (Turner, 2012).

Response

Should development be approved, *Lampranthus explanatus* plants would be relocated to the nearby Bracken Nature Reserve and should also be provided to other specialists to create an *ex-situ* population, to provide the best option in terms of the likelihood of long-term survival of these species and the population strain found on the site. This would be undertaken as a condition of authorisation (if granted) as it is included as a specification in the EMPr. The EMPr also includes a recommendation to only make use of indigenous vegetation in the landscaping plan.

Regarding the proposed layout for capping and redevelopment, it should be noted that retention of the CFSF vegetation on the site (i.e. the green polygon in Figure 38) is not possible, given the need to secure the site from existing mole activity bringing asbestos to the surface. The capping technique proposed is therefore, not compatible with the retaining of this portion of vegetation. However, the water catchment component would be retained in the proposed development and there would be a buffer around the pond, with further green areas included in the proposed site plan, which would add additional refuge for fauna.

Mitigation

The following measures from Turner (2012) are included in the EMPr:

- If development proceeds within the green polygon, mandatory relocation of *L. explanatus* (EN) to Bracken Nature Reserve is advised. In this case, restoration and maintenance of the blue polygon is suggested.
  If development proceeds in the green polygon, decommissioning (capping) and development of the greater Site should not encroach upon the area contained within the blue polygon.
- Before Site decommissioning and/or development, the area/s demarcated by the red and/or green polygons should be buffered by 15 m along the length of their respective southern boundaries.
  All alien vegetation and existing surface rubble and tipped rubbish should be cleared from the red, blue and/or red polygon areas.
- Appropriate CFSF wetland species for re-establishment around the water containment pool include *Salix mucronate (Salicaceae*, "Cape Willow") to accommodate Cape Weavers; and Restionaceae species such as *Elegia nuda* and *Elegia recta*. The 15 m buffer-zone can be planted with *Erica mammosa* (present at Kenilworth Racecourse and Northpine) to cater for Southern Double-collared Sunbirds; *Willdenowia incurvata* (Restionaceae) and *Metalasia muricata* (Asteraceae, "Blombos") to accommodate wind and insect pollen vectors. Given a relocation imperative for *L. explanatus*, immediate re-establishment of plants at Bracken nature Reserve should be supervised by an authorised representative of that nature reserve, bearing in mind that rescued plants need to be planted in loose quartzitic sand – the habitat of the species.

Note that the following recommendation from Turner (2012) is not completely included in the EMPr or proposed site plan because of the need to ensure asbestos is completely contained and mole activity is eliminated on the site:

- From a botanical perspective the area outside of the red and green polygons is suitable for light industrial development and mixed land use.

Fauna

Findings

With respect to fauna found on the site, indigenous and alien birds, as well as the Cape dune molerat have been identified on site, especially in the north-western portion of the site in the vicinity of the stormwater pond (Turner, 2012). Turner (2012) notes that such corridors or "islands" of vegetation can provide important ecosystem services for especially birds, especially given the pace of habitat destruction in the SW Cape lowlands, as well as climate change which impacts bird migrations, e.g. Southern Double-collared Sunbirds have been recorded up to 34 km distant from ringing sites (Hockey et al, 2005).

Response

The proposed capping of the asbestos on site would prevent mole activity within the sub-surface asbestos layers. The proposed green areas in the Site Plan (refer to Appendix B2) would serve to provide "islands" of indigenous vegetation, noting that it is recommended as a condition of Environmental Authorisation that only indigenous plant species be used in the landscaping of the site and that no *kikuyu* grass be allowed anywhere on site.

Mitigation

No formal mitigation has been required by the specialist beyond those listed for "botanical" above. As mentioned above, it has further been recommended as a condition of Environmental Authorisation that only indigenous plant species be used in the landscaping of the site and that no *kikuyu* grass be allowed anywhere on site.

Freshwater

Findings

A freshwater assessment determined that there is a large artificial pond in the north-western corner of the site which was previously constructed to manage stormwater runoff from the site. Numerous drains have been constructed on the elevated portion of the site to channel stormwater into this pond and there is a small drainage channel along the outer edge of the norther and eastern portion of the property (Belcher, 2012). The stormwater pond is overgrown with bulrush (*Typha capensis)* and while it has little significance in terms of biodiversity, it does play an important role in stormwater management on the site (Belcher, 2012).

Belcher (2012) advises that a buffer of 15 m should be maintained between the delineated edge of the retention pond and any development.

The impact of the preferred alternative for the proposed development on freshwater/ surface water would be limited, with the implementation of mitigation Cumulative impacts would relate to change in quality and quantity (flow patterns) of stormwater, but implementation of mitigation measures would limit significant change in stormwater characteristics leaving the site (Belcher, 2012).

Response

The proposed capping and redevelopment would not be applied to the stormwater pond (void of mole activity), and this would continue to function as a stormwater pond in the proposed redevelopment of the site. Vertical mole barriers would prevent lateral movement of moles and related exposure of asbestos around the stormwater pond (and, consequently, into any groundwater into which the stormwater would seep through). The required 15m buffer is also implicit in the proposed site plan. Other measures for control of impacts relate to the stormwater management plan and management actions, and these would be implemented through the design and construction phase specifications of the EMPr as measures recommended by the specialist are included therein

Mitigation

The following measures from Belcher (2012) are included in the EMPr:

- The water quality impacts during the construction phase in particular should be addressed through the Environmental Management Plan, which is implemented by an on-site Environmental Officer. Contaminated runoff from the construction site should be prevented from directly entering the water features where possible. Construction activities should preferably be carried out in the dry season to ensure that the contaminated run-off can easily be managed on site.

Constructed areas should be covered with suitable vegetation cover as soon as possible after construction is completed.

- The construction of the development in the north western extent of the property must not take place in the wetland area. All alien vegetation should be cleared around this area and landscaping is not encouraged. It is believed that this area will naturally recover from the direct (dust, pollution) and indirect (change in passive infiltration of the vicinity) disturbances. A buffer area of 15 m wide should be established from the edge of the pond system. Storm water run-off should not be discharged directly into the wetland area but should be allowed to dissipate through the buffer area. The chosen route for the sewage pipelines (or the bulk water supply line) should also be located outside of the wetland and buffer area.
- The water quality impacts during the operational phase should primarily be dealt with through the design of the storm water system and through implementation of a storm water management plan. The storm water management plan should address aspects such as: Introduce suitable indigenous wetland vegetation and habitat diversity within storm water systems. An opportunity is possible to specifically deal with this mitigation measure within the storm water channels between the aquatic features/storm water dams. These connecting systems should preferably not be piped but be created drainage features.
- Litter transported in the storm water systems should be prevented from entering the storm water pond.
- Storm water run-off should also be reduced as far as possible (see mitigation measures described below) to reduce erosion of soils on the steeper gradient slopes.
- The development activities should not occur within the 1:50 year flood line.
- Reduce run-off on the site through encouragement of surfaces that allow for infiltration where possible rather than impervious surfaces
- The storm water pond in the north western corner of the site should be retained and a 15 m buffer retained from the wetland edge. Limited disturbance should be allowed within the buffer zone. The rehabilitation of disturbed areas must take place as soon as possible post construction.
- Construction on the site should preferably take place in the dry season when run-off on site can be well managed.
- Clearing or felling of invasive alien trees should take place within the buffer area and wetland. Advice of a botanist should be obtained to compile a programme on the removal and control of alien invasive plants.
- The intensity of storm water run-off should be reduced where possible through encouraging paving and surfaces that allow for greater infiltration. Storm water discharges should be dissipated before entering the storm water pond and should not be direct piped discharges.
- Litter should be prevented from entering the storm water pond.

The following condition of authorisation from Belcher (2012) is not included in the EMPr because engagement with DWS has already occurred in this regard and they have confirmed that Section 21 is not triggered was provided by the DWS (refer to Appendix S).

Approval should be obtained from the Department of Water Affairs for any activities such as the development of hard surfaces on the site.

Heritage

It has been confirmed that the site holds no heritage value (Baumann, 2012). As such, heritage will not be impacted.

The proposal, therefore, does not need to consider heritage any further, other than to include the following from the HWC response into the EMPr (which has been done):

"Should any evidence of burials or archaeological material be discovered during earth-moving activities, all works must be stopped immediately, and Heritage Western Cape be notified without undue delay".

Asbestos Site Investigation

Findings

OHMS (2021) confirmed that there is indeed asbestos debris and chips on the site, but at present it is only on the ground and there is no airborne asbestos. During construction works, with the disturbance of soil, asbestos material will be disturbed and there is a high risk that asbestos will become airborne.

Response

The proposed capping responds to the asbestos found on site through providing a means to close and rehabilitate the site so as to ensure that asbestos is no longer present on the surface and would not be brought to the surface again (through moles). The capping and redevelopment would prevent anything from exposing the asbestos from underground as tunneling/ burrowing through cement is not possible. The methodology to keep vegetation in the ground as long as possible, as well as other construction asbestos-management requirements in the EMPr also serve to limit risk of asbestos spreading on and beyond the site limits.

Mitigation

I&AP Comment addressed from previous process: Concerns related to risk and safety with regards to the removal of asbestos waste, recommendations for the handling and disposal of asbestos waste

The following mitigation measures prescribed by OHMS (2021) have been included in the EMPr, noting that the site has already been secured, security signage has been established, and air quality monitoring is on-going:

- Before any site activities takes place, a decontamination unit must be established on site.
- Water must be always available on site in the form of a water bowser or site standpipe before any site activities take place in order to keep the soil damp. This is for to mitigate any airborne fibres being released during any soil disturbance.
- All site activities ranging from removal of the trees, weeds, grass and all excavations and earth works must be carried out by a registered asbestos contractor (RAC) until the asbestos has either been removed or capped. This too includes all machine operators.
- All other persons entering the site (Engineers and the professional team members) must have had asbestos training by a competent person. Training must be specific to the site and conditions of asbestos exposure on the site (OHMS can offer this services)

- All persons entering the site must have asbestos medicals carried out by an Occupational medical practitioner.
- Only authorized persons may enter the site under asbestos control conditions. This requires full asbestos personal Protective equipment being worn.
- Eating, drinking or smoking on site is prohibited.
- On exiting the property, all persons must follow the decontamination process where decontamination of themselves must be carried out through the decontamination unit.
- An asbestos plan must be drawn up by the Approved Inspection Authority in compliance with the asbestos abatement regulations 2020 stating how the asbestos contaminated site activities must be carried out. This plan must be submitted to the local department of Employment and Labour (DoEL).
- The asbestos contaminated site must be managed by an AAIA (Asbestos approved Inspection authority- OHMS) and all site activities during the site excavations up to final capping and foundations works being completed must be carried out by a registered asbestos contractor.
- During any site activities asbestos in air monitoring must be carried out daily both personal on the employees and static monitoring to ensure that no asbestos in becoming airborne and is exposing DFFE.
- The appointed AAIA will issue an asbestos clearance certificate at the end of all site works stating that the site is safe for re-occupation only after successful capping of the site and that there is no further excavations going to be undertaken.
- Any asbestos contaminated material is to be removed (including plants), it must be disposed of as asbestos waste at a certified waste disposal site for asbestos (Vissershok) and in accordance with the asbestos abatement regulations and the Environmental conservation act, 1989, the environmental management act, 2008 and the Un transport of hazardous goods or UN orange book.
- Labelling of any asbestos waste must be done in accordance with the asbestos abatement regulation 2020.
- It must be noted that in terms of the Asbestos Abatement regulations (AAR) AAR 24 (a), no person may sell, reuse, reinstall, or recycle any asbestos or asbestos containing materials.

Impact Management Measure and Outcomes

The EMPr has considered the impacts identified during this impact assessment process and has included all mitigations measures recommended by the independent specialists, the professional team, as well as those included by the EAP. Mitigation measures (i.e. environmental specifications) have been incorporated into the design, decommissioning, construction and operational phases of development, which facilitates integrated environmental management and the appropriate consideration of environmental issues at all levels and relevant stages of the project.

The EMPr would be a legally binding document which would have to be implemented by the Applicant. There is also another layer of reporting contained in the EMPr, whereby an independent auditor would be involved in a regular basis during the construction phase. Auditing during the operational phase is limited, given the nature of the proposed development and the site, however there is still a requirement for a single audit by an independent and suitably qualified professional within six months of operation of the full site development. The remainder of operational audits would be at the discretion of the DFFE and subject to applicable environmental law at the time.

The impact management objective and outcomes for the design, decommissioning, construction, as well as the operational phase and are included in the EMPr and summarised in Table 8 and Table 9.

TABLE 8 SUMMARY OF IMPACT MITIGATION MEASURES AS INCLUDED IN THE EMPR FOR THE PREFERRED ALTERNATIVE - DESIGN. DECOMMISSIONING AND CONSTRUCTION PHASE

No.	Impact/ Aspect of the proposed development	Impact Management Objective	Impact Management Outcome
1	Detail design measures	To ensure that the final designs are in line with the considerations contemplated in the environmental assessment phase.	No deviations from the specifications listed in the EMPr in this regard
2	Documentation, planning and programming requirements	To ensure that the works schedule is appropriately planned to limit adverse impact on the environment.	No deviations from the specifications listed in the EMPr in this regard
3	Site camp / site establishment	To ensure that the site camp is located and laid out in an environmentally sensitive manner, which also does not adversely affect activity on site and around the site.	No deviations from the specifications listed in the EMPr in this regard, and no damage to the stormwater pond or buffers, or harm to fauna as a result of the location and set-up of the site camp.
4	Site Access, Access Routes and Traffic Management	To avoid and/or minimise impacts on the local road network and road users any such impacts are appropriately dealt with to prevent further impacts in the longer term. To avoid construction related impacts to other road users associated with the movement of construction vehicles.	No disruptions to traffic on local networks such that complaints are elicited, no damage to vehicles and related claims and no nuisance to surrounding caused by dust.
5	Soil, Stormwater and Ground Water Pollution Erosion Control	To prevent groundwater, stormwater, and soil pollution associated with the handling storage and use of hazardous materials or materials that have the potential to cause environmental harm and to prevent and control erosion on site as a result of decommissioning and construction activities.	No non-conformances, no pollution to stormwater, soil and groundwater as a result of the construction activities, as well as effective erosion control.
6	Hazardous Substances (including asbestos and cement) Management	To prevent pollution or fire associated with the handling storage and use of materials deemed hazardous to human health or the environment.	No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of the decommissioning and construction activities. No fires as a result of the handling / use of fuel.
6	Waste Management	To prevent pollution/contamination associated with the generation and	No non-conformances and no pollution of soil, groundwater and/or

		temporary storage of general waste, hazardous waste construction rubble and litter generated by the workforce on site.	stormwater as a result of waste generation and management activities.
7	Noise Management	To avoid and/or minimise impacts on the surrounding land users and ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To provide a forum for any Interested and/or Affected Parties to raise their concerns and log complaints for remediation action and prevention of similar incidents.	No disruptions or nuisance to other users of the site or adjacent to the site by noise from the construction site. Effective complaints handling. No repeat complaints received.
8	Dust Management	No unacceptable levels of dust. To avoid and/or minimise impacts on the surrounding users and activities and to ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To prevent wind and water erosion and/or sedimentation of any features surrounding the site. To provide a forum for any Interested and/or Affected Parties to raise their concerns and log complaints for remediation action and prevention of similar incidents.	No nuisance to surrounding users of the site and site activities caused by dust. Effective complaints handling. No repeat complaints received.
9	Labour Relations, Facilities and Site Health and Safety	To ensure the safety of all site personnel as well as the surrounding users of the site.	No injuries / incidents on site and emergency situations managed effectively. No safety breaches.
10	Aesthetics/ Visual	To ensure that visual impacts are avoided as far as possible, and where these cannot be altogether avoided, that it is reduced to acceptable limits.	No unacceptable visual impacts occur as a result of decommissioning and construction activities.
11	Protection of natural Features and Fauna	To protect any protected plant species on the property and prevent harm to fauna found on the site. Appropriate temporary storage and stockpiling of topsoil to prevent erosion, sedimentation, and dust pollution.	No removal of vegetation and/or other impacts on any vegetative cover in the area outside of site limits. No death of any animals on the site or as a result of actions of removing fauna off site.
12	Protection of any Palaeontological and Archaeological Resources	Protection of archaeological and/or palaeontological resources on the site.	No non-conformances in terms of the specifications contained in the EMPr and no impacts on such resources and proper execution of the excavation thereof.

13	Incident Management	To guide the way in which emergencies and/or environmental incidents are handled on site and remediate any damage appropriately. To prevent the starting of fires on site.	No non-conformances and no adverse impacts on the environment as a result of emergency situations and/or environmental incidents. No fires started on the site. Swift response to incidents.
14	Resource Use (Raw Materials and Resources)	To prevent excessive and unnecessary use of natural resources and wasting of natural resources during the decommissioning and construction phase.	Development of an attitude towards a reduction in natural resources consumption where feasible and possible
15	Site Clean-up and Rehabilitation	To prevent impacts on the environment as a result of the conclusion of decommissioning and construction activities and any related impacts requiring rehabilitation actions prior to the contractors leaving the site.	Provision of a decommissioned asbestos dump site and redevelopment whereby all construction-related materials are no longer evident and rehabilitation of all disturbed areas, both on and off-site.
16	Landscaping Implementation	To ensure landscaping is carried out in terms of an approved Landscape Plan.	No deviation from the approved Landscape Plan, which would provide green areas on the site.

TABLE 9 SUMMARY OF IMPACT MITIGATION MEASURES AND OUTCOMES AS INCLUDED IN THE EMPR FOR THE PREFERRED ALTERNATIVE-OPERATIONAL PHASE

No.	Impact/ Aspect of the proposed development	Impact Management Objective	Impact Management Outcome
1	Visual/ Aesthetics Preservation	To prevent degradation of visual appearance of the site over time.	No reduction in aesthetic appearance over time.
2	Stormwater Management	To ensure continued functioning of the stormwater systems.	No blockages or flooding within the stormwater system.
3	Solid Waste Management Plan	To prevent pollution associated with the generation and temporary storage of general waste, hazardous waste and litter generated by the workforce on site.	No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of waste generation and management activities.
5	Risk and Incident Management Plan	To prevent incidents, guide the way in which emergencies and/or environmental incidents are handled on site and remediate any damage appropriately.	No non-conformances, no injuries and no adverse impacts on the environment as a result of emergency situations and/or environmental incidents.
6	Complaints Management Plan	To ensure complaints receive due attention and prevent similar complaints in the future.	No unresolved complaints.

7	Noise and Odour Management	The Light Industrial Park does not disturb surrounding land users.	Low noise and odour levels are maintained, and minimal complaints received.
8	Emissions	The businesses/activities within the light industrial park do not disturb surrounding land users and does not conduct business/operations in the absence of required permits.	All permits are to be in place where appropriate.
9	Resource Use Management Plan-Water	To facilitate the efficient use of water resources on the site.	No water wastage.
10	Resource Use Management Plan-Electricity (Energy Conservation Plan)	To facilitate the efficient use of electricity on the site, specifically in relation to housekeeping activities.	No wastage of electricity/energy
11	Landscape Maintenance	To prevent degradation and death of landscaping on the site over time.	No reduction in aesthetic appearance over time, landscaping to always look healthy.

Summary of Impacts and Impact Statement

The main potential impacts associated with the decommissioning and redevelopment of the Everite asbestos waste consolidation site are summarised in Table 10 and Table 11 below. The proposed mitigation measures that will prevent or reduce as far as possible the occurrence of negative impacts is detailed further in the Environmental Management Programme.

TABLE 10 COMPARATIVE SUMMARY OF ANTICIPATED IMPACTS, WITH MITIGATION, FOR THE OPERATIONAL PHASE

IMPACT	**SIGNIFICANCE AFTER MITIGATION**		
	ALTERNATIVE 1	**ALTERNATIVE 2 (PREFERRED)**	**ALTERNATIVE 3 (NO GO)**
Design / Decommissioning / Construction Phase (duration: short-term)			
Biological: Loss of botanical resources	Medium (-)	Medium (-)	Low (+)
Geographical and Physical: Stormwater quality impairment	Low (-) to negligible	Low (-) to negligible	No impact
Biological: Modification of wetland habitat	Very Low (-) to negligible	Very Low (-) to negligible	No impact
Socio-economic: Provision of jobs	Low (+)	Low (+)	No impact
Nuisance Impacts: Dust and Noise associated with decommissioning/ construction works	Low (-)	Low (-)	No impact

IMPACT	SIGNIFICANCE AFTER MITIGATION		
	ALTERNATIVE 1	ALTERNATIVE 2 (PREFERRED)	ALTERNATIVE 3 (NO GO)
Nuisance and Physical: Visual associated with decommissioning/ construction works	Low (-)	Low (-)	No impact
Social: Impacts on health from asbestos handling during decommissioning	Low (-)	Low (-)	No impact
Social and Physical: Risks associated with transport of asbestos during decommissioning	Low (-)	Low (-)	Low (-)
Physical and Resource Use: Depletion of hazardous landfill space as a result of generation of solid and liquid hazardous waste	Low (-)	Low (-)	Very Low (-)
Natural Resource Use: Depletion of Natural Resources through use as material in the development/construction phase	Low (-)	Low (-)	No Impact
Contamination of soil and groundwater	Insignificant	Insignificant	Insignificant

TABLE 11 COMPARATIVE SUMMARY OF ANTICIPATED IMPACTS, WITH MITIGATION, FOR THE OPERATIONAL PHASE

Impact	Significance After Mitigation		
	ALTERNATIVE 1	ALTERNATIVE 2 (PREFERRED)	ALTERNATIVE 3 (NO-GO)
Operational Phase (duration: long-term)			
Geographical and Physical: Flow modification	Neutral	Neutral	No impact
Physical: Water quality impairment	Low (-) to negligible	Low (-) to negligible	No impact
Socio-economic: Provision of job opportunities	No impact	Medium (+)	No impact
Aesthetics: Visual and sense of place	No impact	Neutral	No impact
Nuisance Impacts: Noise	No impact	Very Low (-)	No impact

Impact	Significance After Mitigation		
	ALTERNATIVE 1	**ALTERNATIVE 2 (PREFERRED)**	**ALTERNATIVE 3 (NO-GO)**
Social and Physical: Traffic	No impact	Low (-)	No impact
Social: Negative effects of possible airborne asbestos fibres exposed by mole activity on human health should capping not occur.	No impact	No impact	High (-)

Refer to Table 12 for a summary of the positive and negative impacts of the various alternatives under consideration.

TABLE 12 COMPARISION OF POSITIVE AND NEGATIVE IMPACTS OF ALTERNATIVES

Phase	ALTERNATIVE 1		ALTERNATIVE 2 (PREFERRED)		ALTERNATIVE 3(NO GO)	
	Positive Impacts	**Negative Impacts**	**Positive Impacts**	**Negative Impacts**	**Positive Impacts**	**Negative Impacts**
Design / Decommissioning / Construction Phase (duration: short-term)		Loss of botanical resources **(Medium)**		Loss of botanical resources **(Medium)**	Loss of botanical resources **(Low)**	
		Stormwater quality impairment **(Low to negligible)**		Stormwater quality impairment **(Low to negligible)**		
		Modification of wetland habitat **(Very Low to negligible**)		Modification of wetland habitat **(Very Low to negligible)**		
	Provision of jobs **(Low)**		Provision of jobs **(Low)**			
		Dust and Noise associated with decommissioning / construction works **(Low)**		Dust and Noise associated with decommissioning / construction works **(Low)**		
		Visual associated with decommissioning / construction		Visual associated with decommissioning / construction		

		works **(Low)**		works **(Low)**		
		Impacts on health from asbestos handling during decommissioning **(Low)**		Impacts on health from asbestos handling during decommissioning (**Low)**		
		Risks associated with transport of asbestos during decommissioning **(Low)**		Risks associated with transport of asbestos during decommissioning **(Low)**		Risks associated with transport of asbestos during decommissioning **(Low)**
		Depletion of hazardous landfill space as a result of generation of solid and liquid hazardous waste **(Low)**		Depletion of hazardous landfill space as a result of generation of solid and liquid hazardous waste **(Low)**		Depletion of hazardous landfill space as a result of generation of solid and liquid hazardous waste **(Very Low)**
		Depletion of Natural Resources through use as material in the development/construction phase **(Low)**		Depletion of Natural Resources through use as material in the development/construction phase **(Low)**		
Operational Phase (duration: long-term)		Water quality impairment **(Low to negligible)**		Water quality impairment **(Low to negligible)**		
			Provision of job opportunities **(Medium)**			

The preferred alternative is as described in Section 4, with the proposed layout being responsive to the areas of better founding conditions indicated in Figure 27 as well as the recommendations to retain the stormwater pond indicated in Figure 37. It should be noted that, although the proposed layout does correspond with the water catchment area, it does not retain the section of indigenous Critically Endangered Cape Flats Sand Fynbos indicated in Figure 38.

The loss of botanical resources associated with Alternative 1 and 2 (Preferred) is of **Medium** (-) significance given the critically endangered classification of this vegetation type. While the botanist found that this impact could possibly be reduced through the exclusion of the north-eastern portion of the site from the

capping activity, exclusion of this area from the proposed capping and redevelopment was, however, not found to be feasible given the design requirements of the capping to secure it against mole activity and, following the capping, development on that portion would be appropriate. Although, although the botanist concluded that a non-development alternative would be preferably from a botanical perspective, the impacts of the preferred alternative are acceptable. Furthermore, considering the small likelihood of survival of an in-situ population, the relocation of the sensitive species to the nearby Bracken Nature Reserve would be the most suitable option. From a site engineering perspective, this is also the best option.

The findings of the freshwater specialist indicate that impacts on freshwater resources can be mitigated to **Low (-) or Very Low (-) – negligible** significance. The Heritage specialist found no resources of heritage significance on the site in question.

In terms of socio-economic circumstance, the capping exercise would lead to the creation of employment opportunities and in the case of Alternative 2 (Preferred) job creation would continue during the construction of top structures, providing a **Low** (+) impact. Should the site be redeveloped, as intended under Alternative 2 (Preferred), it is predicted that in excess of 300 new employment opportunities would be created during the operational phase of the activity, which has been assigned a **Medium** (+) significance.

Impacts associated with the decommissioning and construction phase such as noise, dust and visual aspects were assessed to be acceptable, and it should be considered that these will be temporary and largely localised in nature. Similarly, visual and noise impacts associated with the operational phase in the case of the Alternative 2 (Preferred) are considered to be of **Neutral** and **Very Low** (-) significance respectively, given the industrial context of the surrounding area. Traffic impacts are deemed to be **Low** (-) provided that the necessary upgrades to the intersections are undertaken and that the upgrades identified for other development in this area are implemented.

The unearthing of asbestos waste would be avoided at all cost by taking the precautionary approach to removal of vegetative cover on the site, and the installation of the capping layers as well as making use of the existing levels of the site for capping and redevelopment as much as possible. Should the handling and/or transportation of asbestos related waste be necessary during the decommissioning phase, the associated health risks can be adequately reduced with the implementation of a number of mitigation measures. This reduces the significance of these impacts to **Low** (-). Furthermore, the potential generation of hazardous waste from the removal of an unknown quantity of asbestos waste, clearing of the vegetative cover on site and the generation of wash-water would reduce the available landfill space for hazardous substances. While the possibility and extent of this cannot be determined at this point, given the control mechanisms for this in the EMPr and the proposed caping philosophy to limit the need for contact with asbestos as much as possible, it is believed that this impact would rate **Low** (-) (and not a neutral impact) given the general shortage of hazardous landfill space in the region. All measures should be taken to reduce the volume of hazardous waste that is disposed at landfill.

To conclude, in a scenario where the current state of the Everite asbestos waste consolidation site continues in perpetuity with no management or control of asbestos, there presents a future risk to human health of **High** (-) significance which would continue should the No-Go Alternative be implemented. While air monitoring suggests that the risk of exposure does not exceed the legal limit at present, continued compromise of the existing capping could increase this risk in the long term. This risk can be removed if the site is appropriately capped as proposed in Alternatives 1 and 2 (Preferred). Note, also, that the No-Go alternative is not a feasible alternative for implementation given, not only the potential future risk to

human health, but also when one considers the asbestos regulations which mandate the management and control of asbestos. The assessment of this is therefore largely included in this Basic Assessment process in response to the procedural requirements indicated in the EIA Regulations, 2014 (as amended). While Alternatives 1 and 2(Preferred) are associated with negative impacts in comparison to the No-Go Alternative, all of these (with the exception of botanical impacts) can be mitigated to at least a **Low** (-) level of significance. Alternatives 1 and 2(Preferred) are further associated with socio-economic benefit due to the employment opportunities they create and in the case of Alternative 2 (Preferred), this benefit extends to the operational phase with **Medium** (+) significance.

Given the above, it is believed that Alternative 2 (Preferred) provides the most beneficial option for future use of the site, which responds most appropriately to the founding conditions. The decline in land appropriate for industrial development has to be considered in the decision-making process. In addition to removing the existing health and safety risks associated with the asbestos wastes on the site and providing economic stimulus through light industrial development, securing and use of already contaminated land as proposed in Alternative 2 (Preferred) avoids the consumption of untransformed areas and represents the efficient use of a brownfields site, which is highly appropriate for industrial use. The proposed landscaped open/green areas and stormwater pond would also serve to provide some ecological function and habitat for local fauna and flora.

Note, that at present, there is not yet sufficient information for the Department to reach a decision on this application because the draft Basic Assessment Report is currently out for public review. Comments are to be provided during this public comment period, following which the report would be finalised and submitted to the Department for decision-making (assuming that there are no substantive changes required to the Basic Assessment Report and/or the proposal emanating from the I&AP comments).

15. CONCLUSION AND RECOMMENDATIONS

Concluding Statement

The EIA process has illuminated aspects of the site and project, all which should be afforded due consideration.

The asbestos underlying the site is the dominant aspect thereof, which require serious consideration, particular regarding the best way to secure the site and eliminate any risk of asbestos spreading from the site to surrounding communities. There is a capping layer presently on the asbestos, however this is being increasingly compromised through mole activity and other erosive forces such as fires and wind. Studies carried out in late-2020 indicate that there is widespread asbestos on the surface of the site, but that there is no evidence of this becoming airborne and so the best interim measure (currently undertaken) is security of the site and regular and frequent air quality monitoring. The asbestos waste and previous consolidation and capping has also resulted in unique founding conditions, which would require carefully consideration in terms of ground/ site preparation (i.e. limiting excavation, appropriate levelling, compaction techniques, and infill to level) as well as, and this is key, the type of development that would be appropriate for the site. The bearing capacity of the ground would allow for light industrial and hard covering of the site, but **not** for activities such as heavy industrial use. Groundwater on the site is also present but is not shallow. There is evidence of contamination of the local groundwater through historic activity, but this is not considered a health risk, given the nature of the contaminants. Note that asbestos is not a groundwater contaminant. There are no significant natural watercourses on the site, however there is an artificial stormwater pond which provides a key function in terms of management,

containment, and treatment of run-off, as well as a habitat for some flora and fauna. Most of the site is devoid of natural (i.e. indigenous), but for an area measuring approximately 1,800 m^2 in the north-west corner thereof which contains Critically Endangered Cape Flats Sand Fynbos. The remainder of the site contains invasive species; however, these are playing an important role in containing the asbestos through surface stabilisation. There are no heritage or cultural features relevant to the site.

The context of the site is largely industrial with residences and a Nature Reserve beyond the industrial area. The socio-economic data from the recent census indicates that the community is largely formally educated, but with only a small portion have post-matric qualifications. Income levels and unemployment indicate that job creation would be accepted in this area. Ultimately, the site is not isolated in that there are people who work, live, and carry out recreational activities surrounding it.

Although merely capping the site would not require any services from the local municipality, these have been considered for the preferred Alternative which includes redevelopment upon the site. The City of Cape Town has confirmed available capacity for electricity, potable water, and sewer, as well as refuse removal, thereby demonstrating that there is capacity for the proposed development. Similarly, the current traffic-bearing capacity of the local network are also relevant to the site and its context, particularly regarding the redevelopment component of the proposal. The local network has been found to operate at acceptable levels of service during both morning and afternoon peak hours and the transport impact assessment does not require significant network upgrades, but for one intersection upgrade (Okavango Road/Old Paarl Road).

The above-mentioned aspects of the site provide the limits within which the proposed capping design and redevelopment has to be contrived and it has, therefore, been designed and planned in response to these with the aim of achieving the best and lowest risk option for capping/closure of the site, with the redevelopment of the site being responsive to the limitations posed by the site and being such that it could provide maximum revenue to the Applicant.

Three activity and operational alternatives have been assess through this Basic Assessment process and include (as summarise in Table 7) only capping the site where needed (Alternative 1) , capping the site and redevelopment thereon with a light industrial park (Alternative 2, preferred) and leaving the site as is (i.e. No-Go Alternative). Other alternatives were not assessed as they would not apply to the site, given the firm limitations thereof.

The impacts of the two development alternatives under consideration are largely similar (and are generally low to very low, negative, which is considered acceptable), but for the Medium (+) socio-economic impact that the preferred alternative would provide through the creation of jobs and contribution to light industry, which is a pertinent consideration during the COVID-19 pandemic, which has shaken the local and global economy. There is no such positive impact for the development alternative as merely capping the site would not generate income for the community or the Applicant. The No-Go alternative does not have many impacts, however there is a significant High (-) impact that continued, unfettered spread of asbestos could have on the local community (and this would also not be legally permissible under the Asbestos regulations), therefore it is imperative that this be controlled. The preferred alternative is preferred over the development alternative as merely capping the site without further development would not be economically viable and, given that hard-capping is required to prevent extrusion of asbestos, the site would have to have a hard covering, which would not be aesthetically pleasing, or aligned with the socio-economic spatial planning intentions for the area.

The preferred alternative is also preferred over the no-go alternative because not capping the site would result in further disturbance and subsequent erosion through mole activity, and furthermore, is not legally acceptable in terms of the Asbestos Regulations, 2001, which require that asbestos and risk of exposure be effectively managed and controlled. Therefore, the No-Go alternative is not a feasible alternative for implementation given, not only the potential future risk to human health, but also when one considers the asbestos regulations which mandate the management and control of asbestos. The assessment of this is therefore largely included in this Basic Assessment process in response to the procedural requirements indicated in the EIA Regulations, 2014 (as amended).

The preferred alternative is as per the description provided in the Activity Description in section 4. This provides for a detailed capping methodology, which would, in certain components of the site, be incorporated with the proposed end use, namely a light industrial facility. The proposed capping design, intentions for establishment of foundations and platforms as well as the proposed development footprint have been crafted in response to various site informants, with the dominant one being the consolidated asbestos below the ground and the stormwater pond.

The preferred alternative is aligned with spatial and environmental planning intentions and is preferred from the Applicant's perspective because the costs associated with the capping and closure of the site could be offset with the income generated by the proposed light industrial park, with a view to making a profit on this in time. The proposed capping would tie-in with the proposed end use and would serve to secure the safety of the site from the underlying asbestos permanently. The way this is proposed in terms of limiting excavation, development in response to the existing platforms, and importing fill for the site is aligned with the intention to limit disturbance of asbestos as much as possible and to cap and development on top of it, rather than within in. The preferred alternative is also preferred from a geotechnical perspective as the specialist has stated that simply capping and re-shaping the site with a cover material is considered inadequate because mole activity would continue in future and would also do so within any soil capping layer, and the vegetation currently protecting the site is seasonal and may not always prevent the spread of asbestos around the site and off-site. The proposed capping is aligned with the geotechnical recommendation for an engineered, hardened cap. Given that there are no sensitive freshwater features on site which require protection, the preferred alternative is also acceptable from that perspective (Belcher, 2012) as it accommodates the primary requirement to retain the stormwater pond and buffer around it. Although the preferred alternative is not preferred from a botanical perspective (because the most sensitive vegetation area on the site would be developed on) it would be acceptable with the proposed relocation of the Endangered Cape Flats Strand Fynbos species to the Bracken Nature Reserve as well as to other specialists to create an ex-situ population. The proposed green/ landscaped areas of the site would also serve to provide some vegetation "islands" within the industrial area and surrounding context. The proposal for the light industrial park is also found to be acceptable from a servicing, transport, and access perspective.

The decision for the authorisation lies with the competent authority and should be taken based on the information provided. It is believed that there is presently insufficient information contained in this report to make the decision because the report does not contain the evidence of- and comments received during the public review period. This is because this report is currently out for public review and so comments received during this process will be incorporated into the final report for decision-making.

Overall, the proposal is aligned with the site conditions and context and the impacts anticipated can be controlled to acceptable levels.

Recommended Conditions of Authorisation

If the Department grants authorisation for the proposal, the following are recommended as conditions of authorisation:

- Compliance with the EMPr (refer to Appendix M);
- Undertake a translocation and take cuttings of conservation worthy *Lampranthus explanatus* in accordance with the specifications in the EMPr, noting the following:
    - The translocation must be undertaken following the first heavy winter rains;
    - Translocation must be undertaken by a botanist in collaboration with the Bracken Nature Reserve and the City of Cape Town: Biodiversity Management representatives. Contact details have been included in the EMPr; and
    - Propagation of cuttings must be done by specialist botanists to create an ex-situ population.
- A further botanical scan must be conducted by a botanist late winter/early spring (July – September) to identify any geophytic plants that are deemed conservation-worthy. A search and rescue should be undertaken accordingly;
- A stormwater management plan should be submitted to the City of Cape Town Roads and Stormwater Department when the land use application is submitted. This plan must be in line with the City of Cape Town policy requirements in this regard.
- Updating of the construction and operational EMPr prior to construction of top structures when more information on this is available and submit it to City of Cape Town for approval.
- Implementation of specialist mitigation measures listed in this report;
- Implementation of all recommendations made in this report;
- The appointment of an ECO during the construction phase; and
- Inclusion of the operational EMPr requirements in the constitution of the management structure of the development.
- It is further recommended as a condition of Environmental Authorisation that only indigenous plant species be used in the landscaping of the site and that no kikuyu grass be allowed anywhere on site.

16. REFERENCES

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APPENDICES