



**Western Cape
Government**

Department of Environmental Affairs and
Development Planning

BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

APRIL 2024



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(For official use only)	
Pre-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must include an overview of the project including the Farm name/Portion/Erf number)

1. Background:

MOOV Energy (Pty) Ltd (MOOV Energy), established in 2013, is the Astron Energy (formerly known as Caltex) Western Cape Branded Marketer supplying petroleum products to Astron Energy (Pty) Ltd. (Astron Energy) service stations and commercial clients in the Western Cape region.

Since 2018, MOOV Energy has been operating a diesel storage and distribution facility on property described as Erf 21594, 13 Kiaat Street, Kraaifontein Industria (see Figure 1). The facility currently consists of 2 x 23 m³ aboveground diesel storage tanks (denoted Tank 1 and Tank 2) housed in a bund, 2 x 1 hose diesel pumps, a truck workshop, an oil drum store and administration offices. Tank 1 was installed in 2018, and Tank 2 in 2022. In addition, MOOV Energy stores approximately 500 m³ of oil/lubricants (99%), degasol engine cleaner (0.5%) and ethanol solution (0.5%) as well as LPG storage of 1.5 tonnes.

The existing depot consists of the following infrastructure:

- Office and admin building,
- Warehouse building for storage of oils/lubricants, degasol engine cleaner and ethanol solution,
- Truck wash bay facilities,
- 2 x 23 m³ aboveground horizontal diesel tanks with dispensing pump for own use,
- Truck Workshop building,
- Truck staging and car parking facilities.



Figure 1: Aerial image of the project site in relation to Kraaifontein.

2. Project Proposal:

MOOV Energy plans on increasing their on-site storage capacity of petroleum products by an additional 2 454 m³ to:

- 1) improve security of supply,
- 2) optimise logistics efficiency (fuel trucks can load directly at the depot),
- 3) allow for increased flexibility to ad hoc/emergency fuel requests, and
- 4) reduce waiting time at the refinery gantry.

The project will entail the removal of the two existing diesel aboveground storage tanks (ASTs) with a combined capacity of 46 m³ and installation of three new ASTs with a combined capacity of 2 500 m³. The existing diesel tanks will become obsolete, with own use filling to be taken from the new diesel storage tanks.

The project will therefore consist of:

- The demolition of existing structures and buildings to make way for the new tanks.
- Removal of the existing two tanks with a combined capacity of 46 m³ and demolition of bund walls
- Installation of three new aboveground tanks for the storage of Diesel and ULP 95, as follows:
 - 2 x 1000 m³ 50 ppm Diesel and
 - 1 x 500 m³ for ULP 95;
- Construction of a new bund to contain 100% of the contents of the largest tank.
- The associated containment facilities as outlined in SANS 10089 Part 1;
- The required fire protection facilities covering the new infrastructure;
- Construction of separate entry and exit gates for the decanting and loading bulk trucks.
- Trucks for offloading & loading operations will enter the depot via the gate on the left and exit on the right
- Trucks for overnight staging will enter the depot via the left gate, pass beyond the new tank farm and park alongside one another.

The site safety distances are based on SANS 10089 The Petroleum Industry: Part 1 – Storage and distribution of Petroleum Products in aboveground bulk installations.

3. Alternatives:

Two alternative sites (located in Worcester; 33°38'28"S 19°28'52"E and 33°38'48"S 19°28'22"E) were initially considered, however, due to the various factors (security concerns, spatial restrictions – even too small, restrictions on ingress and egress to the properties, geographically too far from the refinery), only the preferred site will be considered/assessed for this application.

Please refer to Appendix A1 for the Locality Map and Google Earth Images as well as to Appendix B1 for the proposed site layout plan.

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.

2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. *Submission of documentation, reports and other correspondence:*

The Department has adopted a digital format for corresponding with proponents/applicants or the general public. If there is a conflict between this approach and any provision in the legislation, then the provisions in the legislation prevail. If there is any uncertainty about the requirements or arrangements, the relevant Competent Authority must be consulted.

The Directorate: Development Management has created generic e-mail addresses for the respective Regions, to centralise their administration. Please make use of the relevant general administration e-mail address below when submitting documents:

DEADPEIAAdmin@westerncape.gov.za

Directorate: Development Management (Region 1):
City of Cape Town; West Coast District Municipal area;
Cape Winelands District Municipal area and Overberg District Municipal area.

DEADPEIAAdmin.George@westerncape.gov.za

Directorate: Development Management (Region 3):
Garden Route District Municipal area and Central Karoo District Municipal area

General queries must be submitted via the general administration e-mail for EIA related queries. Where a case-officer of DEA&DP has been assigned, correspondence may be directed to such official and copied to the relevant general administration e-mail for record purposes.

All correspondence, comments, requests and decisions in terms of applications, will be issued to either the applicant/requester in a digital format via email, with digital signatures, and copied to the Environmental Assessment Practitioner ("EAP") (where applicable).

4. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
5. All applicable sections of this BAR must be completed.
6. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment

Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.

7. This BAR is current as of **April 2024**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za> to check for the latest version of this BAR.
8. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.
9. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
10. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
11. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.
12. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
13. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
14. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link <https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.
15. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ("NEM:AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 1) (City of Cape Town, West Coast District, Cape Winelands District & Overberg District)	GEORGE REGIONAL OFFICE: DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3) (Central Karoo District & Garden Route District)
The completed Form must be sent via electronic mail to: DEADPEIAAdmin@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 1) at: E-mail: DEADPEIAAdmin@westerncape.gov.za Tel: (021) 483-5829 Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000	The completed Form must be sent via electronic mail to: DEADPEIAAdmin.George@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 3) at: E-mail: DEADPEIAAdmin.George@westerncape.gov.za Tel: (044) 814-2006 Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following: • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development must be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): ○ Watercourses / Rivers / Wetlands ○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable);

	- o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"); - o Ridges; - o Cultural and historical features/landscapes; - o Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as Appendix C. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as Appendix D.
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as Appendix A3.

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ (tick) or a x (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX			✓ (Tick) or x (cross)
Appendix A:	Maps		
	Appendix A1:	Locality Map	✓
	Appendix A2:	Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning	N/A
	Appendix A3:	Map with the GPS co-ordinates for linear activities	N/A
Appendix B:	Appendix B1:	Site development plan(s)	✓
	Appendix B2	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;	N/A
Appendix C:	Photographs		✓
Appendix D:	Biodiversity overlay map		✓
Appendix E:	Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.		
	Appendix E1:	Final comment/ROD from HWC	✓
	Appendix E2:	Copy of comment from Cape Nature	to receive comment after review period
	Appendix E3:	Final Comment from the DWS	✓
	Appendix E4:	Comment from the DEA: Oceans and Coast	N/A
	Appendix E5:	Comment from the DAFF	N/A
	Appendix E6:	Comment from WCG: Transport and Public Works	to receive comment after review period
	Appendix E7:	Comment from WCG: DoA	N/A
	Appendix E8:	Comment from WCG: DHS	N/A
	Appendix E9:	Comment from WCG: DoH	N/A

	Appendix E10:	Comment from DEA&DP: Pollution Management	to receive comment after review period
	Appendix E11:	Comment from DEA&DP: Waste Management	N/A
	Appendix E12:	Comment from DEA&DP: Biodiversity	N/A
	Appendix E13:	Comment from DEA&DP: Air Quality	to receive comment after review period
	Appendix E14:	Comment from DEA&DP: Coastal Management	N/A
	Appendix E15:	Comment from the local authority	to receive comment after review period
	Appendix E16:	Confirmation of all services (water, electricity, sewage, solid waste management)	✓
	Appendix E17:	Comment from the District Municipality	N/A (same as local)
	Appendix E18:	Copy of an exemption notice	N/A
	Appendix E19	Pre-approval for the reclamation of land	N/A
	Appendix E20:	Proof of agreement/TOR of the specialist studies conducted.	✓
	Appendix E21:	Proof of land use rights	✓
	Appendix E22:	Proof of public participation agreement for linear activities	N/A
Appendix F:	Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required.		✓
Appendix G:	Specialist Report(s)		✓
Appendix H:	EMPr		✓
Appendix I:	Screening tool report		✓
Appendix J:	The impact and risk assessment for each alternative		N/A (included in BAR)
Appendix K:	Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline		N/A (included in BAR)
Appendix L:	Curriculum vitae of EAP		✓
Appendix M:	EAPASA registration		✓

Appendix N:	Site Sensitivity Verification Report	✓
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SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE: REGION 1		GEORGE OFFICE: REGION 3
	✓ (City of Cape Town, West Coast District)	(Cape Winelands District & Overberg District)	(Central Karoo District & Garden Route District)
Duplicate this section where there is more than one Proponent Name of Applicant/Proponent: Name of contact person for Applicant/Proponent (if other): Company/ Trading name/State Department/Organ of State: Company Registration Number: Postal address: Telephone: E-mail:	MOOV Energy (PTY) Ltd		
	Deon Maneveld		
	MOOV Energy		
	2007/024515/07		
	PO Box 176		
	Bredasdorp		Postal code: 7280
	021 691 4959		Cell: 083 488 7573
	deon@moovenergy.co.za		Fax: N/A
	Company of EAP: Kantey & Templer (Pty) Ltd		
	EAP name: Seoras Graham		
Postal address: Telephone: E-mail: Qualifications: EAP registration no:	119 Hertzog Boulevard		
	Cape Town		Postal code: 8001
	021 405 9600		Cell: 084 499 8156
	sgraham@jhb.kanteys.co.za		Fax: 021 419 6774
	B.Sc. (Hons) Environmental Management		
	2019/1883		
	Duplicate this section where there is more than one landowner Name of landowner: Name of contact person for landowner (if other): Postal address: Telephone: E-mail:		
	MOOV Energy (PTY) Ltd		
	Deon Maneveld		
	PO Box 176		
Bredasdorp		Postal code: 7280	
021 691 4959		Cell: 083 488 7573	
deon@moovenergy.co.za		Fax: N/A	
Name of Person in control of the land: Name of contact person for person in control of the land: Postal address: Telephone: E-mail:	Deon Maneveld		
	N/A		
	PO Box 176		
	Bredasdorp		Postal code: 7280
	021 691 4959		Cell: 083 488 7573
	deon@moovenergy.co.za		Fax: N/A
Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone: E-mail:	Kraaifontein/Northern Environmental & Heritage Management (EHM) region		
	Sonja Warnich-Stemmet		
	Kraaifontein Municipal Offices, 80 Brighton Road (c/o Darwin and Brighton Roads)		
	Kraaifontein		Postal code: 7570
	021 444 4904		Cell: N/A
	sonja.warnichstemmet@capetown.gov.za		Fax: N/A

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	New		Expansion	✓
2.	Is the proposed site(s) a brownfield or greenfield site? Please explain.				
Brownfield, the project site is an established and operational diesel storage and distribution facility situated within the Kraaifontein Industria.					
3.	For Linear activities or developments				
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:				
3.2.	Development footprint of the proposed development for all alternatives.				m ²
3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.				
3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.				
3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives				
3.6.	Starting point co-ordinates for all alternatives				
	Latitude (S)	°	'	"	
	Longitude (E)	°	'	"	
	Middle point co-ordinates for all alternatives				
	Latitude (S)	°	'	"	
	Longitude (E)	°	'	"	
	End point co-ordinates for all alternatives				
	Latitude (S)	°	'	"	
	Longitude (E)	°	'	"	
Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.					
4.	Other developments				
4.1.	Property size(s) of all proposed site(s):				9747 m ²
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):				9747 m ²
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:				1 929.0496 m ²
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).				
Project Proposal:					
The project will entail the removal of two diesel 23 m³ ASTs and installation of three ASTs (two 1 000 m³ diesel tanks and one 500 m³ ULP 95 tank). As a result, the combined storage capacity will then be 2 500 m³. Therefore, the on-site storage capacity of dangerous goods will be increasing by 2 454 m³. The construction of one reinforced concrete bund with intermediate walls, thus allowing all tanks to be located within their own subdivision. A total number of four aboveground tanks can be accommodated within the available space. Under the current project, only three tanks will be constructed with space allowance for a future tank. Each intermediate bund will comprise a drain pit (sump). The project will also involve the demolition of two warehouses (one of which contains a wash bay and the other containing oil drums), an outbuilding at the front of the site, the toilet and office area in the middle of the warehouse and two small storerooms (with firefighting equipment mounted on them) to make way for the proposal. The 500 000 L storage of oil/lubes will be moved into the main warehouse and the position of the LPG storage will be altered as well as revision of the location of the wash bay. There will also be provision for 4 tankers storing bulk fuel to be under a canopy & have an oil water drainage channel to the oil separator.					

The project will therefore entail:

- The demolition of existing structures and buildings to make way for the new tanks.
- Removal of existing two tanks (with combined capacity of 46m³) and demolition of bund walls.
- Installation of three new aboveground tanks for the storage of diesel and ULP 95, as follows:
 - 2 x 1000 m³ 50 ppm diesel
 - 1 x 500 m³ ULP 95
- Construction of a new bund to contain 100% of the contents of the largest tank.
- The required fire protection facilities covering the new infrastructure.
- Construction of separate entry and exit gates for the decanting and loading bulk trucks.
- Trucks for offloading & loading operations will enter the depot via the gate on the left and exit on the right
- Trucks for overnight staging will enter the depot via the left gate, pass beyond the new tank farm and park alongside one another.

The sections below provide more design detail on the abovementioned listed components of the project proposal.

Tank Specifications:

- Cone Roof Tanks (with IFR for ULP 95)
- Products – Class I, II or IIIA other than Crude Oil
- Tanks equipped with Approved Foam Systems

The most stringent requirement for tank spacing to a property boundary is 0,5D (tank diameter).

All tanks will be fixed cone roof tanks with internal floating roofs (IFR) to the ULP tank only.

Tank sizes & capacities:

Tanks	Service	Diameter	Height	Gross Volume
1	ULP 95	11.52 m	4.8 m	500 m ³
2	Diesel	11.52 m	9.6 m	1 000 m ³
3	Diesel	11.52 m	9.6 m	1 000 m ³
4	Future	11.52 m	9.6 m	1 000 m ³

The vertical bulk storage tanks will be designed in accordance with API 650. Tanks will be supported on a reinforced concrete foundation including the required layer works. Tank foundations will include the necessary secondary containment as prescribed by API 650.

The aboveground tanks will be equipped with the following appurtenances:

- Inlet and Outlet Fire-safe valves complete with thermal by-pass valves;
- Water draw-off valve;
- Tank Shell man-ways;
- Vent or breather pipes;
- Nozzles for dip hatch, temperature probes, Automatic Tank Gauging (ATGs) and High Level Alarms (HLAs);
- Access stairs & interconnecting walkways
- Tank Foam Pourer Connections
- Tank Cooling Rings

Specifications for the tanks:	
Working volume	Gross volume 1000cu.m, Working Volume 900cu.m
Tank type and design codes	Vertical Aboveground, cone roof tank designed to API 650
Storage pressure and temperature	Free venting tank D50,
Nozzle details	Inlet, Outlet, Water Drain
Venting details (such as pressure settings)	To be confirmed on final design
Material of construction	Steel
Tanks to be inerted or blanketed	No
Colour of the tanks (when they are above the ground);	White
Release heights and locations of the tanks' breather valves.	Probably 12 m

Tanks will be protected against corrosion applying protective paint coatings to the external shell and roof as well as the floor and internal surface up to the 1st strake.

Product receipt & transfer facilities:

All product receipt and transfer will be done via road tankers. This facility will be located adjacent to the tank farm area and will comprise of the following:

- Product Receipt
 - o Decanting hose & dry-break coupling
 - o Suction Strainer
 - o Decanting Pump installed onto a concrete plinth
 - o Vertical Deaerator with open close valve to ensure no air is transmitted through the flow meter.
 - o Mechanical Flow meter with calibration valves

- Product transfer
 - o Loading hose & dry break coupling
 - o Loading Pump installed onto a concrete plinth
 - o Strainer/Air Eliminator
 - o Mechanical Flow meter with calibration valves
 - o Suction strainer

Separate facilities for diesel and ULP 95 have been allowed for. This will ensure that all products will be metered for stock control purposes. No automation for this has been allowed for.

Bund Containment Requirements:

This layout caters for tanks to be housed within one main bund.
The bund containment requirements are calculated as follows:

- Largest Tank to be contained = 1000 m³
- Gross Bund Area (GBA) = 1 092 m²
- Nett Bund Area (NBA) = 780 m²

From the main bund requirements, above, the wall height requirements would be
 • Average Wall height (h) = $1000/780 + 0,1$ m free-board = 1,38 m

All tanks will be located within their own subdivision. These walls will be a minimum of 500 mm high and will terminate at a maximum height of approximately 300 mm below the main wall. Subdivision walls will be set at different levels thereby creating a preferential spill pattern in the event of a major spill occurring.

The construction of subdivision walls also contributes to:

- Lower fire water requirements to bund areas;
- The containment of minor spills within its own subdivision, thereby minimizing the risk of fire/ spills spreading to other bunds;

In keeping with the regulations laid down in the SANS 10089 Part 1 code, the bund floors will be sealed to prevent accidental spillages from entering the subsoil.

Bund drainage lines will be routed to the bund outlet chamber from where it will be routed to the API oil-water separator before discharge to the municipal sewer system in keeping with good environmental practices.

Fire Water Requirements:

The facility is to be equipped with a full fire water system comprising of a water tank, booster pump and foam generating facilities. All manifold valves will be activated via electric actuators.

The foam system will be utilized for the top foam pourers to each tank and medium expansion foam pourers for bund fires. The tanks will be equipped with cooling water via cooling rings with spray nozzles designed to deliver the required cooling water application.

The semi-automated fire protection system will be activated via depressing the corresponding buttons for the foam and water systems on the mimic panel which is to be installed and operated from the fire-fighting pump station (exact locations will be confirmed during the detailed design stage).

The design criteria for the site water requirement are based on the following:
 Bund Foam Application – 4,1 l/min/sq.m of largest sub-division in the tank farm
 Tank Foam Application – 4,1 l/min/sq.m of tank roof surface area
 Tank Cooling Water – 30 l/min/m of tank circumference to the largest two tanks

It is proposed to use Class 16 HDPE/PVC piping for belowground foam and water supply and painted steel piping (SANS 62/719) for aboveground services.

The requirement for tank cooling is 1 080 litres/min for each tank.

The requirement for tank foam is 426 litres/min for each tank.

Foam pourers will be of the Angus TPS 80 or similar type and mounted onto a tank flange. The riser pipe will be an 80NB steel pipe supported off the tank shell.

The requirement for bund foam is 693 litres/min for each tank's bund.

Foam pourers will be of the MEX type (Medium Expansion) and will be securely mounted on the bund walls.

The largest simultaneous water demand/requirement is:

- Bund Foam 693 l/min
- Tank Cooling (2 tanks) 2 160 l/min

Therefore, the Total Water Demand is 2 853 l/min (The Pumps (diesel driven engine) will be sized for this demand).

The requirement for water storage is a min of 60 mins as per the code. Therefore, a water reservoir of min 171 180 litres will be required. In addition to the working volume as calculated, the unpumpable volume has been allowed for resulting in a storage volume of 203 000 litres.

This is to be stored in a prefabricated steel panel tank. Water supply to the tank will be drawn off the existing municipal water supply. The tank will be fitted with an automatic shut off valve which will close when the tank has reached its capacity and will open when water is drawn from the tank.

A booster pump will be utilized (diesel-powered engine) and allowance has been made for a duty and standby unit to be installed.

For premix generation, fixed flow in-line inductors will be used which will be connected to a 2000 litre foam concentrate tank. These inductors will be installed in the respective bund and tank foam manifold lines. The foam generating tank and equipment is to be installed under a canopy shielding it from the weather elements.

The minimum foam concentrate storage required for the facility is calculated as follows:

- Bund foam @ 693 l/min with 3% injection = 20,8 l/min
- Allow for 60 mins supply = 1 248 litres.
- Therefore, a 2000 litre tank is to be utilised for foam concentrate storage.

Electrical requirements:

Power supply will be required for the following:

1. Power supply to the decanting & loading pumps
2. Power supply to the battery charger on the fire pump engine
3. Power supply to the actuated fire system activation valves
4. Lighting to the tanks and pump bay
5. Automatic Tank Gauging to all tanks
6. Tank Earthing and Bonding
7. Power to be distributed from a Motor Control Centre to the various electrical infrastructure.

Instrumentation:

Tank 1 is ULP and Tank 2 and Tank 3 are diesel with minimum Safety Integrity Level 2 (SIL-2) overfill protection Below is acceptable with the following mitigation:

- All tanks have minimal SIL-2 overfill instrumentation – suggest stopping the pump and closing the tank valve;
- Tank skin valve has Emergency Shutdown (ESD) function and will shut when:
 - Overfill protection
 - Loss of containment at the pump bay, to prevent a large release from the storage tank
- Full spill containment at the road loading / offloading area. Containment size – largest tanker compartment;
- At least 2 emergency exits from the site and the warehouse building to evade a large tank farm fire.

Please refer to Appendix A1 for the Locality Map and Google Earth Images as well as to Appendix B1 for the proposed site layout plan.

The following design codes will be applicable:

Standards/Codes:

- Compliance with applicable South African National Standards (SANS) codes: SANS 10087, SANS 10089, SANS 10108.
- All work has to comply with the SANS 10089 Part 1 guidelines for aboveground bulk storage facilities
- The site safety distances are based on SANS 10089 The Petroleum Industry: Part 1 – Storage and distribution of Petroleum Products in aboveground bulk installations.
- The containment facilities will additionally be according to SANS 10089 Part 1.
- The bund area should be able to store 100% capacity of the largest tank banded, according to SANS - 100894.5.2.1 b.
- A hazardous area classification as per SANS 10108 must be developed for all flammable materials. Only suitable instrumentation and electrical equipment should be installed in accordance with the requirement of the code.
- SANS 342:2016 – Diesel requirements.

The design and layout of the proposed storage tanks to be installed will be implemented in accordance with SANS 10400T (Fire Protection) 53 Sections 1-6 (The application of the National Building Regulations-Installation of Liquid Fuel Dispensing Pumps and Tanks).

The complete expansion project and all installations must be handled in terms of the SANS guidelines. These SANS guidelines include but not limited to the following:

- Complete set of design criteria including Civil, Structural, Mechanical, Electrical and Traffic Engineering,
- Pump and Tank installations including all measures such as fuel storage, fuel lines, evaporation lines, non-return valves, gas break manholes, together with
- Public safety,
- Fire installation and fire protection requirements,
- Handling of stormwater and water,
- Management of refuse,
- Energy usage.

Compliance with IEC 61508 and IEC 61511 Safety Instrumented Systems) codes (or ANSI/ISA 84.00.01-2004). This is of particular reference to the tank overfilling scenario and should be considered as guidelines to the instrumentation architecture of the instrumentation.

Applicable international best practice production and guidelines or equivalent international recognised codes of good design and practice of installations, must be incorporated in the designs. This implies that best practices would be applied to the design and operation of the proposed site.

American Petroleum Institute standards API 650/653 – Design and continued safety and maintenance of aboveground tanks.

4.5. Indicate how access to the proposed site(s) will be obtained for all alternatives.

The project site is currently accessed directly off Kiaat Street. A new access entrance gate will be created adjacent to the boundary of Erf 21596. The existing entrance and exit will be used exclusively as an exit with the project. Both the new access and exit gates will be on Kiaat Street. The proposed entrance will create a better and safer flow of traffic around the proposed new tank farm.

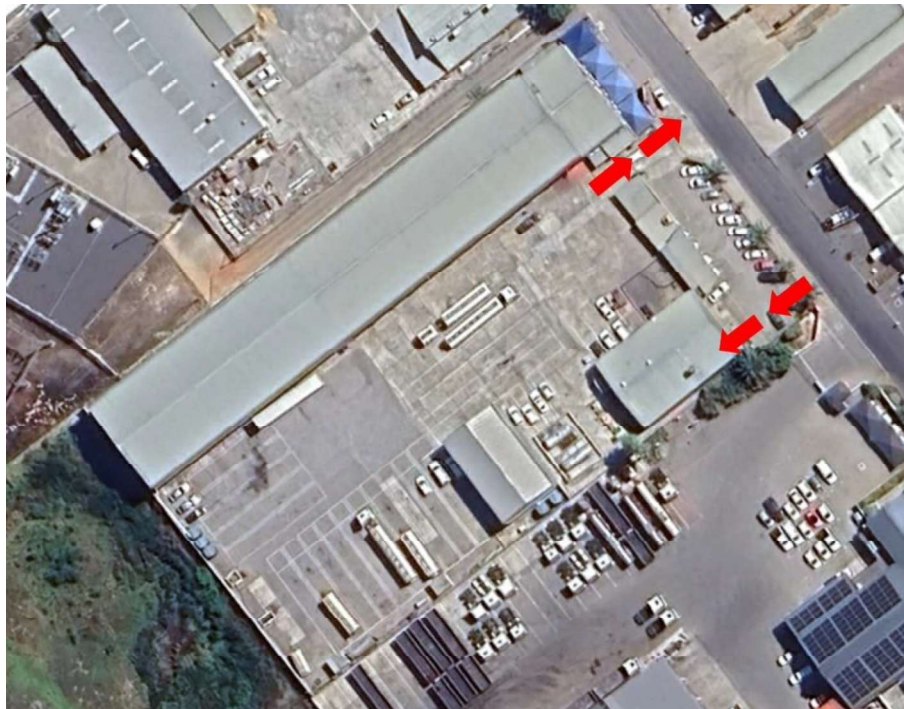


Figure 2: Google Earth image depicting the new entrance and exit for the site.

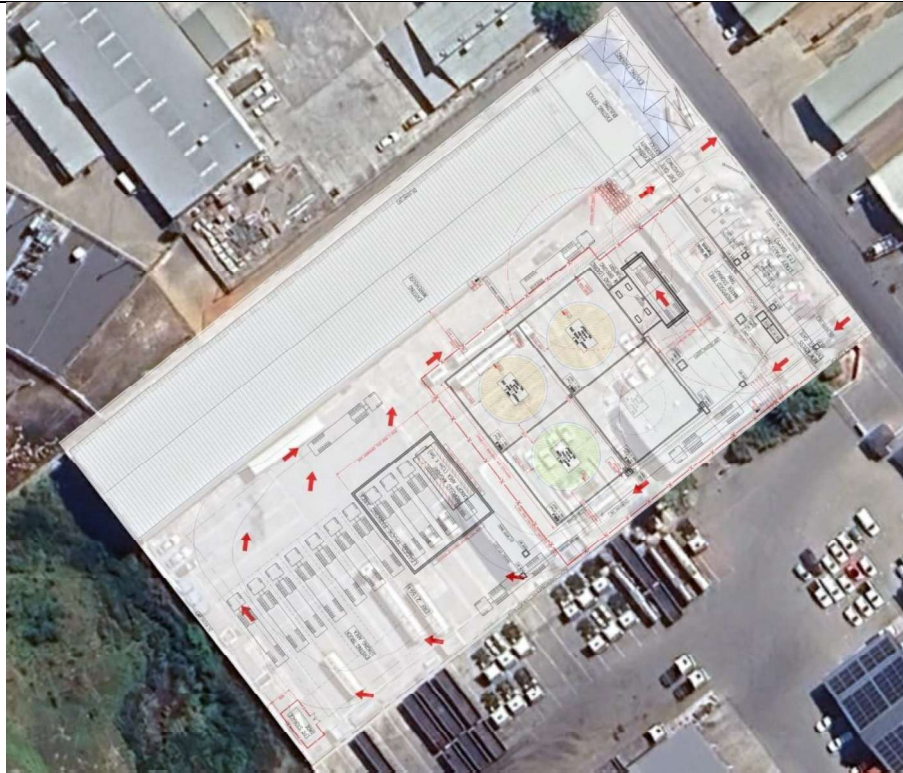


Figure 3: Google Earth image depicting an overlay of the proposed site layout associated with the project.

4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:	C	0	5	5	0	0	0	5	0	0	0	2	1	5	9	4	0	0	0	0	0
4.7.	Coordinates of the proposed site(s) for all alternatives:																					
	Latitude (S)							33°				50'				29.36"						
	Longitude (E)							18°				43'				42.32"						

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	✓NO
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2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	✓NO
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.	YES	✓NO
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	YES	✓NO
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	✓YES	NO
The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")	YES	✓NO
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").	YES	✓NO
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").	YES	✓NO
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	YES	✓NO

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.	
<u>Legislation (Regulations/Acts):</u> All designs should be in full <u>compliance with</u> (but not limited to) <u>the Occupational Health and Safety Act 85 of 1993</u> and its regulations, the <u>National Building Regulations</u> and the <u>Building Standards Act 103 of 1977</u>, as well as the <u>local bylaws</u>. All <u>storm water</u> infrastructures will be constructed in accordance with the standard requirements and specifications as published by the <u>City of Cape Town</u>. All infrastructure installed on site pertaining to stormwater and grey water handling if applicable should be installed as according to industry standards, ensuring that the contamination of surface and groundwater is limited.	
List of rules and regulations in terms of health and safety compliance, and environmental compliance (which current and future additions must comply with)	OSH Act, Petroleum Products Act No. 120 of 1977 (PPA), NEMA
Details of any safety measures, codes and standards in place	OSH Act, SANS 100189 Part 1, API 650/653
List of current health and safety, and environmental documents pertaining to site	Operations: HSSE Policies Index, SANS 342:2016, Construction: OSH Act, SHE Specification, HSSE File Index

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
<u>Air Quality Management Plan for the City of Cape Town 2005</u> The Air Quality Management Plan focuses on the need to reduce and minimise air pollution and improve compliance with national standards. Sustainable long-term improvements to air quality will require strict control of industrial pollution. This project will adhere to this through an Atmospheric Emission License. <u>3RD GENERATION INTEGRATED WASTE MANAGEMENT PLAN CITY OF CAPE TOWN (2021)</u> The Integrated Waste Management Plan promotes responsible waste management in terms of integrated principles, which require recovery, recycling for reuse and for energy recovery/saving purposes to the standard waste management practice in support of sustainability. Means employing several waste control and disposal methods i.e. reduce, re-use, recycle, incineration, and landfilling, to minimise the environmental impact of commercial and industrial waste streams. MOOV Energy intends to utilise existing tanks and pumps etc. once decommissioned in the MOOV Commercial business unit. One pump may be reutilized on site. <u>WATER AND SANITATION WATER DEMAND MANAGEMENT AND STRATEGY Review: 2015/16: Update and Additions to Existing Long-Term Water Conservation and Water Demand Management Strategy</u> The Water Conservation and Water Demand Management Strategy aims to ensure the long-term balance between available water resources and water demand, to postpone the need for expensive capital infrastructure projects for as long as it is economically viable and to minimise water wastage. Considering that domestic water demand is significantly more than the industrial and commercial water demand, the demand growth will be more closely related to the population growth rate rather than the economic growth rate as in the proposed project, which is an industrial site. <u>NATIONAL DEVELOPMENT PLAN</u> <u>According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:</u> - The proposed development in Kraaifontein Industria aligns with the goals and objectives outlined in the <u>National Development Plan (NDP) for 2030</u> by contributing to the growth and development of the Kraaifontein area. It supports <u>economic</u> growth and <u>investment</u> by enhancing the capacity and efficiency of local fuel storage and distribution, which can stimulate local economic activities and create additional <u>jobs</u>. To add, the project highlights additional labour absorption by generating <u>employment</u> opportunities during both the construction and operational phases. By addressing logistical needs and ensuring a stable <u>fuel supply</u>, the expansion also promotes <u>infrastructure development</u>, contributing to the broader goal of building a capable and developmental state. <u>NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE</u> <u>According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:</u> - The proposed development in Kraaifontein Industria aligns well with the objectives of the <u>National Spatial Development Perspective (NSDP) of 2006</u>. It supports economic development by attracting private-sector <u>investment</u> and creating long-term <u>employment</u> opportunities in a locality with demonstrated <u>economic</u> potential. By enhancing fuel storage and distribution capacity, the project <u>strengthens the activity corridor linking Kraaifontein with main growth centres in Cape Town and the Northern Planning District</u>. This fixed infrastructure investment positions Kraaifontein Industrial as a significant growth node, facilitating regional and global economic integration. Additionally, the project addresses <u>social inequalities</u> by creating <u>jobs</u> and <u>improving livelihood opportunities</u> for the local population. Overall, the expansion aligns with the NSDP's goals

of promoting economic growth, infrastructure development, and poverty alleviation, contributing to spatial transformation.

WESTERN CAPE PROVINCIAL STRATEGIC PLAN

According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

- The proposed expansion of the MOOV Energy facility in Kraaifontein Industria aligns with the Western Cape Provincial Strategic Plan (PSP) for 2019-2024 in several ways. The project supports the PSP's Vision-inspired Priorities (VIPs), particularly VIP 2 and VIP 4. By generating employment opportunities during both construction and operational phases, the development boosts the local economy and job creation, directly addressing VIP 2's focus on economic development through investment facilitation and infrastructure development. The project's focus on local labour employment will help improve income levels and living standards for residents in Kraaifontein, Kraaifontein Industrial, and nearby areas like Joostenbergvlakte and Wallacedene, stimulating safe and cohesive communities as envisioned by VIP 1. The infrastructure investment in Kraaifontein Industria also promotes mobility and spatial transformation (VIP 4) by enhancing local economic centres and supporting sustainable densification.

CITY OF CAPE TOWN INTEGRATED DEVELOPMENT PLAN

According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

- The proposed expansion of the MOOV Energy facility in Kraaifontein Industria aligns with the City of Cape Town Integrated Development Plan (IDP) for 2022-2027 by contributing to economic inclusion and job creation, supporting the IDP's vision of an opportunity city. It will create employment opportunities for residents in Kraaifontein, Kraaifontein Industrial, and nearby areas, enhancing local income levels and living standards. The project's investment in infrastructure enhances fuel storage and distribution, contributing to resource efficiency and security, and aligns with the IDP's principles of sustainability and resilience. Additionally, the facility's modernization with advanced technology supports the IDP's priority of leveraging technology for progress, making it a valuable addition to Cape Town's economic and social landscape.

CITY OF CAPE TOWN MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK

According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

- The proposed expansion of the MOOV Energy facility in Kraaifontein Industria aligns with the City of Cape Town Municipal Spatial Development Framework (MSDF) for 2023 by supporting the spatial strategies of building an inclusive, integrated, and vibrant city, and planning for employment and improving access to economic opportunities. The development enhances infrastructure and economic activity in a strategic location, promoting inclusivity and integration by creating additional jobs and improving service delivery. By modernizing the fuel facility, the project also supports sustainable urban growth and balances development with environmental protection, aligning with the MSDF's vision of a well-planned and equitable urban landscape.
- The proposed development aligns with the vision of the Northern Planning District by facilitating economic growth (employment opportunities, income provision) and fostering an integrative environment through the establishment of a mixed-use node. By designating the site for urban development and endorsing densification, the development contributes to the efficient use of land resources while supporting the district's goals of balanced growth and environmental protection. Furthermore, its proximity to key access routes enhances connectivity and accessibility, promoting economic activity and facilitating the movement of goods and services. The proposed expansion complements the existing business and industrial nodes in the northern parts of the district, reinforcing the area's role as a key hub for industrial operations and creating synergies with existing activities. Overall, the proposed development has the potential to positively impact the socio-economic dynamics of the Northern District.
- The proposed development, with its strategic land uses, is set to become a vital hub of commercial activity, significantly contributing to the growth node around the proposed site. Employment opportunities generated during both the construction and operational phases will play a crucial role in achieving the key objectives outlined in National, District, and Local policies, which emphasise job creation. The alignment with these policies highlights the project's potential to support economic growth, enhance infrastructure, and improve living standards for the local community, thereby promoting a more inclusive and sustainable urban environment.

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

WC DEA&DP, EIA Guidelines (March 2013), which have informed the public participation process, assessment of alternatives as well as the need and desirability.

WC DEA&DP, EMP Guideline (June 2005), to provide guidance on the preparation of the EMPr.

The following were considered for the geohydrology assessment:

- Commonwealth of Massachusetts Department of Environmental Protection, March 2024. 310 CMR 40: Massachusetts Contingency Plan
 - USEPA RSLs (Regional Screening Levels – November 2024) for National Primary Drinking Water Regulations, Maximum Contaminant Levels (MCL)
 - Department of Water Affairs and Forestry, Second Edition, 1996. South African Water Quality Guidelines: Volume 7: Aquatic Ecosystems
- South African National Standard, SANS241: 2015, Edition 2. Drinking Water

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

The National Screening Tool was utilised to identify any geographically sensitive areas on or in proximity to the project site that require further consideration. Please see Appendices I and N for the Screening Tool Report and Site Sensitivity Verification Report, respectively.

There are no specific environmental theme protocols for the list of the potential specialist assessments applicable to the project. The studies were undertaken according to the General Requirement Assessment Protocols.

The freshwater study has, however, conformed to the requirements of the Department of Water and Sanitation's guidelines.

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
51	The expansion and related operation of facilities for the storage, or storage and handling, of a dangerous good, where the capacity of such storage facility will be expanded by more than 80 cubic metres.	The removal of two diesel 23 m ³ ASTs and installation of three ASTs (two 1 000 m ³ diesel tanks and one 500 m ³ ULP 95 tank). As a result, the combined on-site storage capacity will be 2 500 m ³ . Therefore, the storage capacity will increase by 2 454 m ³ , which exceeds the permitted threshold level of 80 cubic metres.
34	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution, excluding— (i) where the facility, infrastructure, process or activity is included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; (ii) the expansion of existing facilities or infrastructure for the treatment of effluent, wastewater, polluted water or sewage where the capacity will be increased by less than 15 000 cubic metres per day; or the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day.	According to the listed activities and associated minimum emission standards identified in terms of Section 21 of the National Environmental Management: Air Quality Act, an Atmospheric Emission Licence (AEL) will be applicable to this activity (Category 2, (4), Subcategory 2.4) due to the combined storage capacity of petroleum products exceeding the permitted threshold level of 1000 m ³ .
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A	N/A	N/A

Note:

- The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.
- Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.

List the applicable waste management listed activities in terms of the NEM:WA

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Category A	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A	N/A	N/A

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant Listed Activity(ies)	Describe the portion of the proposed development to which the applicable listed activity relates.
Section 21 (Category 2, (4), Subcategory 2.4)	Storage and Handling of Petroleum Products: Petroleum products storage tanks and product transfer facilities. All permanent immobile liquid storage tanks larger than 1 000 cubic metres cumulative tankage capacity at a site.	The combined storage capacity of petroleum products exceed the permitted threshold level of 1000 m ³ .

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.
<u>Preferred site:</u> The preferred site is an existing diesel storage and distribution facility on property described as Erf 21594, 13 Kiaat Street, Kraaifontein Industria. The facility currently consists of 2 x 23 m³ aboveground diesel storage tank housed in a bund, 2 x 1 hose diesel pumps, a truck workshop, an oil drum store and offices. On the project site MOOV Energy stores approximately 500 m³ of oil/lubes (including degreasol engine cleaner and ethanol solution) as well as LPG storage of 1.5 tonnes. As the proposed project is a replacement with increased capacity, it is environmentally preferable to limit the impact to the existing site. Two alternative sites (located in Worcester; 33°38'28"S 19°28'52"E and 33°38'48"S 19°28'22"E) were initially considered, however, due to the various factors (security concerns, spatial restrictions – even too small, restrictions on ingress and egress to the properties, geographically too far from the refinery), the applicant has identified the project site as being the only feasible property to undertake this activity. Therefore, only the preferred site will be considered/assessed for this application and no alternative sites are being considered as part of this application. Site selection by MOOV Energy was based primarily on the availability of land. The site is positioned conveniently in proximity to (the N1 highway) road systems making transport from the refinery accessible. This major national transportation route strategically positions the proposed development. This enables the area's connectivity and accessibility to the broader region. <u>Preferred use of site (activity):</u> Since 2018, the site has been operating a diesel storage and distribution facility and the preferred use of site will be to continue this activity, however, to increase their on-site storage capacity of petroleum products by an additional 2 454 m³ to: 1) improve security of supply, 2) optimise logistics efficiency (fuel trucks can load directly at the depot), 3) allow for increased flexibility to ad hoc/emergency fuel requests, and 4) reduce waiting time at the refinery gantry. MOOV Energy's main interest is in the trading and distribution of fuel in South Africa, and has not considered any other business venture. Due to this and the development being a replacement with increased capacity, no alternative land uses/activities have been considered by the applicant for this project. <u>Project details:</u> The project will entail the removal of the two existing diesel aboveground storage tanks (ASTs) with a combined capacity of 46 m³ and installation of three new ASTs with a combined capacity of 2 500 m³, with the configuration as follows: - 2 x 1 000 m³ aboveground tanks for the storage of 50 ppm diesel; and - 1 x 500 m³ aboveground tank for the storage of ULP 95. <u>Site layout proposal:</u> - The demolition of some existing structures and buildings, and the existing tanks to make way for the new tanks. - Construction of separate entry and exit gates for the decanting and loading bulk trucks.	

	• The provision of a fire water installation situated at the front end of the depot. • Trucks for offloading & loading operations will enter the depot via the gate on the left and exit on the right. • Trucks for overnight staging will enter the depot via the left gate, pass beyond the new tank farm and park alongside one another. The 500 000 L storage of oil/lubes will be moved into the main warehouse and the position of the LPG storage will be altered as well as revision of the location of the wash bay. There will also be provision for 4 tankers storing bulk fuel to be under a canopy & have an oil water drainage channel to the oil separator.
2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.
	As the property stands, the current activities meet the requirements for the land use rights. However, according to the CoCT's Branch: Land Use Management, the current zoning does not permit the proposal and would trigger a land use application. Plans will be submitted in accordance with SANS 10089 for the aboveground tanks, along with a risk assessment to the Municipality for approval.
3.	Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.
	N/A There will be no development proposal conflicts in terms of the existing approvals for the property.
4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.
	<u>According to the Western Cape Provincial Spatial Development Framework of March 2014 and the Western Cape Provincial Spatial Development Framework Chapter 4 Amendment of November 2020:</u> There is an emphasis on the development of brownfield sites and there is a need for intensification of land uses -both of which this project entails. Consolidate existing and emerging regional economic nodes as they offer the best prospects to generate jobs and stimulate innovation. The site is located in existing industrial node and will involve intensification of operations on site as a result of the project. Cluster economic infrastructure and facilities along public transport routes (to maximise the coverage of these public investments). The site is next to major a transport route (the N1). There is a need for a globally competitive economy. In fact, growing the economy is said to be the Western Cape Government's number one development priority. This project will contribute towards job creation/decrease unemployment (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created) and improve fuel availability and promote economic growth. Improving access to services, facilities, employment and safe and efficient transport modes is essential to achieving the transitions of the NDP and OneCape 2040. Land development should be spatially compact, resource-frugal, compatible with cultural and scenic landscapes and should minimise the consumption of scarce environmental resources, particularly water and land – especially pristine and rural land, which are non-renewable resources. In particular, land transformation (i.e. conversion from natural to manmade landscapes), is the primary cause of biodiversity loss and deteriorating ecosystems health and the Western Cape's precious land, water, agricultural resources (cultivable soils) and mineral resources underpin the regional economy. However, this project makes sustainable use of/protects the Western Cape's spatial assets, including biodiversity and agricultural resources by taking place on a site which is already transformed.
4.2	The Integrated Development Plan of the local municipality.
	This proposal is for the increase in fuel storage capacity of an existing fuel depot. Since the site is previously developed and is an <u>industrial</u> activity located in an area already developed for industrial purposes, the proposed fuel expansion activities do not conflict with the municipal IDP. <u>According to the City of Cape Town (CoCT) Integrated Development Plan (IDP) Summary (July 2022 – June 2027):</u> The City of Cape Town has six priorities, of which it considers economic growth to reduce poverty the most important. This means increased jobs and investment in the economy of Cape Town. However, the IDP summary mentions the need for inclusive economic growth, where people have more equitable access to economic opportunities and where the benefits of economic growth are felt by as many residents as possible and lead to hope for the future. Many people in Cape Town face barriers to participating in the city's economy and taking up opportunities and there is therefore a need to address economic and social exclusions, including those entrenched by the Apartheid era. This project contributes towards economic growth by creating jobs and contributes towards inclusivity by preferentially hiring people from disadvantaged backgrounds. During the construction phase, a strategy will be implemented with the main contractor to ensure local, skilled and semi-skilled, previously disadvantage people get preference. Moov is a company that believes in transformation and learning opportunities for young people. Moov is currently giving learnership opportunities to local youth in the Human Resource, IT and HSSE Department. The IDP summary also mentions creating a balance between urban development and maintaining a quality environment, which encompasses the sustainable use of land and natural resources, efficient use of infrastructure and protecting, restoring and managing its <u>natural</u> areas (including public spaces and waterways). The proposed project has considered this balance.

There is additionally a need for lower carbon emissions, and climate adaptation mentioned in the IDP summary. Climate change adaptation requires building a resilient and climate-responsive city by reducing vulnerability. A resilient city meets its resource needs sustainably, responds to climate change and is able to withstand disaster events including increased severe weather events due to climate change. Poverty is the primary driver of household vulnerability to (social, environmental, health and economic) shocks and therefore needs to be reduced to increase the resilience of Cape Town's communities -again indicating the importance of (inclusive) economic growth and job creation.

Making Cape Town climate-adaptive and moving towards carbon neutrality are cross-cutting priorities of the City's five-year plan. This means that along with adapting to the impacts of climate change, reducing Cape Town's carbon footprint is vital. This relates to energy demand, water resilience and waste minimization. See Section I, Part 5 of this BAR for climate change adaptation and mitigation measures associated with this project as well as Section J, Parts 3-5 for water, waste and energy efficiency.

The IDP Summary further states the importance of the transport industry, with a goal for all people to travel, increasing their freedom to enjoy all that the city has to offer. This project aligns with the stated need to improve urban mobility as it contributes towards the availability of fuel.

According to the IDP Summary, desired outcomes for the COCT include increased density in the urban core and particularly along public transport routes. This project involves intensifying the operations on an industrial site (increase in fuel storage capacity) and thus optimizes the use of existing space within an urban area along the N1 highway.

4.3. The Spatial Development Framework of the local municipality.

According to the Municipal Spatial Development Framework of the City of Cape Town Volume 1: Chapter 1 – 6 and Technical Supplement A, APPROVED BY COUNCIL 26 JANUARY 2023:

It is important to promote inclusive economic growth through sustainable industrialisation and ensure the preservation of well-located, well-established and well-performing industrial areas. Furthermore, appropriate intensification of industrial and commercial activities should be encouraged and there is a demand for peripherally located freight-industry related land uses. This relates to the current project which would be located within Kraaifontein Industria.

The high connectivity provided by direct freeway/expressway connections tends to attract warehousing, and industrial land uses. These opportunities tend to be realised around key intersections or off-ramps, and on roads running parallel to, or linked to, freeways. In this way, the project will be located in an ideal setting as it is immediately south of the N1 freeway.

4.4. The Environmental Management Framework applicable to the area.

According to the Environmental Strategy for the City of Cape Town (Policy Number 46612) Approved by Council 24 AUGUST 2017:

Waste generation is to be minimised and waste diversion is optimised.

MOOV Energy intends to utilise existing tanks and pumps etc. once decommissioned in the MOOV Commercial business unit. One pump may be reutilized on site.

Development should not hamper equitable access to the environment and should be avoided in areas known to be unsuitable, including flood plains, coastal risk areas, nuclear exclusion zones. Land use changes must prevent, minimise or mitigate the potential negative impacts on ecological infrastructure and ecosystem goods and services.

Furthermore, there is a need for development that does not result in a loss of critically important biodiversity or heritage resources. The project is unlikely to result in environmental degradation as the site is already transformed.

According to the January 2023 Northern District Plan Integrated District Spatial Development Framework (DSDF) & Environmental Management Framework (EMF):

In terms of electricity, adequate capacity is also available to accommodate future developments in the wider Kraaifontein area and adequate bulk water capacity is available to serve new developments between Greenville at Fisantekraal, and Kraaifontein.

In 2018, the average industrial cap rates were consistently low (thus lower risk and higher value associated with the property) across the district, indicating strong property market performance. The industrial nodes in the district include the Kraaifontein Industria area. The 'older' Kraaifontein industrial area has, over the last 5 years almost completely redeveloped. This should serve as an indicator of market demand in the area. Additionally, non-residential and commercial property values have significantly increased by more than 100% around industrial areas such as Kraaifontein Industrial.

The Kraaifontein industrial area is almost fully developed and infill in the Kraaifontein industrial area has almost been concluded, indicating the need for intensification of industry on existing plots, such as the project proposed. In particular, the Durbanville CBD and Cape Gate/Kraaifontein nodes offer an opportunity for integration and intensification.

The location is close to areas in need of employment, such as Bloekombos and Wallacedene, thus job creation could be a needed benefit of the project. During the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created.

The project is compatible with existing land uses in the area. According to City of Cape Town Industrial Surveys (2016), the land uses in Kraaifontein Industrial Area are dominated by the 'wholesale and retail trade & repair of vehicles', e.g. 49% wholesale & retail trade, followed by 24% manufacturing and 16% transportation & storage. These figures may have changed slightly with the addition of more distribution orientated uses in the area.

General industrial areas should be supported in industrial designated areas and allowances should be as per the Municipal Planning By-law.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
All comments will be included in the comments and responses report and attached to this BAR as Appendix F. The public will be notified of the opportunity to register as I&APs and to comment on the DBAR, along with relevant authorities. Comments received during the Public Participation Process will be addressed accordingly. Comments and recommendations of the various specialists have been included in the DBAR and EMPr. With respect to biodiversity, this includes the wetland specialist. <u>According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:</u> The assessment determined that the "wetland" situated adjacent to the property boundary is an artificial feature that has formed as a result of stormwater inputs from upslope development and impeded drainage due to the railway line immediately downslope. Despite the presence of aquatic habitat, the artificial wetland does not support any sensitive species or habitats. It has low diversity and is dominated by alien plant species. Due to the poor water quality of the run-off which flows into the artificial wetland, it is unlikely to support a diverse aquatic faunal community. It is therefore deemed to be of low ecological importance and sensitivity.	
6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
The project site is located within a "No Natural Remaining" area and is not located within a Critical Biodiversity Area, Ecological Support Area, or Other Natural Area according to the Overview of the Western Cape Biodiversity Spatial Plan. Additionally, as the site is transformed, there are no biodiversity sensitivities.	
7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
N/A the site is not located within or close to an ICMA zone.	
8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.
No changes to the screening report submitted with the application form.	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
The proposed development will use the existing site and further develop it and, in this way, maximise the use of the existing space. The proposed expansion activity will negate the need to develop a vacant/virgin site, which would otherwise result in potentially significant environmental impacts.	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
Six of the existing buildings (i.e. two warehouses, an outbuilding at the front of the site, the toilet and office area in the middle of the warehouse and two small storerooms) will be demolished as part of this proposal. Once the buildings are demolished, salvageable steel (steel sheeting, steel support structures and steel roofing) can be sold off as scrap metal. MOOV Energy intends to reutilise the existing tanks and pumps once decommissioned in the MOOV Commercial business unit. One pump may be reutilized on site. Materials from the demolished structures can be recycled for the construction of the wash bay. Domestic and construction-related wastes will be collected and kept separate. Where possible, recycling will be implemented. This proposal is for the expansion of fuel storage capacity at an existing fuel depot. The proposed expansion of fuel storage capacity (as well as the installation of associated fuel storage infrastructure) will tie into the existing infrastructure associated with the existing fuel depot.	
11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).
The site is existing therefore the site has all the necessary services available, i.e. any required services are already in place. A new dedicated oily water separator will be constructed, and the effluent will be discharged into the sewage system. The load volume is still to be confirmed. A discharge permit for the wastewater should be obtained for the discharge of this water. The proposed <u>wash bay discharge</u> will pass through the <u>existing oily water</u> separator. During testing of the firefighting systems, water demand will be higher. However, after commissioning, water demand will not increase. The operation of the facility will only require water supply for the admin office (i.e. toilets, washbasins, human consumption) and relocated washbay which are both existing water uses, therefore water usage should not increase as a result of the expansion of the storage and distribution of petroleum products (i.e. the tank farm itself won't require water). In addition, no water will be required or used for production and resultant wastewater will not be generated that could potentially be reused in the production process etc. Firefighting will only be required under abnormal conditions.	

Fire Water Requirements:

The facility is to be equipped with a full fire water system comprising of a water tank, booster pump and foam generating facilities. All manifold valves will be activated via electric actuators.

The foam system will be utilized for the top foam pourers to each tank and medium expansion foam pourers for bund fires. The tanks will be equipped with cooling water via cooling rings with spray nozzles designed to deliver the required cooling water application.

The semi-automated fire protection system will be activated via depressing the corresponding buttons for the foam and water systems on the mimic panel which is to be installed and operated from the fire-fighting pump station (exact locations will be confirmed during the detailed design stage).

The design criteria for the site water requirement are based on the following:

Bund Foam Application – 4,1 l/min/sq.m of largest sub-division in the tank farm

Tank Foam Application – 4,1 l/min/sq.m of tank roof surface area

Tank Cooling Water – 30 l/min/m of tank circumference to the largest two tanks

It is proposed to use Class 16 HDPE/PVC piping for belowground foam and water supply and painted steel piping (SABS 62/719) for aboveground services.

The requirement for tank cooling is 1 080 litres/min for each tank.

The requirement for tank foam is 426 litres/min for each tank.

Foam pourers will be of the Angus TPS 80 or similar type and mounted onto a tank flange. The riser pipe will be an 80NB steel pipe supported off the tank shell.

The requirement for bund foam is 693 litres/min for each tank's bund.

Foam pourers will be of the MEX type (Medium Expansion) and will be securely mounted on the bund walls.

The largest simultaneous water demand/requirement is:

- Bund Foam 693 l/min
- Tank Cooling (2 tanks) 2 160 l/min
- = Total Water Demand 2 853 l/min (The Pumps (diesel driven engine) will be sized for this demand)

The requirement for water storage is a min of 60 mins as per the code. Therefore, a water reservoir of min 171 180 litres will be required. In addition to the working volume as calculated, the unpumpable volume has been allowed for resulting in a storage volume of 203 000 litres.

This is to be stored in a prefabricated steel panel tank. Water supply to the tank will be drawn off the existing municipal water supply. The tank will be fitted with an automatic shut off valve which will close when the tank has reached its capacity and will open when water is drawn from the tank.

A booster pump will be utilized (diesel-powered engine) and allowance has been made for a duty and standby unit to be installed.

For premix generation, fixed flow in-line inductors will be used which will be connected to a 2000 litre foam concentrate tank. These inductors will be installed in the respective bund and tank foam manifold lines. The foam generating tank and equipment is to be installed under a canopy shielding it from the weather elements.

The minimum foam concentrate storage required for the facility is calculated as follows:

- Bund foam @ 693 l/min with 3% injection = 20,8 l/min
- Allow for 60 mins supply = 1 248 litres.
- Therefore, a 2000 litre tank is to be utilised for foam concentrate storage.

Electrical requirements:

1. Power supply to the decanting & loading pumps
2. Power supply to the battery charger on the fire pump engine
3. Power supply to the actuated fire system activation valves
4. Lighting to the tanks and pump bay
5. Automatic Tank Gauging to all tanks.
6. Tank Earthing and Bonding
7. Power to be distributed from a Motor Control Centre to the various electrical infrastructure.

Electricity demands will rise due to the daily operations and enhanced automation of systems. The new tank farm will require 6517.37 kWh of power per year.

Month	Energy Consumption (3 Lights, kWh)	Energy Consumption (ATG, kWh)	Energy Consumption (15 kW Motor 1 Hour per day, kWh)	Total Energy Consumption, kWh)
January	65.96	7.75	465	538.71

February	66.67	7.25	435	508.92
March	78.17	3.75	465	546.92
April	82.46	7.5	450	539.96
May	91.1	7.75	465	563.85
June	91.11	7.5	450	548.61
July	92.93	7.75	465	565.68
August	88.03	7.75	465	560.78
September	78.79	7.5	450	536.29
October	74.34	7.75	465	547.09
November	65.79	7.5	450	523.29
December	64.52	7.75	465	537.27
Year	939.87	87.5	5490	6517.37

	W	time
Lights	216	nighttime
ATG	250	24/7/365
Motor	15000	1 hr per day

According to the January 2023 Northern District Plan Integrated District Spatial Development Framework (DSDF) & Environmental Management Framework (EMF), in terms of electricity, adequate capacity is also available to accommodate future developments in the wider Kraaifontein area and adequate bulk water capacity is available to serve new developments between Greenville at Fisantekraal, and Kraaifontein.

| 12. | In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K. |
| **Need for the project:** MOOV Energy (Pty) Ltd (MOOV Energy), established in 2013, is the Caltex/Astron Energy Western Cape Branded Marketer supplying petroleum products to 90 Caltex/Astron Energy service stations and close to 3000 commercial clients in the Western Cape region. Since 2018, MOOV Energy has been operating a diesel storage and distribution facility on the proposed project property. MOOV Energy plans on increasing their on-site storage capacity of petroleum products by an additional 2 454 m³ to: - 1) improve security of supply, - 2) optimise logistics efficiency (fuel trucks can load directly at the depot), - 3) allow for increased flexibility to ad hoc/emergency fuel requests, and - 4) reduce waiting time at the refinery gantry. According to MOOV: South Africa is facing challenges of fuel supply and MOOV has taken a decision to proactively address the ripple effect this will have on their customers, by developing a bulk fuel storage facility to ensure security of supply. If this project was to not proceed, MOOV customers will be impacted by the effects of the envisaged national fuel shortage, which will lead to economic crisis and negative effects on MOOV's business. According to the DEA's Integrated Environmental Management Guideline on Need and Desirability (2017): **Background to desirability:** Addressing the need and desirability of a development is a way of ensuring (socially, economically and environmentally) sustainable development – in other words, that a development ensures maintenance of ecological integrity and is socially and economically justifiable. This relates directly to Section 24 of the Constitution of South Africa and entails taking into account the effects of decisions on all aspects of the environment and all people in the environment. This guideline specifically refers to the need to evaluate risks for and impacts on the geographical, physical, biological, social, economic and cultural aspects of the environment, in order to find the alternatives and options that best avoid negative impacts altogether, or where negative impacts cannot be avoided, to minimise and manage negative impacts to acceptable levels, while optimising positive impacts. This means providing the most benefit and causing the least damage to the environment as a whole, at a cost acceptable to society, in the long-term as well as in the short-term. Need and desirability therefore incorporate the aspect of financial viability (i.e. the considerations of the private developer/if a development is "do-able") as well as considering the broader community/public's specific needs and interests as well as the opportunity costs and distributional consequences as reflected in the IDP, SDF and EMF for the area. The content of the IDPs, SDFs, EMFs and other relevant plans, frameworks and strategies have been taken into account as mentioned Section E, Part 4 above. | |

Whether a proposed activity will be in line with or deviate from the plan, framework or strategy is not the issue per se, but rather the ecological, social and economic impacts that will result because of the alignment or deviation. As such, this BA specifically provides information on these impacts. The summary of impacts associated with this project can be found in Section J, Part 1.3 of this BAR.

Consideration of project impacts:

The broader community/public's specific needs and interests for the area were further considered through the use of public participation. Interested and affected parties (I&APs) were afforded an opportunity to make representation of their views in terms of the need and desirability considerations.

In South Africa there is a need for job creation and economic growth, however development must additionally consider "geographical, physical, biological, social, economic and cultural aspects of the environment" that may be affected by the proposed activity. This entails collectively considering ecological, social and economic impacts, including the impacts on people's environmental right, cultural heritage, access to resources, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), and health impacts.

This project will result in socio-economic impacts on livelihoods in the form of a number of temporary & permanent jobs that will be created and will improve access to petroleum resources. Additionally, the project will not significantly impact cultural heritage or open spaces (the site is already developed) nor air and water quality (based on the specialist studies undertaken). No significant nuisance, health or safety impacts are predicted either, provided mitigation measures are implemented.

During the assessment stages of this EIA process the need and desirability have been specifically assessed and evaluated, through the use of specialist input/studies in the form of a socio-economic impact assessment, traffic impact assessment, stormwater management plan, major hazardous installation quantitative risk assessment, air quality impact assessment, geotechnical assessment, geohydrology assessment, contamination assessment and wetland assessment. Additionally, a heritage screener was undertaken and an NID was submitted to Heritage Western Cape. A General Authorisation (GA) enquiry was submitted to the DWS.

Although the project is indirectly associated with potential impacts on climate change and the use of non-renewable natural resources (fossil fuels), the ecological/natural integrity of the area (such as the neighbouring artificial wetland) is unlikely to be significantly impacted.

Marine life, terrestrial biodiversity as well as agricultural land are not being degraded, destroyed, or depleted, as they are not relevant to the project area. The site is not identified to be situated within a CBA or an ESA (aquatic or terrestrial).

Please see Section H, Part 4 for the potential impacts of the proposed project on the natural environment related to water, air quality and soil.

Mitigation:

The impact mitigation hierarchy was considered, where alternatives were firstly considered to avoid negative impacts (e.g. use of resources) altogether, but where avoidance is not possible alternatives/measures were considered that mitigate, minimize, remedy and manage (including offsetting) the negative impacts (e.g. minimize the use of resources), while searching for alternatives to better enhance the positive impacts. An explanation of how the mitigation hierarchy has been applied to arrive at the best practicable environmental option can be found in Section I, Part 8 of this report.

Measures have been taken to ensure that the responsibility for the environmental health and safety consequences of the development have been addressed throughout the development's life cycle and that the mitigation measures proposed are realistic. These measures can be found in the EMP, (Appendix H).

Preferred alternatives:

It is also imperative to consider the need and desirability of the activity in the context of the preferred location to ensure the wise use of land. In other words, the following question was asked during this basic assessment: is it the right place for locating the type of land-use/activity being proposed? Based on the socio-economic context and special characteristics (e.g. existing land uses) of the area, the answer was yes. The location reduces the need for transport of goods as it is in closer proximity to the refinery than the other location alternatives that were initially considered. This project compliments other land uses in the area, is in line with the planning for the area and optimises the use of existing land resources (by taking place on an existing site), thus discouraging "urban sprawl" and contributing to compaction/densification of industry. Special locational factors also favour the specific location (e.g. the location of a strategic mineral resources, access to road network -the N1 highway). An in-depth examination of the alternatives considered (or reasoning for the lack of their consideration) for location (as well as activity, design/layout, technology and operation) can be found in Section H.

Two alternative sites (located in Worcester; 33°38'28"S 19°28'52"E and 33°38'48"S 19°28'22"E) were initially considered, however, due to the various factors (security concerns, spatial restrictions – even too small, restrictions on ingress and egress to the properties, geographically too far from the refinery), only the preferred site will be considered/assessed for this application.

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that if the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

Yes, the public participation included pre-application and post-application notification.

Pre-application:

- An advert (English & Afrikaans) was placed in a local newspaper on 10/04/2024, namely the Tygerburger. This is a weekly, free newspaper in the northern suburbs of Cape Town, including Bellville, Durbanville, Parow, Kuils River, Brackenfell, Kraaifontein, Goodwood, Milnerton, Table View, Tyger Valley, De Grendel, Eerste River, Elsies River and Ravensmead.
- A Background Information Document (BID), in English & Afrikaans, was handed out to neighbouring properties within a 200 m radius of the proposed project site on 10/04/2024. Neighbouring properties were requested to sign the register and in instances where the neighbouring residents/businesses were unavailable, the BID was placed in their letter boxes/attached to the gate/fence of the property and photographs were taken as evidence.
- 3x English and 3x Afrikaans (A2 size, laminated, colour) site notices were placed at the proposed project site, with one pair being placed on the door and the other two pairs being placed on the boundary fence/gate of MOOV Energy. Photographs were taken as evidence.
- Emails were also sent to I&APs (relevant government officials) on 10/04/2024 and 11/04/2024 with the BID attached. Read receipts were requested.
- The interested and affected parties were given 30 calendar days (from **11 April 2024** to **13 May 2024**) to register as I&APs and provide initial feedback. Any requests to register as an I&AP as well as feedback received were recorded.

Post-application:

- An advert (English & Afrikaans) will be placed in the Tygerburger on 10/12/2025. The newspaper advert includes the link to the DBAR.
- A notice, in English & Afrikaans, will be handed out to neighbouring properties within a 200 m radius of the proposed project site on 09/12/2025 and 10/12/2025. Neighbouring properties will be requested to sign the register and in instances where the neighbouring residents/businesses are unavailable, the document will be placed in their letter boxes/attached to the gate/fence of the property and photographs will be taken as evidence. Notices include the link to the DBAR.
- 3x English and 3x Afrikaans (A2 size, laminated, colour) site notices will be placed at the project site on 09/12/2025 and 10/12/2025. Photographs will be taken as evidence. Site notices include the link to the DBAR.
- Emails will also be sent to interested and affected parties (including relevant government officials) on 09/12/2025 and 10/12/2025 with the notice (including the link to the DBAR) attached.
- The interested and affected parties (I&APs) will be given 30 calendar days (from **10 December 2025 to 2 February 2026**) to register as I&APs and provide feedback/review the DBAR. Any requests to register as an I&AP as well as feedback received will be recorded. All comments will be responded to and submitted as part of the Final Basic Assessment Report.

See Appendix F for further details on the public participation process.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

All State Departments and Organs of State indicated in the Notice of Intent form were consulted with.

-City of Cape Town: Community Services & Health, Specialised Environmental Health Air Quality Management Unit
Contact: Mr Ian Gildenhuys
Email: Ian.Gildenhuys@capetown.gov.za
Tel: 021 444 2914
Physical Address: 246 Voortrekker Road, Vasco, 7460

-City of Cape Town: Environmental & Heritage Management (Northern Region)
Contact: Ms Sonja Warnich-Stemmet
Tel: 021 444 0598
Email: Sonja.warnichstemmet@capetown.gov.za

Physical Address: Milnerton Municipal Offices, 87 Pienaar Road, Milnerton

-City of Cape Town: Municipal Ward Councillor (Ward No. 111)
Contact: Brenda Hanson
Email: Brenda.Hansen@capetown.gov.za
Tel/cell: 072 338 8425/ 021 987 7290

-Department of Water and Sanitation
Contact: Nelisa Ndobeni
Email: NdobeniN2@dws.gov.za
Tel: 021 941 6000 / 021 941 6140
Physical address: 52 Voortrekker Road, Spectrum Building, Bellville, 7530

-City of Cape Town: Municipal Ward Councillor (Ward No. 101)
Contact: Siyabonga Duka
Email: Siyabonga.Duka@capetown.gov.za

-City of Cape Town: Municipal Ward Councillor (Ward No. 102)
Contact: Rhynhardt Bresler
Email: Rhynhardt.Bresler@capetown.gov.za

-Heritage Western Cape
Email: hwc,hwc@westerncape.gov.za
Contact: Waseefa Dhansay
Email: waseefa.dhansay@westerncape.gov.za

-Department of Environmental Affairs and Development Planning: Air Quality Management
Contact: Joy Leaner
Email: joy.leaner@westerncape.gov.za

-Department of Environmental Affairs and Development Planning: Pollution and Chemicals Management
Contact: Gunther Frantz
Email: Gunther.Frantz@westerncape.gov.za

-Department of Transport and Public Works Directorate: Road Planning
Contact: Devlin Fortuin
Email: devlin.fortuin@westerncape.gov.za

-City of Cape Town: Water & Sanitation Directorate: Water & Waste
Contact: Chanee Johnstone
Email: Chanee.Johnstone@capetown.gov.za

-City of Cape Town: TIA & Development Control Directorate: Transport
Contact: Bill Jones
Email: bill.jones@capetown.gov.za

-City of Cape Town: Environmental Management
Contact: Janet Bodenstein
Email: Janet.Bodenstein@capetown.gov.za

-City of Cape Town: Spatial Planning & Environment: Environmental Management
Contact: Azanne van Wyk
Email: azanne.vanwyk@capetown.gov.za
Contact: Lauren King
Email: lauren.king@capetown.gov.za
Contact: Charlene Dickson Paulsen
Email: Charlene.DicksonPaulsen@capetown.gov.za

-City of Cape Town: Metropolitan Municipality (Municipal Manager)
Contact: Lungelo Mbandazayo
Email: lungelo.mbandazayo@capetown.gov.za

-CapeNature: Land Use Advice
Contact: Ismat Adams
Email: iadams@capenature.co.za

-City of Cape Town: Safety and Security Fire and Rescue
Contact: Andries Moolman
Email: andries.moolman@capetown.gov.za

-City of Cape Town: Water Pollution Control, Technical Services, Water and Sanitation
Contact: Paul Viljoen
Cell: 072 440 1400
Email: paulus.viljoen@capetown.gov.za

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

N/A as all relevant authorities were sent a notification letter with a link to the Basic Assessment Report.

5. If any of the State Departments and Organs of State did not respond, indicate which.

N/A. To be determined after commenting period

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

N/A. To be determined after commenting period

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that "Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."

All the comments received from I&APs on the pre-application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
 - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
 - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
 - if a facsimile was sent, a copy of the facsimile Report;
 - if an electronic mail was sent, a copy of the electronic mail sent; and
 - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	✓YES	NO
1.2.	Provide the name and or company who conducted the specialist study.	Contamination Assessment – Kantey & Templer (independent review by JG Afrika) Geohydrology Assessment – JG Afrika	
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		

According to the Cape Farm Mapper, the aquifer is classified as a major aquifer of most vulnerability and high susceptibility. The site is classified as a sole source aquifer (surface water) (Jones S. and Conrad J., 1998).
 Aquifer Type and Yield Classification: Fractured 2.0 - 5.0 l/s
 As it is a water scarce part of the country it is important to protect the aquifer. This entails bunding to prevent any spills from entering the subsurface.

A search of the NGA¹ georeferenced geohydrological database of licensed groundwater abstractions points was conducted. Two registered abstraction points were identified within a 2 km radius of the site, however none were present within 1 km of the site.

<i>Borehole ID</i>	<i>Coordinates</i>	<i>Distance (m) and Direction</i>	<i>Status and Use</i>
3318DC00095	33°51'14.83"S; 18°44'34.33"E	1 936.96 m SE	In use -Agriculture
3318DC00085	33°49'41.84"S; 18°43'40.33"E	1 463.68 m N	In use -Domestic

¹ NGA: National Groundwater Archive.



Figure 4: Stormwater infrastructure layout as per City of Cape Town GIS data for the area.

Moov is not the only potential source of groundwater (and "wetland") pollution as evidenced by the contamination assessment and geohydrology assessment. Stormwater drainage from the streets and industrial properties nearby the site may also contribute to contamination of this artificial wetland, as seen in Figure 4 above.

According to the Geohydrology Assessment undertaken by JG Afrika dated July 2025:

The aquifer system underlying the site is classified as Major however, with geological structures being absent within the project area, the Geohydrological potential is considered low to moderate.

The DRASTIC mapping index confirms the Major aquifer unit as having a "Moderate" vulnerable rating. For the proposed ASTs, vulnerability is considered medium due to the shallow groundwater, and offset by the proposed bunding and containment design. The associated Parsons Groundwater Quality Management System gives the site a High Level of Protection index when comparing vulnerability as the second variable.

Limited groundwater use was identified within 2 km of the study area. The strategic value is considered Low as the area is likely serviced by municipal supply. The associated Parsons Groundwater Quality Management System gives the site a Medium Level of Protection index when comparing strategic value as the second variable.

The main potential contaminant sources within the project area include the existing ASTs as well as runoff from the existing wash bay located within the south eastern boundary of the site. Workshops, vehicle maintenance bays and fuel storage areas are also potential contaminant sources.

The water quality status quo is that site activities have not impacted on the downslope wetland to date. The water quality status quo assessment indicated localised impacts of a likely diesel nature in the vicinity of the existing bund. Downstream groundwater sample points reported all organic results below the laboratory detection levels, thus indicating no further impacts on the groundwater receiving environment. The groundwater quality in the area is typically not suitable for human consumption without treatment, due to the industrial nature of the project area.

Impacts During Construction

During the construction phase, the removal of the existing ASTs poses an immediate to short-term risk of hydrocarbon contamination which needs to be managed during the decommissioning process. Workshop areas, maintenance of heavy vehicles, and fuel stores also pose a risk of hydrocarbon contamination. Other construction phase activities including temporary sanitation, waste handling, excavations and new infrastructure. All waste handling and sanitation is considered temporary and therefore poses a low and short-term risk. Areas of excavation may result in accelerated erosion, increased storm water runoff, increased turbidity loading, increased microbiological loading and mobilisation of existing contaminants in the soils. Counteractive measures that can be implemented including the installation of temporary containment bunds and surface water runoff controls around the existing ASTs during disassembly, should the existing bund be removed before removing the ASTs and, effective management of the temporary sanitation and waste handling facilities to avoid spills or loss of containment. Appropriate berms and surface water runoff controls should be implemented around excavations if necessary.

Impact	Mitigation measure
Mobilisation of existing elevated macro and micro compounds in the soils matrix due to <u>excavations</u>	Controlled earthworks and spoil management
<u>Excavation</u> areas and increased turbidity loading from open <u>excavations and stockpiles</u>	
Loss of containment of residual product during removal of existing ASTs and previous infrastructure	Follow decommissioning procedure. Temporary bunds and confine temporary waste storage areas. <u>Spill kits on site</u>
Hydrocarbons from plant / equipment storage areas and/or breakdowns	Use of <u>drip trays</u> , good <u>vehicle maintenance</u> , <u>spill kits</u> on site
Spills and/or loss of containment from <u>storage and handling</u> of waste and hazardous materials of variable nature at laydown areas, including temporary sanitation	Bunded areas and/or compacted surfacing to reduce seepage. <u>Restrict areas for refuelling of vehicles and machinery</u>
Contamination of downslope wetland from runoff and seepage of hydrocarbons during decommissioning	Conduct Contaminated Land Assessment if any contaminated in situ soils are identified. Install early warning groundwater monitoring points between proposed <u>new</u> tank farm, wash bay, separator and the wetland at the onset of the construction phase (these wells must not prohibit construction or be impacted by construction) and monitor/sample quarterly during construction

Impacts During Operation

During the operational phase, loss of containment or prolonged leaks from AST facilities may pose a risk of hydrocarbon contamination. Further to this during periods of heavy rainfall reduced efficiency or blockage of the stormwater management system may encourage surface runoff, particularly in areas underlain by impermeable surfaces. Surface runoff in the vicinity of workshops or vehicle maintenance areas and fuel stores and could pose risks to groundwater or the adjacent wetland. No increase or decrease in groundwater resource quantity is expected from the proposed infrastructure. No impact on the reduction of groundwater resource quantity is expected as there is municipal supply.

All activities present risks that score LOW for the pre mitigation ratings, with limited activities scoring MODERATE. Most scores can be reduced with the introduction of proposed mitigation measures.

Impact	Mitigation measure
Overflow of stormwater management system during periods of heavy rainfall or from unmaintained blockages	Correct <u>stormwater design</u>
Prolonged leaks from ASTs and associated infrastructure	<u>Routine inspection and maintenance of infrastructure</u> . Tank farm in concrete hardstand and approved <u>bund</u> design. <u>Rapid response clean up</u> to identified leaks. <u>Spill kits</u> on site

Major loss of containment from ASTs and associated infrastructure	Tank filling procedures, valve, tank and link <u>inspections</u> and <u>pressure testing</u> . Tank farm in concrete hardstand and approved <u>bund</u> design. Rapid response clean up to spills. Spill kits on site
Spills and/or loss of containment from storage and handling of waste and hazardous materials of variable nature at laydown areas	<u>Waste</u> storage in <u>concrete</u> hardstand <u>demarcated</u> areas. <u>Waste management plan</u>
Prolonged leaks from office and site <u>sanitation</u> infrastructure	Early warning <u>groundwater monitoring</u>
Runoff and/or leaks from wash bay, workshop and <u>plant storage areas</u> and <u>oil separators/traps</u> being compromised	<u>Routine inspection and maintenance of infrastructure</u> . <u>Waste handling</u> . Wash bay, <u>oil separators/traps</u> inspections and clean-up. <u>Certified waste removal</u>
Contamination of downslope wetland from runoff and seepage of hydrocarbons during new tank farm operations	Undertake quarterly monitoring on the installed groundwater monitoring network during the initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis.

Current indications suggest no impacts to the groundwater receiving environment however, it is recommended that a groundwater monitoring network be installed around the proposed new concrete bund (and downgradient of the separator and wash bay) to act as an early warning system to historical and possible future impacts from the historical and proposed infrastructure and subsequent to the initial baseline groundwater monitoring exercise, quarterly monitoring will need to be undertaken during the construction phase and initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, sampling frequency can be adjusted to a biannual/annual basis.

According to the Contamination Assessment undertaken by Kantey & Templer dated July 2025:

- The assessment was conducted in areas where contamination was suspected to have been present, designated as Study Area 1 and Study Area 2 (staging areas for fuel tankers on-site) and the Tank Farm Area located within close proximity to the two 23 m³ diesel ASTs.
- Eight soil and four groundwater samples were collected and submitted to a SANAS²-accredited laboratory for analyses of BTEXN³, MTBE⁴, TAME⁵ and TPH⁶-banding.
- Adsorbed phase concentrations detected in the soil samples did not exceed any applicable SSV⁷ criteria. Consequently, the source-pathway-receptor linkages via soil are considered incomplete at this stage and do not pose a risk to on- and off-site receptors.
- The TPH (C₁₀-C₁₄) concentration detected in one of the groundwater samples exceeded the Tier 1 RBSL⁸ for the ingestion of groundwater in a residential scenario, however, no groundwater users were identified within close proximity to the site. Thus, the source-pathway-receptor linkage via the ingestion of groundwater is considered incomplete at this stage.
- Furthermore, targeted hydrocarbon compound concentrations within the groundwater sample collected adjacent to the off-site wetland to the southwest were below the detection limit. Consequently, dissolved phase concentrations detected on-site are considered to not pose a risk to the wetland at this stage as the source-pathway-linkage is considered incomplete.

1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.
The groundwater depth in the area is approximately 9.18 metres below ground level (m bgl) according to Cape Farm Mapper. However, the contamination assessment and geotechnical assessments identified groundwater at a depth of approximately 1.2 to 2 m bgl. Due to the installation of aboveground storage tanks (as opposed to underground storage tanks), it is unlikely that groundwater will influence foundations and therefore groundwater depth has not further been considered for the proposed development. The risk of spills reduces with new tanks and the tanks being located with a bund area is an important mitigation measure to reduce impacts to groundwater by ensuring that no spill permeate into the subsurface. Any spills will be drained to an oil-water separator system (including from the wash bay) and an Industrial Effluent/discharge permit will be acquired before being discharged to the municipal sewer system. The wet stock should be monitored daily to ensure there are no losses (installation of an ATG). If losses are detected, then an investigation should be conducted including integrity testing of the fuel infrastructure. It is recommended that quarterly monitoring be undertaken of the <u>groundwater monitoring wells</u>. Further mitigation measures to prevent groundwater contamination are included in the EMP.	

² SANAS: South African National Accreditation System.
³ BTEXN: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene.
⁴ MTBE: Methyl Tert-Butyl Ether.
⁵ TAME: Tert-Amyl Methyl Ether.
⁶ TPH: Total Petroleum Hydrocarbon.
⁷ SSV: Soil Screening Value.
⁸ RBSL: Risk Based Screening Level.

2. Surface water

2.1.	Was a specialist study conducted?	☒ YES	☐ NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Freshwater Consulting			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

The site is classified as part of the Boland Strategic Water Source Area (SWSA).

The National Spatial Development Framework (NSDF) (DALRRD and DPME, 2021) recommends that land-uses that reduce run-off or stream flow, or affect water quality (e.g. mining, plantations, crop production and overgrazing) should be avoided in SWSAs, that wetlands in SWSAs should be kept in good condition or rehabilitated, and that invasive alien plants in SWSAs should be cleared. The main pressures to SWSAs include the alteration of flow through dams and abstraction of water, removal of natural vegetation along riverbanks or wetlands through cultivation, mining or urban development, growth and spread of invasive alien species, inadequate grazing management which causes erosion, and pollution from point and diffuse sources. Pressures on the ecological condition of SWSAs are often linked to intensive land uses such as cultivation, urban development and mining which have substantial ecological impacts in themselves and can also result in fragmentation of the landscape, further impacting the condition of those natural areas and patches that remain intact. The primary way to maintain healthy, well-functioning water-related ecological infrastructure is to maintain water-related ecosystems and their associated catchments and landscapes in a natural or at least semi-natural state. It is important that the use and management of land, rivers and wetlands in SWSAs does not compromise their water production function. This project does not involve any of the activities which put pressure on SWSAs and as this site is already transformed, no area of importance to the Boland SWSA will be lost. Additionally, no watercourses or wetlands are present on site and the artificial wetland located adjacent to the site has undergone a wetland assessment.

According to the Cape Farm Mapper:

- A channelled valley-bottom wetland is located 1 279.87 m Northeast of the proposed site for the increase in fuel storage capacity
- A series of depression wetlands are located 1 399.37 m Northeast of the site
- A depression wetland is located 2.39 m Southwest of the site
- A non-perennial river is located 1 626.50 m Northwest of the site
- A depression wetland is located 524.09 m North of the site
- A series of artificial NFEPA wetlands starting at 1 839.48 m Northeast of the site
- A seep wetland is located 1 517.11 m Northwest of the site

"Depression Wetland" located alongside the boundary of the site:

Not registered as a NFEPA-wetland. Wetland located within shared ESKOM and Transnet servitude. Appears to be a permanent wetland which has vegetation comprising of both alien and indigenous vegetation (i.e., reeds, sedges, lilies and grasses). Area is largely transformed. High degree of pollution/litter visible within wetland and is therefore assumed to offer limited to no ecological functionality. This can be seen in the photographs included in Appendix C.



Figure 5: Image depicting "depression wetland" obtained from the Cape Farm Mapper

According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:

The wetland assessment found this wetland to be an **artificial** feature that has formed as a result of stormwater inputs from upslope development and impeded drainage due to the railway line immediately downslope. The wetland does not support any important or endangered habitats from an ecological perspective. Nevertheless, the wetland does function as a stormwater attenuation pond and therefore provides some level of ecosystem services within the catchment. Given its location adjacent to an industrial area, the most important of these services is the amelioration of water quality. The wetland discharges directly into the stormwater infrastructure of the City of Cape Town which conveys it to the Mosselbank River. The wetland also overlies an aquifer that is of high susceptibility to contamination from anthropogenic activities and therefore a geohydrology assessment was also undertaken.

3. Coastal Environment

3.1.	Was a specialist study conducted?	YES	✓NO
3.2.	Provide the name and/or company who conducted the specialist study.		
	N/A		
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
	N/A as the project site is situated in the industrial area of Kraaifontein, which is situated more than 20 km from the Western Cape coastline.		
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
	N/A		
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		
	N/A		

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	✓NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
	N/A		
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		

The following systematic conservation planning and biodiversity tools have been used:

- Biodiversity Spatial Plan (BSP) (the Cape Farm Mapper)
- SANBI BGIS City of Cape Town
- NFEPA
- The National Web based Environmental Screening Tool
- Google Earth historic imagery
- Groundwater Quality of South Africa Map (Jones S. and Conrad J., 1998)

These tools were used to determine the conservational value of the proposed site for development.

According to the Cape Farm Mapper, the site is not identified to be situated within a CBA or an ESA (aquatic or terrestrial). The project site is located within a "No Natural Remaining" area and is not located within a Critical Biodiversity Area, Ecological Support Area, or Other Natural Area according to the Overview of the Western Cape Biodiversity Spatial Plan.

The Cape Farm Mapper depicts the following:

- An ESA (restore) is 2 422.83 m Northeast of the site
- A CBA (degraded) is 702.64 m East of the site
- A CBA (terrestrial) is 834.53 m Southeast of site
- The CBAs and CBAs (degraded) identified during the desktop study are located on transformed areas (i.e. overlap an informal settlement).
- The Cape Winelands Biosphere Reserve is 2 275.76 m East of the site

The Cape Farm Mapper indicates that the site falls within the Cape Flats Sand Fynbos, which is critically endangered according to the National Environmental Management: Biodiversity Act 10 of 2004 list of threatened ecosystems in need of protection.

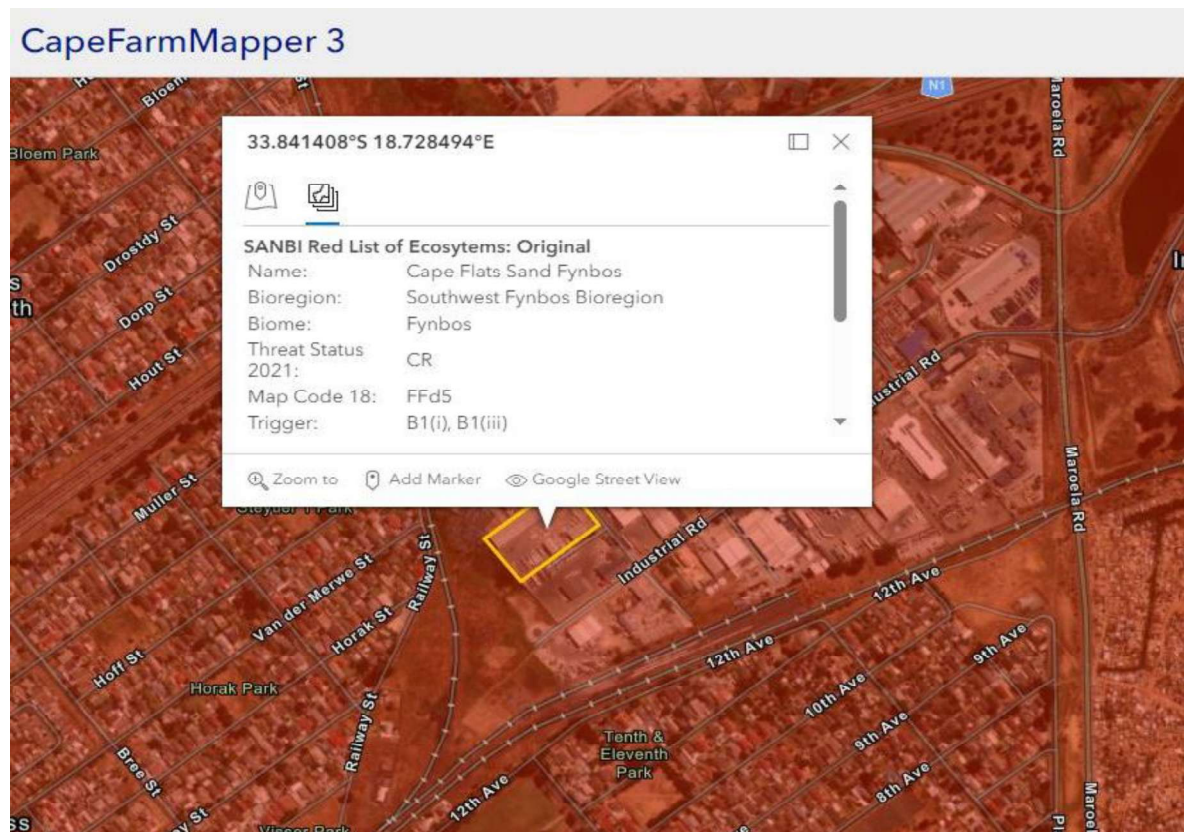


Figure 6: SANBI Red List of Ecosystems: Original

However, the project site has been completely transformed and thus this vegetation is no longer present on site. This can be seen in the photographs below as well as those included in Appendix C.

			
Photo 1: View of staff vehicles parked adjacent to existing aboveground storage tanks and oil store.	Photo 2: View of staff vehicles parked adjacent to truck parking area.		
			
Photo 3: View of existing waste storage area at the front of the depot.	Photo 4: View of existing truck parking area with boundary wall.		

Terrestrial Biodiversity, Plant Species and Animal Species

The site is located within the Boland Strategic Water Source Area (SWSA) and being indicated to contain Cape Flats Sand Fynbos (CFSF), a Critically Endangered (CR) vegetation type.

The National Spatial Development Framework (NSDF) (DALRRD and DPME, 2021) recommends that land-uses that reduce run-off or stream flow or affect water quality (e.g. mining, plantations, crop production and overgrazing) should be avoided in SWSAs, that wetlands in SWSAs should be kept in good condition or rehabilitated, that invasive alien plants in SWSAs should be cleared, that water-related ecosystems and their associated catchments and landscapes be maintained in a natural or at least semi-natural state, and that the use and management of land, rivers and wetlands in SWSAs does not compromise their water production function. The main pressures to SWSAs include the alteration of flow through dams and abstraction of water, removal of natural vegetation along riverbanks or wetlands through cultivation, mining or urban development, growth and spread of invasive alien species, inadequate grazing management, and pollution. Pressures on the ecological condition of SWSAs are often linked to intensive land uses such as cultivation, urban development and mining. This project does not involve these activities, will not result in fragmentation of the landscape and no area of importance to the Boland SWSA will be lost as it is proposed to take place on the existing site's footprint. Additionally, surface runoff will be controlled through the measures included in the stormwater management plan.

CFSF is statutorily conserved as small patches in Table Mountain National Park at Tokai, and at Rondebosch Common, Bracken Nature Reserve and Blaauwberg Conservation Area. Some good stands that have not been proclaimed are found at Milnerton Racecourse, Kenilworth Racecourse, 6 Base Ordinance Depot and Platteklouf. Very few additional areas are available that could conserve CFSF - the only potential area that could protect an ecologically representative patch is located east of Blaauwberg Hill, towards the N7. The project site does not fall within any of these areas. CFSF is mismanaged by mowing, fire protection and by alien plant invasion. None of these activities will take place for the project.

Anthropogenic activities, associated with the previous clearance and current operation of the site have resulted in the transformation and disturbance of the area and have resulted in the previous clearance of the CFSF vegetation type. As per Mucina and Rutherford, 2006, the CFSF is comprised of dense, medium and tall ericoid shrubland containing scattered emergent tall shrubs (dominated by proteoid and restioid fynbos), where aseraceous and ericaceous fynbos are located in drier and wetter areas, respectively. Thus, due to previous anthropogenic activities, the site does not support vegetation characteristic of the CFSF.

The site is well-established as a diesel storage and distribution facility, is completely transformed (built-up), devoid of any flora, and not located close to any intact indigenous vegetation. The proposed increase in storage capacity would therefore have no impact on the plant species.

The site is indicated to contain sensitive species according to the National Screening Tool.

The South-Western African dung beetle subgenus *Scarabaeus* (*Pachysoma*) *aesculapius* is indicated to be found on the site. However, this species is endemic to the West Coast of Southern Africa and the habitat of the species is firm sand on coastal hummocks, riverbanks and vegetated dunes (Harrison, Scholtz, & Chown, 2003).

The project site is not classified as this type of habitat and therefore the species is unlikely to be found on a transformed landscape such as the site in question.

The site is indicated to contain Peringuey's Meadow Katydid (*Conocephalus peringueyi*). According to SANBI, mountains in the fynbos biome are the only known habitat of this species, meaning that the species is highly unlikely to be found on a transformed landscape such as the site in question.

The site is also indicated to contain the Yellow-Winged Agile Grasshopper (*Aneuryphymus montanus*). According to SANBI, this species is associated with fynbos vegetation, where it has been collected "amongst partly burnt stands of evergreen Sclerophyll in rocky foothills" (Brown 1960). It prefers South-facing cool slopes (Kinvig 2005). Again, the project site does not contain its known habitat and as such, the Yellow-Winged Agile Grasshopper is not expected to be found in this transformed landscape.

The project site is devoid of any vegetation, therefore there is no suitable habitat for the animal species of concern indicated in the Screening Tool Report and they are therefore unlikely to be found on site or to be impacted by the proposed activity. Since the site does not support vegetation characteristic of the Cape Flats Sand Fynbos, the site may not have the characteristic habitat required to support animal species characteristic of the Cape Flats Sand Fynbos. Furthermore, it was determined that the proposed increase in storage capacity will have no significant impact on the terrestrial biodiversity of the surrounding area.

Aquatic Biodiversity and Hydrology

There are no water features (watercourses or wetlands) present on-site and the "depression wetland" located adjacent to the site has undergone a wetland assessment.

The "depression wetland" located adjacent to the site is not registered as a NFEPA-wetland, is located within shared ESKOM and Transnet servitude, appears to be a permanent wetland which has vegetation comprising of both alien and indigenous vegetation (i.e., reeds, sedges, lilies and grasses), the area is largely transformed, high degree of pollution/litter visible within wetland, and is therefore assumed to offer limited to no ecological functionality.

According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:

The wetland assessment found this wetland to be an **artificial** feature that has formed as a result of stormwater inputs from upslope development and impeded drainage due to the railway line immediately downslope.

The City of Cape Town's Biodiversity Network mapping (City of Cape Town, 2018), the City of Cape Town's wetland mapping (City of Cape Town, 2017), the National Freshwater Ecosystem Priority Areas (NFEPA) (Nel *et al.*, 2011) and the National Wetland Mapping Version 5 (Van Deventer *et al.*, 2018) mapping initiatives were consulted to determine if there are any areas identified as priorities for conservation, on or near to the study site. There are no critical biodiversity areas or ecological support areas mapped on or adjacent to the site. The National Freshwater Ecosystem Priority Areas (NFEPA) (Nel *et al.*, 2011) and the National Wetland Mapping Version 5 (Van Deventer *et al.*, 2018) mapping initiatives have not mapped any wetlands on or near the site. The City of Cape Town wetland mapping has mapped the wetland which occurs on Erf 21593, south of the site, as a natural or semi-natural wetland. This is connected to another wetland, mapped as transformed, which occurs on Erf 2295. These areas were visited on the 23rd of May 2024. The transformed wetland mapped by the City of Cape Town on Erf 2295 has been developed. The remaining extent of the wetland on Erf 21593, mapped as natural or semi-natural by the City of Cape Town, was observed on site. The wetland is fed by a stormwater channel that conveys flow from the south-east, as well as directly from flows off the roads of the industrial area and from the developed erven 21596, 21594 (study site), 11477, 10268 and 5266. The permanently saturated areas of the wetlands are dominated by dense growth of *Typha capensis* bulrushes. The seasonal edges are overgrown with kikuyu grass (*Cenchrus clandestinus*), *Pycnus polystachyos* var. *polystachyos*, Spanish reed (*Arundo donax*) Castor oil (*Ricinus communis*) and dock weed (*Rumex crispus*). At the time of the site visit, the wetland had recently been disturbed by the removal of vegetation and sediment by machinery.

Despite the presence of aquatic habitat, the wetland does not support any sensitive species or habitats. It has low diversity and is dominated by alien plant species. Due to the poor water quality of the run-off which flows into the wetland, it is unlikely to support a diverse aquatic faunal community. It is therefore deemed to be of low ecological importance and sensitivity.

The findings of the wetland assessment were informed by a desktop review of available information as well as a site visit. The following methods were used to assess the freshwater ecosystems on the site:

- -The ecological importance and sensitivity of the wetland habitats was assessed according to DWAF, 1999;
- -The ecosystem services supplied by the wetland areas were assessed using Wet-EcoServices as described by Kotze *et al* (2020); and
- -The risk posed to water resources by the activity was assessed using the Risk Assessment Matrix developed by the DWS and legislated in GN 4167 of 2023.

Maps and data used for geohydrology study:

- Map sheet titled "3318 CAPE TOWN", at a scale of 1:250000, dated 1990, of the Geological Map Series, supplied by the Department of Mineral and Energy Affairs
- Map sheet titled, "CAPE TOWN 3317", at a scale of 1:500000, first edition, dated 1999, of the Hydrogeological Map Series of the Republic of South Africa, supplied by the Directorate: Geohydrology, of the Department of Water Affairs and Forestry
- Map Sheet titled "3318DC", digital version, at a scale of 1:50 000, unknown date, of the Topocadastral Map Series, supplied by the Surveyor General

- National Groundwater Archive (NGA) digital information, as supplied by The Department of Water and Sanitation (DWS) as at December 2024
- Water Allocation Resource Management System (WARMS) digital information, as supplied by The Department Water and Sanitation (DWS) as at May 2024
- Google Earth Pro version 7.3.6 of December 2022.

No watercourses, other than the "depression wetland" adjacent to the site, are situated within a 500 m radius of the project site that could potentially be affected by the proposal if all mitigation measures implemented, and the nearest river is 1 593 m from the site boundary.

The proposed activity is therefore unlikely to have a significant impact on the water resources and aquatic biodiversity in the surrounding area.

Please refer to Appendix D for the Biodiversity Overlay Maps (SANBI BGIS as well as the Cape Farm Mapper).

4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.
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The WCBS spatial data and mapping was taken into consideration during the screening of the development via the Cape Farm Mapper website.

The project site is located within a "No Natural Remaining" area and is not located within a Critical Biodiversity Area, Ecological Support Area, or Other Natural Area according to the Overview of the Western Cape Biodiversity Spatial Plan. Additionally, as the site is transformed, there are no biodiversity sensitivities.

According to the Cape Farm Mapper:

- The Cape Winelands Biosphere Reserve is located 2 275.76 m East of the site
- A CBA (degraded) is located 702.64 m East of the site
- A CBA (terrestrial) is located 834.53 m Southeast of the site
- The CBAs and CBAs (degraded) identified during the desktop study are located on transformed areas (i.e. overlap buildings/informal settlements).
- An ESA (restore) is located 2 422.83 m Northeast of the site

According to the Cape Farm Mapper, the site is classified as SANBI Red List of ecosystems: Original - Cape Flats Sand Fynbos Threat Status 2021: CR and is classified as Ecological threat status CR (A1 & D1). Furthermore, the area starting from 19.70 m Southwest of the site is classified as SANBI Red List of ecosystems: Remnants -Cape Flats Sand Fynbos Threat Status 2021: CR.

CapeFarmMapper 3



Figure 7: SANBI Red List of Ecosystems: Remnants

Terrestrial Biodiversity, Plant Species and Animal Species

The site is located within the Boland Strategic Water Source Area (SWSA) and being indicated to contain Cape Flats Sand Fynbos (CFSE), a Critically Endangered (CR) vegetation type.

The National Spatial Development Framework (NSDF) (DALRRD and DPME, 2021) recommends that land-uses that reduce run-off or stream flow or affect water quality (e.g. mining, plantations, crop production and overgrazing) should be avoided in SWSAs, that wetlands in SWSAs should be kept in good condition or rehabilitated, that invasive alien plants in SWSAs should be cleared, that water-related ecosystems and their associated catchments and landscapes be maintained in a natural or at least semi-natural state, and that the use and management of land, rivers and wetlands in SWSAs does not compromise their water production function. The main pressures to SWSAs include the alteration of flow through dams and abstraction of water, removal of natural vegetation along riverbanks or wetlands through cultivation, mining or urban development, growth and spread of invasive alien species, inadequate grazing management, and pollution. Pressures on the ecological condition of SWSAs are often linked to intensive land uses such as cultivation, urban development and mining. This project does not involve these activities, will not result in fragmentation of the landscape and no area of importance to the Boland SWSA will be lost as it is proposed to take place on the existing site's footprint. Additionally, surface runoff will be controlled through the measures included in the stormwater management plan.

CFSF is statutorily conserved as small patches in Table Mountain National Park at Tokai, and at Rondebosch Common, Bracken Nature Reserve and Blaauwberg Conservation Area. Some good stands that have not been proclaimed are found at Milnerton Racecourse, Kenilworth Racecourse, 6 Base Ordinance Depot and Platteklouf. Very few additional areas are available that could conserve CFSF - the only potential area that could protect an ecologically representative patch is located east of Blaauwberg Hill, towards the N7. The project site does not fall within any of these areas. CFSF is mismanaged by mowing, fire protection and by alien plant invasion. None of these activities will take place for the project.

Anthropogenic activities, associated with the previous clearance and current operation of the site have resulted in the transformation and disturbance of the area and have resulted in the previous clearance of the CFSF vegetation type. As per Mucina and Rutherford, 2006, the CFSF is comprised of dense, medium and tall ericoid shrubland containing scattered emergent tall shrubs (dominated by proteoid and restioid fynbos), where aseraceous and ericaceous fynbos are located in drier and wetter areas, respectively. Thus, due to previous anthropogenic activities, the site does not support vegetation characteristic of the CFSF.

The site is well-established as a diesel storage and distribution facility, is completely transformed (built-up), devoid of any flora, and not located close to any intact indigenous vegetation. As per the Site Sensitivity Verification Report (SSVR), the proposed increase in storage capacity would therefore have no impact on the plant species.

The site is indicated to contain sensitive species according to the National Screening Tool.

The South-Western African dung beetle subgenus *Scarabaeus* (*Pachysoma*) *aesculapius* is indicated to be found on the site. However, this species is endemic to the West Coast of Southern Africa and the habitat of the species is firm sand on coastal hummocks, riverbanks and vegetated dunes (Harrison, Scholtz, & Chown, 2003).

The project site is not classified as this type of habitat and therefore the species is unlikely to be found on a transformed landscape such as the site in question.

The site is indicated to contain Peringuey's Meadow Katydid (*Conocephalus peringueyi*). According to SANBI, mountains in the fynbos biome are the only known habitat of this species, meaning that the species is highly unlikely to be found on a transformed landscape such as the site in question.

The site is also indicated to contain the Yellow-Winged Agile Grasshopper (*Aneuryphymus montanus*). According to SANBI, this species is associated with fynbos vegetation, where it has been collected "amongst partly burnt stands of evergreen Sclerophyll in rocky foothills" (Brown 1960). It prefers South-facing cool slopes (Kinvig 2005). Again, the project site does not contain its known habitat and as such, the Yellow-Winged Agile Grasshopper is not expected to be found in this transformed landscape.

As per the Site Sensitivity Verification Report (SSVR), the project site is devoid of any vegetation, therefore there is no suitable habitat for the animal species of concern indicated in the Screening Tool Report and they are therefore unlikely to be found on site or to be impacted by the proposed activity.

Since the site does not support vegetation characteristic of the Cape Flats Sand Fynbos, the site may not have the characteristic habitat required to support animal species characteristic of the Cape Flats Sand Fynbos. Furthermore, it was determined that the proposed increase in storage capacity will have no significant impact on the terrestrial biodiversity and animal species of the surrounding area.

Aquatic Biodiversity and Hydrology

There are no water features (watercourses or wetlands) present on-site and the "depression wetland" located adjacent to the site has undergone a wetland assessment.

The "depression wetland" located adjacent to the site is not registered as a NFEPA-wetland, is located within shared ESKOM and Transnet servitude, appears to be a permanent wetland which has vegetation comprising of both alien and indigenous vegetation (i.e., reeds, sedges, lilies and grasses), the area is largely transformed, high degree of pollution/litter visible within wetland, and is therefore assumed to offer limited to no ecological functionality.

According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:

The assessment determined that the "depression wetland" is an **artificial** wetland due to stormwater inputs from upslope development and impeded drainage due to the railway line immediately downslope. Despite the presence of aquatic habitat, the **artificial** wetland does not support any sensitive species or habitats. It has low diversity and is dominated by alien plant species. Due to the poor water quality of the run-off which flows into the wetland, it is unlikely to support a diverse aquatic faunal community. It is therefore deemed to be of low ecological importance and sensitivity.

No watercourses, other than the "depression wetland" adjacent to the site, are situated within a 500 m radius of the project site that could potentially be affected by the proposal, and the nearest river is 1 593 m from the site boundary.

As per the Site Sensitivity Verification Report (SSVR), the proposed activity is unlikely to have any significant impact on the water resources and aquatic biodiversity in the surrounding area.

Please refer to Appendix D for the Biodiversity Overlay Maps (SANBI BGIS as well as the Cape Farm Mapper).

4.5.	Explain what impact the proposed development will have on the site specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.
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The project site is located within a "No Natural Remaining" area and is not located within a Critical Biodiversity Area (CBA), Ecological Support Area (ESA), or Other Natural Area according to the Overview of the Western Cape Biodiversity Spatial Plan. Additionally, as the site is transformed, there are no biodiversity sensitivities.

According to the Cape Farm Mapper:

- The Cape Winelands Biosphere Reserve is located 2 275.76 m East of the site
- A CBA (degraded) is located 702.64 m East of the site
- A CBA (terrestrial) is located 834.53 m Southeast of the site
- The CBAs and CBAs (degraded) identified during the desktop study are located on transformed areas (i.e. overlap buildings/informal settlements).
- An ESA (restore) is located 2 422.83 m Northeast of the site

According to the Cape Farm Mapper, the area starting from 19.70 m Southwest of the site is classified as SANBI Red List of ecosystems: Remnants -Cape Flats Sand Fynbos Threat Status 2021: CR.

Terrestrial Biodiversity, Plant Species and Animal Species

In terms of proximity to Biodiversity Priority Areas, the site is classified as falling into the Boland Strategic Water Source Area (SWSA) and is classified as SANBI Red List of ecosystems: Original -containing Cape Flats Sand Fynbos (CFSF) Threat Status 2021: CR, a Critically Endangered (CR) vegetation type.

This project does not involve the activities classified as the main pressures to SWSAs, will not result in fragmentation of the landscape and no area of importance to the Boland SWSA will be lost as it is proposed to take place on the existing site's footprint. Additionally, the project is unlikely to significantly impact surface water and groundwater quality with the proposed mitigation measures in place (including those in the stormwater management plan).

The project site does not fall within any of the areas statutorily conserved as small patches of CFSF or identified as good stands that have not been proclaimed/potential areas that could protect an ecologically representative patch. Additionally, none of the activities identified to mismanage CFSF will take place for the project.

Anthropogenic activities, associated with the previous clearance and current operation of the site have resulted in the transformation and disturbance of the area. Thus, the site does not support vegetation characteristic of the CFSF.

The site is well-established as a diesel storage and distribution facility, is completely transformed (built-up), devoid of any flora, and not located close to any intact indigenous vegetation. As per the Site Sensitivity Verification Report (SSVR), the proposed increase in storage capacity would therefore have no impact on the plant species.

The site is indicated to contain the following sensitive animal species according to the National Screening Tool:

- The South-Western African dung beetle subgenus *Scarabaeus* (*Pachysoma*) *aesculapius*
- Peringuey's Meadow Katydid (*Conocephalus peringueyi*)
- The Yellow-Winged Agile Grasshopper (*Aneuryphymus montanus*)

The project site does not contain these animal's known habitats and is devoid of any vegetation. As such, these species are not expected to be found on site or to be impacted by the proposed activity.

Since the site does not support vegetation characteristic of the Cape Flats Sand Fynbos, the site may not have the characteristic habitat required to support animal species characteristic of the Cape Flats Sand Fynbos. Furthermore, it was determined that the proposed increase in storage capacity will have no significant impact on the terrestrial biodiversity and animal species of the surrounding area.

Aquatic Biodiversity and Hydrology

There are no water features (watercourses or wetlands) present on-site and the "depression wetland" located adjacent to the site has undergone a wetland assessment.

The "depression wetland" located adjacent to the site is not registered as a NFEPA-wetland, is located within shared ESKOM and Transnet servitude, appears to be a permanent wetland which has vegetation comprising of both alien and indigenous vegetation (i.e., reeds, sedges, lilies and grasses), the area is largely transformed, high degree of pollution/litter visible within wetland, and is therefore assumed to offer limited to no ecological functionality.

According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:

As previously stated, despite the presence of aquatic habitat, the **artificial** wetland does not support any sensitive species or habitats. It has low diversity and is dominated by alien plant species. Due to the poor water quality of the run-off which flows into the wetland, it is unlikely to support a diverse aquatic faunal community. It is therefore deemed to be of low ecological importance and sensitivity.

No watercourses, other than the "depression wetland" adjacent to the site, are situated within a 500 m radius of the project site that could potentially be affected by the proposal if all mitigation measures implemented, and the nearest river is 1 593 m from the site boundary.

As per the Site Sensitivity Verification Report (SSVR), the proposed activity is unlikely to have a significant impact on the water resources and aquatic biodiversity in the surrounding area.

4.6.	If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.
N/A	
4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
<u>Terrestrial Fauna</u> The site is indicated to contain the following sensitive animal species according to the National Screening Tool: • The South-Western African dung beetle subgenus <i>Scarabaeus</i> (<i>Pachysoma</i>) <i>aesculapius</i> • Peringuey's Meadow Katydid (<i>Conocephalus peringueyi</i>) • The Yellow-Winged Agile Grasshopper (<i>Aneuryphymus montanus</i>) The project site does not contain these animal's known <u>habitats</u> and is devoid of any <u>vegetation</u>. As such, these species are not expected to be found in this <u>transformed</u> landscape or to be impacted by the proposed activity. Additionally, the site does not have the characteristic habitat required to support <u>animal</u> species characteristic of the Cape Flats Sand Fynbos. The site is well-established as a diesel storage and distribution facility and this project is proposed to take place on the existing site's footprint. Therefore, it was determined that the proposed increase in storage capacity will have no significant impact on the fauna/animal species of the surrounding terrestrial area. <u>Aquatic Fauna</u> There are no water features (<u>watercourses</u> or <u>wetlands</u>) present on-site and the "depression wetland" located adjacent to the site has undergone a wetland assessment. The "depression wetland" located adjacent to the site appears to be largely transformed and is assumed to offer limited to no ecological functionality. <u>According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:</u> Despite the presence of aquatic habitat, the artificial wetland does not support any sensitive species or habitats. It has low diversity and is dominated by alien plant species. Due to the poor water quality of the run-off which flows into the wetland, it is unlikely to support a diverse aquatic faunal community. It is therefore deemed to be of low ecological importance and sensitivity. The site, erf 21594, is itself completely developed and contains <u>no remnants of natural vegetation</u>. Erf 21593, to the south of the site, contains some highly modified remnants of natural vegetation. This area is however significantly modified by the railway and the excavation of stormwater ponds and channels. There is also evidence that the site is disturbed by regular burning. No sensitive or rare, plant or animal species were observed on the site and due to its highly modified state it is unlikely to contain them. No <u>freshwater systems</u>, other than the "depression wetland" adjacent to the site, are situated within a 500 m radius of the project site that could potentially be affected by the proposal, and the nearest river is 1 593 m from the site boundary. As per the Site Sensitivity Verification Report (SSVR), the proposed activity is therefore unlikely to have a significant impact on aquatic biodiversity/fauna in the surrounding area.	

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
No geographical aspects will be affected by the proposed development, as the affected area was already transformed before the development was proposed.

6. Heritage Resources

6.1.	Was a specialist study conducted?	✓YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
An NID and heritage screener were compiled and submitted to HWC by CTS Heritage Specialists.			
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		

As per the SSVR, the site has been previously transformed and is currently operating as a fuel depot. As this is already an existing, developed site, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot. Based on this and on the nature and extent of the proposed activity, it is envisaged that the proposed expansion activity (the proposed increase in storage capacity) is unlikely to have a significant impact on the surrounding heritage resources/archaeological and cultural heritage.

However, should any paleontological material be discovered during the execution of the proposed activity all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure are to be included in environmental authorization.

Recommendation by CTS Heritage Specialists:

Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources and as such, it is recommended that no further heritage studies are required.

The area under consideration is located within the urban edge of Kraaifontein and has been used for agriculture for many years, prior to residential and urban development in the 1980's and 1990's. As such, it is likely that the area proposed for development has been extensively disturbed through human occupation and agricultural practices.

No resources of heritage significance have been identified in close proximity to the development according to the City of Cape Town GIS Mapviewer layers for heritage. Due to the small scale of the development and its distance from the historic core of Durbanville and any known heritage resources, it is unlikely that the development impacted on significant built environment or cultural landscape heritage resources.

This particular proposed development area falls within close proximity to the Joostenberg Vlake Cultural Landscape. However, as the property has been developed in a similar manner to what is proposed, it is argued here that the proposed development does not constitute a change in character and as such, no negative impact to any identified cultural landscape is anticipated. According to Orton (2009, SAHRIS NID 6616), "The area used to be farmland but this context has been steadily eroded in recent times as a light industrial area has been developed on surrounding erven. Little remains of the previous agricultural context, although a few erven still have clumps or lines of blue gum trees present which no doubt indicated the boundaries of farms, fields and paddocks. These trees were commonly grown in the past for the production of poles for fencing and roofing. There are already several light industrial erven in the vicinity... Several other recent surveys in the immediate area have revealed no heritage material of significance, although in most cases tree lines and clusters were present (Orton 2008a, 2008b, 2008c; Smuts & Orton 2008)."

An archaeological impact assessment was conducted on a nearby farm in 2008 by Hart (SAHRIS NID 7000) looking only at impacts to archaeological heritage. A separate Heritage Impact Assessment has been completed by Vide Memoria; however, this HIA was not uploaded to SAHRIS. Hart (2008) notes that the area is not known to be archaeologically rich although Middle and Early Stone Age material occurs sporadically throughout the region. Hart (2008) identified two heritage resources of significance, SAHRIS Site ID 18005 described as a "Farm workers graveyard with an unknown but substantial amount of graves".

Heritage Impact Assessments conducted within the 5km inclusion zone of the proposed development identified few archaeological heritage resources of significance. Kaplan (2006, SAHRIS NID 3816) identified an Earlier/Middle Stone Age scatter of artefacts, as well as a possible Later Stone Age silcrete quarry site of high local heritage significance. However, in general, the archaeology from this area has limited significance due to its disturbed context. Kaplan (2006) notes that "Comprising mostly old farmland (wheat and grazing), including some fallow agricultural lands, the receiving environment is in a highly degraded and altered state. The surrounding land use comprises mainly agricultural farmland with high-density residential development occurring in the south and east. Relatively large numbers of Early Stone Age and some Middle Stone Age tools were located during the archaeological assessment of the proposed development, but the remains occur in a highly disturbed and degraded context, and are spread quite thinly over the surrounding environment." Due to the nature of the proposed development, it is unlikely that the proposed development will impact on significant archaeological resources. In addition, the area proposed for development has not been identified as a sensitive cultural landscape.

According to the SAHRIS Palaeosensitivity Map, the area proposed for development is located on geological sediments with LOW palaeontological sensitivity. The area is underlain by alluvium and as such, it is very unlikely that the proposed development will impact on significant palaeontological heritage resources. According to the Palaeotechnic Report for the Western Cape (Almond and Pether, 2008), alluvium has a very low sensitivity for impacts to significant palaeontology and as such no further assessment of impacts to palaeontological heritage is recommended.

HWC responded as follows:

"Heritage Western Cape is in receipt of the above matter received. This matter was discussed at the Heritage Officers meeting held on 5 August 2024. You are hereby notified that, since there is no reason to believe that the proposed increase in petroleum products storage capacity at the Moov fuel and lubricants facility in Kraaifontein Industria, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. HWC chance finds to be implements. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay. This letter does not exonerate the applicant from obtaining any necessary approval from any other applicable statutory authority. HWC reserves the right to request additional information as required."

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
As per the SSVR, the site has been previously transformed and is currently operating as a fuel depot. As this is already an existing, developed site, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot. Based on this and on the nature and extent of the proposed activity, it is envisaged that the proposed expansion activity (the proposed increase in storage capacity) is unlikely to have a significant impact on the surrounding heritage resources/archaeological and cultural heritage. <u>However, should any paleontological material be discovered during the execution of the proposed activity all works must be stopped immediately, and Heritage Western Cape must be notified without delay. Fossil finds procedure are to be included in environmental authorization.</u> <u>Recommendation by CTS Heritage Specialists:</u> It is unlikely that the proposed development will impact on significant heritage resources, and it is recommended that no further heritage studies are required. It is likely that the area proposed for development has been extensively disturbed through human occupation and agricultural practices. No resources of heritage significance have been identified in close proximity to the development according to the City of Cape Town GIS Mapviewer layers for heritage. Due to the small scale of the development and its distance from the historic core of Durbanville and any known heritage resources, it is unlikely that the development impacted on significant built environment or cultural landscape heritage resources. As the property has been developed in a similar manner to what is proposed, it is argued that the proposed development does not constitute a change in character and as such, no negative impact to any identified cultural landscape is anticipated. Heritage Impact Assessments conducted within the 5km inclusion zone of the proposed development identified few archaeological heritage resources of significance. In general, the archaeology from this area has limited significance due to its disturbed context. Kaplan (2006) notes that the receiving environment is in a highly degraded and altered state. It is unlikely that the proposed development will impact on significant archaeological resources. In addition, the area proposed for development has not been identified as a sensitive cultural landscape. According to the SAHRIS Palaeosensitivity Map, the area proposed for development is located on geological sediments with LOW palaeontological sensitivity. It is very unlikely that the proposed development will impact on significant palaeontological heritage resources. No further assessment of impacts to palaeontological heritage is recommended. <u>HWC responded as follows:</u> "since there is no reason to believe that the proposed increase in petroleum products storage capacity at the Moov fuel and lubricants facility in Kraaifontein Industria, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. HWC chance finds to be implements. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay."

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
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According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

- The Stats SA Census 2011 is used as the basis for the analysis, and using Quantec Standardised Regional data, the indicators for 2023 were estimated.
- In 2023, the Northern Planning District had the highest share of working-age people in employment (63%), out of the four areas that are being studied. The share of employed working-age individuals in the City of Cape Town and Kraaifontein was approximately 45%, whereas Kraaifontein Industrial recorded approximately 46% of the total working-age population. The Northern Planning District had the lowest percentage of the working-age population without employment (11%), followed by Kraaifontein Industrial (16%), the City of Cape Town (19%), and Kraaifontein (21%). Except for the Northern Planning District, which had about 26% of the working-age population that was not economically active, the working-age population that was not economically active was quite similar for the City of Cape Town (35%), Kraaifontein (34%), and Kraaifontein Industrial (39%).

The proposed increase in storage capacity at the MOOV Energy facility could positively impact the employment profile in Kraaifontein Industria and surrounding areas. With Kraaifontein and Kraaifontein Industrial having around 34% and 39% of the working-age population not economically active, respectively, and lower employment rates compared to the Northern Planning District, the project could offer new job opportunities, thereby reducing unemployment and increasing economic activity. The substantial share of the working-age population in these areas who are currently not employed or economically active highlights the potential for the project to provide employment and contribute to local economic improvement.

The industrial area is close to residential areas in need of employment, such as Bloekombos and Wallacedene. The proximity of these residential areas to the Kraaifontein Industria allow workers to access the site with relative ease.

- The City of Cape Town recorded an estimated 4 827 957 people in 2023. Following was the Northern Planning District, with an estimated 377 428 people, while Kraaifontein recorded an estimated 202 927 people in the same year. These figures show that a large share of the Northern Planning District's population is concentrated in Kraaifontein. The area that recorded the lowest population count was Kraaifontein Industrial, with an estimated 2 240 people in 2023. The City of Cape Town Metro (1 365 710) had the highest number of households, corresponding to its population count in 2023. Followed by the Northern Planning District (114 561), Kraaifontein (52 99), and Kraaifontein Industrial (471). While Kraaifontein Industrial recorded the least population count, the average household size of (5) in 2023 was high compared to the City of Cape Town Metro (4), Northern Planning District (3), and Kraaifontein (4).

The proposed increase in storage capacity at the MOOV Energy facility in Kraaifontein Industria, suggests limited direct socio-economic impacts on residents. However, the economic benefits, such as job creation and increased business activity, could significantly improve local conditions. The low population density in the immediate vicinity means fewer people will be affected by potential disruptions, but the project's contribution to broader economic development could benefit the larger community within the Northern Planning District.

- The population across all four areas in 2023 (City of Cape Town Metro, Northern Planning District, Kraaifontein, and Kraaifontein Industrial) is primarily between the ages of 20 and 64 years. However, the age group 0–19 years had the highest proportion of the population in the City of Cape Town (18%) and Kraaifontein Industrial. In contrast, the Northern Planning District and Kraaifontein recorded the highest proportion of the population among the age group of 20–29 years in the same year. The population above 65 years of age recorded the least share across all areas.

The proposed increase in storage capacity at the MOOV Energy facility in Kraaifontein Industria is likely to have positive socio-economic impacts, given the high proportion of the population within the employable age range of 20 to 64 years. This suggests significant potential for job creation, which can reduce unemployment and boost economic stability in the area. The youthful workforce in Kraaifontein and the Northern Planning District, especially those aged 20–29, stands to benefit from new employment opportunities and skills development. Lastly, this proposed development is set to boost local socio-economic development by utilising the abundant employable population.

- In 2023, the City of Cape Town Metro recorded the largest share of people older than 20 years with some form of secondary education (37%) attainment. On the other hand, Kraaifontein Industrial had the largest share of the population with no schooling (30%) and grade 12 (34%). Compared to other areas, the Northern Planning District's population over 20 years old is skilled, as seen by the high percentage of its population above 20 years old (approximately 29%) who have completed higher education. Overall, the general education profile reveals that most of the population over 20 years have completed grade 12 or some other type of secondary education across all four areas.

The proposed increase in storage capacity at the MOOV Energy facility in Kraaifontein Industria could potentially impact the local education profile, which shows that many residents have completed grade 12 or some form of secondary education. Given that Kraaifontein Industrial has a considerable portion of the population with no schooling and only grade 12 education, the project could offer opportunities for skill development and training, enhancing employability. The broader Northern Planning District's higher education attainment indicates a pool of

	<u>skilled individuals who could fill more specialized roles. Overall, the project may improve local workforce skills and educational outcomes by providing training and development opportunities aligned with the facility's needs.</u> • <u>Sectoral employment</u> in 2023 shows that the leading drivers of employment in Kraaifontein Industrial and Kraaifontein were largely the community, social and personal services sectors, wholesale and retail trade, catering and accommodation sector, and <u>transport, storage, and communication sector</u>. In contrast, the finance, insurance, and real estate and business sectors was the main driver of employment in the Northern Planning District (26%), followed by the wholesale and retail trade, catering, and accommodation sector (22%). The largest driver of employment for the City of Cape Town was the wholesale and retail trade, catering, and accommodation sector, with a total share of 24%. The finance, insurance, real estate, and business sector was also a key contributor to employment in the City of Cape Town, with a total share of approximately 23%. The proposed increase in storage capacity at the MOOV Energy facility in Kraaifontein Industria is likely to impact sectoral employment by potentially boosting job opportunities in <u>the transport, storage, and communication sector</u>, which already employs a notable portion of the local workforce. The significant focus on community, social, and personal services in Kraaifontein and Kraaifontein Industrial, and the <u>higher employment in construction and transport sectors</u>, indicates that <u>the project may align well with existing local employment patterns</u>, potentially offering new roles in these areas. While the City of Cape Town and Northern Planning District have strong employment in finance and wholesale sectors, the project's focus on fuel storage and logistics may <u>create opportunities for local workers in the transport and storage sectors</u>, enhancing local economic activity and providing employment in areas directly related to the facility's operations. • A significant share of households in all areas under consideration in 2023 were medium-<u>income households</u>. In the same year, Kraaifontein Industrial recorded the lowest percentage of low-income households (13%) against the City of Cape Town's 37% and Kraaifontein's 41%. Additionally, in Kraaifontein Industrial, high-income households made up most households (22%), according to 2023 figures. The proposed expansion of the MOOV Energy facility in Kraaifontein Industria could have implications for household income in the area. Given that Kraaifontein Industrial has a higher proportion of high-income households compared to Kraaifontein and the City of Cape Town, the project might contribute positively by potentially creating higher-paying jobs or economic opportunities, which could further increase the household income levels in the area. On the other hand, the overall <u>increase in employment opportunities and economic activity may benefit low- and medium-income households, contributing to economic upliftment and reducing income disparities</u>. As the local economy grows, the additional employment opportunities could help in improving the income levels of residents, especially in a region where a significant share of households already falls into the medium-income bracket.
8.2.	Explain the socio-economic value/contribution of the proposed development.

The existing fuel depot currently supplies fuel trucks for 90 Caltex/Astron Energy service stations and close to 3000 commercial clients.

The proposed increase in fuel storage capacity will promote socioeconomic development in the following ways:

1. Supply the demand for fuel in the Western Cape;
2. Additional services will be **available** to the surrounding communities of Astron Energy Service Stations such as the availability of fuel (petrol and diesel), improving the communities' access to such services.
3. Creation of short- and long-term employment and skills development opportunities associated with the construction and operational phases of the development (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created, with associated economic growth in the area and social upliftment and skills transfer).
4. Employing individuals from previously disadvantaged backgrounds. By creating employment opportunities for these individuals, the dependents of these employees will also indirectly benefit.
5. Retention of permanent jobs associated with the existing fuel depot (i.e., job security).
6. The proposed fuel storage expansion caters for the needs of the defined customer base.
7. The site is positioned conveniently in proximity to (the N1 highway) road systems making transport from the refinery (and to Caltex/Astron Energy Service Stations and commercial clients) accessible.

According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

- By boosting storage capacity and updating infrastructure, the expansion is set to drive economic growth, generate employment, and benefit surrounding communities.
- The construction of the proposed development will create temporary employment opportunities. Contractors, subcontractors, and professional staff will hire labour for various tasks, while indirect employment will arise in industries supplying tools, materials, and equipment.
- The operational stage of development increases household earnings for individuals who earn a wage from long-term employment at the project. Consequently, household expenditure goes up, boosting the economy as additional income is spent on local goods and services.
- The sustainable income generated because of the proposed developments' operation will positively affect nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.
- During the operational phase, the increased vehicle movements could improve logistics for some businesses due to enhanced infrastructure
- Businesses in related industries, such as Fuel Solutions Cape Town, may find opportunities for collaboration and mutual benefit from the increased storage capacity and logistical improvements. Some businesses might experience indirect economic benefits through increased overall activity in the industrial area.
- The project will support the local economy through enhanced production and distribution capabilities, potentially attracting further business investments in the area.

The estimated construction cost and/or value of development upon completion is R 45 million.

8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
Employment opportunities will be created/retained upon the completed expansion of the fuel storage expansion project. Short-term jobs will be created during the construction phase whereas long-term employment opportunities will be created during the operational phase of the project. MOOV is currently assisting non-profit organization through its ongoing company socio involvement, and will continue to strengthen this during and after the construction.	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.

No significant negative impacts are expected on the health and well-being of the people surrounding the development. The expected impacts in terms of noise, odours, visual character and sense of place have been briefly explained below:

Noise and dust:

During the construction of the proposed development, nearby businesses in the surrounding area will face noise and dust pollution.

During construction, activities such as excavation, site preparation, earth-moving, building erection, and material deliveries will occur. This will involve heavy machinery, including cranes and bulldozers.

Despite these impacts, their effect will be minimal due to the project's location in an industrial area, which experiences less disruption compared to residential zones.

It is envisaged that the construction and operation of the proposed development will have an insignificant noise impact as the proposed site is surrounded by a highly modified landscape of commercial, industrial, and urban developments, and is already operating as a fuel depot.

According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

The negative impacts, such as construction-related disruptions, i.e. noise and dust, will be localised and affect a smaller number of people (primarily affecting the construction site and surrounding properties) compared to the broader net benefits derived from the project.

However, by implementing the identified mitigation measures, these nuisance impacts can be reduced to a point of low significance.

Air quality/odours:

Fuel vapour emissions will be associated with operations at the existing fuel depot. These emissions may be emitted when the fuel tanks are refilled by road tankers and during refuelling. Fuel vapour emissions may cause an odour nuisance or health impacts to adjacent residents, workers in/customers of the surrounding residential area as well as to staff on site during operation. It must be noted that this is an existing impact due to the presence of existing fuel stored on site. Potential air quality related health impacts to staff on site are assumed to be addressed by the OHS act.

According to the Air Quality Impact Assessment undertaken by DDA Environmental Engineers dated June 2025:

The 1-hour and annual concentrations of benzene, toluene, ethylbenzene and xylene were within the relevant air quality guidelines provided by the ATSDR, TCEQ and OEHHA.

The resulting ground-level concentrations at the discrete receptors within the residential areas around the facility were found to be very low, are expected to have a very low impact on the ambient air quality in the extended area and are considered negligible.

Due to the low modelled concentrations, the increase of the ambient VOCs concentrations due to the operations of the proposed facility is expected to be insignificant, and the cumulative effect due to these emissions on the ambient concentrations in the extended area is expected to be very low.

Based on the dispersion modelling results, the air quality impacts are considered LOW in the industrial area close to the site and VERY LOW to NEGLIGIBLE in the nearest residential areas further away.

Some visual, heritage, traffic and health impacts may be experienced during the construction phase, while some traffic, health and visual during operation.

Visual Character and Sense of Place:

Visual

As the site is currently operating as a fuel depot, limited and negligible additional visual impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use/current character of the site as well as surrounding industrial area.

The fuel tanks, however, will be vertical and larger (compared to the current horizontal tanks).

Traffic Impacts

It is envisaged that the severity of traffic impacts will not increase significantly due to activities associated with the expansion of fuel storage capacity. Although traffic impacts are expected to occur for the duration of the operational phase, the site is currently operating as a fuel depot and therefore has existing traffic-related impacts.

According to the Traffic Impact Assessment undertaken by Kantey & Templer dated June 2025:

The quantum of traffic generated by the facility during peak hours is fairly insignificant in relation to the background traffic network and is unlikely to have any significant impact on prevailing traffic operations.

The proposed development was found to have a low impact on traffic operations on the surrounding road network.

Heritage Impacts

As a result of the construction phase (e.g. excavation), heritage or cultural resources of conservation value may be uncovered, disturbed and/or destroyed. However, the site has been previously transformed and is currently operating as a fuel depot. As this is already an existing, developed site, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot.

According to the Heritage Screener undertaken by CTS Heritage dated May 2025:

It is unlikely that the proposed development will impact on significant heritage resources.

According to the subsequent response received from HWC:

There is no reason to believe that the proposed increase in petroleum products storage capacity at the Moov fuel and lubricants facility in Kraaifontein Industria will impact on heritage resources.

Health and well-being:

- Possible health and safety risks associated with fuel during an emergency:
- The most significant risk regarding the expansion of the depot and its associated uses is the occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby will be negatively influenced. This could be by exposure to hazardous liquids (diesel/petrol) in the form of swallowing hazardous substances or skin contact) as well as through breathing fuel vapours,
- The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on health and safety.

According to the Major Hazardous Installation Quantitative Risk Assessment undertaken by RISCO dated June 2025:

The proposed MOOV facility in Kraaifontein would be classified as a Low Hazard Establishment Major Hazard Installation. After the completion of Phase 2 with the addition of Tank-4, the MHI classification may increase to a Medium Tier Establishment. A number of events were found to have risks beyond the fuel tank farm boundary, however these risks could be mitigated to acceptable levels. No fatal flaws that would prevent the project proceeding to the detailed engineering phase of the project.

Impacts associated with the existing fuel depot are likely to mask potential identified impacts associated with the proposed expansion of fuel storage activities.

The complete expansion project and all installations must be handled in terms of the SANS guidelines. These SANS guidelines include but not limited to the following:

- Complete set of design criteria including Civil, Structural, Mechanical, Electrical and Traffic Engineering,
- Pump and Tank installations including all measures such as fuel storage, fuel lines, evaporation lines, non-return valves, gas break manholes, together with
- Public safety,
- Fire installation and fire protection requirements,
- Handling of stormwater and water,
- Management of refuse,
- Energy usage.

All recommended mitigation and management measures and operating protocols must be adhered to as listed in Section H, Part 4 of this report, Assessment of Each Impact and Risk Identified for Each Alternative, as well as in the EMP attached as Appendix H.

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred property and site alternative.	
The preferred site is an existing diesel storage and distribution facility on property described as Erf 21594, 13 Klaat Street, Kraaifontein Industria. The facility currently consists of 2 x 23 m³ aboveground diesel storage tank housed in a bund, 2 x 1 hose diesel pumps, a truck workshop, an oil drum store and offices. On the project site MOOV Energy stores approximately 500 m³ of oil at any given stage, ranging from 500ml containers to 210-liter drums. As the proposed project is a replacement with increased capacity, it is environmentally preferable to limit the impact to the existing site. The site is currently operating as a fuel depot. Site alternatives were not considered due to: • Environmental impacts associated with an alternative proposed development of a new site. It is likely that should a virgin site be developed, terrestrial (fauna and flora) and freshwater features may be negatively impacted. Therefore, the study area is the preferred (and only) site alternative considered. As the site is completely transformed, the proposed installation of new ASTs will have a negligible impact compared with the development of an alternative new site. • Financial impacts: the site was previously procured by the applicant. The procurement of a new site may incur financial loss resulting in knock-on effects (i.e., loss of jobs with the existing fuel depot).	
Provide a description of any other property and site alternatives investigated.	
Two alternative sites (located in Worcester; 33°38'28"S 19°28'52"E and 33°38'48"S 19°28'22"E) were initially considered, however, due to the various factors (security concerns, spatial restrictions – even too small, restrictions on ingress and egress to the properties, geographically too far from the refinery), only the preferred site will be considered/assessed for this application. No site alternatives were considered for this proposed fuel depot based on the following: - The site has been previously developed and is currently operating as a fuel depot. - The existing site is in an economically feasible area located along the N1 highway. - The proposed development of a virgin site will result in potentially significant environmental impacts.	
Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.	
Site selection by MOOV Energy was based primarily on the availability of land. The site is positioned conveniently in proximity to (the N1 highway) road systems making transport from the refinery accessible. Although the site is located within the Boland Strategic Water Source Area (SWSA) and is indicated to contain critically endangered Cape Flats Sand Fynbos (CFSF) vegetation, this project does not involve activities which are considered the main	

pressures to SWSAs, will not result in fragmentation of the landscape and no area of importance to the Boland SWSA will be lost as it is proposed to take place on the existing site's footprint. Additionally, the project site does not fall within any of the areas where CFSF is statutorily conserved, where good stands that have not been proclaimed are found or in available areas that could conserve/protect ecologically representative patches of CFSF and none of the activities which result in the mismanagement of CFSF will take place for the project.

Anthropogenic activities, associated with the previous clearance and current operation of the site have resulted in the transformation and disturbance of the area and have resulted in the previous clearance of the CFSF vegetation type. Thus, the site does not support vegetation characteristic of the CFSF and thus, the site may not have the characteristic habitat required to support animal species characteristic of the CFSF.

The site is well-established as a diesel storage and distribution facility, is completely built-up, devoid of any flora, and not located close to any intact indigenous vegetation. Previous developments resulting in land cover changes (and consequent loss of natural areas) have resulted in unsuitable habitats for animals which were initially present prior to the area being cleared.

Additionally, the anthropogenic activities/disturbances taking place each day (e.g. traffic, cleaning, and maintenance-related activities) during the current operations of the fuel depot are likely to have driven away any wild animals.

The site is indicated to contain the following sensitive species according to the National Screening Tool.

- The South-Western African dung beetle *Scarabaeus* (*Pachysoma*) *aesculapius*
- Peringuey's Meadow Katydid (*Conocephalus peringueyi*).
- The Yellow-Winged Agile Grasshopper (*Aneuryphymus montanus*)

However, the project site is not classified as the type of habitats that these animal species of concern are known to exist in as it is devoid of any vegetation, and these species are therefore unlikely to be found on a transformed landscape such as the site in question or to be impacted by the proposed activity.

Consequently, it was determined that the proposed increase in storage capacity will have no impact on the terrestrial biodiversity, plant and animal species of the surrounding area.

Furthermore, there are no water features (watercourses or wetlands) present on-site and the "depression wetland" located adjacent to the site has undergone a wetland assessment.

According to the Wetland Assessment undertaken by Freshwater Consulting dated July 2025:

The wetland assessment found this wetland to be an **artificial** feature that has formed as a result of stormwater inputs from upslope development and impeded drainage due to the railway line immediately downslope. The wetland does not support any important or endangered habitats from an ecological perspective. Nevertheless, the wetland does function as a stormwater attenuation pond and therefore provides some level of ecosystem services within the catchment. Given its location adjacent to an industrial area, the most important of these services is the amelioration of water quality. The wetland discharges directly into the stormwater infrastructure of the City of Cape Town which conveys it to the Mosselbank River. The wetland also overlies an aquifer that is of high susceptibility to contamination from anthropogenic activities and therefore a geohydrology assessment was also undertaken.

The wetland assessment further stated that if the recommended mitigation measures are incorporated into the project, the significance of the impact will be low to very low. Given that the status quo for the area is that run-off flows directly into the wetland, the implementation of on-site stormwater management will be a positive impact of the development.

No watercourses, other than the "depression wetland" adjacent to the site, are situated within a 500 m radius of the project site that could potentially be affected by the proposal, and the nearest river is 1 593 m from the site boundary.

The proposed activity is unlikely to have a significant impact on the water resources (hydrology) and aquatic biodiversity in the surrounding area.

Therefore, based on the factors outlined above, it is envisaged that the proposed expansion to fuel storage capacity will have an insignificant impact on biodiversity associated with the proposed site for fuel storage expansion activities and is therefore considered the preferred site.

Provide a full description of the process followed to reach the preferred alternative within the site.

Impacts of alternative site locations as well as feasibility were considered.

Provide a detailed motivation if no property and site alternatives were considered.

Based on various criteria (security concerns, spatial restrictions – even too small, restrictions on ingress and egress to the properties, geographically too far from the refinery), the applicant has identified the project site as being the only feasible property to undertake this activity. Therefore, no alternative sites are being considered as part of this application.

List the positive and negative impacts that the property and site alternatives will have on the environment.

Positive impacts associated with the preferred site alternative:

- Environmental:
 - o Impacts associated with the proposed development of a new site are avoided. It is likely that should a virgin site be developed, terrestrial (fauna and flora) and freshwater features may be negatively impacted. E.g. reduced resource consumption as this proposal will tie into existing infrastructure present on site.
 - o Based on the nature of this proposal (i.e. the expansion of fuel storage capacity at an existing fuel depot), the site has been previously transformed and this proposal is in line with the current land use (i.e. fuel depot).

- Socio-Economic:

- o The site was previously procured by the applicant. The procurement of a new site may incur financial loss resulting in knock-on effects (i.e. loss of jobs with the existing fuel service station).
- o The proposed development is suitably located along the N1 highway and this proximity to road systems makes transport from the refinery (and to Caltex/Astron Energy Service Stations and commercial clients) accessible.
- o Additional fuel supply services and associated infrastructure would be put in place on site.
- o Additional capital investment would result from the proposed development.
- o Supply the demand for fuel in the Western Cape;
- o Additional services will be available to the surrounding communities of Astron Energy Service Stations such as the availability of fuel (petrol and diesel), improving the communities' access to such services.
- o Creation of short- and long-term employment and skills development opportunities associated with the construction and operational phases of the development (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created, with associated economic growth in the area and social upliftment and skills transfer).
- o Employing individuals from previously disadvantaged backgrounds. By creating employment opportunities for these individuals, the dependents of these employees will also indirectly benefit. According to MOOV, during the construction phase, a strategy will be implemented with the main contractor to ensure local, skilled and semi-skilled, previously disadvantaged people get preference. MOOV is a company that believes in transformation and learning opportunities for young people. MOOV is currently providing learnership opportunities to local youth in the Human Resource, IT and HSSE Department.
- o Retention of permanent jobs associated with the existing fuel depot (i.e., job security).
- o The proposed fuel storage expansion caters for the needs of the defined customer base.

Negative impacts associated with the preferred site alternative:

- Socio-Economic:
 - o Some visual, noise, traffic and dust/air quality impacts will be experienced during the construction phase.
 - o Potential heritage impacts during construction (e.g. excavation), should heritage or cultural resources of conservation value be uncovered, disturbed and/or destroyed.
 - o Traffic impacts during operation
 - o Air quality impacts during operation (fuel vapour emissions will be associated with operations at the existing fuel depot. These emissions may be emitted when the fuel tanks are refilled by road tankers and during refuelling)
 - o Possible health and safety risks associated with fuel during an emergency:
 - The most significant risk regarding the expansion of the depot and its associated uses is the occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby will be negatively influenced. This could be by exposure to hazardous liquids (diesel/petrol) in the form of swallowing hazardous substances or skin contact) as well as through breathing fuel vapours,
 - The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on health and safety.
- Environmental:
 - o Air pollution
 - o Groundwater/soil/freshwater contamination if stormwater runoff is not managed correctly (due to delivery/collection vehicles entering and exiting the fuel depot, refilling of the ASTs and storage tank leakages/spills or delivery road tanker leak)
 - o The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on the environment.

Overall:

As the site is currently operating as a fuel depot, limited and negligible additional visual and noise impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use and existing impacts of the facility. Impacts associated with the existing fuel depot are likely to mask potential identified impacts associated with the proposed expansion of fuel storage activities.

Additionally, the site is surrounded by a highly modified landscape of commercial, industrial, and urban developments.

It is envisaged that the severity of traffic, air quality, soil and groundwater, freshwater/aquatic biodiversity, health & safety impacts will not increase significantly due to activities associated with the expansion of fuel storage capacity and that they can be managed/mitigated to an acceptable level.

As the site has been previously transformed, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot and that the project is unlikely to have a significant impact on terrestrial biodiversity.

1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
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Provide a description of the preferred activity alternative.
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MOOV Energy's main interest is in the trading and distribution of fuel in South Africa, and has not considered any other business venture, therefore no alternative land uses/activities have been considered by the applicant for this property.

Provide a description of any other activity alternatives investigated.
--

There are no activity alternatives as the development is a replacement with increased capacity.

Provide a motivation for the preferred activity alternative.
--

MOOV Energy's main interest is in the trading and distribution of fuel in South Africa, and has not considered any other business venture, therefore no alternative land uses/activities have been considered by the applicant for this property.

Provide a detailed motivation if no activity alternatives exist.
--

There are no activity alternatives as the development is a replacement with increased capacity.

List the positive and negative impacts that the activity alternatives will have on the environment.

The risk of spills reduces with new tanks (as opposed to older ones) and the bunds will ensure that no spills permeate into the subsurface.

Positive impacts associated with the preferred activity alternative:

• Environmental:

o Impacts associated with the proposed development of a new site are avoided. It is likely that should a virgin site be developed, terrestrial (fauna and flora) and freshwater features may be negatively impacted. E.g. reduced resource consumption as this proposal will tie into existing infrastructure present on site.
o Based on the nature of this proposal (i.e. the expansion of fuel storage capacity at an existing fuel depot), the site has been previously transformed and this proposal is in line with the current land use (i.e. fuel depot).

• Socio-Economic:

o The site was previously procured by the applicant. The procurement of a new site may incur financial loss resulting in knock-on effects (i.e. loss of jobs with the existing fuel service station).
o The proposed development is suitably located along the N1 highway and this proximity to road systems makes transport from the refinery (and to Caltex/Astron Energy Service Stations and commercial clients) accessible.
o Additional fuel supply services and associated infrastructure would be put in place on site.
o Additional capital investment would result from the proposed development.
o Supply the demand for fuel in the Western Cape;
o Additional services will be available to the surrounding communities of Astron Energy Service Stations such as the availability of fuel (petrol and diesel), improving the communities' access to such services.
o Creation of short- and long-term employment and skills development opportunities associated with the construction and operational phases of the development (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created, with associated economic growth in the area and social upliftment and skills transfer).
o Employing individuals from previously disadvantaged backgrounds. By creating employment opportunities for these individuals, the dependents of these employees will also indirectly benefit. According to MOOV, during the construction phase, a strategy will be implemented with the main contractor to ensure local, skilled and semi-skilled, previously disadvantaged people get preference. MOOV is a company that believes in transformation and learning opportunities for young people. MOOV is currently providing learnership opportunities to local youth in the Human Resource, IT and HSSE Department.
o Retention of permanent jobs associated with the existing fuel depot (i.e., job security).
o The proposed fuel storage expansion caters for the needs of the defined customer base.

Negative impacts associated with the preferred activity alternative:

• Socio-Economic:

o Some visual, noise, traffic and dust/air quality impacts will be experienced during the construction phase.
o Potential heritage impacts during construction (e.g. excavation), should heritage or cultural resources of conservation value be uncovered, disturbed and/or destroyed.
o Traffic impacts during operation
o Air quality impacts during operation (fuel vapour emissions will be associated with operations at the existing fuel depot. These emissions may be emitted when the fuel tanks are refilled by road tankers and during refuelling)
o Possible health and safety risks associated with fuel during an emergency:
-The most significant risk regarding the expansion of the depot and its associated uses is the occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby will be negatively influenced. This could be by exposure to hazardous liquids (diesel/petrol) in the form of swallowing hazardous substances or skin contact) as well as through breathing fuel vapours,
-The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on health and safety.

• Environmental:

o Air pollution
o Groundwater/soil/freshwater contamination if stormwater runoff is not managed correctly (due to delivery/collection vehicles entering and exiting the fuel depot, refilling of the ASTs and storage tank leakages/spills or delivery road tanker leak)
o The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on the environment.

Overall:

As the site is currently operating as a fuel depot, limited and negligible additional visual and noise impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use and existing impacts of the facility. Impacts associated with the existing fuel depot are likely to mask potential identified impacts associated with the proposed expansion of fuel storage activities.

Additionally, the site is surrounded by a highly modified landscape of commercial, industrial, and urban developments.

It is envisaged that the severity of traffic, air quality, soil and groundwater, freshwater/aquatic biodiversity, health & safety impacts will not increase significantly due to activities associated with the expansion of fuel storage capacity and that they can be managed/mitigated to an acceptable level.

As the site has been previously transformed, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot and that the project is unlikely to have a significant impact on terrestrial biodiversity.

1.3.	Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts
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Provide a description of the preferred design or layout alternative.

The project will entail the removal of two diesel 23 m³ ASTs and installation of three ASTs (two 1 000 m³ diesel tanks and one 500 m³ ULP 95 tank). The construction of one main reinforced concrete bund with intermediate walls, thus allowing all tanks to be located within their own subdivision. A total number of four aboveground tanks can be accommodated within the available space. Under the current project, only three tanks will be constructed with space allowance for a future tank. Each intermediate bund will comprise a drain pit (sump).

The project will also involve the demolition of two warehouses, an outbuilding at the front of the site, the toilet and office area in the middle of the warehouse and two small storerooms to make way for the proposal.

The layout of the development plan for the proposed development has been informed by a thorough design process.

The design and layout of the proposed ASTs are restricted by site-specific features which include, but are not limited to, proximity to existing fuel storage infrastructure (e.g. pump), available space on site, etc. The design and layout of the proposed USTs to be installed will be implemented in accordance with the relevant South African National Standards (SANS), specifically (not exclusive to) the following standard:

a) SANS 10 400TT (Fire Protection) 53 Sections 1-6 (The application of the National Building Regulations-Installation of Liquid Fuel Dispensing Pumps and Tanks).

The installation of the ASTs and associated pipework must comply with the National Building Regulations and Standards Act No. 103 of 1977. The installation must comply with local authority bylaws and all procedures and equipment used must be in accordance with the Occupational Health & Safety Act (No. 85 of 1993). Therefore, limited design/layout alternatives are available and were considered.

The site safety distances are based on SANS 10089 The Petroleum Industry: Part 1 – Storage and distribution of Petroleum Products in aboveground bulk installations.

TANK SPECIFICATIONS

- Cone Roof Tanks (with IFR for ULP 95)
- Products – Class I, II or IIIA other than Crude Oil
- Tanks equipped with Approved Foam Systems

The most stringent requirement for tank spacing to a property boundary is 0,5D (tank diameter)

The vertical bulk storage tanks will be designed in accordance with API 650. Tanks will be supported on a reinforced concrete foundation including the required layer works. Tank foundations will include the necessary secondary containment as prescribed by API 650.

BUND CONTAINMENT REQUIREMENTS

This layout caters for tanks to be housed within one main bund.

The bund containment requirements are calculated as follows:

- Largest Tank to be contained = 1000 m³
- Gross Bund Area (GBA) = 1 092 m²
- Nett Bund Area (NBA) = 780 m²

From the main bund requirements, above, the wall height requirements would be

- Average Wall height (h) = $1000/780 + 0,1$ m free-board = 1,38 m

All tanks will be located within their own subdivision. These walls will be a minimum of 500 mm high and will terminate at a maximum height of approximately 300 mm below the main wall. Subdivision walls will be set at different levels thereby creating a preferential spill pattern in the event of a major spill occurring.

The construction of subdivision walls also contributes to:

- Lower fire water requirements to bund areas;
- The containment of minor spills within its own subdivision, thereby minimizing the risk of fire/ spills spreading to other bunds;

In keeping with the regulations laid down in the code, the bund floors will be sealed to prevent accidental spillages from entering the subsoil.

Bund drainage lines will be routed to the bund outlet chamber from where it will be routed to the API oil-water separator before discharge to the municipal sewer system in keeping with good environmental practices.

FIRE WATER REQUIREMENTS

The facility is to be equipped with a full fire water system comprising of a water tank, booster pump and foam generating facilities. All manifold valves will be activated via electric actuators.

The foam system will be utilized for the top foam pourers to each tank and medium expansion foam pourers for bund fires. The tanks will be equipped with cooling water via cooling rings with spray nozzles designed to deliver the required cooling water application.

The semi-automated fire protection system will be activated via depressing the corresponding buttons for the foam and water systems on the mimic panel which is to be installed and operated from the fire-fighting pump station (exact locations will be confirmed during the detailed design stage).

It is proposed to use Class 16 HDPE/PVC piping for belowground foam and water supply and painted steel piping (SABS 62/719) for aboveground services.

Foam pourers will be of the Angus TPS 80 or similar type and mounted onto a tank flange. The riser pipe will be an 80NB steel pipe supported off the tank shell.

Foam pourers will be of the MEX type (Medium Expansion) and will be securely mounted on the bund walls.

A water reservoir of min 171 180 litres will be required. In addition to the working volume as calculated, the unpumpable volume has been allowed for resulting in a storage volume of 203 000 litres.

This is to be stored in a prefabricated steel panel tank. The tank will be fitted with an automatic shut off valve which will close when the tank has reached its capacity and will open when water is drawn from the tank.

A booster pump will be utilized (diesel-powered engine) and allowance has been made for a duty and standby unit to be installed.

For premix generation, fixed flow in-line inductors will be used which will be connected to a 2000 litre foam concentrate tank. These inductors will be installed in the respective bund and tank foam manifold lines. The foam generating tank and equipment is to be installed under a canopy shielding it from the weather elements.

Although no environmentally sensitive areas have been identified on site, the design of the proposed development has been influenced by the stormwater management plan (in terms of proposed storm water reticulation design and proposed storm water controls).

- It is proposed that an underflow / overflow discharge manhole be introduced on the western boundary and that all stormwater be passed through this device prior to discharge to the existing pond.
- The storm water management strategy will be to manage and collect surface runoff and roof water, and if necessary, pass it through a detention tank/structure system before discharging the water into the storm water drainage system at a peak discharge rate equal to or less than the pre-development flow.
For this site, the runoff will be required to pass through a new detention tank/structure system.
- A new oil water separator is to be installed to accommodate oily water from the bunds and loading area. Any contaminated storm water must pass through the separator to mitigate against the escape of pollutants into the storm water and sewer drainage systems.
- The storm water system must be kept separate from the wastewater (sewer) drainage system.
- The pre-development and post development runoffs are essentially the same because of the extent of hard surfaces being similar. So, no changes to the downstream drainage system of the site would be necessary. However, the local authority may require the installation of an attenuation tank at plan approval stage.
- Any oils to be stored on site are to be stored in bunded areas.
- The proposed wash bay discharge needs to pass through the existing oily water separator.

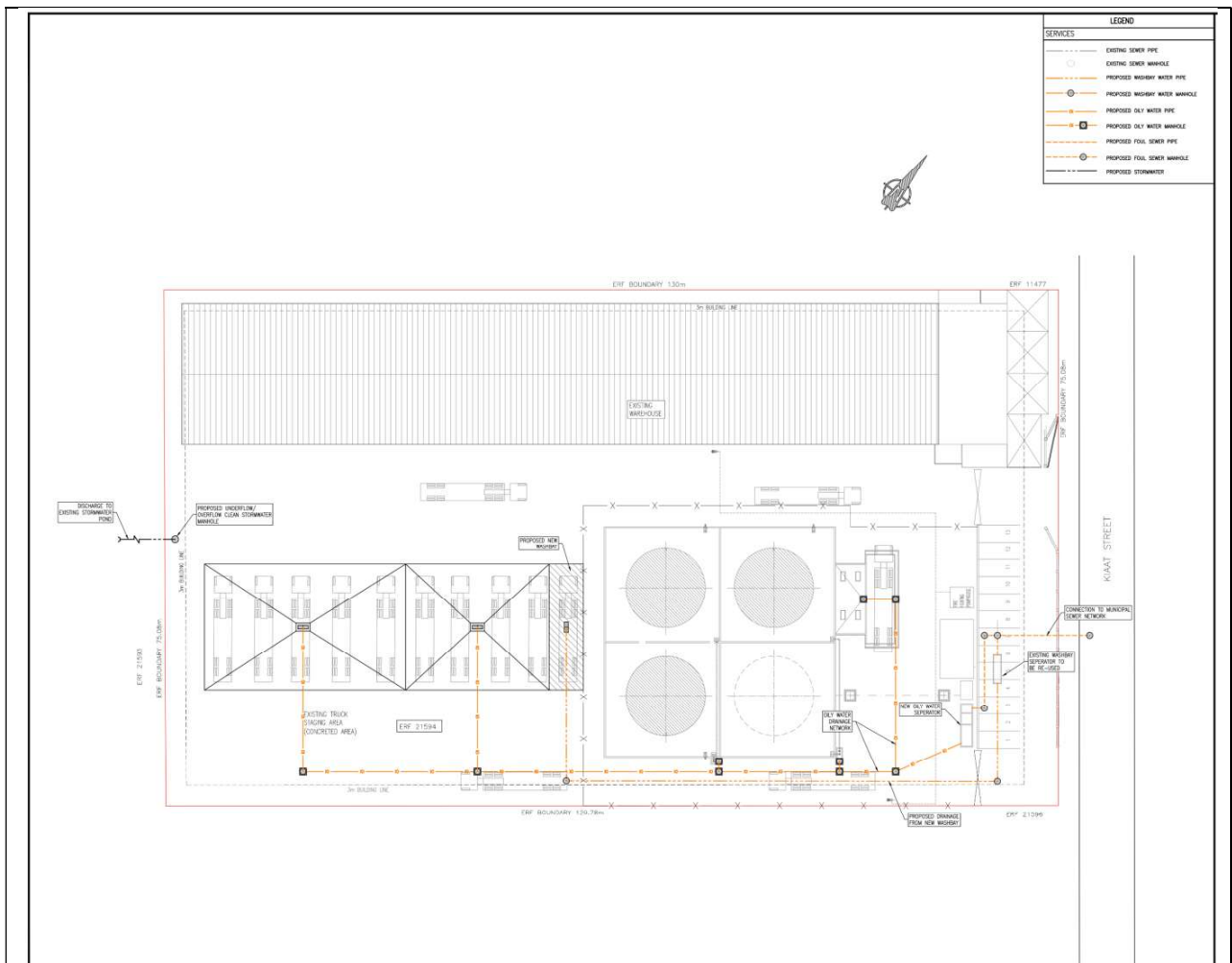


Figure 8: Drawing depicting the proposed storm water reticulation design, as per Annexure A of the Stormwater Management Plan

The project site is currently accessed directly off Kiaat Street. A new access entrance gate will be created adjacent to the boundary of Erf 21596. The existing entrance and exit will be used exclusively as an exit with the project. Both the new access and exit gates will be on Kiaat Street. The proposed entrance will create a better and safer flow of traffic around the proposed new tank farm.

Provide a description of any other design or layout alternatives investigated.

N/A

Provide a motivation for the preferred design or layout alternative.

The proposed entrance will create a better and safer flow of traffic around the proposed new tank farm.

The new bund will further enhance the attenuation of runoff on the site because the release from the bund is a controlled release.

The site safety distances are based on SANS 10089 The Petroleum Industry: Part 1 – Storage and distribution of Petroleum Products in aboveground bulk installations, thereby reducing the fire and explosion risk.

Provide a detailed motivation if no design or layout alternatives exist.

Due to the required storage volumes, underground and horizontal tanks were not feasible. Only vertical tanks were considered. Keeping the project site's access (entrance and exit) the same was not considered as the proposed entrance will create a better and safer flow of traffic around the proposed new tank farm.

List the positive and negative impacts that the design alternatives will have on the environment.

The risk of spills reduces with new tanks (as opposed to older ones) and the bunds will ensure that no spills permeate into the subsurface. The proposed entrance will create a better and safer flow of traffic around the proposed new tank farm. Compared with USTs, ASTs have reduced environmental risks associated with possible spillages, subsoil, and groundwater contamination.

1.4. Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred technology alternative:

Facilities for handling and storage of dangerous goods have approved procedures for development and specific SANS standards to comply with, therefore there is very little room for digression.

Tanks will be protected against corrosion applying protective paint coatings to the external shell and roof as well as the floor and internal surface up to the 1st strake.

BUND CONTAINMENT REQUIREMENTS

This layout caters for tanks to be housed within one main bund.
The bund containment requirements are calculated as follows:

- Largest Tank to be contained = 1000 m³
- Gross Bund Area (GBA) = 1 092 m²
- Nett Bund Area (NBA) = 780 m²

From the main bund requirements, above, the wall height requirements would be

- Average Wall height (h) = $1000/780 + 0,1$ m free-board = 1,38 m

All tanks will be located within their own subdivision. These walls will be a minimum of 500 mm high and will terminate at a maximum height of approximately 300 mm below the main wall. Subdivision walls will be set at different levels thereby creating a preferential spill pattern in the event of a major spill occurring.

The construction of subdivision walls also contributes to:

- Lower fire water requirements to bund areas;
- The containment of minor spills within its own subdivision, thereby minimizing the risk of fire/ spills spreading to other bunds;

In keeping with the regulations laid down in the code, the bund floors will be sealed to prevent accidental spillages from entering the subsoil.

Bund drainage lines will be routed to the bund outlet chamber from where it will be routed to the API oil-water separator before discharge to the municipal sewer system in keeping with good environmental practices.

FIRE WATER REQUIREMENTS

The facility is to be equipped with a full fire water system comprising of a water tank, booster pump and foam generating facilities. All manifold valves will be activated via electric actuators.

The foam system will be utilized for the top foam pourers to each tank and medium expansion foam pourers for bund fires. The tanks will be equipped with cooling water via cooling rings with spray nozzles designed to deliver the required cooling water application.

The semi-automated fire protection system will be activated via depressing the corresponding buttons for the foam and water systems on the mimic panel which is to be installed and operated from the fire-fighting pump station (exact locations will be confirmed during the detailed design stage).

It is proposed to use Class 16 HDPE/PVC piping for belowground foam and water supply and painted steel piping (SABS 62/719) for aboveground services.

Foam pourers will be of the Angus TPS 80 or similar type and mounted onto a tank flange. The riser pipe will be an 80NB steel pipe supported off the tank shell.

Foam pourers will be of the MEX type (Medium Expansion) and will be securely mounted on the bund walls.

A water reservoir of min 171 180 litres will be required. In addition to the working volume as calculated, the unpumpable volume has been allowed for resulting in a storage volume of 203 000 litres.

This is to be stored in a prefabricated steel panel tank. The tank will be fitted with an automatic shut off valve which will close when the tank has reached its capacity and will open when water is drawn from the tank.

A booster pump will be utilized (diesel-powered engine) and allowance has been made for a duty and standby unit to be installed.

For premix generation, fixed flow in-line inductors will be used which will be connected to a 2000 litre foam concentrate tank. These inductors will be installed in the respective bund and tank foam manifold lines. The foam generating tank and equipment is to be installed under a canopy shielding it from the weather elements.

The ULP tank will have an internal floating roof (IFR).

The aboveground tanks will be equipped with Automatic Tank Gauging (ATGs) i.e. level transmitters.

The technology/instrumentation of the proposed development has been influenced by the Major Hazardous Installation Quantitative Risk Assessment in terms of overfill protection.

Tank 1 is ULP and Tank 2 and Tank 3 are diesel with minimum SIL-2 overfill protection

Below is acceptable with the following mitigation:

- All tanks have minimal SIL-2 overfill instrumentation – suggest stopping the pump and closing the tank valve;
- Tank skin valve has ESD function and will shut when:
 - Overfill protection
 - Loss of containment at the pump bay, to prevent a large release from the storage tank
- Full spill containment at the road loading / offloading area. Containment size – largest tanker compartment:

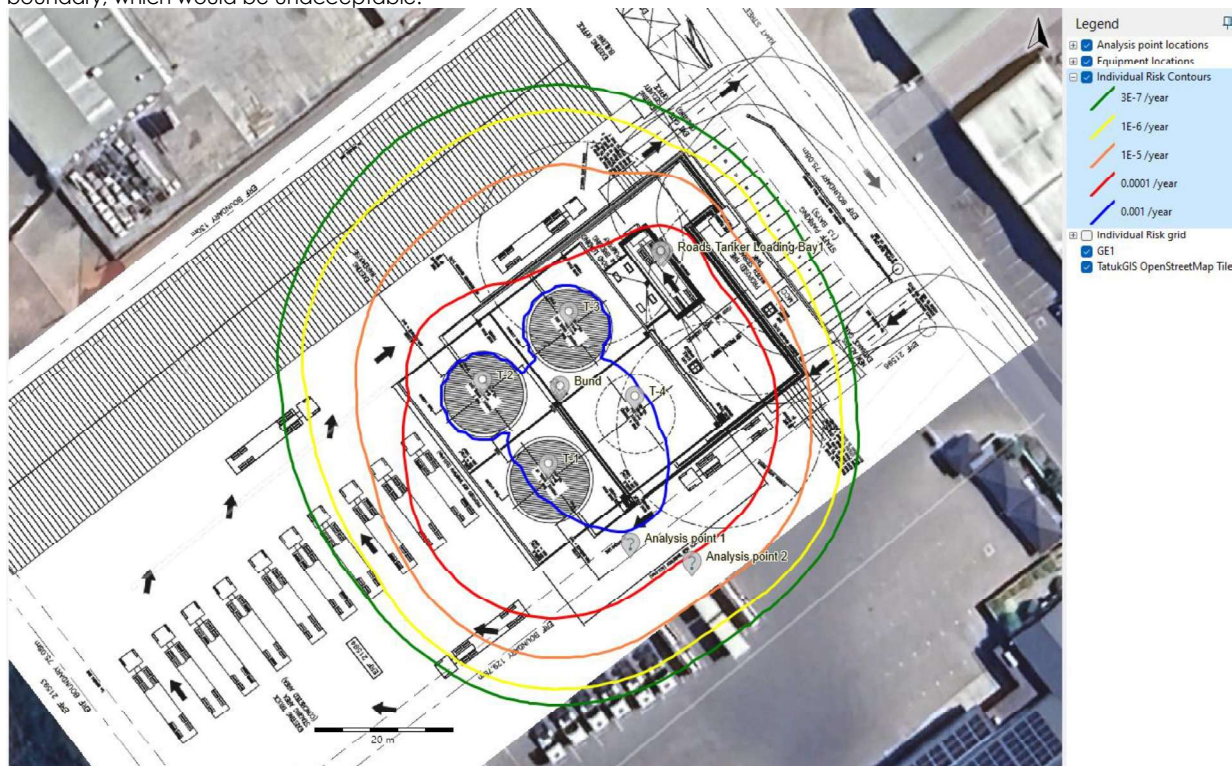
At least 2 emergency exits from the site and the warehouse building to evade a large tank farm fire.

Provide a description of any other technology alternatives investigated.

Various technology alternatives have been identified and investigated and tested according to SANS standards over time by the oil industry internationally and by various oil companies specifically. The proposed technology alternatives are considered the most feasible and appropriate, based on the minimisation of health, safety and environmental risks associated with possible spillages, subsoil, and groundwater contamination and vapour emissions. Therefore, no other technology alternatives were investigated.

Alternative with no automated overfill protection:

The blue line indicates unacceptability to workers and the red line (1e-4 fatalities per person per year) extend over the site boundary, which would be unacceptable.



The highest risks at the Analysis Point 1 are given below. The overfill of tanks 1 & 4 are clearly dominant. For this study tanks 1 & 4 contain ULP.

Analysis point: Analysis point 1

Total Individual risk at analysis point (X=2.08488E6,Y= -4.00756E6) is: 4.63E-04/yr

Individual risk ranking Scenario	Contribution [%]	Value
1. T-1 Overfill (T-1)	85.3	3.95E-04
2. T-4 Overfill (T-4)	13.6	6.28E-05
3. T-4 Fixed duration (Bund)	0.444	2.06E-06
4. T-1 Fixed duration (Bund)	0.442	2.05E-06
5. T-4 Catastrophic failure (Bund)	0.0769	3.56E-07
6. T-1 Catastrophic failure (Bund)	0.0769	3.56E-07
7. T-2 Fixed duration (Bund)	0.0256	1.19E-07
8. T-3 Fixed duration (Bund)	0.0256	1.19E-07
9. T-2 Overfill (T-2)	0.0186	8.63E-08
10.T-1 Tank top Fire (T-1)	0.00695	3.22E-08
11.T-3 Catastrophic failure (Bund)	0.00481	2.23E-08
12.T-2 Catastrophic failure (Bund)	0.00481	2.23E-08
13.T-3 Overfill (T-3)	0.000947	4.39E-09
14.T-1 Tank Explosion (T-4)	0	0.00E+00
15.ULP Tank - Pump failure Set (ULP Loading Pump Bay)	0	0.00E+00
16.ULP Tank - Pump leak Set (ULP Loading Pump Bay)	0	0.00E+00
17.T-4 Tank top Fire (T-4)	0	0.00E+00
18.T-2 Tank top Fire (T-2)	0	0.00E+00
19.T-1 Tank Explosion (T-1)	0	0.00E+00
20.Road Tanker - Failure Set (Roads Tanker Loading Bay1)	0	0.00E+00
21.T-3 Tank top Fire (T-3)	0	0.00E+00
22.Road Tanker - Hose leak Set (Roads Tanker Loading Bay1)	0	0.00E+00
23.Road Tanker - Hose failure Set (Roads Tanker Loading Bay1)	0	0.00E+00

For this alternative, 2 independent level devices were assumed. To improve this may require an additional overfill protection that will prevent the incoming flow to the tanks on overfill. This is in line with the Buncefield recommendations of SIL determined overfill protection.

Provide a motivation for the preferred technology alternative.

Facilities for storage and handling of dangerous goods have approved procedures for development and specific SANS standards to comply with, therefore, there is very little room for digression.

The alternative with automated overfill protection indicates acceptable risk in terms of fire.

An IFR for ULP is best to minimize evaporative hydrocarbon emissions into the atmosphere as vapor space above the fuel is reduced. By acting as a barrier between the fuel and the air above, IFRs also reduce the risk of ignition (fire) and explosion, improving operational safety.

The use of ATGs to detect leaks early/reduce the likelihood of undetected spills and can be integrated into emergency response (by indicating safety & environmental risks).	
Provide a detailed motivation if no alternatives exist.	
N/A	
List the positive and negative impacts that the technology alternatives will have on the environment.	
<u>Positive impacts:</u> The regulated nature of the fuel industry ensures that current technical and operational standards are upheld. This includes the installation of storage tanks in accordance with relevant South African National Standards (SANS), specifically (not exclusive to) the following standard: - SANS 10 400TT (Fire Protection) 53 Sections 1-6 (The application of the National Building Regulations-Installation of Liquid Fuel Dispensing Pumps and Tanks); • The installation of the <u>ASTs</u> and associated pipework must comply with the National Building Regulations and Standards Act No. 103 of 1977. The installation must comply with local authority bylaws and all procedures and equipment used must be in accordance with the Occupational Health & Safety Act (No. 85 of 1993). Therefore, limited alternatives are available and were considered. The risk of spills reduces with new tanks (as opposed to older ones) and the <u>bunds</u> will ensure that no spills permeate into the subsurface. <u>Negative impacts:</u> • This proposal is for the increase in fuel storage capacity, which is a substance with several health and safety, and environmental risks to the surrounding community.	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
Limited operational alternatives were considered for this proposal as this proposal is for the expansion of fuel storage capacity at an existing fuel depot with the requirement of 24-hour operation, therefore operational hours and scheduling alternatives could not be considered, however mitigation measures to minimize community disruption, environmental effects and traffic impacts (particularly at nighttime) have been included. A back-up <u>generator</u> will be utilised. Preference will be given to hiring local and previously disadvantaged labour. Operation will also involve Moov Energy maintaining regular communication with adjacent business owners/residents to keep them informed about the project and address any concerns (inclusion of complaints register). Off-site <u>parking</u> for trucks will be secured to reduce the need for on-site parking, thereby alleviating potential congestion and ensuring adequate space for office and workshop personnel.	
Provide a description of any other operational alternatives investigated.	
N/A	
Provide a motivation for the preferred operational alternative.	
The preferred operational alternative includes robust pre-emptive safety protocols/plans (including staff training) and environmental safeguards (such as air quality monitoring and groundwater monitoring) and prioritises the need to employ local labour, thereby enhancing positive impacts and reducing negative impacts. Open communication with neighbours allows for any issues with regard to disturbance of surrounding properties to be resolved. The generator will provide a back -up source of power.	
Provide a detailed motivation if no alternatives exist.	
Due to loadshedding events, there is a need for back-up power on site, therefore the operational alternative of relying on the electricity grid is not an option.	
List the positive and negative impacts that the operational alternatives will have on the environment.	
<u>Positive impacts associated with the preferred operational alternative:</u> - o The use of a generator as a back-up power solution will ensure uninterrupted operation of critical systems during power outages. This is crucial for monitoring systems (ATG) and fire systems, thereby reduces safety risks. - o Concerns raised by nearby business owners/residents can be addressed promptly if open communication channels are created. - o Traffic impacts will be reduced due to the acquisition of off-site parking of trucks. <u>Negative impacts associated with the preferred operational alternative:</u> - o Some <u>noise and air quality</u> impacts will be experienced through the use of the generator, but these will be managed through appropriate mitigation. - o Contamination impacts may result if the generator is not properly installed, maintained or contained.	
1.6.	The option of not implementing the activity (the 'No-Go' Option).
Provide an explanation as to why the 'No-Go' Option is not preferred.	
The no-go alternative refers to the option of not proceeding with the activity and ultimately the continuation of the current status quo, that is, limited provision of strategic bulk storage and distribution facilities for diesel. Should the no-go alternative be the preferred option, it is probable that existing storage and handling facility will be placed under pressure resulting in negative implications for the provision of liquid fuels supply in South Africa. Negative economic impact should the project not proceed: although the development will not completely alleviate the current levels of unemployment in the Kraaifontein area, it will create new employment opportunities and skills development during both	

the construction and operational phases of the development. Should the project not proceed, these jobs will not be created and the existing fuel depot may experience decreased job security.	
<u>According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:</u> The 'no-go' alternative would result in the avoidance of negative impacts from a socio-economic perspective; it would also <u>prevent</u> the realisation of <u>positive effects/impacts</u>. Since the positive effects would outweigh the negative effect, the construction and operation of the proposed development are preferred over the 'no-go' alternative. Therefore, the proposed development should be considered for development, subject to the implementation of the recommended mitigation and enhancement measures. According to MOOV, South Africa is facing challenges of fuel supply and MOOV has taken a decision to proactively address the ripple effect this will have on their customers, by developing a bulk fuel storage facility to ensure security of supply. If this project was not to proceed, MOOV customers will be impacted by the effects of the envisaged national fuel shortage, which will lead to economic crisis and negative effects on MOOV's business.	
1.7.	Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.
None	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
This application is for the proposed expansion to fuel storage capacity at an existing fuel depot. Based on the nature of this proposal, limited <u>design/layout, technological and operational</u> alternatives were available, with no feasible <u>site</u> and <u>activity</u> alternatives considered. Additionally, due to the existing structures and infrastructure present on site, <u>layout</u> alternatives were limited. The proposed expansion of fuel storage capacity is to tie into existing infrastructure associated with the existing fuel depot. The installation of the ASTs and associated pipework must comply with the National Building Regulations and Standards Act No. 103 of 1977. The installation must comply with local authority bylaws and all procedures and equipment used must be in accordance with the Occupational Health & Safety Act (No. 85 of 1993). Therefore, limited site, design, and layout alternatives are available and were considered. Based on the nature of this proposal (i.e. the expansion of an existing depot), no alternative <u>site</u> was considered since expansion of the fuel storage at the existing fuel depot will have reduced biological and hydrogeochemical impacts compared with an alternative, virgin site being developed. Therefore, due to the condition of the site (i.e., highly disturbed/transformed), it is envisaged that the proposed expansion will not have a significant impact on environmental features. However, should an alternative virgin site be developed, the proposed activity will increase the impact on the environment, compromising sustainable development. <u>Layout and design alternatives</u> were investigated; however, the preferred alternative was selected based on financial (e.g. optimizing the amount of infrastructure to connect to existing infrastructure) and space restrictions on site. The No-Go alternative entails that no additional fuel storage capacity will be installed. Operational activities associated with the No-Go alternative would include the current operation of the existing fuel depot. The impacts (and opportunity costs) associated with the No-Go alternative were considered. The preferred site (Erf 21594) and design, layout, and technology alternative (i.e. in line with existing design, layout, and technology) is recommended based on the impacts detailed above.	

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).
Based on the nature of this proposal (i.e. expansion to fuel storage capacity), areas outside of the existing footprint are identified as "no-go" areas. Importantly, these include the artificial wetland adjacent to the site as well as neighbouring properties, thereby the contractors are confined to the property itself.

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.
The Basic Assessment was undertaken in accordance with the principles of Integrated Environmental Management as detailed in Section 23 of NEMA and in the NEMA EIA Regulations. The impact assessment is aimed at determining the likely significance of any impacts (positive or negative) associated with the development. The significance of the impacts was determined by investigating certain key aspects, or parameters, of the potential impact, which are determined by the nature of the activity, as well as the nature of the receiving environment. Aspects investigated include the extent, duration, probability and intensity of the impact. The following table includes an impact and risk assessment process.

Extent	
Site	The impact could affect the whole, or a measurable portion of the site
Local	Extending only as far as the activity, limited to the site and its immediate surroundings
Regional	Impact on the broader region
National	Will have an impact on a national scale or across international borders
Duration	
Short term	0-5 years
Medium term	5-15 years
Long term	Where the impact will cease after the operational life of the activity
Permanent	Where mitigation either by natural process or human intervention will not occur in such a way or in such a time span that the impact can be considered transient
Intensity	
Low	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected
Medium	Where the affected environment is altered but natural, cultural or social functions and processes continue albeit in a modified way i.e. general integrity maintained.
High	Where natural, cultural or social functions or processes are altered to a large degree/the extent that it will temporarily cease
Very High	Where natural, cultural or social functions or processes are completely altered to the extent that it will permanently cease
Probability	
Improbable	Where the possibility of the impact to materialise is very low either because of design or historic experience
Probable	Where there is a distinct possibility that the impact will occur
Highly Probable	Where it is most likely that the impact will occur
Definite	Where the impact will occur regardless of any prevention measures

Table 1: Rating criteria used to assess environmental impacts.

Evaluation Rating System

In order to evaluate and classify the impacts, a rating system has been used accordingly. The following scoring criteria were implemented:

Table 2: Scores per rating criteria used

Extent	National 4	Regional 3	Local 2	Site 1
Duration	Permanent 4	Long-term 3	Medium-term 2	Short-term 1
Intensity	Very high 4	High 3	Medium 2	Low 1
Probability of Occurrence	Definite 4	Highly probable 3	Probable 2	Improbable 1

The total points were calculated per impact (for extent, duration, intensity and probability as per the above table) and the **significance** of each of the environmental issues was therefore assessed and accorded a rating (low/medium/high) using the rating system below.

- a) High impact (13-16 points)
- b) Medium impact (9-12 points)
- c) Low impact (5-8 points)
- d) No significance (1-4 points)

Significance	
No significance (1-4 points)	The impact is not substantial and does not require any mitigation action.
Low (5-8 points)	The impact is of little importance, but may require limited mitigation. A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted a part of a standing design, construction or operational procedures.
Medium (9-12 points)	The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels and is possible with additional design and construction inputs.
High (13-16 points)	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential. The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.

The significance of the impact is assessed without (WOM = without mitigation) and with mitigation (WM = with mitigation) measures in place.

Determination of Degree to which an Impact can be Mitigated:	
Can be mitigated	The impact can be completely mitigated
Can be partly mitigated	The impact can be partly mitigated
Can be barely mitigated	It is possible to mitigate the impact only slightly
Not able to mitigate	It is not possible to mitigate the impacts

Reversibility of the impact and whether the impact could cause an irreplaceable loss of resources are also considered in this assessment.

The irreplaceable loss of resources is the degree to which resources will be irreplaceably lost as a result of a proposed activity; while reversibility is the degree to which an impact on an environmental parameter can be successfully reversed upon completion of the proposed activity. The following scoring criteria will be used:

Determination of Loss of Resources:	
No loss of resource	The impact will not result in the loss of any resources
Marginal loss of resource	The impact will result in marginal/limited loss of resources
Significant loss of resources	The impact will result in significant loss of resources
Complete loss of resources	The impact will result in a complete loss of all resources

Reversibility	
Irreversible	The impact is irreversible and no mitigation measures exist
Partially reversible	The impact is partly reversible but more intense mitigation measures are required
Fully reversible	The impact is reversible with implementation of minor mitigation measures

Other factors which are also considered in the assessment of impacts include whether the impact is direct, indirect, or cumulative. A direct impact can be explained as being a direct result of activities associated with the development, such as damage of on-site infrastructure due to a fire.

An indirect impact would be a downstream, secondary or "knock-on" impact resulting from an impact directly associated with the development (such as the contamination of freshwater resources downstream of the municipal stormwater system in the event of a contamination incident).

A cumulative impact would be an impact which already occurs in the receiving environment associated with other activities taking place in proximity to the development, such as noise, vibration and dust due to industrial activities in the area.

Determination of Cumulative Impact:	
Negligible	The impact would result in negligible to no cumulative effects
Low	The impact would result in insignificant cumulative effects
Medium	The impact would result in minor cumulative effects
High	The impact would result in significant cumulative effects

The impact assessment methodology used has been closely guided by the DEAT EIA Guideline Document 5, on the assessment of impacts and alternatives (DEAT 2006); as well as reference to the description of the criteria used for the assessment of impacts as contained in the DEA&DP Specialist Guidelines Series (2005).

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

Alternative:	Preferred
EARLY WORKS AND DECOMMISSIONING OF EXISTING TANKS & CONSTRUCTION PHASE	
Potential impact and risk:	Groundwater, Soil and Surface Water (Freshwater) Contamination & Impacts The removal of existing concrete and paving during construction will <u>expose underlying soils</u> and may result in the increased potential for the direct <u>infiltration</u> of contaminants into the subsurface with pollution of soil and groundwater. Additionally, <u>stormwater runoff</u> may flow over the site camp area, becoming contaminated and carry contaminants off-site. Soil, surface water/nearby water bodies and groundwater contamination can occur from: - Fuel, oil/lubricants and other pollutants may <u>leak</u> from <u>vehicles, chemical stores or equipment/machinery</u>. - Accidental <u>spillage</u> of hazardous <u>substances</u> (such as lubricant oils, diesel) <u>used</u> on-site during decommissioning of the existing tanks/construction activities. <u>Cement mixing</u> (lime spills) <u>Chemical toilets</u> (blockages/spills e.g. during cleaning) - The improper <u>storage and disposal</u> of <u>waste</u>, including hazardous waste. The existing tanks, pipelines and aboveground pumps will be the primary "waste" generated during this phase. Waste generated during the construction phase will typically consist of domestic waste (litter, plastic etc.), building rubble, spoil materials as well as excess and discarded construction materials. - Leaks/spillage of fuel from incorrect procedures (inadequate draining of pipelines and dispensers) adopted in <u>dismantling the fuel storage system (residual product)</u> i.e. subsurface from pipelines and surface from <u>fuel storage equipment</u>. - Incorrect disposal of <u>wastewater</u> generated e.g. during cement/concrete/mortar batching. Storage of construction materials, including fill or excavated material into, or in close proximity to drainage lines may be washed indirectly into waterways/water bodies. Additionally, soil <u>erosion</u> on site due to the inadequate implementation of stormwater management practices, may result in <u>deposition of excess sediment downstream</u> (via existing stormwater drains). The construction of the facilities on site could also potentially cut across natural drainage patterns and <u>divert surface runoff</u> e.g. runoff patterns may be <u>altered</u> due to <u>stockpiling</u> of soil, building material, rubble and construction waste <u>on natural drainage lines</u>.
Nature of impact:	Negative
Extent and duration of impact:	Regional, long-term/permanent
Consequence of impact or risk:	Decrease in the water quality as a result of contamination of groundwater/soil and runoff from the construction site into the stormwater system. <u>This could result in further water quality impairment of the nearby artificial wetland, compromising its ability to fulfil its currently functionality of stormwater attenuation and water quality amelioration.</u> Contaminated water discharging into the stormwater system and artificial wetland would ultimately discharge into a <u>natural watercourse</u>. Increase in sedimentation of nearby waterbodies. Alteration of natural drainage patterns. <u>Increased turbidity loading, increased microbiological loading and mobilisation of existing contaminants in the soils.</u>
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss of resources
Degree to which the impact can be reversed:	Partial (difficult and expensive to reverse/remediate)

Indirect impacts:	Contaminated water discharging into the <u>natural watercourse</u> (Mosselbank River), downstream aquatic ecosystem degradation, reduced water quality for irrigation and potable supply, potential human health impacts
Cumulative impact prior to mitigation:	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	Decommissioning of fuel infrastructure: - Tanks, pipelines and pumps are to be <u>drained</u> thoroughly of all products <u>prior to dismantling</u> and removal. This function is to be performed by an <u>accredited fuel products transporter</u>. Certificate of complete product delivery/disposal is to be issued. <u>Dismantling of equipment</u> is to be performed by an <u>accredited contractor</u> as per Moov's work system requirements. - A specialist consultant should be present during the tank <u>and bund foundation</u> removal process to monitor the subsurface conditions (<u>contamination assessment</u>) and to provide guidance and clean-up measures (disposal pathways and remediation) where required. This phase should involve environmental <u>rehabilitation</u> in the form of <u>soil and groundwater remediation</u>, should contamination be identified. Soil vapour tests and soil contamination analysis will be undertaken. - Installation of <u>temporary containment bunds and surface water runoff controls around</u> the existing <u>ASTs during disassembly</u>, should they remove the bund before removing the <u>ASTs</u>. Spillages: - In case of an accidental <u>spillage of oil/fuel</u> immediate action must be taken to contain and clean the spillage/to remove hydrocarbons (e.g. Rapid Spill or Spilltech). <u>Emergency procedures</u> and cleaning up operations must be in place <u>prior</u> to construction commencement. - All necessary equipment for dealing with spills of fuels/chemicals must be available on the site i.e. ensure absorbent <u>spill kits</u> and <u>disposal containers</u> on hand to handle <u>spillages</u> during dismantling of equipment and removal of residual product. - In an event of a spill, Contractors will <u>remediate</u> to the satisfaction of Moov Energy. Waste management: - As far as feasible, the Contractor must <u>separate different types of material</u> to facilitate <u>reuse, recycling</u> or disposal thereof. - All <u>off cuts</u> must be <u>reused</u> where possible or <u>recycled</u>. <u>Separate bins</u> must be provided for <u>hazardous and general waste</u> to ensure correct waste separation. The bins should be clearly marked and lined for safe disposal of waste. <u>Contaminated material and hazardous waste</u> are to be removed and <u>disposed</u> of at a licensed <u>Class A landfill</u> site by a licensed specialist contractor. Chain of Custody documentation is to be retained on site. - If the fuel storage <u>tanks</u> are not suitable for <u>reuse</u>, a registered waste disposal company must be appointed to transport them to a registered site for cutting and final <u>disposal</u>. <u>All waste is to be disposed</u> of to a <u>suitably licenced landfill</u> site. - The bins/skips containing <u>general waste</u> must be cleared on a <u>weekly</u> basis and <u>disposed</u> of at a <u>municipal landfill</u> site by a registered waste management company. <u>Solid waste</u> should be <u>regularly collected</u> from the site for disposal at an appropriately licensed landfill site. - Builder's <u>rubble</u> generated during construction activities is to be correctly disposed of at a <u>registered landfill</u> site. <u>No building rubble</u> may be used as <u>backfill</u>. - No wastes are permitted to be disposed of into <u>excavations or stormwater drains</u>, <u>burned</u> on site or illegally <u>dumped in the surrounding areas</u>, during or after the construction period. - Collection and disposal of <u>waste metal</u> to a registered site where the equipment will either be <u>scrapped</u> or reused depending on the condition of the equipment.

	• The Contractor must ensure that staff are <u>educated/encouraged</u> to not <u>litter</u> or <u>dispose of waste in the surrounding environment</u> but to use available facilities for waste disposal. • All <u>waste storage areas</u> on site must be kept <u>tidy</u> on a daily basis. • An <u>adequate number of scavenger proof waste</u> receptacles and/or <u>bins</u> must be strategically placed around the site to collect all domestic waste. • <u>General waste</u> is to be collected in <u>skips</u> for disposal at the local municipal landfill site. • <u>Skip</u> bins must be <u>covered</u> to avoid waste from being blown off. • <u>Clean soil</u> from excavation activities must be <u>reused</u> as fill on the site. • <u>Excess soil and bedrock</u> will be correctly <u>disposed</u> of with certificates of Disposal accompanying the disposal. • Effective <u>management of the waste handling facilities</u> to avoid spills or loss of containment and the risk of refuse being washed into the ground/downstream (<u>confine</u> temporary <u>waste storage areas</u>, <u>bunded</u> areas and/or compacted surfacing to reduce seepage). Storage areas: • <u>Fuel, other chemicals and hazardous materials/substances</u> utilized during this phase are to be securely <u>stored</u> on an <u>impervious surface</u> in a designated <u>bunded</u> area, able to contain the total volume of materials at any given time in order to contain accidental spills or leaks. The <u>integrity of the impervious surface</u> and <u>bunded</u> area must be <u>inspected</u> on a regular basis and maintained when necessary. • The <u>materials storage area</u> must be located in a defined area <u>away from</u> any natural <u>drainage lines</u> and/or <u>stormwater drains</u> and away from the artificial wetland. • <u>Material Safety Datasheets</u> are to be retained on site for the fuels and chemicals stored on site. • Correct measures need to be taken to ensure that no contaminants seep into the soil or ground water. • The <u>construction camp</u> must be placed in an area already disturbed and <u>at least 50 m away from the artificial wetland</u>. • <u>No materials or equipment</u> may be stored <u>outside</u> of the <u>boundaries</u> of the construction camp. • The <u>construction footprint</u> must be well demarcated and <u>fenced</u> off to contain site activities and prevent the dumping of refuse or building waste outside of work areas. • Adequate <u>training</u> of contractor staff on the <u>correct storage and handling</u> of hazardous substances (e.g. fuel, oil, cement, etc). Vehicles and equipment: • All earthmoving <u>plant</u>, construction <u>vehicles</u> and <u>equipment</u> must be <u>maintained</u> in <u>good working order</u> to <u>reduce</u> the probability of <u>leakage</u> of hydrocarbon fuels and lubricants and provided with <u>drip trays when parked</u> and during <u>refueling</u>. Drip trays must be inspected for leaks and emptied where necessary. • <u>Restrict areas for refuelling of vehicles and machinery</u>. • <u>Maintenance</u> of construction vehicles, earthmoving <u>plant</u>, and <u>equipment</u> <u>is not permitted on site, unless</u> a specific <u>bunded</u> area is constructed for this purpose. • Earthmoving plant, heavy <u>machinery</u>, construction <u>vehicles</u> and/or equipment must be located away from stormwater drains and the artificial wetland when <u>parked/stored</u> for extended periods of time. • If a <u>water pump</u> is required, the water pump must operate inside a <u>drip tray</u> to prevent any spillage of fuel and limit the risk of soil/water contamination. The drip tray will need to be lined with absorbent material and <u>checked</u> daily while in use. • In the event of a <u>breakdown</u>, immediate steps shall be taken to prevent any spillage. Surface runoff: • Adequate <u>stormwater drainage</u> should be <u>constructed</u> and <u>no</u> water should be allowed to <u>pond</u>. • The construction phase of the project must take cognisance of existing <u>drainage lines</u> in the area so as not to disrupt these drainage patterns.
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	• There is to be a <u>periodic inspection</u> of the sites temporary and/or permanent <u>drainage system</u> to ensure that the flow of surface water is not obstructed. • Proposed Storm Water Controls to address runoff as per the Stormwater Management Plan include: -Silt fencing -Instant lawn -Poles (banks) -Drainage pipes -Sandbagging -Earth-berms -Small trenches with small earth-berms -Agricultural trenches • <u>Install stormwater management on the site before construction of the rest of the infrastructure.</u> • Construction should take place in <u>summer as</u> there is a lower likelihood of run-off from the site (associated with rainfall). • Ensure that no <u>water</u> from the construction site enters the adjacent artificial <u>wetland</u> downstream and the catchment drained by the Mosselbank River via <u>existing storm water drains</u>. • <u>Wastewater</u> must not be allowed to come into contact with exposed soils or run across the site. • All <u>wastewater</u> must be collected in a <u>sealed container</u> and <u>disposed</u> of by an <u>approved specialist waste contractor</u>. Chain of Custody Documentation must be retained on site. • <u>Contaminated or highly turbid stormwater runoff</u> from the construction site, including 'clean' areas, should be collected and <u>treated</u> prior to disposal off-site. • All <u>contaminated water</u> should be immediately removed and disposed of at a registered <u>Class A landfill</u> site or approved recycling facility. • <u>Appropriate berms and surface water runoff controls</u> should be implemented <u>around excavations</u> if necessary. Concrete management: • <u>Excess or spilled concrete</u> should be <u>confined</u> within the works area and then collected and correctly <u>disposed</u> of to a registered landfill site. • All <u>cement</u>/mortar mixing or other hazardous substances handling and dispensing activities must be undertaken on an <u>impermeable surface</u>. • Cleaning of cement related <u>equipment</u> shall be restricted to pre-determined areas. • To prevent spillage onto roads, <u>ready mix trucks</u> shall <u>scrape</u> off the <u>delivery shoot</u> into a suitable sump prior to leaving the site. • <u>Vehicles</u> transporting <u>concrete</u> and other chemicals are <u>not</u> permitted to be <u>washed</u> on site. • <u>Unused cement bags</u> shall be stored where they will not be affected by <u>rain/runoff</u>. • <u>Used cement bags</u> shall be stored properly to prevent them from being blown by wind and potential water contamination. Used bags shall be disposed of appropriately. Erosion: • All exposed <u>bare surfaces</u> during clearing and earthworks must be protected against <u>erosion</u> using <u>rows of sediment barriers</u> (e.g. silt fences, sandbags, earthen diversion berms). • <u>Sediment barriers</u> should be <u>regularly</u> maintained and <u>cleaned</u> so as to ensure effective drainage. • Areas susceptible to <u>erosion</u> must be protected by installing temporary and/or permanent <u>drainage works</u> to prevent surface water from being concentrated in streams. • Ensure that any <u>trenches or excavations</u> are <u>closed</u> and compacted immediately. • <u>Stockpiles</u> of soil/sand should be <u>shaped</u> appropriately to reduce their susceptibility to <u>erosion</u>. • <u>Stockpiles</u> of soil/sand should be <u>covered</u> with a tarpaulin to reduce the effects of wind erosion. • <u>Stockpiled</u> soil should be protected by <u>erosion-control berms</u> if exposed for a period of more than <u>14 days</u> during the wet seasons.
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	• <u>Stockpiles</u> must be restricted to <u>designated areas</u> and positioned <u>away from</u> existing natural <u>drainage lines/stormwater drains</u>. Ablution facilities: • Construction staff must use temporary <u>chemical ablation</u> facilities provided by the contractor and the use of surrounding areas as a toilet facility must be forbidden. • All temporary/portable <u>toilets</u> are to be maintained in a hygienic state and serviced regularly or as required by a reputable <u>contractor</u>, and the contents are to be removed to a licensed <u>disposal</u> facility. The Contractor shall ensure that <u>no spillage</u> occurs when the toilets are <u>cleaned</u> or emptied. • Toilets must be <u>anchored</u> to the ground to ensure that they don't get knocked or blown over. General: • In the event that surface, ground or storm water <u>pollution</u> does occur as a result of activities on the site, the <u>Department of Water and Sanitation</u> must be informed immediately. Any significant spills or leak incidents must be reported in terms of the NEMA section 30. • During construction, good site management and environmental practices must be ensured by an approved independent Environmental Control Officer (ECO). • <u>Completely remove</u> from site <u>all</u> general <u>waste</u>, constructional plant, <u>equipment</u>, surplus rock and other foreign <u>materials once construction</u> has been <u>completed</u>. • <u>Install</u> early warning <u>groundwater monitoring</u> points between proposed new tank farm, wash bay, separator and the wetland at the onset of the construction phase (these wells must not prohibit construction or be impacted by construction) and monitor/sample <u>quarterly</u> during construction.
Residual impacts:	Soil disturbance, localised contamination of subsurface soil or shallow groundwater from leaks/spills that are not immediately detected and contained.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Noise Impacts As a result of the construction phase of this development, noise impacts are expected to occur in the area due to: - o an increase in movement of construction and delivery vehicles in and around the site (including the operation of a crane) - o excavations being made. Construction activities may also result in a temporary increase in noise levels due to - o earthmoving, - o heavy machinery, - o mechanical and electrical construction equipment (use of jackhammers to break concrete to access pipelines), and general construction activities (dismantling of the tanks and dispensing equipment).
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	During the construction of the proposed development, nearby businesses in the surrounding area will face medium noise pollution. During construction, activities such as excavation, site preparation, demolition, bund construction, tank installation and material deliveries will occur. Operations will involve heavy machinery, including cranes and bulldozers, and generate noise. Despite these impacts, their effect will be minimal due to the project's location in an industrial area, which experiences less disruption compared to residential zones.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Highly reversible

Indirect impacts:	Wildlife disturbance, community stress, temporary impact on worker concentration in surroundings
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be partially managed
Degree to which the impact can be mitigated:	Impact can be partially mitigated
Proposed mitigation:	- Comply with the City of Cape Town's noise bylaws for industrial areas. - Construction staff working in areas where the 8-hour ambient noise is equal to or exceeds 85 dBA, should be provided with <u>ear protection</u> equipment. <u>Limit the working hours</u> during the construction phase to between 7:30 am and 6 pm during weekdays, and between 8:30 am and 1 pm on Saturdays. No construction work should occur on Sundays and public holidays. - Contractor is to <u>maintain vehicles and machinery</u> in good working order to minimize noise. - Institute <u>noise control measures</u> throughout the construction phase for all applicable activities. - Provide and maintain all equipment with standard <u>silencers</u>. - A complaints registration process must be established for the construction phase. This must be available to all communities and advertised (e.g. sign boards). This instrument must be available, trustworthy, and fair, and ensure that all <u>complaints</u> of noise emissions are registered, managed and resolved within a 24-hour timeframe in order to be effective. - Neighbouring landowners should be <u>informed</u> prior to any very noisy activities being undertaken, e.g. high intensity drilling.
Residual impacts:	Occasional disturbance during high-noise activities
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Air Quality Impacts As a result of the construction phase of this development, air quality impacts are expected to occur in the area. <u>Dust and particulate matter</u> may result due to the increase in construction and delivery <u>vehicles</u> and may be released during the following <u>construction activities</u>: - Demolition of existing buildings and debris removal - Dismantling of equipment - Earthworks and excavation - Breaking of concrete <u>Stockpiles</u> of topsoil/other imported material and uncovered sand loads on construction vehicles. <u>Hydrocarbon vapours</u> are likely to be released during the removal of the tanks and associated infrastructure. <u>Engine combustion emissions</u> during this phase may be associated with the following: - Heavy plant (i.e. cranes) and transport vehicles - Generators used during activities - Diesel powered equipment Air quality impacts may also result if <u>waste</u> is improperly disposed of through burning.
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	During the construction of the proposed development, nearby businesses in the surrounding area will face medium dust pollution. During construction, activities such as excavation, site preparation, demolition, bund construction, tank installation and material deliveries will occur. Operations will involve heavy machinery, including cranes and bulldozers, and generate dust and exhaust fumes. Despite these impacts, their effect will be minimal due to the project's location in an industrial area, which experiences less disruption compared to residential zones.

Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Partially reversible
Indirect impacts:	Health impacts, reduced visibility, nuisance to nearby workers/residents, deposition on wetland vegetation
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	Dust: - Comply with the City of Cape Town's air quality bylaws and the <u>National Dust Control Regulations</u>. <u>Regularly clean</u> and maintain the construction <u>site</u> to prevent the accumulation of dust. - The appointed Contractor is to implement effective <u>dust control measures</u> during his/her activities. - In areas where there is unbound sand or storage piles, make sure that the area has been watered down. <u>Wet</u> unprotected, <u>cleared areas and stockpiles</u> with water to suppress dust pollution. - The contractors and/or subcontractors must wear the <u>appropriate PPE</u> e.g. dust masks. - Soil/sand <u>stockpiles</u> are to be <u>located in sheltered areas</u> where they will not be exposed to the erosive effects of the <u>wind</u>. - In order to minimise the risk of spillage and loss through wind erosion, <u>trucks transporting soil</u> must <u>not</u> be <u>overloaded</u> when conveying soil to and from the site. <u>Cover</u> materials such as sand, soil and building rubble during <u>transport</u> to and from the site with a tarpaulin. If necessary, make sure loads on trucks are <u>dampened</u>. - Dust containment measures must be used during period of dry, <u>windy</u> conditions (>40 km/hr), through <u>shade cloth</u>, <u>dust suppression</u>, or other appropriate methods. - Erect <u>wind barriers</u> in high wind situations to prevent dust being blown up from exposed soils and storage piles. Emissions: - Ensure that <u>no refuse wastes</u> are <u>burnt</u> on the premises or on surrounding premises. - Ensure that <u>vehicles and machinery/equipment</u> used are adequately <u>maintained</u>/kept in good working order and meet manufacturer's specifications for safety, fuel consumption etc and are <u>inspected</u> on a regular basis to limit potential emissions and prevent smoke. - A complaints registration process must be established for the construction phase. This must be available to all communities and advertised (e.g. sign boards). This instrument must be available, trustworthy, and fair, and ensure that all <u>complaints</u> of dust/emissions are registered, managed and resolved within a 24-hour timeframe in order to be effective.
Residual impacts:	Intermittent dust in windy conditions, small amounts of exhaust emissions
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Heritage Impacts As a result of the construction phase (e.g. excavation), heritage or cultural resources of conservation value may be uncovered, disturbed and/or destroyed, however this is unlikely.
Nature of impact:	Negative
Extent and duration of impact:	Site, permanent
Consequence of impact or risk:	According to the Heritage Specialist, and based on the available information, it is unlikely that the proposed development will impact on significant heritage resources. It is likely that the area proposed for development has been extensively disturbed through human occupation and agricultural practices.

	No resources of heritage significance have been identified in close proximity to the development according to the City of Cape Town GIS Mapviewer layers for heritage. Due to the small scale of the development and its distance from the historic core of Durbanville and any known heritage resources, it is unlikely that the development impacted on significant built environment or cultural landscape heritage resources. The proposed development does not constitute a change in character and as such, no negative impact to any identified cultural landscape is anticipated. According to Orton (2009, SAHRIS NID 6616), "The area used to be farmland but this context has been steadily eroded in recent times as a light industrial area has been developed on surrounding erven. Heritage Impact Assessments conducted within the 5km inclusion zone of the proposed development identified few archaeological heritage resources of significance. Due to the nature of the proposed development, it is unlikely that the proposed development will impact on significant archaeological resources. In addition, the area proposed for development has not been identified as a sensitive cultural landscape. According to the SAHRIS Palaeosensitivity Map, the area proposed for development is located on geological sediments with LOW palaeontological sensitivity. The area is underlain by alluvium and as such, it is very unlikely that the proposed development will impact on significant palaeontological heritage resources. According to the Palaeotechnic Report for the Western Cape (Almond and Pether, 2008), alluvium has a very low sensitivity for impacts to significant palaeontology. According to HWC, there is no reason to believe that the proposed increase in petroleum products storage capacity at the Moov fuel and lubricants facility in Kraaifontein Industria will impact on heritage resources.
Probability of occurrence:	Very low
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Impact on cultural landscape/heritage sites (but no significant resources are known to be present)
Cumulative impact prior to mitigation:	Very Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low
Degree to which the impact can be avoided:	Impact cannot be avoided, but is unlikely to occur as development is located away from sensitive heritage areas
Degree to which the impact can be managed:	Impact cannot be managed (only monitored), but is unlikely to occur
Degree to which the impact can be mitigated:	Impact cannot be mitigated, but is unlikely to occur and therefore special mitigation is not required
Proposed mitigation:	Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities, all works must be stopped immediately, and Heritage Western Cape must be notified without delay.
Residual impacts:	Negligible
Cumulative impact post mitigation:	Very low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low

Potential impact and risk:	Fire, Health & Safety Risks Due to the nature of the decommissioning of the tanks and construction activities, together with human error (negligence and inadequate staff training), the safety of workers, the public, property and/or equipment may be compromised. There is a risk of fire and explosion and toxic combustion gases if an incident occurs at the existing facility while construction takes place, particularly related to residual fuel.
Nature of impact:	Negative
Extent and duration of impact:	Local, medium-term (can be long-term/permanent if catastrophic)
Consequence of impact or risk:	Exposure through breathing vapours, swallowing hazardous substances or skin contact may have possible health effects. This includes possible exposure of the workforce to hydrocarbon vapours during excavation works/the removal of the tanks and

	equipment as well as to other chemicals utilised during the construction. Potential physical injury on duty due to lack of awareness during construction activities.
Probability of occurrence:	Medium probability
Degree to which the impact may cause irreplaceable loss of resources:	High (injury, life threatening)
Degree to which the impact can be reversed:	Medium (injuries/fatalities irreversible), severity of injury varies Property damage can be repaired
Indirect impacts:	Loss of a family income due to injury of worker, loss of construction productivity/project delays, public concern/emergency response, firewater
Cumulative impact prior to mitigation:	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Impact can be partially avoided (risks inherent to construction)
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	General procedures and emergency preparedness: • Adhere to all applicable <u>specifications</u> and <u>legislation</u> during the construction. • Contractor appointed for construction is to comply with the Occupational Health and Safety Act Regulations (<u>OSHA</u>) current version in its entirety. • All the necessary <u>safety regulations</u> must be abided by including <u>building codes</u> and fire practice requirements. • All staff shall be <u>trained</u> of general fire prevention and control methods as well as responsibilities and <u>fire drills</u> are to be carried out. • The contractor must comply with <u>Moov Energy's Safe Work Practices</u>. • The contractor will prepare a <u>site-specific Health and Safety Plan</u>. • Provision of adequate <u>training</u> to all employees regarding health and safety is necessary. • The Contractor is to appoint a <u>Health and Safety Officer</u> to monitor the safety conditions during the construction phase of the development. • Ensure that the <u>contact details</u> of the <u>police</u> or a <u>security</u> company, <u>ambulance</u> service and <u>fire</u> brigade are available on site. • Provide adequate <u>facilities</u> on site <u>to treat emergencies</u> to staff and/or the public. • The contractor and construction personnel appointed to carry out the construction activities (decommission of existing tanks) must undertake adequate <u>training in emergency response</u> situations. • The Contractors will have to provide their own <u>security</u> arrangements while on site. Prevention of injury/health issues: • Ensure that the <u>handling of equipment and materials</u> is <u>supervised</u> and adequately <u>instructed</u>. • Ensure that construction/delivery <u>vehicles</u> and/or <u>plant</u> are under the <u>control</u> of <u>competent</u> personnel. • Provision of <u>personal protective equipment</u> (PPE) will be made by the Contractor and all employees on site must wear appropriate PPE. • The construction site must be clearly demarcated, have safety signage and be <u>fenced</u> off to limit access to the site to the workforce only and to mark hazards. Site access must be strictly controlled. • Open <u>excavations</u> must be clearly marked. The excavations required to remove the underground tanks require adequate <u>barricading</u> to prevent accidents. • Workers and personnel must be provided with <u>essential services</u>. The Contractor will be responsible for the provision of a <u>worker's camp</u>, including <u>ablution facilities</u>. The standard of these facilities must be to the satisfaction of the Health and Safety Officer and these facilities must only be removed after completion of all building and construction works.

	- The <u>ablutions</u> must be <u>emptied regularly</u> and maintained in a working order throughout the construction period, ensuring that there is sufficient toilet paper available in the toilets. - Measures must be taken to <u>prevent standing water</u> creating conditions favourable for <u>diseases</u>. - No unauthorized <u>firearms</u> or weapons shall be permitted on site. Fires and explosions: <u>Firefighting facilities</u> will be to oil industry standards, which will include hand-held fire <u>extinguishers</u> and a <u>hose reel</u>. These facilities must be approved by the local fire department. - Firefighting equipment must be available on site and routinely <u>inspected</u> by competent personnel. - Minimization of <u>spark</u> quenching by <u>wetting</u> down and/or using construction power tools such as jack hammers under running water. - All <u>fuel</u> on site must be stored in <u>sealed containers</u> to prevent accidental fires and explosions. - All <u>fuel reserves</u> must be removed from the site prior to the decommissioning/dismantling of the existing tanks. <u>Gas-free certification</u> must take place prior to any dismantling activity commencing, to ensure that the tanks are free of flammable/explosive vapours and that they are safe to dismantle (should "hot works" be required) and safe to transport for scrap or recovery.
Residual impacts:	Minor incidents possible if human error occurs despite controls
Cumulative impact post mitigation:	Low (decreased likelihood and increased responsiveness and readiness)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Geological Constraints -The water table was encountered at approximately 2 meters below natural ground level. This high-water table is expected to adversely affect the tank foundations causing softening and weakening of clayey soils. -No significant potential swell/heave problems are anticipated largely due to the overlying 3 m layer of medium-dense sand overlying the clayey soils.
Nature of impact:	Negative
Extent and duration of impact:	Site, long-term
Consequence of impact or risk:	Results from the geotechnical investigation indicate that there are no major geotechnical constraints envisaged regarding the proposed installation of fuel tanks.
Probability of occurrence:	Medium probability (due to clay soils)
Degree to which the impact may cause irreplaceable loss of resources:	Low (no permanent environmental loss)
Degree to which the impact can be reversed:	Reversible (excavations stabilized, foundations reworked)
Indirect impacts:	Uneven settlement/shifting soils can lead to structural and operational risks (tilting of tanks over time), site damage, future operational risks, worker safety risks, construction delays
Cumulative impact prior to mitigation:	Low - Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low - Medium
Degree to which the impact can be avoided:	Impact can be moderately avoided (inherent geotechnical conditions cannot be changed)
Degree to which the impact can be managed:	Impact can be managed
Degree to which the impact can be mitigated:	Impact can be mitigated
Proposed mitigation:	- The raft foundation will require heavy steel reinforcement to accommodate hogging and/or sagging. - Raft foundation to be steel reinforced top and bottom or at centre to accommodate the possibility of both hogging and sagging. - The layered sands and sandy clays should be wetted and pre-compacted to 93 % Mod AASHTO prior to casting foundations. - An experienced engineering geologist or geotechnical engineer should inspect foundations prior to casting of foundations. - Stormwater and subsurface drainage systems across the site will require regular maintenance and cleaning to prevent flooding after high rainfall events.

	- The sandy nature of the surface soils across the site indicates that these soils will be susceptible to erosion by water should future excavations of service trenches be carried out. Likewise, appropriate stormwater management and drainage design will be necessary to cope with heavy rainfall events. - Excavations deeper than 1.5 m for service trenches, especially in saturated soils may be unstable and will require shoring or battering of slopes for safety reasons. Sub-vertical open cuts to 1.3 m bgl in the dry silty sands will be unstable in the short term and will stabilise at an angle of approximately 40 degrees. Sub-vertical open cuts between 1.3 and 2.0 m bgl in the sandy clays are likely to be stable in the short term but will require stabilization in the long term. - Unsupported excavations for service trenches that are more than 2 m deep in the sandy clays at slope angles steeper than 45° should be assumed to be unstable in areas where the slopes are very moist, or saturated. Excavation crests must not be surcharged or exposed to temporary loads. - It is recommended that any engineered fill be compacted to at least 95% MOD AASHTO beneath foundations and slabs which has bearing pressures of up to 100 kPa, and bearing pressures greater than 150 kPa pressures should be compacted to 98% MOD AASHTO compactive effort. - Should future sections of the site be excavated, the sand fill on the site can be re-used as medium-quality selected engineered fill material provided well-supervised compaction to 100% relative density and provided it is not too wet. - The sandy clayey soils containing high percentages of clay and silt are not suitable for engineered fill as compaction beneath the foundations will be poor. Based on the grading results and experience regarding compaction of the more clayey silts, these soils are not suitable for use as an engineered fill and will be difficult to compact if wet or dry of optimum moisture content.
Residual impacts:	Construction adjustments, minor potential delays
Cumulative impact post mitigation:	Very low - low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low - low

Potential impact and risk:	Traffic Impacts As a result of the construction phase of this development, traffic impacts are expected to occur on the surrounding road network due to an increase in construction vehicle and truck traffic while materials are being transported to and from the site. There may also be impacts on road infrastructure.
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	Construction activities are likely to lead to increased vehicle movement, including the transportation of materials and machinery, which could result in temporary traffic congestion and delays on local roads. Heavy construction vehicles and equipment may contribute to road wear and tear, and there might be localized disruptions to traffic flow due to construction site access points.
Probability of occurrence:	Medium - high
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Highly reversible
Indirect impacts:	Disruption to surrounding businesses and operations, public inconvenience due to delays
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	Scheduling construction related traffic during <u>off-peak</u> hours can help mitigate these impacts and minimize disruption to the surrounding transport network. Large machinery and trucks (construction and delivery vehicles) should not access the site

	during peak hours (i.e. 6:45 am to 8:15 am and 3:45 pm to 5:30 pm). • If <u>abnormal loads</u> are in transit to or from the site, the required precautions must be taken to ensure public safety, as per the National Department of Transport Regulations (2009). • Ensure that there is <u>sufficient parking and loading space</u> available for vehicles to limit congestion on-site and disruption off-site. • The driver is to abide by the <u>rules of the road</u> obeying the speed limits, road signs and markings. • All vehicles entering the site are to be <u>roadworthy</u> and <u>not overloaded</u>. • Any <u>incident/accident</u> or <u>damage</u> to a vehicle must be <u>reported</u> immediately. • Construction and delivery vehicles are to <u>avoid</u> routes through <u>residential areas</u> where possible. • <u>Monitor road conditions</u> before, during and after construction by means of photographs. Roads damaged as a direct result of project activities will be <u>restored</u> to their original condition in consultation with local authorities. • Establish a <u>complaint</u> reporting mechanism (trucks to have contact details to report poor driving as well as site to have contact details to report traffic related impacts associated with the project) • The use of <u>delivery trucks</u> during construction should be <u>limited to the designated areas</u>. • <u>Co-ordination of movement of vehicles</u> on and off site to reduce risks and prevent congestion on roads in the vicinity of the site.
Residual impacts:	Slight delays for other road users during delivery/when large vehicles enter/exit site
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Visual Impacts Visual disturbance associated with littering and illegal dumping on site and surrounding areas, as well as the alteration of the visual character of the site and surrounds as a result of temporary structures on site, stockpiles, heavy vehicles and equipment on site.
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	Temporary alteration of the visual character of the site
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	Highly reversible
Indirect impacts:	Temporary aesthetic value/quality loss
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Impact cannot be avoided (stockpiles, vehicles, structures necessary for construction)
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	• Good site management must ensure that no builders' waste and rubble accumulate on the site (i.e. timely removal) and no unsafe, unhealthy and unsightly conditions develop. • Ensure that no refuse or builders' rubble generated on the premises be placed, dumped or deposited on adjacent/surrounding properties including road verges, roads or public places as well as open spaces during or after the construction period of the development. • Ensure that all refuse and/or builders' rubble generated on the premises during and after the construction phase be contained and disposed of at a registered landfill site. • Excess soil and bedrock will be correctly disposed of with certificates of Disposal accompanying the disposal. • No waste may remain on the construction site for more than two weeks. Waste receptacles/bins must be provided at strategic

	places within the construction area, and cleared at regular intervals as required avoiding overflow. • The construction site must be kept in a clean and tidy state at all times. • Excess concrete will be collected and correctly disposed of. • No wastes will be disposed of and buried in the excavations. • Locate the construction camp in a position removed from the adjacent properties. • Care will have to be taken to ensure that the advertising signs blend into the surrounding areas. • Light pollution from the construction phase is expected to be minimal, as the construction area will be kept to a minimum, night-time construction work will not occur, and where possible time-controlled, motion-activated and directional lighting should be utilised. • Storage facilities and other temporary structures on site should be located in such a way that they have as little visual impact on local residents and businesses as possible.
Residual impacts:	Minor visual disruption possible
Cumulative impact post mitigation:	Very low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low

Potential impact and risk:	Socio-Economic Benefits- Creation of Business & Employment Opportunities, Impact on production and local economy (GDP), Impact on household income Temporary employment opportunities will be provided during the construction phase to those residing in the geographical area. Contractors, subcontractors, and professional staff will hire labour for various tasks, while indirect employment will arise in industries supplying tools, materials, and equipment. Additionally, induced employment will occur as households benefiting from these jobs spend their additional income on goods and services in the local economy. Although temporary, this increase in household earnings would have a positive effect on the livelihood of workers during the construction phase. Overall, the construction phase will provide a modest boost to the local economy through employment, requiring both skilled and unskilled labour.
Nature of impact:	Positive
Extent and duration of impact:	Regional, short-term
Consequence of impact or risk:	Medium The construction phase of the proposed project will involve activities such as engineering and design, site and infrastructure development, construction of buildings and facilities, installation of machinery and equipment, civil engineering works, and other business activities related to the construction. The construction of the proposed development will positively impact on the local community and beyond by creating additional job opportunities (albeit temporary). Employing individuals will increase the income of their respective households and thereby experience a temporary improvement in their standard of living.
Probability of occurrence:	Highly probable – Definite (labour and materials required)
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resources (impact is positive)
Degree to which the impact can be reversed:	Benefit terminated with end of construction, irreversible
Indirect impacts:	Increased household income, leading to more spending in local economy, support for local businesses
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact cannot be avoided and is desirable
Degree to which the impact can be managed:	Impact can be highly managed/enhanced
Degree to which the impact can be mitigated:	Impact can be highly mitigated/enhanced
Proposed mitigation:	• The developer should encourage the contractor to hire local labour from local communities (the broader Kraaifontein area), as far as feasible, to maximize the project's benefits to the local economy and to create maximum benefits to the communities.

	- The developer should engage with local authorities and business organisations to investigate the possibility of procuring construction materials, goods and products from local suppliers where feasible. - Sub-contract to local construction companies first where possible to do so, particularly small, medium and micro enterprises (SMMEs) and BBBEE complaint enterprises. - Employ labour-intensive methods in construction where feasible.
Residual impacts:	Positive impact on employment and economy
Cumulative impact post mitigation:	Medium - High
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium - High

OPERATIONAL PHASE

Potential impact and risk:	Groundwater, Soil and Surface Water (Freshwater) Contamination & Impacts During the operational phase, contamination of soil, groundwater and/or surface water (downstream waterbodies/watercourses) could occur from: -the <u>oil/lubricant storage</u> -fuel spillage during the re-filling of the ASTs (overfilling of the tanks) -fuel <u>leakage</u> from the ASTs and associated <u>fuel infrastructure</u> (accidental release of stored fuels due to tank corrosion/rupture or piping failures/faulty connections) -leaks/spills from the <u>road tankers</u>, including overfilling during loading -runoff contaminated by <u>firewater</u> -incorrect storage/handling and disposal of <u>waste</u> i.e. domestic waste (paper, plastic etc.), used oil and other hazardous waste generated during <u>maintenance</u> and operational activities. Although the site will consist of paving and cement (therefore direct contact with the subsurface will be limited), incorrect management of stormwater runoff may negatively impact the environment by potentially causing pollution and contamination off-site.
Nature of impact:	Negative
Extent and duration of impact:	Regional, long-term/permanent
Consequence of impact or risk:	Surface Water Quality Deterioration and Reduced Quantity: The site characteristics in terms of ground cover will not change as a consequence of the proposed development and thereby will not affect the storm water flows across the site. In essence the <u>new bund will further enhance the attenuation of runoff on the site because the release from the bund is a controlled release.</u> Given that the status quo for the area is that runoff flows directly into the wetland, the implementation of on-site stormwater management will be a positive impact of the development. The pre-development and post development <u>runoffs</u> are essentially the <u>same</u> because of the <u>extent of hard surfaces</u> being <u>similar</u>. So, no changes to the downstream drainage system of the site would be necessary. During periods of <u>heavy rainfall</u> reduced efficiency or <u>blockage</u> of the stormwater management system may encourage surface runoff (overflow), particularly in areas underlain by impermeable surfaces. Surface and/or Groundwater Quality Deterioration: However, there is a risk of decreased water quality as a result of soil and (ground and surface) water <u>contamination</u>, including the contamination of watercourses/waterbodies and the loss of freshwater biodiversity features. <u>This could result in further water quality impairment of the nearby artificial wetland, compromising its ability to fulfil its current functionality of stormwater attenuation and water quality amelioration.</u> Contaminated water discharging into the stormwater system and artificial wetland would ultimately discharge into a <u>natural watercourse.</u>

Probability of occurrence:	Medium probability
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Low (difficult to reverse/remediate)
Indirect impacts:	Contaminated water discharging into the <u>natural watercourse</u> (Mosselbank River), impairment of wetland ecosystem services, reduced water quality downstream, potential human health impacts
Cumulative impact prior to mitigation:	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be managed
Degree to which the impact can be mitigated:	Impact can be mitigated
Proposed mitigation:	Implement robust environmental safeguards to prevent spills or leaks: Design and Containment of Accidental Tank Leaks/Offloading/Loading Leaks: - The ASTs will be placed within a reinforced <u>concrete bund</u> capable of retaining 100% of the contents of the largest tank. - Intermediate lower bund walls will be constructed to separate the tanks. - The bunds will be fitted with a <u>valve</u> that is tamper proof and closed at all times. - The ASTs will be equipped with <u>automatic tank gauging</u> systems (early <u>leak detection</u>), which will be connected to a tank inventory management system. - An emergency shut down system should be place for the fuel infrastructure to assist in the reduction of the site risks by limiting the amount of diesel and gasoline released. <u>Overfilling instrumentation</u> will consist of at least two independent level detection alarms and trips. - Pumps/road <u>loading</u> of fuel to occur on an area of hardstanding where spillages can be readily contained and drained to the <u>oil-water</u> separator. Such surface will prevent downward migration of any spilled product. - The tanks and product lines must be <u>pressure tested</u> prior to commissioning. Measures for Emergency Spills: - Should any <u>inventory loss</u> be <u>suspected</u>, <u>emergency spill protocols</u> should be immediately triggered. - The wet stock should be monitored daily to ensure there are no losses (installation of an <u>Automatic Tank Gauging</u> ATG system). If losses are detected, then an investigation should be conducted including <u>integrity testing</u> of the fuel infrastructure. <u>Routine inspection and maintenance of infrastructure to prevent leakage</u> (valves, pipelines, tanks, links, wash bay, <u>oil separators/traps</u>, tank filling procedures) - Should <u>fire-fighting</u> become necessary, <u>emergency spill protocols</u> should be triggered to ensure the least possible impact from the disposal of <u>firewater</u>. - Undertake quarterly monitoring on the installed <u>groundwater monitoring</u> network during the initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis. - A <u>Spill Contingency Plan</u> must be drawn up and approved by the DEADP, including the DWS, prior to the operational phase of the project. <u>Emergency spill response equipment should be kept on-site in a</u> readily accessible area, and these should be <u>regularly inspected</u> to ensure that all necessary equipment remains in good working order. <u>Spill kits</u> must be provided and located in close proximity to the loading/dispatching points, the tank farm area and product storage area. - All staff to be <u>briefed</u> on <u>emergency spill protocols</u>, and mandatory <u>refresher courses</u> should be conducted on an annual basis.

	- Any oil/fuel <u>spill/leak</u> is to be <u>cleaned immediately</u> and any contaminated soil and spill clean-up materials must be disposed of through a recognisable waste disposal method. <u>Hazardous waste</u> will only be generated under abnormal or <u>emergency</u> conditions. <u>Disposal</u> of this material will involve chain of custody documentation to a <u>registered landfill</u> site. Stormwater Management Measures: - All stormwater infrastructures will be in accordance with the standard requirements and specifications as published by the City of Cape Town. - It is proposed that an <u>underflow/overflow discharge manhole</u> be introduced on the western boundary and that all stormwater be passed through this device prior to discharge to the existing pond. i.e. No run-off should flow directly into the wetland adjacent to the site. - The new storage <u>bund</u> area will be drained to a central switching valve. This valve will normally be in the closed position. After inspection of the contents of the bund, if the water is <u>not contaminated</u> the water will be released via the control valve to the <u>clean storm water system</u>. If the water is contaminated the water will be released via the control valve to the <u>new separator system</u> that drains to <u>sewer</u>. - All Continuously Oil Contaminated (COC) areas (i.e. the truck loading point and any areas where loaded trucks will be staged overnight on the site) will be drained directly to a new oil water separator that drains to the sewer system. - The <u>new wash bay</u> on the site needs to be drained to the <u>existing oil water separator</u> which would then drain to the <u>sewer</u> system. - The storm water management strategy will be to manage and collect surface runoff and roof water, and <u>if necessary</u>, pass it through a <u>detention tank/structure system</u> before discharging the water into the storm water drainage system at a peak discharge rate equal to or less than the pre-development flow. For this site, the runoff will be required to pass through a new detention tank/structure system. - A <u>new oil water separator</u> is to be installed to accommodate oily water from the <u>bunds and loading area</u>. Any contaminated stormwater must pass through the separator to mitigate against the escape of pollutants into the stormwater and sewer drainage systems. - The stormwater system must be kept separate from the wastewater (sewer) drainage system i.e. <u>separation of 'clean' storm water from the facility and storm water from the bundled portions</u> of the site (contaminated run-off), with measures for the containment, assessment, treatment and disposal of contaminated runoff. Storage and Maintenance: <u>Tank sludge</u> must be managed in an environmentally sound manner and correctly <u>disposed</u> of at a registered landfill site that handles this type of material. - Ensuring <u>machinery</u> and <u>trucks</u> on site are serviced and inspected regularly and provided with <u>drip trays</u> when parked. <u>Used oil</u> must be disposed of in accordance with the correct procedures. - Care is to be taken to ensure that spillages of oils and effluent are limited during <u>maintenance</u>. - Any <u>oils</u> to be stored on site are to be stored in <u>bunded</u> areas. <u>Waste</u> storage in <u>concrete</u> hardstand <u>demarcated</u> areas. <u>Waste management plan</u> to ensure <u>appropriate waste handling</u>.
Residual impacts:	Localised contamination of subsurface soil or shallow groundwater from leaks/spills. Small/slow leaks may remain undetected for some time. Potential minor spills reaching stormwater if system fails or human error occurs.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Potential impact and risk:	Fire, Health & Safety Risks Possible health and safety risks associated with fuel during an emergency:

	• <u>Uncontrolled leak at the depot (from bulk storage tank or delivery road tanker)</u>. Occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby could be negatively influenced. • The potential of hydrocarbon pool fires on site and the subsequent <u>toxic effect of combustion gases</u> can have adverse impacts on health and safety. This risk of fires and explosions at the facility include: -Bund and Pool Fires -Tank-Top Fires -Jet Fires (from a release of a 9 kg cylinder) -Flash fires (could result from a loss of a containment of petrol with subsequent ignition) -Vapour Cloud Explosions (VCEs) from a large spillage within the storage bund -Fixed-Roof Tank Explosions -LPG cylinder Boiling Liquid Expanding Vapour Explosions (BLEVEs) The scenarios with the highest risk rankings are the <u>overfilling</u> of the tanks. The presence of large-scale fuel storage tanks may raise concerns about safety issues among nearby business owners.
Nature of impact:	Negative
Extent and duration of impact:	Local, long-term (permanent if catastrophic)
Consequence of impact or risk:	Accidental Fires and Explosions • The risks greater than 1×10^{-3} fatalities per person per year are considered excessive for the workers. As this does not extend beyond the storage tank, the risks to workers would be considered acceptable. • Risks greater than 1×10^{-4} fatalities per person per year, are considered tolerable for industrial areas, but excessive for residential areas. The 1×10^{-4} fatalities per person per year did not extend into areas occupied by the general public on the proposed MOOV site. • The risk of 3×10^{-7} fatalities per person per year isopleth indicates the extent for land-use that would be suitable for vulnerable populations, such as hospitals, retirement homes, nursery schools, prisons, large gatherings in the open, and so forth. As the risks did not extend into areas occupied by the general public, no land planning would be required. • The risks to occupants beyond the proposed MOOV site boundary will be less than 1×10^{-4} fatalities per person per year, but greater than 3×10^{-7} fatalities per person per year, classifying the risks as ALARP and is deemed tolerable. The societal risks to the public are well below the lower guideline and therefore, the societal risks would be considered acceptable. Bulk Fuel Tank Farm • The impacts from accidental fires and explosions could extend beyond the site boundary, but would not extend to the residential areas. • The offsite risks from the proposed project will be between 1×10^{-4} to 1×10^{-6} fatalities per person per year, meaning the risks would be within the ALARP region and will be considered tolerable.
Probability of occurrence:	Moderate
Degree to which the impact may cause irreplaceable loss of resources:	High (fatalities)
Degree to which the impact can be reversed:	Low (irreversible harm to life)
Indirect impacts:	Public health concerns, reputational damage to Moov, potential interruption of nearby businesses, firewater
Cumulative impact prior to mitigation:	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Impact can be partially avoided (risks inherent with fuel storage)
Degree to which the impact can be managed:	Impact can be managed
Degree to which the impact can be mitigated:	As a result of the risk assessment study conducted for the proposed MOOV facility in Kraaifontein, a number of events were found to

	have risks beyond the fuel tank farm boundary. These risks could be mitigated to acceptable levels.
Proposed mitigation:	• Implement robust safety protocols, addressing any safety concerns raised by nearby business owners. • Compliance with all statutory requirements, i.e., pressure vessel designs; • Compliance with applicable SANS codes i.e., SANS 10087, SANS 10089, SANS 10108, etc.; • Incorporation of applicable guidelines or equivalent international recognised codes of good design and practice into the designs; • Completion of a recognised process hazard analysis (such as a <u>HAZOP</u> study, FMEA, etc.) on the proposed facility prior to construction to ensure that the design and operational hazards have been identified and adequate mitigation are put in place; • Full compliance with IEC 61511 (Safety Instrument Systems) standards or equivalent to ensure that adequate protective instrumentation is included in the design and would remain valid for the full life cycle of the tank farm: This is particularly relevant to the <u>overfilling</u> of the storage tanks and applicable shutdown systems: - o Including demonstration from the designer that sufficient and reliable instrumentation would be specified and installed at the facility; • Preparation and issuing of a safety document detailing safety and design features reducing the impacts from fires, explosions and flammable atmospheres to the MHI assessment body at the time of the <u>MHI assessment</u>: - o Including compliance to statutory laws, applicable codes and standards and world's best practice; - o Including the listing of statutory and non-statutory inspections, giving frequency of inspections; - o Including the auditing of the built facility against the safety document; - o Noting that codes such as IEC 61511 can be used to achieve these requirements; • Demonstration by MOOV or their contractor that the final designs would reduce the risks posed by the installation to internationally acceptable guidelines; • Signature of all terminal designs by a professional <u>engineer</u> registered in South Africa in accordance with the Professional Engineers Act, who takes responsibility for suitable designs; • Completion of an <u>emergency preparedness and response document</u> for on-site and off-site scenarios prior to initiating the MHI risk assessment (with input from the local authorities); • Permission not being granted for increases to the product list or product inventories without redoing part of or the full EIA; • Final acceptance of the facility risks with an MHI risk assessment that must be completed in accordance to the MHI regulations: - o Basing such a risk assessment on the final design and including engineering mitigation. • The requirements of approvals and registration under the MHI regulations <u>should be</u> reviewed for adequate preparation in completing the MHI risk assessment, as required by the legislation prior to construction. • Secondary containment for the storage and offloading/loading of road tankers has been described. However, it is <u>recommended</u> that the oil separator must contain the volume of the largest compartment of the road tanker, over and above the volume required for the first flush. • <u>Overfilling instrumentation</u> as at least two independent level detection alarms and trips. • <u>A detailed PHA / HAZOP study should be completed</u> by an independent chairman, who is registered with the Engineering Council of South Africa. Furthermore, any instruments used should incorporate the findings of a SIL assessment defined in IEC 61511. • <u>Ignition sources</u> near the depot <u>must be minimised</u> as far as possible. This is particularly relevant with the fuel storage area.

	- A <u>hazardous area classification</u> as per SANS 10108 must be developed for all flammable materials. Only suitable instrumentation and electrical equipment should be installed in accordance with the requirement of the code, - Emergency Shut Down System (ESD). The fast <u>detection</u> of a loss of containment with appropriate <u>shut-down</u> action to limit the amount of gasoline and diesel released, will assist in the reduction of the site risks. - The <u>societal risk</u> should be <u>reviewed</u> with each new <u>surrounding development</u>. - Moov is to comply with all OHS guidelines and ensure adequate training of all staff concerning the handling of fuel. - Provision of adequate firefighting equipment and periodic maintenance of such equipment. - Employees are to be equipped with appropriate PPE when handling fuel on-site. - The ASTs, pipelines and pumps are to be monitored on a weekly basis for leaks. - The road tanker driver is to be present during loading of fuel with a fire extinguisher.
Residual impacts:	Low likelihood of significant general public effects, potential minor incidents confined with emergency response procedures and mitigation measures
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low The Major Hazardous Installation Quantitative Risk Assessment found that the proposed MOOV facility in Kraaifontein would be classified as a <u>Low</u> Hazard Establishment Major Hazard Installation.

Potential impact and risk:	Noise Impacts The main source of elevated noise levels during the operation of the facility will be associated with the road tankers frequenting the site. Noise will also result from the use of equipment/machinery as well as from staff on site.
Nature of impact:	Negative
Extent and duration of impact:	Local, long-term
Consequence of impact or risk:	It is envisaged that the operation of the proposed development will have an insignificant noise impact as the proposed site is surrounded by a highly modified landscape of commercial, industrial, and urban developments, and is already operating as a fuel depot.
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low (does not destroy physical/ecological resources)
Degree to which the impact can be reversed:	Highly reversible
Indirect impacts:	Disturbance to neighbouring businesses and residents
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided (some noise inherent to fuel depot operations)
Degree to which the impact can be managed:	Impact can be partially managed
Degree to which the impact can be mitigated:	Impact can be partially mitigated
Proposed mitigation:	- Road tankers are to be in good working order so as to prevent excessive engine or brake noise. - Truck engines to be switched off when stationary/not in use i.e. no idling. - Staff training to avoid loud noise or shouting during nighttime hours (10pm to 6am) and <u>awareness</u> of surrounding community sensitivities. - Maintain a noise complaint register and set procedures for investigation and resolution. - Restrict high-noise activities such as maintenance to daylight hours. - Perform regular noise <u>monitoring</u>, particularly at the site boundary nearest to the residential area. - Fit anti-vibration mounts under noisy equipment. - Fit mufflers/silencers to machinery such as compressors, generators, pumps and vehicles, where possible.

Residual impacts:	Minor, occasional noise noticeable near site boundaries, particularly during loading/unloading
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Air Quality Impacts Fuel vapour emissions may cause an odour nuisance or health impacts to adjacent residents, staff on site or to users of the fuel depot. It must be noted that this is an existing impact due to the presence of existing fuel stored on site. The air emissions associated with the fuel storage tanks include VOCs emissions during the loading of the tanks, as well as breathing losses due to vapour expansion and contraction that result from changes in ambient temperature and barometric pressure. In addition, VOC emissions are expected to occur during the loading of the fuel onto the road tanker trucks. Exhaust emissions as a result of road tankers engines.
Nature of impact:	Negative
Extent and duration of impact:	Local, long-term
Consequence of impact or risk:	The main air pollutants of concern examined in the present study included benzene, toluene, ethylbenzene and xylene. Most of the VOC emissions originate from the petrol tank, reaching 1097.4 kg per year. The diesel tanks are expected to emit 32.7 kg/year per tank. The petrol tanker loading had the maximum operational emissions reaching 910.4 kg per year. The similar emissions from the diesel dispatch were 20.2 kg/yr. The current air quality in the study area appears to be good. The 1-hour and annual concentrations of <u>benzene, toluene, ethylbenzene and xylene</u> were <u>within the relevant air quality guidelines provided by the ATSDR, TCEQ and OEHHA</u>. The resulting ground-level concentrations at the discrete receptors within the residential areas around the facility were found to be very low, and are expected to have a very low impact on the ambient air quality in the extended area. Due to the low modelled concentrations, the increase of the ambient VOCs concentrations due to the operations of the proposed facility is expected to be <u>insignificant</u>, and the cumulative effect due to these emissions on the ambient concentrations in the extended area is expected to be <u>very low</u>. Based on the dispersion modelling results, the <u>air quality impacts are considered LOW in the industrial area close to the site and VERY LOW to NEGLIGIBLE in the nearest residential areas further away</u>.
Probability of occurrence:	Medium probability
Degree to which the impact may cause irreplaceable loss of resources:	Low - medium
Degree to which the impact can be reversed:	Partially reversible
Indirect impacts:	Odour nuisance and potential health impacts if uncontrolled chronic exposure
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Impact can be partially avoided (some emissions inherent to fuel storage and loading)
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	- Before the depot is in operation, perform two rounds of ambient VOCs <u>monitoring</u> via passive samplers at four locations along the site <u>boundaries</u>, in order to establish the background air quality levels in the area. Thereafter, once the plant is in operation, perform annual ambient VOCs monitoring via passive samplers at these same locations. - Develop a site-specific Leak Detection and Repair (LDAR) programme and submit it to the appropriate authorities for approval. - Perform annual leak detection monitoring in accordance with the above-mentioned LDAR programme. - All operators handling fuel to wear appropriate PPE to minimise exposure to hydrocarbon odours and to be adequately trained in the handling of fuel.

	- All drivers to switch off road tanker engines once correctly parked and to avoid idling where possible. - Moov is to ensure that all road tankers and machinery are in good working order so as to decrease air emissions (less burning of engine oil, improved combustion, fuel burnt more completely). - The use of an internal floating roof tank for the storage of ULP.
Residual impacts:	Road tanker may release vapours formed due to evaporation of residual product from the previous load in its empty tank
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Traffic Impacts Although traffic impacts are expected to occur for the duration of the operational phase, the site is currently operating as a fuel depot and therefore has existing traffic-related impacts. During the operational phase, the increased vehicle movements to and from the MOOV Energy facility could worsen traffic congestion, impacting ease of access for employees and customers of adjacent businesses. Based on the traffic impact assessment, there will be no significant change in traffic conditions or service levels at key intersections, maintaining current traffic flow efficiency and minimizing disruptions to the surrounding area.
Nature of impact:	Negative
Extent and duration of impact:	Local, long-term
Consequence of impact or risk:	The proposed development can be expected to generate an additional 60 and 54 EVU trips on the surrounding road network during the AM and PM peak hours, respectively. The quantum of traffic generated by the facility during peak hours is fairly insignificant in relation to the background traffic network and is unlikely to have any significant impact on prevailing traffic operations. The key intersections are currently operating at acceptable LOS and will continue to do so during the future 2029-year scenario even with the inclusion of the additional site traffic. The minimum off-street parking requirement for the proposed development within a Standard area is 37 bays. Provision will be made for 19 bays (down from 37 bays currently) in the front of the site and therefore, the parking provision is deemed insufficient in terms of the City of Cape Town Municipal Planning By-Law. However, MOOV Energy is seeking to acquire off-site parking to have all trucks park overnight which should result in less light/passenger vehicle traffic to the site as truck drivers will no longer need to park on-site. (This measure will also improve road safety by allowing truck drivers to rest and recover from their long shifts on the road.) Therefore, 19 bays would be sufficient to meet the parking demand of the office/workshop personnel – 17 personnel working in the office/workshop travel to the site with their own private vehicles. The proposed development was found to have a <u>low</u> impact on traffic operations on the surrounding road network.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low (no irreplaceable loss of resources)
Degree to which the impact can be reversed:	Reversible
Indirect impacts:	Reduced ease of access to surrounding area and delays
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Impact can be partially avoided (some traffic inherent to fuel depot)
Degree to which the impact can be managed:	Impact can be partially managed
Degree to which the impact can be mitigated:	Impact can be partially mitigated
Proposed mitigation:	Secure off-site parking for trucks to reduce the need for on-site parking, thereby alleviating potential congestion and ensuring adequate space for office and workshop personnel.

	- Explore the possibility of adding parking bays along the western boundary edge of the site to address the 18-bay shortfall and enhance on-site parking provision. - MOOV Energy should implement comprehensive traffic management plans. - To prevent delays in loading operations, bottlenecks must be reduced and breakdowns as well as accidents avoided. - The driver is to abide by the rules of the road obeying the speed limits, road signs and markings. - Road tankers entering/leaving the site are to be roadworthy. - Adequate level of training for all personnel involved in the handling and transportation of the fuel to the site. - The driver must have training with regard to the emergency response measures to be taken during the transportation of fuel in case of spills or accidents. - Each road tanker must carry a first-aid kit, spill control equipment and a fire extinguisher. - Any incident or damage to a road tanker must be reported immediately to Moov.
Residual impacts:	Slight increase in road users in the vicinity of the site, occasional short-term delays during special events/circumstances where background traffic levels are unusually high.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Visual Impacts Based on the nature of this proposal (i.e. fuel expansion), visual impacts associated with the fuel depot will remain similar. This is therefore a negligible impact as the expansion of the fuel storage capacity on site will not compromise/increase the significance of any visual impact.
Nature of impact:	Negative
Extent and duration of impact:	As the site is currently operating as a fuel depot, limited and negligible additional <u>visual</u> impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use/current character of the site and surrounding area. Tall buildings are present within the vicinity of the site. The fuel tanks, however, will be vertical and larger (compared to the current horizontal tanks).
Consequence of impact or risk:	Local, long-term
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Negligible
Degree to which the impact can be reversed:	Reversible
Indirect impacts:	Potential site reduction in visual amenity for nearby properties
Cumulative impact prior to mitigation:	Low - medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low - medium
Degree to which the impact can be avoided:	Impact cannot be avoided
Degree to which the impact can be managed:	Impact can be partially managed
Degree to which the impact can be mitigated:	Impact can be partially mitigated
Proposed mitigation:	- Maintain the tanks in clean condition to avoid patchy weathering that may make them more noticeable. - Avoid floodlighting of tanks, use downward facing lighting with curfew dimming. - Perimeter fencing and walling must be present to reduce visual intrusion.
Residual impacts:	Taller tanks may slightly increase visual prominence (but overall industrial character unchanged)
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Socio-Economic Benefits-Creation of Business & Employment Opportunities, Impact on production and local economy (GDP), Impact on household income Due to the increase in fuel storage capacity, current permanent employees' jobs are more likely to be retained.
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	The proposed development will create direct employment opportunities through the increased operations at the site. Induced employment will be created through forward linkages as households benefiting from direct employment will spend some of their income on goods and services in the economy. These two outcomes boost regional GDP while boosting economic activity. The sustainable income generated because of the proposed developments' operation will positively affect nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices. Additionally, business owners of the surrounding area may experience changes in the form of new activities and movements resulting from the proposed development within the area. Some businesses might experience indirect economic benefits through increased overall activity in the industrial area. (However, there are some concerns about potential disruptions (e.g. noise, traffic) and their impact on the local business environment.)
Nature of impact:	Positive
Extent and duration of impact:	Regional, long-term
Consequence of impact or risk:	The local economy will be stimulated through induced impacts, which will result from activities that occur in response to opportunities and activities associated with the new development; that is tapping into new resources, potential employment and household spending and investment opportunities. The induced effects will be generated by the spending of the employees within the business supply chain. Expenditure associated with the operation of the proposed development will have a positive impact on production. The operational spend on the project will inject business sales/production for the local and regional economy. The operation of the project will positively impact on the community and beyond by creating several sustainable job opportunities. Employment of individuals will increase the income of their respective households and thereby experience an improvement in their standard of living. (However, there are some concerns about potential disruptions (e.g. noise, traffic) and their impact on the local <u>business</u> environment.) These impacts, though localised, necessitate strict adherence to mitigation measures to minimize adverse effects and enhance overall benefits.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low (benefits are positive and no resources lost)
Degree to which the impact can be reversed:	Partially reversible (some economic and social gains may persist after facility closure)
Indirect impacts:	Increased household income, improved local spending, business opportunities for local suppliers, boosted GDP
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact cannot be avoided and is desirable
Degree to which the impact can be managed:	Impact can be highly managed/enhanced
Degree to which the impact can be mitigated:	Impact can be highly mitigated/enhanced
Proposed mitigation:	• The developer is urged to procure supplies they need for the facility's functioning from regional businesses. • The emphasis should be on increasing local procurement practices in terms of sourcing materials locally, hiring local suppliers and services as far as feasible to maximise the benefits to the local economies. • Where feasible, efforts must be made to employ locally to create maximum benefits to communities and to increase the positive impact on the local and regional area's economies. • Sub-contract to local construction companies particularly SMMs and BBBEE compliant enterprises where possible. • SMMs should be approached to investigate the opportunities for supply inputs required for maintenance and operations of the petroleum product facility, including warehousing and logistics operations.

	- MOOV Energy should maintain regular communication with adjacent business owners to keep them informed about the project and address any concerns. - It is required that as many of the employment opportunities for the operational phase are sourced from the area, where possible. This should be a minimum of <u>75% of the potential opportunities in order to maximise the local benefits.</u> <u>Ensure job opportunities are advertised</u> within the local press. - Ensuring the meaningful development of Historically Disadvantaged Individuals (HDIs) during the operational phase including the sourcing of HDIs for employment, services and local investment where possible.
Residual impacts:	Improvement employment opportunities, household income and long-term economic injection into the economy
Cumulative impact post mitigation:	Medium - High
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium - High

EVENTUAL DECOMMISSIONING AND CLOSURE PHASE OF FACILITY	
Potential impact and risk:	Groundwater, Soil and Surface Water (Freshwater) Contamination & Impacts Contamination caused by infiltration and <u>runoff</u> from decommissioning activities which may indirectly impact the water quality downstream. Soil, surface water/nearby water bodies and groundwater contamination can occur from: - Fuel, oil/lubricants and other pollutants may <u>leak</u> from <u>vehicles, chemical stores or equipment/machinery.</u> - Accidental <u>spillage</u> of <u>substances</u> used on-site during decommissioning of the tanks e.g. lubricant oil. <u>Chemical toilets</u> - Leaks/spillage of fuel from incorrect procedures adopted in <u>dismantling the fuel storage system (residual product).</u> The generation (storage and disposal) of solid and liquid <u>waste</u> may contaminate the receiving environment (soil, groundwater, surface water). Waste generated will consist of fuel storage infrastructure, domestic waste, building rubble, spoil materials as well as excess and discarded materials used in the decommissioning process. Storage of materials, including fill or excavated material in close proximity to drainage lines as well as soil <u>erosion</u> may result in <u>deposition of excess sediment downstream.</u> The decommissioning of the facilities on site e.g. stockpiling could also potentially cut across natural drainage patterns and <u>divert surface runoff</u>
Nature of impact:	Negative
Extent and duration of impact:	Regional, long-term/permanent
Consequence of impact or risk:	Decrease in the water quality as a result of contamination of groundwater/soil and runoff from the construction site into the stormwater system. <u>This could result in further water quality impairment of the nearby artificial wetland, compromising its ability to fulfil its currently functionality of stormwater attenuation and water quality amelioration.</u> Contaminated water discharging into the stormwater system and artificial wetland would ultimately discharge into a <u>natural watercourse.</u> Increase in sedimentation of nearby waterbodies. Alteration of natural drainage patterns. <u>Increased turbidity loading, increased microbiological loading and mobilisation of existing contaminants in the soils.</u>
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss of resources
Degree to which the impact can be reversed:	Partial (difficult to reverse/remediate)
Indirect impacts:	Reduced wetland functionality, impacts on aquatic ecology, potential downstream water quality impairment (Mosselbank River), potential human health impacts

Cumulative impact prior to mitigation:	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	Decommissioning of fuel infrastructure: - Tanks, pipelines and pumps are to be <u>drained</u> thoroughly of all product prior to dismantling and removal. This function is to be performed by an accredited <u>fuel products transporter</u>. Certificate of complete product delivery/disposal to be issued. <u>Dismantling</u> of equipment is to be carried out by an <u>accredited contractor</u> as per the Moov's work system requirements. - A <u>specialist</u> consultant should be present during the <u>tank and bund foundation removal</u> process to monitor the subsurface conditions (<u>contamination assessment</u>) and to provide guidance and clean-up measures (disposal pathways and remediation) where required. This phase should involve environmental <u>rehabilitation</u> in the form of <u>soil and groundwater remediation</u>, should contamination be identified. <u>Soil vapour tests and soil contamination analysis</u> will be undertaken. - Installation of temporary containment bunds and <u>surface water runoff controls around the existing ASTs during disassembly, should they remove the bund before removing the ASTs.</u> Spillages: - In case of an accidental <u>spillage of oil/fuel immediate action must be taken to contain and clean the spillage/to remove hydrocarbons</u> e.g. Spilltech or Rapid Spill. <u>Emergency procedures</u> and cleaning up operations must be in place <u>prior</u> to decommissioning commencement. - All necessary <u>equipment</u> for dealing with <u>spills</u> of fuels/chemicals must be available on the site i.e. ensure absorbent <u>spill kits</u> and <u>disposal containers</u> on hand to handle <u>spillages</u> during dismantling of equipment and removal of residual product. - In an event of a spill, Contractors will remediate to the satisfaction of Moov Energy. Waste management: - As far as feasible, the Contractor must <u>separate different types of material to facilitate reuse, recycling or disposal</u> thereof. - All <u>off cuts</u> must be <u>reused</u> where possible or <u>recycled</u>. <u>Separate bins</u> must be provided for <u>hazardous and general waste</u> to ensure correct waste separation. The <u>bins</u> should be clearly <u>marked and lined</u> for safe disposal of waste. <u>Contaminated material and hazardous waste</u> are to be removed and <u>disposed</u> of at a licensed <u>Class A landfill</u> site by a licensed specialist contractor. Chain of Custody documentation is to be retained on site. - If the fuel storage <u>tanks</u> are not suitable for <u>reuse</u>, a registered waste disposal company must be appointed to transport them to a registered site for cutting and final <u>disposal</u>. <u>All waste is to be disposed</u> of to a <u>suitably licenced landfill</u> site. - The bins/skips containing <u>general waste</u> must be <u>cleared</u> on a <u>weekly</u> basis and disposed of at a municipal landfill site by a registered waste management company. <u>Solid waste</u> should be <u>regularly collected</u> from the site for disposal at an appropriately licensed landfill. - Builder's <u>rubble</u> generated during decommissioning activities is to be correctly disposed of at a registered landfill site. - No building <u>rubble</u> may be used as <u>backfill</u>. - No <u>wastes</u> are permitted to be disposed of into <u>excavations or stormwater drains</u>, <u>burned</u> on site or illegally <u>dumped</u> in the surrounding areas, during or after the decommissioning period. - Collection and disposal of waste <u>metal</u> to a registered site where the equipment will either be <u>scrapped</u> or <u>reused</u> depending on the condition of the equipment. - The Contractor must ensure that staff are <u>educated/encouraged</u> to not <u>litter</u> or dispose of waste in the natural environment but to use available facilities for waste disposal.

	• All <u>waste storage areas</u> on site must be kept <u>tidy</u> on a daily basis. • An adequate number of <u>scavenger proof</u> waste receptacles and/or <u>bins</u> must be strategically placed around the site to collect all <u>domestic</u> waste. • <u>General waste</u> is to be <u>collected in skips</u> for disposal at the local municipal landfill site. • <u>Skip</u> bins must be <u>covered</u> to avoid waste from being blown off. • <u>Clean soil</u> from excavation activities must be <u>reused</u> as fill on the site. • <u>Excess soil and bedrock</u> will be correctly <u>disposed</u> of with certificates of Disposal accompanying the disposal. • Effective management of the waste handling facilities to avoid spills or loss of containment and the risk of refuse being washed into the ground/downstream (confine temporary waste storage areas, <u>bunded</u> areas and/or <u>compacted surface</u> to reduce seepage). Storage areas: • <u>Fuel, other chemicals and hazardous materials/substances</u> are to be securely <u>stored</u> on an impervious surface in a designated <u>bunded area</u>, <u>able</u> to contain 100% of the total volume of materials at any given time in order to contain accidental spills or leaks. The <u>integrity of the impervious surface</u> and bunded area must be <u>inspected</u> on a regular basis and maintained when necessary. • The materials <u>storage area</u> must be located in a defined area <u>away from</u> any natural drainage lines and/or stormwater drains and <u>away from</u> the artificial wetland. • <u>Material Safety Datasheets</u> are to be retained on site for the fuels and chemicals stored on site. • Correct measures need to be taken to ensure that no contaminants seep into the soil or ground water. • The <u>contractor camp</u> must be placed in an area already disturbed and <u>at least 50 m away from the artificial wetland</u>. • <u>No materials or equipment</u> may be stored <u>outside</u> of the <u>boundaries</u> of the construction camp. • The decommissioning footprint must be well demarcated and <u>fenced</u> off to contain site activities and prevent the <u>dumping</u> of refuse or building <u>waste</u> outside of work areas. • Adequate training of contractor staff on the correct <u>storage and handling</u> of hazardous substances (e.g. fuel, oil, cement, etc.). Vehicles and equipment: • All earthmoving <u>plant</u>, <u>vehicles</u> and <u>equipment</u> must be <u>maintained</u> in good working order to reduce the probability of leakage of hydrocarbon fuels and lubricants and provided with <u>drip trays when parked and during refuelling</u>. <u>Drip trays must be inspected for leaks and emptied when necessary</u>. • Restrict areas for refuelling of vehicles and machinery. • <u>Maintenance</u> of earthmoving plant, vehicles and equipment is not permitted on site, unless a specific <u>bunded</u> area is constructed for this purpose. • Earthmoving plant, heavy machinery, vehicles and/or equipment must be located away from stormwater drains and the artificial wetland when <u>parked/stored</u> for extended periods of time. • If a <u>water pump</u> is required, the water pump must operate inside a <u>drip tray</u> to prevent any spillage of fuel and limit the risk of soil/water contamination. The drip tray will need to be lined with absorbent material and <u>checked</u> daily while in use. • In the event of a breakdown, immediate steps shall be taken to prevent any spillage. Surface runoff: • Adequate <u>stormwater drainage</u> should be <u>constructed</u> and <u>no</u> water should be allowed to <u>pond</u>. • The decommissioning phase of the project must take cognisance of existing <u>drainage lines</u> in the area so as not to disrupt these drainage patterns. • There is to be a <u>periodic inspection</u> of the sites temporary and/or permanent <u>drainage system</u> to ensure that the flow of surface water is not obstructed.
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	- Proposed Storm Water Controls to address runoff as per the Stormwater Management Plan include: -Silt fencing -Instant lawn -Poles (banks) -Drainage pipes -Sandbagging -Earth-berms -Small trenches with small earth-berms -Agricultural trenches <u>Install stormwater management on the site before decommissioning of the infrastructure.</u> - Decommissioning should take place in <u>summer</u> as there is a lower likelihood of run-off from the site (associated with rainfall). - Ensure that no <u>water</u> from the site enters the adjacent artificial <u>wetland</u> downstream and the catchment drained by the Mosselbank River via <u>existing stormwater drains</u>. <u>Wastewater</u> must not be allowed to come into contact with <u>exposed soils</u> or run across the site. - All <u>wastewater</u> must be <u>collected in a sealed container</u> and <u>disposed</u> of by an approved specialist waste contractor. Chain of Custody Documentation must be retained on site. - Contaminated or <u>highly turbid storm water</u> runoff from the site, including 'clean' areas, should be collected and <u>treated</u> prior to disposal off-site. - All <u>contaminated water</u> should be immediately removed and disposed of at a registered <u>Class A landfill</u> site or approved <u>recycling</u> facility. - Appropriate berms and surface water runoff controls should be implemented around excavations if necessary. Erosion: - All exposed <u>bare surfaces</u> during clearing and earthworks must be protected against <u>erosion</u> using <u>rows of sediment barriers</u> (e.g. silt fences, sandbags, earthen diversion berms). <u>Sediment barriers</u> should be <u>regularly</u> maintained and <u>cleaned</u> so as to ensure effective drainage. - Areas susceptible to <u>erosion</u> must be protected by installing temporary and/or permanent <u>drainage works</u> to prevent surface water from being concentrated in streams. - Ensure that any <u>trenches or excavations</u> are <u>closed</u> and compacted immediately. <u>Stockpiles</u> of soil/sand should be <u>shaped</u> appropriately to reduce their susceptibility to <u>erosion</u>. <u>Stockpiles</u> of soil/sand should be <u>covered</u> to reduce the effects of wind <u>erosion</u>. <u>Stockpiled</u> soil should be protected by <u>erosion-control berms</u> if exposed for a period of more than <u>14 days</u> during the wet seasons. <u>Stockpiles</u> must be restricted to <u>designated areas</u> and positioned <u>away from</u> existing natural <u>drainage lines/stormwater drains</u>. Ablution facilities: - Decommissioning staff must use temporary chemical <u>ablution</u> facilities provided by the contractor and the use of surrounding areas as a toilet facility must be forbidden. - All temporary/portable <u>toilets</u> are to be maintained in a hygienic state and <u>serviced</u> regularly or as required by a reputable contractor, and the contents are to be removed to a licensed disposal facility. The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied. - Toilets must be anchored to the ground to ensure that they don't get knocked or blown over. General: - In the event that surface, ground or storm water <u>pollution</u> does occur as a result of activities on the site, the <u>Department of Water and Sanitation</u> must be informed immediately. Any significant spills or leak incidents must be reported in terms of the NEMA section 30. - During decommissioning, good site management and environmental practices must be ensured by an approved Environmental Control Officer (ECO).
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	- Completely <u>remove</u> from site all <u>waste</u>, plant, equipment, surplus rock and other foreign <u>materials</u> once decommissioning has been <u>completed</u>. - Ensure that the groundwater monitoring wells are not impacted/access-compromised by the decommissioning phase and monitor/sample quarterly during decommissioning.
Residual impacts:	Soil disturbance, localised contamination
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Fire, Health & Safety Risks Due to the nature of decommissioning activities, together with human error (negligence and inadequate staff training), the safety of workers, the public, property and/or equipment may be compromised. There is a risk of: -hydrocarbon vapours being released during the decommissioning process -fire and explosion and toxic combustion gases if an incident occurs at the existing facility while decommissioning takes place, particularly related to residual fuel.
Nature of impact:	Negative
Extent and duration of impact:	Local, medium-term (can be long-term/permanent if catastrophic)
Consequence of impact or risk:	Exposure through breathing vapours, swallowing hazardous substances or skin contact may have possible health effects. This includes likely exposure of the workforce to hydrocarbon vapours during excavation works in the removal of the proposed aboveground fuel storage tanks and equipment/pipelines.
Probability of occurrence:	Medium probability
Degree to which the impact may cause irreplaceable loss of resources:	High (injuries/fatalities)
Degree to which the impact can be reversed:	Medium
Indirect impacts:	Public concern/emergency response, loss of family income due to worker injury, firewater, decommissioning delays
Cumulative impact prior to mitigation:	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be avoided:	Impact can be partially avoided (risks inherent to decommission)
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be high mitigated
Proposed mitigation:	- Contractor appointed for construction is to comply with the Occupational Health and Safety Act Regulations (<u>OSHA</u>) current version in its entirety. - All the necessary <u>safety regulations</u> must be abided by including <u>building codes</u> and fire practice requirements. - The contractor must comply with <u>Moov Energy's Safe Work Practices</u>. - The contractor will prepare a <u>site-specific Health and Safety Plan</u>. - Provision of adequate health and safety <u>training</u> to all employees is necessary. - Ensure that the <u>handling of equipment and materials</u> is <u>supervised</u> and adequately <u>instructed</u>. - Ensure that <u>vehicles/plant</u> are under the control of <u>competent</u> personnel. - Provision of <u>personal protective equipment</u> will be made by the Contractor. - Provide adequate <u>facilities</u> on site <u>to treat emergencies</u> to staff and/or the public. - The site must be clearly demarcated, have safety signage and be <u>fenced</u> off to limit access to the site to the workforce only and mark hazards during decommission. - The Contractor is to appoint a <u>Health and Safety Officer</u> to monitor the safety conditions during the decommissioning phase of the development. - Workers and personnel must be provided with <u>essential services</u>. The Contractor will be responsible for the provision of a <u>worker's camp</u>, including <u>ablution facilities</u>. The standard of these

	facilities must be to the satisfaction of the Health and Safety Officer and these facilities must only be removed after completion of all building and construction works. - The <u>ablutions</u> must be <u>emptied</u> regularly and maintained in a working order throughout the construction period. - Measures must be taken to <u>prevent standing water</u> creating conditions favourable for <u>diseases</u>. - Ensure that the <u>contact details</u> of the <u>police</u> or a <u>security</u> company, <u>ambulance</u> service and fire brigade are available on site. - The contractor and construction personnel appointed to carry out the decommissioning activities must undertake adequate <u>training in emergency response</u> situations. <u>Firefighting facilities</u> will be to oil industry standards, which will include hand-held fire <u>extinguishers</u> and a <u>hose reel</u>. These facilities must be approved by the local fire department. - Minimization of <u>spark</u> quenching by <u>wetting</u> down and/or using construction power tools such as jack hammers under running water. - All <u>fuel</u> on site must be stored in <u>sealed containers</u> to prevent accidental fires and explosions. - All <u>fuel reserves</u> must be removed from the site prior to the decommissioning phase. <u>Gas-free certification</u> must take place prior to any dismantling activity commencing, to ensure that the tanks are free of flammable/explosive vapours and that they are safe to dismantle (should "hot works" be required) and safe to transport for scrap or recovery.
Residual impacts:	Minor incidents possible if human error occurs despite controls
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Noise Impacts Decommissioning activities may result in a temporary increase in noise levels over a relatively short duration. Activities which are likely to be noisy include: - Vehicles frequenting the site; <u>Dismantling</u> of equipment; - Demolition of bund walls and floor slabs. - Earthmoving (backfilling, compacting) and soil remediation
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	During the decommissioning of the proposed development, nearby businesses in the surrounding area will face noise pollution. Activities such as excavation of suspected contaminated soil, site restoration and material deliveries (to reinstate surfaces) will occur. Operations will involve heavy machinery, including cranes and bulldozers, and generate noise. Despite these impacts, their effect will be minimal due to the project's location in an industrial area, which experiences less disruption compared to residential zones.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Highly reversible
Indirect impacts:	Wildlife and community disturbance/stress, temporary impact on worker concentration in surroundings
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be partially managed
Degree to which the impact can be mitigated:	Impact can be partially mitigated
Proposed mitigation:	- Institute <u>noise control measures</u> throughout the decommissioning phase for all applicable activities. <u>Limit</u> the <u>working hours</u> during the decommissioning phase to between 7:30 am and 6 pm during weekdays, and between

	8:30 am and 1 pm on Saturdays. No construction work should occur on Sundays and public holidays. • Provide and maintain all equipment with standard <u>silencers</u>. • Construction staff working in areas where the 8-hour ambient noise is equal to or exceeds 85dBA, should be provided with <u>ear protection</u> equipment. • Contractor to <u>maintain</u> vehicles and machinery in good working order. • A hot line or other methods of complaints registration must be established for the construction phase. This must be available to all communities and advertised (e.g. sign boards). This instrument must be available, trustworthy, and fair, and ensure that all <u>complaints</u> of noise are registered, managed and resolved within a 24-hour timeframe in order to be effective.
Residual impacts:	Occasional disturbance during high-noise activities
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Air Quality Impacts <u>Dust</u> and particulate matter emissions are probable during vehicle transport, stockpiling, the breaking of concrete slabs, excavation activities as well as dismantling of equipment. However, periods of dust generation are likely to be of a relatively short duration. <u>Hydrocarbon vapours</u> are likely to be released during the removal of the tanks and associated infrastructure. <u>Engine</u> combustion <u>emissions</u> may be associated with the following: ○ Heavy machinery, earthmoving and excavation plant, and vehicles ○ Generators used during activities ○ Diesel powered equipment Improper <u>waste</u> disposal in the form of burning may also impact air quality.
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	During the decommissioning of the proposed development, nearby businesses in the surrounding area will face dust pollution. Activities such as excavation, earthworks, breaking of concrete, stockpiling and dismantling/demolition will occur. Operations will involve heavy machinery and vehicle transport thereby generating dust and exhaust fumes. Despite these impacts, their effect will be minimal due to the project's location in an industrial area, which experiences less disruption compared to residential zones.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Partially reversible
Indirect impacts:	Health impacts, reduced visibility, nuisance to nearby worker/residents, deposition on wetland vegetation
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	• <u>Regularly clean</u> and maintain the construction <u>site</u> to prevent the accumulation of dust. • The appointed Contractor is to implement effective <u>dust control measures</u> during his/her activities. • In areas where there is unbound sand or storage piles, make sure that the area has been watered down. <u>Wet</u> unprotected, <u>cleared areas and stockpiles</u> with water to suppress dust pollution. • Soil/sand <u>stockpiles</u> are to be covered with <u>tarpaulin</u> and located in <u>sheltered areas</u> where they will not be exposed to the erosive effects of the <u>wind</u>.

	- In order to minimise the risk of spillage and loss through wind erosion, trucks transporting soil must <u>not</u> be <u>overloaded</u> and must be <u>covered</u> when conveying soil to and from the site. If necessary, to make sure loads on trucks are <u>dampened</u>. - Ensure that no refuse wastes are <u>burnt</u> on the premises or on surrounding premises. - The contractors and/or subcontractors must wear the <u>appropriate PPE</u> e.g. dust masks. - All heavy earthmoving vehicles and equipment must be <u>maintained</u> on a regular basis to ensure in good working order to prevent smoke, limit potential emissions and to meet manufacturer's specifications for safety, fuel consumption etc. and are to be <u>inspected</u> on a regular basis. - Dust containment measures must be used during period of dry, windy conditions (>40 km/hr) through <u>shade cloth</u>, dust suppression, or other appropriate methods. - Erect <u>wind barriers</u> in high wind situations to prevent dust being blown up from exposed soils and storage piles. - A hot line or other methods of complaints registration must be established for the construction phase. This must be available to all communities and advertised (e.g. sign boards). This instrument must be available, trustworthy, and fair, and ensure that all <u>complaints</u> of dust emissions are registered, managed and resolved within a 24-hour timeframe in order to be effective.
Residual impacts:	Intermittent dust in windy conditions, small amounts of exhaust emissions
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Traffic Impacts Potential increase and intermittent interruption of traffic flow due to frequent movement of vehicles associated with the decommissioning activities, delivery vehicles as well as plant to and from the site. There may also be impacts on road infrastructure.
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	Decommissioning activities are likely to lead to increased vehicle movement, including the transportation of materials and machinery, which could result in temporary traffic congestion and delays on local roads. Heavy vehicles and equipment may contribute to road wear and tear, and there might be localized disruptions to traffic flow due to decommission site access points.
Probability of occurrence:	Medium - high
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Highly reversible
Indirect impacts:	Community disruption, public inconvenience due to delays
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be avoided:	Impact can be partially avoided
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	- The Contractor must take cognisance of <u>peak</u> traffic times (i.e. 6:45 am to 8:15 am and 3:45 pm to 5:30 pm) when large decommissioning-related and delivery vehicles should not be present on the local road system. - The driver is to abide by the <u>rules of the road</u> obeying the speed limits, road signs and markings. - All vehicles entering the site are to be <u>roadworthy</u> and <u>not overloaded</u>. - Any <u>incident/accident</u> or <u>damage</u> to a vehicle must be <u>reported</u> immediately. - Heavy and delivery vehicles are to avoid routes through <u>residential areas</u> where possible.

	- If <u>abnormal loads</u> are in transit to or from the site, the required precautions must be taken to ensure public safety, as per the National Department of Transport Regulations (2009). - Ensure that there is <u>sufficient parking and loading space</u> available for vehicles to limit congestion on-site and disruption off-site. <u>Monitor road conditions</u> before, during and after decommissioning by means of photographs. Roads damaged as a direct result of project activities will be <u>restored</u> to their original condition in consultation with local authorities. - Establish a <u>complaint</u> reporting mechanism (trucks to have contact details to report poor driving as well as site to have contact details to report traffic related impacts associated with the project).
Residual impacts:	Slight delays for other road users during delivery/when large vehicles enter/exit the site
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact and risk:	Visual Impacts Visual disturbance associated with littering and illegal dumping on site and surrounding areas, as well as the alteration of the visual character of the site and surrounds as a result of temporary structures on site, stockpiles, heavy vehicles and equipment on site.
Nature of impact:	Negative
Extent and duration of impact:	Local, short-term
Consequence of impact or risk:	Temporary alteration of the visual character of the site
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	Highly reversible
Indirect impacts:	Temporary aesthetic value/quality loss
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Impact cannot be avoided (vehicles, stockpiles, structures necessary for decommission)
Degree to which the impact can be managed:	Impact can be highly managed
Degree to which the impact can be mitigated:	Impact can be highly mitigated
Proposed mitigation:	- Good site management must ensure that no builders' waste and rubble accumulate on the site (i.e. timely removal) and no unsafe, unhealthy and unsightly conditions develop. - Ensure that no refuse or builders' rubble generated on the premises be placed, dumped or deposited on adjacent/surrounding properties including road verges, roads or public places as well as open spaces during or after the decommissioning period of the development. - Ensure that all refuse and/or builders' rubble generated on the premises during and after the decommissioning phase be contained and disposed of at a registered landfill site. - Excess soil and bedrock will be correctly disposed of with certificates of disposal accompanying the disposal. - No waste may remain on the construction site for more than two weeks. Waste receptacles/bins must be provided at strategic places within the construction area, and cleared at regular intervals as required avoiding overflow. - The site must be kept in a clean and tidy state at all times. - Excess concrete will be collected and correctly disposed of. - No wastes will be disposed of and buried in the excavations. - Locate the construction camp in a position removed from the adjacent properties. - Care will have to be taken to ensure that the advertising signs blend into the surrounding areas. - Light pollution from the decommissioning phase is expected to be minimal, as the construction area will be kept to a minimum, night-time decommissioning work will not occur, and where

	possible time-controlled, motion-activated and directional lighting should be utilised. - Storage facilities and other temporary structures on site should be located in such a way that they have as little visual impact on local residents and businesses as possible. - The site shall be <u>rehabilitated</u> in accordance with the planned usage of the site.
Residual impacts:	Minor visual disruption possible
Cumulative impact post mitigation:	Very low
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low

Potential impact and risk:	Socio-Economic Impacts Creation of temporary employment during decommissioning, but loss of permanent employment after closure of the depot. In both cases there will be associated impacts on production and local economy (GDP) -i.e. positive, then negative. Temporary employment opportunities will be provided during the decommissioning phase. Contractors, subcontractors, and professional staff will hire labour for various tasks, while indirect employment will arise in industries supplying tools and materials/equipment. Additionally, induced employment will occur as households benefiting from these jobs spend their additional income on goods and services in the local economy. Although temporary, this increase in household earnings would have a positive effect on the livelihood of workers during the decommissioning phase and provide a modest boost to the local economy. The decommissioning of the depot will, however, cause a loss in direct employment opportunities associated with the operations at the site. Induced employment will be lost through forward linkages as households losing direct employment may spend less of their income on goods and services in the economy. These outcomes can negatively impact GDP/economic activity. Additionally, businesses of the surrounding area may experience changes in the form of fewer activities and movements resulting from the proposed development within the area and as result loss of indirect economic benefits through associated with activity in the industrial area. (Businesses may, however, experience fewer potential disruptions, such as noise and traffic, associated with operations after the depot's closure.)
Nature of impact:	Positive then negative
Extent and duration of impact:	Regional, short-term positive then permanent negative
Consequence of impact or risk:	The decommissioning phase of the proposed project will involve activities such as dismantling infrastructure, rehabilitating the site, managing waste and ensuring safety. This will involve jobs such as environmental consultants, waste transporters, hazmat specialists, security, compliance officers, project managers, general labourers, demolition workers, earthworks operators/heavy equipment operators, mechanical technicians, electricians and tank cleaning technicians. The decommissioning phase of the proposed development will positively impact on the local community and beyond by creating additional job opportunities (albeit temporary). Employing individuals will increase the income of their respective households and thereby experience a temporary improvement in their standard of living. On the other hand, the closure of the depot may cause a loss of permanent employment, with knock-on impacts on the local economy/GDP.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Low (economic impacts are not irreplaceable)
Degree to which the impact can be reversed:	Reversible
Indirect impacts:	Increased household spending during decommission then decreased household income after closure Local businesses may experience reduced activity post-closure
Cumulative impact prior to mitigation:	Moderate
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Moderate

Degree to which the impact can be avoided:	Impact cannot be avoided (closure of facility is inevitable)
Degree to which the impact can be managed:	Impact can be partially managed (temporary employment can be enhanced)
Degree to which the impact can be mitigated:	Impact can be partially mitigated
Proposed mitigation:	- Retrenchment and down-scaling policies as well as early, transparent communication are put in place by the operator to ensure that employees are given sufficient time to seek alternative employment. - Transferable skills development policies should also be in place during the operational phase to ensure that employees can find alternative employment should the facility be closed permanently. - Local contractors, labour and service providers are to be used during the decommissioning phase to ensure that the local economic benefit is maximized. - Sub-contract to local construction companies first where possible to do so, particularly SMMs and BBBEE compliant enterprises. - Employ labour-intensive methods in decommissioning where feasible.
Residual impacts:	Temporary positive impact during decommissioning, but permanent loss of employment post-closure, partially mitigated by skills transfer, retraining and use of local contractors
Cumulative impact post mitigation:	Low - moderate
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low - moderate

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.
<u>Major Hazardous Installation Quantitative Risk Assessment undertaken by RISCO dated June 2025:</u> A number of incident scenarios were simulated, taking into account the prevailing meteorological conditions. This risk assessment included the consequences of fires and explosions at the proposed MOOV facility. A number of well-known sources of incident data were consulted and applied to determine the likelihood of an incident to occur. Physical consequences were calculated with Gexcon's Riskcurves version 12.3.0. No material to be stored on site is listed as notifiable. No bulk materials to be stored on, produced at or delivered to site are considered extremely corrosive. All substances to be stored on, produced at or delivered to site are considered thermally stable in atmospheric conditions. Bund and Pool Fires - Flammable and combustible materials to be stored on site include gasoline and diesel. - A tank release, such as overfilling or piping failure, would not result in overtopping, and even in the worst case, would be contained within the bunded area. 10 kW/m² is the value for the 1% fatality for unprotected people, with an exposure duration at 20 seconds. The 10 kW/m², representing the 1% fatality, could extend beyond the site boundary, to the neighbour to the south. - The maximum impacts from a large bund fire could extend beyond the MOOV site boundary into neighbouring properties, but would not extend into any residential areas. Tank-Top Fires - The maximum downwind distance to the 1% fatality (represented by the 10 kW/m²) was calculated at 17 m and could extend beyond the site boundary to the south of the MOOV facility, but would not reach any residential areas. Jet Fires - The worst-case jet fires from a release of a 9 kg cylinder. The 10 kW/m², representing the 1% fatality, could extend beyond the site boundary, to the neighbour to the south. Flash fires - Flash fires could result from a loss of a containment of petrol with subsequent ignition. From the simulations, the greatest extent of a flash fire would be less than 45 m from the center of the pool. The maximum extent from flash fires could extend a short distance beyond the MOOV site boundary. Vapour Cloud Explosions (VCEs) - In the event of a VCE from a large spillage within the storage bund, the risks could extend beyond the MOOV site boundary. However, no injuries will be expected within the nearby residential area. Fixed-Roof Tank Explosions	

- The 1% fatality could extend beyond the site boundary, but will not impact the nearby residential area.

Boiling Liquid Expanding Vapour Explosions (BLEVEs)

- The extent of an LPG cylinder BLEVE 1% fatality could extend beyond the site boundary into the unoccupied area.

The warehouse will primarily contain oils having a high flashpoint and will thus have a very low probability of a fire. The flammable ethanol must be stored in a separate flammable area. The extent of a fire will be limited to the flammable area and will not reach the general public, outside of the facility.

Accidental Fires and Explosions

- The risks greater than 1×10^{-3} fatalities per person per year are considered excessive for the workers. As this does not extend beyond the storage tank, the risks to workers would be considered acceptable.
- Risks greater than 1×10^{-4} fatalities per person per year, are considered tolerable for industrial areas, but excessive for residential areas. The 1×10^{-4} fatalities per person per year did not extend into areas occupied by the general public on the proposed MOOV site.
- The risk of 3×10^{-7} fatalities per person per year isopleth indicates the extent for land-use that would be suitable for vulnerable populations, such as hospitals, retirement homes, nursery schools, prisons, large gatherings in the open, and so forth. As the risks did not extend into areas occupied by the general public, no land planning would be required.
- The risks to occupants beyond the proposed MOOV site boundary will be less than 1×10^{-4} fatalities per person per year, but greater than 3×10^{-7} fatalities per person per year, classifying the risks as ALARP and is deemed tolerable.

The societal risks to the public are well below the lower guideline and therefore, the societal risks would be considered acceptable.

The scenarios with the highest risk rankings are the overflowing of the tanks.

Bulk Fuel Tank Farm

- The impacts from accidental fires and explosions could extend beyond the site boundary, but would not extend to the residential areas.
- The offsite risks from the proposed project will be between 1×10^{-4} to 1×10^{-6} fatalities per person per year, meaning the risks would be within the ALARP region and will be considered tolerable.

This study found that the proposed MOOV facility in Kraaifontein would be classified as a Low Hazard Establishment Major Hazard Installation. After the completion of Phase 2 with the addition of Tank-4, the MHI classification may increase to a Medium Tier Establishment.

RECOMMENDATIONS

As a result of the risk assessment study conducted for the proposed MOOV facility in Kraaifontein, a number of events were found to have risks beyond the fuel tank farm boundary. These risks could be mitigated to acceptable levels.

RISCOM did not find any fatal flaws that would prevent the project proceeding to the detailed engineering phase of the project.

RISCOM would support the project with the following conditions:

- Compliance with all statutory requirements, i.e., pressure vessel designs;
- Compliance with applicable SANS codes, i.e., SANS 10087, SANS 10089, SANS 10108, etc.;
- Incorporation of applicable guidelines or equivalent international recognised codes of good design and practice into the designs;
- Completion of a recognised process hazard analysis (such as a HAZOP study, FMEA, etc.) on the proposed facility prior to construction to ensure that the design and operational hazards have been identified and adequate mitigation are put in place;
- Full compliance with IEC 61511 (Safety Instrument Systems) standards or equivalent to ensure that adequate protective instrumentation is included in the design and would remain valid for the full life cycle of the tank farm: This is particularly relevant to the overflowing of the storage tanks and applicable shutdown systems:
 - Including demonstration from the designer that sufficient and reliable instrumentation would be specified and installed at the facility;
- Preparation and issuing of a safety document detailing safety and design features reducing the impacts from fires, explosions and flammable atmospheres to the MHI assessment body at the time of the MHI assessment:
 - Including compliance to statutory laws, applicable codes and standards and world's best practice;
 - Including the listing of statutory and non-statutory inspections, giving frequency of inspections;
 - Including the auditing of the built facility against the safety document;
 - Noting that codes such as IEC 61511 can be used to achieve these requirements;
- Demonstration by MOOV or their contractor that the final designs would reduce the risks posed by the installation to internationally acceptable guidelines;
- Signature of all terminal designs by a professional engineer registered in South Africa in accordance with the Professional Engineers Act, who takes responsibility for suitable designs;
- Completion of an emergency preparedness and response document for on-site and off-site scenarios prior to initiating the MHI risk assessment (with input from the local authorities);
- Permission not being granted for increases to the product list or product inventories without redoing part of or the full EIA;
- Final acceptance of the facility risks with an MHI risk assessment that must be completed in accordance to the MHI regulations:
 - Basing such a risk assessment on the final design and including engineering mitigation.

The requirements of approvals and registration under the MHI regulations should be reviewed for adequate

preparation in completing the MHI risk assessment, as required by the legislation prior to construction.

Secondary containment for the storage and offloading / loading of road tankers has been described. However, it is recommended that the oil separator must contain the volume of the largest compartment of the road tanker, over and above the volume required for the first flush.

Overfilling instrumentation has been described as at least two independent level detection alarms and trips. The overfilling protection cannot be reduced to anything less than the aforementioned protection.

Due to the seriousness of the hazardous material stored, transported and produced on site, it is suggested that a detailed PHA / HAZOP study should be completed by an independent chairman, who is registered with the Engineering Council of South Africa. Furthermore, any instruments used should incorporate the findings of a SIL assessment defined in IEC 61511.

Ignition sources near the depot must be minimised as far as possible. This is particularly relevant with the fuel storage area.

A hazardous area classification as per SANS 10108 must be developed for all flammable materials. Only suitable instrumentation and electrical equipment should be installed in accordance with the requirement of the code,

Emergency Shut Down System (ESD)

- The fast detection of a loss of containment with appropriate shut-down action to limit the amount of gasoline and diesel released, will assist in the reduction of the site risks.

The societal risks could further change with the development of the surrounding area, and thus the societal risk should be reviewed with each new surrounding development.

Contamination Assessment undertaken by Kantey & Templer dated July 2025:

- A search of the NGA⁹ geo-referenced geohydrological database of registered groundwater abstractions was conducted. No registered groundwater abstraction points were identified within a 1 km radius of the site.
- The assessment was conducted in areas where contamination was suspected to have been present, designated as Study Area 1 and Study Area 2 (staging areas for fuel tankers on-site) and the Tank Farm Area located within close proximity to the two 23 m³ diesel ASTs.
- A total of eight hand auger locations were advanced across the three designated areas on-site.
- Headspace testing was conducted on soil recovered at 0.3 m intervals during hand augering.
- Soil samples (designated SS1 to SS8) were collected from within each of the eight hand auger locations, at depths with the highest VOC readings.
- Groundwater was encountered at depths of 1.5 m bgl¹⁰ and 1.2 m bgl.
- Groundwater samples were collected from four of the eight auger holes.
- The eight soil and four groundwater samples collected were submitted to a SANAS¹¹-accredited laboratory for analyses of BTEXN¹², MTBE¹³, TAME¹⁴ and TPH¹⁵-banding.
- Adsorbed phase concentrations detected in the soil samples did not exceed any applicable SSV criteria. Consequently, the source-pathway-receptor linkages via soil are considered incomplete at this stage and do not pose a risk to on- and off-site receptors.
- The TPH (C₁₀-C₁₄) concentration detected in one of the groundwater samples exceeded the Tier 1 RBSL for the ingestion of groundwater in a residential scenario, however, no groundwater users were identified within close proximity to the site. Thus, the source-pathway-receptor linkage via the ingestion of groundwater is considered incomplete at this stage.
- Furthermore, targeted hydrocarbon compound concentrations within the groundwater sample collected adjacent to the off-site wetland to the southwest were below the detection limit. Consequently, dissolved phase concentrations detected on-site are considered to not pose a risk to the wetland at this stage as the source-pathway-linkage is considered incomplete.

Heritage Screener undertaken by CTS Heritage dated May 2025:

It is unlikely that the proposed development will impact on significant heritage resources, and it is recommended that no further heritage studies are required.

It is likely that the area proposed for development has been extensively **disturbed** through human occupation and agricultural practices.

No resources of heritage significance have been identified in close proximity to the development according to the City of Cape Town GIS Mapviewer layers for heritage.

Due to the small scale of the development and its distance from the historic core of Durbanville and any known heritage resources, it is unlikely that the development impacted on significant built environment or cultural landscape heritage resources.

As the property has been developed in a similar manner to what is proposed, it is argued here that the proposed development does not constitute a change in character and as such, no negative impact to any identified cultural landscape is anticipated.

⁹ NGA: National Groundwater Archive

¹⁰ m bgl: meters below ground level.

¹¹ SANAS: South African National Accreditation System.

¹² BTEXN: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene.

¹³ MTBE: Methyl Tert-Butyl Ether.

¹⁴ TAME: Tert-Amyl Methyl Ether.

¹⁵ TPH: Total Petroleum Hydrocarbon.

Heritage Impact Assessments conducted within the 5km inclusion zone of the proposed development identified few archaeological heritage resources of significance.

In general, the archaeology from this area has limited significance due to its disturbed context. Kaplan (2006) notes that the receiving environment is in a highly degraded and altered state. It is unlikely that the proposed development will impact on significant archaeological resources.

In addition, the area proposed for development has not been identified as a sensitive cultural landscape.

According to the SAHRIS Palaeosensitivity Map, the area proposed for development is located on geological sediments with **LOW** palaeontological sensitivity.

It is very unlikely that the proposed development will impact on significant palaeontological heritage resources. No further assessment of impacts to palaeontological heritage is recommended.

Air Quality Impact Assessment undertaken by DDA Environmental Engineers dated June 2025:

The current air quality in the study area appears to be good.

The air emissions associated with these fuel storage tanks include VOCs emissions during the loading of the tanks, as well as breathing losses due to vapour expansion and contraction that result from changes in ambient temperature and barometric pressure. In addition, VOC emissions are expected to occur during the loading of the fuel onto the road tanker trucks. Most of the VOC emissions originate from the petrol tank and the petrol tanker loading had the maximum operational emissions.

Benzene:

Maximum 1-hour (99th percentile) concentrations at facility and communities to south and west - well below TCEQ short-term guideline.

Maximum annual concentrations - well below South African Air Quality Standard and TCEQ long-term guideline.

Current impacts due to emissions:

- in immediate vicinity of facility - very low, and
- in nearby residential areas - negligible.

Ethylbenzene:

1-hour and annual concentrations - well below TCEQ short-term guideline and long-term guideline.

Modelled concentrations - well within their respective ATSDR and OEHA guidelines.

Maximum 1-hour and annual concentrations at communities nearby - very low.

Toluene:

1-hour concentrations at facility and communities to southwest - well below TCEQ short-term screening level.

Maximum annual concentrations - well below the TCEQ long-term screening level.

Modelled concentrations - well within their respective ATSDR and OEHA guidelines.

Maximum 1-hour and annual concentrations at communities nearby - very low.

Xylene:

1-hour and annual concentrations - well below TCEQ short-term guideline and long-term guideline.

Modelled concentrations - well within their respective ATSDR and OEHA guidelines.

Modelled concentrations at communities nearby - very low.

The resulting ground-level concentrations at the discrete receptors within the residential areas around the facility were found to be very low, are expected to have a very low impact on the ambient air quality in the extended area and are considered negligible.

Due to the low modelled concentrations, the increase of the ambient VOCs concentrations due to the operations of the proposed facility is expected to be insignificant, and the cumulative effect due to these emissions on the ambient concentrations in the extended area is expected to be very low.

Based on the dispersion modelling results, the air quality impacts are considered LOW in the industrial area close to the site and VERY LOW to NEGLIGIBLE in the nearest residential areas further away.

Based on these modelled concentrations and the resulting impacts, the proposed facility should be authorised.

Recommendations

- Before the depot is in operation, perform two rounds of ambient VOCs monitoring via passive samplers at four locations along the site boundaries, in order to establish the background air quality levels in the area. Thereafter, once the plant is in operation, perform annual ambient VOCs monitoring via passive samplers at these same locations.
- Develop a site-specific Leak Detection and Repair (LDAR) programme and submit it to the appropriate authorities for approval.
- Perform annual leak detection monitoring in accordance with the above-mentioned LDAR programme.

Geotechnical Assessment undertaken by MTB Geoservices dated July 2024:

The 8.45 m soil profile encountered during the rotary core drilling comprises a 3 m thick layer of medium-dense SAND, underlain by a 3.6 m thick layer of very stiff sandy CLAY, which is in turn underlain by a 1.3m layer of medium-dense SAND, followed by residual very stiff sandy CLAY. The water table was encountered at approximately 2 meters below natural ground level. This high-water table is expected to adversely affect the tank foundations causing softening and weakening of clayey soils.

No significant potential swell/ heave problems are anticipated largely due to the overlying 3 m layer of medium-dense sand overlying the clayey soils.

The estimated raft footing load is approximately 12500 kN, equating to an approximate foundation pressure of 10 kPa and an allowable bearing pressure of 165 kPa (estimated range of 120 to 180 kPa). Settlement estimations are based on the raft with approximate sides of 34 m and embedment depths of 0.4 – 0.6 m. This translates to estimated settlements of less than 5 mm, assuming a 2.5 safety factor. The visual assessments of the soil consistency, laboratory grading, constrained modulus and Geostudio software values have been applied to determine the foundation pressures and generic compressibility and settlement values.

Results from the geotechnical investigation indicate that there are no major geotechnical constraints envisaged regarding the proposed installation of fuel tanks.

Recommendations:

The raft foundation will require heavy steel reinforcement to accommodate hogging and/or sagging.

Raft foundation to be steel reinforced top and bottom or at centre to accommodate the possibility of both hogging and sagging.

The layered sands and sandy clays should be wetted and pre-compacted to 93 % Mod AASHTO prior to casting foundations.

An experienced engineering geologist or geotechnical engineer should inspect foundations prior to casting of foundations.

Stormwater and subsurface drainage systems across the site will require regular maintenance and cleaning to prevent flooding after high rainfall events.

The sandy nature of the surface soils across the site indicates that these soils will be susceptible to erosion by water should future excavations of service trenches be carried out. Likewise, appropriate stormwater management and drainage design will be necessary to cope with heavy rainfall events. Excavations deeper than 1.5m for service trenches, especially in saturated soils may be unstable and will require shoring or battering of slopes for safety reasons. Sub-vertical open cuts to 1.3 mbgl in the dry silty sands will be unstable in the short term and will stabilise at an angle of approximately 40 degrees. Sub-vertical open cuts between 1.3 and 2.0 mbgl in the sandy clays are likely to be stable in the short term but will require stabilization in the long term. Unsupported excavations for service trenches that are more than 2m deep in the sandy clays at slope angles steeper than 45° should be assumed to be unstable in areas where the slopes are very moist, or saturated. Excavation crests must not be surcharged or exposed to temporary loads.

It is recommended that any engineered fill be compacted to at least 95% MOD AASHTO beneath foundations and slabs which has bearing pressures of up to 100 kPa, and bearing pressures greater than 150kPa pressures should be compacted to 98% MOD AASHTO compactive effort.

Should future sections of the site be excavated, the sand fill on the site can be re-used as medium-quality selected engineered fill material provided well-supervised compaction to 100% relative density and provided it is not too wet. The sandy clayey soils containing high percentages of clay and silt are not suitable for engineered fill as compaction beneath the foundations will be poor. Based on the grading results and experience regarding compaction of the more clayey silts, these soils are not suitable for use as an engineered fill and will be difficult to compact if wet or dry of optimum moisture content.

Stormwater Management Plan undertaken by Kantey & Templer dated June 2025:

The drainage streams on the site will be split into three drainage streams as below:

- Clean storm water (CSW)
- Accidentally oil contaminated (AOC)
- Continuously oil contaminated (COC)

The stormwater infrastructure to be installed for the purpose of the proposed development should allow for the following:

- Pipe diameters: min. 375mm diam.
- Bedding: Class C
- Inlets: Manhole
- Junctions: Points of deflections on pipelines

All stormwater infrastructures will be constructed in accordance with the standard requirements and specifications as published by the City of Cape Town.

It is proposed that an underflow / overflow discharge manhole be introduced on the western boundary and that all stormwater be passed through this device prior to discharge to the existing pond.

The new storage bund area will be drained to a central switching valve. This valve will normally be in the closed position. After inspection of the contents of the bund, if the water is not contaminated the water will be released via the control valve to the CSW system. After inspection of the contents of the bund, if the water is contaminated the water will be released via the control valve to the new separator system (COC) that drains to sewer.

All COC areas will be drained directly to a new oil water separator that drains to the sewer system.

It is proposed to construct a new wash bay on the site, this wash bay will be drained to the existing oil water separator which would then drain to the sewer system.

The objective of a storm water management plan is therefore to manage the storm water resources of the collective watersheds to:

- Prevent flood damage,
- Preserve the natural and beneficial functions of the natural drainage system.

The stormwater management strategy will be to manage and collect surface runoff and roof water, and if necessary, pass it through a detention tank/structure system before discharging the water into the storm water drainage system at a peak discharge rate equal to or less than the pre-development flow.

For this site, the runoff will be required to pass through a new detention tank/structure system.

The site characteristics in terms of ground cover will not change as a consequence of the proposed development and thereby will not affect the storm water flows across the site. In essence the new bund will further enhance the attenuation of runoff on the site because the release from the bund is a controlled release.

The proposed changes to the site will require a review of the existing stormwater system and the new infrastructure required. For the proposed storm water reticulation design, please see Annexure A of the Stormwater Management Plan (found in Appendix G of this BAR).

Proposed Stormwater Controls-Details during Construction Phase include:

- Silt fencing
- Instant lawn
- Poles (banks)
- Drainage pipes
- Sandbagging
- Earth-berms
- Small trenches with small earth-berms
- Agricultural trenches

Recommendations:

- A new oil water separator is to be installed to accommodate oily water from the bunds and loading area. Any contaminated storm water must pass through the separator to mitigate against the escape of pollutants into the storm water and sewer drainage systems.
- The storm water system must be kept separate from the wastewater (sewer) drainage system.
- The pre-development and post development runoffs are essentially the same because of the extent of hard surfaces being similar. So, no changes to the downstream drainage system of the site would be necessary. However, the local authority may require the installation of an attenuation tank at plan approval stage.
- Any oils to be stored on site are to be stored in bunded areas.
- The proposed wash bay discharge needs to pass through the existing oily water separator.

Wetland Assessment undertaken by Freshwater Consulting dated July 2025:

The study area is situated in the Mosselbank Catchment (quaternary catchment G21E).

The erf is completely developed with no aquatic habitats or features occurring on it. However, the southern boundary of the site lies adjacent to a wetland on Erf 21593. This wetland is an artificial feature that has formed as a result of stormwater inputs from upslope development and impeded drainage due to the railway line immediately downslope. The wetland does not support any important or endangered habitats from an ecological perspective. Nevertheless, the wetland does function as a stormwater attenuation pond and therefore provides some level of ecosystem services within the catchment. An ecosystem service demanded of the wetland, given its context within an industrial area, is the amelioration of water quality through assimilation of phosphates, nitrates and toxicants. Despite the impacts to the wetland, it is able to provide this service to a limited degree.

The wetland discharges directly into the stormwater infrastructure of the City of Cape Town which conveys it to the Mosselbank River. The wetland also overlies an aquifer that is of high susceptibility to contamination from anthropogenic activities.

The risk that polluted run-off from the site flows into the artificial wetland would be of a high significance. However, this impact is addressed by the designs of the bund area and the stormwater management plan. These will include the following measures to prevent the risk of potentially contaminated runoff discharging into the artificial wetland:

- 1) The current stormwater plan makes provision for how contaminated run-off from the site will be kept separate from general 'clean' stormwater from the site. Contaminated run-off and wash water generated on the site will be disposed of into the sewer. Run-off flow intensity and volume are shown to not increase as a result of the development, nor should water quality of the run-off deteriorate. No run-off should flow directly into the wetland adjacent to the site.
- 2) the outlets of the bunded subdivisions will be designed so that contaminated water containing hydrocarbons can be flushed into the sewer system, whilst clean stormwater in the bund areas can be discharged into the stormwater system.
- 3) Bund storage capacity exceeds the tank volume to ensure that in a worst-case leak scenario – the entire tank can be contained.
- 4) The wash bay water drains to the oil separator and then into the sewer system.

During construction there is a risk that the waste material from decommissioned infrastructure will be dumped into aquatic features resulting in their disturbance.

Recommendation: All waste (including old fuel storage tanks) must be reused or disposed of at an approved waste disposal facility that can accommodate the type of waste being disposed of. This includes any wastewater that might be pooled in the smaller bund areas of the existing tanks and within the wash-bay.

While the construction is undertaken on the site there is a risk that run-off from the construction site (operation of machinery and use of potential pollutants such as cement) will flow into the wetland.

Recommendations: This impairment of water quality should be avoided by installing stormwater management on the site before construction of the rest of the infrastructure.

- During construction, good site management and environmental practices must be ensured by an approved Environmental Control Officer (ECO).
- Construction should take place in summer as there is a lower likelihood of run-off from the site
- Adequate ablutions are provided for contractors;
- Machinery needs to be serviced to ensure there are no oil or fuel leaks, and provided with drip trays when parked; and
- No stockpiling of material or dumping of waste outside of the site footprint.

When the site is operational there will be trucks passing through the site each day. This means that during rainfall events, run-off from the site could impact upon the wetland adjacent to the site.

Recommendations: This can be addressed by designing for on-site stormwater management, as previously described. It can also be managed by ensuring machinery and trucks on site are regularly inspected and serviced to ensure there are no oil or fuel leaks and provided with drip trays when parked.

The storage of LPG gas is not considered to have any additional impact from an aquatic ecosystem perspective. Furthermore, the storage of oils and other products are not considered to have an additional impact from an aquatic ecosystem perspective. This is because these are already being stored on site and the oils and other products are stored indoors. The stormwater management plan for the site is an improvement from the current scenario.

If the recommendations of this report are implemented then the proposed increase in fuel storage capacity on Erf 21594 will most likely have a low to very low impact from a freshwater ecological perspective.

The risk of the proposed increase in fuel storage capacity impacting upon freshwater resources, without any stormwater mitigation in place, is **moderate**.

The primary risk is that run-off from the site or water from the bund areas will enter the wetland located on Erf 21593. This wetland is itself of low importance, however, its degradation poses a risk to downstream ecosystems. This concern can be addressed by implementing the mitigation measures recommended. Primarily, the proposed layout should show how stormwater will be accommodated on site rather than being directly discharged into the wetland, and how the bund outlets will be managed on site to prevent contaminated water being discharged to the stormwater system.

A stormwater management plan was prepared for the site. The plan addresses the above concerns. With the implementation of these design measures incorporated into the proposed layout, the risk of the proposed activity will be **low**.

Considering that the wetland may contribute to the recharge of an aquifer that is highly susceptible to contamination, it is **recommended** that the potential impacts to groundwater associated with the proposed development be assessed by a geohydrologist.

Geohydrology Assessment undertaken by JG Afrika dated July 2025:

The aquifer system underlying the site is classified as Major however, with geological structures being absent within the project area, the Geohydrological potential is considered low to moderate.

The DRASTIC mapping index confirms the Major aquifer unit as having a "Moderate" vulnerable rating. For the proposed ASTs, vulnerability is considered medium due to the shallow groundwater, and offset by the proposed bunding and containment design. The associated Parsons Groundwater Quality Management System gives the site a High Level of Protection index when comparing vulnerability as the second variable.

Limited groundwater use was identified within 2 km of the study area. The strategic value is considered Low as the area is likely serviced by municipal supply. The associated Parsons Groundwater Quality Management System gives the site a Medium Level of Protection index when comparing strategic value as the second variable.

The main potential contaminant sources within the project area include the existing ASTs as well as runoff from the existing wash bay located within the south eastern boundary of the site. Workshops, vehicle maintenance bays and fuel storage areas are also potential contaminant sources.

The water quality status quo is that site activities have not impacted on the downslope wetland to date.

The water quality status quo assessment indicated localised impacts of a likely diesel nature in the vicinity of the existing bund. Downstream groundwater sample points reported all organic results below the laboratory detection levels, thus indicating no further impacts on the groundwater receiving environment. The groundwater quality in the area is typically not suitable for human consumption without treatment, due to the industrial nature of the project area.

Impacts During Construction

During the construction phase, the removal of the existing ASTs (residual product) poses an immediate to short term risk of hydrocarbon contamination which needs to be managed during the decommissioning process. Workshop areas, maintenance and storage of heavy vehicles/plant/equipment (and breakdowns), and fuel stores also pose a risk of hydrocarbon contamination. Other construction phase activities including temporary sanitation, waste handling, excavations and new infrastructure. All waste handling and sanitation is considered temporary and therefore poses a low and short-term risk. Areas of excavation may result in accelerated erosion, increased storm water runoff, increased turbidity loading, increased microbiological loading and mobilisation of existing contaminants in the soils.

Recommendations:

- Follow decommissioning procedure

- Installation of temporary containment bunds and surface water runoff controls around the existing ASTs during disassembly, should the existing bund be removed before the ASTs are removed
- Effective management of the temporary sanitation and waste handling facilities to avoid spills or loss of containment (confine temporary waste storage areas and use of bunded areas and/or compacted surfacing to reduce seepage)
- Controlled earthworks and spoil management
- Appropriate berms and surface water runoff controls should be implemented around excavations if necessary
- Conduct Contaminated Land Assessment if any contaminated in situ soils are identified
- Spill kits on site
- Use of drip trays
- Good vehicle maintenance
- Restrict areas for refuelling of vehicles and machinery
- Install early warning groundwater monitoring points between proposed new tank farm, wash bay, separator and the wetland at the onset of the construction phase (these wells must not prohibit construction or be impacted by construction) and monitor/sample quarterly during construction

Impacts During Operation

During the operational phase, loss of containment or prolonged leaks from ASTs and associated infrastructure may pose a risk of hydrocarbon contamination. Further to this during periods of heavy rainfall reduced efficiency or blockage of the stormwater management system may encourage surface runoff (overflow), particularly in areas underlain by impermeable surfaces. Surface runoff/leaks in the vicinity of workshops, the wash bay or vehicle maintenance/plant storage areas and material/waste storage and handling areas could pose risks to groundwater or the adjacent wetland. Runoff and/or leaks from oil separators/traps being compromised. Prolonged leaks from office and site sanitation infrastructure.

(No increase or decrease in groundwater resource quantity is expected from the proposed infrastructure. No impact on the reduction of groundwater resource quantity is expected as there is municipal supply.)

All activities present risks that score LOW for the pre mitigation ratings, with limited activities scoring MODERATE. Most scores can be reduced with the introduction of proposed mitigation measures.

Recommendations:

- Correct stormwater design
- Tank farm in concrete hardstand and approved bund design
- Rapid response clean up to identified leaks/spills
- Spill kits on site
- Routine inspection and maintenance/clean-up of infrastructure (valve, tank, link, wash bay, oil separators/traps, tank filling procedures, and pressure testing)
- Waste storage in concrete hardstand demarkated areas
- Waste management plan (appropriate waste handling)
- Certified waste removal
- Undertake quarterly monitoring on the installed groundwater monitoring network during the initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis.

Current indications suggest no impacts to the groundwater receiving environment however, it is recommended that a groundwater monitoring network be installed around the proposed new concrete bund (and downgradient of the separator and wash bay) to act as an early warning system to historical and possible future impacts from the historical and proposed infrastructure and subsequent to the initial baseline groundwater monitoring exercise, quarterly monitoring will need to be undertaken during the construction phase and initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis.

Traffic Impact Assessment undertaken by Kantey & Templer dated June 2025:

The site is well served by existing road infrastructure and is located within an intermediate (industrial) roadside development environment near the City of Cape Town urban edge.

Access to the site is currently situated on Kiaat Road via an 11m wide carriageway crossing. The two-way access serves the main on-site parking area and the fuel depot. Furthermore, access to a shaded parking area with perpendicular parking is located on Kiaat Road.

A new access/dedicated entrance will be created adjacent to the boundary of Erf 21596 on Kiaat Road. The existing two-way access will be used exclusively as an exit from the site. The shaded parking area will be retained. The dedicated entrance and exit will be spaced approximately 32 m apart.

Kiaat Road is a Class 5 local (industrial) street within the City of Cape Town's road network. Access to Kiaat Road is achievable from Industrial Road another Class 5 road which acts as a collector road providing access to the other side streets and abutting driveways within Kraaifontein Industria from Maroela Road.

The traffic generated by the proposed development can be expected to influence the following key intersections:

- Key Intersection 1: Maroela Road / Sandringham Road / Industrial Road
- Key Intersection 2: Industrial Road / Kiaat Road

Whilst the light vehicle traffic to the site will not increase with the proposed development, the heavy vehicle traffic is expected to increase on account of the delivery of fuel to the ASTs by heavy duty vehicles (HDVs) and the supply to clients/customers will

be via road tankers. The frequency of HDVs delivering and supplying fuel will only be calculated during the detailed design stage. Therefore, for the purpose of this TIA, it was assumed that HDV traffic will increase by 200% during the AM and PM peak hours.

MOOV Energy currently generates 38 EVU trips during the AM peak hour (06:15 – 07:15) and 45 EVU trips during the PM peak hour (16:30 – 17:30). MOOV Energy can be expected to generate 98 and 99 EVU trips during the AM and PM peak hours in future, respectively. Therefore, the proposed development can be expected to generate an additional 60 and 54 EVU trips on the surrounding road network during the AM and PM peak hours, respectively.

The quantum of traffic generated by the facility during peak hours is fairly insignificant in relation to the background traffic network and is unlikely to have any significant impact on prevailing traffic operations. This will result in a fairly low impact on the traffic operations at the key intersections. Therefore, no geometric improvements are required to the network at any of the key intersections.

The existing and future traffic operations at the key intersections were evaluated in terms of Level of Service (LOS), Delay and V/C ratios (measures of effectiveness). The findings of the Signalised and Unsignalised Intersection Design and Research Aid (SIDRA) analysis indicate that the key intersections are currently operating at acceptable LOS and will continue to do so during the future 2029-year scenario even with the inclusion of the additional site traffic. Therefore, the proposed development is expected to have a low impact on the traffic operations at the key intersections.

The sidewalk on Kiat Road adjacent to the site measures ±1.8m in width and is adequate to serve the needs of pedestrians. There are also sidewalks on both sides of Industrial Road which serves as the main pedestrian thoroughfare into Kraaifontein Industria.

The minimum off-street parking requirement for the proposed development within a Standard area is 37 bays. Provision will be made for 19 bays (down from 37 bays currently) in the front of the site and therefore, the parking provision is deemed insufficient in terms of the City of Cape Town Municipal Planning By-Law. However, MOOV Energy is seeking to acquire off-site parking to have all trucks park overnight which should result in less light/passenger vehicle traffic to the site as truck drivers will no longer need to park on-site. (This measure will also improve road safety by allowing truck drivers to rest and recover from their long shifts on the road.) Therefore, 19 bays would be sufficient to meet the parking demand of the office/workshop personnel – 17 personnel working in the office/workshop travel to the site with their own private vehicles. An alternative could be to explore if additional parking can be provided internally along the western boundary edge of the site to make up the 18-bay shortfall.

It is therefore recommended by the Traffic Impact Assessment specialist that the application should be approved by the Western Cape Government and the relevant Road Authority (City of Cape Town) as the proposed development was found to have a low impact on traffic operations on the surrounding road network.

Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

This development aligns with regional growth strategies and local development goals. By boosting storage capacity and updating infrastructure, the expansion is set to drive economic growth, generate employment, and benefit surrounding communities. Additionally, the project's comprehensive approach to environmental, social, and economic impacts emphasizes its potential to contribute positively to the broader objectives of spatial and economic development within the City of Cape Town.

The analysis of Kraaifontein and Kraaifontein Industria reveals a diverse income landscape and economic challenges. The proposed development expansion is expected to generate job opportunities and stimulate local economic activity.

Recommendations: To effectively manage these impacts, it is crucial to ensure inclusive hiring by prioritising local recruitment from the surrounding areas within the broader Kraaifontein region first, which can provide job opportunities across different income levels and enhance community benefits.

Supporting skill development through training programs will align the local workforce with the project's needs, boosting employability.

Ongoing monitoring of the project's socio-economic impacts will be essential for making necessary adjustments and maximizing benefits, thereby effectively contributing to local economic growth while mitigating potential challenges.

In the stakeholder engagement with local businesses in Kiat Street, Kraaifontein Industria, most were aware of the proposed increase in fuel storage capacity at MOOV but did not see significant benefits for their operations, given their different industry focuses. It was observed that existing businesses did not show significant interest in the proposed expansion, as MOOV is already an established entity in the area. Fuel Solutions Cape Town, a competitor of MOOV, expressed potential interest in the development due to their related industry and saw potential for collaboration due to their related industry. No major objections or concerns were raised, and the overall impact on local businesses is expected to be limited, except for possible effects on Fuel Solutions due to the competitive nature of the fuel industry. Given MOOV's current presence and operations, the expansion is not expected to substantially alter the competitive landscape for most businesses in the vicinity.

The operational stage of development increases household earnings for individuals who earn a wage from long-term employment at the project, which is referred to as the consumption effect. Consequently, household expenditure goes up. These two outcomes boost regional GDP while boosting economic activity.

Recommendation: The developer is urged to get the supplies they need for the facility's functioning from regional businesses. The local economy will be stimulated through induced impacts, which will result from activities that occur in response to opportunities and activities associated with the new development; that is tapping into new resources, potential employment and household spending and investment opportunities. The induced effects will be generated by the spending of the employees within the business supply chain.

The construction of the proposed development will create temporary employment opportunities. Contractors, subcontractors, and professional staff will hire labour for various tasks, while indirect employment will arise in industries supplying tools, materials, and equipment. Additionally, induced employment will occur as households benefiting from these jobs spend their additional income on goods and services in the local economy. The project will have a positive impact on employment in construction, business services, and trade sectors, even though many of these jobs will be temporary.

Recommendation: It is recommended that the developer encourage the contractor to hire local labour from the broader Kraaifontein area to maximize the project's benefits to the local economy.

Overall, the construction phase will provide a modest boost to the local economy through employment, requiring both skilled and unskilled labour.

The proposed development will create direct employment opportunities initially provided through the construction phase, followed by job creation through the operations. Indirect employment in the backward-linked industries, supplying tools, materials, and equipment for the maintenance of the proposed development will be minimal, if at all. Lastly, induced employment will be created through forward linkages as households benefiting from direct and indirect employment will spend some of their income on goods and services in the economy.

The proposed development will create some employment positions during construction, generating revenue for the affected households within the surrounding local areas through direct, indirect and induced effects. This slight increase in household income levels is due to the anticipated increase in unskilled to skilled employment opportunities (construction workers, site managers, security, engineers, builders, specialists, etc.) to be created as part of the construction phase of the proposed Development. Salaries, and wages within low to high-income levels would be paid out depending on the employment position. Although temporary, this increase in household earnings would have a positive effect on the livelihood of workers during the construction phase.

The proposed development will create some employment positions within the local region, which will generate personal income and be sustained for the entire project's lifespan. It is important to note that these employment opportunities will be long-term, compared to the short-term and limited opportunities created during construction that will end once construction is completed. The employment opportunities created during the operation phase will likely be for unskilled, semi-skilled and skilled positions. The sustainable income generated because of the proposed developments' operation will positively affect nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

During the construction phase of the proposed development, there may be notable impacts on transport and road infrastructure. Construction activities are likely to lead to increased vehicle movement, including the transportation of materials and machinery, which could result in temporary traffic congestion and delays on local roads. Heavy construction vehicles and equipment may contribute to road wear and tear, and there might be localized disruptions to traffic flow due to construction site access points.

Recommendation: Measures such as traffic management plans and scheduling construction activities during off-peak hours can help mitigate these impacts and minimize disruption to the surrounding transport network.

During the operational phase, the increased vehicle movements to and from the MOOV facility could either improve logistics for some businesses due to enhanced infrastructure or worsen traffic congestion, impacting ease of access for employees and customers. While businesses in related industries, such as Fuel Solutions Cape Town, may find opportunities for collaboration and mutual benefit from the increased storage capacity and logistical improvements, many adjacent businesses, particularly those in different industries, do not anticipate significant direct benefits. Some businesses might experience indirect economic benefits through increased overall activity in the industrial area. Most businesses did not object to the project, suggesting general acceptance of its suitability for the industrial area; however, some concerns about potential disruptions and their impact on the local business environment remain. The presence of large-scale fuel storage tanks may raise concerns about environmental risks, such as spills or leaks, and safety issues among nearby business owners.

Recommendation: To address these impacts, MOOV Energy should maintain regular communication with adjacent business owners, implement comprehensive traffic management plans.

During the construction phase of the MOOV fuel storage expansion in Kraaifontein Industria, potential impacts include elevated noise from machinery and construction activities, dust generation from earth-moving and material handling, and pollution risks from fuel spills or waste materials. The noise may disrupt nearby businesses, while dust can affect air quality and require additional cleaning. While this activity is unavoidable, the severity of the anticipated impacts is estimated to be medium, primarily affecting the construction site and surrounding properties.

Recommendation: However, by implementing the identified mitigation measures, these nuisance impacts can be reduced to a point of low significance.

The proposed expansion of the MOOV Facility development is expected to contribute positively to the socioeconomic landscape of Kraaifontein Industria. By increasing storage capacity, the project will support the local economy through enhanced production and distribution capabilities, potentially attracting further business investments in the area. While the expansion will create some additional job opportunities during both construction and operational phases, the overall increase in employment will be modest given the facility's existing operations. Nevertheless, the project is aligned with national and local policies, emphasizing its potential to drive economic growth and infrastructure development. However, the cumulative impacts also include potential negative effects, such as construction related disruptions, noise, dust, pollution and congestion during the construction phase, which could disrupt surrounding local businesses.

Recommendation: These impacts, though localised, necessitate strict adherence to mitigation measures to minimize adverse effects and enhance overall benefits.

The net effects of the project and the trade-offs between positive, neutral, and negative impacts indicate that the positive impacts outweigh the negative ones. The project is expected to have positive net impact on production and GDP, employment, and household earnings. The negative impacts, such as construction-related disruptions, and noise, dust, and pollution, will be localised and affect a smaller number of people and households compared to the broader net benefits derived from the project. Due to this imbalance, the recommended mitigation measures, particularly those related to traffic, must be strictly adhered to. Applying these measures will ensure that the negative impacts are minimized or negated and that the positive benefits are enhanced.

There are no highly sensitive and/or 'no-go' areas associated with the proposed site area from a socio-economic perspective, and thus no fatal flaws.

Recommendation: While the location proposed for the site area is deemed acceptable from a socio-economic perspective, the identified impacts should be carefully managed, and the recommendations and mitigation measures outlined in this assessment should be implemented in coordination with the findings of the supporting specialist studies.

The net positive impacts associated with the construction and operation of the proposed development outweigh the net negative effects. The proposed development is also anticipated to have a positive impact on the local economy and some employment creation during the expansion of the already existing facility. In terms of the assessed site area, there are no fatal flaws or other potentially significant issues/impacts identified from a socio-economic perspective, thus the location is deemed acceptable and should be authorised.

Additionally, even though the 'no-go' alternative would result in the avoidance of negative impacts from a socio-economic perspective, it would also prevent the realisation of positive effects/impacts. Since the positive effects would outweigh the negative effect, the construction and operation of the proposed development are preferred over the 'no-go' alternative.

Recommendation: Therefore, the proposed development should be considered for development, subject to the implementation of the recommended mitigation and enhancement measures.

2. List the impact management measures that were identified by all Specialist that will be included in the EMPr

Impact management measures proposed by the freshwater/wetland, Major Hazardous Installation Quantitative Risk Assessment, air quality, geohydrological, geotechnical, stormwater and socio-economic specialists will be incorporated into the EMPr. These include the following:

Major Hazardous Installation Quantitative Risk Assessment Recommendations:

As a result of the risk assessment study conducted for the proposed MOOV facility in Kraaifontein, a number of events were found to have risks beyond the fuel tank farm boundary. These risks could be mitigated to acceptable levels.

RISCOM did not find any fatal flaws that would prevent the project proceeding to the detailed engineering phase of the project.

RISCOM would support the project with the following conditions:

- Compliance with all statutory requirements, i.e., pressure vessel designs;
- Compliance with applicable SANS codes, i.e., SANS 10087, SANS 10089, SANS 10108, etc.;
- Incorporation of applicable guidelines or equivalent international recognised codes of good design and practice into the designs;
- Completion of a recognised process hazard analysis (such as a HAZOP study, FMEA, etc.) on the proposed facility prior to construction to ensure that the design and operational hazards have been identified and adequate mitigation are put in place;
- Full compliance with IEC 61511 (Safety Instrument Systems) standards or equivalent to ensure that adequate protective instrumentation is included in the design and would remain valid for the full life cycle of the tank farm: This is particularly relevant to the overfilling of the storage tanks and applicable shutdown systems:
 - o Including demonstration from the designer that sufficient and reliable instrumentation would be specified and installed at the facility;
- Preparation and issuing of a safety document detailing safety and design features reducing the impacts from fires, explosions and flammable atmospheres to the MHI assessment body at the time of the MHI assessment:
 - o Including compliance to statutory laws, applicable codes and standards and world's best practice;
 - o Including the listing of statutory and non-statutory inspections, giving frequency of inspections;
 - o Including the auditing of the built facility against the safety document;
 - o Noting that codes such as IEC 61511 can be used to achieve these requirements;
- Demonstration by MOOV or their contractor that the final designs would reduce the risks posed by the installation to internationally acceptable guidelines;
- Signature of all terminal designs by a professional engineer registered in South Africa in accordance with the Professional Engineers Act, who takes responsibility for suitable designs;
- Completion of an emergency preparedness and response document for on-site and off-site scenarios prior to initiating the MHI risk assessment (with input from the local authorities);
- Permission not being granted for increases to the product list or product inventories without redoing part of or the full EIA;
- Final acceptance of the facility risks with an MHI risk assessment that must be completed in accordance to the MHI regulations:
 - o Basing such a risk assessment on the final design and including engineering mitigation.

The requirements of approvals and registration under the MHI regulations should be reviewed for adequate

preparation in completing the MHI risk assessment, as required by the legislation prior to construction.

Secondary containment for the storage and offloading / loading of road tankers has been described. However, it is recommended that the oil separator must contain the volume of the largest compartment of the road tanker, over and above the volume required for the first flush.

Overfilling instrumentation has been described as at least two independent level detection alarms and trips. The overfilling protection cannot be reduced to anything less than the aforementioned protection.

Due to the seriousness of the hazardous material stored, transported and produced on site, it is suggested that a detailed PHA / HAZOP study should be completed by an independent chairman, who is registered with the Engineering Council of South Africa. Furthermore, any instruments used should incorporate the findings of a SIL assessment defined in IEC 61511.

Ignition sources near the depot must be minimised as far as possible. This is particularly relevant with the fuel storage area.

A hazardous area classification as per SANS 10108 must be developed for all flammable materials. Only suitable instrumentation and electrical equipment should be installed in accordance with the requirement of the code,

Emergency Shut Down System (ESD)

- The fast detection of a loss of containment with appropriate shut-down action to limit the amount of gasoline and diesel released, will assist in the reduction of the site risks.

The societal risks could further change with the development of the surrounding area, and thus the societal risk should be reviewed with each new surrounding development.

Air Quality Impact Assessment Recommendations:

- Before the depot is in operation, perform two rounds of ambient VOCs monitoring via passive samplers at four locations along the site boundaries, in order to establish the background air quality levels in the area. Thereafter, once the plant is in operation, perform annual ambient VOCs monitoring via passive samplers at these same locations.
- Develop a site-specific Leak Detection and Repair (LDAR) programme and submit it to the appropriate authorities for approval.
- Perform annual leak detection monitoring in accordance with the above-mentioned LDAR programme.

Geotechnical Recommendations:

The raft foundation will require heavy steel reinforcement to accommodate hogging and/or sagging.

Raft foundation to be steel reinforced top and bottom or at centre to accommodate the possibility of both hogging and sagging.

The layered sands and sandy clays should be wetted and pre-compacted to 93 % Mod AASHTO prior to casting foundations.

An experienced engineering geologist or geotechnical engineer should inspect foundations prior to casting of foundations.

Stormwater and subsurface drainage systems across the site will require regular maintenance and cleaning to prevent flooding after high rainfall events.

The sandy nature of the surface soils across the site indicates that these soils will be susceptible to erosion by water should future excavations of service trenches be carried out. Likewise, appropriate stormwater management and drainage design will be necessary to cope with heavy rainfall events. Excavations deeper than 1.5m for service trenches, especially in saturated soils may be unstable and will require shoring or battering of slopes for safety reasons. Sub-vertical open cuts to 1.3 mbgl in the dry silty sands will be unstable in the short term and will stabilise at an angle of approximately 40 degrees. Sub-vertical open cuts between 1.3 and 2.0 mbgl in the sandy clays are likely to be stable in the short term but will require stabilization in the long term. Unsupported excavations for service trenches that are more than 2m deep in the sandy clays at slope angles steeper than 45° should be assumed to be unstable in areas where the slopes are very moist, or saturated. Excavation crests must not be surcharged or exposed to temporary loads.

It is recommended that any engineered fill be compacted to at least 95% MOD AASHTO beneath foundations and slabs which has bearing pressures of up to 100 kPa, and bearing pressures greater than 150kPa pressures should be compacted to 98% MOD AASHTO compactive effort.

Should future sections of the site be excavated, the sand fill on the site can be re-used as medium-quality selected engineered fill material provided well-supervised compaction to 100% relative density and provided it is not too wet. The sandy clayey soils containing high percentages of clay and silt are not suitable for engineered fill as compaction beneath the foundations will be poor. Based on the grading results and experience regarding compaction of the more clayey silts, these soils are not suitable for use as an engineered fill and will be difficult to compact if wet or dry of optimum moisture content.

Stormwater Management Plan Recommendations:

Proposed Storm Water Controls-Details during Construction Phase include:

- Silt fencing
- Instant lawn
- Poles (banks)
- Drainage pipes
- Sandbagging
- Earth-berms
- Small trenches with small earth-berms
- Agricultural trenches

- A new oil water separator is to be installed to accommodate oily water from the bunds and loading area. Any contaminated storm water must pass through the separator to mitigate against the escape of pollutants into the storm water and sewer drainage systems.
- The storm water system must be kept separate from the wastewater (sewer) drainage system.
- The pre-development and post development runoffs are essentially the same because of the extent of hard surfaces being similar. So, no changes to the downstream drainage system of the site would be necessary. However, the local authority may require the installation of an attenuation tank at plan approval stage.

- Any oils to be stored on site are to be stored in bunded areas.
- The proposed wash bay discharge needs to pass through the existing oily water separator.

Wetland Assessment recommendations:

- All waste (including old fuel storage tanks) must be reused or disposed of at an approved waste disposal facility that can accommodate the type of waste being disposed of. This includes any wastewater that might be pooled in the smaller bund areas of the existing tanks and within the wash-bay.
- The impairment of water quality should be avoided by installing stormwater management on the site before construction of the rest of the infrastructure.
- During construction, good site management and environmental practices must be ensured by an approved Environmental Control Officer (ECO).
- Construction should take place in summer as there is a lower likelihood of run-off from the site.
- Adequate ablutions are provided for contractors.
- Machinery and trucks need to be regularly inspected and serviced to ensure there are no oil or fuel leaks and provided with drip trays when parked.
- No stockpiling of material or dumping of waste outside of the site footprint.
- Freshwater impacts can be addressed by designing for on-site stormwater management, as described in the Stormwater Management Plan.
- Considering that the wetland may contribute to the recharge of an aquifer that is highly susceptible to contamination, it is recommended that the potential impacts to groundwater associated with the proposed development be assessed by a geohydrologist.

Socio-Economic Impact Assessment recommendations:

- It is crucial to ensure inclusive hiring by prioritising local recruitment from the surrounding areas within the broader Kraaifontein region first, which can provide job opportunities across different income levels and enhance community benefits.
- Supporting skill development through training programs will align the local workforce with the project's needs, boosting employability.
- Ongoing monitoring of the project's socio-economic impacts will be essential for making necessary adjustments and maximizing benefits, thereby effectively contributing to local economic growth while mitigating potential challenges.
- The developer is urged to get the supplies they need for the facility's functioning from regional businesses.
- It is recommended that the developer encourage the contractor to hire local labour from the broader Kraaifontein area to maximize the project's benefits to the local economy.
- Measures such as traffic management plans and scheduling construction activities during off-peak hours can help mitigate traffic impacts and minimize disruption to the surrounding transport network.
- The presence of large-scale fuel storage tanks may raise concerns about environmental risks, such as spills or leaks, and safety issues among nearby business owners. To address these impacts, MOOV Energy should maintain regular communication with adjacent business owners, implement comprehensive traffic management plans.
- Noise may disrupt nearby businesses, while dust can affect air quality and require additional cleaning. However, by implementing mitigation measures, these nuisance impacts can be reduced.
- The cumulative impacts also include potential negative effects, such as construction related disruptions, noise, dust, pollution and congestion during the construction phase, which could disrupt surrounding local businesses. These impacts, though localised, necessitate strict adherence to mitigation measures to minimize adverse effects and enhance overall benefits.
- The recommended mitigation measures, particularly those related to traffic, must be strictly adhered to.
- The identified impacts should be carefully managed, and the recommendations and mitigation measures outlined in this assessment should be implemented in coordination with the findings of the supporting specialist studies.
- The proposed development should be subject to the implementation of the recommended mitigation and enhancement measures.

Geohydrology Assessment recommendations:

Recommendations during construction:

- Follow decommissioning procedure
- Installation of temporary containment bunds and surface water runoff controls around the existing ASTs during disassembly should the existing bund be removed before the ASTs are removed
- Effective management of the temporary sanitation and waste handling facilities to avoid spills or loss of containment (confine temporary waste storage areas and use of bunded areas and/or compacted surfacing to reduce seepage)
- Controlled earthworks and spoil management
- Appropriate berms and surface water runoff controls should be implemented around excavations if necessary
- Conduct Contaminated Land Assessment if any contaminated in situ soils are identified
- Spill kits on site
- Use of drip trays
- Good vehicle maintenance
- Restrict areas for refuelling of vehicles and machinery

- Install early warning groundwater monitoring points between proposed new tank farm, wash bay, separator and the wetland at the onset of the construction phase (these wells must not prohibit construction or be impacted by construction) and monitor/sample quarterly during construction

Recommendations during operation:

- Correct stormwater design
- Tank farm in concrete hardstand and approved bund design
- Rapid response clean up to identified leaks/spills
- Spill kits on site
- Routine inspection and maintenance/clean-up of infrastructure (valve, tank, link, wash bay, oil separators/traps, tank filling procedures, and pressure testing)
- Waste storage in concrete hardstand demarcated areas
- Waste management plan (appropriate waste handling)
- Certified waste removal
- Undertake quarterly monitoring on the installed groundwater monitoring network during the initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis.

Current indications suggest no impacts to the groundwater receiving environment however, it is recommended that a groundwater monitoring network be installed around the proposed new concrete bund (and downgradient of the separator and wash bay) to act as an early warning system to historical and possible future impacts from the historical and proposed infrastructure and subsequent to the initial baseline groundwater monitoring exercise, quarterly monitoring will need to be undertaken during the construction phase and initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis.

During the construction and operational phases, the conditions stipulated in the EMPr must be complied with.

3.	List the specialist investigations and the impact management measures that will not be implemented and provide an explanation as to why these measures will not be implemented.
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N/A All measures proposed by the specialists will be implemented.

4.	Explain how the proposed development will impact the surrounding communities.
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The development proposal will impact the surrounding communities through the following:

Positive:

- Supply the demand for fuel in the Western Cape.
- Additional services will be available to the surrounding communities of Astron Energy Service Stations such as the availability of fuel (petrol and diesel), improving the communities' access to such services.
- Creation of short- and long-term employment and skills development opportunities associated with the construction and operational phases of the development (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created, with associated economic growth in the area and social upliftment and skills transfer).
- Employing individuals from previously disadvantaged backgrounds. By creating employment opportunities for these individuals, the dependents of these employees will also indirectly benefit. According to MOOV, during the construction phase, a strategy will be implemented with the main contractor to ensure local, skilled and semi-skilled, previously disadvantaged people get preference. MOOV is a company that believes in transformation and learning opportunities for young people. MOOV is currently providing learnership opportunities to local youth in the Human Resource, IT and HSSE Department.
- Retention of permanent jobs associated with the existing fuel depot (i.e., job security).
- The proposed fuel storage expansion caters for the needs of the defined customer base.

Negative:

- o Some visual, noise, traffic and dust/air quality impacts will be experienced during the construction phase.
- o Potential heritage impacts during construction (e.g. excavation), should heritage or cultural resources of conservation value be uncovered, disturbed and/or destroyed.
- o Traffic impacts during operation
- o Air quality impacts during operation (fuel vapour emissions will be associated with operations at the existing fuel depot. These emissions may be emitted when the fuel tanks are refilled by road tankers and during refuelling)
- o Possible health and safety risks associated with fuel during an emergency:
- The most significant risk regarding the expansion of the depot and its associated uses is the occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby will be negatively influenced. This could be by exposure to hazardous liquids (diesel/petrol) in the form of swallowing hazardous substances or skin contact) e.g. with contaminated soil/water as well as through breathing fuel vapours,
- The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on health and safety.

According to the Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

- By boosting storage capacity and updating infrastructure, the expansion is set to drive economic growth, generate employment, and benefit surrounding communities.
- The construction of the proposed development will create temporary employment opportunities. Contractors, subcontractors, and professional staff will hire labour for various tasks, while indirect employment will arise in industries supplying tools, materials, and equipment.

- The operational stage of development increases household earnings for individuals who earn a wage from long-term employment at the project. Consequently, household expenditure goes up, boosting the economy as additional income is spent on local goods and services.
- The sustainable income generated because of the proposed developments' operation will positively affect nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.
- The project will support the local economy through enhanced production and distribution capabilities, potentially attracting further business investments in the area.
- Construction activities are likely to lead to increased vehicle movement, including the transportation of materials and machinery, which could result in temporary traffic congestion and delays on local roads. Heavy construction vehicles and equipment may contribute to road wear and tear, and there might be localized disruptions to traffic flow due to construction site access points.
- Potential impacts include elevated noise and dust generation from construction activities (which could disrupt surrounding businesses), and pollution risks from fuel spills or waste materials.
- During the operational phase, the increased vehicle movements could either improve logistics for some businesses due to enhanced infrastructure or worsen traffic congestion, impacting ease of access for employees and customers. While businesses in related industries, such as Fuel Solutions Cape Town, may find opportunities for collaboration and mutual benefit from the increased storage capacity and logistical improvements, many adjacent businesses, particularly those in different industries, do not anticipate significant direct benefits. Some businesses might experience indirect economic benefits through increased overall activity in the industrial area.
- There are some concerns about potential disruptions and their impact on the local business environment remain.
- The presence of large-scale fuel storage tanks may raise concerns about environmental risks, such as spills or leaks, and safety issues among nearby business owners.

Overall:

As the site is currently operating as a fuel depot, limited and negligible additional visual and noise impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use and existing impacts of the facility. Impacts associated with the existing fuel depot are likely to mask potential identified impacts associated with the proposed expansion of fuel storage activities.

Additionally, the site is surrounded by a highly modified landscape of commercial, industrial, and urban developments.

It is envisaged that the severity of traffic, air quality, soil and groundwater/freshwater, health & safety impacts will not increase significantly due to activities associated with the expansion of fuel storage capacity and that they can be managed/mitigated to an acceptable level.

As the site has been previously transformed, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot and that the project is unlikely to have a significant impact on terrestrial biodiversity.

The net positive impacts associated with the construction and operation of the proposed development outweigh the net negative effects as the negative impacts will be localized and affect a smaller number of people compared to the broader net benefits derived from the project.

5. Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.

When considering climate change in the context of this BA, it is important to consider both climate change adaptation and mitigation.

Adaptation responses to reduce the effects of climate change on the proposed development:

(addressing a project's vulnerability to climate change, i.e. increasing the project's resilience)

- Climate change projections for the Western Cape include higher mean annual temperatures, higher maximum temperatures, more hot days and more heat waves, higher minimum temperatures, fewer cold days and frost days, intensification of rainfall events, and increased mean sea level and associated storm surges (DEA&DP, 2014).
- To increase a project's ability to adapt to the impacts of climate change, it is important to identify its vulnerability or sensitivity to the potential effects of climate change. In particular, this project could be vulnerable or sensitive to the increased temperatures associated with climate change, which will lead to increased fire risk. Inadequate fire risk management may result in increased major hazardous risk events occurring. The significance of this potential impact associated will be medium without mitigation and low with mitigation. It is envisaged that the occurrence of climate change is likely to influence the proposed expansion of the existing fuel depot.

The project is inherently associated with potential impacts on climate change as the evaporation and combustion of petrol and diesel (fossil fuels) contribute to the emission of carbon dioxide, a greenhouse gas, which traps heat in the earth's atmosphere and contributes to global warming.

Mitigation measures to minimise the effects of the proposed project on climate change:

(ensure resource efficiency and renewable energy supply for the proposed development to limit its greenhouse gas emissions)

One of the objectives of the Western Cape Provincial Spatial Development Framework is to minimise the consumption of scarce environmental resources such as water, building materials, and land.

No additional land is being transformed as part of this proposal.

During the development phase, six of the existing buildings (i.e. two warehouses, an outbuilding at the front of the site, the toilet and office area in the middle of the warehouse and two small storerooms) will be demolished as part of this proposal. As a result, the waste composition of this activity will entail materials such as steel sheeting, steel support structures and steel roofing. Salvageable steel can be sold off as scrap metal. MOOV Energy intends to reutilise the existing tanks and pumps once decommissioned in the MOOV Commercial business unit. One pump may be reutilized on site. Domestic and construction-related wastes will be collected and kept separate. Where possible, recycling will be implemented.

Considering that South Africa is a water scarce country and that many catchments in the Western Cape are already water stressed, measures that limit the waste of water should be implemented. For example, awareness will be highlighted on the careful use of water in the form of toolbox talks prior to and during construction and any water leakages will be fixed immediately.

- With the "no-go" alternative (i.e. operation of existing fuel depot), the existing ASTs will have to be re-fuelled more regularly due to the lower storage capacity. This will increase the:
 - (1) number of delivery road tankers entering and exiting the site,
 - (2) more frequent handling of fuel, over time, and
 - (3) a larger carbon emission footprint over time.

- All the relevant industry standards regarding the fuel industry should be adhered to and best practice measures should be complied with where practically possible.

6. Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.

N/A

7. Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.

The recommendations and findings of the specialist studies have been incorporated into this BAR and corresponding EMPr, (Appendix H) alongside findings obtained from desktop screening and site visits as well as information base on policies, guidelines, and protocols. The recommendations from specialists have also been integrated with those of the EAP, which are based on recommendations for (and findings from) similar projects and based on the EAP's experience in EIAs and other environmental work. These findings and recommendations have been integrated to inform the proposed mitigation measures that should be implemented to manage the potential impacts identified during the BA process and inform the alternatives which have been considered (in terms of layout, technology, design etc). It is therefore vital that these recommendations be complied with during the construction and operational phases.

8. Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.

NEMA and the EIA Regulations call for a hierarchical approach to impact management.

In this regard, the EIA regulations states that the purpose of the EIA regulation is "... to regulate the procedure and criteria as contemplated in Chapter 5 of the Act relating to the submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities in order to avoid detrimental impacts on the environment, or where it cannot be avoided, ensure mitigation and management of impacts to acceptable levels, and to optimise positive environmental impacts, and for matters pertaining thereto."

According to the Environmental Impact Assessment and Management Strategy for South Africa (2014), Impact Mitigation Hierarchy is a tool used throughout a project lifecycle to limit negative impacts on the environment. The mitigation hierarchy is comprised of four actions which are designed to be implemented sequentially:

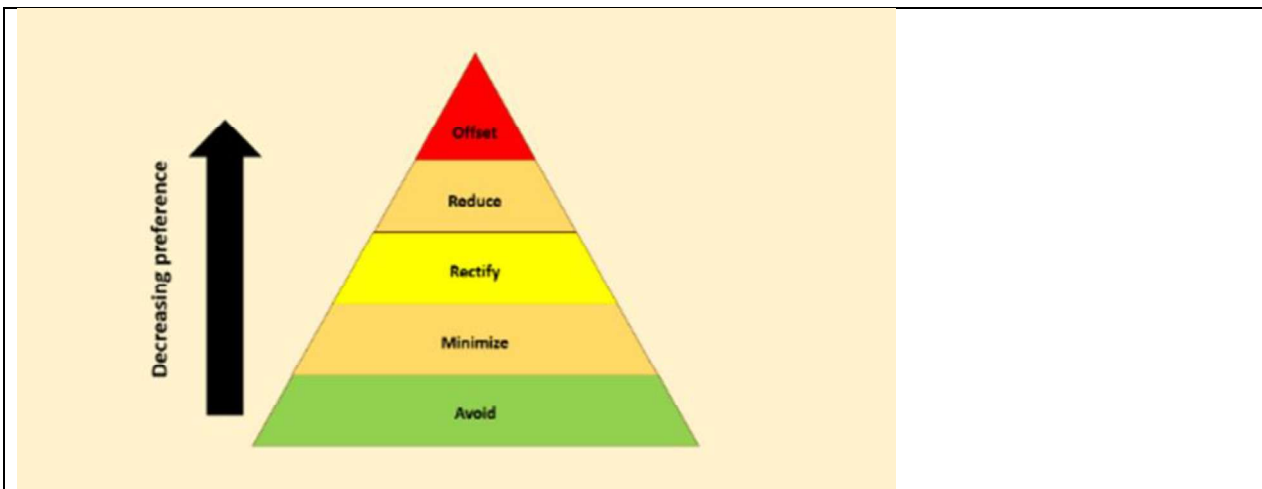
- (1) avoidance,
- (2) minimization,
- (3) rehabilitation, and
- (4) offset (if required).

This is reiterated in the DEA's Integrated Environmental Management Guideline on Need and Desirability (2017), which states the Impact Mitigation Hierarchy as comprising of the following:

- Firstly, alternatives must be investigated to avoid negative impacts altogether.
- Secondly, after it has been found that the negative impacts cannot be avoided, alternatives must be investigated to reduce (mitigate and manage) unavoidable negative impacts.
- Thirdly, alternatives must be investigated to remediate (rehabilitate and restore).
- Fourthly, unavoidable impact that remain after mitigation and remediation must be compensated for through investigating options to offset the negative impacts.
- While throughout, alternatives must be investigated to optimise positive impact.

In terms of having to follow the impact mitigation hierarchy, it is not acceptable for instance to not investigate alternatives to avoid negative impacts and simply investigate options to mitigate impacts.

The figure below indicates the mitigation hierarchy and that avoid is the preferred option.



The following actions have been applied in the context of this project to promote the best feasible environmental option:

(1) Avoidance:

avoiding impacts on biodiversity within the proposed site of development and surrounding area and includes identifying potential risks and investigating alternatives. Avoidance was carried out in the context of this process as environmental components (namely potential groundwater and soil contamination, fire risks, botanical, freshwater impacts) were identified and rated accordingly.

Moreover, the proposed site for fuel expansion activities comprises an existing, previously developed site currently operating as a fuel depot. This avoids potential impacts associated with the development of a new (virgin) site where the development thereof will potentially negatively impact abiotic (e.g. hydrogeochemical) and biotic (fauna and flora) features.

The proposed project essentially makes use of the most preferable option **avoid**. This is as the development involves replacement with 2 454 m³ increased capacity therefore there will be limited additional impacts as the development remains on the same site as the existing storage facility.

This as there is no additional land being transformed and the risk of spills reduces with the new tanks and the bunds being in place means that no spills will permeate into the subsurface.

(2) Minimize potential negative impacts:

Mitigation measures and recommendations have been proposed by the Specialists and EAP to mitigate and reduce identified potential impacts. These mitigation measures and recommendations have been incorporated into the EMPr and are to be implemented during the construction and operational phases.

The proposed expansion activities will keep environmental impacts to a minimum by complying to various industry standards as well as regulation from the department of energy as well as the National Energy Regulator of South Africa, among others.

Conditions stipulated in the EMPr aim to reduce/minimize the unavoidable negative impacts and will maximize the benefits associated with the proposed expansion. It is in this case of particular importance to manage the health and safety risk associated with a potential pool fire, exposure to hazardous liquids (diesel/petrol), as well as fuel vapours to prevent soil and groundwater contamination. Monitoring measures will be included in the EMPr.

Bulk tanks to be inspected in-service every 5 years, out of service every 10 years.

(3) Rehabilitation:

It is not anticipated that there will be irreplaceable loss of a resource, especially since the site has been previously disturbed/transformed. Should the depot be decommissioned all relevant legal procedures will need to be complied with at that moment in time.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1. Provide a summary of the key findings of the EIA.

Socio-Economic Impacts

Positive:

- ❖ Due to the increase in fuel storage capacity, current permanent jobs associated with the existing fuel depot are more likely to be retained (i.e. job security).
- ❖ The site was previously procured by the applicant. The procurement of a new site may incur financial loss resulting in knock-on effects (i.e. loss of jobs with the existing fuel depot).
- ❖ The proposed development is suitably located along the N1 highway and this proximity to road systems makes transport from the refinery (and to Caltex/Astron Energy Service Stations and commercial clients) accessible.
- ❖ Additional fuel supply services and associated infrastructure would be put in place on site.

- ❖ Additional capital investment would result from the proposed development.
- ❖ Supply the demand for fuel in the Western Cape.
- ❖ Additional services will be available to the surrounding communities of Astron Energy Service Stations such as the availability of fuel (petrol and diesel), improving the communities' access to such services.
- ❖ Creation of short- and long-term employment and skills development opportunities associated with the construction and operational phases of the development (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created, with associated economic growth in the area and social upliftment and skills transfer).
- ❖ Employing individuals from previously disadvantaged backgrounds. By creating employment opportunities for these individuals, the dependents of these employees will also indirectly benefit. According to MOOV, during the construction phase, a strategy will be implemented with the main contractor to ensure local, skilled and semi-skilled, previously disadvantaged people get preference. MOOV is a company that believes in transformation and learning opportunities for young people. MOOV is currently providing learnership opportunities to local youth in the Human Resource, IT and HSSE Department.
- ❖ The proposed fuel storage expansion caters for the needs of the defined customer base.

Negative:

- ❖ Some visual, noise, traffic and dust/air quality impacts will be experienced during the construction phase.
- ❖ Potential heritage impacts during construction (e.g. excavation), should heritage or cultural resources of conservation value be uncovered, disturbed and/or destroyed.
- ❖ Traffic impacts during operation
- ❖ Air quality impacts during operation (fuel vapour emissions will be associated with operations at the existing fuel depot. These emissions may be emitted when the fuel tanks are refilled by road tankers and during refuelling)
- ❖ Possible health and safety risks associated with fuel during an emergency:
 - The most significant risk regarding the expansion of the depot and its associated uses is the occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby will be negatively influenced. This could be by exposure to hazardous liquids (diesel/petrol) in the form of swallowing hazardous substances or skin contact) as well as through breathing fuel vapours,
 - The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on health and safety.

Socio-Economic Impact Assessment undertaken by Urban-Econ dated June 2025:

Socio-Economic Impact Assessment	There are no highly sensitive and/or 'no-go' areas associated with the proposed site area from a socio-economic perspective, and thus no fatal flaws. While the location proposed for the site area is deemed acceptable from a socio-economic perspective, the identified impacts should be carefully managed, and the recommendations and mitigation measures outlined in this assessment should be implemented in coordination with the findings of the supporting specialist studies.
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Air Quality Impact Assessment undertaken by DDA Environmental Engineers dated June 2025:

Air Quality Impact Assessment	The resulting ground-level concentrations at the discrete receptors within the residential areas around the facility were found to be very low, are expected to have a very low impact on the ambient air quality in the extended area and are considered negligible. Due to the low modelled concentrations, the increase of the ambient VOCs concentrations due to the operations of the proposed facility is expected to be insignificant, and the cumulative effect due to these emissions on the ambient concentrations in the extended area is expected to be very low. Based on the dispersion modelling results, the air quality impacts are considered LOW in the industrial area close to the site and VERY LOW to NEGLIGIBLE in the nearest residential areas further away. Based on these modelled concentrations and the resulting impacts, the proposed facility should be authorised.
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Major Hazardous Installation Quantitative Risk Assessment undertaken by RISCUM dated June 2025:

Major Hazardous Installation Quantitative Risk Assessment	This study found that the proposed MOOV facility in Kraaifontein would be classified as a Low Hazard Establishment Major Hazard Installation. After the completion of Phase 2 with the addition of Tank-4, the MHI classification may increase to a Medium Tier Establishment. As a result of the risk assessment study conducted for the proposed MOOV facility in Kraaifontein, a number of events
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	were found to have risks beyond the fuel tank farm boundary. These risks could be mitigated to acceptable levels. RISCOM did not find any fatal flaws that would prevent the project proceeding to the detailed engineering phase of the project.
Heritage Screener undertaken by CTS Heritage dated May 2025:	
Heritage Screener	Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources and as such, it is recommended that no further heritage studies are required.
According to Heritage Western Cape: "Since there is no reason to believe that the proposed increase in petroleum products storage capacity at the Moov fuel and lubricants facility in Kraaifontein Industria, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required." "HWC chance finds to be implements. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay."	
Traffic Impact Assessment undertaken by Kantey & Templer dated June 2025:	
Traffic Impact Assessment	It is therefore recommended by the Traffic Impact Assessment specialist that the application should be approved by the Western Cape Government and the relevant Road Authority (City of Cape Town) as the proposed development was found to have a low impact on traffic operations on the surrounding road network.
<u>Environmental Impacts</u>	
<u>Positive:</u> ❖ Impacts associated with the proposed development of a new site are avoided. It is likely that should a virgin site be developed, terrestrial (fauna and flora) and freshwater features may be negatively impacted. E.g. reduced resource consumption as this proposal will tie into existing infrastructure present on site. ❖ Based on the nature of this proposal (i.e. the expansion of fuel storage capacity at an existing fuel depot), the site has been previously transformed and this proposal is in line with the current land use (i.e. fuel depot).	
<u>Negative:</u> ❖ Air pollution ❖ <u>Groundwater/soil/freshwater contamination</u> if stormwater runoff is not managed correctly (due to delivery/collection vehicles entering and exiting the fuel depot, refilling of the ASTs and storage tank leakages/spills or delivery road tanker leak) ❖ The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on the environment.	
Stormwater Management Plan undertaken by Kantey & Templer dated June 2025:	
Stormwater Management Plan	The site characteristics in terms of ground cover will not change as a consequence of the proposed development and thereby will not affect the storm water flows across the site. In essence the new bund will further enhance the attenuation of runoff on the site because the release from the bund is a controlled release. The proposed changes to the site will require a review of the existing stormwater system and the new infrastructure required.
<u>Aquatic Biodiversity and Water Resources</u> Furthermore, there are no water features (<u>watercourses</u> or <u>wetlands</u>) present on-site and the "depression wetland" located adjacent to the site has undergone a wetland assessment. The "depression wetland" is considered largely transformed and to offer limited to no ecological functionality. According to the wetland assessment: "Despite the presence of aquatic habitat, the wetland does not support any sensitive species or habitats. It has low diversity and is dominated by alien plant species. Due to the poor water quality of the run-off which flows into the wetland, it is unlikely to support a diverse aquatic faunal community. It is therefore deemed to be of low ecological importance and sensitivity." No watercourses, other than the "depression wetland" adjacent to the site, are situated within a 500 m radius of the project site that could potentially be affected by the proposal, and the nearest river is 1 593 m from the site boundary.	
Wetland Assessment undertaken by Freshwater Consulting dated July 2025:	
Wetland Assessment	The risk that polluted run-off from the site flows into the artificial wetland would be of a high significance. However,

	this impact is addressed by the designs of the bund area and the stormwater management plan. The risk of the proposed increase in fuel storage capacity impacting upon <u>freshwater resources</u>, without any stormwater mitigation in place, is moderate. This wetland is itself of low importance, however, its degradation poses a risk to downstream ecosystems. This concern can be addressed by implementing the mitigation measures recommended. The stormwater management plan for the site is an improvement from the current scenario. If the recommendations of this report are implemented, then the proposed increase in fuel storage capacity will most likely have a <u>low to very low</u> impact from a <u>freshwater</u> ecological perspective.
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The proposed activity is therefore unlikely to have any significant impact on the water resources (hydrology) and aquatic biodiversity in the surrounding area.

Response from DWS for General Authorization enquiry:

"The proposed above ground storage tanks are limited to the existing developed footprint that is bunded with impermeable floor lining. An authorisation in terms of section 21c&i water uses stipulated on the National Water Act 1998 (Act 36 of 1998) as Amended is thus not triggered. It must however be noted that additional activities out of the existing developed footprint must be applied for and obtained prior to commencing with the activities by following <https://www.dws.gov.za/ewulaas/>

As a pollution preventative measure, the bunded area is designed to accommodate 1 000m³ of diesel spill. Furthermore, a leak detection system will be installed on the tanks. No surface, ground or storm water may be polluted as a result of activities on the site. In the event that pollution does occur, this Department must be informed immediately. The person who owns, controls, occupies or uses the land in question is responsible for taking measures to prevent any occurrence of pollution to water resources. All the requirements of the National Water Act, 1998 (Act 36 of 1998) regarding pollution management must be always adhered to."

The DWS was contacted on multiple occasions regarding the final proposed layout of the site, storage of LPG and lubricants (including ethanol solution and degreasol engine cleaner) as well as the applicant's name change from Moov Fuel to Moov Energy. However, a response was not obtained. Please see email chain attached as Appendix E3. However, the original response from DWS has been included and assumed to still hold true as the findings of the wetland assessment remained the same.

Geohydrology Assessment undertaken by JG Afrika dated July 2025:

Geohydrology Assessment	The aquifer system underlying the site is classified as Major however, with geological structures being absent within the project area, the Geohydrological potential is considered low to moderate. The DRASTIC mapping index confirms the Major aquifer unit as having a "Moderate" vulnerable rating. For the proposed ASTs, vulnerability is considered medium due to the shallow groundwater, and offset by the proposed bunding and containment design. The associated Parsons Groundwater Quality Management System gives the site a High Level of Protection index when comparing vulnerability as the second variable. Limited groundwater use was identified within 2 km of the study area. The strategic value is considered Low as the area is likely serviced by municipal supply. The associated Parsons Groundwater Quality Management System gives the site a Medium Level of Protection index when comparing strategic value as the second variable. All activities present risks that score <u>LOW</u> for the pre mitigation ratings, with limited activities scoring <u>MODERATE</u>. Most scores can be reduced with the introduction of proposed mitigation measures. The water quality status quo assessment indicated localised impacts of a likely diesel nature in the vicinity of the existing bund, but that site activities have not impacted on the downslope wetland to date. Downstream groundwater sample points reported all organic results below the laboratory detection levels, thus indicating no further impacts on the groundwater receiving environment. The groundwater quality in the area is typically not suitable for human consumption without treatment, due to the industrial nature of the project area.
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	Current indications suggest no impacts to the groundwater receiving environment.
Contamination Assessment undertaken by Kantey & Templer dated July 2025:	
Contamination Assessment	Adsorbed phase concentrations detected in the soil samples did not exceed any applicable SSV criteria. Consequently, the source-pathway-receptor linkages via soil are considered incomplete at this stage and do not pose a risk to on- and off-site receptors. The TPH (C₁₀-C₁₄) concentration detected in one groundwater sample exceeded the Tier 1 RBSL for the ingestion of groundwater in a residential scenario, however, no groundwater users were identified within close proximity to the site. Thus, the source-pathway-receptor linkage via the ingestion of groundwater is considered incomplete at this stage. Furthermore, targeted hydrocarbon compound concentrations within the groundwater sample collected adjacent to the off-site wetland to the southwest were below the detection limit. Consequently, dissolved phase concentrations detected on-site are considered to not pose a risk to the wetland at this stage as the source-pathway-linkage is considered incomplete.
Additionally, the project site is located within a "No Natural Remaining" area and is not located within a Critical Biodiversity Area, Ecological Support Area, or Other Natural Area according to the Overview of the Western Cape Biodiversity Spatial Plan. Additionally, as the site is transformed, there are limited to no biodiversity sensitivities.	
Terrestrial Biodiversity Although the site is located within the Boland Strategic Water Source Area (SWSA) and is indicated to contain critically endangered Cape Flats Sand Fynbos (CFSF) vegetation, this project does not involve activities which are considered the main pressures to SWSAs, will not result in fragmentation of the landscape and no area of importance to the Boland SWSA will be lost as it is proposed to take place on the existing site's footprint. Additionally, the project site does not fall within any of the areas where CFSF is statutorily conserved, where good stands that have not been proclaimed are found or in available areas that could conserve/protect ecologically representative patches of CFSF and none of the activities which result in the mismanagement of CFSF will take place for the project. Anthropogenic activities, associated with the previous clearance and current operation of the site have resulted in the <u>transformation</u> and disturbance of the area and have resulted in the previous clearance of the CFSF vegetation type. Thus, the site does not support <u>vegetation</u> characteristic of the <u>CFSE</u> and thus, the site may not have the characteristic habitat required to support <u>animal</u> species characteristic of the <u>CFSE</u>. The site is well-established as a diesel storage and distribution facility, is completely built-up, devoid of <u>any flora</u>, and not located close to any intact <u>indigenous</u> vegetation. Previous developments resulting in land cover changes (and consequent loss of natural areas) have resulted in unsuitable <u>habitats</u> for <u>animals</u> which were initially present prior to the area being cleared. Additionally, the anthropogenic activities/disturbances taking place each day (e.g., traffic, cleaning, and maintenance-related activities) during the current operations of the fuel depot are likely to have driven away any wild <u>animals</u>. The site is indicated to contain the following <u>sensitive</u> species according to the National Screening Tool. • The South-Western African dung beetle <i>Scarabaeus (Pachysoma) aesculapius</i> • Peringuey's Meadow Katydid (<i>Conocephalus peringueyi</i>). • The Yellow-Winged Agile Grasshopper (<i>Aneuryphymus montanus</i>) However, the project site is not classified as the type of <u>habitats</u> that these <u>animal</u> species of <u>concern</u> are known to exist in as it is devoid of any vegetation, and these species are therefore unlikely to be found on a transformed landscape such as the site in question or to be impacted by the proposed activity. Consequently, it was determined that the proposed increase in storage capacity will have no impact on the terrestrial biodiversity, plant and animal species of the surrounding area. Overall: As the site is currently operating as a fuel depot, limited and negligible additional <u>visual and noise</u> impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use/character of the site and existing impacts of the facility. Impacts associated with the existing fuel depot are likely to mask potential identified impacts associated with the proposed expansion of fuel storage activities. Additionally, the site is surrounded by a highly modified landscape of commercial, industrial, and urban developments. It is envisaged that the severity of <u>traffic, air quality, soil and groundwater, freshwater/aquatic biodiversity, health & safety</u> impacts will not increase significantly due to activities associated with the expansion of fuel storage capacity and that they can be managed/mitigated to an acceptable level.	

As the site has been previously transformed, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot and that the project is unlikely to have a significant impact on terrestrial biodiversity.

Geotechnical Assessment undertaken by MTB Geoservices dated July 2024:

Geotechnical Assessment	Results from the geotechnical investigation indicate that there are no major geotechnical constraints envisaged regarding the proposed installation of fuel tanks.
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1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)
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This proposal is for the proposed expansion of fuel storage capacity. There are no areas which need to be avoided as the site is already transformed and there are no sensitive features/environmental sensitivities present on the site. Relevant maps of surrounding environmental sensitivities (Biodiversity Overlay Maps) have been appended to this BAR as Appendix D.

1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.
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Positive impacts associated with the proposed project:

- Environmental:
 - o Impacts associated with the proposed development of a new site are avoided. It is likely that should a virgin site be developed, terrestrial (fauna and flora) and freshwater features may be negatively impacted. E.g. reduced resource consumption as this proposal will tie into existing infrastructure present on site.
 - o Based on the nature of this proposal (i.e. the expansion of fuel storage capacity at an existing fuel depot), the site has been previously transformed and this proposal is in line with the current land use (i.e. fuel depot).
- Socio-Economic:
 - o The site was previously procured by the applicant. The procurement of a new site may incur financial loss resulting in knock-on effects (i.e. loss of jobs with the existing fuel service station).
 - o The proposed development is suitably located along the N1 highway and this proximity to road systems makes transport from the refinery (and to Caltex/Astron Energy Service Stations and commercial clients) accessible.
 - o Additional (new) fuel supply infrastructure would be put in place on site, including that which will reduce the possibility of leaks.
 - o Additional capital investment would result from the proposed development.
 - o Supply the demand for fuel in the Western Cape;
 - o Additional services will be available to the surrounding communities of Astron Energy Service Stations such as the availability of fuel (petrol and diesel), improving the communities' access to such services.
 - o Creation of short- and long-term employment and skills development opportunities associated with the construction and operational phases of the development (during the construction stage it is estimated around 40 jobs will be created and for the operational stage it is estimated 10 jobs will be created, with associated economic growth in the area and social upliftment and skills transfer).
 - o Employing individuals from previously disadvantaged backgrounds. By creating employment opportunities for these individuals, the dependents of these employees will also indirectly benefit. According to MOOV, during the construction phase, a strategy will be implemented with the main contractor to ensure local, skilled and semi-skilled, previously disadvantaged people get preference. MOOV is a company that believes in transformation and learning opportunities for young people. MOOV is currently providing learnership opportunities to local youth in the Human Resource, IT and HSSE Department.
 - o Due to the increase in fuel storage capacity, current permanent jobs associated with the existing fuel depot are more likely to be retained (i.e. job security).
 - o The proposed fuel storage expansion caters for the needs of the defined customer base.

Negative impacts associated with the proposed project:

- Socio-Economic:
 - o Some visual, noise, traffic and dust/air quality impacts will be experienced during the construction phase.
 - o Potential heritage impacts during construction (e.g. excavation), should heritage or cultural resources of conservation value be uncovered, disturbed and/or destroyed.
 - o Traffic impacts during operation
 - o Air quality impacts during operation (fuel vapour emissions will be associated with operations at the existing fuel depot. These emissions may be emitted when the fuel tanks are refilled by road tankers and during refuelling)
 - o Possible health and safety risks associated with fuel during an emergency:
 - The most significant risk regarding the expansion of the depot and its associated uses is the occurrence of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health and safety of the community nearby will be negatively influenced. This could be by exposure to hazardous liquids (diesel/petrol) in the form of swallowing hazardous substances or skin contact) as well as through breathing fuel vapours,
 - The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on health and safety.
- Environmental:
 - o Air pollution
 - o Groundwater/soil/freshwater contamination if stormwater runoff is not managed correctly (due to delivery/collection vehicles entering and exiting the fuel depot, refilling of the ASTs and storage tank leakages/spills or delivery road tanker leak)

o The potential of hydrocarbon pool fires on site and the subsequent toxic effect of combustion gases can have adverse impacts on the environment.

Overall:

As the site is currently operating as a fuel depot, limited and negligible additional visual and noise impacts are expected to occur as the proposed expansion to fuel storage capacity is in line with the current land use and existing impacts of the facility. Impacts associated with the existing fuel depot are likely to mask potential identified impacts associated with the proposed expansion of fuel storage activities.

Additionally, the site is surrounded by a highly modified landscape of commercial, industrial, and urban developments.

It is envisaged that the severity of traffic, air quality, soil and groundwater, freshwater/aquatic biodiversity, health & safety impacts will not increase significantly due to activities associated with the expansion of fuel storage capacity and that they can be managed/mitigated to an acceptable level.

As the site has been previously transformed, it is envisaged that any archaeological and/or cultural heritage artefacts would have been uncovered during the previous clearance and earthworks associated with the development of the existing fuel depot and that the project is unlikely to have a significant impact on terrestrial biodiversity.

Risks

- The risk of spills of petroleum hydrocarbons (TPH), BTEX compounds, polycyclic aromatic hydrocarbons (PAH), phenol and lead. Depending on the magnitude of a spill the health, safety as well as environment in which the community live will be negatively influenced.
- As with spills, the potential of fires on sight can have adverse impacts on health, safety and the environment. The developer should ensure that an emergency response plan is in place for such instances.

The EAP has assessed the impacts associated with the fuel depot for the construction and operational phases (after mitigation) to be of the following significance:

Construction Phase	
Impact	Impact Significance after Mitigation
Groundwater, Soil & Surface Water (Freshwater) Contamination and Impacts	Low (-)
Noise Impacts	Low (-)
Air Quality Impacts	Low (-)
Heritage Impacts	Very low (-)
Fire, Health & Safety Risks	Low (-)
Geological Constraints	Very low to low (-)
Traffic Impacts	Low (-)
Visual Impacts	Very low (-)
Socio-Economic Benefits -Creation of temporary employment opportunities, impact on GDP and household income	Medium to high (+)
Operational Phase	
Impact	Impact Significance after Mitigation
Groundwater, Soil and Surface Water (Freshwater) Contamination & Impacts	Low (-)
Fire, Health & Safety Risks	Low (-)
Noise Impacts	Low (-)
Air Quality Impacts	Low (-)
Traffic Impacts	Low (-)
Visual Impacts	Low (-)
Socio-Economic Benefits- Creation of permanent employment opportunities, impact on GDP and household income	Medium to high (+)
Eventual Decommissioning and Closure of Facility	
Impact	Impact Significance after Mitigation
Groundwater, Soil and Surface Water (Freshwater) Contamination & Impacts	Low (-)
Fire, Health & Safety Risks	Low (-)
Noise Impacts	Low (-)
Air Quality Impacts	Low (-)
Traffic Impacts	Low (-)
Visual Impact	Very low (-)
Socio-Economic Impacts- Creation of temporary employment, but loss of permanent employment	Low to medium (+ then -)

2. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr The EMPr forms part of the contractual obligations to which all people including contractors/sub-contractors and employees involved in construction, operation, maintenance, or decommissioning work, must be committed. It also serves as a baseline information document for the project applicant and any entity working on behalf of the applicant, during the various phases of the proposed activity. The EMPr aims to comply with Section 24N of the National Environmental Management Act No. 107 of 1998 (as amended) and any additional specific requirements of government departments, including the regulating authority for this project, the DEA&DP. The overall objective of the EMPr is to direct and guide all responsible parties, binding all people working on the site to adhere to the terms and conditions of the EMPr during the construction, operation, maintenance, and anticipated demolition/decommissioning phases of the project. The overall outcome of the EMPr is to prevent avoidable damage and/or minimize or mitigate unavoidable environmental damage associated with the relevant phases of the proposed project. The specific outcomes of the EMPr will be achieved by ensuring that the mitigation and management measures detailed in the EMPr are implemented and adhered to throughout the project duration. Compliance monitoring and independent assessment/auditing allow the verification of achievement of the EMPr outcomes and ultimately, fulfilment of the EMPr objectives. The EMPr: - identifies project activities that could cause environmental damage and provides a summary of actions required; - identifies people responsible for ensuring compliance with the conditions thereof; - provides standard measures to avoid and/or minimize the identified negative environmental impacts and to enhance the positive impact of the project on the environment; - provides site- and project-specific measures required, including a site plan showing: - areas where construction, maintenance, or demolition work may be carried out; - areas where any material or waste may be stored; - allowed access routes, parking, and turning areas for construction or construction-related vehicles; - forms a written record of procedures, responsibilities, requirements, and rules for contractor/s, their staff, and any other person who must comply with the EMPr; - provides a monitoring and auditing program to track and record compliance and identify and respond to any potential or actual negative environmental impacts; and - provides a monitoring program to record any mitigation measures that are implemented Impact management outcomes include: Water and soil <u>No contamination of soil, groundwater or stormwater runoff/surface water.</u> <u>Limit soil erosion and deposition of excess sediment downstream.</u> <u>Prevent alteration of natural drainage patterns and diversion of surface runoff.</u> <u>Ensure continuation of the nearby artificial wetland's functionality of stormwater attenuation and water quality amelioration.</u> Noise <u>Keep noise levels to a minimum and within limits.</u> Air <u>Ensure air quality</u> (engine combustion emissions/hydrocarbon vapours) remains within legislated standards and does not cause odour nuisance. - Dust is to be suppressed/contained and particulate matter is to remain within acceptable regulation limits. Health and safety <u>The safety and health of workers and the public</u>, property and/or equipment may not be compromised (prevent injury, fires or explosions as a result of onsite activities). - Sufficient <u>emergency preparedness</u> is to be in place. Geology - Adhere to geological constraints. Traffic - Compliance with rules of the road and road safety to be ensured. - Minimize traffic congestion and disruption to surrounding businesses. - Avoid long delays on/obstruction of local roads which would result in public inconvenience. - Road infrastructure is to remain in a good condition. - Ensure sufficient parking and access points. Visual - Reduce visual intrusion. - Prevent unsightly/distracting conditions (e.g. light pollution) and an untidy/visually unpleasant site. Heritage - Protect heritage resources if discovered. Socio-Economic - Prioritize hiring of local, disadvantaged persons and companies. <u>Respect and promptly rectify issues/concerns raised by neighbouring properties through complaints.</u>
2.2.	Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.

The installation of <u>aboveground</u> Storage Tanks and associated pipework must be implemented in accordance with the: - relevant South African National Standards (<u>SANS</u>), specifically (not exclusive to) the following standards: - o SANS 1535: Storage tank manufacture standards. - o SANS 10 400TT (Fire Protection) 53 Sections 1-6 (The application of the National Building Regulations- Installation of Liquid Fuel Dispensing Pumps and Tanks). - National Building Regulations and Standards Act No. 103 of 1977. - local authority bylaws. The bund area should be able to store <u>100%</u> capacity of the largest tank bunded, according to SANS - 100894.5.2.1 b. Upon completion of the <u>AST</u> installation, an <u>engineer</u> is to <u>inspect</u> and verify that the tanks and the associated infrastructure have been installed as per all required SANS standards and applicable legislation. All procedures and equipment used must be in accordance with the <u>Occupational Health & Safety Act</u> (No. 85 of 1993). The wet stock should be monitored daily to ensure there are no losses (installation of an Automatic Tank Gauging ATG system). If losses are detected, then an investigation should be conducted including integrity testing of the fuel infrastructure. A Spill Contingency Plan must be drawn up and approved by the DEADP, including the DWS, prior to the operational phase of the project. Routine inspection and maintenance of fuel infrastructure to prevent leakage (valves, pipelines, tanks, links, wash bay, oil separators/traps, tank filling procedures). An operational EMPr needs to be developed and approved by the DEADP prior to commissioning of the facility. Tank 1 is ULP and Tank 2 and Tank 3 are diesel with minimum Safety Integrity Level 2 (SIL-2) overfill protection: - All tanks have minimal SIL-2 overfill instrumentation – suggest stopping the pump and closing the tank valve; - Tank skin valve has Emergency Shutdown (ESD) function and will shut when: - o Overfill protection - o Loss of containment at the pump bay, to prevent a large release from the storage tank - Full spill containment at the road loading / offloading area. Containment size – largest tanker compartment; - At least 2 emergency exits from the site and the warehouse building to evade a large tank farm fire. Quarterly monitoring of groundwater via the <u>monitoring wells</u> during construction and the initial year of operation. Should the results of the sampling in the construction phase and initial year of operation show low to no risk, subsequent sampling frequency can be adjusted to a biannual/annual basis. All infrastructure installed on site pertaining to stormwater and grey water handling if applicable should be installed as according to industry standards, ensuring that the contamination of surface and groundwater is limited. A <u>drainage system</u> should be installed to capture any spillages on-site which drain to a separator which in turn drains to the sewer system. A <u>discharge permit</u> for the wastewater should be obtained for the discharge of this water. The <u>wet stock</u> should be <u>monitored daily</u> to ensure there are no losses. If losses are detected, then an investigation should be conducted which may include integrity test of the fuel infrastructure if deemed necessary. The proponent must undertake an <u>Atmospheric Emission Licence</u> Application to authorise the proposed atmospheric emissions for the project. The EMPr (and conditions details in this BAR and attached specialist's reports) must be fully complied with, including all positive impacts which must be optimized as practical as possible. ECO <u>audits</u> should be undertaken monthly during construction and annually during operation for the first three years and thereafter every five years as well as monthly during the final decommission.	2.3. Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation. The Basic Assessment has determined that none of these potential identified impacts have been found to be of an unacceptable level; all of these impacts can either be avoided or minimised to an acceptable level of risk, provided that the mitigation measures recommended in the EMPr are adhered to. Moreover, based on the nature of this proposal (i.e. the expansion of fuel storage capacity at an existing fuel depot), existing impacts associated with the current fuel depot exist which further reduce the severity of impacts associated with the operation of the fuel depot with an increased fuel storage capacity. Should all the mitigation measures and impact management outcomes be achieved, it is envisaged that this development will promote socio-economic development while mitigating any potentially significant impacts associated with the development of fuel storage facilities on a virgin site. In addition, the applicant will receive an income stream, as well as be able to service Astron Energy service stations and commercial clients in the Western Cape. Given the (i) low ecological impacts associated with the proposed expansion, (ii) the low likelihood of an incident occurring (post-mitigation),
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	(iii) comparative impacts associated with developing fuel storage capacity infrastructure on a virgin site, and (iv) the socio-economic benefits associated with the proposed expansion, it is of the EAP's opinion that there is adequate motivation for the proposed expansion of fuel storage capacity to proceed and that this application be authorised with the necessary conditions of approval (implementation of proposed mitigation measures) as described throughout this BAR and the EMPr (Appendix H). The proposed development should be authorised as the proposed development is a replacement of the existing storage facility. The difference is the new tanks will be vertical and have an increased capacity. <u>Conditions</u> related to the design, construction, operational, and decommissioning phases stipulated in the EMPr (Appendix H) as well as in this report must be adhered to. This will maximize the benefits and avoid/minimize any environmental risks associated with the proposed expansion.
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
	<u>Assumptions and Uncertainties of this Basic Assessment:</u> - It is assumed that all the information provided in this report and on which the report is based is correct and valid. i.e. -That the available data including biodiversity maps (SANBI BGIS), zoning maps (City of Cape Town Map Viewer), geological maps, and the DWS national groundwater database information on which the National Web based Environmental Screening Tool is based, are accurate. -That all specialist input and all information extracted from the specialist reports to complete the assessment are correct. - The exact impacts discussed in this report may vary once the project commences due to real life events. The impacts identified are predicted to occur as per this report. - It is assumed that the proposed mitigation measures as listed in this report and the EMPr (Appendix H) will be implemented and adhered to. - The assessment of impacts and recommendation of mitigation measures was informed by the site-specific concerns arising from the site visit and based on the assessor's working knowledge and experience with similar development projects. - Aspects relating to the layout plan and technical drawings, bund and tank design and construction and operational processes are only to be available during the detailed design stage and thus the specialists have needed to make assumptions where available information is not attainable at this time. - That the construction will be carried out according to the oil companies' normal operating standards. - That management will act in a responsible manner and act when incidents occur to determine the cause and/or rectify the cause of the problem. - A HSE consultant is to confirm that all the risks associated with the various project phases have been identified and safe work procedures are in place to ensure compliance with the OSH ACT. <u>Assumption of the Traffic Impact Assessment:</u> The frequency of heavy-duty vehicles (HDVs) delivering and supplying fuel will only be calculated during the detailed design stage. Therefore, for the purpose of the Traffic Impact Assessment, it was <u>assumed</u> that HDV traffic will increase by 200% during the AM and PM peak hours. <u>Assumptions, Limitations and Gaps in Knowledge of Socio-Economic Impact Assessment:</u> - Project-related information supplied by the team involved in the project was assumed to be reasonably accurate. Thus, all potential impacts are predicted based on this information. - The secondary data sources used to compile the economic baseline can be viewed as being indicative of broad trends within the study area; and - Impacts cannot be predicted with complete accuracy and these predictions are based on research and years of experience, taking the specific set of circumstances into account <u>Limitations of the Wetland Assessment:</u> Whilst each of the utilised tools have certain limitations that are discussed by their authors, the additional limitations to this specific assessment include the following: -The detection and assessment of wetland habitats processes is complicated by the highly modified environment within which the study site is located. -The site visit was conducted late in May 2024, despite high rainfall in mid-autumn, late May represents the end of the area's dry season and therefore habitat indicators (such as vegetation) were more difficult to detect; -A lack of long term or seasonal data to describe variability in freshwater characteristics of the area; and -The rapid level at which the assessments were undertaken. <u>Limitations of the Contamination Assessment:</u> The investigation is limited to the area of sampling. While all reasonable care has been taken towards ensuring that sample distribution is as representative as possible, it must be noted that the results of the investigation/assessment are limited to the locations and depths from which the samples were obtained and therefore may not represent the status of the respective site in its entirety. <u>Limitations and Assumptions of the Major Hazardous Installation Quantitative Risk Assessment:</u> - The risk assessment was developed based on the information provided by MOOV. These designs are conceptual and do not include detailed designs, which will be completed before construction. Thus, some information, as required by the risk assessment simulations, were <u>assumed</u> and based on similar installations. However, it is <u>assumed</u> that the relatively large storage tanks will determine the endpoints from a release and will be the major contributor towards the risks generated. To this end, the results obtained in this report may lack the accuracy of a detailed engineered plant. However, the risks generated are expected to represent the facility, provided the vessel size and <u>inventory</u> are not increased. - Risk calculations are <u>not precise</u>. Accuracy of predictions is determined by the quality of base data and expert judgements.

- This risk assessment was performed with the <u>assumption</u> that the site would be maintained to an acceptable level and that all statutory regulations would be applied. It was also <u>assumed</u> that the detailed engineering designs would be done by competent people and would be correctly specified for the intended duty. For example, it was <u>assumed</u> that the tank wall thicknesses have been correctly calculated, that vents have been sized for emergency conditions, that instrumentation and electrical components comply with the specified electrical area classification, that material of construction is compatible with the products, etc. - The evaluation methodology <u>assumes</u> that the facility will perform as designed in absence of unintended events, such as component and material failures of equipment, human errors, external events and process unknowns. - It should be noted that <u>no scenarios</u> are included for the loss of containment as a result of external damage to the tanker or fire in the surrounding areas. It is assumed that sufficient measures are taken to prevent external damage to the tanker. <u>Limitations for the Geotechnical Assessment:</u> Since the shear strength properties of the horizons were not determined in the laboratory, strength values were inferred. Values are based on material properties, selected reliable published charts and tables and experience. The presumed bearing values given in the table above are only a preliminary guide to the pressures that can be placed on the soils particular to this site without shear failure, and as such are not an indicator of the possible settlement that may occur at foundation pressures up to the bearing capacity of the soil. The allowable bearing capacities above do not include factors of safety, as they are typical bearing pressure values from tables, which generally provide for 25mm settlement. The design bearing pressures and tolerable settlements specific to the actual structures however need to be accommodated to obtain the appropriate estimate of allowable bearing capacity. The presumed bearing values are based on the materials exposed in-situ in the borehole, and ignore any improvement, which may be obtained by compacting, reinforcing, or treating the site soils. The load of the 4th tank planned for installation in the future has been included in the estimations and calculations. The values for Estimated Compressibility and Settlement will require reassessing once the final foundation and structural designs have been completed. No compaction tests were conducted; however, the upper 3 m of clean, medium-dense, sandy soil will have immediate settlement when compacted or loaded. <u>Limitations for the Air Quality Impact Assessment:</u> - It was assumed that loading will take place submerged. As for the true vapour pressure (P) and molecular weight of the vapours (M), the values at 60 °F were used, by assuming the fuels will be of ambient temperature which is 16.7 °C (=60 °F). - The data availability ambient air quality monitoring stations for 2022 and 2023 was low with an average of 34% only. - For the specification of the BTEX compounds in diesel, typical composition for diesel from the NPI emission Estimation Technique Manual for Fuel and Organic Liquid Storage (May 2012) were used. The emissions were assumed to occur continuously, 24 hours per day, 7 days a week, throughout the year.	
2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised. The Environmental Authorisation is required for a minimum of 30 years (but there should preferably not be a prescribed lifespan for the operation phase) as the period of operation is indefinite/permanent and the facility, if maintained well, could be used for over 60 years. The expansion will commence immediately subsequent to the receipt of the Environmental Authorization and would take approximately 18 months to complete construction. Whereas the post-construction monitoring would be finalised within twelve months after construction has ended. The period within which commencement should occur is 10 years.

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.	
The project will make use of the site's existing water supply, which is municipal water, however, awareness will be highlighted on the careful use of water in the form of toolbox talks prior to and during construction and any water leakages will be fixed immediately. During testing of the firefighting systems, water demand will be higher. However, after commissioning, water demand will not increase. The operation of the facility will only require water supply for the admin office (i.e. toilets, washbasins, human consumption) and relocated washbay which are both existing water uses, therefore water usage should not increase as a result of the expansion of the storage and distribution of petroleum products (i.e. the tank farm itself won't require water). In addition, no water will be required or used for production and resultant wastewater will not be generated that could potentially be reused in the production process etc. Firefighting will only be required under abnormal conditions.	

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.	
<u>During the development phase</u> Six of the existing buildings (i.e. two warehouses, an outbuilding at the front of the site, the toilet and office area in the middle of the warehouse and two small storerooms) will be demolished as part of this proposal. As a result, the waste composition of this activity will entail materials such as steel sheeting, steel support structures and steel roofing. No hazardous waste is expected to	

be generated as a result of the demolition activities, based on the previous use of the buildings on-site. Once the buildings are demolished, salvageable steel can be sold off as scrap metal. MOOV Energy intends to reutilise the existing tanks and pumps once decommissioned in the MOOV Commercial business unit. One pump may be reutilized on site. A small volume of uncontaminated soil/rubble will be generated as part of construction of the new bund walls and spill slab. Domestic and construction-related wastes will be collected and kept separate. Where possible, recycling will be implemented. General waste will be removed to a municipal waste disposal site as often as required by an accredited waste management company. Construction-related waste will be stored temporarily on site in bins or skips and will be disposed of at registered waste disposal site. Should any hazardous waste be generated, it must be kept separately in marked containers and be disposed of at a Class A landfill site. Materials from the demolished structures can be recycled for the construction of the wash bay. <u>During the operational phase</u> Waste will only be generated under abnormal or emergency conditions. Hazardous waste must be separated from all non-hazardous waste to prevent cross-contamination and be temporarily stored in waste skips or clearly marked bins prior to collection and disposal to a registered and licenced Class A landfill site by an accredited waste management company. Disposal of this material will involve Chain of Custody documentation. Existing waste management measures have been implemented. Once construction starts, a portable chemical toilet must be made available on site if existing toilets are not made available to construction workers. The toilet should not be placed within 100 m of a watercourse/river/wetland and should be routinely serviced by a Registered Disposal Contactor and removed after construction is completed. Waste receipts are required as proof of safe disposal. The convention of separate waste containment and removal of recyclable waste is envisaged during the operational phase. A private sector refuse removal company is to separate waste and disposes of waste to various recyclers. A new dedicated oily water separator will be constructed, and the effluent will be discharged into the sewage system. Load volume still to be confirmed. The existing concrete surface will be demolished, resulting in rubble that needs to be removed and disposed of by an accredited waste company. A waste management plan will be required during the construction phase. The oily water (wastewater) from each bund will be directed to the oil separator. The oily water in the separator will be processed/separated, clear water discharged to sewer system and oil/sludge will be frequently cleaned using a vacuum truck.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
The development will use the existing energy supply, which is municipal, but will use a similar quantity to that currently being used and makes use of a back-up generator for the future installation. Electricity demands will rise due to the daily operations and enhanced automation of systems. The site currently consumes approximately 6 780 kWh per month. The additional power consumption for the new tank farm is calculated at 560 kwh per month (average), giving a total consumption of 7 340 kWh per month. This less than a 10% increase in electricity consumption.	

SECTION K: DECLARATIONS

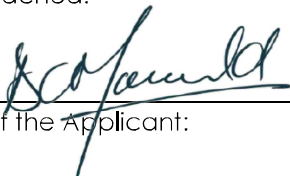
DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I, DC Maneveld, ID number 6807035151085 in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
 - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
 - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
 - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
 - Legitimate costs in respect of specialist(s) reviews; and
 - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.



Signature of the Applicant:

4 December 2025

Date:

Moov Energy

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I Seoras Graham, EAP Registration number 2019/1883 as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- 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, and that:
- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
 - ~~am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);~~
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;



Signature of the EAP:

05/12/2025

Date:

Kantey & Templer (Pty) Ltd

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, Robert Murray, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.


Signature of the EAP:

4/08/2025

Date:

Kantey & Templer

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Tim Briggs, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

MTB Briggs
Signature of the EAP:

5 August 2025.
Date:

MTB GEOSERVICES (PTY) LTD
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

Demos Dracoulides

I, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.


Signature of the EAP:

05-08-2025

Date:

DDA ENVIRONMENTAL ENGINEERS

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

Robert Schapers

I, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the EAP:

13 Aug 2025

Date:

JG Afrika (Pty) Ltd

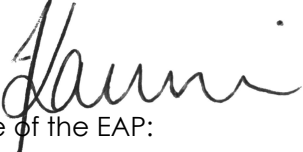
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

IJenna Lavin....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.


Signature of the EAP:

Date: 4 August 2025

Name of company (if applicable): CTS Heritage

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I **Michael.Paul.Oberholzer**., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the EAP:

8 August 2025

Date:

Riscom (Pty) Ltd

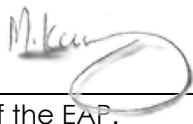
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Mwajuma Kamanzi, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the EAP.

05 August 2025

Date:

Urban-Econ Development Economists

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Hoosain Cassoo, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



04/08/2025

Signature of the EAP:

Date:

Kantey & Templer

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, **Stuart Barrow**....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the [REDACTED] Freshwater ecologist:

8 August 2025

Date:

Freshwater Consulting CC

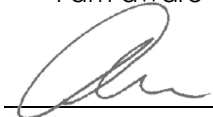
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, **Riaan Delport**, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the EAP:

24 July 2025

Date:

Kantey & Templer (Pty) Ltd

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

I **Robert Schapers**, as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s): K&T Phase 1 Due Diligence Assessment
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, ~~the review EAP (if applicable),~~ the Specialist(s), the ~~Department and I&APs,~~ all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.



31 July 2025

Signature of the EAP:

Date:

JG Afrika (Pty) Ltd

Name of company (if applicable):