

**CEN INTEGRATED ENVIRONMENTAL
MANAGEMENT UNIT**



Environmental and Rural Development Specialist

**DRAFT ASSESSMENT REPORT for
PART 2 AMENDMENT APPLICATION**

**PROPOSED MANGANESE EXPORT FACILITY
AND ASSOCIATED INFRASTRUCTURE IN THE
COEGA SPECIAL ECONOMIC ZONE (SEZ) AND
PORT OF NGQURA,
GQEBERHA, EASTERN CAPE**

DFFE REFERENCE NO: 14/12/16/3/3/2/319/AM3

11 September 2023

Project Title:

Part 2 Amendment Application

Proposed Manganese Export Facility and Associated Infrastructure
in the Coega Special Economic Zone (SEZ) and Port of Ngqura,
Gqeberha, Eastern Cape

Project Applicant / EA Holder:

TRANSNET SOC (PTY) LTD

DFFE Reference Number:

14/12/16/3/3/2/319/AM3

Environmental Assessment Practitioner:

CEN Integrated Environmental Management Unit

Phone: 082 320 3111 • Fax 086 504 2549

E-mail: steenbok@aerosat.co.za / lucille@environmentcen.co.za

Compiled by: Lucille Behrens

Reviewed by: Dr Mike Cohen

Date of Report:

11 September 2023

EXECUTIVE SUMMARY

INTRODUCTION

The Ngqura Manganese Export Terminal (NMET) and associated infrastructure will consist of a manganese ore handling and export facility that will enable the realisation of an annual throughput capacity of delivering 16 million tonnes per annum (mtpa) and scalable to reach 22 mtpa. The following key components are included in the NMET:

- Railway infrastructure from the mainline take-off to the Tippler Yard adjacent to the Manganese Stockyard which is to comprise of the rail lines, lines feeding and exiting the Tiplers and any other tracks required for shunting, inspection, train preparation, crewing and rolling stock maintenance, as may be identified through the operational readiness process.
- Rail Unloading and Stockyard Feed Infrastructure complete with all the equipment, machinery and instrumentation required to operate the NMET Project.
- Access and Service Roads. An Access Road from the nearby MR435 to the Stockyard.
- A Closed / Covered Manganese Stockyard for temporarily stockpiling manganese before it is exported.
- Manganese Handling Plant and Equipment. Requisite plant and equipment to handle the manganese throughout the process (offloading from the train wagons, handling in from tippler house and conveying to stockyard, and transportation to quayside to be loaded onto vessels for export markets), thereby ensuring effective and efficient operations. The proposed equipment to take redundancy into account.
- A Piped/Closed Overland Conveyor Belt System based on the principle of duality and to ensure that the overall operations are not affected when one of the conveyors is under repairs.
- 2 x Ship-loaders at the Quayside, complete with all necessary railway tracks and ancillaries at the Quayside to enable effective and efficient loading of the vessels. The related ship-loading conveyors to transfer ore into the vessel are to be designed supplied and installed complete with dust collection and suppression system.
- Required Bulk Services including inter alia, water, sewerage system, power, telecoms, and ICT/Digital infrastructure (including but not limited to SCADA, CCTC, Fire Detection and Protection Systems, in-motion weighing systems).
- Buildings / Ancillary Top Structures and External Works.

The proposed Ngqura Manganese Export Terminal Facility will be located on Erf 359 Coega, in Zone 9 of the Coega Special Economic Zone (SEZ), in Ward 53, in the Nelson Mandela Bay Municipality, Eastern Cape. The conveyor route is located on erven 327, 272, 306, 251, 356 Coega, in Zones 9 and 8 of the Coega SEZ. Refer to **Figure 0-1**.

Transnet SOC Ltd (Transnet) received the following authorisations with regards to the Ngqura Manganese Export Terminal and associated infrastructure:

1. **Environmental Authorisation** issued by the then Department of Environmental Affairs (DEA).
2. **Provisional Atmospheric Emissions Licence** issued by the Nelson Mandela Bay Municipality.
3. **Water Use Licence** issued by the Department of Water and Sanitation.

In terms of the EIA Regulations, 2014 (as amended on 7 April 2017), a Part 2 Amendment Application process is applicable as the amendment relates to a change in the scope of a valid environmental authorisation.

The main purpose of the amendment assessment is to provide:

- a) an assessment of all impacts related to the proposed change;
- b) advantages and disadvantages associated with the proposed change;
- c) measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and
- d) any changes to the Environmental Management Programme (EMPr).

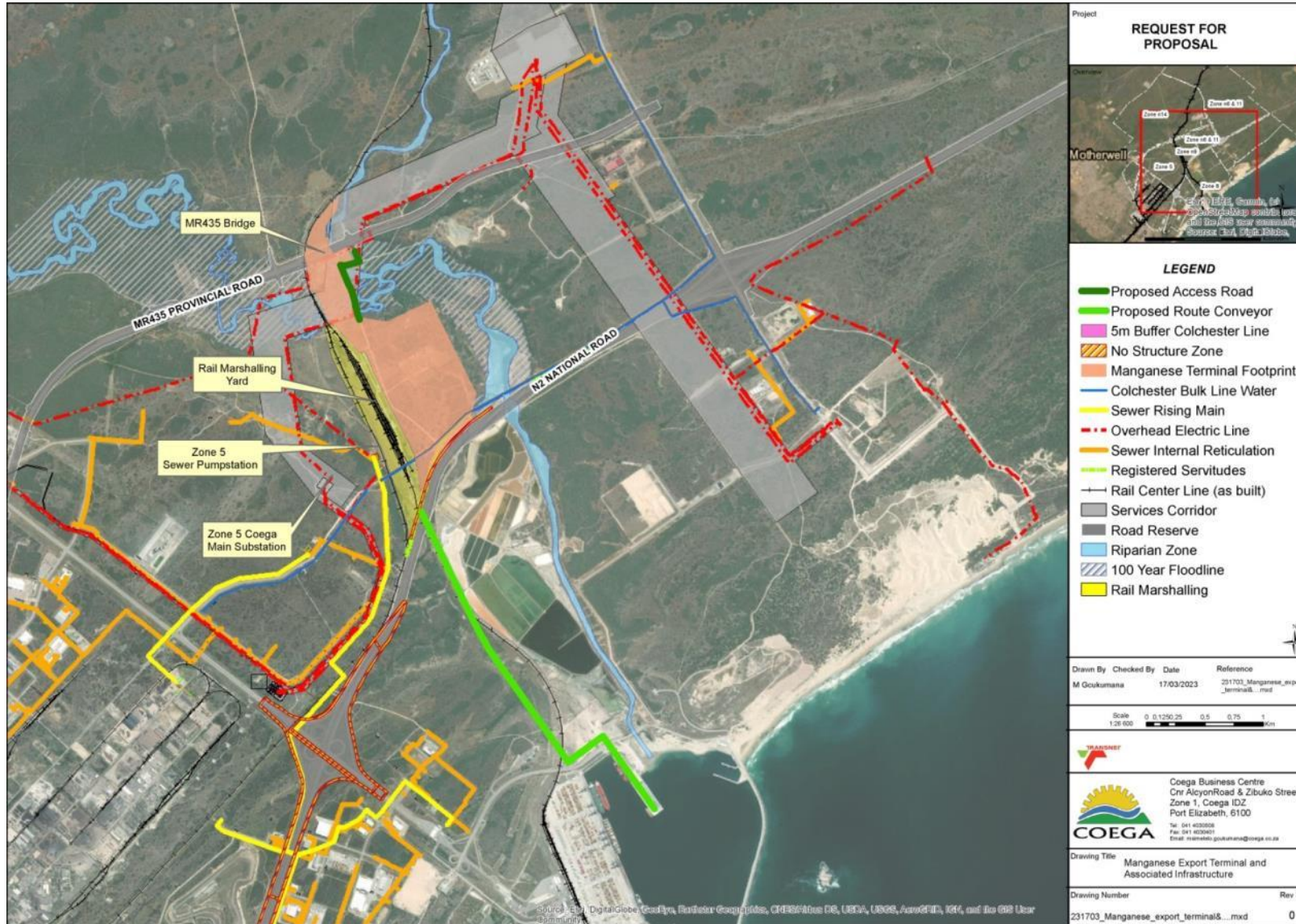


Figure 0-1: Locality Map

PROPOSED AMENDMENTS

The Final Environmental Impact Assessment Report (FEIAR) submitted as part of the application for Environmental Authorisation in 2013 indicated that the stockyard will cover an area of approximately 40 hectares in Zone 9 of the Coega SEZ and will hold a volume of approximately 1.8 million tons of Manganese Ore. The 2013 assessment considered the throughput capacity of 16 million tons per annum and assessed an area of approximately 82ha for the manganese export terminal. The remaining 42ha would include the stormwater control pond, buildings and construction laydown areas.

A Part 2 Amendment Application to the existing and valid Environmental Authorisation (14/12/16/3/3/2/319/AM2) is being undertaken in terms of Section 31 of the Environmental Impact Assessment Regulations, 2014, as amended, and submitted to the National Department of Forestry, Fisheries, and Environment (DFFE).

A Part 2 Amendment Application is required for amendments where a change of scope or change in nature of impacts occur. The proposed amendments to the existing and valid Environmental Authorisation relate to the following:

- Increase in manganese ore throughput capacity from 16 to 22 million tons per annum. A 16 million tons per annum manganese terminal will initially be constructed with the option to expand to 22 million tons per annum in the future.
- Change from an open manganese stockyard to an enclosed stockyard.
- Change to a covered conventional belt conveyer and piped conveyors.
- Removal of the Compilation Yard, associated return loop and link line, mainline doubling and any works related to the Compilation Yard.

The proposed amendments require changes to the project description, co-ordinates, property description, description in the listed activities and removal of conditions in the Environmental Authorisation.

No amendments are proposed for the footprint of the conveyor from the terminal area (stockyard) to the Port of Ngqura.

Limited information is available on the layout of the structures within the footprint of the enclosed stockyard. As a result, it has been considered that the enclosed stockyard and associated infrastructure (e.g. buildings and stormwater pond) will occupy the full extent of the approximate 80-82ha indicated for the manganese stockyard and the full extent of the manganese export terminal including the rail take-off, rail line into the stockyard and access road infrastructure will be approximately 96.27ha. Refer to **Figure 0-2**.

A Part 1 amendment has also been included and relates to the change in contact details of the EA Holder (Transnet SOC). The amendment to the contact details is required due to changes in the Transnet organisation structure. Transnet SOC will retain the ownership of the EA. The contact person listed on the approved EA is no longer part of the project, hence the proposed undertaking for a new contact person to assume responsibility and responsibilities regarding the issued EA.

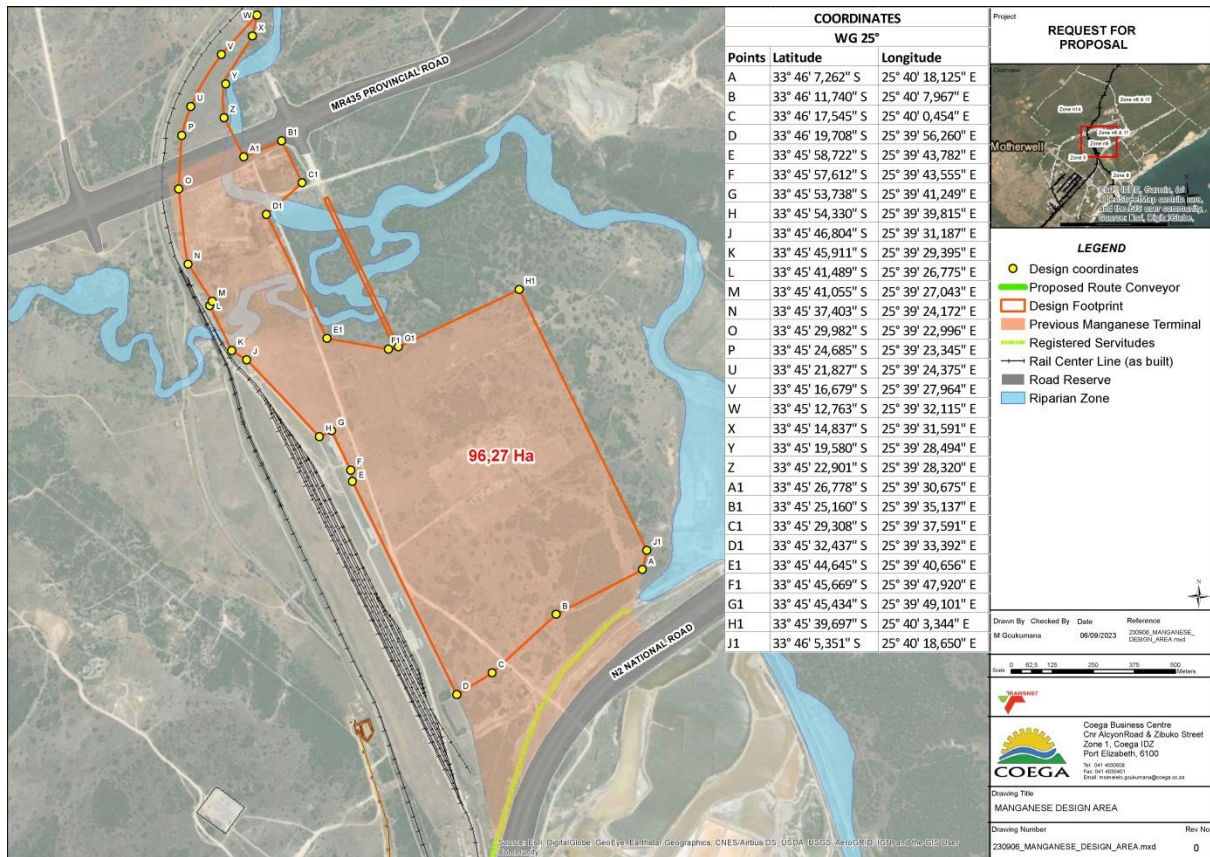


Figure 0-2: NMET Stockyard Footprint and Co-ordinates

The amendment application to the existing Provisional AEL (NMBM AEL 13/32(1)) is being undertaken in terms of the National Environmental Management: Air Quality Act (Act No. 39 of 2004), and submitted to Nelson Mandela Bay Municipality.

The amendment is required for the change from an open stockyard to an enclosed stockyard as well as the increase of manganese ore from 16 to 22 million tons per annum and change in contact details of the responsible person at Transnet in terms of Condition 4.1 of the Provisional AEL. The current authorised capacity is for 16 million tons per annum.

The relevant air quality listed activity is Category 5, Sub-category 5.1: Storage and Handling of Ore. No new air quality listed activities are triggered.

The amendment application to the existing water use licence is being undertaken in terms of the National Water Act, 1998 (Act No. 36 of 1998), and submitted to the Department of Water and Sanitation (DWS).

The existing Water Use Licence authorises the bridge across the Coega River and culverts within 500m of wetlands in terms of Section 21 (c) and (i) water uses; as well as the two stormwater control ponds (one at the stockyard and one at the quay) in terms of Section 21(g).

From the information available, it is unclear if the positions of the proposed stormwater management ponds will change in order to accommodate the anticipated increase of the enclosed stockyard footprint, as a result the view has been taken that the position of the stormwater management ponds, and capacity remains the same and no amendment is required at this stage for the ponds.

A minor amendment to the Water Use Licence is required for the change in contact details of the Licence Holder and the crossing of the small drainage line by the conveyor (located at 33°46'49.05"S, 25°40'4.68"E).

ENVIRONMENTAL IMPACT STATEMENT

An assessment has been undertaken on the impacts related to the proposed amendments:

- Increase in manganese ore throughput capacity from 16 to 22 million tons per annum.
- Change from an open manganese stockyard to an enclosed stockyard.
- Change to a covered conventional belt conveyor and piped conveyors.

The **air quality** impacts related to construction works, i.e. dust and other pollutants, as assessed in the 2013 FEIAR are not expected to change. The assessment of the air quality impacts during operations has changed due to the proposed enclosed structures and associated dust suppression & extraction systems for the Manganese Ore Terminal and conveyor, and the overall impact on air quality will be of **low negative** significance without mitigation and reduces to **very low negative** significance with mitigation.

The assessment of the **health risks** during operations has changed due to the proposed enclosed structures for the Manganese Ore Terminal and conveyor, and the overall impact on health risks will be of **low negative** significance without mitigation and reduces to **very low negative** significance with mitigation.

In terms of the **terrestrial biodiversity**, the proposed amendments will not result in a change in any of the impacts as originally assessed in 2013 other than the long-term effects of Manganese dust. Implementation of the proposed covering of the stockyard and conveyor will reduce this significance to **very low negative** significance with mitigation.

In terms of the **terrestrial animal species**, there is very little difference in the significance of impacts between the 2013 assessment and the proposed amendments. The impact levels can be reduced to **low negative** with appropriate full mitigation.

The **avifauna** assessment identified two additional impacts due to the proposed amendments, namely Impact on avifauna due to habitat loss and fragmentation at the Manganese Stockyard (**Low negative significance** before and after mitigation) and Impact on avifauna due to the roosting and nesting of urban adapted bird species in the structure covering the Manganese Stockyard (**Negligible** impact). The assessed significance of two impacts due to the expected reduction in water borne ore sediment and fugitive ore dust resulting from the covering of the Manganese Stockyard and containment of the conveyor system were reduced to **Low negative significance** before mitigation and post mitigation. The remaining impacts applicable to the proposed amendments do not result in a change from the 2013 assessment.

The **groundwater** impacts related to construction works as assessed in the 2013 FEIAR are not expected to change. There is no anticipated change in the 2013 assessment of the following groundwater impacts during the operational phase:

- Impact of the dust fall out on groundwater remains valid as fugitive manganese ore dust is still expected from the various operations. The impact remains at a **low**

negative significance before mitigation and reduces to a **very low negative** significance after mitigation.

- Impact of stormwater outflows on groundwater remains valid as there would still be “clean” and “potentially polluted stormwater”. The impact remains at a **medium - low negative** significance before mitigation and reduces to a **low - very low negative** significance after mitigation.
- Impact of accidental oil spillage/fuel leakages on groundwater remains valid as there is still the potential of accidental spillages / leakages. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.

The following impacts are considered no longer applicable as the stockpiles will be within an enclosed structure and no leachate is expected:

- Dust from the stockpile reaching groundwater.
- Impact of stockpile leachate on groundwater

There is no anticipated change in the 2013 assessment of the following **surface and aquatic ecology** impacts:

- Potential loss of riverine habitat during construction as no additional crossings over the Coega River or other watercourses have been identified with the information provided. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Potential changes to the hydrological regime as stormwater runoff will still be experienced. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.
- Potential impact on water quality and risk to the aquatic environment as the construction activities remain the same. Although the storage and handling of the manganese will be undertaken within enclosed structures, spillages may still be experienced from conveyor systems that may breakdown and from fugitive emissions. As a result the impact during the operational phase is considered to remain the same. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.
- Loss of ecosystem services as no additional crossings over the Coega River or other watercourses have been identified with the information provided. The impact remains at a **high negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.
- Habitat fragmentation as no additional crossings over the Coega River or other watercourses have been identified with the information provided. The impact remains at a **high negative** significance before mitigation and reduces to a **low negative** significance after mitigation for the construction phase.
- Loss of species of special concern as no aquatic flora and fauna species of special concern were noted. The impact remains at a **low negative** significance before mitigation and reduces to a **low negative** significance after mitigation for the construction phase.

- Erosion and sedimentation as hard engineered surfaces and structures would still occur on site. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.

The **Integrated water and waste management** impacts related to construction works as assessed in the 2013 FEIAR are not expected to change. There is no anticipated change in the 2013 assessment of the following integrated water management and waste management impacts during the operational phase:

- Domestic effluent discharge into sewer enters environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Service wastewater discharge into environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Hazardous wastes (e.g. chemical, oil waste) disposal into environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- General solid waste disposal into environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Contaminated stormwater discharge to environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Manganese ore mud waste disposal into environment as this impact considers the manganese ore mud collected from the on-site dams. Although the amount / volume of manganese ore mud would be less due to the enclosed stockyard, fugitive emissions (manganese dust) are still expected to occur. The lower volumes will entail the dams would require clearing / cleaning out less frequently. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.

The impact of the increased water used during normal operation impacts regional water balance is expected to change due to the expected increase in the volume of service water required. The service water system will provide water for flushing of toilets, dust suppression and other process uses requiring water; as well as fire water systems. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.

The proposed amendments to enclose the stockyard and a covered conveyor, removal of the compilation yard and rail, and the increase in the throughput of manganese ore are not applicable to the 2013 assessment on **marine ecology**. The 2013 assessment and mitigation measures provided remain valid.

The **noise** intrusion during the construction and operational phase at the stockyard and conveyor will be below the threshold value of 7.0dBA. The noise from the sirens at the stockyard and the train hooting opposite the stock yard (western boundary) may be audible

when there is a north westerly wind. The amendment to the approved manganese export terminal will not be in contravention of the Nelson Mandela Bay Metropolitan Municipality Noise By-laws and regular assessments will have to be conducted to ensure compliance (Van der Merwe, 2023). The 2013 FEIR assessed the noise impact during construction and operations to be of **Low significance** with and without mitigation. The 2023 noise impact during construction and operations would be of a **medium negative** significance without mitigation and reduced to a **low negative** with mitigation.

The **visual impact** of the intrusion of Manganese ore stockpiles on the existing views of sensitive visual receptors changes due to the proposed ore stockpiles being located within an enclosed structure. The extent of the visual impact will also be reduced due to limited fugitive dust on the adjacent areas changing from a widespread area to the site only. There are no specific mitigation measures proposed in the 2013 assessment and the general mitigation regarding adherence with the CDC guidelines and specifications would remain valid. The mitigation measures identified in the Air Quality Assessment would be of relevance to limit fugitive manganese ore dust. The impact is of a **low negative** significance before mitigation and is reduced to a **very low negative** significance with mitigation.

The overall visual impact of the proposed Manganese Ore Export Terminal and Compilation Yard on existing views of sensitive visual receptors changes with the removal of the compilation yard. This impact is now related to the overall visual impact of the Manganese Ore Export Terminal and conveyor system on existing views. Although there would be a reduction in the overall area for development with the removal of the compilation yard and railway infrastructure, new structures and buildings for the Manganese Ore Export Terminal and conveyor system would still be introduced into the regional landscape and views of visual receptors will be altered. The mitigation measures applicable to the visual intrusion and night lighting impacts would still be valid for this impact. The impact is of a **medium negative** significance before mitigation and is reduced to a **low negative** significance with mitigation.

There is no anticipated change in the assessment of the landscape impact, as this impact considered the introduction of a manganese ore export terminal and compilation yard into an industrial landscape. The removal of the compilation yard will not change the impact as the industrial landscape for the manganese ore export terminal will still be undertaken within the Coega SEZ. The impact remains at a **low negative** significance before and after mitigation.

There is no anticipated change in the 2013 assessment of the following visual impacts, and these remain at a **medium negative** significance before mitigation and a **low negative** significance with mitigation:

- Intrusion of activity associated with construction of the Manganese Ore Export Terminal on existing views of sensitive visual receptors, as the same construction activities are expected.
- Visual intrusion of Conveyor System on the existing views of sensitive visual receptors does not change as this impact considered the scars from clearance of vegetation as well as from cut and fill operations.
- Impact on the Visual intrusion of Manganese Ore Export Terminal on the existing views of sensitive visual receptors considered the berth and ship loaders as the port; structures and components of the stockyard which include buildings housing tippers, and stackers and reclaimer equipment. The impact does not change as the proposed

enclosed structure would need to be a large enough structure that covers the components of the stockyard and would be visible from various points on the N2 and R334.

- Visual impact of night lighting of the Manganese Ore Export Terminal on the nightscape of the region would not change as this impact considers the addition of new lights to the region and related light pollution. The enclosed stockyard and conveyor would still require night lighting.

Heritage - Impacts on the palaeontology resources during construction are related to bush clearing or excavations where destruction of fossil resources could occur. The 2013 FEIR assessed impacts on palaeontological resources during construction to be of Medium negative significance without mitigation and reduces to a Low negative significance with mitigation. The 2023 palaeontology resources impact during construction would be of a **medium negative** significance without mitigation and reduced to a **very low negative** with mitigation.

The archaeological impacts related to construction works have not been re-assessed as the outcomes to the archaeological assessment remains the same, i.e. the area is considered as having a low archaeological and cultural heritage significance as no archaeological, historical or other heritage material, sites or features were identified within the footprint and layout for the manganese ore terminal.

Two grave relocation projects, undertaken in 2014 and 2016, were conducted by PGS Heritage. These reports have been submitted to ECPHRA for their records. The fences of the two graveyards identified in the 2013 FEIAR still remain, although the graves were relocated during 2014 (Booth, 2023).

The impacts that have been assessed are summarised in **Table 1**.

The proposed amendments could result in increases in impacts due to:

- A potential increase in the footprint of the Manganese Stockyard to accommodate storage of 2.2 rather than 1.8 million tons of ore.
- An increase in project related train and ship traffic and ore handling equipment.
- A potential increase in pollution risk due to the increase in ore throughput from 16 to 22mtpa

These disadvantages are compensated for by the expected reduction in manganese ore sediment in storm water and reduction in fugitive manganese dust due to the proposed enclosed structure for the stockyard and covered conveyor system.

The majority of the mitigation measures provided in the 2013 FEIAR and EMPr remain valid for the various impacts identified. Additional or recommended mitigation measures have been included in the Amended Environmental Management Programme (EMPr), **Appendix F**.

Table 1: Summary of Impacts

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
AIR QUALITY IMPACTS				
Increased dust and other pollutants during construction	Low	Very Low	Not affected by Change in Scope	
Dust deposition from the Manganese Ore Export Facility in the neighbouring environment (operations)	Medium	Low	Low	Very Low
Ambient PM10-concentrations exceed ambient standards (operations)	Low	Very Low	Low	Very Low
Ambient PM2.5 concentrations exceed ambient standards (operations)	Low	Very Low	Not affected by Change in Scope	
Ambient NO _x concentrations exceed ambient standards (operations)	Low	Low	Not affected by Change in Scope	
Ambient BTEX concentrations exceed ambient standards (operations)	Very Low	Very Low	Not affected by Change in Scope	
Cumulative impacts of dust, PM10, PM2.5, NO _x and BTEX (operations)	Low	Low	Not affected by Change in Scope	
HEALTH RISK IMPACTS				
Increase in respiratory effects due to increased exposure to dust and other pollutants during construction	Low	Very low	Not affected by Change in Scope	
Neurological symptoms from exposure to Mn dust in the neighbouring environment	Medium to high industrial area and low in the neighbouring environment	Low to medium industrial area and low in the neighbouring environment	Low	Very Low
Respiratory symptoms from exposure to PM10-concentrations exceeding ambient standards	Low	Low	Low	Very Low
Respiratory symptoms from exposure to ambient PM2.5 concentrations exceeding ambient standards	Low	Low	Low	Very Low
Respiratory symptoms from exposure to ambient NO _x concentrations exceeding ambient standards	Low	Low	Not affected by Change in Scope	
Neurological symptoms from exposure to ambient BTEX concentrations exceeding ambient standards	Very low	Very low	Not affected by Change in Scope	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Cumulative impacts of dust, PM10, PM2.5, NOX and BTEX	Low	Low	Not affected by Change in Scope	
TERRESTRIAL ECOLOGY IMPACTS				
Direct loss of vegetation (construction)	Medium	Medium – Very low	No change to original assessment	
Direct loss of Flora SSC concern and SSC habitat (construction)	Medium	Low	No change to original assessment	
Increased risk of alien plant invasion in disturbed areas (construction)	Medium	Low - Very low	No change to original assessment	
Change in natural fire regime (construction)	Medium	Low - Very low	No change to original assessment	
Fragmentation of Ecological Corridors and disruption of Ecological processes and animal movement as a result of artificial barriers (construction)	Medium High	Low Medium	No change to original assessment	
Faunal mortality as a result of bush clearing and earthmoving activities during site preparation (construction)	Medium	Medium - Low	High	Low
Habitat destruction may affect faunal diversity and composition (construction)	Medium	Low	High	Low
Road mortality of fauna from trucks and other construction vehicles (construction)	High-Medium	Medium-Low	Medium	Low
Faunal mortalities resulting from fences (mammals and reptiles) (construction)	Medium	Low	Low	Low
Mortalities resulting from poaching (mammals) (construction)	Medium	Low	Low	Low
Increased risk of alien plant invasion in disturbed areas (operations)	Medium	Low - Very low	No change to original assessment	
Change in natural fire regime	Medium	Low - Very low	No change to original assessment	
Long-term effects of Manganese dust on adjacent vegetation	Medium	Low - Very low	Medium	Very low
Long-term effects of Manganese dust on adjacent animal habitats	Medium	Low - Very low	Medium	Low
Fragmentation of Ecological Corridors and disruption of Ecological processes and animal movement as a result of artificial barriers (operations)	Medium High	Low Medium	No change to original assessment	
Road mortality of fauna from trucks, trains and other service vehicles (operations)	Medium	Low	Medium	Low
Faunal mortalities resulting from fences (mammals and reptiles) (operations)	Medium	Low	Low	Low

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Mortalities resulting from poaching (mammals) (operations)	Medium	Low	Low	Low
Direct and indirect impacts on animal species will cause disruption of the ecological processes facilitated by animals	Not assessed at scale of the stockyard		High	Low
Temporary loss of habitat (decommissioning)	Medium	Low	No change to original assessment	
Partial restoration of habitat due to rehabilitation of the site	Low	Low	No change to original assessment	
Partial reestablishment of disrupted Ecological Processes	Low	Low	No change to original assessment	
AVIFAUNA IMPACTS				
Habitat loss and fragmentation at Manganese Stockyard (Construction)	Not Assessed		Low	Low
Urban adapted birds roosting and nesting at structure covering Manganese Stockyard (Operations)	Not Assessed		Negligible	
Habitat fragmentation / reduction (Grass Ridge Bontveld) for both the Preferred and Alternative compilation yard layout	Medium	Medium	No longer applicable due to proposed changes	
Habitat fragmentation / reduction Sundays Valley Thicket) due to the doubling of the railway	Medium	Medium	No longer applicable due to proposed changes	
Sedimentation from storm water run-off affecting Coega River and saltpans (construction and operation)	Medium	Low	Low	Low
Increased disturbance (noise/ movement /lights) during construction	Medium	Low	No change to original assessment	
Collision with powerlines/trains (operation)	High	Low to Medium	No change to original assessment	
Fugitive manganese dust on terrestrial vegetation (operation)	Low	Low	No change to original assessment	
Fugitive manganese dust on Coega River & saltpans (operation)	Medium	Low	Low	Low
Routing of conveyor between Stockyard and port (Preferred Option)	Low	Low	Not affected by Change in Scope	
Routing of conveyor between Stockyard and port (Alternative Option)	Low / Medium	Low	Not affected by Change in Scope	
Potential pollution from ships and port operations	Medium	Low	No change to original assessment	
Fugitive manganese dust on islands of Algoa Bay (operation)	Low	Very Low	No change to original assessment	
Blasting	Low	Very Low	Not affected by Change in Scope	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Cumulative: Collision with project powerlines & adjacent proposed wind farm infrastructure	High	Medium to High	Not affected by Change in Scope	
Cumulative: Pollution of harbour and nearshore waters	High	Low to Medium	No change to original assessment	
GROUNDWATER IMPACTS				
Construction Phase:				
Increased dust and other pollutants reaching groundwater	Low -	Very low -	No change to original assessment	
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	No change to original assessment	
Impact of ancillary activities carried out at the compilation yard on groundwater	Medium -	Low -	No longer applicable due to proposed changes	
Operational Phase:				
Dust from the stockpile reaching groundwater	Low -	Very low -	No longer applicable due to proposed changes	
General dust from the operation (PM10 and PM25)	Low -	Very low -	No change in assessment	
Leachate from the stockpile reaching groundwater	Medium -	Low -	No longer applicable due to proposed changes	
Impact of "clean stormwater" outflow on groundwater	Low -	Very low -	No change in assessment	
Impact of potentially polluted stormwater outflow on groundwater	Medium -	Low -	No change in assessment	
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	No change in assessment	
Impact of ancillary activities at the compilation yard on groundwater.	Medium -	Low -	No longer applicable due to proposed changes	
Decommissioning Phase:				
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	Not applicable to changes	
SURFACE WATER AND AQUATIC ECOLOGY				
Construction				
Potential loss of wetland habitat	N/A	N/A	N/A	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Potential loss of riverine habitat	Medium -	Low -	No change to original assessment	
Potential changes to the hydrological regime	Medium -	Low -	No change to original assessment	
Potential impacts on water quality	Medium -	Low -	No change to original assessment	
Loss of ecosystem services	High -	Low -	No change to original assessment	
Habitat fragmentation	High -	Low -	No change to original assessment	
Loss of species of special concern	Low -	Low -	No change to original assessment	
Erosion and sedimentation	Medium -	Low -	No change to original assessment	
Operational Phase				
Potential changes to the hydrological regime	Medium -	Low -	No change to original assessment	
Loss of ecosystem services	High -	Low -	No change to original assessment	
Potential impacts on water quality	Medium -	Low -	No change to original assessment	
Erosion and sedimentation	Medium -	Low -	No change to original assessment	
INTEGRATED WATER MANAGEMENT AND WASTE MANAGEMENT IMPACTS				
Construction				
Increased water use during construction impacts regional water balance	Medium -	Low -	Not applicable to changes	
Domestic effluent collection in portable toilets/tanks for transport to appropriate treatment facility enters environment	Medium -	Low -	Not applicable to changes	
Construction stormwater discharge into environment during construction	Medium -	Low -	Not applicable to changes	
Construction solid waste not appropriately disposed of	Medium -	Low -	Not applicable to changes	
Construction hazardous materials/wastes not appropriately disposed of	Medium -	Low -	Not applicable to changes	
Operational Phase				
Increased water used during normal operation impacts regional water balance	Medium -	Low -	Medium -	Low -
Domestic effluent discharge into sewer enters environment	Medium -	Low -	No change to original assessment	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Service wastewater discharge into environment	Medium -	Low -	No change to original assessment	
Contaminated stormwater discharge to environment	Medium -	Low -	No change to original assessment	
Hazardous wastes (e.g. chemical, oil waste) disposal into environment	Medium -	Low -	No change to original assessment	
General solid waste disposal into environment	Medium -	Low -	No change to original assessment	
Manganese ore mud waste disposal into environment	Medium -	Low -	No change to original assessment	
Decommissioning Phase				
Increased water used during decommissioning impacts regional water balance	Low -	Low -	Not applicable to changes	
Domestic effluent collection in portable toilets/tanks for transport to appropriate treatment facility enters environment	Medium -	Low -	Not applicable to changes	
Contaminated stormwater discharge to environment	Medium -	Low -	Not applicable to changes	
Demolition solid waste enters environment	Low -	Low -	Not applicable to changes	
Hazardous waste spills (oil, chemicals, etc.) on site during decommissioning	Medium -	Low -	Not applicable to changes	
NOISE IMPACTS				
Impact of the construction noise on the Noise Sensitive Areas – Manganese Ore Export Terminal	Low	Low	Medium	Low
Impact of the construction noise on the Noise Sensitive Areas – Compilation yard	Low	Low	No longer applicable due to proposed changes	
Impact of the manganese ore handling operational noise on the Noise Sensitive areas	Low	Low	Medium	Low
Impact of the rail operations on the Noise Sensitive areas	Medium	Low	Not affected by Change in Scope	
Impact of the decommissioning phase noise on the Noise Sensitive Areas	Low	Low	Not affected by Change in Scope	
VISUAL IMPACTS				
Landscape Impact	Low -	Low -	No change to original assessment	
Intrusion of activity associated with construction of the Manganese Ore	Medium -	Low -	No change to original assessment	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Export Terminal on existing views of sensitive visual receptors				
Intrusion of activity associated with construction of the compilation yard on existing views of sensitive visual receptors	Medium -	Low -	No longer applicable due to proposed changes	
Visual intrusion of Manganese ore stockpiles on the existing views of sensitive visual receptors	Medium -	Low -	Low -	Very low -
Visual intrusion of Conveyor System on the existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment	
Visual intrusion of Manganese Ore Export Terminal on the existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment	
Visual intrusion of a compilation yard on the existing views of sensitive visual receptors	Medium -	Low -	No longer applicable due to proposed changes	
Visual impact of night lighting of the Manganese Ore Export Terminal on the nightscape of the region.	Medium -	Low -	No change to original assessment	
Visual impact of night lighting of the Compilation Yard on the nightscape of the region.	Medium -	Low -	No longer applicable due to proposed changes	
Overall visual impact of proposed Manganese Ore Export Terminal and Conveyor System on existing views of sensitive visual receptors	Medium -	Low -	Medium -	Low -
HERITAGE IMPACTS - PALAEOLOGY				
Construction: Destruction, disturbance or sealing-in of fossils exposed on the ground or buried beneath the surface during excavations and other construction work				
Compilation Yard – Preferred Option	Medium -	Low -	No longer applicable due to proposed changes	
Compilation Yard – Alternative Option	Low -	Very Low -	No longer applicable due to proposed changes	
Conveyor System - Preferred Option	Medium -	Low -	Medium -	Very Low -
Conveyor System - Alternative Option	Low -	Low -	Not affected by Change in Scope	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Doubling of railway line between compilation yard and marshalling yard	Medium -	Low -	No longer applicable due to proposed changes	
Stockyard, stormwater control dam and ancillary infrastructures	Medium -	Low -	Medium -	Very Low -
HERITAGE IMPACTS – ARCHAEOLOGY & HERITAGE				
Construction: Proposed compilation yard:				
The potential impact of the development on above and below ground archaeology	Low -	Low -	No longer applicable due to proposed changes	
Occurrence of significant archaeological sites/material, i.e. human remains	High -	Low -	No longer applicable due to proposed changes	
The potential impact of the development on the cultural landscape and 'sense of place'.	Low -	Low -	No longer applicable due to proposed changes	

REASONED OPINION AND RECOMMENDATIONS

The Environmental Assessment Practitioner (EAP) is of the opinion that the significance of impacts associated with the proposed amendments is of a very low to low negative significance with the implementation of mitigation measures.

The EAP recommends that the amendments to the Environmental Authorisation for the Ngqura Manganese Export Terminal should be authorised.

PUBLIC PARTICIPATION

The Draft Assessment Report will be made available to registered I&APs and Organs of State / State Departments for a 30-day review period, from **11 September to 13 October 2023**.

The following table presents the main comments and concerns raised by registered I&APs and Organs of State / State Departments as well as the responses provided.

Comments	Responses
<p>1. Unitainer was granted EIA for its back-of-port Manganese project on 05 May 2021. Unitainer needs to ascertain how multiple users will access the berth via covered conveyor, including transfer rates of conveyors and design of transfer towers.</p>	<p>1. Transnet: The Ngqura Manganese Export Terminal (NMET) Project allows for the installation of additional conveyors along the same installation by other stakeholders upon agreement with the property owner. Please note these will be additional conveyors and not the NMET's conveyors. Additional conveyors will be required for additional users upon agreement with the property owner.</p>
<p>2. Methodology for dust control from train unloading, storage, transfer and ship loading.</p>	<p>2. EAP: The following is as per the Air Quality Assessment:</p> <p>Tippler operation: Tippler operation will occur in a fully enclosed area that is fitted with an extraction system and baghouse to collect dust that is released during the ore offloading step.</p> <p>Stockpile storage: The stockyard area will be fully enclosed. According to the Australian Government's National Pollution Inventory's (NPI) Emissions Estimation Technique Manual (EETM) for Mining states that a fully enclosed structure will reduce emissions by 99%, thus implying that the possibility exists for 1% of the emissions to escape to atmosphere as fugitive emissions. These emissions can be reduced further by using water sprays inside the building.</p> <p>Conveyor system: Ore will be conveyed from the stockyard to the harbour in a fully enclosed conveyor system, thus preventing fugitive emissions from the conveyor system. Each transfer point in the conveyor system will be fitted with an extraction system and baghouse to collect particulate matter emitted during transfer.</p> <p>Harbour: The ore will be delivered into surge bins from which it will be transferred to ship cargo holds through a chute. Water sprays will be used to suppress dust formation. According to the NPI EETM for Mining, the dust suppression efficiency of such a system is 75%.</p> <p>2. Transnet: The NMET will incorporate exhaustive dust abatement and control systems to prevent pollution.</p> <p>Water spay systems will be used at key control points for dust mitigation. These will include transfer points and chutes.</p> <p>Dust suppression systems emit very fine water mist to minimise release and spread of dust particles at the point of source</p>

Comments	Responses
	<p>Dust extraction and scrubbing systems shall be used to prevent dust build-up within the covered stockyard.</p> <p>The dust particles concentrate target over a year period, should be within the “limits for common pollutants” as highlighted under SANS 1929 (Ambient Air Quality), Clause 4.</p>
<p>3. Methodology for common usage of conveyors, ship loaders and berth capacity.</p>	<p>3. Transnet: The NMET incorporates allowing additional users through the provision for installation of additional conveyors to access the berths.</p>
<p>To confirm that manganese ore would be transported via rail to the stockyard and there would be no change to the current situation of transportation of manganese ore via trucks.</p> <p>Will trucks be included as part of the operations? If trucks delivering manganese ore will form part of the operations a traffic impact assessment will need to be included for assessment of the road infrastructure.</p> <p>Manganese ore trucks will not disappear / be phased out over a long period.</p>	<p>EAP: The manganese ore will be delivered via rail to the stockyard. It is unlikely that the current situation regarding the manganese ore trucks will change in the short term. Trucks delivering manganese ore to or from the stockyard would not form part of the operations.</p> <p>CDC: The NMET does not include a facility for offloading manganese or from trucks.</p> <p>EAP: As trucks will not be delivering manganese ore to the stockyard, a traffic impact assessment is not considered a requirement for these amendments.</p>
<p>Why are specialist studies being undertaken if the footprint areas are not increasing?</p>	<p>EAP: The identified specialist studies were included due to the 10 year period since the EIA was undertaken and at the start of the process the footprint changes were not confirmed.</p>
<p>Was a pre-application meeting undertaken?</p>	<p>EAP: A pre-application meeting request was submitted to the DFFE. The DFFE responded that a pre-application meeting would not be required and that the Part 2 amendment application may be submitted.</p>
<p>To confirm if the expansion activity is related to the proposed increase in the throughput capacity.</p>	<p>EAP: Activity 34 in Listing Notice 1 (EIA Regulations, 2014) is considered not applicable as it relates to the expansion of existing facilities or infrastructure where the expansion requires an amended permit / licence for emissions. The Transnet Manganese Export Terminal has not yet been constructed and no existing facilities occur. No new or additional listed activities have been identified or triggered by the proposed amendments. The listed activities previously authorised would still be relevant.</p>

Comments	Responses
<p>To confirm the changes related to the AEL is for an increase from 16 to 22 mtpa in terms of storage and handling.</p>	<p>EAP: That is correct, the amendment to the Provisional AEL is for the increase from 16 to 22mtpa for the storage and handling of manganese ore.</p>
<p>To confirm if the amendment application would also include an extension of the validity period. If required, a strong motivation or reasons are to be provided. The DFFE may decline to extend the validity further if the environmental authorisation holder does not provide substantive reasons for not having commenced with the activity.</p> <p>To confirm the validity date of the EA as the DFFE would not extend over a 10 year period.</p>	<p>EAP: The amendment application does not include an extension of the validity of the Environmental Authorisation.</p> <p>EAP: The Amended Environmental Authorisation #2 indicates that activities must commence by 27 March 2025.</p>
<p>When is commencement planned to begin?</p> <p>Technically there is nothing stopping construction from commencing now and then to start the amendments.</p>	<p>CDC: Construction is scheduled to commence in 2024.</p> <p>EAP: Should construction commence prior to the amendment application being undertaken, it is likely then that Activity 34 of Listing Notice 1 would be applicable and a Basic Assessment Process would need to be undertaken.</p>
<p>Would the decommissioning of the PE facilities require an Environmental Authorisation in terms of the decommissioning activity?</p>	<p>EAP: The closure of the manganese facility at the Port of Port Elizabeth would require an Environmental Authorisation for the closure of the facility.</p> <p>Transnet: Transnet will apply for an environmental authorization to decommission the manganese facility at the Port of Port Elizabeth. The EIA application is anticipated to be submitted in 2027.</p>
<p>Lessons learnt from existing structures / current situations in the SEZ need to be considered in the designs. Will there be different designs in the assessment report?</p>	<p>EAP: Due to Non-Disclosure Agreements and that the Stage 2 bidding process for the Development of the NMET is still being undertaken the different designs will not be included in the assessment report.</p>

Comments	Responses
<p>ECPHRA (Eastern Cape Provincial Heritage Authority) formally acknowledges the Heritage Impact Assessments submitted however the studies are outdated. Kindly send the ffg:-</p> <ul style="list-style-type: none"> • An updated AIA (Archaeological Impact Assessment) for the current proposed development. • “Walk down” for palaeontology instead of a full PIA. • Evidence of the Public Participation Process (incl. support of the grave relocations from local communities as the project impacts on IKS (indigenous knowledge systems). 	<p>Transnet: Transnet intends to undertake pre-construction archaeological and paleontological assessments that will respond to the recommendations of ECPHRA. The assessments will entail an updated archaeological impact assessment and a walk-down palaeontology assessment.</p> <p>EAP: Evidence of the public participation process for the grave relocations has been submitted to ECPHRA.</p> <p>EAP: The updated AIA and PIA has been submitted to ECPHRA.</p>
<p>ECPHRA FINAL COMMENTS in terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999).</p> <p>This matter was tabled again at the APM Committee meeting held on 14 August 2023.</p> <p>The requested studies were received therefore the proposed development may proceed as planned.</p> <p>NOTE: Recommendations by the heritage specialists are to be implemented.</p>	<p>EAP: The comments were acknowledged and no further response is required.</p>

TABLE OF CONTENTS

Executive Summary	i
Table of Contents	xxiv
List of Figures	xxvi
List of Tables	xxvi
Chapter 1: INTRODUCTION.....	1
1.1 Background	1
1.2 Current Authorisations	2
1.3 Locality.....	2
1.4 Applicant / Environmental Authorisation Holder	2
1.5 Environmental Assessment Practitioner	3
1.6 Purpose of the Study and Report.....	5
Chapter 2: DESCRIPTION OF ACTIVITIES AND PROPOSED AMENDMENTS.....	6
2.1 Authorised Operations / Activities	6
2.2 Proposed Amendments	7
2.3 Amendment to Environmental Authorisation	8
2.4 Amendment to Atmospheric Emissions Licence	12
2.5 Amendment to Water Use Licence	12
2.6 Need and Desirability / Motivation	12
Chapter 3: METHODOLOGY.....	14
3.1 Impact Assessment Methodology	14
3.2 Assumptions, Uncertainties and Gaps in Knowledge	17
3.3 Environmental Management Programme	18
Chapter 4: IMPACT ASSESSMENT	19
4.1 Air Quality Impacts.....	19
4.2 Health Impacts.....	22
4.3 Terrestrial Ecology Assessment	25
4.4 Avifaunal Assessment	33
4.5 Groundwater Impact Assessment.....	41
4.6 Surface Water and Aquatic Ecology Impact Assessment	43
4.7 Integrated Water Management and Waste Management	46
4.8 Marine Ecology Impact Assessment.....	49
4.9 Noise Assessment.....	50
4.10 Visual Impact Assessment	52
4.11 Heritage Impact Assessment.....	55
Chapter 5: PUBLIC PARTICIPATION PROCESS	59
5.1 Pre-Application Notifications.....	59
5.2 Pre-Application Comment Period.....	59

5.3	Environmental Liaison Committee Meeting.....	59
5.4	Draft Report Review Period	60
5.5	Interested and Affected Parties Database	60
5.6	Comments and Response Register.....	66
	Chapter 6: ENVIRONMENTAL IMPACT STATEMENT AND REASONED OPINION.....	75
6.1	Environmental Impact Statement	75
6.2	Advantages and Disadvantages	88
6.3	Management of Impacts.....	88
6.4	Reasoned Opinion and Recommendation	94
	APPENDIX A: SITE DEVELOPMENT PLAN.....	95
	APPENDIX B: COPY OF ENVIRONMENTAL AUTHORISATIONS.....	99
	APPENDIX C: COPY OF ATMOSPHERIC EMISSIONS LICENCE (AEL) APPLICATION & CURRENT AEL	100
	APPENDIX D: COPY OF WATER USE LICENCE AMENDMENT APPLICATION & CURRENT WUL	101
	APPENDIX E: SPECIALIST REPORTS AND DECLARATIONS	102
	APPENDIX E-1: AIR QUALITY ASSESSMENT	102
	APPENDIX E-2: HEALTH RISK ASSESSMENT	103
	APPENDIX E-3: TERRESTRIAL BIODIVERSITY.....	104
	APPENDIX E-4: TERRESTRIAL ANIMAL SPECIES	105
	APPENDIX E-5: AVIFAUNAL ASSESSMENT	106
	APPENDIX E-6: WATER QUALITY AND BALANCE REPORT	107
	APPENDIX E-7: AQUATIC BIODIVERSITY	108
	APPENDIX E-8: NOISE ASSESSMENT.....	109
	APPENDIX E-9: HERITAGE ASSESSMENT –PALEONTOLOGICAL & ARCHAEOLOGICAL	110
	APPENDIX F: AMENDED ENVIRONMENTAL MANAGEMENT PROGRAMME.....	111
	APPENDIX G: PUBLIC PARTICIPATION PROCESS	112
	APPENDIX G-1: SITE NOTICES	112
	APPENDIX G-2: NEWSPAPER NOTICES	117
	APPENDIX G-3: PRE-APPLICATION NOTIFICATIONS	119
	APPENDIX G-4: PRE- APPLICATION CORRESPONDENCE WITH I&APs	127
	APPENDIX G-5: COPY OF ELC PRESENTATION AND MINUTES OF MEETING.....	138
	APPENDIX G-6: POST APPLICATION NOTIFICATIONS – AVAILABILITY OF DRAFT ASSESSMENT REPORT.....	143
	APPENDIX G-7: POST APPLICATION CORRESPONDENCE WITH STAKEHOLDERS / I&APS	143
	APPENDIX H: EAP CV AND DECLARATION.....	144

LIST OF FIGURES

Figure 0-1: Locality Map	iii
Figure 0-2: NMET Stockyard Footprint and Co-ordinates	v
Figure 1-1: Locality Map	4
Figure 2-1: 2013 Assessment of the Proposed Manganese Terminal Footprint	6
Figure 2-2: NMET Stockyard Footprint and Co-ordinates	10

LIST OF TABLES

Table 1: Summary of Impacts.....	xi
Table 2: Checklist in terms of Regulation 32 of the EIA Regulations, 2014 as amended.....	5
Table 3: Impact Assessment Criteria.....	14
Table 4: Air Quality Results Summary, $\mu\text{g}/\text{m}^3$	20
Table 5: Air Quality Impacts per the 2013 Assessment and relevance to Change in Scope.....	20
Table 6: Air Quality Impact Assessment	21
Table 7: Health Impacts per the 2013 Assessment and relevance to Change in Scope.....	23
Table 8: Health Impacts	25
Table 9: Terrestrial Ecology Impacts per the 2013 Assessment and relevance to Change in Scope.....	26
Table 10: Impacts on Terrestrial Biodiversity	28
Table 11: Impacts on Animal Species.....	31
Table 12: Avifaunal Impacts per the 2013 Assessment and relevance to Change in Scope.....	33
Table 13: Impact on avifauna due to habitat loss and fragmentation.....	34
Table 14: Avifauna Impacts – Ore laden sedimentation / stormwater runoff affecting Coega River.....	37
Table 15: Groundwater Impacts per the 2013 Assessment and relevance to Change in Scope	42
Table 16: Surface Water and Aquatic Ecology Impacts per the 2013 Assessment and relevance to Change in Scope.....	44
Table 17: Integrated Water and Waste Management Impacts per the 2013 Assessment and relevance to Change in Scope	47
Table 18: Increased water used during normal operation impacts regional water balance Impacts.....	49
Table 19: Noise Impacts per the 2013 Assessment and relevance to Change in Scope.....	50
Table 20: Noise Impact Assessment.....	52
Table 21: Visual Impacts per the 2013 Assessment and relevance to Change in Scope.....	53

Table 22: Visual Impacts	54
Table 23: Paleontology Impacts per the 2013 Assessment and relevance to Change in Scope	55
Table 24: Impact on Palaeontological Resources	56
Table 25: Archaeological and Heritage Impacts per the 2013 Assessment and relevance to Change in Scope	57
Table 26: Interested and Affected Parties Database	60
Table 27: Comments / Issues and Response	66
Table 28: Summary of Impacts	80

CHAPTER 1: INTRODUCTION

1.1 Background

CEN IEM Unit has been appointed by the Coega Development Corporation (CDC) on behalf of Transnet SOC (Pty) Ltd (Transnet) to undertake the Part 2 Amendment Application process as the independent Environmental Assessment Practitioner (EAP) for the proposed amendments to the Environmental Authorisation for the Ngqura Manganese Export Terminal (NMET).

The Ngqura Manganese Export Terminal (NMET) and associated infrastructure will consist of a manganese ore handling and export facility that will enable the realisation of an annual throughput capacity of delivering 16 million tonnes per annum (mtpa) and scalable to reach 22 mtpa. The following key components are included in the NMET:

- Railway infrastructure from the mainline take-off to the Tippler Yard adjacent to the Manganese Stockyard which is to comprise of the rail lines, lines feeding and exiting the Tiplers and any other tracks required for shunting, inspection, train preparation, crewing and rolling stock maintenance, as may be identified through the operational readiness process.
- Rail Unloading and Stockyard Feed Infrastructure complete with all the equipment, machinery and instrumentation required to operate the NMET Project.
- Access and Service Roads. An Access Road from the nearby MR435 to the Stockyard.
- A Closed / Covered Manganese Stockyard for temporarily stockpiling manganese before it is exported.
- Manganese Handling Plant and Equipment. Requisite plant and equipment to handle the manganese throughout the process (offloading from the train wagons, handling in from tippler house and conveying to stockyard, and transportation to quayside to be loaded onto vessels for export markets), thereby ensuring effective and efficient operations. The proposed equipment to take redundancy into account.
- A Piped/Closed Overland Conveyor Belt System based on the principle of duality and to ensure that the overall operations are not affected when one of the conveyors is under repairs.
- 2 x Ship-loaders at the Quayside, complete with all necessary railway tracks and ancillaries at the Quayside to enable effective and efficient loading of the vessels. The related ship-loading conveyors to transfer ore into the vessel are to be designed supplied and installed complete with dust collection and suppression system.
- Required Bulk Services including inter alia, water, sewerage system, power, telecoms, and ICT/Digital infrastructure (including but not limited to SCADA, CCTC, Fire Detection and Protection Systems, in-motion weighing systems).
- Buildings / Ancillary Top Structures and External Works.

1.2 Current Authorisations

Transnet SOC Ltd. (Transnet) received the following authorisations with regards to the Ngqura Manganese Export Terminal and associated infrastructure:

4. **Environmental Authorisation** issued by the then Department of Environmental Affairs (DEA):
 - Environmental Authorisation on 10 July 2014 (DEA Reference: 14/12/16/3/3/2/319). This is the original Environmental Authorisation issued.
 - Environmental Authorisation Amendment #1 on 27 March 2015 (14/12/16/3/3/2/319/AM1). The amendments to the EA related to: Proposed infrastructure and the respective geographical co-ordinates, Description of key components of the project, Condition 17 relating to the Environmental Management Committee (EMC), Condition 18 relating to any changes to the EMPr, Condition 19.4 relating to employment of an ECO for the entire lifecycle, Condition 20 relating to reporting responsibilities of the ECO.
 - Environmental Authorisation Amendment #2 on 24 March 2020 (14/12/16/3/3/2/319/AM2). The amendments related to the extension of the validity period and change of contact details of the Environmental Authorisation holder. The validity of authorisation expires on 27 March 2025.
5. **Provisional Atmospheric Emissions Licence** issued by the Nelson Mandela Bay Municipality:
 - Provisional Atmospheric Emissions Licence (AEL) on 1 August 2014 (NMBM AEL 13/32). This is the original Provisional AEL issued.
 - Provisional AEL Renewal issued on 1 June 2020 (NMBM AEL 13/32(1)). The validity of renewed licence expires on 27 March 2025.
6. **Water Use Licence** issued by the Department of Water and Sanitation:
 - Water Use Licence (WUL) on 19 November 2015 (Licence Number: 15M30B/ACGI/3736). This is the original WUL issued.
 - Water Use Licence Amendment on 9 March 2021 (15M30B/ACGI/3736). The amendment related to extension of commencement of water uses.

Copies of the authorisations are provided in **Appendix B, C and D**.

1.3 Locality

The proposed Ngqura Manganese Export Terminal Facility will be located on Erf 359 Coega, in Zone 9 of the Coega Special Economic Zone (SEZ), in Ward 53, in the Nelson Mandela Bay Municipality, Eastern Cape. The conveyor route is located on erven 327, 272, 306, 251, 356 Coega, in Zones 9 and 8 of the Coega SEZ. Refer to **Appendix A**.

1.4 Applicant / Environmental Authorisation Holder

Transnet SOC (Pty) Ltd (Transnet) is the Environmental Authorisation Holder, and is applying for amendments to the Environmental Authorisation (EA).

1.5 Environmental Assessment Practitioner

CEN IEM Unit meets the requirements for an independent Environmental Assessment Practitioner (EAP) in terms of the Environmental Impact Assessment (EIA) Regulations of 4 December 2014 (GN R 982), as amended (7 April 2017, GN 326).

The report was prepared by Mrs Lucille Behrens, the project-specific EAP. Lucille has 18 years of experience in the environmental management field, has a B.Sc. Honours in Environmental Monitoring and Modelling, is a member of IAIAA and a Registered EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA). Her area of expertise is EIAs and related processes, and as project manager.

All reports are reviewed and approved by Dr Mike Cohen, Director at CEN IEM Unit. Mike has over 30 years of experience, has a D.Sc. in Wildlife Management, is a registered Professional Natural Scientist (PrSciNat), and a member of IAIAA.

Refer to **Appendix H** for the EAP CV.

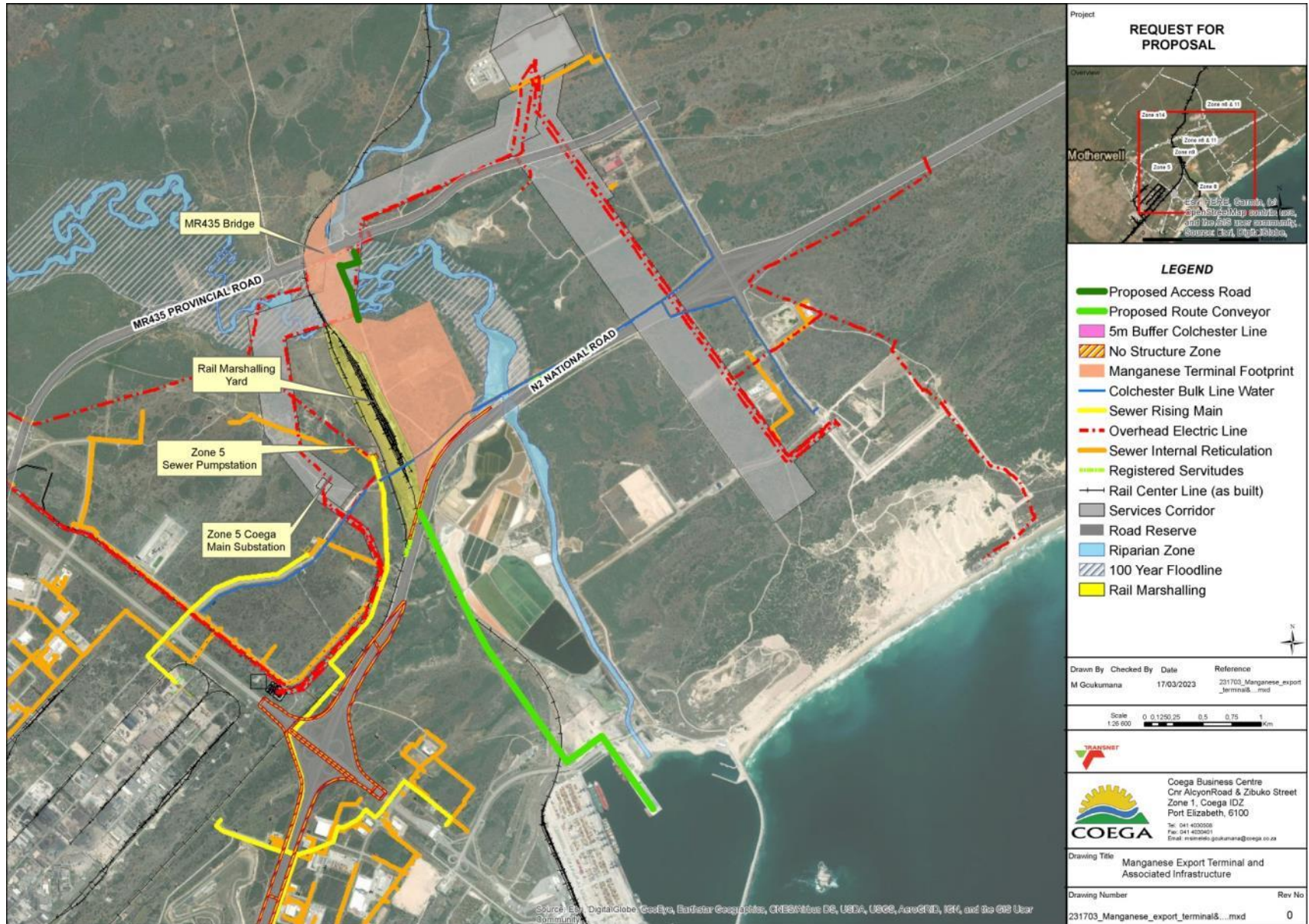


Figure 1-1: Locality Map

Proposed Manganese Export Facility and Associated Infrastructure in the Coega SEZ and Port of Ngqura, Gqeberha

1.6 Purpose of the Study and Report

In terms of the EIA Regulations, 2014 (as amended on 7 April 2017), a Part 2 Amendment Application process is applicable as the amendment relates to a change in the scope of a valid environmental authorisation.

The main purpose of the amendment assessment is to provide:

- a) an assessment of all impacts related to the proposed change;
- b) advantages and disadvantages associated with the proposed change;
- c) measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and
- d) any changes to the Environmental Management Programme (EMPr).

The information provided from the amendment assessment is passed on to the competent authority, DFFE, for consideration during the decision-making phase.

Table 2 presents the requirements of an Assessment Report for a Part 2 Amendment Application as indicated in Regulation 32 of the EIA Regulations, 2014 as amended:

Table 2: Checklist in terms of Regulation 32 of the EIA Regulations, 2014 as amended

Content Requirement for Part 2 Assessment Reports (Regulation 32 of the EIA Regulations, 2014, as amended)	Relevant Section in this Assessment Report
32(1)(a) a report, reflecting—	
(i) an assessment of all impacts related to the proposed change;	Chapter 4
(ii) advantages and disadvantages associated with the proposed change;	Chapter 4
(iii) measures to ensure avoidance, management and mitigation of impacts associated with such proposed change;	Chapter 4 & Appendix E - EMPr
(iv) any changes to the EMPr;	Appendix E - EMPr
which report— (aa) had been subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential and registered interested and affected parties, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the competent authority, and (bb) reflects the incorporation of comments received, including any comments of the competent authority;	Chapter 5

CHAPTER 2: DESCRIPTION OF ACTIVITIES AND PROPOSED AMENDMENTS

2.1 Authorised Operations / Activities

The Final Environmental Impact Assessment Report (FEIAR) submitted as part of the application for Environmental Authorisation in 2013 indicated that the stockyard will cover an area of approximately 40 hectares in Zone 9 of the Coega SEZ and will hold a volume of approximately 1.8 million tons of Manganese Ore. The 2013 assessment considered the throughput capacity of 16 million tons per annum and assessed an area of approximately 82ha for the manganese export terminal. The remaining 42ha would include the stormwater control pond, buildings and construction laydown areas. Refer to **Figure 2-1**.

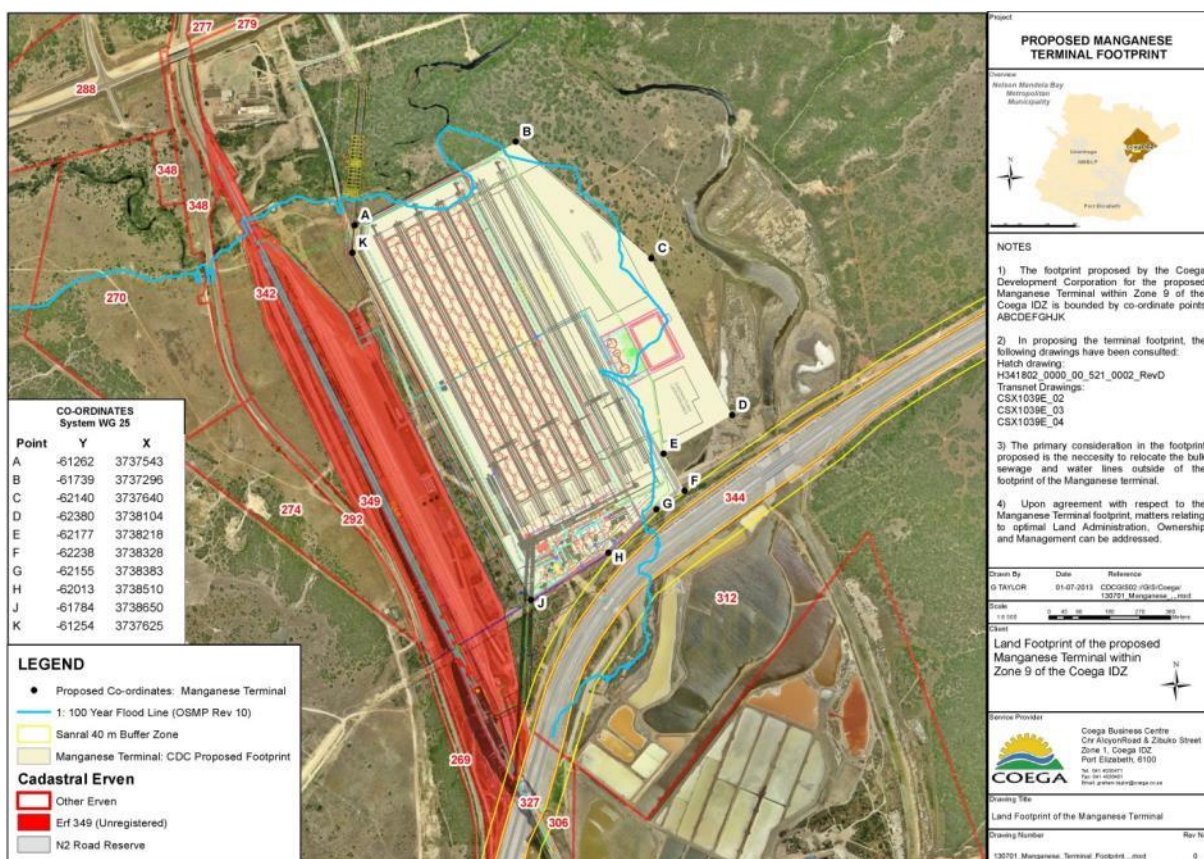


Figure 2-1: 2013 Assessment of the Proposed Manganese Terminal Footprint

The following project description is provided in the existing Environmental Authorisation (dated 27/03/2015 (AM1)) regarding the key components of the project:

Manganese Export Terminal: The construction and operation of a bulk terminal for handling Manganese Ore, including a stockyard, conveyor systems linking the stockyard to the tippler and to the ship loader as well as the associated infrastructure such as a tippler, stackers, reclaimers, ship loaders, surge bins, office buildings, bulk services infrastructure and additional rail infrastructure from the existing marshalling yard linking into the tippler.

Rail compilation yard and doubling of railway line: The rail compilation yard comprising five yard lines to allow for the consolidation and de-consolidation of four 200 wagon trains per day. A triangle is also included to allow for the locomotives to turn around. The complete rail yard will include back roads to access the locomotive and wagon maintenance workshops, a diesel locomotive refuelling station (2 self-contained aboveground storage tanks with a total capacity of approximately 150 m³), a locomotive sanding facility and wash bay. Electrical locomotives will be used to haul the 200 wagon trains on the mainline from Hotazel to the compilation yard. From the compilation yard, diesel locomotives will haul the 100 wagon sets to and from the tippler. A security building, two shunter cabins, a Transnet Freight Rail operations building, and three signalling relay rooms are planned to be constructed at the rail compilation yard.

Ancillary infrastructure and services: A storm water control dam constructed at the stockyard with a storage capacity of approximately 50 MI (mega litres) and will be constructed to accommodate a 1:100 year flood. In addition, a second storm water control dam with a storage capacity of approximately 10 MI will be constructed at the quay area to collect all storm water runoff from this area and prevent it to enter the marine environment. Two attenuation ponds (i.e. simulated wetlands or Sustainable Urban Drainage Systems) will be constructed at the rail compilation yard to collect all storm water runoff from this area and will have a storage capacity of approximately 7514 kl and 200 kl respectively. The proposed project will also include the construction of access roads at the stockyard area, including a road bridge over the Coega River and the proposed compilation yard as well as necessary crossings and rail bridges. In addition, a service road will be constructed along the proposed rail loop and rail link at the compilation yard. Suitable erosion control measures will be included at all culverts to ensure that sediment is not washed away, e.g. reno mattress and suitable wing walls.

2.2 Proposed Amendments

The proposed amendments to the Environmental Authorisation relate to the following only:

- Increase in manganese ore throughput capacity from 16 to 22 million tons per annum.
- Change from an open manganese stockyard to an enclosed stockyard.
- Change to a covered conventional belt conveyer and piped conveyors.
- Removal of the rail compilation yard and associated works.

No amendments are proposed for the footprint of the conveyor from the terminal area (stockyard) to the Port of Ngqura.

Limited information is available on the layout of the structures within the footprint of the enclosed stockyard. As a result, it has been considered that the enclosed stockyard and associated infrastructure (e.g. buildings and stormwater pond) will occupy the full extent of the approximate 80-82ha indicated for the manganese stockyard and the full extent of the manganese export terminal including the rail take-off, rail line into the stockyard and access road infrastructure will be approximately 96.27ha.

Refer to **Appendix A** for the overall site development plan.

2.3 Amendment to Environmental Authorisation

A Part 2 Amendment Application to the existing and valid Environmental Authorisation (14/12/16/3/3/2/319/AM2) is being undertaken in terms of Section 31 of the Environmental Impact Assessment Regulations, 2014, as amended, and submitted to the National Department of Forestry, Fisheries, and Environment (DFFE).

A Part 2 Amendment Application is required for amendments where a change of scope or change in nature of impacts occur.

The Part 2 amendment relates to the following changes regarding the operations:

- Increase in manganese ore throughput capacity from 16 to 22 million tons per annum.
- Change from an open manganese stockyard to an enclosed stockyard.
- Change to a covered conventional belt conveyer and piped conveyors.
- Removal of the rail compilation yard and associated works.

The amendments to the proposed operations in terms of an increase in the throughput capacity to 22 million tons per annum relates to:

- The Ngqura Manganese Export Terminal project is the development of a Manganese (Mn) Stockyard that has a capacity of handling 16 million tons per annum (mtpa) that is expandable to 22 mtpa in future.
- The improvement of the predictability and increased reliability of the Mn Mining Sector Value chains to export markets, thereby impacting positively on investor confidence;
- Contribute towards the rejuvenation of the South African economy and sustainable job-creating economic growth.

The amendments to the proposed operations in terms of enclosed structures for the stockyard and conveyors are required for the implementation of an environmental best practice approach which considers:

- a) Reduce the environmental liability for stockpiled materials and the risk of abandonment.
- b) Prevent and minimise the risk of harm to the environment and human health; and
- c) Support the most preferable use of waste and secondary materials in accordance with the waste management hierarchy

The following relates to changes in the project description in the Environmental Authorisation (EA):

- Removal of the “Rail Compilation Yard and Doubling of Railway Line” description in the key components section on Page 11 of EA dated 27/03/2015 (AM1).
- Amendment to the “Ancillary Infrastructure and Services” description in the key components section on Page 12 of EA dated 27/03/2015 (AM1) to reflect the removal of the compilation yard infrastructure from:

Ancillary infrastructure and services: A storm water control dam constructed at the stockyard with a storage capacity of approximately 50 MI (mega litres) and will be constructed to accommodate a 1:100 year flood. In addition, a second storm water control dam with a storage capacity of approximately 10 MI will be constructed at the quay area to collect all storm water runoff from this area and prevent it to enter the

marine environment. Two attenuation ponds (i.e. simulated wetlands or Sustainable Urban Drainage Systems) will be constructed at the rail compilation yard to collect all storm water runoff from this area and will have a storage capacity of approximately 7514 kl and 200 kl respectively. The proposed project will also include the construction of access roads at the stockyard area, including a road bridge over the Coega River and the proposed compilation yard as well as necessary crossings and rail bridges. In addition, a service road will be constructed along the proposed rail loop and rail link at the compilation yard. Suitable erosion control measures will be included at all culverts to ensure that sediment is not washed away, e.g. reno mattress and suitable wing walls.

Changing to:

Ancillary infrastructure and services: A storm water control dam constructed at the stockyard with a storage capacity of approximately 50 MI (mega litres) and will be constructed to accommodate a 1:100 year flood. In addition, a second storm water control dam with a storage capacity of approximately 10 MI will be constructed at the quay area to collect all storm water runoff from this area and prevent it to enter the marine environment. The proposed project will also include the construction of access roads at the stockyard area, including a road bridge over the Coega River as well as necessary crossings and rail bridges. Suitable erosion control measures will be included at all culverts to ensure that sediment is not washed away, e.g. reno mattress and suitable wing walls.

The co-ordinates for the manganese stockyard to be corrected on page 10 of EA dated 27/03/2015 (AM1) as follows, refer also to **Figure 2-2** and **Appendix A**:

A 33° 46' 7,262" S 25° 40' 18,125" E	B 33° 46' 11,740" S 25° 40' 7,967" E
C 33° 46' 17,545" S 25° 40' 0,454" E	D 33° 46' 19,708" S 25° 39' 56,260" E
E 33° 45' 58,722" S 25° 39' 43,782" E	F 33° 45' 57,612" S 25° 39' 43,555" E
G 33° 45' 53,738" S 25° 39' 41,249" E	H 33° 45' 54,330" S 25° 39' 39,815" E
J 33° 45' 46,804" S 25° 39' 31,187" E	K 33° 45' 45,911" S 25° 39' 29,395" E
L 33° 45' 41,489" S 25° 39' 26,775" E	M 33° 45' 41,055" S 25° 39' 27,043" E
N 33° 45' 37,403" S 25° 39' 24,172" E	O 33° 45' 29,982" S 25° 39' 22,996" E
P 33° 45' 24,685" S 25° 39' 23,345" E	U 33° 45' 21,827" S 25° 39' 24,375" E
V 33° 45' 16,679" S 25° 39' 27,964" E	W 33° 45' 12,763" S 25° 39' 32,115" E
X 33° 45' 14,837" S 25° 39' 31,591" E	Y 33° 45' 19,580" S 25° 39' 28,494" E
Z 33° 45' 22,901" S 25° 39' 28,320" E	A1 33° 45' 26,778" S 25° 39' 30,675" E
B1 33° 45' 25,160" S 25° 39' 35,137" E	C1 33° 45' 29,308" S 25° 39' 37,591" E
D1 33° 45' 32,437" S 25° 39' 33,392" E	E1 33° 45' 44,645" S 25° 39' 40,656" E
F1 33° 45' 45,669" S 25° 39' 47,920" E	G1 33° 45' 45,434" S 25° 39' 49,101" E
H1 33° 45' 39,697" S 25° 40' 3,344" E	J1 33° 46' 5,351" S 25° 40' 18,650" E

The removal of the co-ordinates for the Compilation Yard and Doubling Railway Yard on page 11 of EA dated 27/03/2015 (AM1).

The co-ordinates for the Ship Loading, Conveyor Route and Manganese Terminal – Storm Water Dam as listed in the EA dated 27/03/2015 (AM1) remains the same with no changes proposed.

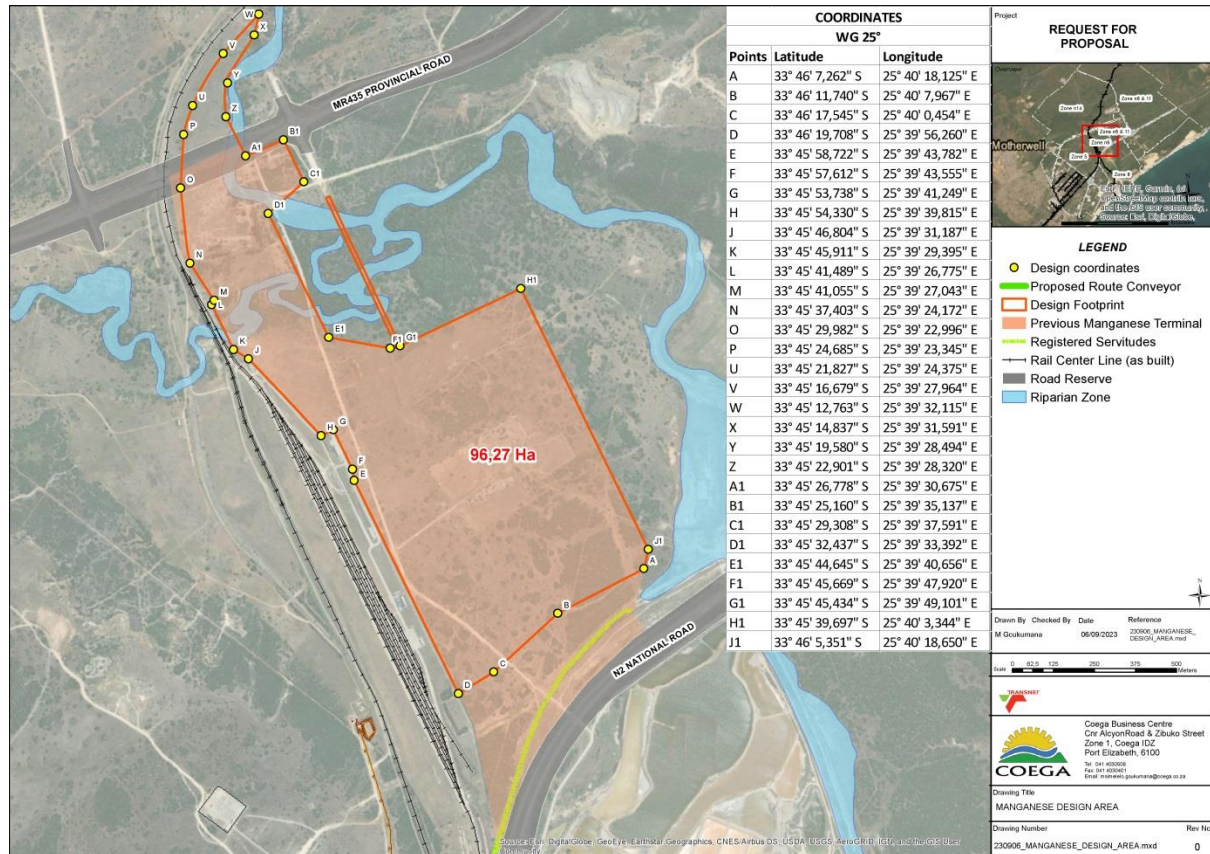


Figure 2-2: NMET Stockyard Footprint and Co-ordinates

With the removal of the Compilation Yard and Doubling of Railway Line, the following changes are required in terms of property details in the EA:

- Page 1 of EA dated 27/03/2015 (AM1), Location of Activity requires the removal of Tankatara area, remainder of the Farm Tankatara Trust 643; and changes to: “Eastern Cape Province: In the Coega Special Economic Zone and Port of Ngqura within the Nelson Mandela Bay Metropolitan Municipality”.
- Page 11 of EA dated 27/03/2015 (AM1), description of ‘the property’ requires the removal of Remainder of the Farm Tankatara Trust and Zone 11; and changes to: “for the construction of manganese export terminal and its associated infrastructure within the Coega Special Economic Zone (SEZ) Zones 8, 9 and 13 within the Nelson Mandela Bay Metropolitan Municipality in the Eastern Cape Province, hereafter referred to as “the property””.

With the removal of the Compilation Yard and Doubling of Railway Line, the following changes are required in terms of listed activity descriptions in the EA:

- Listed Activity GN R. 545 Item 11 – Activity / Project Description: Railway infrastructure from the mainline take-off to the Tippler Yard adjacent to the Manganese Stockyard will occur within the Coega SEZ, and comprise of the rail lines,

lines feeding and exiting the Tiplers and any other tracks required for shunting, inspection, train preparation, crewing and rolling stock maintenance, as may be identified through the operational readiness process.

- Listed Activity GN R. 545 Item 15 - Activity / Project Description: The proposed project will result in the physical alteration of more than 20 hectares of undeveloped land for industrial use. The proposed stockyards will cover an area of approximately 80 hectares.
- Listed Activity GN R. 546 Item 12: The development footprint of the proposed project will exceed 300m². The stockyards will cover an area of approximately 80 hectares. Project activities may take place within 100 metres inland of the high water mark of the sea or an estuary. The clearance of vegetation will occur within a critical biodiversity area as identified by the Eastern Cape Biodiversity Conservation Plan (2007) and NMBM Bioregional Plan (2015).

Amendments to the following conditions in the EA dated 27/03/2015 (AM1):

- Condition 25, Page 16, bullet point 5: 'turbine sites' to be replaced with 'along the conveyor route' – "Cut and fill areas along the conveyor route and access roads indicating the expected volume of each cut and fill".
- Condition 26, Page 16: Replace 'archaeologist' with 'palaeontologist' – The applicant must appoint a qualified botanical, fauna specialist, palaeontologist and an ornithologist to ground-truth every footprint and their recommendations must form part of the final layout plan to be submitted to this Department for approval.
- Condition 39, Page 17: Removal of the condition relating a biodiversity offset agreement due to the removal of the compilation yard and associated infrastructure located within CBAs of the NMBM Bioregional Plan and open space areas of the CDC OSMP.
- Condition 43, Page 18: Removal of Zone 9 as graves within the stockyard area has been relocated. "No activities will be allowed to occur within 20m from the perimeter of the fence of the cemeteries identified in Zones 5 and 13."

The request for removal of the Compilation Yard and Doubling of the Railway Line is due to the compilation yard and railway components being included in a new EIA application by Transnet Freight Rail. This separate and new EIA process is anticipated to commence in 2024.

Refer to **Appendix A** for the site development plan.

A Part 1 amendment has also been included and relates to the change in contact details of the EA Holder (Transnet SOC). The amendment to the contact details is required due to changes in the Transnet organisation structure. Transnet SOC will retain the ownership of the EA. The contact person listed on the approved EA is no longer part of the project, hence the proposed undertaking for a new contact person to assume responsibility and responsibilities regarding the issued EA.

The Amendment application form was submitted to the DFFE on 14 July 2023 and acknowledged on 6 August 2023. A revised amendment application form and the draft assessment report was submitted to the DFFE in September 2023.

There are no new or additional EIA-listed activities triggered by the increase in manganese ore throughput. The listed activities previously authorised would still be relevant.

2.4 Amendment to Atmospheric Emissions Licence

The amendment is required for the change from an open stockyard to an enclosed stockyard as well as the increase of manganese ore from 16 to 22 million tons per annum and change in contact details of the responsible person at Transnet in terms of Condition 4.1 of the Provisional AEL. The current authorised capacity is for 16 million tons per annum.

The amendment application to the existing Provisional AEL (NMBM AEL 13/32(1)) is being undertaken in terms of the National Environmental Management: Air Quality Act (Act No. 39 of 2004), and submitted on SAAELIP on 21 August 2023. Refer to **Appendix C** for a copy of the application.

The relevant air quality listed activity is Category 5, Sub-category 5.1: Storage and Handling of Ore. No new air quality listed activities are triggered.

2.5 Amendment to Water Use Licence

The amendment application to the existing water use licence is being undertaken in terms of the National Water Act, 1998 (Act No. 36 of 1998), and submitted to the Department of Water and Sanitation (DWS). A pre-application meeting request has been submitted to the DWS. Refer to **Appendix D** for a copy of the acknowledgement. The pre-application meeting with DWS was held on 7 July 2023.

The existing Water Use Licence authorises the bridge across the Coega River and culverts within 500m of wetlands in terms of Section 21 (c) and (i) water uses; as well as the two stormwater control ponds (one at the stockyard and one at the quay) in terms of Section 21(g).

From the information available, it is unclear if the positions of the proposed stormwater management ponds will change in order to accommodate the anticipated increase of the enclosed stockyard footprint, as a result the view has been taken that the position of the stormwater management ponds and capacity remains the same and no amendment is required at this stage for the ponds.

A minor amendment to the Water Use Licence would be required for the change in contact details of the Licence Holder and the crossing of the small drainage line by the conveyor (located at 33°46'49.05"S, 25°40'4.68"E).

2.6 Need and Desirability / Motivation

Transnet has recommended what it deemed as a world-class Manganese Terminal that will meet environmental best practice, which satisfy obligations associated with ISO 14 001 Standards and ensure compliance with the applicable legislation amongst other requirements. Given the commitment of the South African Government on the protection of

the environment and the fact that Transnet plays a significant role in the global market, it is imperative that the Manganese Terminal to be developed at the Port of Ngqura be designed to meet the United Nation's Sustainable Development Goals (SDGs) considering Transnet's initiative of contributing positively towards them. A risk-based approach in the design of the Manganese Terminal will be suited to optimising climate adaptation strategies related to the design and maintenance of the infrastructure.

Implementing environmental best practice approach for the Manganese Terminal is crucial for the following reasons:

- a) Reduce the environmental liability for stockpiled materials and the risk of abandonment.
- b) Prevent and minimise the risk of harm to the environment and human health; and
- c) Support the most preferable use of waste and secondary materials in accordance with the waste management hierarchy.

The primary benefits of the Ngqura Manganese Export Terminal (NMET) are to:

- (i) Provide a conducive environment and a world-class platform for the Manganese Mining Sector to export their material efficiently and cost-effectively to the global market;
- (ii) Improve the predictability and increased reliability of the Manganese Mining Sector Value chains to export markets, thereby impacting positively on investor confidence.

The secondary benefits of the NMET Project are to:

- (i) Increase sustainable job-opportunities during both the construction and operation stages of the Project;
- (ii) Increase revenue-base for Transnet while lowering operating costs for the Mining Sector.
- (iii) Increase Tax Revenue base for the country; and
- (iv) Increase the Gross Geographic Product (GGP) and Gross Fixed Capital Formation for the Eastern Cape

CHAPTER 3: METHODOLOGY

3.1 Impact Assessment Methodology

The criteria used for the assessment of the potential impacts of the proposed amendments are described below. Cumulative impacts will be included as part of the impact assessment process. The predicted impacts are compared to the assessment undertaken in 2013 where applicable.

Table 3: Impact Assessment Criteria

NATURE		
The nature of the impact is the consideration of what the impact will be and how it will be affected. This description is qualitative and gives an overview of what is specifically being considered. That is, the nature considers 'what is the cause, what is affected, and how is it affected?'		
STATUS		
+ / - Direct / Indirect	This describes whether the impact is positive (a benefit) or negative (a cost), and whether the impact is direct or indirect.	
EXTENT		
Whether the impact will occur on a scale limited to the immediate areas, footprint or site of the development activity or will the impact occur on a sub-regional (local), regional and/or national scale.		
Footprint / Site	The impact could affect the whole, or a significant portion of the site.	1
Local	Impact could affect the adjacent landowners and areas surrounding the site.	2
Regional	Impact could affect the wider area around the site, that is, from a few kilometres, up to the wider region.	3
National	Impact could have an effect that expands throughout a significant portion of South Africa – that is, as a minimum has an impact across provincial borders.	4
DURATION		
Whether the lifetime of the impact will be of a short duration (0-5 years); medium term (5-15 years); long-term (>15 years), with the impact ceasing after the operational life of the development); or considered permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient		
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process, and will be relevant for 0 to 5 years.	1
Medium term	The impact will be relevant for 5 to 15 years.	2
Long term	The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter (i.e. more than 15 years).	3

Permanent	This is the only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient (i.e. impact will remain after the operational lifetime of the project).	4
INTENSITY/MAGNITUDE		
Whether the intensity (magnitude / size) of the impact is high, medium, low or negligible (very low / no impact). Where possible the intensity of impacts are quantified		
Very Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.	1
Low	The impact alters the affected environment in such a way that the natural processes or functions are slightly affected.	2
Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.	3
High	Function or process of the affected environment is disturbed to the extent where the function or process temporarily or permanently ceases.	4
REVERSIBILITY		
Reversibility is the ability of the affected environment to recover from the impact. Examining whether the impacted environment can be returned to its pre-impacted state once the cause of the impact has been removed. The degree to which the impact and risk can be reversed:		
Reversible	The impact is completely reversible	1
Low	The impact is reversible with mitigation measures implemented, over short term	2
Medium	The impact is reversible with additional mitigation measures, over medium term	3
Irreversible	Affected environment is unable to recover from the impact, i.e. permanently modified	4
REPLACEABLE		
Examining if an irreplaceable resource is impacted upon. Replaceable is an indication of the scarcity of the specific set of parameters that make up the affected environment. That is, if lost can the affected environment be (a) recreated, or (b) is it a common set of characteristics and thus if lost is not considered a significant loss. The degree to which the impact and risk may cause irreplaceable loss of resources:		
Replaceable	Affected environment is replaceable, i.e. an irreplaceable resource is not damaged or the resource is not irreplaceable / scarce.	1
Low	There would be a marginal loss of resources.	2
Medium	There would be a significant loss of resources	3
Irreplaceable	Affected environment is irreplaceable, i.e. complete loss of all resources	4
CUMULATIVE		
A cumulative impact is an impact, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
Very Low	Negligible to no cumulative effect / impact	1

Low	Low cumulative effect / impact	2
Medium	Medium cumulative effect / impact	3
High	Significant cumulative effects / impacts	4
PROBABILITY		
The probability of the impact actually occurring as either improbable (low likelihood); probable (distinct possibility); highly probable (most likely) or definite (impact will occur regardless of preventative measures)		
Improbable	The possibility of the impact occurring is none, due either to the circumstances, design or experience.	1
Probable	There is a possibility that the impact will occur to the extent that provisions must therefore be made.	2
Highly Probable	It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity.	3
Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied upon.	4
SIGNIFICANCE		
<p>The significance of impacts of the proposed project are assessed with the mitigation measures which will be included in the Environmental Management Programme (EMPr) as well as with the additional mitigation measures recommended in this report being implemented. The significance of the identified impacts on the components of the affected environment (and where relevant, with respect to potential legal infringement) are described as:</p> <p>No Impact: Where the project action will not cause any adverse or beneficial changes to the natural (biophysical), and/or social environment.</p> <p>Impact of Low Significance: Where the project actions will result in minor short-term changes to the biophysical and/or socio-economic environment. The impacts will usually be restricted to the immediate area of the project action. The affected system should return to its natural or almost natural state in a short period of time (0 - 5 years). The impacts on human populations will be of a short duration and will not have any lasting consequences.</p> <p>Impact of Moderate Significance: Where the project actions will result in moderate short-term or medium term changes to the biophysical and/or socio-economic environment. The effects of the impact could be experienced outside of the project action area and may be evident at a sub-regional or even a regional level. Minor indirect impacts may arise from the project action. The system should recover but it is unlikely that it will return to its natural state. Recovery would only take place in the medium term (5-15 years). Impacts on the human population will be felt after the project action is completed but are not severe and/or disruptive to their quality of life or economic wellbeing.</p> <p>Impacts of High Significance: Where the project actions will result in major long-term changes to the biophysical and/or socio-economic environment. The effects of the impact will be experienced outside of the project action area and may be evident at a regional, national and even at the international level. Secondary or indirect impacts may arise from the project action. The system may recover over the long-term (>15 years) but will not revert to its natural state. Impacts on human populations will be felt after the project action is completed. The impacts are of a long-term nature and are disruptive to the previous life style of the affected population.</p> <p>Determination of significance will be made on the assumption that any mitigation and / or management measure, which is recommended, will be implemented by the developer.</p> <p>The level of significance is expressed as the sum of the area exposed to the risk (extent), the length of time that exposure may occur over in total (duration), the severity of the exposure</p>		

(intensity/magnitude), reversibility, the irreplaceable loss of a resource (replaceable), the cumulative effect / impact and the likelihood of the event occurring (probability).		
Significance value = (Extent + Duration + Intensity/Magnitude + Reversibility + Replaceable + Cumulative) x Probability.		
A distinction is made for the significance rating without the implementation of mitigation measures and with the implementation of mitigation measures. The purpose of mitigation measures is to reduce the significance level of the anticipated impact. Therefore, the reduction in the significance level after mitigation is directly related to the scores used in the impact assessment criteria. The effect of potential mitigation measures to reduce the overall significance level is also to be considered in each issues table (i.e. values with or without mitigation are presented).		
No / Very Low Impact	There is no impact or a very low impact.	6-16
Low	The impacts are less important, but some mitigation is required to reduce the negative impacts.	17-43
Moderate	The impacts are important and require attention; mitigation is required to reduce the negative impacts.	44-70
High	The impacts are of high importance and mitigation is essential to reduce the negative impacts	71-96
MITIGATING ENVIRONMENTAL EFFECTS		
Mitigation measures are technically and economically feasible measures that will mitigate a project's likely environmental effects. Mitigation is the elimination, reduction, or control of a project's adverse environmental effects, including restitution for any damage to the environment caused by such effects through replacement, restoration, compensation, or any other means.		
Mitigation is used to address all adverse environmental effects, whether or not subsequent analysis determines that the effects are significant. The development of the mitigation measures commenced during the scoping assessment and many have become part of the project design. Relevant mitigation measures should form part of any contract for the project.		
DEGREE OF CONFIDENCE IN PREDICTIONS		
The degree of confidence in the predictions, based on the availability of information and/or specialist knowledge		

3.2 Assumptions, Uncertainties and Gaps in Knowledge

The following assumptions, uncertainties and gaps in knowledge were identified for this process:

3.2.1 Assessment Process

The information as provided by the Applicant to date is accurate, appropriate and correct.

Data shown in the maps was supplied by various sources and was used after it was reviewed and verified where considered necessary. Verification was, however, restricted to available sources of information only.

Limited information is available on the layout of the footprint of the enclosed stockyard and relates only to the extent of the site. As a result, it has been considered that the enclosed

stockyard and associated infrastructure (e.g. buildings and stormwater pond) will occupy the full extent of the approximate 80ha.

From the information available, it is unclear if the positions of the proposed stormwater management ponds will change in order to accommodate the anticipated increase of the enclosed stockyard footprint, as a result the view has been taken that the position of the stormwater management ponds and capacity remains the same as per the 2013 assessment, Environmental Authorisation and Water Use Licence.

There is insufficient data to undertake a comprehensive water balance for the Ngqura Manganese Export Terminal Project.

3.2.2 Public Participation Process

Every effort was made to contact all stakeholders within the study area. Information presented by the stakeholders is presumed to be accurate and presented timeously with respect to the process at hand.

3.3 Environmental Management Programme

The Environmental Management Programme (EMPr) that was provided as Part B to the Final EIA Report 2013 has been updated to include any additional mitigation and/or management measures provided in this amendment assessment.

The updated EMPr is included as **Appendix F**.

CHAPTER 4: IMPACT ASSESSMENT

4.1 Air Quality Impacts

4.1.1 Summary of Specialist Findings

The 2023 Air Quality Impact Assessment was undertaken by Chris Albertyn from Lethabo Air Quality Specialists (Pty) Ltd (LAQS), refer to **Appendix E1**.

Findings of the air quality specialist study undertaken by LAQS are summarised as follows (Albertyn, 2023):

- One point source will exist on the site, i.e. the exhaust air from the tippler operations extraction system (extraction of particulates and collection by baghouse at the train wagon tippler).
- Two area sources will exist, i.e. fugitive dust emissions from the enclosed stockpile area and fugitive dust emissions from the ship loading activity.
- While a conventional conveyor belt may be interpreted as a line source, the conveyors used in this application will be fully enclosed so that no emissions are expected along the conveyor route.
- As the planned terminal will purely serve as a transfer facility from the mine to ships for export, the only pollutant emissions that can occur is particulate matter.
- LAQS modelled the dispersion of PM10 particulates at the full operating capacity of 22 million tons ore per annum. The approach was to determine both annual average ground-level concentrations and 99-percentile daily averaged concentrations (the levels below which concentrations will occur for 99% of the time) of PM10 particulate matter.
- For the ore terminal, the maximum annual average concentration of PM10 particulates is estimated to be $0.7 \mu\text{g}/\text{m}^3$ and it is estimated that it will occur the site of operations. The maximum 99-percentile concentration would be $2.3 \mu\text{g}/\text{m}^3$ and it is estimated that it will occur on the southern boundary of operations. These values are significantly lower than the official ambient air quality standards, refer **Table 4**.
- When the estimated impact of the manganese terminal is compared with the cumulative PM10 impact, the contributions from the terminal will be very low (refer to **Appendix E1** for the dispersion models).
- The low estimated annual emissions are due to the stringent dust control measures planned for the facility, i.e. fully enclosed operations, water sprays and dust extraction / filtration measures, etc. LAQS is of the opinion that all bulk product handling operations envisaged for the SEZ should be fully enclosed to minimise emissions into the atmosphere.
- Based on the information given and the efficiency of pollution prevention measures planned, LAQS calculated that the concentration of total particulate matter in the stack serving the tippler operation will be less than $10 \text{ mg}/\text{m}^3$. It is generally accepted that plume visibility starts with concentration in the order of $50 \text{ mg}/\text{m}^3$. The low calculated stack concentration implies that the plume from this stack will not be visible, thus complying with the SEZ's Record of Decision which states that no visible emissions are permitted.

It is recommended that an atmospheric emission license is issued to Transnet for the operation of the manganese ore terminal (Albertyn, 2023).

Table 4: Air Quality Results Summary, $\mu\text{g}/\text{m}^3$

Maximum PM10 Concentrations	Processing capacity, tons per annum	Air quality standard
	22 million	
Annual average	0.7	40
Where	On site	
99-percentile	2.3	75
Where	Southern site boundary	

4.1.2 Impacts per 2013 FEIAR

The air quality impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 5**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 5: Air Quality Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Increased dust and other pollutants during construction	Low	Very Low	Not applicable to changes
Dust deposition from the Manganese Ore Export Facility in the neighbouring environment (operations)	Medium	Low	Applicable
Ambient PM10-concentrations exceed ambient standards (operations)	Low	Very Low	Applicable
Ambient PM2.5 concentrations exceed ambient standards (operations)	Low	Very Low	Not applicable to changes
Ambient NO _x concentrations exceed ambient standards (operations)	Low	Low	Not applicable to changes
Ambient BTEX concentrations exceed ambient standards (operations)	Very Low	Very Low	Not applicable to changes
Cumulative impacts of dust, PM10, PM2.5, NO _x and BTEX (operations)	Low	Low	Not applicable to changes

4.1.3 Air Quality Impacts

The air quality impacts related to construction works, i.e. dust and other pollutants, as assessed in the 2013 FEIAR are not expected to change and have not been re-assessed. The mitigation measures provided in 2013 remain valid.

The assessment of the air quality impacts during operations has changed due to the proposed enclosed structures for the Manganese Ore Terminal and conveyor, and the overall impact on air quality will be of **low negative** significance without mitigation and reduces to **very low negative** significance with mitigation.

The following mitigation measures are recommended by the specialist (Albertyn, 2023):

- Designed and implemented dust abatement equipment must be operated and maintained according to manufacturers' requirements.
- Doorways to the enclosed stockyard should only be opened when necessary and closed as soon as possible afterwards.
- Maintain the enclosed conveyor belt system to prevent fugitive emissions.
- Conduct sound "house-keeping" by collecting any ore materials that may spill onto the site, sweep areas to collect dust that may have been emitted and that settled on site, etc.
- Suitable monitors are installed in the stacks serving all baghouses, e.g. broken bag detectors. This will allow monitoring of the operation of the baghouses on a continuous basis so that effective emission controls are maintained.
- An alternative method to dust fall-out buckets is employed in which the concentration of airborne dust is measured on a continuous basis at one or more point of the terminal site, specifically the site's southern boundary. Such results can be compared directly to official ambient air quality standards as published in GN 1210.

Table 6: Air Quality Impact Assessment

Air Quality Impact	
Phase	Operational Phase
Nature	Dust deposition from the Manganese Ore Export Facility in the neighbouring environment Ambient PM10-concentrations exceed ambient standards
Status	Negative (-), Direct
Extent	Local - 2
Duration	Long term - 3
Intensity	Low - 2
Reversibility	Low - 2
Replaceable	Low - 2
Cumulative	Low - 2
Probability	Probable - 2
	$(2+3+2+2+2+2)*2=26$
Level of significance without mitigation	Low -
Significance with mitigation	Very Low -
Confidence	High

4.2 Health Impacts

4.2.1 Summary of Specialist Findings

The 2023 Health Risk Assessment was undertaken by Dr Gerhard Verdoorn from Griffon Poison Information Centre, refer to **Appendix E2**.

In terms of the health risk assessment during operations, the specialist has provided the following findings (Verdoorn, 2023):

- Scientific data as presented indicates that the risk of oral intake during work with or being in close proximity to the manganese ore consisting of manganese oxide, is extremely low. It is inconceivable that a worker or other person will consume the quantity of 2,917 mg/kg Mn for the acute oral risk to be applicable.
- The Lowest Observed Adverse Effect Level (LOAEL) of MnO₂ was set at 275 mg/kg body mass per day and it is extremely unlikely that a worker will be able to ingest this quantity of MnO₂ per day. There is therefore extremely little risk of long-term oral intake and resultant adverse health effect for human beings, even those who work with the manganese ore daily.
- The dermal toxicity of MnO₂ exceeds LD₅₀ >2,000 mg/kg which means that it could not be quantified beyond that concentration. Unless a worker is literally buried in moist, finely powdered MnO₂, the acute dermal toxicity of the ore for people is of extremely low risk.
- Long-term dermal exposure of workers to finely powdered MnO₂ may be of concern if their intake *via* the skin exceeds the safety limit of 4.14 ug/kg body mass per day. No peer reviewed records could be found of workers that suffered ill health effects due to dermal over-exposure to manganese dioxide ore; it is therefore considered very unlikely that long-term dermal exposure will generate ill health effects in workers.
- Single high dose inhalation of very fine MnO₂ dust (<2 microns) is undesired due to the possible irritation factor that may cause nasal and respiratory tract irritation and inflammation. It is therefore considered to be a real risk for workers who work with the ore in windy conditions or working conditions that produce a very fine dust, and if such workers do not wear appropriate personal protection clothing and equipment to prevent dust inhalation.
- The chronic inhalation effects of the MnO₂ are well documented for factory workers and relates probably mostly to the irritation effects that causes inflammation but also due to slow uptake of manganese into their organs. The latter has been demonstrated beyond reasonable doubt to have adverse neurological effects on workers as early as eight months after exposure to airborne MnO₂.
- The manganese ore is unlikely to cause dermal irritation but there is a limited risk for eye irritation due to the physical action of fine MnO₂ dust particles.

4.2.2 Impacts per 2013 FEIAR

The health impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 7**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 7: Health Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Increase in respiratory effects due to increased exposure to dust and other pollutants during construction	Low	Very low	Not applicable to changes
Neurological symptoms from exposure to Mn dust in the neighbouring environment	Medium to high within the industrial area and low in the neighbouring environment	Low to medium within the industrial area and low in the neighbouring environment	Applicable
Respiratory symptoms from exposure to PM10-concentrations exceeding ambient standards	Low	Low	Applicable
Respiratory symptoms from exposure to ambient PM2.5 concentrations exceeding ambient standards	Low	Low	Applicable
Respiratory symptoms from exposure to ambient NO _x concentrations exceeding ambient standards	Low	Low	Not applicable to changes
Neurological symptoms from exposure to ambient BTEX concentrations exceeding ambient standards	Very low	Very low	Not applicable to changes
Cumulative impacts of dust, PM10, PM2.5, NO _x and BTEX	Low	Low	Not applicable to changes

4.2.3 Health Impacts

The health risk impacts related to construction works, i.e. dust and other pollutants, as assessed in the 2013 FEIAR are not expected to change and have not been re-assessed. The mitigation measures provided in 2013 remain valid.

Operational phase: The presence of MnO₂ in stockpiles under well managed and controlled environments poses an extremely low to very low risk for people, unless conditions arise that produce airborne dust or elemental manganese as Mn or Mn²⁺ (which is extremely unlikely in an ore stockpile). Airborne MnO₂ dust poses a definite and calculated physical and toxicological health risk to workers that are exposed to dust. It is therefore essential that workers are equipped with the appropriate PPE as recommended and that dust suppression must be considered to prevent significant quantities of fine dust developing during transportation, off-loading and loading. Whilst MnO₂ poses extremely little risk to people for oral ingestion and dermal contact, it is essential to minimise such possibilities for workers, due to the potential for physical rather than chemical eye irritation due to fine MnO₂ dust (Verdoorn, 2023).

Environmental risks for animal and plant life are considered to be low to very low as long as reductive conditions that may produce elemental or bivalent manganese cations are avoided (Verdoorn, 2023).

One of the most important aspects is to reduce physical pollution of the environment around the storage facility due to aesthetical aspects thereof (Verdoorn, 2023).

The following mitigation measures are recommended by the specialist (Verdoorn, 2023):

- During off-loading (tipping). It is inevitable that dust will form while the ore is off-loaded (tipped) from the railway carriages. This should be mitigated by the most cost-effective tool, which may include sprinkling (irrigating) the ore during tipping with pressurised water with a droplet size not exceeding 500 microns to create a moist atmosphere without generating excessive run-off water. A dust suppressing agent such as an oligosaccharide or light polymer may be added to the water to aid the dust suppression. Since dust suppression is widely used in the mining and construction it is strongly recommended that Transnet consults the manganese mines for advice on what they use as affordable dust suppressants. Please take note that such substances may be more of a risk to workers (although unlikely) than the manganese ore and dust itself and it is therefore recommended that workers wear appropriate personal protective clothing and equipment during such work. Irrigation or sprinkler lines must be as close as possible to the rail trucks to minimise water usage, to prevent creation of excessive run-off water and to prevent workers from being drenched in irrigation water. Should the irrigation or sprinkler system prove sufficiently effective to suppress dust formation during tipping, it is probably unnecessary to add a dust suppressant to the water.
- A series of air intakes along the walls of the enclosed structure are included in the engineering design of the storage facility associated with extractors on the roof (whirly birds) with fine dust filters. This system should generate an indoor pressure that is slightly lower than the ambient air pressure, allowing fresh air intake and filter any dust that may be airborne from the vented air.
- Protective clothing and equipment for workers: Light weight cotton overalls (one or two piece), light weight cotton head cover such as small-brimmed cotton hat or totally covered golf cap, footwear (may be steel capped leather boots or rubber boots) and gloves (preferably long length isobutylene (isoprene) or neoprene rubber gloves) are essential and will protect worker bodies adequately against MnO₂ dust. Company policy may dictate wearing protective helmets instead of normal hats. Comfortable eye cover made from polycarbonate that protects the eyes from direct dust contamination is essential to prevent eye irritation. Such eyewear must not have venting ports because fine dust particles can penetrate through the ports. Comfortable dust masks to cover the nose and mouth are also essential to prevent even the slightest possibility of oral intake or inhalation of MnO₂ dust and must be worn by all workers who work with the ore at all times.
- Protective clothing and equipment for Management and Administrative Staff: Pressurised office spaces are essential to prevent MnO₂ dust from penetrating into the offices. When entering the stockpiling section of the storage facility, management and administrative staff must wear eye protection and dust masks.
- Protective clothing and equipment for Visitors: Unless visitors such as state authority inspectors that have a mandate to inspect facility have good reason to enter the storage

section of the facility, they should be denied access to this section. Visitors that must enter the storage section of the facility for whatever reason must wear appropriate full body clothing, head cover, eye protection and a dust mask.

Table 8: Health Impacts

Health Impact		
Phase	Operational Phase	
Nature	Neurological symptoms from exposure to Mn dust in the neighbouring environment	Respiratory symptoms from exposure to PM2.5 & PM10-concentrations exceeding ambient standards
Status	Negative (-), Indirect	Negative (-), Indirect
Extent	Local – 2	Local – 2
Duration	Long term - 3	Long term - 3
Intensity	Low - 2	Low - 2
Reversibility	Irreversible - 4	Irreversible - 4
Replaceable	N/A	N/A
Cumulative	Low - 2	Low - 2
Probability	Probable - 2	Probable - 2
	$(2+3+2+4+2)*2=26$	$(2+3+2+4+2)*2=26$
Level of significance without mitigation	Low -	Low -
Significance with mitigation	Very Low -	Very Low -
Confidence	High	High

4.3 Terrestrial Ecology Assessment

4.3.1 Summary of Specialist Findings: Terrestrial Biodiversity

The Terrestrial Biodiversity Impact Assessment was undertaken by Jamie Pote, refer to **Appendix E3**.

The Conservation status of the primary vegetation unit that is present within the stockpile site area has been elevated, since the unit designation has changed (NBA, 2022), since the original assessment from primarily Albany Alluvial Vegetation (Endangered) to Motherwell Karoid Thicket (Critically Endangered). The overall sensitivity is thus elevated from Moderate to High for portions of the site having this unit. The Thicket portions remain as having a Moderate Sensitivity. A small corner of the site adjacent to the Coega River has remnant Albany Alluvial Vegetation. Since this fragment also falls within the CDC SEZ OSMP designated area, it should be excluded from development and retained as open space (Pote, 2023).

The proposed amendments will not result in a change in any of the impacts as originally assessed other than the long-term effects of Manganese dust. At the time of the assessment several alternatives were under consideration and the significance after mitigation was deemed to be Low/Very Low. Implementation of the proposed covering of the stockyard and Conveyor amendments will reduce this significance to Very Low rather than Low/Very Low (Pote, 2023).

The proposed increase in throughput of Manganese (as well as the proposed covering) will not result in a larger operational footprint of the site, which will be constructed within the same footprint area, hence the other impacts to vegetation, flora and ecological processes will not change as a result of the proposed amendments (Pote, 2023).

4.3.2 Summary of Specialist Findings: Terrestrial Animal Species

The Terrestrial Animal Species Impact Assessment was undertaken by Dr Marietjie Landman, refer to **Appendix E4**.

The likelihood that the project area supports animal species of conservation concern is low due to a range of existing threats (not project related) to animal habitats and animal species. This reduces the sensitivity of the project area for animal species. Given the low probability of occurrence of SCC in the project area, it is not considered necessary to buffer any habitat types or identify No-Go areas for terrestrial animal species (Landman, 2023).

Because the amended project has a potentially smaller development footprint, includes more degraded areas that are unsuitable to animal species of conservation concern, and will include covering the stockyard and overland conveyor system to reduce the influence of Manganese Ore dust on animal habitat conditions, the amended project will likely have a lower animal species impact than the permitted project. However, this presumes that appropriate mitigation measures will be applied. In this case, it will be especially important to limit impacts on Thicket karoo mosaic and Riverine thicket habitats (both with a Site Ecological Importance: Medium) to a minimum (Landman, 2023).

4.3.3 Impacts and Significance per 2013 FEIAR

The terrestrial animal species impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 9**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 9: Terrestrial Ecology Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Direct loss of vegetation (construction)	Medium	Medium – Very low	No change to original assessment
Direct loss of Flora SSC concern and SSC habitat (construction)	Medium	Low	No change to original assessment
Increased risk of alien plant invasion in disturbed areas (construction)	Medium	Low - Very low	No change to original assessment
Change in natural fire regime (construction)	Medium	Low - Very low	No change to original assessment
Fragmentation of Ecological Corridors and disruption of Ecological processes	Medium High	Low Medium	No change to original assessment

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
and animal movement as a result of artificial barriers (construction)			
Faunal mortality as a result of bush clearing and earthmoving activities during site preparation (construction)	Medium	Medium - Low	Reassessed
Habitat destruction may affect faunal diversity and composition (construction)	Medium	Low	Reassessed
Road mortality of fauna from trucks and other construction vehicles (construction)	Medium	Low	Reassessed
Faunal mortalities resulting from fences (mammals and reptiles) (construction)	Medium	Low	Reassessed
Mortalities resulting from poaching (mammals) (construction)	Medium	Low	Reassessed
Increased risk of alien plant invasion in disturbed areas (operations)	Medium	Low - Very low	No change to original assessment
Change in natural fire regime	Medium	Low - Very low	No change to original assessment
Long-term effects of Manganese dust on adjacent vegetation	Medium	Low - Very low	Reassessed
Fragmentation of Ecological Corridors and disruption of Ecological processes and animal movement as a result of artificial barriers (operations)	Medium High	Low Medium	Reassessed on the scale of the stockyard
Road mortality of fauna from trucks, trains and other service vehicles (operations)	Medium	Low	Reassessed
Faunal mortalities resulting from fences (mammals and reptiles) (operations)	Medium	Low	Reassessed
Mortalities resulting from poaching (mammals) (operations)	Medium	Low	Reassessed
Temporary loss of habitat (decommissioning)	Medium	Low	No change to original assessment
Partial restoration of habitat due to rehabilitation of the site	Low	Low	No change to original assessment
Partial reestablishment of disrupted Ecological Processes	Low	Low	No change to original assessment

4.3.4 Impacts on Terrestrial Biodiversity

Risk of Manganese dust will be reduced significantly as a result of the proposed covering of the Stockyard and Conveyor, will likely reduce this risk substantially, in particular in the natural vegetation that will be in close proximity as well as the long term. Implementation of the proposed covering of the stockyard and Conveyor amendments will reduce this significance to Very Low rather than Low/Very Low (Pote, 2023).

The mitigation recommendations in the 2013 FEIR remain valid and include:

- Measures as per the Air Quality Specialist Report to be implemented to reduce the likelihood of wind-borne Manganese dust.

Table 10: Impacts on Terrestrial Biodiversity

Terrestrial Biodiversity Impact	
Phase	Operational Phase
Nature	Long-term Effects of Manganese Dust on Adjacent Vegetation
Status	Negative (-), Indirect
Extent	Local – 2
Duration	Long term - 3
Intensity	Medium - 3
Reversibility	Low - 2
Replaceable	Low - 2
Cumulative	Low - 2
Probability	Highly Probable - 3
	$(2+3+3+2+2)*3=42$
Level of significance without mitigation	Medium -
Significance with mitigation	Very Low -
Confidence	Medium

4.3.5 Impacts on Terrestrial Animals

The assessment considers the significance of amendments to the features of the stockyard (i.e. size, layout, and adding covering to reduce the emission of windblown Manganese Ore dust) as well as the overland conveyor system (i.e., adding covering). Impacts on animal species are expected to emerge either directly, through disturbances and mortalities, or indirectly, through habitat loss and transformation. These impacts may in turn influence the ecological processes facilitated by animal species. The significance of impacts on animal species depends on a range of factors, including the area of influence, the duration, the extent of current threats (not project related), the uniqueness and/or sensitivity of the habitat, and the uniqueness and/or sensitivity of the animal species occupying those habitats (Landman, 2023).

Amendment / additional mitigation measures during construction include (Landman, 2023):

Disturbance to and mortality of animal species during habitat clearing for the construction of the stockyard:

- Limit habitat clearing to a minimum.
- Use existing roads and access routes as far as possible.
- Clearly demarcate all construction areas to avoid the unplanned loss, transformation of habitat.
- Conduct a pre-construction walk through (Search & Rescue) of the project area to remove animal species threatened by construction activities. Threatened species should be removed to similar habitat within proximity of the project area by the Environmental

Control Officer (ECO) or other suitably qualified person. Permits for the removal of animal species must be obtained from the relevant authorities where appropriate

Mortality of animal species due to fencing of the stockyard:

- Avoid using electric fencing if possible.
- If electric fencing is necessary, fence design should be modified to avoid animals (especially tortoises) getting trapped and electrocuted. This can be achieved by lifting the lowest electrified strand 30 cm from the ground.

Disturbance to and mortality of animal species due to poaching by construction staff:

- Construction staff should undergo environmental induction before construction commences to raise awareness and reduce potential animal impacts. Conservation orientated clauses should form part of construction contracts, complete with penalty clauses for non-compliance.
- Construction camps: i) ensure strict control of the movements of construction staff to reduce animal disturbances, ii) ensure strict poaching control, iii) exclude all domestic/feral dogs and cats.

Disturbance to and mortality of animal species along roads due to construction vehicles:

- Use existing roads and access routes as far as possible and only use designated roads and tracks; avoid driving off-road.
- Limit the travel speeds (< 40 km/h) of construction vehicles to reduce disturbances to and mortalities of animal species.
- Ensure appropriate vegetation management along roads for early detection of the presence of animal species.
- Ensure appropriate stormwater management to prevent the formation of wetlands (i.e., foci of animal activity) along roads.

Loss and transformation of habitat during the construction of the stockyard will influence animal communities:

- Limit habitat clearing to a minimum.
- Use existing roads and access routes as far as possible and only use designated roads and tracks; avoid driving off-road.
- Clearly demarcate all construction areas to avoid the unplanned loss, transformation of habitat.
- Locate construction camps and equipment stockpiles in degraded areas.
- Construction camps and construction staff: i) ensure strict control of the movements of construction staff, ii) prohibit fuel-wood collection and campfires; provide alternative fuels, iii) prohibit the feeding of all animals, iv) develop and implement a suitable Waste Management Plan to prevent increases in the incidence of opportunistic species (e.g., vervet monkeys, pied crows, starlings, sparrows, rats and mice) that displace other indigenous animal species and come into conflict with humans.
- Develop and implement: i) Alien and invasive plant management plan to eradicate these species, ii) Rehabilitation plan for the rehabilitation of disturbed areas where appropriate,

and iii) Erosion management plan. Plans should be developed by appropriately qualified specialists and monitored by the ECO.

- Hazardous materials (chemicals, fuels, oils) should be stored appropriately to prevent soil contamination. Accidental spills should be cleaned up immediately and appropriately

Amendment / additional mitigation measures during operations include (Landman, 2023):

Mortality of animal species due to fencing of the stockyard:

- Ensure regular (every 2-days) fence-checks for the removal of animal species that might be trapped.
- Ensure that access gates are kept closed to avoid animal species accidentally accessing the stockyard and getting trapped. Animals entering the stockyard should be removed to similar habitat within proximity of the project area by a suitably qualified person.

Disturbance to and mortality of animal species due to poaching by stockyard staff:

- Stockyard staff should undergo environmental induction to raise awareness and reduce potential animal impacts.
- Limit staff movements to clearly designated areas and access routes where possible. Ensure strict poaching control.

Disturbance to and mortality of animal species along roads due to Manganese Ore transport vehicles:

- Use existing roads and access routes as far as possible and only use designated roads and tracks; avoid driving off-road.
- Limit the travel speeds (< 40 km/h) of transport vehicles to reduce disturbances to and mortalities of animal species.
- Ensure appropriate vegetation management along roads for early detection of the presence of animal species.
- Ensure appropriate stormwater management to prevent the formation of wetlands (i.e., foci of animal activity) along roads.

Accumulation of windblown Manganese Ore dust on plants will influence habitat conditions for animal communities:

- Ensure covering the stockyard and overland conveyor system.
- Ensure strict adherence to mitigation measures identified as part of the amended air quality specialist assessment.
- Develop and implement a Manganese Ore dust monitoring programme for habitats adjacent to the project area.

Direct and indirect impacts on animal species will cause disruption of the ecological processes facilitated by animals:

- Limit habitat clearing to a minimum.
- Use existing roads and access routes as far as possible.
- Develop and implement: i) Alien and invasive plant management plan to eradicate these species, and ii) Rehabilitation plan for the rehabilitation of cleared areas.

Table 11: Impacts on Animal Species

Animal Species Impacts					
Phase	Construction Phase				
Nature	Disturbance to and mortality of animal species during habitat clearing for the construction of the stockyard	Mortality of animal species due to fencing of the stockyard	Disturbance to and mortality of animal species due to poaching by construction staff	Disturbance to and mortality of animal species along roads due to construction vehicles	Loss and transformation of habitat during the construction of the stockyard will influence animal communities
Status	Negative (-), Direct	Negative (-), Direct	Negative (-), Direct	Negative (-), Direct	Negative (-), Direct
Extent	Site – 1	Site – 1	Local – 2	Local – 2	Site – 1
Duration	Permanent - 4	Long term - 3	Long term - 3	Long term - 3	Permanent - 4
Intensity	Medium - 3	Low - 2	Low - 2	Medium - 3	Medium - 3
Reversibility	Medium - 3	Low - 2	Low - 2	Medium - 3	Medium - 3
Replaceable	Low - 2	Low - 2	Low - 2	Medium - 3	Low - 2
Cumulative	Medium - 3	Low - 2	Low - 2	Medium - 3	Medium - 3
Probability	Definite - 4	Highly Probable - 3	Highly Probable - 3	Highly Probable - 3	Definite - 4
Level of significance	$(1+4+3+3+2+3)*4=64$	$(1+3+2+2+2+2)*3=36$	$(2+3+2+2+2+2)*3=39$	$(2+3+3+3+3+3)*3=51$	$(1+4+3+3+2+3)*4=64$
	High -	Low -	Low -	Medium -	High -
Significance with mitigation	Low -	Low -	Low -	Low -	Low -
Confidence	High	High	High	High	High

Animal Species Impacts					
Phase	Operational Phase				
Nature	Mortality of animal species due to fencing of the stockyard	Disturbance to and mortality of animal species due to poaching by stockyard staff	Disturbance to and mortality of animal species along roads due to Manganese Ore transport vehicles	Accumulation of windblown Manganese Ore dust on plants will influence habitat conditions for animal communities	Direct and indirect impacts on animal species will cause disruption of the ecological processes facilitated by animals
Status	Negative (-), Direct	Negative (-), Direct	Negative (-), Direct	Negative (-), Indirect	Negative (-), Indirect
Extent	Site – 1	Local – 2	Local – 2	Local – 2	Site – 1
Duration	Long term - 3	Long term - 3	Long term - 3	Long term - 3	Permanent - 4
Intensity	Low - 2	Low - 2	Medium - 3	Medium - 3	Medium - 3
Reversibility	Low - 2	Low - 2	Medium - 3	Medium - 3	Medium - 3
Replaceable	Low - 2	Low - 2	Medium - 3	Medium - 3	Low - 2
Cumulative	Low - 2	Low - 2	Medium - 3	Medium - 3	Medium - 3
Probability	Highly Probable - 3	Highly Probable - 3	Highly Probable - 3	Highly Probable - 3	Definite - 4
Level of significance	$(1+3+2+2+2+2)*3=36$	$(2+3+2+2+2+2)*3=39$	$(2+3+3+3+3+3)*3=51$	$(2+3+3+3+3+3)*3=51$	$(1+4+3+3+2+3)*4=64$
	Low -	Low -	Medium -	Medium -	High -
Significance with mitigation	Low -	Low -	Low -	Low -	Low -
Confidence	High	High	High	High	High

4.4 Avifaunal Assessment

4.4.1 Summary of Specialist Findings:

The Avifauna Impact Assessment was undertaken by Dr Paul Martin, refer to **Appendix E5**.

Changes to the avifauna in the NMET Project Areas of Influence (PAOI) since 2013 include (Martin, 2023):

- The collapse of the African Penguin breeding colony on the St Croix Island group from 7838 pairs in 2013 to 3600 pairs in 2019 and 560 pairs in 2021.
- There are no longer large breeding colonies on the Coega Saltpans (probably due to mammalian predation), the Kelp Gull colony has moved to the Port of Ngqura and the numbers of breeding pairs have doubled.
- Martial Eagle no longer breeds in the Coega SEZ.
- There has been little change to other avifauna parameters. The Coega Saltpans and adjacent Coega River remain a very important habitat for feeding waterbirds.
- There has been little change to the bird habitats and environment along the NMET corridor between the Rail Compilation Yard and Port of Ngqura. The Coega OSMP was revised in 2014. The NMET infrastructure does not fall within the OSMP except where road and rail infrastructure crosses the rivers.

The avifaunal specialist is of the opinion that the marginal increase in impacts on avifauna due to the proposed increase in throughput of manganese ore will be more than compensated for by the improvement in the management and containment of the ore. None of the identified impacts on avifauna are expected to increase in significance and the Change in Scope is supported.

4.4.2 Impacts on Avifauna per 2013 FEIAR

The direct, indirect and cumulative impacts on avifauna that were assessed in the 2013 Avifauna Impact Assessment and their assessed significance before and after mitigation are given in **Table 12**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope (Martin, 2023).

Table 12: Avifaunal Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Habitat fragmentation / reduction (Grass Ridge Bontveld) for both the Preferred and Alternative compilation yard layout	Medium	Medium	No longer applicable due to proposed changes
Habitat fragmentation / reduction (Sundays Valley Thicket) due to the doubling of the railway	Medium	Medium	No longer applicable due to proposed changes
Sedimentation from storm water run-off affecting Coega River and saltpans (construction and operation)	Medium	Low	Applicable: Reduction in sedimentation expected during operations
Increased disturbance (noise/	Medium	Low	Applicable but any change will

movement /lights) during construction			be minimal
Collision with powerlines/trains (operation)	High	Low to Medium	No additional powerlines. Up to 20% increase in train traffic
Fugitive manganese dust on terrestrial vegetation (operation)	Low	Low	Applicable: Reduction in dust expected
Fugitive manganese dust on Coega River & salt pans (operation)	Medium	Low	Applicable: Reduction in dust expected
Routing of conveyor between Stockyard and port (Preferred Option)	Low	Low	Not Applicable: Approved conveyor route will not change
Routing of conveyor between Stockyard and port (Alternative Option)	Low/Medium	Low	Not Applicable: This is not the approved route – it has been assessed if route is changed
Potential pollution from ships and port operations	Medium	Low	Applicable: Relates to increase in shipping traffic into Port of Ngqura
Fugitive manganese dust on islands of Algoa Bay (operation)	Low	Very Low	Applicable: Reduction in dust expected
Blasting	Low	Very Low	Not Applicable: No additional blasting anticipated
Cumulative: Collision with project powerlines & adjacent proposed wind farm infrastructure	High	Medium to High	Not Applicable: No additional powerlines. Only 2 wind turbines have been constructed in SEZ
Cumulative: Pollution of harbour and nearshore waters	High	Low to Medium	Applicable: Relates to increase in shipping and diversity of products handled at Ngqura

4.4.3 Impacts on Avifauna

4.4.3.1 *Habitat Loss and Fragmentation: Manganese Stockyard*

This is new impact identified in the 2023 specialist study.

The Site Ecological Importance for avifauna of the Manganese Stockyard development footprint is Low. Walk Transects conducted in 2016 and in 2023 found no Priority Bird Species and no areas of avifaunal sensitivity within the development footprint. Birds using the terrestrial habitat are generally common and widespread, albeit that some are endemic to South Africa. The Coega River and Coega Saltpans however are very important avifauna habitat and impacts on these habitats from the NMET project must be kept to a minimum. The impact on avifauna of the Manganese Stockyard was assessed to be **Low** both before and after mitigation (Martin, 2023).

Table 13: Impact on avifauna due to habitat loss and fragmentation

Impact on avifauna	
Phase	Construction Phase
Nature	Impact on avifauna due to habitat loss and fragmentation: Manganese Stockyard and rail
Status	Negative (-), Direct
Extent	Local – 2

Impact on avifauna	
Phase	Construction Phase
Duration	Long term - 3
Intensity	Low - 2
Reversibility	Medium - 3
Replaceable	Low - 2
Cumulative	Medium - 3
Probability	Probable - 2
	$(2+3+2+3+2+3) \times 2 = 30$
Level of significance without mitigation	Low -
Significance with mitigation	Low -
Confidence	High

Mitigation Measures:

Standard Environmental Management Specifications apply to construction and operational activities within the Coega SEZ and these provide specifications to minimize the environmental impact of projects (e.g. Minimise construction footprint, noise, light and disturbance. Management of construction and operational materials, chemicals, vehicles, machinery and equipment, dust control, waste management, provision and control of ablutions and dining areas, worker induction and toolbox talks).

- Within the Coega SEZ it is compulsory to comply with the Coega OSMP and Management Guidelines to prevent encroachment into the OSMP and to manage impacts on the OSMP.
- Activities controlled by CDC must comply with:
CDC's Standard Environmental Specification for Construction;
CDC's Standard Vegetation Specification for Construction;
CDC's Operational Safety, Health and Environmental Management Plan
- Activities controlled by Transnet must comply with TNPA's Construction Environmental Management Programme for the Port of Ngqura and relevant sections of the Environmental Management Programme for the Operation of the Port of Ngqura.

Specific mitigation measures, some of which are included in the Standard Environmental Management Specifications above include:

- Limit clearing of vegetation to the minimum required for the development of the project and clearly demarcate areas to be cleared, areas where vegetation is to be retained and No-Go areas (e.g. Coega OSMP boundaries and 1:100 year floodline falling outside of the approved footprint).
- Condition 26 of the Environmental Authorisation requires an ornithologist to ground truth every footprint. Due to the time lag between project authorization and commencement of the project, it is recommended that this condition be retained and a walk through of areas to be cleared of vegetation should be undertaken prior to clearing commencing to

check for breeding by Priority Species. If evidence of breeding is found the area around the nest should not be disturbed until breeding has finished.

- Cleared vegetation should be stockpiled on degraded and previously cleared areas.
- Ideally locate construction camps and laydown areas on degraded and previously cleared areas that must be above the 1:100 year floodline and outside of the Coega OSMP.
- Rehabilitate disturbed areas that are not part of the infrastructure footprints with appropriate indigenous vegetation
- Maintain disturbed areas and the project development footprint free of alien and invasive vegetation for the duration of the project.
- Activities, personnel and machinery should be confined to the demarcated development area and approved access routes during all phases of the project.
- Maintain and keep in good condition the Coega OSMP areas adjacent to the development and control project impacts on these areas.
- All lighting must be down / shielded lighting, not directed towards the Coega OSMP areas and should be kept within the development area boundaries and at the minimum required for security and health and safety.
- Security fencing must be of a design that does not entrap, snag, electrocute or present a collision hazard to avifauna. Design features such as avoiding twin fence lines (entrapment hazard), avoiding electrified strands and / or barbed strands close to the ground and along the top of the fence and ensuring the fence is visible to birds must be considered (Birdlife SA 2020).

4.4.3.2 Impact of Roosting and Nesting by Urban Adapted Bird Species

This is new impact identified in the 2023 specialist study.

Construction of a large structure enclosing the Manganese Stockyard is likely to provide roosting and nesting areas for urban adapted bird species (e.g. sparrow, pigeon and starling species, some of which are naturalized non-indigenous species). While these species can out-compete the naturally occurring avifauna, especially in an urban setting, the potential impact on the surrounding natural avifauna is considered to be **Negligible** and is not assessed further.

Droppings, nesting material and the carcasses of dead adults and chicks may cause an environmental health nuisance during operations at the stockyard (Martin, 2023).

Mitigation Measures:

- Design infrastructure (especially the structure enclosing the stockyard) to minimize nesting and roosting by urban adapted bird species. Passive bird deterrents may be required (e.g. spikes, reflective rotating prisms). Urban Raptor Project principles (using owls and raptors to prevent nuisance bird problems) may be required.

4.4.3.3 **Sedimentation from stormwater run-off affecting the Coega River and saltpans:**

Stormwater runoff containing sediment mobilised during construction has the potential of changing the in-stream characteristics of the Coega River and causing sedimentation of the saltpans (Martin, 2023).

During the operational phase spilled manganese ore has the potential to be deposited in the Coega River by stormwater if not controlled adequately. Enclosure of the Manganese Stockyard should significantly reduce the quantity of ore mobilised in stormwater during the operational period. The 2013 FEIR assessed the impact to be Medium before and Low after mitigation and the Change in Scope reduces this to **Low** both before and after mitigation (Martin, 2023).

Alteration of the Coega River habitat could reduce the value of the river to feeding waterbirds in particular. Sedimentation of the saltpans may marginally reduce the feeding area available to wading birds (Martin, 2023).

The recommended mitigation must remain: Stormwater to be channelled into detention ponds to trap sediment and ore, thereby preventing it from entering the Coega River.

Table 14: Avifauna Impacts – Ore laden sedimentation / stormwater runoff affecting Coega River

Impact on avifauna	
Phase	Operational Phase
Nature	Impact on avifauna due to ore in stormwater runoff affecting the Coega River
Status	Negative (-), Indirect
Extent	Local – 2
Duration	Long term - 3
Intensity	Low - 2
Reversibility	Low - 2
Replaceable	Low - 2
Cumulative	Medium - 3
Probability	Probable - 2
	$(2+3+2+2+2+3) \times 2 = 28$
Level of significance without mitigation	Low -
Significance with mitigation	Low -
Confidence	High

4.4.3.4 **Impact on avifauna as a result of fugitive manganese ore dust on vegetation:**

The Air Quality study in the 2013 FEIR indicated that the Manganese Stockyard can be subject to some deposition of fugitive manganese dust. Especially during dry periods manganese dust deposition may build up on vegetation. This was assessed to have a Low impact on bush-dwelling birds, both before and after mitigation (CSIR 2013), (Martin, 2023).

Enclosing the Manganese Stockyard will reduce fugitive manganese dust and will reduce the impact on bush-dwelling birds. The Change in Scope reduces this to **Low** both before and after mitigation.

The mitigation recommendations in the 2013 FEIR include:

- Dust abatement measures presented in the Air Quality study must be implemented to ensure unnecessary fugitive manganese ore dust generation does not occur. This recommendation remains valid.
- Transects through the vegetation which potentially receive the greatest quantity of manganese ore dust deposition should be monitored for their use by birds. A baseline should be established during the breeding season prior to any construction and then monthly for at least two years after commencement of operations. In the long-term breeding season surveys should be conducted annually.

Recommended Amendment to Bird Monitoring Protocol:

- Monthly bird monitoring is deemed to be excessive. Quarterly bird surveys (one in each season) should be adequate to monitor the impact of the NMET project on avifauna.

4.4.3.5 Impact on avifauna of fugitive manganese ore dust on Coega River and Saltpans:

The 2013 FEIR stated that the effect of fugitive manganese dust on both the Coega River and saltpans is unlikely to be significant since the dust consists predominantly of manganese oxide which is relatively insoluble in water, both fresh and (hyper-) saline. The dust could, if present in quantity, reduce the feeding efficiency of filter feeders such as brine shrimps which are fed upon by flamingos, avocets and other waders. Filter-feeding crustaceans, e.g., brine shrimps, may ingest manganese dust particles directly should these particles fall into their food particle size range. These crustaceans containing ingested particles may in turn be consumed by birds with the possibility that heavy metals will be absorbed by them (CSIR 2013), (Martin, 2023).

Enclosing the Manganese Stockyard will reduce fugitive manganese dust and will reduce the impact on birds (mainly feeding waterbirds) using the Coega River and Saltpans. The 2013 FEIR assessed the impact to be Medium before and Low after mitigation and the Change in Scope reduces this to **Low** both before and after mitigation (Martin, 2023).

The mitigation recommendations in the 2013 FEIR include:

- Dust abatement measures presented in the Air Quality study must be implemented to ensure unnecessary fugitive manganese ore dust generation does not occur.
- Monitoring of the avifauna (bi-annual CWAC counts) and of the breeding colonies on the saltpans be continued.
- For completeness, it is also recommended that the status of the invertebrate fauna of the Coega River be assessed prior to, and after, commencement of operations to determine whether fugitive manganese ore dust has any effect on the aquatic fauna.

All of the above mitigation recommendations remain valid.

Impact on avifauna	
Phase	Operational Phase
Nature	Impact on avifauna due to ore in stormwater runoff affecting the Coega River
Status	Negative (-), Indirect
Extent	Local – 2
Duration	Long term - 3
Intensity	Low - 2
Reversibility	Low - 2
Replaceable	Low - 2
Cumulative	Low - 2
Probability	Probable - 2
	$(2+3+2+2+2+2) \times 2 = 26$
Level of significance without mitigation	Low -
Significance with mitigation	Low -
Confidence	High

4.4.3.6 *Impact on avifauna as a result of potential pollution from ships and port operations:*

The 2013 FEIR identified this as both an Indirect and Cumulative Impact during Operations. The NMET project will result in greater shipping traffic into the Port of Ngqura with the concomitant risk of accidents and spillages. Provided all the ore-carriers are MARPOL compliant and the port has an effective oil spill contingency plan the impact of normal operations will be low. In the event of a major accident resulting in a serious oil spill the impact on the Endangered African Penguin (and other marine and coastal birds) could be severe. This impact is generated by shipping in general and not specifically by the manganese terminal project and is thus beyond the purview of this assessment (Martin, 2023).

As the Port of Ngqura develops with an increase in shipping and a greater diversity of products being handled (e.g. Tank Farm, Liquid Natural Gas, Cement) there is an increase in the risk of major accidents and pollution incidents (e.g. product spillages, leaks of hydraulic fluids from port equipment) (Martin, 2023).

Increasing the throughput of Manganese Ore from 16 to 22mtpa will increase the number of ship visits and quantity of port equipment (e.g. ship loaders) thereby marginally increasing the risk of pollution into the marine environment. The 2013 FEIR assessed the impact due to the NMET project to be Medium before and Low after mitigation. The Cumulative Impacts were assessed to be High before and Low-Medium after mitigation. The approximately 20% increase in manganese ore throughput is very unlikely to significantly change the pollution risk to the marine environment and the impact significance as assessed in the 2013 FEIR remain valid (Martin, 2023).

The mitigation recommendations in the 2013 FEIR, that remain valid, include:

- Increased vigilance both in terms of safe vessel operation and the prevention of spills of product and from port equipment.
- All ports are required to have oil spill contingency plans. For the Port of Ngqura this should encompass all port operations that in the event of an accident or failure result in pollutants entering the sea. This emergency spill response plan must be supported by a full suite of spill response equipment, regular response training, and realistic field exercises.
- The Project Description includes a 10MI stormwater control dam at the quay to prevent contaminated water entering the marine environment and this must be implemented.

4.4.3.7 Other Assessed Impacts that may be influenced by the Change in Scope:

From **Table 12** other impacts that were assessed and that may be influenced by the change in scope include (Martin, 2023):

- a) Increased disturbance to avifauna due to e.g. noise, movement and lights, during construction. Any changes due to the Change in Scope will be marginal and are adequately covered by the mitigation recommendations in Section 4.4.3.1 (Habitat Loss and Fragmentation).
- b) Bird collisions with powerlines and trains during operations. The Change in Scope should not require more powerlines than those already planned. There is likely to be an approximate 20% increase in train traffic between the Compilation Yard and Manganese Stockyard that is very unlikely to significantly increase bird mortality of Priority Species due to train collisions.

While the Generic EMPRs for Substation and Overhead Electricity Transmission and Distribution Infrastructure (GN 435 dated 22 March 2019) are not applicable to this application as Listed Activities relevant to powerlines have not been applied for, the requirements of the EMPRs include best practice and should be adhered to where relevant to this project.

The design of distribution powerlines used by NMBM in the Coega SEZ and surrounding areas are very high risk for bird collisions and electrocutions (Martin 2023). Appropriate engineering designs should be used to minimize and prevent bird electrocutions and collisions in addition to the use of bird flight diverters.

Apart from two wind turbines the Wind Energy Facilities planned in the Coega SEZ have not been constructed. This reduces the potential cumulative risk of collisions for Priority Bird Species.

- c) The impact of manganese dust deposition on the seabird breeding islands of Algoa Bay was assessed to be Low and Very Low after mitigation. The increase in ore dust due to the approximate 20% increase in annual ore throughput is likely to be compensated for by the improvement in dust abatement measures, especially full enclosure of the conveyor systems and improved containment at the ship loaders. Consequently no change to the significance of the impact is expected.

4.5 Groundwater Impact Assessment

4.5.1 Summary of Specialist Findings

The 2023 Groundwater Quality study was undertaken by Richard Williamson from GHT Consulting Scientists, refer to **Appendix E6**.

The shallow groundwater of the area is highly saline and should not be used for socio-economic purposes. There is a deeper higher quality aquifer beneath the site, however that is protected by a thick impermeable clay layer. The role the shallow groundwater does play is that of providing baseflow to the Coega River and this function should not be negatively impacted (Williamson, 2023).

With respect to shallow aquifer groundwater levels, it is likely that the groundwater contributes to the Coega River baseflow, especially in periods of low rainfall, as the groundwater level is very shallow in places. As the groundwater is anticipated to contribute to baseflow, abstraction should not occur from the upper aquifer as groundwater flow gradients may be reversed and the flow of the ephemeral Coega River reduced (Williamson, 2023).

The shallow aquifer is saline and the groundwater monitoring shows clear signs of being impacted. All monitoring boreholes sampled in the hydrocensus have bacteriological contamination, including E.coli and Faecal Coliforms (Williamson, 2023).

In all boreholes and surface samples taken from the Coega river, chemical parameters are significantly high in most chemical parameters such as Cl, K, Na, Mg and sulphates. Trace amounts of Arsenic were present in all surface and groundwater samples. The use of the shallow groundwater is not recommended due to its poor quality and high salinity (Williamson, 2023).

Effort needs to be made to improve this shallow aquifer water quality and a precautionary approach is required in that all potentially contamination activities from the proposed manganese ore activities have high levels of protection in place to ensure minimal impact. The reason for this is the shallow aquifer overlies a very important deeper aquifer and although there is a significant aquiclude between the two aquifers, it is still deemed necessary that the deeper aquifer must be protected using all measures (Williamson, 2023).

If groundwater is required on site for processing, offices, ablutions, dust suppression etc., the only aquifer to be considered is the deeper confined Coega Ridge Aquifer (Peninsula Formation of the Table Mountain Group). An additional investigation would be required into the feasibility of abstracting groundwater from the deeper aquifer. Existing lawful users of this aquifer would need to be considered, detailed geohydrological work would be required to identify optimal borehole positions and associated hydrogeological conditions. The use of the groundwater would also require licensing from the Department of Water and Sanitation (DWS) (Williamson, 2023).

The following monitoring actions recommended (which is line with the monitoring recommendations of the 2013 assessment):

- There is a good and regularly monitored network of boreholes in the IDZ area, and this monitoring must continue, however the monitoring network will need to be expanded to be project specific. Additional groundwater monitoring sites have been proposed following the outcome of this hydrocensus and taking into account the development of the project (Williamson, 2023). These additional sites can be seen **Appendix E6**.

- The boreholes must be drilled to the top of the impermeable clay layer (and no deeper). They need to be fully screened and have an appropriately designed gravel pack installed. The boreholes must be fully developed prior to use and proper sampling techniques must be followed. A groundwater monitoring protocol needs to be established. Monitoring on a quarterly basis should suffice (Williamson, 2023).

4.5.2 Impacts per 2013 FEIAR

The groundwater impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 15**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 15: Groundwater Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Construction phase:			
Increased dust and other pollutants reaching groundwater	Low -	Very low -	No change in assessment
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	No change in assessment
Impact of ancillary activities carried out at the compilation Yard on groundwater	Medium -	Low -	No longer applicable due to proposed changes
Operational phase:			
Dust from the stockpile reaching groundwater	Low -	Very low -	No longer applicable due to proposed changes
General dust from the operation (PM10 and PM25)	Low -	Very low -	No change in assessment
Leachate from the stockpile reaching groundwater	Medium -	Low -	No longer applicable as the proposed changes involve having the stockpiles within an enclosed structure
Impact of "clean stormwater" outflow on groundwater	Low -	Very low -	No change in assessment
Impact of potentially polluted stormwater outflow on groundwater	Medium -	Low -	No change in assessment
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	No change in assessment
Impact of ancillary activities at the compilation yard on groundwater.	Medium -	Low -	No longer applicable due to proposed changes
Decommissioning phase:			
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	Not applicable to changes

4.5.3 Groundwater Impacts

The groundwater impacts related to construction works as assessed in the 2013 FEIAR are not expected to change and have not been re-assessed. The mitigation measures provided in 2013 remain valid.

There is no anticipated change in the 2013 assessment of the following groundwater impacts during the operational phase:

- Impact of the dust fall out on groundwater remains valid as fugitive manganese ore dust is still expected from the various operations.
- Impact of stormwater outflows on groundwater remains valid as there would still be “clean” and “potentially polluted stormwater”.
- Impact of accidental oil spillage/fuel leakages on groundwater remains valid as there is still the potential of accidental spillages / leakages.

The mitigation measures identified in the 2013 assessment remain valid for the impacts identified above.

The following impacts are considered no longer applicable as the stockpiles will be within an enclosed structure and no leachate is expected:

- Dust from the stockpile reaching groundwater.
- Impact of stockpile leachate on groundwater.

4.6 Surface Water and Aquatic Ecology Impact Assessment

4.6.1 Summary of Specialist Findings

The Surface Water and Aquatic Ecology Impact Assessment was undertaken by Dr Brian Colloty, refer to **Appendix E7**.

The amendment layout portions of the development falls within the Quaternary catchment M30B. The proposed development will have a direct link to the Coega Estuary and the marine environment. Several aquatic systems are known within the greater study area and included watercourses (drainage lines), rivers, pans / depressions (natural & modified) and the highly modified Coega Estuary.

Two distinct water courses were observed within the study area. These included the Coega River and one of its unknown tributary's. A dominant feature of the study area is the degree to which the lower portion of the Coega River has been modified, either through past flooding or anthropogenic modifications (roads, quarries, salt pans, brick yards and dumping sites). Further as the systems has seen some meandering within its floodplain, several oxbow formations associated with the Coega River were also observed, one of which is located within 500m of the site. Although isolated and fragmented, these systems still retain some form of function, and the Present Ecological State in 2013 was rated C (Moderately Modified) within the upper and middle reaches. Similarly the Ecological Importance and Sensitivity (EIS) of the Coega River would also be moderate, due to the degree of degradation already found within the system. Based on the infield assessments, these can be upheld. The unknown tributary, not affected by the proposed layout amendment, was rated as higher with regard PES and EIS, as this system contained fewer impacts than those observed in the Coega River itself. The impacts were mostly related to cattle and informal crossings and bush encroachment. These impacts on the tributary reduce the habitat continuity and thus the PES was rated as A/B (mostly natural). The EIS was B, as the riparian zones are largely intact, however the importance and sensitivity is lowered due to the lack of surface flows, which limit the formation of any significant instream habitat.

The proposed conveyor line crosses three small watercourses that have been transformed by stormwater management features from the N2 or current port rail / road network. The southernmost two are located within the estuarine functional zone, while the northern system will be included into the revised Water Use License being applied for. Those within the estuarine zone are completely transformed by the stormwater management features while the small drainage line receives runoff from the N2 but contains some natural vegetation. This watercourse crossing is located at 33°46'49.05"S, 25°40'4.68"E.

Most of the wetland systems observed within the study area were consistent with dolines or natural depressions, occurring in association with much larger polje type formations. None of these as well as the oxbow formations (also a type of depression in this context), will be affected by the proposed layouts changes.

From a catchment management perspective, the proposed project could affect a number of wetland areas. These wetlands perform an important role in attenuating surface water flows, while providing a series of differing wetland habitats form part of a wetland network within the region. The draft layout plan provided in 2023 has accounted for this and provides protection of the observed wetlands and remaining portions of the estuarine functional zone (Colloty, 2023).

4.6.2 Impacts per 2013 FEIAR

The surface water and aquatic ecology impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 16**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 16: Surface Water and Aquatic Ecology Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Manganese Ore Export Terminal and associated infrastructures (including shiploading) – Preferred and Alternative conveyor route - Construction			
Potential loss of wetland habitat	N/A	N/A	N/A
Potential loss of riverine habitat	Medium -	Low -	No change to original assessment
Potential changes to the hydrological regime	Medium -	Low -	No change to original assessment
Potential impacts on water quality	Medium -	Low -	No change to original assessment
Loss of ecosystem services	High -	Low -	No change to original assessment
Habitat fragmentation	High -	Low -	No change to original assessment
Loss of species of special concern	Low -	Low -	No change to original assessment
Erosion and sedimentation	Medium -	Low -	No change to original assessment
Manganese Ore Export Terminal and associated infrastructures (including shiploading) – Preferred and Alternative conveyor route – Operational Phase			
Potential changes to the hydrological	Medium -	Low -	No change to original

regime			assessment
Loss of ecosystem services	High -	Low -	No change to original assessment
Potential impacts on water quality	Medium -	Low -	No change to original assessment
Erosion and sedimentation	Medium -	Low -	No change to original assessment
Impacts associated with the compilation yard and doubling of the railway line are not repeated here as these are no longer applicable due to proposed changes			

4.6.3 Surface Water and Aquatic Ecology Impacts

There is no anticipated change in the 2013 assessment of the following aquatic impacts (Colloty, 2023):

- Potential loss of riverine habitat as no additional crossings over the Coega River or other watercourses have been identified with the information provided.
- Potential changes to the hydrological regime as stormwater runoff will still be experienced.
- Potential impact on water quality and risk to the aquatic environment as the construction activities remain the same. Although the storage and handling of the manganese will be undertaken within enclosed structures, spillages may still be experienced from conveyor systems that may breakdown and from fugitive emissions. As a result the impact during the operational phase is considered to remain the same.
- Loss of ecosystem services as no additional crossings over the Coega River or other watercourses have been identified with the information provided.
- Habitat fragmentation as no additional crossings over the Coega River or other watercourses have been identified with the information provided.
- Loss of species of special concern as no aquatic flora and fauna species of special concern were noted previously.
- Erosion and sedimentation as hard engineered surfaces and structures would still occur on site.

The mitigation measures identified in the 2013 assessment remain valid for the impacts identified above. Further recommendations and monitoring guidelines included in the 2013 assessment are upheld and included the following (Colloty, 2023):

- Stormwater should be managed using suitable structures such as swales, gabions, and rock rip-wrap so that any run-off from the development site is attenuated prior to discharge. Silt and sedimentation should be kept to a minimum, using the above-mentioned structures and by also ensuring that all structures don't create any form of erosion.
- Vegetation clearing should occur in parallel with the construction progress to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment.
- All construction materials including fuels and oil should be stored in demarcated areas that are contained within berms / bunds to avoid spread of any contamination into

wetlands or rivers. Washing and cleaning of equipment should also be done in berms or bunds, to trap any cement and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any river channel. It is therefore suggested that all construction camps, lay down areas, batching plants or areas and any storage areas should be more than 50m from any demarcated wetland or riverine area.

- It is also advised that an Environmental Control Officer, with a good understanding of the local flora be appointed during the construction phase. The ECO should be able to make clear recommendations with regards to the re-vegetation of the newly completed / disturbed areas, using selected species detailed in this and the terrestrial vegetation report. All alien plant re-growth must be monitored and should it occur, these plants should be eradicated. Where any works (e.g. storm water control measures) near a wetland or river is required specific attention should be paid to the immediate re-vegetation of cleared areas to prevent future erosion of sedimentation issues.
- All the relevant CDC IDZ / SEZ environmental specifications and monitoring plans should be included into the relevant management plans for this project, with reference to any surface water monitoring plans.

4.7 Integrated Water Management and Waste Management

4.7.1 Summary of Specialist Findings

The 2023 Water Balance study was undertaken by Richard Williamson from GHT Consulting Scientists, refer to **Appendix E6**.

Expected potable water required for the project is 20 m³/day and the expected service water required for the project is 2445 m³/day. The fire water system requires 126 m³/time. The total water required for the project is 2591 m³/day. The fire water system is not a daily use but for the sake of implication is included in the total daily use (Williamson, 2023).

The sources of water available for the project is from the municipal water supply (potable water) and from the return effluent from the Coega WWTW and Fishwater Flats WWTW which have a capacity of 50 Ml/day and 60 Ml/day respectively. How much of that water is available or already allocated is unknown. Converted to cubic metres the volume of the two WWTW's is 1100m³/day.

The project requires 20 m³/day of potable water and 2571 m³/day of service water. The total volume of water from the Coega and Fishwater Flats WWTW's does meet this demand of service water and fire water but does not account for how much of the water from these sources is available. The potable water will need to be sourced from the municipal supply or from alternative means such as rainwater harvesting or potable groundwater which is only within the deeper aquifer.

If groundwater is required on site for processing, offices, ablutions, dust suppression etc., the only aquifer to be considered is the deeper confined Coega Ridge Aquifer (Peninsula Formation of the Table Mountain Group). An additional investigation would be required into the feasibility of abstracting groundwater from the deeper aquifer. Existing lawful users of this aquifer would need to be considered, detailed geohydrological work would be required to identify optimal borehole positions and associated hydrogeological conditions. The use of the groundwater

would also require licensing from the Department of Water and Sanitation (DWS) (Williamson, 2023).

Water end points are poorly defined at this stage but technical information provided by Coega indicates that water used on site will be reused depending on the water requirements.

The following recommendations are made regarding the way forward for the water balance:

- Flow Meters must be installed at all source points for water being sourced for the project. It has been indicated that the only known source of water will be municipal. A flow meter must be installed on this pipeline to determine the quantity of water being taken from the municipal network and to work towards reducing that footprint through alternative means such as rain harvesting.
- The installation and calibration of flow meters must be done by a SABS certified calibration technician and certificates must be made available upon calibration.
- The location coordinates and serial numbers for the new flow meters, following calibration, must be recorded and kept in a database so that future water balancing can be done.
- Currently the project is still in the planning phase and no flow meter data is available. Therefore, there is insufficient data to undertake a comprehensive water balance for the Ngqura Manganese Export Terminal Project.
- Upon installation of recommended flow meters, monthly recordings must be taken and recorded for at least three months to have sufficient data to compile a comprehensive water balance for the project.

4.7.2 Impacts per 2013 FEIAR

The integrated water and waste management impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 17**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 17: Integrated Water and Waste Management Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Construction			
Increased water use during construction impacts regional water balance	Medium -	Low -	Not applicable to changes
Domestic effluent collection in portable toilets/tanks for transport to appropriate treatment facility enters environment	Medium -	Low -	Not applicable to changes
Construction stormwater discharge into environment during construction	Medium -	Low -	Not applicable to changes
Construction solid waste not appropriately disposed of	Medium -	Low -	Not applicable to changes
Construction hazardous materials/wastes not appropriately disposed of	Medium -	Low -	Not applicable to changes

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Operational Phase			
Increased water used during normal operation impacts regional water balance	Medium -	Low -	Applicable
Domestic effluent discharge into sewer enters environment	Medium -	Low -	Not applicable to changes
Service wastewater discharge into environment	Medium -	Low -	Not applicable to changes
Contaminated stormwater discharge to environment	Medium -	Low -	Not applicable to changes
Hazardous wastes (e.g. chemical, oil waste) disposal into environment	Medium -	Low -	Not applicable to changes
General solid waste disposal into environment	Medium -	Low -	Not applicable to changes
Manganese ore mud waste disposal into environment	Medium -	Low -	Not applicable to changes
Decommissioning Phase			
Increased water used during decommissioning impacts regional water balance	Low -	Low -	Not applicable to changes
Domestic effluent collection in portable toilets/tanks for transport to appropriate treatment facility enters environment	Medium -	Low -	Not applicable to changes
Contaminated stormwater discharge to environment	Medium -	Low -	Not applicable to changes
Demolition solid waste enters environment	Low -	Low -	Not applicable to changes
Hazardous waste spills (oil, chemicals, etc.) on site during decommissioning	Medium -	Low -	Not applicable to changes

4.7.3 Integrated Water Management and Waste Management Impacts

The integrated water management and waste management impacts related to the construction and decommissioning phases, as assessed in the 2013 FEIAR are not expected to change and have not been re-assessed. The mitigation measures provided in 2013 remain valid.

There is no anticipated change in the 2013 assessment of the following integrated water management and waste management impacts during the operational phase:

- Domestic effluent discharge into sewer enters environment.
- Service wastewater discharge into environment
- Hazardous wastes (e.g. chemical, oil waste) disposal into environment
- General solid waste disposal into environment
- Contaminated stormwater discharge to environment

- Manganese ore mud waste disposal into environment as this impact considers the manganese ore mud collected from the on-site dams. Although the amount / volume of manganese ore mud would be less due to the enclosed stockyard, fugitive emissions (manganese dust) are still expected to occur. The lower volumes will entail the dams would require clearing / cleaning out less frequently.

The mitigation measures identified in the 2013 assessment remain valid for the impacts identified above.

The impact of the increased water used during normal operation impacts regional water balance is expected to change due to the expected increase in the volume of service water required. The service water system will provide water for flushing of toilets, dust suppression and other process uses requiring water; as well as fire water systems.

Additional recommendations for the water balance are as provided in Section 4.7.1.

Table 18: Increased water used during normal operation impacts regional water balance Impacts

Water Management Impact	
Phase	Operational Phase
Nature	Increased water used during normal operation impacts regional water balance
Status	Negative (-), Direct
Extent	Local - 2
Duration	Long term - 3
Intensity	Low - 2
Reversibility	Low - 2
Replaceable	Low - 2
Cumulative	Medium - 3
Probability	Definite - 4
	$(2+3+2+2+2+3)*4=56$
Level of significance	Medium -
Significance with mitigation	Low -
Confidence	Medium

4.8 Marine Ecology Impact Assessment

The proposed amendments to enclose the stockyard and a covered conveyor, removal of the compilation yard and rail, and the increase in the throughput of manganese ore are not applicable to the 2013 assessment on marine ecology.

The 2013 assessment and mitigation measures provided remain valid, and are not repeated here.

4.9 Noise Assessment

4.9.1 Summary of Specialist Findings

The 2023 Noise Impact Assessment was undertaken by Barend van der Merwe from dBAcoustics, refer to **Appendix E8**.

The noise intrusion during the construction and operational phase at the stockyard and conveyor will be below the threshold value of 7.0dBA. The noise from the sirens at the stockyard and the train hooting opposite the stock yard (western boundary) may be audible when there is a north westerly wind. The amendment to the approved manganese export terminal will not be in contravention of the Nelson Mandela Bay Metropolitan Municipality Noise By-laws and regular assessments will have to be conducted to ensure compliance (Van der Merwe, 2023).

The noise specialist is of the opinion that the proposed amendments will be in line with the environmental noise standards and guidelines provided that all the noise mitigatory measures are in place and that the Noise Impact Management Plan (NIMP) for the project is adhered to. The NIMP has been included as part of the EMPr.

4.9.2 Noise Impacts per 2013 FEIAR

The noise impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 19**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 19: Noise Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Impact of the construction noise on the Noise Sensitive Areas – Manganese Ore Export Terminal	Low	Low	Reassessed
Impact of the construction noise on the Noise Sensitive Areas – Compilation yard	Low	Low	No longer applicable due to proposed changes
Impact of the manganese ore handling operational noise on the Noise Sensitive areas	Low	Low	Reassessed
Impact of the rail operations on the Noise Sensitive areas	Medium	Low	Not applicable to changes
Impact of the decommissioning phase noise on the Noise Sensitive Areas	Low	Low	Not applicable to changes

4.9.3 Noise Impacts

Impacts on the prevailing ambient environmental noise levels and the creation of a possible noise disturbance and/or noise nuisance due to construction works relates to (Van der Merwe, 2023):

- Site preparation - vegetation removal, grabbing and earthworks
- Construction of camp and offices
- Earthworks during preparation of stockyard footprint
- Front end loader activities
- Concrete batching and concrete works
- Stockyard building construction
- Emergency generator
- Site rehabilitation of construction sites, camps

The 2013 FEIR assessed the noise impact during construction to be of Low significance with and without mitigation. The 2023 noise impact during construction would be of **a medium negative** significance without mitigation and reduced to a **low negative** with mitigation.

The specialist has recommended the following mitigation measures (Van der Merwe, 2023):

- Construction machinery and equipment or any other machinery to comply with the manufacturer's specifications on recommended noise levels for specific applications.
- Environmental Noise surveys to be carried out during the construction phase.

The mitigation recommendations in the 2013 FEIR remain valid and include:

- Noisy construction activities exceeding the prescribed night time noise levels as per SANS 10103 or later should be limited to daylight hours.

Potential impacts on the prevailing ambient environmental noise levels and the creation of a possible noise disturbance and/or noise nuisance at times at noise receptors during operations relate to the following activities (Van der Merwe, 2023):

- Off-loading of wagons – Tippler
- Train noise
- Vehicular noise at the stockyard
- Train noise hooting
- Bucket wheel machine
- Loading of Manganese onto conveyor
- Siren
- Limited Front End Loader activities
- Conveyor in pipe enclosure
- Loading of vessel at Berth C100 and/or C101
- Ship-loader crane

The 2013 FEIR assessed the noise impact during operations to be of Low significance with and without mitigation. The 2023 noise impact during operations would be of **a medium negative** significance without mitigation and reduced to a **low negative** with mitigation.

The specialist has recommended the following mitigation measures (Van der Merwe, 2023):

- Processes, machinery and equipment or any other machinery to comply with the manufacturer's specifications on recommended noise levels for specific applications.
- Environmental noise surveys to be carried out during the operational phase to ensure compliance to the Nelson Mandela Bay Metropolitan Municipality Noise By-laws.

The mitigation recommendations in the 2013 FEIR remain valid and include:

- Ambient noise monitoring around the site and at the closest residential areas should be undertaken every six months for at least 2 years to determine the actual environmental noise impact.

Table 20: Noise Impact Assessment

Phase	Construction Phase	Operational Phase
Nature	Noise impacts from construction activities	Noise impacts from operational activities
Status	Negative, Cumulative	Negative, Cumulative
Extent	Site - 1	Local - 2
Duration	Short Term - 1	Long term - 3
Intensity	Medium - 3	Low - 2
Reversibility	Low - 2	Irreversible - 4
Replaceable	Low - 2	Low - 2
Cumulative	Medium - 3	Medium - 3
Probability	Definite - 4	Highly Probable - 3
Level of significance	$(1+1+2+2+2+3)*4=44$	$(2+3+2+4+2+3)*2=48$
	Medium -	Medium -
Significance with mitigation	Low -	Low -
Confidence	High	High

4.10 Visual Impact Assessment

No specialist study has been undertaken for the visual impact assessment and this section has been compiled by the EAP.

4.10.1 Impacts per 2013 FEIAR

The visual impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 21**. The table also documents whether the assessed impacts are relevant to the proposed Change in Scope.

Table 21: Visual Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Landscape Impact	Low -	Low -	No change to original assessment
Intrusion of activity associated with construction of the Manganese Ore Export Terminal on existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment
Intrusion of activity associated with construction of the compilation yard on existing views of sensitive visual receptors	Medium -	Low -	No longer applicable due to proposed changes
Visual intrusion of Manganese ore stockpiles on the existing views of sensitive visual receptors	Medium -	Low -	applicable to changes/ Reassessed
Visual intrusion of Conveyor System on the existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment
Visual intrusion of Manganese Ore Export Terminal on the existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment
Visual intrusion of a compilation yard on the existing views of sensitive visual receptors	Medium -	Low -	No longer applicable due to proposed changes
Visual impact of night lighting of the Manganese Ore Export Terminal on the nightscape of the region.	Medium -	Low -	No change to original assessment
Visual impact of night lighting of the Compilation Yard on the nightscape of the region.	Medium -	Low -	No longer applicable due to proposed changes
Overall visual impact of proposed Manganese Ore Export Terminal and Compilation Yard on existing views of sensitive visual receptors	Medium -	Low -	Applicable to changes/ Reassessed

4.10.2 Visual Impacts

There is no anticipated change in the assessment of the following visual impacts:

- The landscape impact considered the introduction of a manganese ore export terminal and compilation yard into an industrial landscape. The removal of the compilation yard will not change the impact as the industrial landscape for the manganese ore export terminal will still be undertaken within the Coega SEZ.
- Intrusion of activity associated with construction of the Manganese Ore Export Terminal on existing views of sensitive visual receptors, as the same construction activities are expected.
- Visual intrusion of Conveyor System on the existing views of sensitive visual receptors does not change as this impact considered the scars from clearance of vegetation as well as from cut and fill operations.

- Impact on the Visual intrusion of Manganese Ore Export Terminal on the existing views of sensitive visual receptors considered the berth and ship loaders as the port; structures and components of the stockyard which include buildings housing tipplers, and stackers and reclaimer equipment. The impact does not change as the proposed enclosed structure would need to be a large enough structure that covers the components of the stockyard and would be visible from various points on the N2 and R334.
- Visual impact of night lighting of the Manganese Ore Export Terminal on the nightscape of the region would not change as this impact considers the addition of new lights to the region and related light pollution. The enclosed stockyard and conveyor would still require night lighting.

The mitigation measures identified in the 2013 assessment remain valid for the impacts identified above.

The impact of the Visual intrusion of Manganese ore stockpiles on the existing views of sensitive visual receptors changes due to the proposed ore stockpiles being located within an enclosed structure. The extent of the visual impact will also be reduced due to limited fugitive dust on the adjacent areas changing from a widespread area to the site only. There are no specific mitigation measures proposed in the 2013 assessment and the general mitigation regarding adherence with the CDC guidelines and specifications would remain valid. The mitigation measures identified in the Air Quality Assessment would be of relevance to limit fugitive manganese ore dust. The impact is of a low negative significance before mitigation and is reduced to a very low negative significance with mitigation.

The overall visual impact of the proposed Manganese Ore Export Terminal and Compilation Yard on existing views of sensitive visual receptors changes with the removal of the compilation yard. This impact is now related to the overall visual impact of the Manganese Ore Export Terminal and conveyor system on existing views. Although there would be a reduction in the overall area for development with the removal of the compilation yard and railway infrastructure, new structures and buildings for the Manganese Ore Export Terminal and conveyor system would still be introduced into the regional landscape and views of visual receptors will be altered. The mitigation measures applicable to the visual intrusion and night lighting impacts would still be valid for this impact. The impact is of a medium negative significance before mitigation and is reduced to a low negative significance with mitigation.

Table 22: Visual Impacts

Visual Impact		
Phase	Operational Phase	
Nature	Visual intrusion of Manganese ore stockpiles and fugitive dust	Overall visual impact of the proposed Manganese Ore Export Terminal and Conveyor System on existing views
Status	Negative (-), Indirect	Negative (-), Indirect
Extent	Site – 1	Regional - 3
Duration	Long term - 3	Long term - 3
Intensity	Low - 2	Low - 2
Reversibility	Low - 2	Low - 2
Replaceable	Low - 2	Low - 2

Visual Impact		
Phase	Operational Phase	
Cumulative	Low - 2	Low - 2
Probability	Probable - 2	Definite - 4
	$(1+3+2+2+2+2)*2=24$	$(3+3+2+2+2+2)*4=56$
Level of significance	Low -	Medium -
Significance with mitigation	Very Low -	Low -
Confidence	Medium	Medium

4.11 Heritage Impact Assessment

4.11.1 Palaeontology

4.11.1.1 Summary of Specialist Findings:

The 2023 Palaeontological Assessment was undertaken by Dewald Wilken, refer to **Appendix E9**.

The site of the proposed development is underlain by the Quaternary Sands (not sensitive), Alexandria Formation, the Kirkwood Formation and possibly the Sundays River Formation. The Alexandria, Kirkwood and Sundays River Formations are known to be very sensitive, and highly fossiliferous. It is likely that fossils can be uncovered during construction (Wilken, 2023).

The palaeontologist is of the opinion that the proposed amendments may proceed on the condition that a palaeontologist is present to monitor during bush clearing and any major excavation in the area (Wilken, 2023).

4.11.1.2 Impacts per 2013 FEIAR:

The paleontology impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 23**.

Table 23: Paleontology Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Construction: Destruction, disturbance or sealing-in of fossils exposed on the ground or buried beneath the surface during excavations and other construction work			
Compilation Yard – Preferred Option	Medium -	Low -	No longer applicable due to proposed changes
Compilation Yard – Alternative Option	Low -	Very Low -	No longer applicable due to proposed changes
Conveyor System - Preferred Option	Medium -	Low -	Reassessed
Conveyor System - Alternative Option	Low -	Low -	Not applicable to changes

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Doubling of railway line between compilation yard and marshalling yard	Medium -	Low -	No longer applicable due to proposed changes
Stockyard, stormwater control dam and ancillary infrastructures	Medium -	Low -	Reassessed

4.11.1.3 Palaeontology Impacts:

Impacts on the palaeontology resources during construction are related to bush clearing or excavations where destruction of fossil resources could occur. The 2013 FEIR assessed impacts on palaeontological resources during construction to be of Medium negative significance without mitigation and reduces to a Low negative significance with mitigation. The 2023 palaeontology resources impact during construction would be of a **medium negative** significance without mitigation and reduced to a **very low negative** with mitigation.

The specialist has recommended the following mitigation measures (Wilken, 2023):

- A palaeontologist is present to monitor during bush clearing and any major excavation in the area.
- The appointed palaeontologist MUST be informed at least 2 months prior to excavation, in order to prepare an application for a Fossil Collection Permit as it is highly likely this will be required.
- In the case of any fossil finds, the chance fossil find procedure must be followed.

The above mitigation recommendations are similar to the mitigation measures provided in the 2013 FEIR.

Table 24: Impact on Palaeontological Resources

Palaeontology Impacts	
Phase	Construction Phase
Nature	Excavation might lead to the destruction of fossil material
Status	Negative (-), Direct
Extent	Site – 1
Duration	Permanent - 4
Intensity	Low - 2
Reversibility	Low - 2
Replaceable	Medium - 3
Cumulative	Low - 2
Probability	Highly Probable - 3
	$(1+4+2+2+3+2)*3=42$
Level of significance	Medium -
Significance with mitigation	Very Low -
Confidence	Medium

4.11.2 Archaeology & Heritage

4.11.2.1 Summary of Specialist Findings:

The 2023 Archaeological & Heritage Assessment was undertaken by Celeste Booth, refer to **Appendix E9**.

The area is covered in dense thicket and transformed grass vegetation that inhibited surface visibility during the archaeological investigation. Very few disturbed and other surface exposed areas were observed within the proposed development area. The disturbed areas from previous diggings and the Algoa Brickfields are still evident of the landscape.

Two grave relocation projects, undertaken in 2014 and 2016, were conducted by PGS Heritage. These reports have been submitted to ECPHRA for their records. The fences of the two graveyards identified in the 2013 FEIAR still remain, although the graves were relocated during 2014 (Booth, 2023).

Earlier and Middle Stone Age stone artefacts were identified previously along the route for the conveyor belt (Booth, 2023).

No archaeological, cultural or heritage sites, resources or features were identified during the survey for the development. It is possible that stone artefacts may occur below the surface, between 0cm – 80cm, and within the denser thicket vegetation. This is evident from surveys and archaeological monitoring previously conducted. It is also likely that the flooding of the Coega River over time may have significantly impacted any archaeological evidence within the footprint of manganese ore terminal (Booth, 2023).

The area is considered as having a low archaeological heritage significance as no archaeological heritage sites were identified (Booth, 2023).

4.11.2.2 Impacts per 2013 FEIAR

The archaeological and heritage impacts and related impact significance before and after mitigation from the 2013 FEIR are provided in **Table 25**.

Table 25: Archaeological and Heritage Impacts per the 2013 Assessment and relevance to Change in Scope

Nature of Impact	Significance without Mitigation	Significance with Mitigation	Relevance to Change in Scope
Construction: Proposed compilation yard:			
The potential impact of the development on above and below ground archaeology	Low -	Low -	No longer applicable due to proposed changes
Occurrence of significant archaeological sites/material, i.e. human remains	High -	Low -	No longer applicable due to proposed changes
The potential impact of the development on the cultural landscape and 'sense of place'.	Low -	Low -	No longer applicable due to proposed changes

4.11.2.3 Archaeology & Heritage Impacts

The archaeological impacts related to construction works have not been re-assessed as the outcomes to the archaeological assessment remains the same, i.e. the area is considered as having a *low archaeological and cultural heritage significance* as no archaeological, historical or other heritage material, sites or features were identified within the footprint and layout for the manganese ore terminal.

Two grave relocation projects, undertaken in 2014 and 2016, were conducted by PGS Heritage. These reports have been submitted to ECPHRA for their records. The fences of the two graveyards identified in the 2013 FEIAR still remain, although the graves were relocated during 2014 (Booth, 2023).

The specialist has recommended the following mitigation measures (Booth, 2023), and are similar to the mitigation measures proposed in the 2013 FEIAR:

- Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
- A person must be trained as a site monitor to report to the foreman when archaeological sites are found.
- If concentrations of pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction of the proposed development and / or future excavations for individual graves, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) (043 745 0888) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the findings will then be conducted to establish the contextual status of the sites and remove the archaeological deposit before development activities continue.

In the 2013 FEIR, the recommendations by SAHRA for the conveyor system linking the stockyard to the harbour in Zone 8 and possibly Zone 5, included the following:

- An archaeologist must be present during the vegetation clearing.
- A suitably qualified person should be trained by an archaeologist as a site monitor to check/supervise.

The specialist has recommended that due to the low significance of archaeological heritage resources, that an archaeologist does not need to be present during the vegetation clearing as long as the recommendations of the 2023 assessment are implemented (Booth, 2023).

CHAPTER 5: PUBLIC PARTICIPATION PROCESS

5.1 Pre-Application Notifications

Notifications of the amendment applications were distributed via the following means:

- Three A2-sized site notices (English, Afrikaans, Xhosa) were placed on 6 April 2023, at the access road from the R334 (33°45'24.25"S, 25°39'36.42"E). Refer to **Appendix G1**.
- Electronic site notices in English, Afrikaans and Xhosa were displayed on the Coega Development Corporation's electronic notice board. Refer to **Appendix G1**.
- The Background Information Document (BID) and Electronic site notices in English, Afrikaans and Xhosa were placed on the websites for the Coega Development Corporation and CEN IEM Unit on 6 April 2023. Refer to **Appendix G1**.
- Newspaper advertisements appeared in The Herald (in English and Xhosa) and Die Burger (in Afrikaans) on 6 April 2023, refer to **Appendix G2**.
- Written notifications were distributed to identified stakeholders, including the landowners and adjacent landowners, tenants of the Coega SEZ, ELC members and State Departments on 6 April 2023. This included the Notifications in English, Afrikaans and Xhosa as well as the BID. Refer to **Appendix G3**.

5.2 Pre-Application Comment Period

The objective of the public comment period is for I&APs to raise comments and issues about the proposed amendments. The BID distributed as part of the notifications provided additional information on the applications.

A 30 day comment period was provided to the public, identified stakeholders and State Departments to provide any comments on the proposed amendments. This 30 day period was from **6 April to 10 May 2023**.

Comments or issues raised during the pre-application comment period have been included in the Comments and Response Register, refer to **Section 5.6** and **Appendix G4**.

5.3 Environmental Liaison Committee Meeting

A presentation on the proposed amendments was undertaken at the Coega Environmental Liaison Committee (ELC) meeting on 18 June 2023. Refer to **Appendix G** for a copy of the presentation and minutes of the meeting.

Concerns and comments raised at the ELC meeting has been incorporated into the Comments and Response Register. Refer to **Section 5.6**.

5.4 Draft Report Review Period

The objective of the public comment period is for I&APs to raise issues about the information presented in the report and for them to raise any other issues related to the proposed amendments. Should I&APs wish to register during this period, they would be allowed to.

The Draft Assessment Report will be made available to registered I&APs and Organs of State / State Departments for a 30 day review period, from **11 September to 13 October 2023**. Refer to **Appendix G** for proof of notifications and proof of delivery.

Comments and issues raised during the public review period will be incorporated in the Final Assessment Report.

5.5 Interested and Affected Parties Database

The public were invited to register as Interested and Affected Parties (I&APs) so that they can comment or raise issues on the proposed amendment. A database (**Table 26**) of I&APs has been compiled, including Organs of State and/or State Departments, and will be updated throughout the amendment process should additional stakeholders or I&APs be identified or request registration.

Please note that contact details for stakeholders and I&APs are not reflected in the I&APs database due to the Protection of Personal Information Act, (No. 2 of 2013). This information is available on request to relevant authorities and will not be distributed in the public domain.

Table 26: Interested and Affected Parties Database

Organisation	Name & Surname	Email / Telephone Number
ELC MEMBERS		
DEDEAT	Dayalan Govender	
	Andries Struwig	
	Lyndon Mardon	
DFFE: Ocean & Coast	Nontsasa Tonjeni	
	Yazeed Peterson	
	Pontsho Makonko	
DFFE	Wayne Hector	
	Masina (Litsoane) Morudu	
	Milicent Solomons	
CDC	Andrea Shirley	
	Simphiwe Silwana	
TNPA	Renee de Klerk	
	Zimasa Sani	
NMBM	Sizwe Mvunelwa	
	Rosa Blaauw	
	Patrick Nodwele	
	Buyiswa Deliwe	
DWS	Thandi Mmachaka	
	Ncumisa Heymann	
DMR	Deidre Watkins	
SAMSA	Bongi Stofile	

Organisation	Name & Surname	Email / Telephone Number
ADDITIONAL STATE DEPARTMENTS / ORGANS OF STATE		
DWS	Joseph Jacobs	
	Marisa Bloem	
DFFE - Forestry	Babalwa Layini	
DFFE	Constance Musemburi	
NMBM	Jill Miller	
	City Manager	
	Luvuyo Magalela	
	Bukelwa Vetyeka	
	Barry Martin	
	Mthulisi Msimanga	
Yussuf Gaffore		
Eastern Cape Provincial Heritage Resource Agency	Ayanda Mncwabe-Mama	
DMR	ZimkitaTyala	
Transnet	Nosicelo Biyana TNPA HQ	
	Dirk Engelbrecht Transnet Freight Rail PTA	
	Khathutshelo Tshipala Transnet Corporate JHB	
	Raymond Van Rooyen Transnet Port Terminals DBN	
	Ndivhuwo Netshilaphala Transnet Freight Rail JHB	
	Nonkululeko Hadebe Transnet Corporate JHB	
	Xola Mkontwana Transnet National Ports Authority PLZ	
	Themba Ntanzu TNPA HQ	
Siphokazi Goba TNPA HQ		
SANRAL	Simon Peterson	
	Lindelani Tsanwani	
	Nenekazi Songxaba	
Eskom	John Geeringh	
CDC	Sisa Xabanisa	
WARD COUNCILLORS		
NMBM Ward 60	Thembinkosi Bethwell Mafana	
NMBM Ward 53	Zwelandile Patrick Tsotso	
IDENTIFIED STAKEHOLDERS		
Zwartkops Conservancy	Jenny Rump	
	Arthur Rump	
	Dale Calyton	
WESSA Algoa Bay Branch	Gary Koekemoer	
	Eckart Schumann	
	Lorien Pichegru	
Addo Elephant National Park	Nick De Goede	
SANPARKS	Maretha Alant	

Organisation	Name & Surname	Email / Telephone Number
LANDOWNERS / SURROUNDING LANDOWNERS		
OFFIT Farming Enterprises	Warwick Ofsowitz	
CDC		
SANRAL		
Transnet	Pamela Yoyo	
Tankatara Properties	Peter Lake Gorden Lake Trevor Donian	
CDC TENANTS		
DSV	Danie Gerber Sheree Harmse	
Digistics	Jackson Tutu Alistair Stallenberg Brett Williams	
Famous Brands	Guthrie Robertson Arnold Barnard Gloria January	
Isuzu Motors	Beth Hurr Mbongeni Mbiko	
PE Cold Storage	Craig Vaughan Charl de Lange George Efstrapiou	
APM Terminals	Karl McLachlan Monique Oosthuizen	
Vector Logistics	Rudo Stoltenkamp Jurie Schoeman	
National Ship Chandlers	George Charalambous Adro Stylianou	
Apli /Coega Fruit Terminals	Rhyan Webb	
Parmalat / Lactalis	Lynette Barnard	
The Courier Guy	Aaron Lench	
MSC	Shaldon Chetty	
BAIC SA	Ben Fouche	
Zacpack / CFR	Len Cowley	
FAW	Liu Shijie Nadine Forlee Haiyang Yao	
HELLA	Theo Theuner	
Dynamic Commodities	Adrian Vardy Marc Later Heinrich Vosloo	
Coega Dairy	Phillip Nieman Mark Harris	
Air Products	Vincent Ntuli	
Afrox	Satish Brugwathypersad Rene Naidu Andile Qwase	
Himoin SA	Martin Foster	

Organisation	Name & Surname	Email / Telephone Number
Enel Green Power	Mapkgole Johannes	
Corromaster	Herbert Ball	
Ocean Legacy Marine Engineering (OLME)	Charles Lumsden Pieter van Heerden	
Bacarac Foods	Len Mulders	
Discovery Health	Ellian Peterson Hennie van Staden Christine Hogan David Pierre-Eugene	
WNS	Brian Windsor	
Bosun Bricks	Ashwin Langeveldt Wyne Poultan	
Sanitech	Joy du Plessis	
Ke Nako Concrete	Jerome Perils	
Osho Cement / CEMZA	Hendrik du Preez	
Coega Steels	Hassan Khan	
Cerebos	John Drinkwater Sinawo Mtongana David Louw	
DEDISA Peaking Power	James Classen	
Algoa Brick	Eric Offeman	
NTI	Mark Snyman	
Accoustex	Gillian Solomon	
ABSA	Johan Steyn	
Cape Concentrates	Leon Wait	
Oiltanking Grindrod Calulo	Charlo Marston Rajen Sigh	
PhytoAmandla	Maertín Middelmann	
Electrawinds Sonop & Coega	Tijmen Keesmet	
GMSA	Lushen Govender	
REGISTERED I&APS - PUBLIC		
Newlyn	Sagie Chetty	
Sternwood Products Pty Ltd	Andrew Stern	
Darneke Properties	Philip Darne	
I&APs registered for previous EIA processes that are not included above		
DFFE - Forestry	Dorothy Jagers	
DFFE	Luyanda Veto Rose Masela Stanley Tshitwamolomoni	
DFFE – Oceans & Coast	Reuben Molale Tandiwe Njajula Mulalo Tshikotshi Mpho Ligudu	
DEDEAT	Charmaine Struwig	
SAHRA	Veliswa Baduza Phillip Hine	
EC Department of Roads	Randall Moore	

Organisation	Name & Surname	Email / Telephone Number
Eastern Cape Parks and Tourism Agency	Malaika Koali-Lebona Kagiso Mangwale	
Department of Agriculture and Land Affairs – Eastern Cape	Sizule Silinta	
Transnet	Mpatisi Pantsi	
Eastern Cape Provincial Heritage Resource Agency	Sello Mokhanya	
DMR	Vusi Kubheka	
WESSA – Eastern Cape	Cheryl Lipman Jenny Gon	
SANParks	Rob Milne Dr Ane Oosthuizen	
NMBM	Executive Mayor Pakama Dyani Darryl Bailey Kithi Ngesi Schalk Potgieter	
Cllr Ward 53 Cllr Ward 60 Cllr Ward 59 Cllr Ward 60 Cllr Ward 56	Nomazulu Mthi (previous cllr) Mvuzo E. Mbelekane (prev. cllr) Cllr. Leonard Dano Cllr. Nondikho Gana Cllr. Linda Y Kwitsana	
Nelson Mandela Bay Rate Payers Association	Kobus Gerber	
Eden to Addo Corridor Initiative	Mike Bridgeford	
CDC	Keith du Plessis Khuthala Somdaka Lunga Tungu Graham Taylor Christelle du Plessis	
Cbm Africa	Johan Schutte	
Wild Coast Abalone	Richard Clark	
Carnegie Energie	Chris Carnegie	
Registered I&AP	Chris Albertyn	
Registered I&AP	Sandy Wren	
Registered I&AP	Huldah Solomon (GM SA)	
Registered I&AP	Paul Martin	
Registered I&AP	Paul-Pierre Steyn (NMMU)	
Registered I&AP	Simon Wijnberg	
Registered I&AP	Tim Foxen	
Cerebos	David Louw	
Mining Coega IDZ	Kate Crews	
Innowind	Louis Dewavrin	
Eastern Cape Infrastructure JV	Chris Dickson	
PPC	Vincent Diegaardt Vannesa Lessing	
NAFCOC NMB	MK Dyala	

Organisation	Name & Surname	Email / Telephone Number
SANCO Region	Kiki Dyimi Roro Ntsinde	
Glendor Sand & Stone	Desmond Eales	
ANC Region	Nceba Faku	
Motherwell Councillor Forum	Cllr. Friday Frans	
Rhodes Business School	Leticia Greyling	
SACP District	Nkosinathi Jikela Zukile Jodwana	
Eastern Cape Infrastructure JV	Stephanie Koch	
Zwartkops Trust	Hugh Laue	
ANC Region	Cllr. Patricia Ndlovu	
Motherwell Environmental Forum	Cllr. Themile P. Nkosiyanzani	
COSATU Region	Phumzile Nodongwe	
COPE Region	Bongiswa Ntetha	

5.6 Comments and Response Register

The following table (**Table 27**) presents comments received, by whom, method of communication and response. Refer to **Appendix G4** for correspondence from I&APs and State Departments.

Table 27: Comments / Issues and Response

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
Pre-application Comment & Review: 6 April to 10 May 2023			
1.	11-04-2023 Email & Registration sheet Andrew Stern	Please find attached our registration as an Interested and/ or Affected Party relating to the above.	EAP: Registration and confirmation of details added to the I&AP database was sent on 11-04-2023.
2.	15-04-2023 Email Warwick Ofsowitz	I would appreciate you using these 2 email addresses to copy me as regards the Offit Companies md@dbrmegajackpot.com; wofsowitz@comcast.net; Lucille your spam filter bounced this back to wofsowitz@telkomsa.net ?????? Please confirm receipt	EAP: Receipt of emails was confirmed on 17-04-2023. EAP: The additional contact details have been added to the I&AP database and were confirmed on 17-04-2023.
4.	20-04-2023 Email ECPHRA - Ayanda Mncwabe-Mama	I am currently having network challenges especially in downloading documents from SAHRIS. Please could you email me the documents of the following projects (if is not too much	EAP: The Background Information Document was provided to the ECPHRA via email on 20-04-2023.

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
		trouble): <ul style="list-style-type: none"> Ngqura Manganese Export Terminal Amendment Applications. I was hoping to add these cases in our next APM meeting next week – 25 th of April.	
5.	21-04-2023 Email Philip Darne	I would like to register as an affected party for your amended application DEA REF: 14/12/16/3/3/2/319. Please forward all correspondence to this email address.	EAP: Registration and confirmation of details added to the I&AP database was sent on 24-04-2023.
6.	05-05-2023 Email Philip Darne	Please advise me as to the progress of this amendment, as I have heard that this has been placed on hold?	EAP: We are in process of undertaking the various specialist studies and compiling the draft amendment assessment report. I anticipate the draft report to be available for public review in June 2023. EAP: Registered I&APs will be advised of the availability of the draft report for comment.
7.	08-05-2023 Letter via Email ECPHRA - Ayanda Mncwabe-Mama	This matter was tabled at the Archaeology, Palaeontology and Meteorites (APM) Committee meeting held on 25 April 2023. As per Section 38(3) of the National Heritage Resources Act (Act 25 of 1999), ECPHRA (Eastern Cape Provincial Heritage Authority) formally acknowledges receipt of the Amendment EA Notice and requests the	EAP: The comments from the ECPHRA were acknowledged on 08-05-2023. EAP: The Heritage Impact Assessments as contained in the Final EIA Report of September 2013 were provided to the ECPHRA via SAHRIS and email on 16-05-2023.

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
		original Heritage Impact Assessments (HIAs).	
8.	08-05-2023 Email & Registration Sheet Sagie Chetty	<p>Please find our I&AP registration for the Transnet NMET EIA amendment attached.</p> <p>1. Unitainer was granted EIA for its back-of-port Manganese project on 05 May 2021. Unitainer needs to ascertain how multiple users will access the berth via covered conveyor, including transfer rates of conveyors and design of transfer towers.</p> <p>2. Methodology for dust control from train unloading, storage, transfer and ship loading.</p>	<p>EAP: Registration and confirmation of details added to the I&AP database was sent on 08-05-2023.</p> <p>1. Transnet: The Ngqura Manganese Export Terminal (NMET) Project allows for the installation of additional conveyors along the same installation by other stakeholders upon agreement with the property owner. Please note these will be additional conveyors and not the NMET's conveyors. Additional conveyors will be required for additional users upon agreement with the property owner.</p> <p>2. EAP: The following is as per the Air Quality Assessment: Tippler operation: Tippler operation will occur in a fully enclosed area that is fitted with an extraction system and baghouse to collect dust that is released during the ore offloading step. Stockpile storage: The stockyard area will be fully enclosed. According to the Australian Government's National Pollution Inventory's (NPI) Emissions Estimation Technique Manual (EETM) for Mining states that a fully enclosed structure will reduce emissions by 99%, thus implying that the possibility exists for 1% of the</p>

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
			<p>emissions to escape to atmosphere as fugitive emissions. These emissions can be reduced further by using water sprays inside the building.</p> <p>Conveyor system: Ore will be conveyed from the stockyard to the harbour in a fully enclosed conveyor system, thus preventing fugitive emissions from the conveyor system. Each transfer point in the conveyor system will be fitted with an extraction system and baghouse to collect particulate matter emitted during transfer.</p> <p>Harbour: The ore will be delivered into surge bins from which it will be transferred to ship cargo holds through a chute. Water sprays will be used to suppress dust formation. According to the NPI EETM for Mining, the dust suppression efficiency of such a system is 75%.</p> <p>2. Transnet: The NMET will incorporate exhaustive dust abatement and control systems to prevent pollution.</p> <p>Water spray systems will be used at key control points for dust mitigation. These will include transfer points and chutes.</p> <p>Dust suppression systems emit very fine water mist to minimise release and spread of dust particles at the point of source</p> <p>Dust extraction and scrubbing systems shall be used to prevent dust build-up within the covered</p>

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
		3. Methodology for common usage of conveyors, ship loaders and berth capacity.	<p>stockyard.</p> <p>The dust particles concentrate target over a year period, should be within the “limits for common pollutants” as highlighted under SANS 1929 (Ambient Air Quality), Clause 4.</p> <p>3. Transnet: The NMET incorporates allowing additional users through the provision for installation of additional conveyors to access the berths.</p>
9.	18-05-2023 ELC Meeting	<p>To confirm that manganese ore would be transported via rail to the stockyard and there would be no change to the current situation of transportation of manganese ore via trucks.</p> <p>Will trucks be included as part of the operations? If trucks delivering manganese ore will form part of the operations a traffic impact assessment will need to be included for assessment of the road infrastructure.</p> <p>Manganese ore trucks will not disappear / be phased out over a long period.</p>	<p>EAP: The manganese ore will be delivered via rail to the stockyard. It is unlikely that the current situation regarding the manganese ore trucks will change in the short term. Trucks delivering manganese ore to or from the stockyard would not form part of the operations.</p> <p>CDC: The NMET does not include a facility for offloading manganese ore from trucks.</p> <p>EAP: As trucks will not be delivering manganese ore to the stockyard, a traffic impact assessment is not considered a requirement for these amendments.</p>
10.	18-05-2023 ELC Meeting	Why are specialist studies being undertaken if the footprint areas are not increasing?	EAP: The identified specialist studies were included due to the 10 year period since the EIA was undertaken and at the start of the process the footprint changes were not confirmed.

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
11.	18-05-2023 ELC Meeting	Was a pre-application meeting undertaken?	EAP: A pre-application meeting request was submitted to the DFFE. The DFFE responded that a pre-application meeting would not be required and that the Part 2 amendment application may be submitted.
12.	18-05-2023 ELC Meeting	To confirm if the expansion activity is related to the proposed increase in the throughput capacity.	EAP: Activity 34 in Listing Notice 1 (EIA Regulations, 2014) is considered not applicable as it relates to the expansion of existing facilities or infrastructure where the expansion requires an amended permit / licence for emissions. The Transnet Manganese Export Terminal has not yet been constructed and no existing facilities occur. No new or additional listed activities have been identified or triggered by the proposed amendments. The listed activities previously authorised would still be relevant.
13.	18-05-2023 ELC Meeting	To confirm the changes related to the AEL is for an increase from 16 to 22 mtpa in terms of storage and handling.	EAP: That is correct, the amendment to the Provisional AEL is for the increase from 16 to 22mtpa for the storage and handling of manganese ore.
14.	18-05-2023 ELC Meeting	To confirm if the amendment application would also include an extension of the validity period. If required, a strong motivation or reasons are to be provided. The DFFE may decline to extend the validity further if the environmental authorisation holder does not provide substantive reasons for not having	EAP: The amendment application does not include an extension of the validity of the Environmental Authorisation.

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
		<p>commenced with the activity.</p> <p>To confirm the validity date of the EA as the DFFE would not extend over a 10 year period.</p>	<p>EAP: The Amended Environmental Authorisation #2 indicates that activities must commence by 27 March 2025.</p>
15.	<p>18-05-2023 ELC Meeting</p>	<p>When is commencement planned to begin?</p> <p>Technically there is nothing stopping construction from commencing now and then to start the amendments.</p>	<p>CDC: Construction is scheduled to commence in 2024.</p> <p>EAP: Should construction commence prior to the amendment application being undertaken, it is likely then that Activity 34 of Listing Notice 1 would be applicable and a Basic Assessment Process would need to be undertaken.</p>
16.	<p>18-05-2023 ELC Meeting</p>	<p>Would the decommissioning of the PE facilities require an Environmental Authorisation in terms of the decommissioning activity?</p>	<p>EAP: The closure of the manganese facility at the Port of Port Elizabeth would require an Environmental Authorisation for the closure of the facility.</p> <p>Transnet: Transnet will apply for an environmental authorization to decommission the manganese facility at the Port of Port Elizabeth. The EIA application is anticipated to be submitted in 2027.</p>
17.	<p>18-05-2023 ELC Meeting</p>	<p>Lessons learnt from existing structures / current situations in the SEZ need to be considered in the designs. Will there be different designs in the assessment report?</p>	<p>EAP: Due to Non-Disclosure Agreements and that the Stage 2 bidding process for the Development of the NMET is still being undertaken the different designs will not be included in the assessment report.</p>

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
18.	30-05-2023 Letter via Email ECPHRA - Ayanda Mncwabe-Mama	<p>ECPHRA (Eastern Cape Provincial Heritage Authority) formally acknowledges the Heritage Impact Assessments submitted however the studies are outdated. Kindly send the ffg:-</p> <ul style="list-style-type: none"> • An updated AIA (Archaeological Impact Assessment) for the current proposed development. • “Walk down” for palaeontology instead of a full PIA. • Evidence of the Public Participation Process (incl. support of the grave relocations from local communities as the project impacts on IKS (indigenous knowledge systems). 	<p>EAP: The comments from the ECPHRA were acknowledged on 30-05-2023.</p> <p>Transnet: Transnet intends to undertake pre-construction archaeological and paleontological assessments that will respond to the recommendations of ECPHRA. The assessments will entail an updated archaeological impact assessment and a walk-down palaeontology assessment.</p> <p>EAP: Evidence of the public participation process for the grave relocations has been submitted to ECPHRA.</p> <p>EAP: The updated AIA and PIA has been submitted to ECPHRA.</p>
19.	15-08-2023 Letter via Email ECPHRA - Ayanda Mncwabe-Mama	<p>ECPHRA FINAL COMMENTS in terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999).</p> <p>This matter was tabled again at the APM Committee meeting held on 14 August 2023.</p> <p>The requested studies were received therefore the proposed development may proceed as planned.</p> <p>NOTE: Recommendations by the heritage specialists are to be implemented.</p>	<p>EAP: The comments were acknowledged on 16 August 2023 and no further response is required.</p>

No.	DATE OF COMMENT FORMAT OF COMMENT NAME OF ORGANISATION / I&AP	COMMENT	RESPONSE FROM EAP / APPLICANT / SPECIALIST
Draft Assessment Report Comment & Review: 11 September to 13 October 2023			
1.	To be updated in Final Report.		

CHAPTER 6: ENVIRONMENTAL IMPACT STATEMENT AND REASONED OPINION

6.1 Environmental Impact Statement

An assessment has been undertaken on the impacts related to the proposed amendments:

- Increase in manganese ore throughput capacity from 16 to 22 million tons per annum.
- Change from an open manganese stockyard to an enclosed stockyard.
- Change to a covered conventional belt conveyer and piped conveyors.

The **air quality** impacts related to construction works, i.e. dust and other pollutants, as assessed in the 2013 FEIAR are not expected to change. The assessment of the air quality impacts during operations has changed due to the proposed enclosed structures and associated dust suppression & extraction systems for the Manganese Ore Terminal and conveyor, and the overall impact on air quality will be of **low negative** significance without mitigation and reduces to **very low negative** significance with mitigation.

The assessment of the **health risks** during operations has changed due to the proposed enclosed structures for the Manganese Ore Terminal and conveyor, and the overall impact on health risks will be of **low negative** significance without mitigation and reduces to **very low negative** significance with mitigation.

In terms of the **terrestrial biodiversity**, the proposed amendments will not result in a change in any of the impacts as originally assessed in 2013 other than the long-term effects of Manganese dust. Implementation of the proposed covering of the stockyard and conveyor will reduce this significance to **very low negative** significance with mitigation.

In terms of the **terrestrial animal species**, there is very little difference in the significance of impacts between the 2013 assessment and the proposed amendments. The impact levels can be reduced to **low negative** with appropriate full mitigation.

The **avifauna** assessment identified two additional impacts due to the proposed amendments, namely Impact on avifauna due to habitat loss and fragmentation at the Manganese Stockyard (**Low negative significance** before and after mitigation) and Impact on avifauna due to the roosting and nesting of urban adapted bird species in the structure covering the Manganese Stockyard (**Negligible** impact). The assessed significance of two impacts due to the expected reduction in water borne ore sediment and fugitive ore dust resulting from the covering of the Manganese Stockyard and containment of the conveyor system were reduced to **Low negative significance** before mitigation and post mitigation. The remaining impacts applicable to the proposed amendments do not result in a change from the 2013 assessment.

The **groundwater** impacts related to construction works as assessed in the 2013 FEIAR are not expected to change. There is no anticipated change in the 2013 assessment of the following groundwater impacts during the operational phase:

- Impact of the dust fall out on groundwater remains valid as fugitive manganese ore dust is still expected from the various operations. The impact remains at a **low negative** significance before mitigation and reduces to a **very low negative** significance after mitigation.
- Impact of stormwater outflows on groundwater remains valid as there would still be “clean” and “potentially polluted stormwater”. The impact remains at a **medium - low negative** significance before mitigation and reduces to a **low - very low negative** significance after mitigation.
- Impact of accidental oil spillage/fuel leakages on groundwater remains valid as there is still the potential of accidental spillages / leakages. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.

The following impacts are considered no longer applicable as the stockpiles will be within an enclosed structure and no leachate is expected:

- Dust from the stockpile reaching groundwater.
- Impact of stockpile leachate on groundwater

There is no anticipated change in the 2013 assessment of the following **surface and aquatic ecology** impacts:

- Potential loss of riverine habitat during construction as no additional crossings over the Coega River or other watercourses have been identified with the information provided. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Potential changes to the hydrological regime as stormwater runoff will still be experienced. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.
- Potential impact on water quality and risk to the aquatic environment as the construction activities remain the same. Although the storage and handling of the manganese will be undertaken within enclosed structures, spillages may still be experienced from conveyor systems that may breakdown and from fugitive emissions. As a result the impact during the operational phase is considered to remain the same. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.
- Loss of ecosystem services as no additional crossings over the Coega River or other watercourses have been identified with the information provided. The impact remains at a **high negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.
- Habitat fragmentation as no additional crossings over the Coega River or other watercourses have been identified with the information provided. The impact remains at a **high negative** significance before mitigation and reduces to a **low negative** significance after mitigation for the construction phase.

- Loss of species of special concern as no aquatic flora and fauna species of special concern were noted. The impact remains at a **low negative** significance before mitigation and reduces to a **low negative** significance after mitigation for the construction phase.
- Erosion and sedimentation as hard engineered surfaces and structures would still occur on site. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation for both the construction and operational phases.

The **Integrated water and waste management** impacts related to construction works as assessed in the 2013 FEIAR are not expected to change. There is no anticipated change in the 2013 assessment of the following integrated water management and waste management impacts during the operational phase:

- Domestic effluent discharge into sewer enters environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Service wastewater discharge into environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Hazardous wastes (e.g. chemical, oil waste) disposal into environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- General solid waste disposal into environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Contaminated stormwater discharge to environment. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.
- Manganese ore mud waste disposal into environment as this impact considers the manganese ore mud collected from the on-site dams. Although the amount / volume of manganese ore mud would be less due to the enclosed stockyard, fugitive emissions (manganese dust) are still expected to occur. The lower volumes will entail the dams would require clearing / cleaning out less frequently. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.

The impact of the increased water used during normal operation impacts regional water balance is expected to change due to the expected increase in the volume of service water required. The service water system will provide water for flushing of toilets, dust suppression and other process uses requiring water; as well as fire water systems. The impact remains at a **medium negative** significance before mitigation and reduces to a **low negative** significance after mitigation.

The proposed amendments to enclose the stockyard and a covered conveyor, removal of the compilation yard and rail, and the increase in the throughput of manganese ore are not

applicable to the 2013 assessment on **marine ecology**. The 2013 assessment and mitigation measures provided remain valid.

The **noise** intrusion during the construction and operational phase at the stockyard and conveyor will be below the threshold value of 7.0dBA. The noise from the sirens at the stockyard and the train hooting opposite the stock yard (western boundary) may be audible when there is a north westerly wind. The amendment to the approved manganese export terminal will not be in contravention of the Nelson Mandela Bay Metropolitan Municipality Noise By-laws and regular assessments will have to be conducted to ensure compliance (Van der Merwe, 2023). The 2013 FEIR assessed the noise impact during construction and operations to be of **Low significance** with and without mitigation. The 2023 noise impact during construction and operations would be of a **medium negative** significance without mitigation and reduced to a **low negative** with mitigation.

The **visual impact** of the intrusion of Manganese ore stockpiles on the existing views of sensitive visual receptors changes due to the proposed ore stockpiles being located within an enclosed structure. The extent of the visual impact will also be reduced due to limited fugitive dust on the adjacent areas changing from a widespread area to the site only. There are no specific mitigation measures proposed in the 2013 assessment and the general mitigation regarding adherence with the CDC guidelines and specifications would remain valid. The mitigation measures identified in the Air Quality Assessment would be of relevance to limit fugitive manganese ore dust. The impact is of a **low negative** significance before mitigation and is reduced to a **very low negative** significance with mitigation.

The overall visual impact of the proposed Manganese Ore Export Terminal and Compilation Yard on existing views of sensitive visual receptors changes with the removal of the compilation yard. This impact is now related to the overall visual impact of the Manganese Ore Export Terminal and conveyor system on existing views. Although there would be a reduction in the overall area for development with the removal of the compilation yard and railway infrastructure, new structures and buildings for the Manganese Ore Export Terminal and conveyor system would still be introduced into the regional landscape and views of visual receptors will be altered. The mitigation measures applicable to the visual intrusion and night lighting impacts would still be valid for this impact. The impact is of a **medium negative** significance before mitigation and is reduced to a **low negative** significance with mitigation.

There is no anticipated change in the assessment of the landscape impact, as this impact considered the introduction of a manganese ore export terminal and compilation yard into an industrial landscape. The removal of the compilation yard will not change the impact as the industrial landscape for the manganese ore export terminal will still be undertaken within the Coega SEZ. The impact remains at a **low negative** significance before and after mitigation.

There is no anticipated change in the 2013 assessment of the following visual impacts, and these remain at a **medium negative** significance before mitigation and a **low negative** significance with mitigation:

- Intrusion of activity associated with construction of the Manganese Ore Export Terminal on existing views of sensitive visual receptors, as the same construction activities are expected.

- Visual intrusion of Conveyor System on the existing views of sensitive visual receptors does not change as this impact considered the scars from clearance of vegetation as well as from cut and fill operations.
- Impact on the Visual intrusion of Manganese Ore Export Terminal on the existing views of sensitive visual receptors considered the berth and ship loaders as the port; structures and components of the stockyard which include buildings housing tippers, and stackers and reclaimer equipment. The impact does not change as the proposed enclosed structure would need to be a large enough structure that covers the components of the stockyard and would be visible from various points on the N2 and R334.
- Visual impact of night lighting of the Manganese Ore Export Terminal on the nightscape of the region would not change as this impact considers the addition of new lights to the region and related light pollution. The enclosed stockyard and conveyor would still require night lighting.

Heritage - Impacts on the palaeontology resources during construction are related to bush clearing or excavations where destruction of fossil resources could occur. The 2013 FEIR assessed impacts on palaeontological resources during construction to be of Medium negative significance without mitigation and reduces to a Low negative significance with mitigation. The 2023 palaeontology resources impact during construction would be of a **medium negative** significance without mitigation and reduced to a **very low negative** with mitigation.

The archaeological impacts related to construction works have not been re-assessed as the outcomes to the archaeological assessment remains the same, i.e. the area is considered as having a low archaeological and cultural heritage significance as no archaeological, historical or other heritage material, sites or features were identified within the footprint and layout for the manganese ore terminal.

Two grave relocation projects, undertaken in 2014 and 2016, were conducted by PGS Heritage. These reports have been submitted to ECPHRA for their records. The fences of the two graveyards identified in the 2013 FEIAR still remain, although the graves were relocated during 2014 (Booth, 2023).

The impacts that have been assessed are summarised in **Table 26**.

Table 28: Summary of Impacts

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
AIR QUALITY IMPACTS				
Increased dust and other pollutants during construction	Low	Very Low	Not affected by Change in Scope	
Dust deposition from the Manganese Ore Export Facility in the neighbouring environment (operations)	Medium	Low	Low	Very Low
Ambient PM10-concentrations exceed ambient standards (operations)	Low	Very Low	Low	Very Low
Ambient PM2.5 concentrations exceed ambient standards (operations)	Low	Very Low	Not affected by Change in Scope	
Ambient NO _x concentrations exceed ambient standards (operations)	Low	Low	Not affected by Change in Scope	
Ambient BTEX concentrations exceed ambient standards (operations)	Very Low	Very Low	Not affected by Change in Scope	
Cumulative impacts of dust, PM10, PM2.5, NO _x and BTEX (operations)	Low	Low	Not affected by Change in Scope	
HEALTH RISK IMPACTS				
Increase in respiratory effects due to increased exposure to dust and other pollutants during construction	Low	Very low	Not affected by Change in Scope	
Neurological symptoms from exposure to Mn dust in the neighbouring environment	Medium to high industrial area and low in the neighbouring environment	Low to medium industrial area and low in the neighbouring environment	Low	Very Low
Respiratory symptoms from exposure to PM10-concentrations exceeding ambient standards	Low	Low	Low	Very Low
Respiratory symptoms from exposure to ambient PM2.5 concentrations exceeding ambient standards	Low	Low	Low	Very Low
Respiratory symptoms from exposure to ambient NO _x concentrations exceeding ambient standards	Low	Low	Not affected by Change in Scope	
Neurological symptoms from exposure to ambient BTEX concentrations exceeding ambient standards	Very low	Very low	Not affected by Change in Scope	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Cumulative impacts of dust, PM10, PM2.5, NOX and BTEX	Low	Low	Not affected by Change in Scope	
TERRESTRIAL ECOLOGY IMPACTS				
Direct loss of vegetation (construction)	Medium	Medium – Very low	No change to original assessment	
Direct loss of Flora SSC concern and SSC habitat (construction)	Medium	Low	No change to original assessment	
Increased risk of alien plant invasion in disturbed areas (construction)	Medium	Low - Very low	No change to original assessment	
Change in natural fire regime (construction)	Medium	Low - Very low	No change to original assessment	
Fragmentation of Ecological Corridors and disruption of Ecological processes and animal movement as a result of artificial barriers (construction)	Medium High	Low Medium	No change to original assessment	
Faunal mortality as a result of bush clearing and earthmoving activities during site preparation (construction)	Medium	Medium - Low	High	Low
Habitat destruction may affect faunal diversity and composition (construction)	Medium	Low	High	Low
Road mortality of fauna from trucks and other construction vehicles (construction)	High-Medium	Medium-Low	Medium	Low
Faunal mortalities resulting from fences (mammals and reptiles) (construction)	Medium	Low	Low	Low
Mortalities resulting from poaching (mammals) (construction)	Medium	Low	Low	Low
Increased risk of alien plant invasion in disturbed areas (operations)	Medium	Low - Very low	No change to original assessment	
Change in natural fire regime	Medium	Low - Very low	No change to original assessment	
Long-term effects of Manganese dust on adjacent vegetation	Medium	Low - Very low	Medium	Very low
Long-term effects of Manganese dust on adjacent animal habitats	Medium	Low - Very low	Medium	Low
Fragmentation of Ecological Corridors and disruption of Ecological processes and animal movement as a result of artificial barriers (operations)	Medium High	Low Medium	No change to original assessment	
Road mortality of fauna from trucks, trains and other service vehicles (operations)	Medium	Low	Medium	Low
Faunal mortalities resulting from fences (mammals and reptiles) (operations)	Medium	Low	Low	Low

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Mortalities resulting from poaching (mammals) (operations)	Medium	Low	Low	Low
Direct and indirect impacts on animal species will cause disruption of the ecological processes facilitated by animals	Not assessed at scale of the stockyard		High	Low
Temporary loss of habitat (decommissioning)	Medium	Low	No change to original assessment	
Partial restoration of habitat due to rehabilitation of the site	Low	Low	No change to original assessment	
Partial reestablishment of disrupted Ecological Processes	Low	Low	No change to original assessment	
AVIFAUNA IMPACTS				
Habitat loss and fragmentation at Manganese Stockyard (Construction)	Not Assessed		Low	Low
Urban adapted birds roosting and nesting at structure covering Manganese Stockyard (Operations)	Not Assessed		Negligible	
Habitat fragmentation / reduction (Grass Ridge Bontveld) for both the Preferred and Alternative compilation yard layout	Medium	Medium	No longer applicable due to proposed changes	
Habitat fragmentation / reduction Sundays Valley Thicket) due to the doubling of the railway	Medium	Medium	No longer applicable due to proposed changes	
Sedimentation from storm water run-off affecting Coega River and saltpans (construction and operation)	Medium	Low	Low	Low
Increased disturbance (noise/ movement /lights) during construction	Medium	Low	No change to original assessment	
Collision with powerlines/trains (operation)	High	Low to Medium	No change to original assessment	
Fugitive manganese dust on terrestrial vegetation (operation)	Low	Low	No change to original assessment	
Fugitive manganese dust on Coega River & saltpans (operation)	Medium	Low	Low	Low
Routing of conveyor between Stockyard and port (Preferred Option)	Low	Low	Not affected by Change in Scope	
Routing of conveyor between Stockyard and port (Alternative Option)	Low / Medium	Low	Not affected by Change in Scope	
Potential pollution from ships and port operations	Medium	Low	No change to original assessment	
Fugitive manganese dust on islands of Algoa Bay (operation)	Low	Very Low	No change to original assessment	
Blasting	Low	Very Low	Not affected by Change in Scope	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Cumulative: Collision with project powerlines & adjacent proposed wind farm infrastructure	High	Medium to High	Not affected by Change in Scope	
Cumulative: Pollution of harbour and nearshore waters	High	Low to Medium	No change to original assessment	
GROUNDWATER IMPACTS				
Construction Phase:				
Increased dust and other pollutants reaching groundwater	Low -	Very low -	No change to original assessment	
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	No change to original assessment	
Impact of ancillary activities carried out at the compilation Yard on groundwater	Medium -	Low -	No longer applicable due to proposed changes	
Operational Phase:				
Dust from the stockpile reaching groundwater	Low -	Very low -	No longer applicable due to proposed changes	
General dust from the operation (PM10 and PM25)	Low -	Very low -	No change in assessment	
Leachate from the stockpile reaching groundwater	Medium -	Low -	No longer applicable due to proposed changes	
Impact of "clean stormwater" outflow on groundwater	Low -	Very low -	No change in assessment	
Impact of potentially polluted stormwater outflow on groundwater	Medium -	Low -	No change in assessment	
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	No change in assessment	
Impact of ancillary activities at the compilation yard on groundwater.	Medium -	Low -	No longer applicable due to proposed changes	
Decommissioning Phase:				
Impact of accidental oil spillage / fuel leakage on groundwater	Medium -	Low -	Not applicable to changes	
SURFACE WATER AND AQUATIC ECOLOGY				
Construction				
Potential loss of wetland habitat	N/A	N/A	N/A	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Potential loss of riverine habitat	Medium -	Low -	No change to original assessment	
Potential changes to the hydrological regime	Medium -	Low -	No change to original assessment	
Potential impacts on water quality	Medium -	Low -	No change to original assessment	
Loss of ecosystem services	High -	Low -	No change to original assessment	
Habitat fragmentation	High -	Low -	No change to original assessment	
Loss of species of special concern	Low -	Low -	No change to original assessment	
Erosion and sedimentation	Medium -	Low -	No change to original assessment	
Operational Phase				
Potential changes to the hydrological regime	Medium -	Low -	No change to original assessment	
Loss of ecosystem services	High -	Low -	No change to original assessment	
Potential impacts on water quality	Medium -	Low -	No change to original assessment	
Erosion and sedimentation	Medium -	Low -	No change to original assessment	
INTEGRATED WATER MANAGEMENT AND WASTE MANAGEMENT IMPACTS				
Construction				
Increased water use during construction impacts regional water balance	Medium -	Low -	Not applicable to changes	
Domestic effluent collection in portable toilets/tanks for transport to appropriate treatment facility enters environment	Medium -	Low -	Not applicable to changes	
Construction stormwater discharge into environment during construction	Medium -	Low -	Not applicable to changes	
Construction solid waste not appropriately disposed of	Medium -	Low -	Not applicable to changes	
Construction hazardous materials/wastes not appropriately disposed of	Medium -	Low -	Not applicable to changes	
Operational Phase				
Increased water used during normal operation impacts regional water balance	Medium -	Low -	Medium -	Low -
Domestic effluent discharge into sewer enters environment	Medium -	Low -	No change to original assessment	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Service wastewater discharge into environment	Medium -	Low -	No change to original assessment	
Contaminated stormwater discharge to environment	Medium -	Low -	No change to original assessment	
Hazardous wastes (e.g. chemical, oil waste) disposal into environment	Medium -	Low -	No change to original assessment	
General solid waste disposal into environment	Medium -	Low -	No change to original assessment	
Manganese ore mud waste disposal into environment	Medium -	Low -	No change to original assessment	
Decommissioning Phase				
Increased water used during decommissioning impacts regional water balance	Low -	Low -	Not applicable to changes	
Domestic effluent collection in portable toilets/tanks for transport to appropriate treatment facility enters environment	Medium -	Low -	Not applicable to changes	
Contaminated stormwater discharge to environment	Medium -	Low -	Not applicable to changes	
Demolition solid waste enters environment	Low -	Low -	Not applicable to changes	
Hazardous waste spills (oil, chemicals, etc.) on site during decommissioning	Medium -	Low -	Not applicable to changes	
NOISE IMPACTS				
Impact of the construction noise on the Noise Sensitive Areas – Manganese Ore Export Terminal	Low	Low	Medium	Low
Impact of the construction noise on the Noise Sensitive Areas – Compilation yard	Low	Low	No longer applicable due to proposed changes	
Impact of the manganese ore handling operational noise on the Noise Sensitive areas	Low	Low	Medium	Low
Impact of the rail operations on the Noise Sensitive areas	Medium	Low	Not affected by Change in Scope	
Impact of the decommissioning phase noise on the Noise Sensitive Areas	Low	Low	Not affected by Change in Scope	
VISUAL IMPACTS				
Landscape Impact	Low -	Low -	No change to original assessment	
Intrusion of activity associated with construction of the Manganese Ore	Medium -	Low -	No change to original assessment	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Export Terminal on existing views of sensitive visual receptors				
Intrusion of activity associated with construction of the compilation yard on existing views of sensitive visual receptors	Medium -	Low -	No longer applicable due to proposed changes	
Visual intrusion of Manganese ore stockpiles on the existing views of sensitive visual receptors	Medium -	Low -	Low -	Very low -
Visual intrusion of Conveyor System on the existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment	
Visual intrusion of Manganese Ore Export Terminal on the existing views of sensitive visual receptors	Medium -	Low -	No change to original assessment	
Visual intrusion of a compilation yard on the existing views of sensitive visual receptors	Medium -	Low -	No longer applicable due to proposed changes	
Visual impact of night lighting of the Manganese Ore Export Terminal on the nightscape of the region.	Medium -	Low -	No change to original assessment	
Visual impact of night lighting of the Compilation Yard on the nightscape of the region.	Medium -	Low -	No longer applicable due to proposed changes	
Overall visual impact of proposed Manganese Ore Export Terminal and Conveyor System on existing views of sensitive visual receptors	Medium -	Low -	Medium -	Low -
HERITAGE IMPACTS - PALAEOLOGY				
Construction: Destruction, disturbance or sealing-in of fossils exposed on the ground or buried beneath the surface during excavations and other construction work				
Compilation Yard – Preferred Option	Medium -	Low -	No longer applicable due to proposed changes	
Compilation Yard – Alternative Option	Low -	Very Low -	No longer applicable due to proposed changes	
Conveyor System - Preferred Option	Medium -	Low -	Medium -	Very Low -
Conveyor System - Alternative Option	Low -	Low -	Not affected by Change in Scope	
Doubling of railway line between compilation yard and marshalling yard	Medium -	Low -	No longer applicable due to proposed changes	

Nature of Impact	2013 Final Environmental Impact Report		Revised Impacts due to Change in Scope	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
Stockyard, stormwater control dam and ancillary infrastructures	Medium -	Low -	Medium -	Very Low -
HERITAGE IMPACTS – ARCHAEOLOGY & HERITAGE				
Construction: Proposed compilation yard:				
The potential impact of the development on above and below ground archaeology	Low -	Low -	No longer applicable due to proposed changes	
Occurrence of significant archaeological sites/material, i.e. human remains	High -	Low -	No longer applicable due to proposed changes	
The potential impact of the development on the cultural landscape and 'sense of place'.	Low -	Low -	No longer applicable due to proposed changes	

6.2 Advantages and Disadvantages

The proposed amendments could result in increases in impacts due to:

- A potential increase in the footprint of the Manganese Stockyard to accommodate storage of 2.2 rather than 1.8 million tons of ore.
- An increase in project related train and ship traffic and ore handling equipment.
- A potential increase in pollution risk due to the increase in ore throughput from 16 to 22mtpa

These disadvantages are compensated for by the expected reduction in manganese ore sediment in storm water and reduction in fugitive manganese dust due to the proposed enclosed structure for the stockyard and covered conveyor system.

6.3 Management of Impacts

The majority of the mitigation measures provided in the 2013 FEIAR and EMPr remain valid for the various impacts identified.

The mitigation measures for the operational phase for air quality are recommended (Albertyn, 2023):

- Designed and implemented dust abatement equipment must be operated and maintained according to manufacturers' requirements.
- Doorways to the enclosed stockyard should only be opened when necessary and closed as soon as possible afterwards.
- Maintain the enclosed conveyor belt system to prevent fugitive emissions.
- Conduct sound "house-keeping" by collecting any ore materials that may spill onto the site, sweep areas to collect dust that may have been emitted and that settled on site, etc.
- Suitable monitors are installed in the stacks serving all baghouses, e.g. broken bag detectors. This will allow monitoring of the operation of the baghouses on a continuous basis so that effective emission controls are maintained.

This mitigation measure has been amended in the EMPr as follows: Suitable monitors are installed in the stacks serving all baghouses or similar air pollution control device filtration systems that use air filters to collect dust and separate it from air molecules with similar minimum control efficiencies, e.g. broken bag detectors.

- An alternative method to dust fall-out buckets is employed in which the concentration of airborne dust is measured on a continuous basis at one or more point of the terminal site, specifically the site's southern boundary. Such results can be compared directly to official ambient air quality standards as published in GN 1210.

The following mitigation measures are recommended by the health risk specialist (Verdoorn, 2023):

- During off-loading (tipping). It is inevitable that dust will form while the ore is off-loaded (tipped) from the railway carriages. This should be mitigated by the most cost-effective tool, which may include sprinkling (irrigating) the ore during tipping with

pressurised water with a droplet size not exceeding 500 microns to create a moist atmosphere without generating excessive run-off water. A dust suppressing agent such as oligosaccharide or light polymer may be added to the water to aid the dust suppression. Since dust suppression is widely used in the mining and construction it is strongly recommended that Transnet consults the manganese mines for advice on what they use as affordable dust suppressants. Please take note that such substances may be more of a risk to workers (although unlikely) than the manganese ore and dust itself and it is therefore recommended that workers wear appropriate personal protective clothing and equipment during such work. Irrigation or sprinkler lines must be as close as possible to the rail trucks to minimise water usage, to prevent creation of excessive run-off water and to prevent workers from being drenched in irrigation water. Should the irrigation or sprinkler system prove sufficiently effective to suppress dust formation during tipping, is it probably unnecessary to add a dust suppressant to the water.

- A series of air intakes along the walls of the enclosed structure are included in the engineering design of the storage facility associated with extractors on the roof (whirly birds) with fine dust filters. This system should generate an indoor pressure that is slightly lower than the ambient air pressure, allowing fresh air intake and filter any dust that may be airborne from the vented air.
- Protective clothing and equipment for workers: Light weight cotton overalls (one or two piece), light weight cotton head cover such as small-brimmed cotton hat or totally covered golf cap, footwear (may be steel capped leather boots or rubber boots) and gloves (preferably long length isobutylene rubber gloves) are essential and will protect worker bodies adequately against MnO₂ dust. Company policy may dictate wearing protective helmets instead of normal hats. Comfortable eye cover made from polycarbonate that protects the eyes from direct dust contamination is essential to prevent eye irritation. Such eyewear must not have venting ports because fine dust particles can penetrate through the ports. Comfortable dust masks to cover the nose and mouth are also essential to prevent even the slightest possibility of oral intake or inhalation of MnO₂ dust and must be worn by all workers who work with the ore at all times.
- Protective clothing and equipment for Management and Administrative Staff: Pressurised office spaces are essential to prevent MnO₂ dust from penetrating into the offices. When entering the stockpiling section of the storage facility, management and administrative staff must wear eye protection and dust masks.
- Protective clothing and equipment for Visitors: Unless visitors such as state authority inspectors that have a mandate to inspect facility have good reason to enter the storage section of the facility, they should be denied access to this section. Visitors that must enter the storage section of the facility for whatever reason must wear appropriate full body clothing, head cover, eye protection and a dust mask.

Amendment / additional mitigation measures for terrestrial animals during construction include (Landman, 2023):

Disturbance to and mortality of animal species during habitat clearing for the construction of the stockyard:

- Limit habitat clearing to a minimum.
- Use existing roads and access routes as far as possible.
- Clearly demarcate all construction areas to avoid the unplanned loss, transformation of habitat.
- Conduct a pre-construction walk through (Search & Rescue) of the project area to remove animal species threatened by construction activities. Threatened species should be removed to similar habitat within proximity of the project area by the Environmental Control Officer (ECO) or other suitably qualified person. Permits for the removal of animal species must be obtained from the relevant authorities where appropriate.

Mortality of animal species due to fencing of the stockyard:

- Avoid using electric fencing if possible.
- If electric fencing is necessary, fence design should be modified to avoid animals (especially tortoises) getting trapped and electrocuted. This can be achieved by lifting the lowest electrified strand 30 cm from the ground.

Disturbance to and mortality of animal species due to poaching by construction staff:

- Construction staff should undergo environmental induction before construction commences to raise awareness and reduce potential animal impacts. Conservation orientated clauses should form part of construction contracts, complete with penalty clauses for non-compliance.
- Construction camps: i) ensure strict control of the movements of construction staff to reduce animal disturbances, ii) ensure strict poaching control, iii) exclude all domestic/feral dogs and cats.

Disturbance to and mortality of animal species along roads due to construction vehicles:

- Use existing roads and access routes as far as possible and only use designated roads and tracks; avoid driving off-road.
- Limit the travel speeds (< 40 km/h) of construction vehicles to reduce disturbances to and mortalities of animal species.
- Ensure appropriate vegetation management along roads for early detection of the presence of animal species.
- Ensure appropriate stormwater management to prevent the formation of wetlands (i.e., foci of animal activity) along roads.

Loss and transformation of habitat during the construction of the stockyard will influence animal communities:

- Limit habitat clearing to a minimum.
- Use existing roads and access routes as far as possible and only use designated roads and tracks; avoid driving off-road.
- Clearly demarcate all construction areas to avoid the unplanned loss and transformation of habitat.
- Locate construction camps and equipment stockpiles in degraded areas.

- Construction camps and construction staff: i) ensure strict control of the movements of construction staff, ii) prohibit fuel-wood collection and campfires; provide alternative fuels, iii) prohibit the feeding of all animals, iv) develop and implement a suitable Waste Management Plan to prevent increases in the incidence of opportunistic species (e.g., vervet monkeys, pied crows, starlings, sparrows, rats and mice) that displace other indigenous animal species and come into conflict with humans.
- Develop and implement: i) Alien and invasive plant management plan to eradicate these species, ii) Rehabilitation plan for the rehabilitation of disturbed areas where appropriate, and iii) Erosion management plan. Plans should be developed by appropriately qualified specialists and monitored by the ECO.
- Hazardous materials (chemicals, fuels, oils) should be stored appropriately to prevent soil contamination. Accidental spills should be cleaned up immediately and appropriately.

Amendment / additional mitigation measures during operations include (Landman, 2023):

Mortality of animal species due to fencing of the stockyard:

- Ensure regular (every 2 days) fence-checks for the removal of animal species that might be trapped.
- Ensure that access gates are kept closed to avoid animal species accidentally accessing the stockyard and getting trapped. Animals entering the stockyard should be removed to similar habitat within proximity of the project area by a suitably qualified person.

Disturbance to and mortality of animal species due to poaching by stockyard staff:

- Stockyard staff should undergo environmental induction to raise awareness and reduce potential animal impacts.
- Limit staff movements to clearly designated areas and access routes where possible. Ensure strict poaching control.

Disturbance to and mortality of animal species along roads due to Manganese Ore transport vehicles:

- Use existing roads and access routes as far as possible and only use designated roads and tracks; avoid driving off-road.
- Limit the travel speeds (< 40 km/h) of transport vehicles to reduce disturbances to and mortalities of animal species.
- Ensure appropriate vegetation management along roads for early detection of the presence of animal species.
- Ensure appropriate stormwater management to prevent the formation of wetlands (i.e., foci of animal activity) along roads.

Accumulation of windblown Manganese Ore dust on plants will influence habitat conditions for animal communities:

- Ensure covering the stockyard and overland conveyor system.

- Ensure strict adherence to mitigation measures identified as part of the amended air quality specialist assessment.
- Develop and implement a Manganese Ore dust monitoring programme for habitats adjacent to the project area.

Direct and indirect impacts on animal species will cause disruption of the ecological processes facilitated by animals:

- Limit habitat clearing to a minimum.
- Use existing roads and access routes as far as possible.
- Develop and implement: i) Alien and invasive plant management plan to eradicate these species, and ii) Rehabilitation plan for the rehabilitation of cleared areas.

The bird monitoring protocols in the EMPR mostly require monthly bird surveys. This is deemed to be excessive and quarterly bird surveys (one in each season) should be more than adequate to monitor the impact of the NMET project on avifauna. It is recommended that the following additions be made to the EMPr (Martin, 2023):

- Activities within the Coega SEZ must comply with CDC's and Port of Ngqura's Standard Environmental Specifications for Construction and Operations and with the Coega OSMP Management Guidelines.
- Security fencing must be of a design that does not entrap, snag, electrocute or present a collision hazard to avifauna.
- Design infrastructure (especially the structure enclosing the stockyard) to minimize nesting and roosting by urban adapted bird species.
- Electrical infrastructure, including powerlines, must be of bird friendly designs to minimize and prevent bird electrocutions and collisions (in addition to the use of bird flight diverters on overhead powerlines).

The following monitoring actions are recommended on water quality (which is line with the monitoring recommendations of the 2013 assessment):

- There is a good and regularly monitored network of boreholes in the SEZ area, and this monitoring must continue, however the monitoring network will need to be expanded to be project specific. Additional groundwater monitoring sites have been proposed following the outcome of this hydrocensus and taking into account the development of the project (Williamson, 2023). These additional sites can be seen **Appendix E6**.
- The boreholes must be drilled to the top of the impermeable clay layer (and no deeper). They need to be fully screened and have an appropriately designed gravel pack installed. The boreholes must be fully developed prior to use and proper sampling techniques must be followed. A groundwater monitoring protocol needs to be established. Monitoring on a quarterly basis should suffice (Williamson, 2023).

The following recommendations are made regarding the way forward for the water balance (Williamson, 2023):

- Flow Meters must be installed at all source points for water being sourced for the project. It has been indicated that the only known source of water will be municipal. A

flow meter must be installed on this pipeline to determine the quantity of water being taken from the municipal network and to work towards reducing that footprint through alternative means such as rain harvesting.

- The installation and calibration of flow meters must be done by a SABS certified calibration technician and certificates must be made available upon calibration.
- The location coordinates and serial numbers for the new flow meters, following calibration, must be recorded and kept in a database so that future water balancing can be done.
- Currently the project is still in the planning phase and no flow meter data is available. Therefore, there is insufficient data to undertake a comprehensive water balance for the Ngqura Manganese Export Terminal Project.
- Upon installation of recommended flow meters, monthly recordings must be taken and recorded for at least three months to have sufficient data to compile a comprehensive water balance for the project.

The noise specialist has recommended the following mitigation measures (Van der Merwe, 2013):

- Processes, machinery and equipment or any other machinery to comply with the manufacturer's specifications on recommended noise levels for specific applications.
- Environmental noise surveys to be carried out during the operational phase to ensure compliance to the Nelson Mandela Bay Metropolitan Municipality Noise By-laws.

The palaeontologist has recommended the following mitigation measures (Wilken, 2023), which are similar to the mitigation measures provided in the 2013 FEIR:

- A palaeontologist is present to monitor during bush clearing and any major excavation in the area.
- The appointed palaeontologist MUST be informed at least 2 months prior to excavation, in order to prepare an application for a Fossil Collection Permit as it is highly likely this will be required.

Although the specialist has recommended being informed at least 2 months prior to excavation, the measure has been reworded to "The appointed palaeontologist must be informed timeously prior to excavations and bush clearing" in the EMPr.

- In the case of any fossil finds, the chance fossil find procedure must be followed.

The archaeologist has recommended the following mitigation measures (Booth, 2023), and are similar to the mitigation measures proposed in the 2013 FEIR:

- Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
- A person must be trained as a site monitor to report to the foreman when archaeological sites are found.

- If concentrations of pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction of the proposed development and / or future excavations for individual graves, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) (043 745 0888) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the findings will then be conducted to establish the contextual status of the sites and remove the archaeological deposit before development activities continue.
- The specialist has recommended that due to the low significance of archaeological heritage resources, that an archaeologist does not need to be present during the vegetation clearing as long as the recommendations of the 2023 assessment are implemented (Booth, 2023).

Mitigation measures have been included in the Amended Environmental Management Programme (EMPr), **Appendix F**.

6.4 Reasoned Opinion and Recommendation

The Environmental Assessment Practitioner (EAP) is of the opinion that the significance of impacts associated with the proposed amendments is of a very low to low negative significance with the implementation of mitigation measures.

The EAP recommends that the amendments to the Environmental Authorisation for the Ngqura Manganese Export Terminal should be authorised.

Copyright © CEN Integrated Environmental Management Unit. All Rights Reserved



No part of the documents may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without permission in writing from the CEN Integrated Environmental Management Unit. Likewise, the document may not be lent, resold, or otherwise disposed of by way of trade.

Document printed September 2023