

EXPANSION OF LIQUID OXYGEN (LOX) AND DIESEL
STORAGE AT THE AIR PRODUCTS FACILITY LOCATED
WITHIN THE COEGA SPECIAL ECONOMIC ZONE, PORT
ELIZABETH

Eastern Cape Province

Final Basic Assessment Report

Provincial Ref No: ECm1/C/LN1/M/03-2020

March 2020

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BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014 as amended, promulgated in terms of the National Environmental Management Act, 1998(Act No. 107 of 1998), as amended.

Kindly note that:

1. This basic assessment report is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable tick the boxes that are applicable or black out the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner (EAP).
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

PROJECT DETAILS

Title	:	Basic Assessment Report: Expansion of Liquid Oxygen (LOX) and diesel storage at the Air Products facility located within the Coega Special Economic Zone, Port Elizabeth, Eastern Cape Province
Authors	:	Savannah Environmental Arlene Singh Jo-Anne Thomas
Client	:	Air Products South Africa (Pty) Ltd.
Report Revision	:	Final Basic Assessment report to DEDEAT
Date	:	March 2020

When used as a reference this report should be cited as: Savannah Environmental (2020) Basic Assessment report: Expansion of Liquid Oxygen (LOX) and diesel storage at the Air Products facility located within the Coega Special Economic Zone, Port Elizabeth, Eastern Cape Province.

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SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

	NO
--	----

If YES, please complete form XX for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

No specialists were required by Savannah Environmental (Pty) Ltd to provide input into this section of the report, specifically owing to the project located within a brownfields site, as well as the current use of the site.

A Major Hazard Installation (MHI) Risk Assessment was, however, undertaken by an independent specialist on behalf of Air Products to inform their decision making regarding the positioning of the diesel and Liquid Oxygen (LOX) tank locations within the site. The Occupational Health and Safety Act defines a Major Hazard Installation as (a) where more than the prescribed quantity of a substance is kept or maybe kept (The listed substances are provided in the General Machinery Regulations Schedule A) and (b) where the substance is processed, produced, used, handled or stored which has the potential to cause a major incident, this includes a mixture of substances in Schedule A. This specifically refers to LOX and diesel that is stored and handled at the APSA site that could both potentially cause an offsite incident if ignited. The primary purpose of the MHI Risk Assessment is to characterise the risk. The MHI Assessment provides the specific risk statistics that have been derived to present, rank and evaluate the hazards that were evaluated. It also summarises what options have been evaluated and the criteria by which the statistics will be ranked. Within the MHI Assessment undertaken for the expansion of LOX and diesel at the Coega site, several recommendations and risk reduction measures are proposed such as emergency response plans, procurement of fire-fighting foam and notification to neighbouring tenants in order to reduce or mitigate offsite incidents. The Major Hazard Installation Risk Assessment report has been undertaken and included within Appendix D.

1. Activity Description

Describe the activity, which is being applied for, in detail

APSA first broke ground at the Coega Special Economic Zone (SEZ), Zone 3, in 2013 and was the first of its kind in the region. The purpose of the company's investment in the SEZ was to bring local stability to the sector, counter-acting the practice of gas being trucked into the region practice of gas being trucked into the region.

The APSA site in the Coega SEZ features the latest available air separation technology designed for maximum product output capacity and energy efficiency (see **Figure 1** for Air Separation process). Liquid Oxygen (LOX) and Liquid Nitrogen (LIN) are currently handled and stored at the site for use in the air separation process. The current storage capacity of LOX storage at the site is 72,7 m³ which was deemed suitable in 2013 as per the forecasted customer requirements and demand. Hence the volume of liquid nitrogen at the plant was significantly greater than liquid oxygen storage.

Following the increase in demand for liquid oxygen, APSA is proposing to increase the current LOX storage capacity at this site. The LOX storage capacity will be expanded by an additional 127,3 m³ to a total of 200 m³. In addition, APSA intends to add 23 000 litres (23 m³) of above ground diesel storage facility at the site for use for the Air Products trucks that are based in Port Elizabeth.

The APSA project site is located within Zone 3 of the SEZ, amongst other existing industries such as Afrox, Coega Dairy, Famous Brands, Dynamic Commodities, Himoin SA and Ambasaam. Zone 3 is designated for light general industrial development. The APSA project site is considered a brownfields site.

The existing operations consist of storage of and handling of Liquid Oxygen (LOX) and Liquid Nitrogen (LIN) at the site for use in the air separation process. The initial development and operation of facilities for the storage and handling of cryogenic substances (liquid oxygen) in above ground double walled, vacuum jacketed storage tanks was below the threshold of 80 m³ for storage of dangerous good. The current storage of liquid gases and petroleum at the site consists of the following capacities:

Cryogenic substance		Existing capacity (m ³)
Liquid (LOX)	Oxygen	72,7
Liquid (LIN)	Nitrogen	356
Diesel		0

As per the above table the storage capacity did not exceed GN R. 327, Activity No. 14 for storage of dangerous goods, LOX (CAS: 7782-44-7, listed within SAN 10234:2008) and diesel (CAS: 68334-30-5, Hazard Statement Codes: H226 & H351 as per section 4.2.3 of SANS 10234:2008) and other activities as per National Environmental Management Act (NEMA), Act 107 of 1998 (as amended) during the Air Products inception in 2013 due to customer demand forecasts.

Air Products South Africa (Pty) Ltd now intends to increase their storage capacity of Liquid Oxygen at and include aboveground diesel storage at the site to supply their trucks travelling long distances. This proposed increased storage of Liquid Oxygen (LOX) and diesel combined with the existing storage of Liquid Oxygen will result in the total storage capacity of a dangerous good¹ that exceeds 80 m³ thereby triggering Listing Notice 1 of GN R.327, Activities 14, 51 and 67. The expansion of storage facilities at the Air Products Coega plant is in line with the current operations at the site and forms part of the larger existing operations at the site.

¹ As per the definition of "dangerous goods" within NEMA i.e. "means goods containing any of the substances as contemplated in South African National Standard No. 10234, supplement 2008 1.00: designated "List of classification and labelling of chemicals in accordance with the Globally Harmonized Systems (GHS)" published by Standards South Africa, and where the presence of such goods, regardless of quantity, in a blend or mixture, causes such blend or mixture to have one or more of the characteristics listed in the **Hazard Statements in section 4.2.3, namely physical hazards, health hazards or environmental hazards;**" therefore diesel has been considered a dangerous good due to the listed characteristics within Section 4.2.3 of the Hazard Statement (H226 & H351).

LOX Storage Tanks:

Liquid oxygen (LOX) is currently stored in a large capacity tank at a slight overpressure ready for liquid transport. As LOX is stored at very low temperatures (approximately $-183\text{ }^{\circ}\text{C}$), special storage tanks are required. The storage tanks are constructed with a double shell; whereby the inner vessel is made of stainless steel, and acts as the liquid storage vessel, and the outer vessel is made of carbon steel. The storage tanks are vacuum insulated and equipped with appropriate relief protection. The existing LOX tank is positioned horizontally (refer to Figure 3). Air Products proposes to increase the storage capacity either by a) installing a new $127,3\text{ m}^3$ vertical LOX storage tank directly adjacent to the existing $72,7\text{ m}^3$ storage tank; or b) by replacing the existing $72,7\text{ m}^3$ LOX tank with a new 200 m^3 LOX tank. Either of these two options considered will be located at the site of the existing tank, and therefore loading bays and other associated infrastructure are already in place.

Aboveground Diesel Tank and associated infrastructure:

The aboveground diesel storage tank, pump and hoses will allow trucks to be filled up with diesel prior to departing on a delivery. The infrastructure will include a $23\ 000$ litre (23 m^3) composite, storage tank, equipped with a filling pump, $57,15\text{ m}^3$ bund wall, spill slab and separator pit.

Separator system: Best practice alternatives include the installation of a separator system. The surface around the tank filler points will be sloped to a catch pit which will feed to the separator system, so that in the event of a spillage, this will be contained. This system separates any floating product from any stormwater runoff which is then sent into a side holding tank. The water passing through the system then feeds to the storm water system. The alternative of operating without a separator system was identified and investigated and it was found that the associated environmental risk is unacceptably high (refer to Appendix C for Facility Illustrations).

The bund area will be equipped with a concrete floor falling in a corner sump with all the necessary isolation values as per the SANS code 10131:2004 discharging into the separation tank before discharging into the stormwater system.

Timeline

It is envisaged that the construction and installation of these tanks and associated infrastructure is to be completed within 3 months of construction commencing.

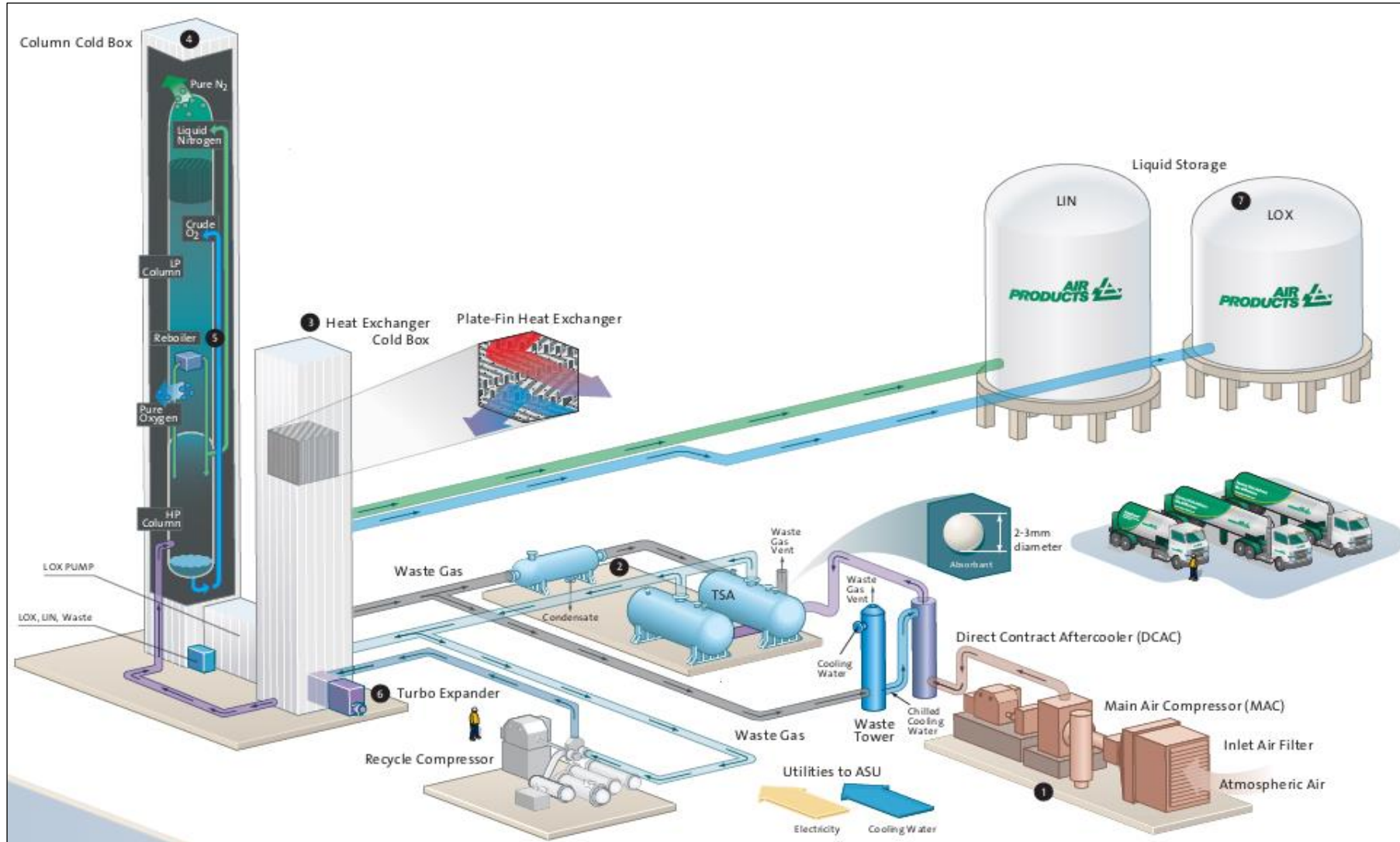


Figure 1 : Schematic of the Air Products South Africa (Pty) Ltd air separation process

2. Feasible and Reasonable Alternatives

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

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

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

ALTERNATIVES CONSIDERED

1. Location

The existing and already operational Air Products plant located in Coega SEZ, Zone 3 was chosen as the location for the activities as the plant is looking to expand their current operations and customer base. The existing plant can accommodate additional LOX and diesel storage to support the expansion. Therefore, no alternative site is proposed.

2. Type of Activity

Air Products South Africa (Pty) Ltd (APSA) core Industrial Gases business provides atmospheric and process gases and related equipment to manufacturing markets, including refining and petrochemical, metals, electronics, and food and beverage. APSA first broke ground at the Coega Special Economic Zone (SEZ), Zone 3, in 2013 and was the first of its kind in the region. The purpose of the company's investment in the SEZ was to bring local stability to the sector, counter-acting the practice of gas being trucked into the region. APSA currently supplies its customers within the Eastern Cape region and as far as Cape Town. In order to maintain the reliability of supply of product and expand their operations APSA intends to expand their operations by the addition of Liquid Oxygen (LOX) storage and diesel storage at the Coega facility to supply the APSA trucks travelling long distances. The plant intends to keep to their current activities of supplying LOX and LIN but increase storage capacity at the site in order to keep up with demand and supply and increase their customer base. As such no alternative activity is proposed.

3. Design & Layout

The design and layout of the LOX tanks are as per APSA standards for the storage of cryogenic liquids. Two design and layout alternatives are considered. The expansion of Liquid Oxygen (LOX) storage facilities will entail either: a) the addition of 1 x 127,3m³ double walled storage tank (to make up a total 200m³ storage capacity) to be located adjacent to the existing LOX and Nitrogen tanks; or b) the total replacement of the existing 72,2m³ Liquid Oxygen tank with 1 x 200m³ tank, to be located in the position of the existing 72,7 m³ LOX tank. All necessary loading bays and infrastructure is already in place, regardless of the alternative selected, as illustrated by the Major Hazard Installation Risk Assessment Report (refer to Appendix D).

The design of the 23 m³ aboveground diesel tank is as per the standard of the fuel supplier (Engen). The standard aboveground composite tank will also consist of standard bund wall designs, spill slab, spill separator, 1 pump, 2 hoses and shut off valve. The location and layout of the diesel tank and infrastructure within the site was dependent on the results of the Major Hazard Installation Risk Assessment. One location was deemed feasible by APSA for the siting of the diesel tank within the site (Location 1) and has been assessed accordingly within the Major Hazard Installation Risk Assessment Report (refer to Appendix D) i.e. Table 1.4, page 42 and 43 of 69 for the Qualitative evaluation of the proposed diesel locations.

Based on the Major Hazard Installation Risk Assessment report the following alternatives of the LOX and diesel storage locations are proposed and considered in this BAR:

Preferred Alternative (Alternative A1): Addition of 127,3 m³ LOX tank adjacent to existing LOX tank; and diesel tank storage located at Location 1 as per MHI report. Loading bays and infrastructure for additional LOX tank already in place and the diesel tank placement was deemed relatively distant from neighbouring properties and to be located a minimum of 15,2 metres away from the Main Air Compressor as per Air Products standards.

Alternative 2 (Alternative A2): Replacement of existing 72,7 m³ LOX tank with 200 m³ LOX tank; and diesel tank storage located at Location 1 as per MHI report. Loading bays and infrastructure for already in place for existing LOX tank and the diesel tank placement was deemed relatively distant from neighbouring properties and to be located a minimum of 15,2 metres away from the Main Air Compressor as per Air Products standards.

Other location alternatives for the diesel storage considered through the MHI Risk Assessment were discarded as feasible alternatives by APSA. Location 3 and Location 4 were deemed "OK" by the MHI report (as per Figure 4.1. and Table 4.1. of the MHI Report), however, these were not considered feasible by APSA: Location 3 is on the boundary of a neighbouring tenant Dynamic Commodities and would pose a safety risk to their daily operations due to the close proximity to the boundary. Location 4 would require re-arrangement of the staff parking and the creation of an additional access to the site. As per the planning regulations of the Coega Development Corporation (CDC) only one access is granted per tenant site.

These storage location alternatives are therefore not considered further in this BAR.

4. Technology Alternatives

The technology to be used for the cryogenic storage process of the LOX storage and the diesel tank technology is as per the standards for Air Products and Engen respectively. No alternative technology is proposed.

5. Operational aspects

As part of the diesel tank locality options within the site, the operational aspects of refilling of the diesel tank by the Engen tanker must be considered. As per the standards set by Engen, the Engen tanker may not reverse at any point in order to reach and refill the aboveground tank due to safety concerns. The Engen tanker must face the exit of the site when parked for refilling. These aspects along with the Major Hazard Risk Installation Assessment were considered when selecting the preferred diesel tank location on site. No other operational alternatives were considered.

6. No go alternative

The No Go alternative would result in Air Products having to continue with the current LOX storage capacity and without diesel storage to supply the APSA trucks. Without the additional LOX storage, the APSA Coega plant will be unable to keep up with supply and demand of LOX to its current customers. This will inhibit growth and expansion of the APSA Coega plant. As APSA Coega prides itself as a reliable liquid gas provider, lack of supply will result in reduced reliability of APSA as a company.

Currently the APSA trucks travelling to Cape Town and to other areas in the Eastern Cape need to be refuelled at other fuel depots in the SEZ. This method is expensive and inefficient. Having the APSA truck fuel up at the APSA site prior to departure will save time and will allow APSA to monitor fuel usage and fuel costs of the fleet.

Not installing additional LOX and diesel storage is considered be economically unviable to continue to meet the current and future demand requirements of its customers and the industry

3. Activity Position

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable.

Alternative:

Alternative S1² (preferred or only site alternative)

Alternative S2 (Not applicable)³

Alternative S3 (if any)

Latitude (S):

Longitude (E):

Latitude (S)		Longitude (E)	
33°	47'36.65''	25°	37'37.21''

In the case of linear activities:

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S)		Longitude (E)	

Alternative S2 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S)		Longitude (E)	

Alternative S3 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S)		Longitude (E)	

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

² "Alternative S.." refer to site alternatives.

³ Note that the alternatives considered above are considered site layout alternatives of the diesel tanks, only one site has been selected for the expansion, i.e. the existing Air Products Coega Site.

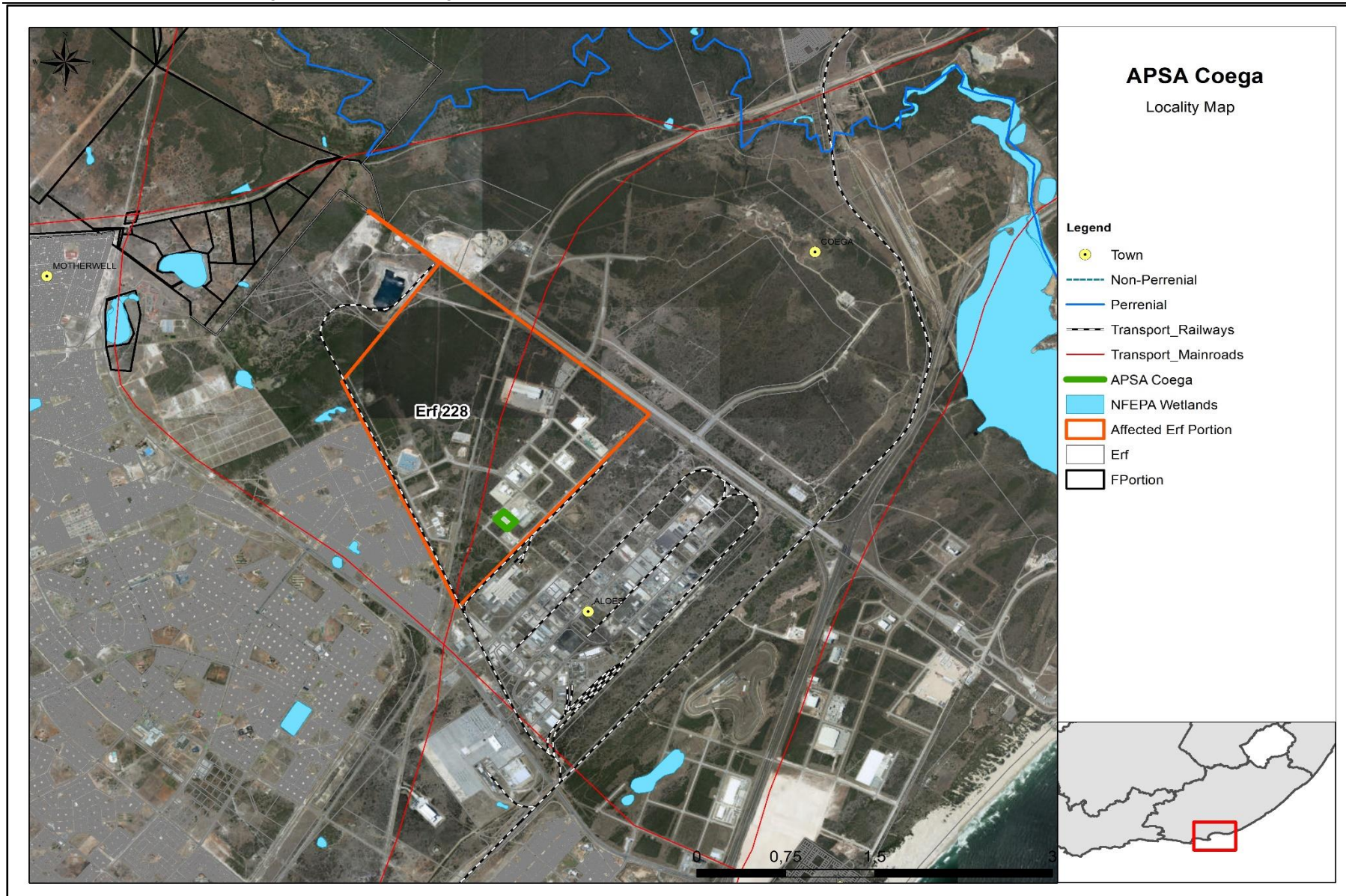


Figure 2: Locality Map of Air Products Coega site on Erf 228 and surrounding sensitive area

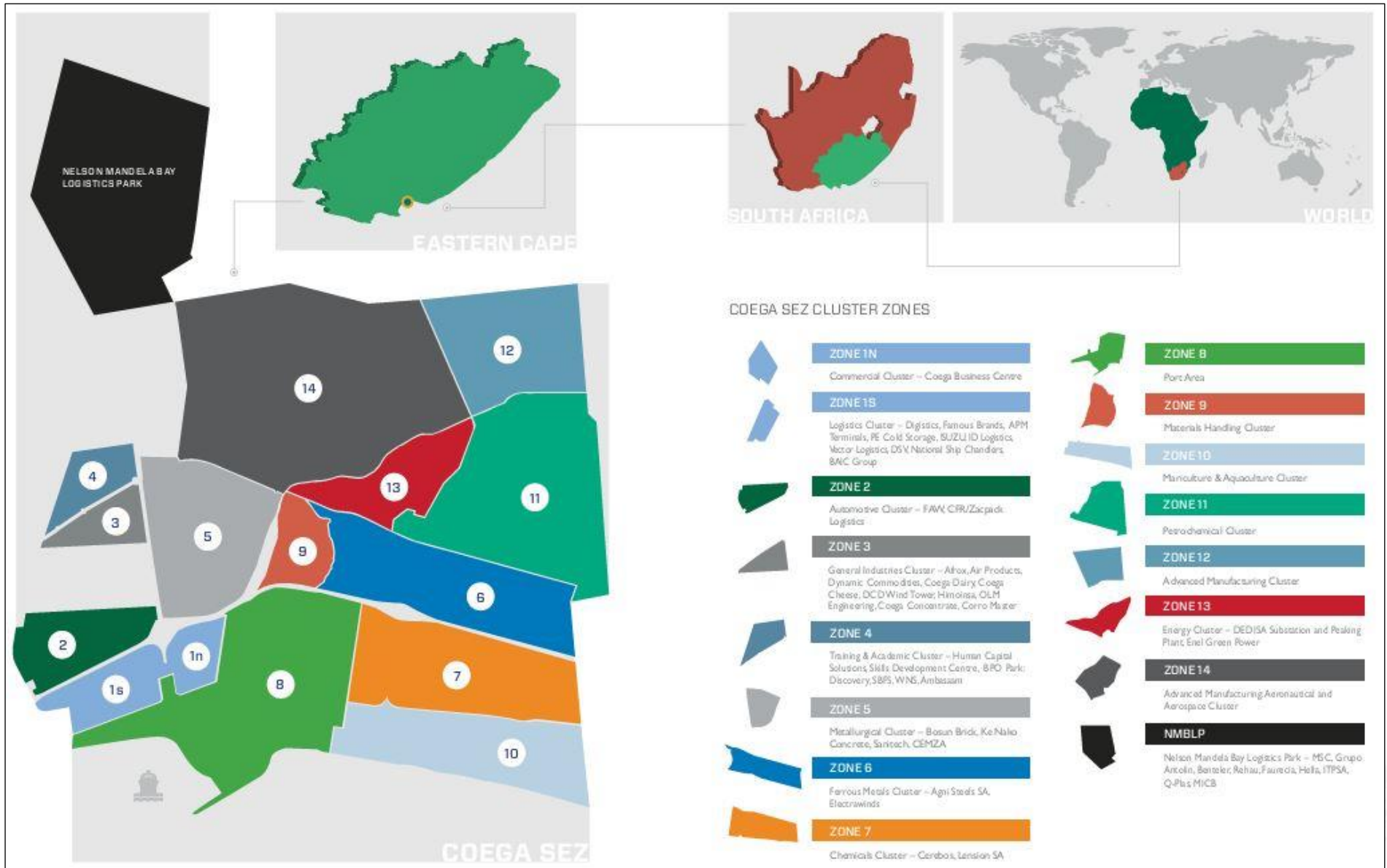


Figure 3: Coega Development Corporation (CDC) Special Economic Zone (SEZ) Area Profile

4. Physical Size of Activity

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

The physical size of the Preferred and Alternative /layout (footprints) are:

Alternatives:	Alternative position	Size of the LOX storage tank	Size of the diesel tank and related infrastructure
Alternative A1 ⁴ (preferred alternative)- Site Plan A	Site Plan A	127,3 m ²	82,2 m ²
Alternative A2 (if any)- Site Plan B	Site Plan B	200 m ²	82,2 m ²
Alternative A3 (if any)			

or, for linear activities:

Alternative:	Length of the activity:
Alternative A1 (preferred activity alternative)	
Alternative A2 (if any)	
Alternative A3 (if any)	

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	Size of the site/servitude:
Alternative A1 (preferred activity alternative)	
Alternative A2 (if any)	
Alternative A3 (if any)	

5. Site Access

Does ready access to the site exist?	YES
If NO, what is the distance over which a new access road will be built	N/A
Describe the type of access road planned:	
Access to the plant is via the existing road infrastructure in the Coega Special Economic Zone (SEZ). Access to the plant will be by authorisation only via the plant gate on the western side of the Air Products site, off Intsimbi Road. No new access to the site will be created.	

⁴ "Alternative A.." refer to activity, process, technology or other alternatives.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. Site or route plan

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.

7. Site Photographs

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Photographs of the site are included as Appendix B to this report.

8. Facility Illustrations

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

Detailed illustration of the activity at the site are included as Appendix C to this report.

9. Activity Motivation

(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 10 million
What is the expected yearly income that will be generated by or as a result of the activity?	R 65 million
Will the activity contribute to service infrastructure?	NO
Is the activity a public amenity?	NO
How many new employment opportunities will be created in the development phase of the activity?	Contractor appointment
What is the expected value of the employment opportunities during the development phase?	R200 000 (once- off)
What percentage of this will accrue to previously disadvantaged individuals?	95 %
How many permanent new employment opportunities will be created during the operational phase of the activity?	Approximately 2-4 people
What is the expected current value of the employment opportunities during the first 10 years?	R 18,1 million
What percentage of this will accrue to previously disadvantaged individuals?	95%

(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

Currently Air Products supplies LIN & LOX to its secured customers in the Eastern Cape and Cape Town from the APSA Coega plant located within Zone 3 of the Coega Special Economic Zone (SEZ). The APSA Coega plant has created a steady customer base and an increased reliability of the supply of LIN & LOX in the region. Now that a steady market has been established within the region, APSA is looking to expand their customer base and therefore require to expand the operations and on-site storage capacity of LOX. The APSA Coega plant provides customers requiring LIN & LOX with a cost-effective local supply of LIN and LOX i.e. supply will not need to be imported from other regions thereby decreasing the transport costs.

The availability of a secure supply of industrial gas, which no longer has to be trucked vast distances to the Eastern Cape Province, strengthens the Eastern Cape's industrial infrastructure and its attractiveness as an investment destination of choice.

Indicate any benefits that the activity will have for society in general:

The Air Products Coega plant has a market in the Eastern Cape and Cape Town for the supply of LIN & LOX which comprise of approximately 20 customers. The expansion of the plant and storage tanks for LOX will ensure the reliability of supply to its customers. Customers will benefit as it will reduce their dependency on supply from other sources and outside of the Eastern Cape and associated increased costs.

Current benefits to customers in the Eastern Cape also included short transport distances and quicker delivery times of LOX and LIN, the expansion of the storage tanks will allow for a reliable steady supply of LOX and LIN.

Security of industrial gas supply further supports business sustainability and competitiveness, by enhancing the region's supply chain network, which in turn opens the door to further industrial growth, investment and job creation throughout the entire value chain. The expansion will make a positive contribution to the economic growth of the region for many years to come.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The local communities will benefit from the employment opportunities that will be created from the expansion of the plant and associated activities. Employment opportunities generated by the expansion activity will be related to additional security and cleaning vacancies that will service the additional infrastructure

10. Applicable Legislation, Policies and/or Guidelines

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
Constitution of the Republic of South Africa Act, 1996 (Act 108 of 1996) Constitution of the Republic of South Africa Amendment Act, 1997 (Act 35 of 1997) Section 24 – Environmental Rights Section 33 – Access to Information Section 32 – Administrative Justice Section 38 Enforcement of Rights and Administrative Review	South African Government	1996
National Environmental Management Act (36 of 1998)	DEDEAT	1998
NEMA EIA Regulations, 2017 (Government Notice Nos. 324, 325, 326 and 327) (as amended, 2017)	DEDEAT	2017
National Environmental Management: Biodiversity Act (No. 10 of 2004)	DEDEAT, DAFF, DEA	2004
National Forest Act, 1998 (Act 84 of 1998)	DEDEAT, DAFF	1998
Occupational Health & Safety Act, 1993 (Act No. 85 of 1993) (OHSA) as amended in July 2001	Department of Labour	2001
Coega Development Corporation (CDC): Safety, Health, Environment and Quality Policy	CDC	2018
Hazardous Substances Act, Act 15 of 1993	DEDEAT, DEA	1993
National Water Act No 36 of 1998 (NWA)	Department of Water and Sanitation	1998
The National Heritage Resources Act, 1999 (Act No 25 of 1999) as amended	SAHRA	1999
National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA)	DEDEAT	2008
Municipal By-laws	Nelson Mandela Bay Metropolitan Municipality	2010
National Building Regulations and Building Standards Act (No 103 of 1977)	National Government	1977
Model Noise Regulations published under the Environment Conservation Act, 1989 (Act 73 of 1989)	National Government	1989

11. Waste, Effluent, Emission and Noise Management

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	<input type="checkbox"/>
-----	--------------------------

If yes, what estimated quantity will be produced per month?

Negligible quantities of solid waste will be produced.

How will the construction solid waste be disposed of (describe)?

Negligible quantities of solid waste produced during the construction phase of the proposed expansion and will primarily consist of building rubble, cables and litter (e.g. plastic, glass, etc.). The contractor will collect all waste generated from construction which will then be collected by EnviroServ Waste Management and disposed at the EnviroServ waste disposal site. EnviroServ Waste Management services currently service the site and provide monthly proof of disposal receipts to APSA Coega.

Any hazardous waste such as oils and grease will be collected and stored separately according to the specific requirements of the waste type and will be collected by EnviroServ Waste Management Services (the current service provider) and disposed of the at the EnvironServ waste disposal site.

Where will the construction solid waste be disposed of (describe)?

Solid waste as described above will be collected within the site by the contractor and disposed of by EnviroServ Waste Management as they currently service the existing operations at the site.

Will the activity produce solid waste during its operational phase?

YES	
	Minimal quantities of solid waste will be produced.

If yes, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

The expansion by the addition of a diesel tank and LOX capacity will not result in any additional solid waste being produced at the site. The expansion activities at the site are a continuation of current operational activities at the site. The storage tanks themselves do not generate any solid waste from their operation.

Waste generation at the APSA site will remain the same, with minimal quantities of solid waste currently consisting of food waste, plastic, paper, glass and tin from day to day activities being produced. The expansion activities at the site can be considered as an add on to the existing operations at the site, it will therefore not introduce any solid waste streams to the site. Air Products has adopted a management strategy that is based on waste minimization, waste reduction, recycling, re-use and disposal where possible.

All general waste material (e.g. non-hazardous waste) will be contained in general waste bins that are currently available on site and will be collected by EnviroServ for disposal at the waste disposal site.

Hazardous substances (e.g. oil rags, grease, oil cans, including the contents of the oil separator drain box etc.) will be disposed of at an appropriate classified waste site (unless it is to be recycled by approved methods), as per the National Environmental Management Waste Act, 2008 (Act 59 of 2008).

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Solid waste will be disposed via EnviroServ Waste Management Services which is the current service provider to Air Products. Hazardous waste consisting of oil rags and grease will be collected by EnviroServ and disposed of at the EnviroServ waste disposal site. Proof of disposal of all waste will be kept on record for auditing purposes.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? NO

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? NO

If yes, what estimated quantity will be produced per month? Not Applicable

Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO
--	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	NO
--	----

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

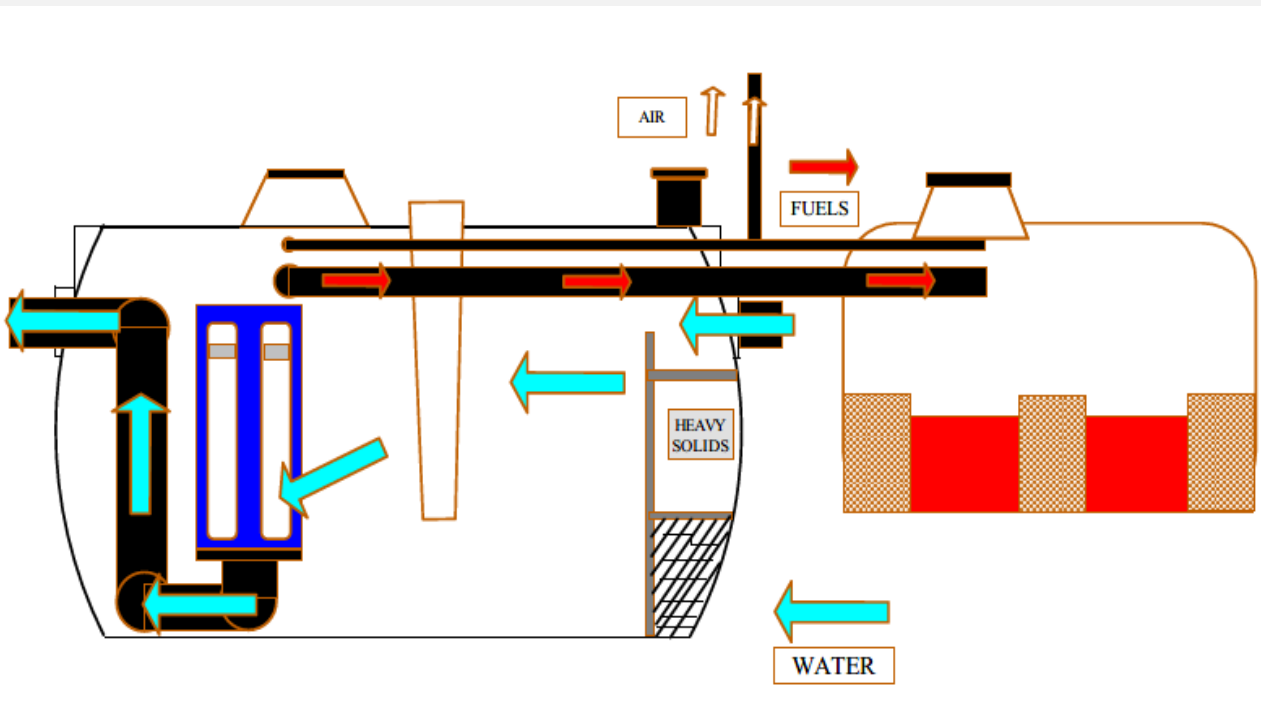
Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

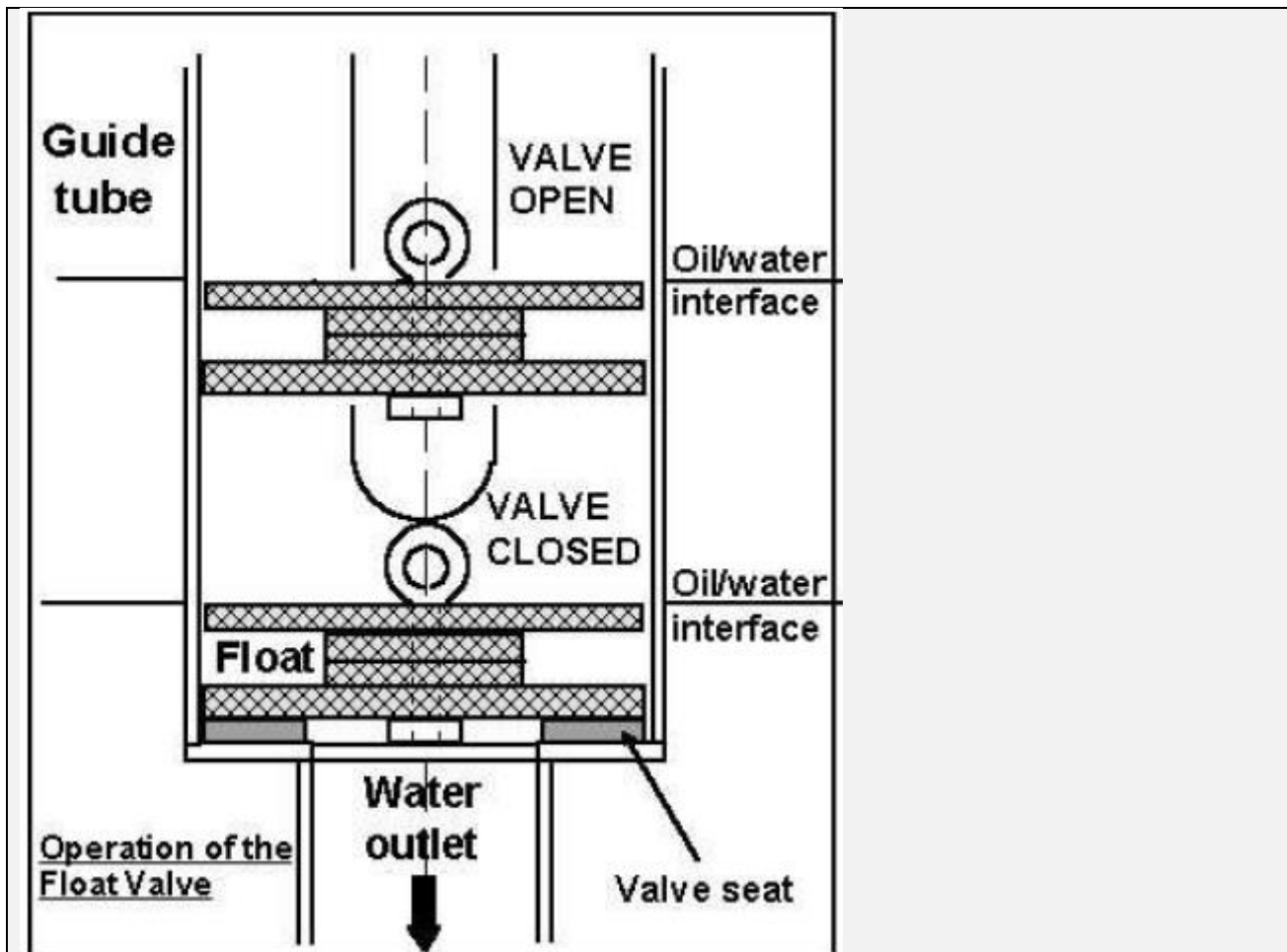
Condensate from existing compressors, cooling water blow down and side blow down for the proposed and existing cryogenic LOX tanks are so negligible that it evaporates into the atmosphere and no water is discharged into the municipal system.

Separator Pit Summary:

A separator pit will be installed with the installation and construction of the aboveground diesel storage tank and associated infrastructure. Storm water, which may contain hydrocarbon contaminants from accidental spillage will be captured from the above ground diesel tank and channeled through an oil/water separator which meets the SANS 50858: 1 & 2 standards, this will be discharged into the municipal storm water system. The standard has eclipsed general municipal and national regulations in terms of stormwater water quality, with maximum pollutant levels of around 400.ppm and a national target of 250.ppm.

The flow path applicable to the oil separator illustrated and explained below:





The operation of a valve within the oil separator protects the storm water system from contamination of hydrocarbon matter. When, for whatever reason, the Oil Separator becomes overloaded with contaminants, the drain box (receiving the contaminants from the Separator) fills and the contaminants begin to fill the Separator itself. As a result of the increased contaminant loading, wastewater is pushed out of the Separator, the float drops with the water level, and the float eventually settles on the valve seat, sealing off the stormwater outlet and protecting the storm water system from contamination. The drain feeding the Separator then backs up to alarm the operator of the installation to take appropriate action, such as emergency emptying of the drain box to the contaminant storage facility. Waste from the separator will be disposed of at the Enviro serv waste disposal facility. The Separator only allows wastewater to flow to storm water again once the drain box has capacity accept more contaminants and there has been sufficient water flow into the separator to lift the valve off its seat. Should it be found that a vacuum has been drawn in the Separator's drain line, causing the float valve to be held onto its seat, the valve can be released by opening the access cover, engaging the float's handle, and pulling the float upwards.

Stormwater monitoring:

In order to comply with the relevant legislation, standards and guidelines the separator pit will be inspected regularly by APSA and cleaned to ensure overflow or blockages are prevented. The water quality of outflow leaving the separator pit into the stormwater system will require monthly testing to be undertaken on a regular basis in order to comply with the General Limit Values of the National Water Act (No. 36 of 1998). The contents of the drain box from the separator pit will be

collected and disposed of at an appropriately classified landfill site and safe disposal receipts will kept on site for record keeping purposes.

(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

[REDACTED]	YES
	NO

Air Products intends to add 23 000 litres (23 m³) of above ground diesel storage, in terms of the emissions to air, the Regulations governing the impact of storage and handling of petroleum products includes:

- Nationals Minimum Emissions Standards (NMES)
- Ambient air quality standards and guidelines:
 - National Ambient Air Quality Standards (NAAQS) for criteria pollutants;
 - National Dust Control Regulations (NDCR) for dustfall;
 - International inhalation health criteria for non- criteria pollutants

The Storage and Handling of Petroleum Products is listed under Subcategory 2.4 in terms of section 21 of the Air Quality Act, 2004 (Act No.39 of 2004). Subcategory 2.4 is applicable to all permanent immobile liquid storage facilities at a single site with a combined storage capacity of greater than 1 000 m³. The storage of the facility will only be 23 m³ (23 000 litres) of diesel and 200 m³ of LOX, totaling 223 m³ and therefore, the on-site storage will not exceed 1 000 m³. The facility therefore falls below the Subcategory 2.4 threshold and does not require an Atmospheric Emissions License (AEL).

It is likely that dust will be generated during the construction phase, especially during windy conditions. Mitigation measures are provided in the EMPr. These will become mandatory and a legal requirement once the authorization has been received from the competent authority, the construction and operational EMPr's from the CDC are binding on tenants, hence all air quality mitigation measures and method statements will be enforced by Air Products.

The current operations of the plant consist of ambient air being drawn in and separated. Minimal amounts of evaporation losses are generated from the storage tanks for liquefied gases, therefore all gases emitted through evaporation loss are components of ambient air with no additional components.

Emergency or accidental emissions to air from the Diesel or LOX Storage tanks:

LOX Storage:

For Alternative A1 and A2 (the addition of 127,3 m³ LOX tank or replace of the existing tank) the LP Column is designed for oxygen recovery. A catastrophic rupture of that portion of the distillation column was modelled and subsequent release of oxygen at an initial pressure of 0.4 bar and approximately -196 °C was modelled. The vapour would be entrained relatively slowly into the surrounding air and would disperse some distance at relatively high oxygen concentration. The oxygen-enrichment of air would result in increased risk of ignition / increased fire risk at 'Dynamic Commodities' directly east. The impact relates to the potential for incidents occurring at those locations rather than damage from the release itself. The initially low temperature vapour would have some cryogenic effect on surrounding equipment with a chance of embrittlement and resulting equipment damage. As a result of the above, between the contours, a fatality probability of approximately 1% would be expected were a release to occur.

The consequences for failure of the 200m³ LOX tank (Alternative 2) would be more pronounced and extend further beyond the site boundary over Dynamic Commodities in comparison to Alternative 1 (refer to Appendix D1: MHI : Risk Assessment report). The consequences for option 2 would result in 30 vol % oxygenation that would extend further than Alternative A1 resulting in increased risk of fire and fatality probability.

Diesel Storage:

Diesel tank storage loss of containment (such as from a large leak or a catastrophic rupture) could result in the formation of a flammable pool covering the entire area of the bund. Were the pool to ignite, a pool fire could form resulting in the generation of thermal radiation contours. The 37.5 kW/m² contour would be limited to the area in close proximity to the bund. It is assumed that were an event to occur, personnel would be able to find shelter and it is likely that only personnel who respond to the event (fire team members or the Emergency Services) would experience that level of thermal radiation (refer to Appendix D).

There would not be excessive impact on the air intake to the MAC from a thermal radiation perspective. If hydrocarbon vapour were to be in contact with oxygen, the specialist (MMRisk) is of the opinion that the concentration of oxygen would far exceed that of hydrocarbon vapour (which would be in trace amounts) and therefore the mixture would be too rich in oxygen to combust. However, were the hydrocarbon vapours to be in contact with air, such as in the atmosphere or the Main Air Compressor (MAC) there could be the risk of explosion within the ASU. Due to the hydrocarbon vapours likely being present only in trace amounts, the inventory of hydrocarbon vapour available for fire or explosion would be limited and therefore the effects would unlikely result in a major release, but rather on equipment damage. The system contains mitigation measures against this event, with the presence of filters and molecular sieves in the process, as well as principles of inherently safer option preventing the presence of hydrocarbon vapours.

It is anticipated that exhaust emissions from APSA tankers refuelling will remain the same as per the daily emissions as there will be no change to the fleet size and considering that the tankers currently operate from the Air Products site.

The Nelson Mandela Bay Fire Department will only issue the Flammable Liquid Licence to Air Products if they are satisfied with the installation and that it has met the SANS standards and local by-laws.

There is no land sterilisation of the properties adjacent to the Air Products site as a result of the planned installation LOX and diesel storage tanks at the planned locations.

(d) Generation of noise

Will the activity generate noise?

NO	
YES	

If yes, is it controlled by any legislation of any sphere of government?

YES	
NO	

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

During the construction phase noise associated with normal temporary construction activities i.e. equipment and vehicles, generators and plant equipment will be used on the site and will not exceed 70 dB based on the CDC's Zone rules. As the site is located within Zone 3 which has been designated for light general industries the noise generated during the construction phase is not anticipated to have a significant impact on the surrounding industries.

Noise levels are to be kept within the legislated limits for the area, in accordance with the requirements of the relevant national and local noise control statutes and as per SANS10103-2008 Construction activities will be limited to the working hours as specified by Nelson Mandela Bay Metropolitan Municipality and the of the SEZ.

The main sources of noise during current operations stem from compressors, pump motors and vents which are housed in noise proof housing or have silencers installed. The storage tanks do not in themselves produce noise.

12. Water Use

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-----------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

Not Applicable
<input checked="" type="checkbox"/> NO

Does the activity require a water use permit from the Department of Water Affairs?

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13. Energy Efficiency

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

As the proposed activity is an expansion of existing storage, no new technology is to be implemented that is different to the technology used for the existing storage tanks. In order to maximize energy efficiency cryogenic storage tanks are insulated with cold insulation systems and minimize heat input.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

N/A

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?

	NO
--	----

If YES, please complete form XX for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	
------	--

Alternative S2 (if any):

--

Alternative S3 (if any):

--

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

- 2.1 Ridgeline
- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley
- 2.6 Plain
- 2.7 Undulating plain / low hills
- 2.8 Dune
- 2.9 Seafront

None of the above- transformed landscape/ industrial area.
--

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	<input type="checkbox"/> NO <input type="checkbox"/>		

Dolomite, sinkhole or doline areas		NO		
Seasonally wet soils (often close to water bodies)		NO		
Unstable rocky slopes or steep slopes with loose soil		NO		
Dispersive soils (soils that dissolve in water)		NO		
Soils with high clay content (clay fraction more than 40%)		NO		
Any other unstable soil or geological feature		NO		
An area sensitive to erosion		NO		

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

- ~~4.1 Natural veld – good condition-[£]~~
- ~~4.2 Natural veld – scattered aliens-[£]~~
- ~~4.3 Natural veld with heavy alien infestation-[£]~~
- ~~4.4 Veld dominated by alien species-[£]~~
- ~~4.5 Gardens~~
- ~~4.6 Sport field~~
- ~~4.7 Cultivated land~~
- 4.8 Paved surface
- 4.9 Building or other structure
- ~~4.10 Bare soil~~

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

██████████ ██████████	██████████ ██████████	██████████ ██████████ ██████████	██████████ ██████████	██████████
██████████	██████████	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. LAND USE CHARACTER OF THE SURROUNDING ENVIRONMENT

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

	YES	NO
5.1 Natural area		NO
5.2 Low density residential		NO
5.3 Medium density residential		NO
5.4 High density residential		NO
5.5 Informal residential		NO
5.6 Retail commercial & warehousing		NO
5.7 Light industrial	YES	
5.8 Medium industrial ^{AN}	YES	
5.9 Heavy industrial ^{AN}		NO
5.10 Power station		NO
5.11 Office/consulting room	YES	
5.12 Military or police base/station/compound		NO
5.13 Spoil heap or slimes dam ^A		NO
5.14 Quarry, sand or borrow pit		NO
5.15 Dam or reservoir		NO
5.16 Hospital/medical centre		NO
5.17 School		NO
5.18 Tertiary education facility		NO
5.19 Church		NO
5.20 Old age home		NO
5.21 Sewage treatment plant ^A		NO
5.22 Train station or shunting yard ^N		NO
5.23 Railway line ^N	YES	
5.24 Major road (4 lanes or more) ^N		NO
5.25 Airport ^N		NO
5.26 Harbour		NO
5.27 Sport facilities		NO
5.28 Golf course		NO
5.29 Polo fields		NO
5.30 Filling station ^H		NO

5.31 Landfill or waste treatment site		NO
5.32 Plantation		NO
5.33 Agriculture		NO
5.34 River, stream or wetland	YES	
5.35 Nature conservation area		NO
5.36 Mountain, koppie or ridge		NO
5.37 Museum		NO
5.38 Historical building		NO
5.39 Protected Area		NO
5.40 Graveyard		NO
5.41 Archaeological site		NO
5.42 Other land uses (describe):		NO

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity.

5.23 – The expansion will have no impacts on the railway line and noise generated from the railway line will not be an area of concern as this is an industrial area, with its own noise related impacts.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

5.8 – No impact as the proposed activity is in line in with the surrounding land use (industrial).

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

N/A

If any of the other boxes are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

5.34. – There is a waterbody located approximately 330 m south west of the site, no impacts are expected on the water body as activities will be restricted to within the site.

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?

	NO
NO	

If YES, explain: N/A

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

The CDC conducted a Phase 1 Heritage Impact Assessment (HIA) in 2010 for the Coega SEZ. The HIA was in fulfilment of Section 38 of the National Heritage Resources Act, 1999. The HIA comprised of 3 separate specialist impact assessments:

- 1) Scoping & Phase 1 archaeological impact assessment for the Coega SEZ, with recommendations;
- 2) Scoping & Phase 1 paleontological impact assessment for the Coega SEZ with recommendations;
- 3) Assessment of the Built Environment in the Coega SEZ, with recommendations for the preservation of identified grave sites and buildings of conservation value; i.e. older than 60 years.

In collaboration with SAHRA, management guidelines were generated by SAHRA for each Zone within the Coega SEZ, outlining the sensitivity of the Zone and proposed guidelines which must be followed prior to and during any development within each zone. These guidelines, together with the findings of the impact assessments, constitute the CDC's Heritage Management Plan for the Coega SEZ.

Palaeontological Assessments must be done for all developments where excavations will be deeper than 3m, except for Zone 6, which does not require a palaeontologist. **As the expansion within Zone 3 consists of the addition of above ground storage tanks (diesel and LOX) and associated infrastructure that will not result in excavations deeper than 3m infers that no Palaeontological Assessments are required for the proposed expansion.**

A chance find procedure has however been incorporated within the EMPr should the discovery of heritage artefact be uncovered at the site.

Will any building or structure older than 60 years be affected in any way? [REDACTED] NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)? [REDACTED] NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

N/A

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—

- (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
- (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
- (iii) the nature and location of the activity to which the application relates;
- (iv) where further information on the application or activity can be obtained; and
- (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

An A2 sized site notice in English was placed at the access gate of the Air Products Coega site along Bumba Road and on the electronic notice board at the Coega Business Centre briefly detailing the activities and notification of the basic assessment process. The Site Notices were placed at the site and electronic notice board on the 30 January 2020 and 27 January 2020 respectively (refer to Appendix E2 for proof of site notices).

An advertisement was placed in The Herald (Eastern Cape) on the 31 January 2020 advertising the Basic Assessment application process and proposed activities at the Air Products site at the Coega SEZ (refer to Appendix E2 for proof of advertisement).

4. DETERMINATION OF APPROPRIATE MEASURES

Potential I&APs and stakeholders consisting of adjacent tenants, investors, organs of state, relevant departments and officials were identified and notified of the proposed expansion and a Background Information Document (BID) was distributed via email correspondence for comments and registration (refer to Appendix E). An advert was placed in The Herald newspaper on the 31st of January 2020 (see Appendix E2), an electronic notice was placed on the electronic notice board in the foyer of the Coega Business Centre as required by the CDC and a hard copy site notice was placed at the Air Products Coega Site Entrance on Erf 228 (refer to Appendix E2).

An Application for Authorisation (DEDEAT Ref: ECm1/C/LN1/M/40-2019) was previously lodged with the DEDEAT on 22 November 2019 for the expansion of LOX and diesel storage at the Air Products site. Air Products (Pty) Ltd withdrew this application (ref no: ECm1/C/LN1/M/40-2019) on the 06 November 2019 due to the reconsideration of the layout of storage infrastructure at the site; and subsequently initiated this new Basic Assessment and public participation process to address the new layout options. As such,

some of the meetings and opportunities for I&APs and stakeholders to comment and participate have informed this BA application, and form part of the public consultation.

A meeting was held between Savannah Environmental (the EAP), Air Products (Project Manager), the CDC's Spatial Planning Manager and Environmental Project Manager on the 27 June 2019 at the CDC Business Centre. The purpose of the meeting was to introduce the project and determine the requirements from the CDC to discuss the scope of the project prior. While this meeting was prior to the previous application being withdrawn (DEDEAT Ref No: ECm1/C/LN1/M/40-2019 on the 06 November 2019) due to the reconsideration of the layout of storage infrastructure at the site, the consultation informed and has been considered within this new application and basic assessment process. Refer to Appendix E for a copy of the attendance register.

A presentation of the previous application to the ELC Committee on the 22 August 2019 in which several aspects on the placement of the diesel tank were discussed (refer to the Appendix E7 for a copy of the presentation and the minutes of the meeting).

In order to address the health and safety aspects raised at the ELC Meeting and the concerns raised by Dynamic Commodities, the applicant withdrew the application in order to assess other alternatives prior to submitting this new application.

A presentation to the ELC Committee consisting of members of the CDC, TNPA, EC DEDEAT, DEA, the NMBM and the DWS was undertaken on the 13 February 2020 in which the new application and changes were discussed. The presentation and minutes of the discussion have been addressed and included in this final basic assessment report (refer to Appendix E7 and Appendix E8).

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

The public participation process involved the identification of key stakeholders and I&APs. A list of tenants from the CDC are included within the I&AP database to ensure all tenants were included in the notification process.

Notifications consisted of emails and an attached Background Information Document (BID) to all tenants, ward councillor, relevant organs of state and Departments of the project and outlining the main activities associated with the project.

All neighbouring landowners within the immediate vicinity of the Air Products site in Zone 3 were sent individual notifications regarding the proposal expansion on the Air Products site. The ward councillor (Cllr. Mbelekane), was sent a notification via email and will continue receiving information on the project throughout the Public Participation process.

It was deemed early on that the Air Products expansion activities would only generate approximately 2-4 jobs during the operational phase for additional security and cleaning staff and the environmental

impact on the surrounding community were deemed to be low as per the impact assessment, hence as the environmental and social impacts of the project were deemed low no public meeting was held with the community.

A meeting was held with the ELC Committee on the 13 February 2020 to present the new application and the findings of the basic assessment and the minutes of the meeting have been included within this Final Basic Assessment report (Appendix E7) and distributed by the CDC.. As the ELC Committee consists of members of the CDC, tenant representatives, Municipal officials and the EC DEDEAT this meeting was considered to be the best platform to reach relevant I&APs and stakeholders.

Notifications were sent out on the 02 March 2020 to all landowners and I&APs by Savannah Environmental's Public Participation Consultant as reminder that the comment period for the Basic Assessment report would be coming to close on the 06 March 2020 (refer to Appendix E5 for proof of email communication).

As part of the public participation process, neighbouring tenants of APSA were sent notifications and were communicated with telephonically to obtain comments on this application. Comments were received from Dynamic Commodities to indicate that they found the application and location of the diesel tank acceptable and that they would not be providing further comment. Following telephonic and email communication with the Coega Dairy, Afrox, Himoin and Ambasaam regarding the public participation process, revised application and comment period, no comments were received. (refer to Appendix E8 and E5).

5. COMMENTS AND RESPONSES REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

The comments and responses report (CRR) is attached as Appendix E8 of this report.

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

The Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)
The Department of Water and Sanitation (DWS)
The Department of Mineral Resources (DMR)
The South African Heritage Resource Agency (SAHRA)
The Nelson Mandela Bay Municipality (NMBM)
Coega Development Corporation (CDC)

Refer to Appendix E3 for a full list of authorities and stakeholders included within the I&AP database.

List of authorities from whom comments have been received:

No written comments were received in response to the notification letters inviting comment or Background Information Document submitted for this application.

An Application for Authorisation (DEDEAT Ref: ECm1/C/LN1/M/40-2019) was previously lodged with the DEDEAT on 22 November 2019 for the expansion of LOX and diesel storage at the Air Products site. Air Products (Pty) Ltd withdrew this application (ref no: ECm1/C/LN1/M/40-2019) on the 06 November 2019 due to the reconsideration of the layout of storage infrastructure at the site; and subsequently initiated this new Basic Assessment and public participation process to address the new layout options. As such, some of the meetings and opportunities for I&APs and stakeholders to comment and participate have informed this BA application, and form part of the public consultation. The application and findings of the basic assessment report were presented at the ELC Meeting on the 22 August 2019 in which the CDC also requested further clarity on the workings of the separator pit system and potential monitoring of stormwater outflow. This was addressed in the final BAR prior to withdrawal in November 2019. All comments received during the ELC meeting held on the 22 August 2019 have been included within Appendix 7 of the basic assessment report for reference. Dynamic Commodities, a tenant adjacent to Air Products within the SEZ, had submitted comments on the previous application regarding the preferred location of the 23m³ diesel storage tank. The comments received and responses have been included within Appendix E6 and E8. Subsequently the applicant withdrew the application taking into consideration the concerns of the adjacent tenant.

All comments received during the ELC Committee meeting held on the 13 February 2020 for this new application and basic assessment report have been addressed within the Comments and Responses report and included within this final basic assessment report.

Following the comments raised at the ELC Meeting on the 13 February 2020, a revised Application with the inclusion of Activity 51 of Listing Notice 1, GNR 327 was submitted to the DEDEAT and notifications were sent out to all I&AP's informing them of the revised application (refer to Appendix G5). Queries regarding the MHI Report and MHI Application and approval from the NMBM Fire Department have been addressed within the Comments and Responses report (refer to Appendix E8)

The Department of Water and Sanitation (DWS) provided comments on the basic assessment report regarding stormwater management and waste management for the installations. These comments have been addressed within the Comments and Responses report (Appendix E8).

Dynamic Commodities a neighbouring tenant of Air Products within Zone 3 of the SEZ indicated that upon review of the revised application and the basic assessment report that they were satisfied with the new location of the diesel tank, and that they would not be providing further comments.

All comments received from the authorities for the Basic Assessment have been addressed and included within the comments and responses report in this Final Basic Assessment report.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

An Application for Authorisation (DEDEAT Ref: ECm1/C/LN1/M/40-2019) was previously lodged with the DEDEAT on 22 November 2019 for the expansion of LOX and diesel storage at the Air Products site. Air Products (Pty) Ltd withdrew this application (ref no: ECm1/C/LN1/M/40-2019) on the 06 November 2019 due to the reconsideration of the layout of storage infrastructure at the site; and subsequently initiated this new Basic Assessment and public participation process to address the new layout options. The CDC did provide comments on the Background Information Document in of report reviews and provided recommendations and guidance on the CDC procedures for the SEZ. The CDC had also provided Savannah Environmental with a list of tenants and stakeholders that should be included within the public participation process.

The information provided by the CDC has been used within this new application and basic assessment report. The CDC has provided guidance and review of project documentation prior to submission to the DEDEAT and public review.

All comments received from stakeholders have been addressed and included within Appendix E8.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

The following issues were raised and addressed during the previous application that had been withdrawn on 22 November 2019:

- a. The main issues raised by interested and affected parties following the review of the BAR included: The CDC and DEDEAT raised points for clarity on the separator pit system for the diesel tank installation during the ELC Meeting and presentation held on the 22 August 2019.
- b. The DEDEAT raised questions on the venting of the diesel tank, possible blast radius and impacts on surrounding tenants and the possibilities of land sterilization during the ELC meeting.
- c. The Nelson Mandela Bay Municipality and DEDEAT requested clarity on the current capacities of liquid oxygen that trigger the requirements for an Atmospheric Emissions License for the site.
- d. Dynamic Commodities, a tenant adjacent to the Air Products site within the SEZ, submitted comments regarding the installation of the 23m³ diesel storage tank and highlighted potential impacts on their business associated with the preferred location alternative.

These aspects were addressed and the application was subsequently withdrawn to attend to the diesel tank location as raised by adjacent tenant (refer to Appendix E6 & E8).

The following issues were raised and addressed this new application and basic assessment report:

- a. The ELC indicated that Activity 51 of Listing 1 of GNR 327 must be included within the application as the installation of LOX and diesel are considered to be an 'expansion⁵' of existing activities at the site. It was agreed that a revised application be submitted to the DEDEAT with the inclusion of Activity 51, and a notification was submitted to all registered I&APs advising of this proposed additional activity. No further comments have been received regarding the inclusion of this Listed Activity.
- b. The ELC raised comments on the need for the MHI Study and MHI Application. These comments have been addressed by Air Products within the Comments and Responses report, and

⁵ As per the National Environmental Management Act (Act 017 of 1998) (as amended) "expansion" means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

explained that the requirement for an MHI Assessment for the installation is due to the possibility of ignition of the installation should there be a rupture or incident. The MHI Assessment provides mitigation measures to minimize the risks associated with the failure of the installations.

- c. Dynamic Commodities, a neighbouring tenant of APSA, who had provided comments against the previous application indicated that, upon review of the revised application and the basic assessment report, that they were satisfied with the location of the diesel tank and that they would not be providing any further comments.
- d. The Department of Water and Sanitation (DWS) provided comments on the basic assessment report regarding stormwater management and waste management for the installations. These comments have been addressed within the Comments and Responses report (Appendix E8).

All comments and issues raised by I&APs for this basic assessment report and during the ELC meeting held on the 13 February 2020 have been addressed and included within the Comments and Responses report within this final basic assessment report.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

The responses to the main issues raised by interested and affected parties following the review of the Background Information document have been included within the Comments and Responses report as Appendix E8 for this new application and basic assessment report.

The responses to the main issues raised **previously** by interested and affected parties following the review of the Application and Basic Assessment that were withdrawn has been included as follows. Full responses are given in the Comments and Response Report, attached to this report within Appendix E8 (note that comments highlighted below are from the application that had been withdrawn):

a. Regarding the separator pit, the drawing and flow diagram of the separator pit were obtained and submitted to the CDC for clarity and included within the final BAR. Monthly water quality testing has been included within the Final BAR and EMPr to ensure the outflow into stormwater is monitored for hydrocarbons regularly.

b. Comments raised during the ELC meeting on the venting of the diesel tank and land sterilisation have been addressed within the Final BAR and the final full Major Hazard Installation report submitted with the Final BAR. It was also clarified during the ELC Meeting that LIN & LOX are not flammable and therefore there was no need to determine the blast radius for these.

c. The comments raised during the ELC Committee meeting regarding the storage capacity of LOX prior to undertaking the basic assessment were attributed to customer needs at the time with LIN being in demand. It was discussed that the current storage for LOX at the site fell below the threshold for an Air Emissions Licence.

d. The comments received from Dynamic Commodities regarding their concerns on the location and installation of the 23m³ diesel tank and the potential impacts were addressed in a formal response addressing the safety aspects of the diesel tank and a response from Savannah Environmental

regarding the choice of alternative locations for the diesel tank selected for the Basic Assessment process. (refer to Appendix E8 for the full response).

Comments received and addressed within this **new** application and basic assessment report:

- a. Comments raised during the ELC meeting held on the 13 January 2020 regarding the addition of Activity 51 of Listing Notice 1 were addressed through the submission of a revised application form to the DEDEAT, and a notification regarding this addition distributed to all I&APs to ensure transparency and allow for any comments in this regard.
- b. Comments raised during the the ELC meeting regarding the purpose of the MHI Assessment and MHI Application were addressed during the ELC Meeting and within the comments and responses report. APSA has indicated that a substance such as LOX and diesel can ignite if ruptured and that an MHI Assessment would be required for these types of installations. The MHI report included mitigation measures to minimise the impacts associated with The MHI Assessment has assessed the impacts of both the LOX and diesel tank installations on the neighbouring tenants and APSA site.
- c. The comments received from Dynamic Commodities indicated that upon review of the revised application and the basic assessment report, they were satisfied with the location of the diesel tank and would therefore not be providing further comments.
- d. Comments from DWS regarding stormwater management, spill control, waste management for the installations have been addressed referring to the existing waste management, stormwater management procedures and infrastructure currently in place at the site for existing operations.

All comments and issues raised by I&APs for this application and basic assessment report and during the ELC Committee meeting to be held on the 13 February 2020 have been addressed and included within the Comments and Responses report within this final basic assessment report.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

METHODOLOGY UTILISED IN THE RATING OF SIGNIFICANCE OF IMPACTS

The following methodology was used in assessing impacts related to the proposed project. All impacts are assessed according to the following criteria:

- » The **nature**, a description of what causes the effect, what will be affected, and how it will be affected.
- » The **extent**, wherein it is indicated whether the impact will be local (limited to the immediate area or site of development), regional, national or international. A score of between 1 and 5 is assigned as appropriate (with a score of 1 being low and a score of 5 being high).
- » The **duration**, wherein it is indicated whether:
 - * The lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
 - * The lifetime of the impact will be of a short duration (2–5 years) - assigned a score of 2;
 - * Medium-term (5–15 years) – assigned a score of 3;
 - * Long term (> 15 years) - assigned a score of 4; or;
 - * Permanent - assigned a score of 5.

- » The **magnitude**, quantified on a scale from 0-10, where a score is assigned:
 - * 0 is small and will have no effect on the environment;
 - * 2 is minor and will not result in an impact on processes;
 - * 4 is low and will cause a slight impact on processes;
 - * 6 is moderate and will result in processes continuing but in a modified way;
 - * 8 is high (processes are altered to the extent that they temporarily cease); and
 - * 10 is very high and results in complete destruction of patterns and permanent cessation of processes.

- » The **probability** of occurrence, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned:
 - * Assigned a score of 1–5, where 1 is very improbable (probably will not happen);
 - * Assigned a score of 2 is improbable (some possibility, but low likelihood);
 - * Assigned a score of 3 is probable (distinct possibility);
 - * Assigned a score of 4 is highly probable (most likely); and
 - * Assigned a score of 5 is definite (impact will occur regardless of any prevention measures).

- » The **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high.
 - * The **status**, which is described as positive, negative or neutral.
 - * The degree to which the impact can be reversed.
 - * The degree to which the impact may cause irreplaceable loss of resources.
 - * The degree to which the impact can be mitigated.

The **significance** is determined by combining the criteria in the following formula:

$S = (E+D+M) P$; where

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance** weightings for each potential impact are as follows:

- * **< 30 points: Low** (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- * **30-60 points: Medium** (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- * **> 60 points: High** (i.e. where the impact must have an influence on the decision process to develop in the area)

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

DESIGN PHASE:**Site Alternatives: Air Products Coega Site (Zone 3)**

The proposed site to carry out the expansion activities will be the existing and operational Air Products sites located within Zone 3 of the SEZ. The site has been operating since 2013 and can be considered a brownfields site.

The additional LOX tank will either be located adjacent to the existing LOX tank or replace the existing LOX tank and proposed diesel tank locations is discussed below. As the expansion activities are a component to the existing operations at the site, no other site alternatives have been selected.

Diesel Storage Tank:

The design of the 23 m³ aboveground diesel tank is as per the standard of the fuel supplier (Engen). The standard aboveground composite tank will also consist of standard bund wall designs, spill slab, spill separator, 1 pump, 2 hoses and shut off valve. The layout of the diesel tank and infrastructure within the site will be dependent on location of the intended diesel tank based on the results of the Major Hazard Installation Risk Assessment. APSA has deemed site Location 1 as the most feasible option for the for the siting of the diesel tank within the site and has been assessed accordingly within the Major Hazard Installation Risk Assessment Report (refer to Appendix D) i.e. Table 1.4, page 42 and 43 of 69 for the Qualitative evaluation of the proposed diesel locations.

LOX Storage tank:

The design and layout of the LOX tanks are as per APSA standards for the storage of cryogenic liquids. The 127,3 m³ LOX tank will either be located adjacent to the existing LOX and Nitrogen tanks or replace the existing 72,7 m³ LOX tank with a 200 m³ tank as the loading bays and infrastructure are already in place as illustrated by the Major Hazard Installation Risk Assessment Report (refer to Appendix D).

Addition of 127,3 m³ LOX tank adjacent to existing LOX tank and diesel tank storage located at location 1 as per MHI report (Preferred Alternative- A1): Loading bays and infrastructure for additional LOX tank already in place and the diesel tank placement was deemed relatively distant from neighbouring properties and to be located a minimum of 15,2 metres away from the Main Air Compressor as per Air Products standards (refer to Site Plan A).

Replacement of existing 72,7 m³ LOX tank with 200 m³ LOX Diesel Tank; location Number 1 as per MHI report (Alternative 2- A2): Loading bays and infrastructure for already in place for existing LOX tank and the diesel tank placement was deemed relatively distant from neighbouring properties and to be located a minimum of 15,2 metres away from the Main Air Compressor as per Air Products standards.

It must be noted that the locations Number 3 and 4 that were deemed "OK" by the MHI report as per Figure 4.1. and Table 4.1. of the MHI Report were not deemed feasible for the APSA site as Location 3 was on boundary of neighbouring tenant Dynamic Commodities and would pose a safety risk due to its close proximity. Location 4 was not determined to be feasible for APSA as it would require re-arrangement of the staff parking and the creation of an additional access to the site. As per the

planning regulations of the Coega Development Corporation (CDC) only one access is granted per tenant site.

It must be noted that the health and safety consequences identified for the LOX tank Alternative A2 are higher as they extend further beyond the site boundary over Dynamic Commodities in comparison to Alternative A1, and therefore Alternative A1 has been identified preferred alternative. Location 1 for the placement of the diesel tank is favoured by Air Products (the applicant) and Engen (the diesel supplier) due to the health and safety standards for the tank, delivery trucks and minimum proximity (15,2m). As the location of the diesel tank remains the same for both Alternative A1 & A2 the impacts for identified for the diesel tank are applicable to both A1 & A2.

Alternative A1 (preferred alternative): Installation of an additional 127,3 m³ LOX tank and aboveground diesel storage tank (A1), with the location of the diesel tank located across from the APSA Main Air Compressor

No impacts are anticipated in terms of planning and design, as the proposed site is already developed and operational. The site is zoned for industrial use, within the Special Development Zone. The screening assessment (refer to Appendix G3) conducted for the site using the national web based screening tool as per Regulation 16 (1)(b)(v) of the Environmental Impact Assessment Regulations, 2014 (as amended) indicated that site has **medium agricultural themed sensitivity**, however the site has been zoned for light industrial activities as per the Coega Development Corporation Zone Map. Aquatic and terrestrial biodiversity indicators indicated that the site is located within an area of **low sensitivity**.

Direct impacts:

None

Indirect impacts:

Location of diesel tank is influenced by the potential for wind-blown vapour to move in the direction of APSA's main air compressor.

Cumulative impacts:

None

Mitigation measures that may eliminate or reduce the potential impacts listed above:

The diesel tank location must be located at least 15,2 m away from the main air compressor as per Air Products operating requirements in order to limit vapour intake from the diesel storage tank.

Alternative (2): Replacement of existing LOX tank with a 200 m³ tank and aboveground diesel storage tank (A2), with the location of the diesel tank located across from the APSA Main Air Compressor

No impacts are anticipated in terms of planning and design, as the proposed site is already developed and operational. The site is zoned for industrial use, within the Special Development Zone. The screening assessment (refer to Appendix G3) conducted for the site using the national web based screening tool as per Regulation 16 (1)(b)(v) of the Environmental Impact Assessment Regulations, 2014 (as amended) indicated that site has **medium agricultural themed sensitivity**, however the site has been zoned for light industrial activities as per the Coega Development Corporation Zone Map. Aquatic and terrestrial biodiversity indicators indicated that the site is located within an area of **low sensitivity**.

Direct impacts:

None

Indirect impacts:

Location of diesel tanks is influenced by the potential for wind-blown vapour to move in the direction of APSA's main air compressor.

Cumulative impacts:

None

Mitigation measures that may eliminate or reduce the potential impacts listed above:

The diesel tank location must be located at least 15,2m away from the main air compressor as per Air Products in order to limit vapour intake from the diesel storage tank.

CONSTRUCTION PHASE:**Alternative A1 (preferred alternative): Installation of an additional 127,3 m³ LOX tank and aboveground diesel storage tank , with the location of the diesel tank located across from the APSA Main Air Compressor**

Considering all the impacts identified and assessed, it is concluded that the construction activities associated with an additional LOX storage tank and aboveground diesel storage tank (A1), will result in negative and positive impacts. The construction phase impacts associated with the noise, dust, waste generation and traffic are considered to be **negative**, and of **Low significance**. The duration of the **negative** impacts are short-term and local in extent.

The overall significance rating of the impacts associated with the expansion of the LOX storage and addition of diesel storage and associated infrastructure is of a **Low significance** with the implementation of mitigation measures. This is in line with the level of significance indicators results within the web-based screening tool report for the site (refer to Appendix G3).

Direct impacts:

- » On site construction activities will result in excess dust generated from the site;
- » Ambient noise level within the site will increase due to construction activities i.e. movement of trucks, machinery and workers on site.

Indirect impacts:

- » Construction activities from contractors transporting material to site, transport of the LOX tank (abnormal load) will result in increased traffic within the vicinity of the site.
- » Excess general waste such as plastic, cement bags, steel, pipes, wood will be generated from construction activities

Cumulative impacts:

- » A local contractor will be procured to conduct construction activities associated with the installation of the LOX and diesel tank and associated infrastructure.

1. Noise Emissions

Noise generated from construction activities will have little impact on the surrounding businesses due to the nature of area zoned for light and medium general industrial activities. As construction activities will take place during the day when ambient noise conditions are louder the noise generated from construction is anticipated to be minimal. Construction noise is anticipated to be short term and local in extent, as construction is anticipated to be completed within 3 months of commencement.

Noise is created from the machinery that is operational 24 hours a day in the existing facility and will not increase following the addition of the LOX will increase the ambient noise levels in the immediate vicinity. The plant design has already taken into consideration the positioning of noise generating equipment to reduce the noise levels at the boundaries and Air Products have also implemented soundproofing of the structures housing noise generating equipment, with no additional mitigation measures proposed.

The significance of the impact resulting from construction activities is rated as **low (negative)** for the proposed development as the site is classified as industrial with very low baseline noise levels and it is not near any residential areas. With the implementation of mitigation measures the impact can be minimised further.

2. Socio- Economic Impacts

The project will result in direct investment into the economy, consisting of capital expenditure, including engineering, procurement and construction; additionally, local contractors will be appointed for the construction phase of the activity. Employment opportunities must comply with the Labour Agreement as provided by the CDC due to the locality of the expansion within the SEZ.

3. Dust Emissions

The site is currently operational, and the ground cover consists of paved, concreted areas and bare ground portions. During the construction phase the movement of machinery and equipment on bare areas will generate dust. The impact rating is **low (negative)** as the construction phase is short term (3 months). Impacts as a result of dust emission can be minimised through the implementation measures within the EMPr.

4. Waste Management

As minimal general waste is anticipated to be generated during the 3-month construction phase and considering that the operational site currently has an agreement with EnviroServ Waste Management

for the collection and disposal of waste the impact rating for the construction phase was anticipated to **low (negative)**.

5. Traffic Impacts

During the construction phase materials and equipment will need to be transported to site by means of road transportation, resulting in more traffic utilising the CDC road network, however as the construction phase will be undertaken within a short timeframe and will be located within an area designated for light general industrial the impact was rated as **low (negative)**. As it is an SEZ it is anticipated that the design of the road infrastructure as well as the road network was done in accordance with required specifications to handle the anticipated carrying capacity of the developed area on completion of the SEZ.

Mitigation measures that may eliminate or reduce the potential impacts listed above:

Direct impacts identified:

- » Dust suppression measures such as soil wetting must be undertaken to reduce dust during construction activities
- » Construction activities must be limited to working hours (8am-5pm) on weekdays unless otherwise permitted by the CDC.
- » All machinery and equipment must be serviced and in good working order to prevent excessive unnecessary noise.

Indirect impacts identified:

- » Construction activities are to take place within working hours (8am-5pm) on weekdays unless otherwise authorised by the CDC.
- » Abnormal loads must be accompanied by escorts ahead and behind the load to notify other motorists.
- » Where necessary flag men must be employed to notify motorists and tenants of construction vehicles leaving and entering the site.
- » The traffic authorities must be notified of the abnormal load accompany with load within the SEZ if deemed necessary
- » Waste generated due to construction activities must be stored in vermin proof bins within the site;
- » Construction waste must be stored at a central collection point and must be collected regularly for disposal at an approved landfill or waste disposal site.
- » Proof of waste disposal must be kept on site for auditing purposes.

Cumulative impacts identified:

- » None

Alternative (A2): Replacement of existing LOX tank with a 200 m³ tank and aboveground diesel storage tank , with the location of the diesel tank located across from the APSA Main Air Compressor

Considering all the impacts identified and assessed, it is concluded that the construction activities associated with the replacement of the existing LOX storage tank and aboveground diesel storage tank (A2), will result in negative and positive impacts. The construction phase impacts associated with the noise, dust, waste generation and traffic are considered to be **negative**, and of **low significance**. The duration of the negative impacts are short-term and local in extent.

The overall significance rating of the impacts associated with the expansion of the LOX storage and addition of diesel storage and associated infrastructure is of a **low significance** with the implementation of mitigation measures. This is in line with the level of significance indicators results within the web-based screening tool report for the site (refer to Appendix G3).

Direct impacts:

- » On site construction activities will result in excess dust generated from the site;
- » Ambient noise level within the site will increase due to construction activities i.e. movement of trucks, machinery and workers on site.

Indirect impacts:

- » Construction activities from contractors transporting material to site, transport of the 200 m³ LOX tank (abnormal load) will result in increased traffic within the vicinity of the site.
- » Excess general waste such a plastic, cement bags, steel, pipes, wood will be generated from construction activities

Cumulative impacts:

A local contractor will be procured to conduct construction activities associated with the installation of the LOX tank.

1. Noise Emissions

Noise generated from construction activities will have little impact on the surrounding businesses due to the nature of area zoned for light and medium general industrial activities. As construction activities will take place during the day when ambient noise conditions are louder the noise generated from construction is anticipated to be minimal. Construction noise is anticipated is to be short term and local in extent, as construction is anticipated to be completed within 3 months of commencement.

Noise is created from the machinery that is operational 24 hours a day in the existing facility and will not increase following the addition of the LOX will increase the ambient noise levels in the immediate vicinity. The plant design has already taken into consideration the positioning of noise generating equipment to reduce the noise levels at the boundaries and Air Products have also implemented soundproofing of the structures housing noise generating equipment, with no additional mitigation measures proposed.

The significance of the impact resulting from construction activities is rated as **low (negative)** for the proposed development as the site is classified as industrial with very low baseline noise levels and it is not near any residential areas. With the implementation of mitigation measures the impact can be minimised further.

1. **Socio- Economic Impacts**

The project will result in direct investment into the economy, consisting of capital expenditure, including engineering, procurement and construction; additionally, local contractors will be appointed for the construction phase of the activity. Employment opportunities must comply with the Labour Agreement as provided by the CDC due to the locality of the expansion within the SEZ.

2. **Dust Emissions**

The site is currently operational, and the ground cover consists of paved, concreted areas and bare ground portions. During the construction phase the movement of machinery and equipment on bare areas will generate dust. The impact rating is **low (negative)** as the construction phase is short term (3 months). Impacts as a result of dust emission can be minimised through the implementation measures within the EMPr.

3. **Waste Management**

As minimal general waste is anticipated to be generated during the 3-month construction phase and considering that the operational site currently has an agreement with EnviroServ Waste Management for the collection and disposal of waste the impact rating for the construction phase was anticipated to **low (negative)**.

4. **Traffic Impacts**

During the construction phase materials and equipment will need to be transported to site by means of road transportation, resulting in more traffic utilising the CDC road network, however as the construction phase will be undertaken within a short timeframe and will be located within an area designated for light general industrial the impact was rated as **low (negative)**. As it is an SEZ it is anticipated that the design of the road infrastructure as well as the road network was done in accordance with required specifications to handle the anticipated carrying capacity of the developed area on completion of the SEZ.

Mitigation measures that may eliminate or reduce the potential impacts listed above:

Direct impacts identified:

- » Dust suppression measures such as soil wetting must be undertaken to reduce dust during construction activities
- » Construction activities must be limited to working hours (8am-5pm) on weekdays unless otherwise permitted by the CDC.
- » All machinery and equipment must be serviced and in good working order to prevent excessive unnecessary noise.

Indirect impacts identified:

- » Construction activities are to take place within working hours (8am-5pm) on weekdays unless otherwise authorised by the CDC.
- » Abnormal loads must be accompanied by escorts ahead and behind the load to notify other motorists.
- » Where necessary flag men must be employed to notify motorists and tenants of construction vehicles leaving and entering the site.
- » The traffic authorities must be notified of the abnormal load accompany with load within the SEZ if deemed necessary
- » Waste generated due to construction activities must be stored in vermin proof bins within the site;
- » Construction waste must be stored at a central collection point and must be collected regularly for disposal at an approved landfill or waste disposal site.
- » Proof of waste disposal must be kept on site for auditing purposes.

Cumulative impacts identified:

- » None

No-Go Alternative: No expansion of LOX storage and installation of diesel tank (A1 & A2)**Direct impacts:**

The socio-economic benefits of job creation will not be realised.

Indirect impacts

- » The increase in revenue expected to be generated for Air Products, the SEZ and Eastern Cape will not be realised.
- » Refuelling of APSA trucks at other depots prior to delivery may result in delays to customers creating reputational risk.
- » No health and safety risks associated with the onsite aboveground diesel storage tanks will materialise.

Cumulative impacts

- » Air Products Coega will not be able to keep up with the supply and demand on liquid gases to customers which may result in customers exporting liquid gas from other sources.
- » Lack of consistent delivery may result in the loss of customers

Mitigation measures that may eliminate or reduce the potential impacts listed above:

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation / enhancement:	Significance rating of impacts after mitigation / enhancement :	Risk of the impact and mitigation / enhancement not being implemented
Construction phase				
Noise generated from movement of vehicles and machinery for construction related activities.	Low Negative	<ul style="list-style-type: none"> » Construction activities must be take place during working hours as stipulated by the CDC and Nelson Mandela Bay Metropolitan Municipality by-laws » Speed limits should be implemented on site and adhered to off site 	Low Negative	Low risk as as construction activities will take place during the day when ambient noise conditions are louder the noise generated from construction should be minimal. Construction is anticipated to be completed within 3 months
The project will result in direct investment into the economy, consisting of capital expenditure, including engineering, procurement and construction	Low Positive	» No mitigation measures required	Low Positive	Low positive due to employment and investment opportunities.
Local contractors will be appointed for the construction phase of the activity (Employment opportunities)	Low Positive	» Employment opportunities must comply with the Labour Agreement as provided by the CDC due to the locality of the expansion within the SEZ	Low Positive	Low Positive due to employment opportunities created.

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation / enhancement:	Significance rating of impacts after mitigation / enhancement :	Risk of the impact and mitigation / enhancement not being implemented
Increased emissions to air (including dust) due to construction activities on site	Low Negative	<ul style="list-style-type: none"> » Dust suppression techniques, such as wetting or covering should be implemented to minimise the impact of dust, when necessary; » Construction vehicles must adhere to speed limits; and » Rehabilitation or paving of bare areas at the site should take place where applicable within the site as per the approved site plan. 	Low Negative	Low risk as construction activities are anticipated to be completed within a period of 3 months)
Generation of waste and waste management	Low Negative	<ul style="list-style-type: none"> » Housekeeping at the site must be monitored such the site is neat and free of litter; » All construction and APSA staff must be informed on appropriate waste disposal at the site; » Waste separation must be carried out by the appointed contractor were applicable. An effort must be made to recycle and re-use metal, wooden pallets; metals, plastic and packaging were possible by the contractor; » All construction materials (e.g. chemical stored; bags of cement) must be suitably stored, labelled and protected, so that they do not become damaged and unusable or a hazard; » The Contractor must be responsible for the frequent disposal of all waste generated as a result of the construction. (As per the approval 	Low Negative	Low risk as waste is currently separated and ,managed by EnviroServ and safe disposal slips are made available following disposal

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation / enhancement:	Significance rating of impacts after mitigation / enhancement :	Risk of the impact and mitigation / enhancement not being implemented
		<p>landfill) or as agreed between Air Products and EnviroServ Waste Management. Waste disposal slips shall be kept for auditing purposes;</p> <ul style="list-style-type: none"> » Dumping within the surrounding area is prohibited, waste must not be buried or burned by any party. Safe disposal slips will be required to kept for auditing purposes as proof of safe disposal of ALL waste. » General waste is to be collected either by the Local Municipality or via a Municipal approved waste transporting contractor. The frequency of collections will be such that waste containment receptacles do not unduly accumulate or overflow. » Weather and scavenger proof bins must be provided at the site, and must be placed at points that are easily accessible and close to construction activities. 		

OPERATION PHASE:**Alternative A1 (preferred alternative): Installation of an additional 127,3m³ LOX tank and aboveground diesel storage tank (A1), with the location of the diesel tank located across from the APSA Main Air Compressor**

The operation activities associated with the additional 127,3m³ LOX storage tank and aboveground diesel storage tank (A1) will result in negative and positive impacts. The impacts for noise, safety risks and soil contamination from diesel spillage identified to be associated with the operation of the infrastructure are considered to be negative and **low significance**. The duration of the impact short medium term and are of local extent.

The overall significance rating of the impacts associated with the expansion of the LOX storage and addition of diesel storage and associated infrastructure is of a **low significance** with the implementation of mitigation measures.

Direct impacts

- » Risk leakage of spillage of diesel during refueling APSA truck or refueling of the aboveground tank by Engen
- » Risk of incidents resulting from the storage of dangerous goods
- » Creation of job opportunities

Indirect impacts

None

Cumulative impacts

- » Noise generated from existing operational infrastructure at the plant

1. Noise Emissions

The noise created from the machinery that is operational 24 hours a day in the existing facility will not increase levels in the immediate vicinity. The plant design has already taken into consideration the positioning of noise generating equipment to reduce the noise levels at the boundaries and Air Products have also implemented soundproofing of the structures housing noise generating equipment, with no additional mitigation measures proposed.

The significance of the impact resulting from construction activities and operational activities is rated as low (negative) for the proposed development as the site is classified as industrial with very low baseline noise levels and it is not near any residential areas. With the implementation of mitigation measures the impact can be minimised further.

2. Socio- Economic Impacts

It is anticipated that the expansion will result in approximately 3 new job opportunities during the operational phase. Although the intensity of the impact is low due to the small number of jobs required for the operation of the plant, the period of the impact (up to 50 years) and the one local contractor

being appointed for the construction period results in the impact were rated as a low (negative). No mitigation measures are required.

3. Dust Emissions

No dust impacts are anticipated as a result of the operational phase of the expansion.

2. Waste Management

No further waste management impact as a result of the additional storage tanks were anticipated for the operational phase of the project.

4. Traffic Impacts

As the site is located with the SEZ it is anticipated that the design of the road infrastructure as well as the road network was done in accordance with required specifications to handle the anticipated carrying capacity of the developed area on completion of the SEZ. The other developments should not interfere with the operations of Air Products located in Zone 3 of the SEZ, which is designated the Air Products plant as the plant can be reached from two directions, minimising the chance of congestion.

Based on the above the significance of this negative impact on the congestion at the intersections, as well as wear and tear of the infrastructure, is rated as **low negative** due to the long-term operation of the plant, as such no mitigation measures are proposed

5. Health and Safety Risks (Risk of accidents in relation to the storage of a dangerous goods)

The entire existing plant is currently fenced off; meaning any lawful access to the plant will only be gained by authorisation with adherence to safety protocol. The Air Products, storage tanks and associated machinery are to be manufactured according to the relevant safety standards. The plant is provided with safety-related monitoring and protection equipment. As a result, dangerous conditions such as excessive pressures, too high or too low temperatures, and accumulation of critical materials or leakages can be prevented. Additionally, the products are stored in double shelled storage tanks so that in the case of any external incidents, if the external shell is punctured the internal shell will remain intact.

From the measures currently in place for the safety impacts for operational phase of the project were deemed as **low (negative)** as the expansion activities are a continuation of operations currently taking place at the site and Air Products have a number of policies and procedures in place that must be followed by all personnel.

6. Contamination of soil

There the risk of diesel spills when filling up trucks at the filling point as well as leaks from the storage tanks. However, the area where the filling of trucks is to take place will be constructed out of an impermeable concrete slab and bunded area, and the above ground storage tanks, as well as

equipment that could potentially result in spills or leaks, are to be positioned within defined areas so as to contain any leaks or spills that may occur.

The significance of this impact is rated as a **low (negative)** which can be minimised with the implementation of mitigation measures.

7. Impacts to Stormwater

The risk of hydrocarbon containing outflow release into the stormwater system is very low due to the design and mechanism of the separator system. Should the Oil Separator become overloaded with contaminants, the drain box fills, and the contaminants begin to fill the Separator itself. As a result of the increased contaminant loading, wastewater is pushed out of the Separator, the float drops with the water level, and the float eventually settles on the valve seat, sealing off the stormwater outlet and protecting the storm water system from contamination. The drain feeding the Separator then backs up to alarm the operator of the installation to take appropriate action, such as emergency emptying of the drain box to the contaminant storage facility. The Separator only allows water to flow to storm water again once the drain box has capacity accept more contaminants and there has been sufficient water flow into the separator to lift the valve off its seat.

Mitigation measures that may eliminate or reduce the potential impacts listed above:

Direct impacts identified:

- » Implement and adhere to safety protocol and procedures for refueling of the tank and APSA trucks.
- » All employees must be made aware and training of health and safety procedures at the site for the handling of dangerous good and refueling of trucks.
- » Implement regular monitoring and maintenance of the separator pit and storm water quality.
- » Update the emergency response procedure to include future planned installations.
- » Re-fuelling of diesel to be undertaken at least 15,2m away from the main air compressor.

Indirect impacts:

None

Cumulative impacts

- » Noise generating equipment and machinery must be serviced regularly and in good working order in order.
- » All silencers and noise proof housing must be maintained.
- » Operating hours of the plant must be as stipulated and agreed upon with the CDC.

Alternative (A2): Replacement of existing LOX tank with a 200 m³ tank and aboveground diesel storage tank , with the location of the diesel tank located across from the APSA Main Air Compressor

The operational activities associated with the replacement of the existing LOX storage tank and aboveground diesel storage tank (A2) will result in negative and positive impacts. The impacts for noise, safety and health risks and soil contamination from diesel spillage identified to be associated with the

operation of the infrastructure are considered to be negative and **low significance**. The duration of the impact short medium term and are of local extent.

The overall significance rating of the impacts associated with the expansion of the LOX storage and addition of diesel storage and associated infrastructure is of a **low significance** with the implementation of mitigation measures.

Direct impacts

- » Risk leakage of spillage of diesel during refueling APSA truck or refueling of the aboveground tank by Engen.
- » Safety risk of Engen tanker reversing into the aboveground tank when parking due to location.
- » Risk of inhalation of diesel particulate matter due to close vicinity of the guardhouse.
- » Risk of incidents resulting from the storage of dangerous goods.
- » Creation of job opportunities.

Indirect impacts

None

Cumulative impacts

Noise generated from existing operational infrastructure at the plant

1. Noise Emissions

The noise created from the machinery that is operational 24 hours a day in the existing facility will not increase levels in the immediate vicinity. The plant design has already taken into consideration the positioning of noise generating equipment to reduce the noise levels at the boundaries and Air Products have also implemented soundproofing of the structures housing noise generating equipment, with no additional mitigation measures proposed.

The significance of the impact resulting from construction activities and operational activities is rated as low (negative) for the proposed development as the site is classified as industrial with very low baseline noise levels and it is not near any residential areas. With the implementation of mitigation measures the impact can be minimised further.

2. Socio- Economic Impacts

It is anticipated that the expansion will result in approximately 3 new job opportunities during the operational phase. Although the intensity of the impact is low due to the small number of jobs required for the operation of the plant, the period of the impact (up to 50 years) and the one local contractor being appointed for the construction period results in the impact were rated as a low (negative). No mitigation measures are required.

3. Dust Emissions

No dust impacts are anticipated as a result of the operational phase of the expansion.

3. Waste Management

No further waste management impact as a result of the additional storage tanks were anticipated for the operational phase of the project.

4. Traffic Impacts

As the site is located with the SEZ it is anticipated that the design of the road infrastructure as well as the road network was done in accordance with required specifications to handle the anticipated carrying capacity of the developed area on completion of the SEZ. The other developments should not interfere with the operations of Air Products located in Zone 3 of the SEZ, which is designated the Air Products plant as the plant can be reached from two directions, minimising the chance of congestion.

Based on the above the significance of this negative impact on the congestion at the intersections, as well as wear and tear of the infrastructure, is rated as **low negative** due to the long-term operation of the plant, as such no mitigation measures are proposed

5. Health and Safety Risks (Risk of accidents in relation to the storage of a dangerous goods)

The entire existing plant is currently fenced off; meaning any lawful access to the plant will only be gained by authorisation with adherence to safety protocol. The Air Products, storage tanks and associated machinery are to be manufactured according to the relevant safety standards. The plant is provided with safety-related monitoring and protection equipment. As a result, dangerous conditions such as excessive pressures, too high or too low temperatures, and accumulation of critical materials or leakages can be prevented. Additionally, the products are stored in double shelled storage tanks so that in the case of any external incidents, if the external shell is punctured the internal shell will remain intact.

From the measures currently in place for the safety impacts for operational phase of the project were deemed as **low (negative)** as the expansion activities are a continuation of operations currently taking place at the site and Air Products have a number of policies and procedures in place that must be followed by all personnel.

6. Contamination of soil

There the risk of diesel spills when filling up trucks at the filling point as well as leaks from the storage tanks. However, the area where the filling of trucks is to take place will be constructed out of an impermeable concrete slab and bunded area, and the above ground storage tanks, as well as equipment that could potentially result in spills or leaks, are to be positioned within defined areas so as to contain any leaks or spills that may occur.

The significance of this impact is rated as a **low (negative)** which can be minimised with the implementation of mitigation measures.

7. Impacts to Stormwater

The risk of hydrocarbon containing outflow release into the stormwater system is very low due to the design and mechanism of the separator system. Should the Oil Separator become overloaded with contaminants, the drain box fills, and the contaminants begin to fill the Separator itself. As a result of the increased contaminant loading, wastewater is pushed out of the Separator, the float drops with the water level, and the float eventually settles on the valve seat, sealing off the stormwater outlet and protecting the storm water system from contamination. The drain feeding the Separator then backs up to alarm the operator of the installation to take appropriate action, such as emergency emptying of the drain box to the contaminant storage facility. The Separator only allows water to flow to storm water again once the drain box has capacity accept more contaminants and there has been sufficient water flow into the separator to lift the valve off its seat.

Mitigation measures that may eliminate or reduce the potential impacts listed above:

Direct impacts identified:

- » Implement and adhere to safety protocol and procedures for refueling of the tank and APSA trucks.
- » All employees must be made aware and training of health and safety procedures at the site for the handling of dangerous good and refueling of trucks.
- » Implement regular monitoring and maintenance of the separator pit and storm water quality.
- » Re-fuelling of diesel to be undertaken at least 15,2m away from the main air compressor

Indirect impacts:

None

Cumulative impacts

- » Noise generating equipment and machinery must be serviced regularly and in good working order in order.
- » All silencers and noise proof housing must be maintained.

No-Go Alternative: No expansion of LOX storage and installation of diesel tank (A1 & A2)

Direct impacts:

- » The socio-economic benefits of job creation will not be realised.

Indirect impacts

- » The increase in revenue expected to be generated for Air Products, the SEZ and Eastern Cape will not be realised.
- » Refuelling of APSA trucks at other depots prior to delivery may result in delays to customers creating reputational risk.
- » No health and safety risks associated with the onsite aboveground diesel storage tanks will materialise.

Cumulative impacts

- » Air Products Coega will not be able to keep up with the supply and demand on liquid gases to customers which may result in customers exporting liquid gas from other sources.
- » Lack of consistent delivery may result in the loss of customers

Mitigation measures that may eliminate or reduce the potential impacts listed above:

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation / enhancement:	Significance rating of impacts after mitigation / enhancement :	Risk of the impact and mitigation / enhancement not being implemented
Operation Phase				
Risk relating to the storage of dangerous goods.	Low Negative	<ul style="list-style-type: none"> » The Air Products storage tanks and associated machinery are to be manufactured according to the relevant safety standards. » Regular maintenance of the machines are carried out at the plant. » Emergency policies and procedures for the site must be made available to all staff and implemented at the site (refer to EMPr) and must be updated to include future planned installations. » Diesel tank and re-fuelling must always be undertaken atleast 15,2m away from the main air compressor. 	Low Negative	Low risk due to the existing plant is provided with safety-related monitoring and protection equipment. As a result dangerous conditions such as excessive pressures, too high or too low temperatures, and accumulation of critical materials or leakages can be detected and prevented. The entire plant is currently fenced of within the SEZ; meaning any lawful access to the plant will only be gained by authorisation with adherence to safety protocol.
Impact on ambient noise levels as a result of machinery that is operational 24 hours a day. vicinity	Low Negative	<ul style="list-style-type: none"> » No additional mitigation measures other than those already in place as no additional noise will be generated from the LOX or diesel storage tank expansion. 	Low Negative	Low risk as the plant design has already taken into consideration the positioning of noise generating equipment to reduce the noise levels at the boundaries and Air Products have also implemented soundproofing

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation / enhancement:	Significance rating of impacts after mitigation / enhancement :	Risk of the impact and mitigation / enhancement not being implemented
				of the structures housing noise generating equipment.
Increased job opportunities	Low Positive	» No mitigation measures required.	Low Positive	No risk as approximately 3 new job opportunities will be created as a result of the expansion.
Risk of diesel spills when filling up trucks at the filling point as well as leaks from the storage tanks.	Low Negative	<ul style="list-style-type: none"> » Use the minimum quantity of treatment chemicals necessary to achieve adequate system protection; » Minimise leaks through preventative maintenance. » Refuelling of the aboveground diesel tank must be conducted as per the Health and safety procedures as set out by Engen and Air Products » Refuelling must take place within the designated area upon the spill slab. » Any spillage noted on bare ground must be cleaned up immediately using a hydrocarbon spill kit. 	Low Negative	Low risk as the area where the filling of trucks is to take place will be constructed out of an impermeable concrete slab, and the above ground storage tanks, as well as equipment that could potentially result in spills or leaks, are to be positioned within defined areas so as to contain any leaks or spills that may occur.
Risk of hydrocarbon containing stormwater release into the stormwater system from the separator pit	Low Negative	<ul style="list-style-type: none"> » Conduct regular maintenance of the oil separator as per Engen guidelines » Implement monthly water quality testing by obtaining samples of water discharged from the separator pit. 	Low Negative	Low risk as the separator pit is designed such that should it will not allow hydrocarbon containing outflow into the stormwater system should the drain box become full. Monthly water quality testing of the separator pit outflow into the stormwater will ensure outflow complies with the General Limit Values of the

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation / enhancement:	Significance rating of impacts after mitigation / enhancement :	Risk of the impact and mitigation / enhancement not being implemented
				National Water Act (No.36 of 1998).

No Go Alternative

Socio Economic impacts i.e. job creation will not be realised	Low Positive	» No mitigation proposed, implement expansion.	Low Positive	No risk associated associated with positive impact
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DECOMMISSIONING PHASE:

Alternative (A1): Installation of additional 127,3 m³ LOX tank and aboveground diesel storage tank, with the location of the diesel tank located across from the APSA Main Air Compressor & Alternative (A2): Replacement of existing LOX tank with 200 m³ tank and aboveground diesel storage tank, with the location of the diesel tank located across from the APSA Main Air Compressor

No decommissioning is anticipated in the foreseeable future as the plant has an anticipated lifespan of up to 50 years; after which it will be reassessed as to whether to continue, expand the facility or half production.

Direct impacts

- » Continued supply of liquid gas to its existing customers and growth of the customers base of time, resulting in more sales and increased revenue in the Eastern Cape.

Indirect impacts

- » Increased revenue for the SEZ as Air Products is a tenant.

Cumulative impacts

- » Ongoing operation of the plant will result in sustained long term/permanent job opportunities.

Mitigation measures that may eliminate or reduce the potential impacts listed above:

N/A

No-Go Alternative: No expansion of LOX storage and installation of diesel tank (A1 & A2)**Direct impacts:**

- » The socio-economic benefits of job creation will not be realised.

Indirect impacts

- » The increase in revenue expected to be generated for Air Products, the SEZ and Eastern Cape will not be realised.
- » Refuelling of APSA trucks at other depots prior to delivery may result in delays to customers creating reputational risk.
- » No health and safety risks associated with the onsite aboveground diesel storage tanks will materialise.

Cumulative impacts

- » Air Products Coega will not be able to keep up with the supply and demand on liquid gases to customers which may result in customers exporting liquid gas from other sources.

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Site Alternative 1: Existing Air Products site located within Zone 3 of the SEZ

Air Products currently operate site within Zone 3 of the SEZ since 2013. Site alternative 1 (Air Products existing plant) is the only site proposed for the expansion activities i.e. addition of LOX storage and an aboveground diesel storage tank. As the site is existing, operational, has sufficient capacity to accommodate for the expansion activities and required the expansion to enhance supply of LOX and increase operational efficiency by supplying diesel to their own fleet, no other sites were applicable.

Alternative A1 (preferred alternative): Installation of an additional 127,3 m³ LOX tank and aboveground diesel storage tank, with the location of the diesel tank located across from the APSA Main Air Compressor

This section provides a summary of the environmental assessment and conclusions drawn for the expansion of storage facilities proposed for the Air Products Coega site. In doing so, it draws on the information gathered as part of the Basic Assessment process and the knowledge gained by the environmental consultant during the course of the process and presents an informed opinion of the environmental impacts associated with the proposed project. The following conclusions can be drawn from the Basic Assessment.

Planning and Design Phase- short term duration

- » Indirect environmental impacts were identified during the planning and design phase due to the proximity of the diesel tank to the APSA Main Air Compressor, however as per the APSA standards the location of the diesel tank will be located approximately 15,2 m away from the main air compressor in order to minimize vapour intake that the affect operations resulting in a low risk impact to APSA and low risk impact to the surrounding environmental due to the current zoning and operations of the site .
- » The EMPr developed incorporated the lay-out and specific mitigation measures to ensure that positive impacts be maximised, and negative impacts be prevented or minimised.

Constructions Phase- short term duration

- » The probable impacts on the biophysical environment (e.g. noise, emissions, traffic and waste generation) were found to be of low impact and can be mitigated to remain low.
- » The positive impacts such investment to economy and job creation were found to be low positive and no mitigation measure measures were proposed.

Operational Phase- long term duration

- » The definitive impacts associated with improved social, and economic opportunities through the continued operation of the plant can be considered as a Low- Positive impact.
- » The probable negative impacts associated with noise, health and safety risks associated with storage of dangerous goods, noise and soil contamination were deemed low-negative and be mitigated to remain low- negative upon adherence to the EMPr, construction of additional safety infrastructure associated with the diesel tank and implementation of Safety & Emergency Procedures.

The environmental impacts identified for A1 (the preferred alternative) and A2 are the same in magnitude and significance, and therefore should either alternative be constructed the significance of environmental impacts will be low and environmentally acceptable. Both A1 and A2 are technically feasible. The safety risks between A1 and A2 differ in that the MHI report indicated a slightly higher risk for A2, but this can, however, be adequately managed as demonstrated by current practices and procedures in place at the site and the implementation of mitigation measure as specified by the MHI Report. It is therefore concluded that both alternatives are environmental acceptable, with Alternative A1 nominated as the preferred alternative for authorisation.

Alternative (2): Replacement of the existing LOX tank with a 200 m³ tank and aboveground diesel storage tank, with the location of the diesel tank located across from the APSA Main Air Compressor

Planning and Design Phase- short term duration

- » No environmental impacts were identified during the planning and design phase as the site is an existing operational site within the SEZ.
- » Safety risks regarding the location of diesel tank in relation to Engen's safety standards were deemed to be low-negative.
- » Mitigation measures indicated to implement Alternative A1 to avoid safety risks.

The EMPr developed incorporated the lay-out of the preferred alternative (A1) and specific mitigation measures to ensure that positive impacts be maximised, and negative impacts be prevented or minimised.

Construction Phase- short term duration

- » The probable impacts on the biophysical environment (e.g. noise, emissions, traffic and waste generation) were found to be of low impact and can be mitigated to remain low negative.
- » The positive impacts such investment to economy and job creation were found to be low positive and no mitigation measure measures were proposed.

Operational Phase- long term duration

- » The definitive impacts associated with improved social, and economic opportunities through the continued operation of the plant can be considered as a Low- Positive impact.

- » The probable negative impacts associated with noise, health, safety risks associated with storage of dangerous goods, noise, soil contamination and storm water contamination were deemed low-negative and be mitigated to remain low- negative upon adherence to the EMPr and Emergency Procedures.

The consequences of the replacement of the existing 72,7m³ LOX tank with a 200m³ tank (Alternative A2) are more pronounced and extend further beyond the site boundary over the neighbouring Dynamic Commodities site, in comparison to Alternative A1 and is therefore not favoured from a health and safety perspective. The environmental impacts identified for A1 (the preferred alternative) and A2 are the same in magnitude and significance, and therefore should either alternative be constructed the significance of environmental impacts will be low and environmentally acceptable. Both A1 and A2 are technically feasible.

No-Go Alternative: No expansion of LOX storage and installation of diesel tank (A1 & A2)

The no-go (or do nothing) alternative will result inhibit Air Products Coega operation from growing and expanding their business opportunities, this may affect the economic viability of the Air Products Coega plant. The no-go alternative will also lead may result in the erratic supply of the LOX to customers due to the shortage of LOX storage and the availability of LOX at any given time.

Not installing the diesel tank at the site will result in the Air Products fleet of trucks having to refuel at alternative depot's that within and outside of the SEZ, external fuel charges per litre of fuel may then be applied by the supplier. Time will also be lost in the refuelling of trucks at other depots prior to departure, this may result in deliveries to customers being delayed or behind schedule resulting impacting supplier-customer relationships.

The no-go option allows for the positive socio-economic impacts of the project such as job creation to be lost. As Air Products is a revenue generating tenant within the SEZ, not expanding the operations of the plants may result in economic losses for Air Products and may harm the future economic viability of the plant. Customers currently being supplied by product will need to find alternative and more expensive sources of trucked liquid gas. The negative impacts of the no-go alternative are considered to outweigh the positive impacts of this alternative.

Planning, Construction, Operational and Decommissioning Phase:

Environmental impacts associated with the project were deemed to be **of low significance** due to the existing operations at the site, location of the site within the light industrial zone and duration of construction.

The opportunities socio- economic opportunities presented by the development will be lost if the no-go alternative is applied and is therefore not considered desirable for the project.

The no-go alterative is an undesirable option for the project as it will result in a lost opportunity for a reliable supply of LOX to existing and future customers on the Eastern and Western Cape region.

Thus, from a sustainability perspective as per NEMA, considering the positive social and economic impacts and EMPr commitments, the no-go is not supported.



Figure 4. Google Image of proposed preferred locations of the LOX and diesel storage tank

SECTION E: RECOMMENDATION OF THE EAP

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	
YES	

Is an EMPr attached?

The EMPr must be attached as Appendix F.

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

Not Applicable – The project EMPr is attached as Appendix F.

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

Due to the low significance of all the impacts identified, it is the EAP's view that the application should be approved for the expansion of storage facilities for the Air Products Coega site. It is recommended that the mitigation measure proposed within this report and the EMPr be implemented for the project.

The environmental impacts identified for both Alternatives A1 and A2 were determined to be of low significance and can be mitigated by means in implantation of the EMPr. Alternatives A1 & A2 are technically feasible. It is therefore concluded that both alternatives are environmental acceptable, with Alternative A1 nominated as the preferred alternative for authorisation. All mitigation measures within the EMPr and MHI Report for the installations must be implemented at all phases of the development.

SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information