BASIC ASSESSMENT REPORT IN TERMS OF NEMA

PROPOSED DECOMMISSIONING OF THE TRANSNET DURBAN TO JOHANNESBURG PIPELINE (DJP) AFTER DEACTIVATION, I.E. PRODUCT (HYDROCARBON) DISPLACEMENT AND CLEANING

MARCH 2020

(DRAFT)

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Appendix A: EAP
- Company profile: HydroScience
- Curriculum vitae (Environmental Assessment Practitioner): Ms Paulette Jacobs
- Qualification: Ms Paulette Jacobs
- Professional affiliations: Ms Paulette Jacobs (SACNASP, WISA, IAIAsa)
- Curriculum vitae: Ms Yonanda Martin
- Professional affiliations: Ms Yonanda Martin (IAIAsa)
- Curriculum vitae (Public Participation): Ms Babalwa Fatyi
- Project list: HydroScience NEMA applications

Appendix B: Applicant & property information
- Property information
  - Servitude

Appendix C: Photographs & Maps
- Photographs from site visits (November – December 2019)
- Maps for sections of the route where work will be conducted (VGI)

Appendix D: Specialist studies
- Biodiversity: The Biodiversity Company (December 2019)
  - Specialist declaration
- Heritage Impact Assessment: Prof A.C. van Vollenhoven from Archaetnos Culture and Cultural Resource Consultants (November 2019)
  - Specialist declaration
- Socio-economic: Umsizi Sustainable Social Solutions (November 2019)
  - Specialist declaration

Appendix E: Public participation
- Newspaper notices – Tear sheets from newspapers
- Summary of site notices
- Email communication
- SMS notifications
- Comments & responses summary
- Contact details of Interested and Affected Parties (confidential)

Appendix F: Designs (VGI Consulting)
- Typical water crossing detail – abandonment and plugging excavation detail (1297-C-A3-03109)
- Typical rail crossing detail – abandonment and plugging excavation detail (1297-C-A3-03111)
- Typical road crossing detail - – abandonment and plugging excavation detail (1297-C-A3-03112)

Appendix G: Definitions document (VGI Consulting)

LIST OF ACRONYMS AND ABBREVIATIONS AND DEFINITIONS

AIS	Alien and Invasive Species Regulations (2014)
Biodiversity	Diversity of genes, species and ecosystems on earth, and the ecological and evolutionary processes that maintain this diversity.
BPG	Best Practice Guidelines
CARA	Conservation of Agriculture Resources Act, 1983 (Act 43 of 1983)
CBA	Critical Biodiversity Area (terrestrial and aquatic areas required to meet biodiversity targets for ecosystems, species or ecological processes, as identified in a systematic biodiversity plan)
CBD	Central Business District (centre of a town/city)
CRSA	Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) – Section 24 relates to environment
CSIR	Council for Scientific and Industrial Research
DEA	Department of Environmental Affairs (national authority responsible for environmental protection and implementation of NEMA)
DJP	Durban-Johannesburg Pipeline
DOL	Department of Labour
DTI	Department of Trade and Industry
DWS	Department of Water and Sanitation (national authority responsible for water protection and implementation of NWA, custodian of South Africa's water resources)
EAP	Environmental Assessment Practitioner (independent consultant administering NEMA processes on behalf of applicant)
EAPASA	Environmental Assessment Practitioner Association of South Africa
ECA	Environment Conservation Act, 1989 (Act 73 of 1989) – preceded NEMA
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment (process required in terms of NEMA to obtain authorisation for listed activities)
EMF	Environmental Management Framework
EMP	Environmental Management Programme/Plan
EO	Environmental Officer
ERAP	Emergency Response Action Plan

ESA	Ecological Support Area (terrestrial and aquatic areas that are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of one or more Critical Biodiversity Areas; or in delivering ecosystem services.
FPA	Fire Protection Agency
GIS	Geographic Information System
GNR	Government Notice Regulation (notices published in Government Gazette in terms of already promulgated laws, legislated by government)
GNR 324	Amendment of GNR 985 - Listing 3 deals with activities requiring environmental authorisation due to sensitive locations
GNR 325	Amendment of GNR 984 - Listing 2 deals with activities requiring environmental authorisation due to expected higher environmental impact – requires full EIA (scoping and EIA)
GNR 326	Amendment of GNR 982 - EIA regulations – procedures / requirements
GNR 327	Amendment of GNR 983 - Listing 1 deals with activities requiring environmental authorisation due to expected lower environmental impact – requires Basic Assessment only
GPS	Global Positioning System
HCS	Hazardous Chemical Substance
HIA	Heritage Impact Assessment
IAIA	International Association of Impact Assessment
IBA	Important Bird (and Biodiversity) Area – of international significance for conservation of birds as identified by BirdLife International.
I&APs	Interested and Affected Parties (as identified during the Public Participation Process)
IDP	Integrated Development Plan
IRP	Integrated Resource Plan
mamsl	Metres Above Mean Sea Level
KZN	Kwa-Zulu Natal
Listed Activities	Activities identified in terms of NEMA Sections 24 and 24D, which require environmental authorisation prior to commencement due to their potential environmental impacts. See GNR 324, 325, 326, 327
MAE	Mean Annual Evaporation
MAP	Mean Annual Precipitation
MSDS	Material Safety Data Sheets

NEMA	National Environmental Management Act, 1998 (Act 107 of 1998) – overarching environmental legislation in South Africa
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
NEM:PAA	National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
NERSA	National Energy Regulator of South Africa
NFEPA	National Freshwater Ecosystems Priority Area
NHRA	National Heritage Resources Act, 1999 (Act 25 of 1999)
NWA	National Water Act, 1998 (Act 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act 85 of 1993)
PPE	Personal Protective Equipment
PPP	Public Participation Process
PRECIS	National Herbarium Pretoria (PRE) Computerised Information System
QDGC	Quarter Degree Grid Cell
SACNASP	South African Council for Natural Scientific Professions (body for the registration of professional natural scientists)
SAHRA	South African Heritage Resources Agency (authority responsible for implementation of NHRA)
SAHRIS	South African Heritage Resources Information System (electronic system onto which reports are loaded for comments from SAHRA)
SANBI	South African National Biodiversity Institute
SABS	South African Bureau of Standards
SANS	South African National Standards
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SDP	Site Development Plan
SHEQ	Safety, Health, Environment & Quality
SOC	State Owned Company
SoE	State of the Environment Report
SUDS	Sustainable Urban Drainage Systems

TBC	The Biodiversity Company
TPL	Transnet Pipelines, a division of Transnet SOC Limited
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WCMR	Waste classification and Management Regulations
WISA	Water Institute of Southern Africa
WULA	Water Use License Application (also referred to as WUL)

1 ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

1.1 Details

Table 1-1: Details of the EAP

Company:	HydroScience CC
Registration Number:	2008/056910/23 14 March 2008
Postal address:	P.O. Box 1322 Ruimsig 1732
Physical address:	C4 Cascades Office Park Corner of Wasbank and Weiling Streets Little Falls Johannesburg
Email address:	paulette@hydroscience.co.za
Telephone number:	+ 27 (0) 82 850 5482 (Paulette) + 27 (0) 82 409 0405 (Yonanda)
Fax number:	+ 27 (0) 86 692 8820
Contact person:	Ms Paulette Jacobs I.D. 680526 0104 08 4 Ms Yonanda Martin I.D. 820306 0074 08 7
Professional registration (Paulette Jacobs):	South African Council for Natural Scientific Professions (SACNASP): 400005/07 Environmental Assessment Practitioner Association of South Africa (EAPASA): In progress
Membership (Paulette Jacobs):	Water Institute of Southern Africa (WISA): 24906 International Association of Impact Assessment South Africa (IAIAsa): 5266
Professional registration (Yonanda Martin):	South African Council for Natural Scientific Professions (SACNASP): 400204/09 Environmental Assessment Practitioner Association of South Africa (EAPASA): In progress
Membership (Yonanda Martin):	International Association of Impact Assessment South Africa (IAIAsa): 2389

1.2 Experience and expertise

HydroScience CC was established in 2008 after Ms Paulette Jacobs acted as an independent consultant (sole proprietor) since 2000. HydroScience is an environmental, water and waste management solutions provider. Refer to Appendix A for a company profile.

Ms Paulette Jacobs obtained her qualifications from the Rand Afrikaans University in Johannesburg in 1990 and has been in the water, waste and environmental field for the last 30 years, first in research for seven (7) years at the Council for Scientific and Industrial Research (CSIR) and since then in consulting (Pulles, Howard and De Lange Water Quality Management Consultants, SRK Consulting, sole proprietor, HydroScience). Refer to Appendix A for Curriculum Vitae of Ms Paulette Jacobs. Ms Paulette Jacobs assisted Department of Water Affairs and Forestry (now Department of Water and Sanitation, DWS) to compile the Best Practice Guidelines (BPG) for water resource protection in the mining industry and has successfully completed many Water Use Licence (WUL) Applications in terms of the National Water Act (NWA), 1998 (Act 36 of 1998) as well as Environmental Impact Assessments (EIA) in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended for the industrial, retail, commercial/business and residential sectors to obtain environmental authorisations, Atmospheric Emissions Licenses (AEL) and Waste Management Licenses (WML) over the last 20 years. Refer to Appendix A for a project list of applications for environmental authorisation.

1.3 Supporting information

Appendix A contains:

- Company profile: HydroScience
- Curriculum vitae (Environmental Assessment Practitioner): Ms Paulette Jacobs
- Qualification: Ms Paulette Jacobs
- Professional affiliations: Ms Paulette Jacobs (SACNASP, WISA, IAIAsa)
- Curriculum vitae: Ms Yonanda Martin
- Professional affiliations: Ms Yonanda Martin (IAIAsa)
- Curriculum vitae (Public Participation): Ms Babalwa Fatyi
- Project list: HydroScience NEMA applications

1.4 Assumptions, limitations, disclaimer and copyright

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information at the time of compilation (October 2019 – February 2020). The report is based on review and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken (Basic Assessment process) and HydroScience and its staff / representatives reserve the right to modify aspects of the report if and when new information may become available from changes in legislation, on-going research or further work in this field, or pertaining to this investigation.

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Transnet Pipelines is responsible for the implementation of recommendations and HydroScience cannot and will not take responsibility for its actions or lack thereof.

1.5 Declaration of independence

I, **Paulette Jacobs**, declare that –

- I act as an independent environmental, water and waste consultant in this investigation;
- I have expertise in water, waste and environmental management, including knowledge of the relevant Acts, Regulations and any guidelines that have relevance to the investigation;
- I have performed the work relating to this investigation in an objective manner, even if this results in views and findings that are not favourable to any party involved;
- I have included the specialist studies provided to me in Appendices as well as summarised findings and recommendations in this report;
- I undertake to disclose all material information in my possession that reasonably has or may have the potential to influence this investigation, unless access to that information is protected by law, in which case it will be indicated that such information exists;
- I do not have any vested interest (either business, financial, personal or other) in the investigation other than fair remuneration for work performed; and
- I will provide the parties with access to all information at my disposal regarding the investigation, whether such information is favourable or not.

_____

Signature: Paulette Jacobs

I, **Babalwa Fatyi**, declare that –

- I act as an independent public participation consultant in this investigation;
- I have expertise in public participation and stakeholder engagement;
- I have performed the work relating to this investigation in an objective manner, even if this results in views and findings that are not favourable to any party involved;
- I have recorded and included comments received from stakeholders and interested and affected parties in the report;
- I undertake to disclose all material information in my possession that reasonably has or may have the potential to influence this investigation, unless access to that information is protected by law, in which case it will be indicated that such information exists;
- I do not have any vested interest (either business, financial, personal or other) in the investigation other than fair remuneration for work performed; and
- I will provide the parties with access to all information at my disposal regarding the investigation, whether such information is favourable or not.

_____

Signature: Babalwa Fatyi

2 APPLICANT / PROPONENT

2.1 Details

Table 2-1: Details of the Project Applicant/Proponent

Company:	Transnet Pipelines, a division of Transnet State-Owned Company (SOC) Limited
Registration Number:	1990/000900/30
Postal address:	P.O. Box 3113 Durban 4000
Physical address:	202 Smith (Anton Lembede) Street Durban 4001
Email address:	vicky.dlamini@transnet.net
Telephone number:	+ 27 (0) 31 361 1301/47
Fax number:	+ 27 (0) 31 361 1346
Contact person:	Ms Nqobile Victoria Dlamini (Environmental Manager) Cellular number: 083 607 6084

2.2 Supporting information

Appendix B contains details on the servitude.

3 ROUTE

3.1 Details

Table 3-1: Provinces and Municipalities affected by the proposed Project

Provinces:	KwaZulu-Natal (KZN) Free State (FS) North West (NW) Gauteng (GP)
Municipalities:	Ethekwini Local Municipality Makhambatheni Local Municipality Msunduzi Local Municipality uMngeni Local Municipality Mooi Mphofana Local Municipality Inkosi Langalibalele Local Municipality Alfred Duma Local Municipality Okhahlamba Local Municipality Maluthi-A-Phofung Local Municipality Dihlabeng Local Municipality Nketoana Local Municipality Moqhaka Local Municipality Ngwathe Local Municipality City of Motlosana Local Municipality Metsimaholo Local Municipality Midvaal Local Municipality City of Tshwane Metropolitan Municipality Ekurhuleni Metropolitan Municipality City of Johannesburg Metropolitan Municipality
Ownership:	Transnet Pipelines, a division of Transnet State-Owned Company (SOC) Limited through a servitude.

See Figures below.

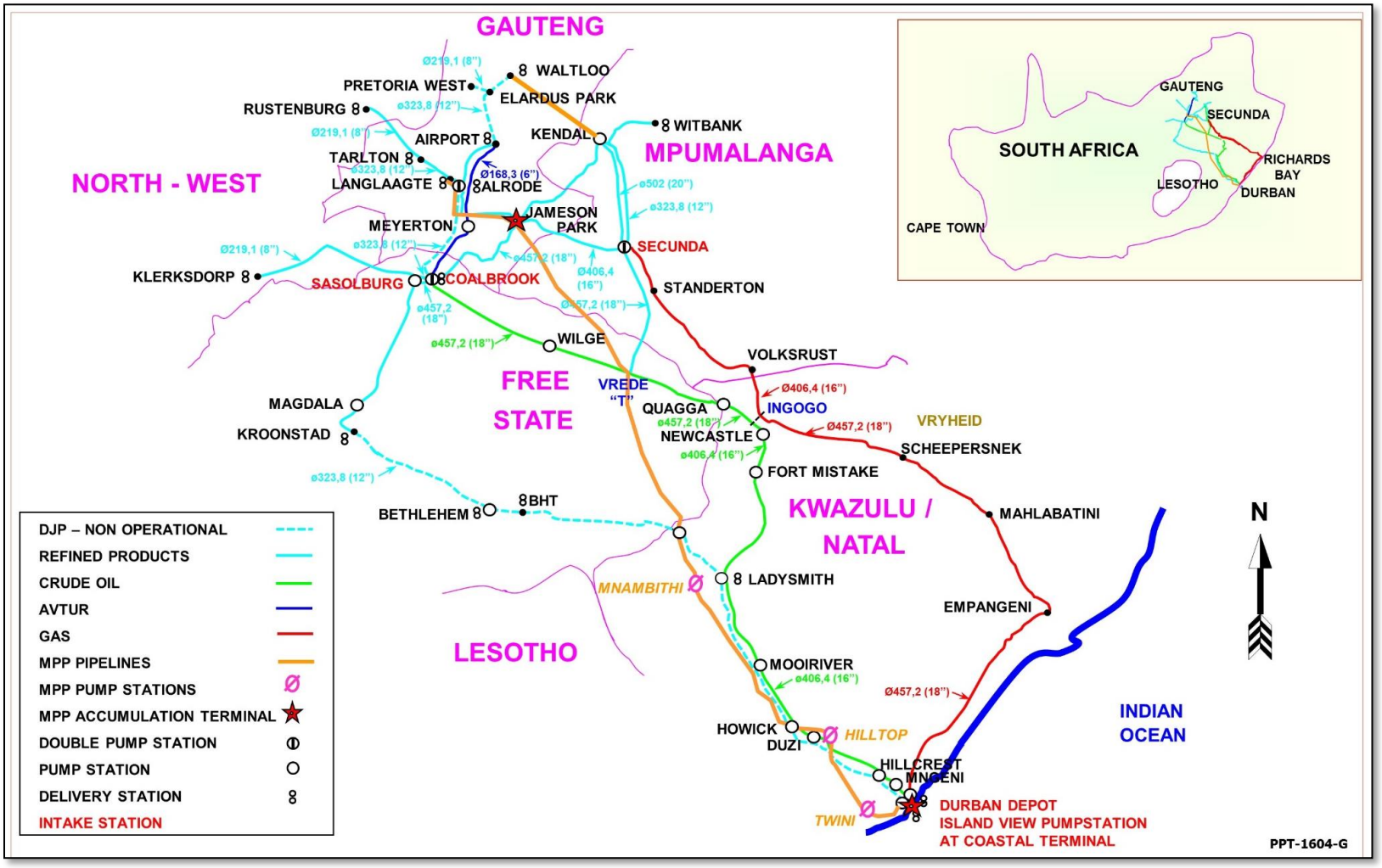


Figure 3-1: Overview plan (VGI)

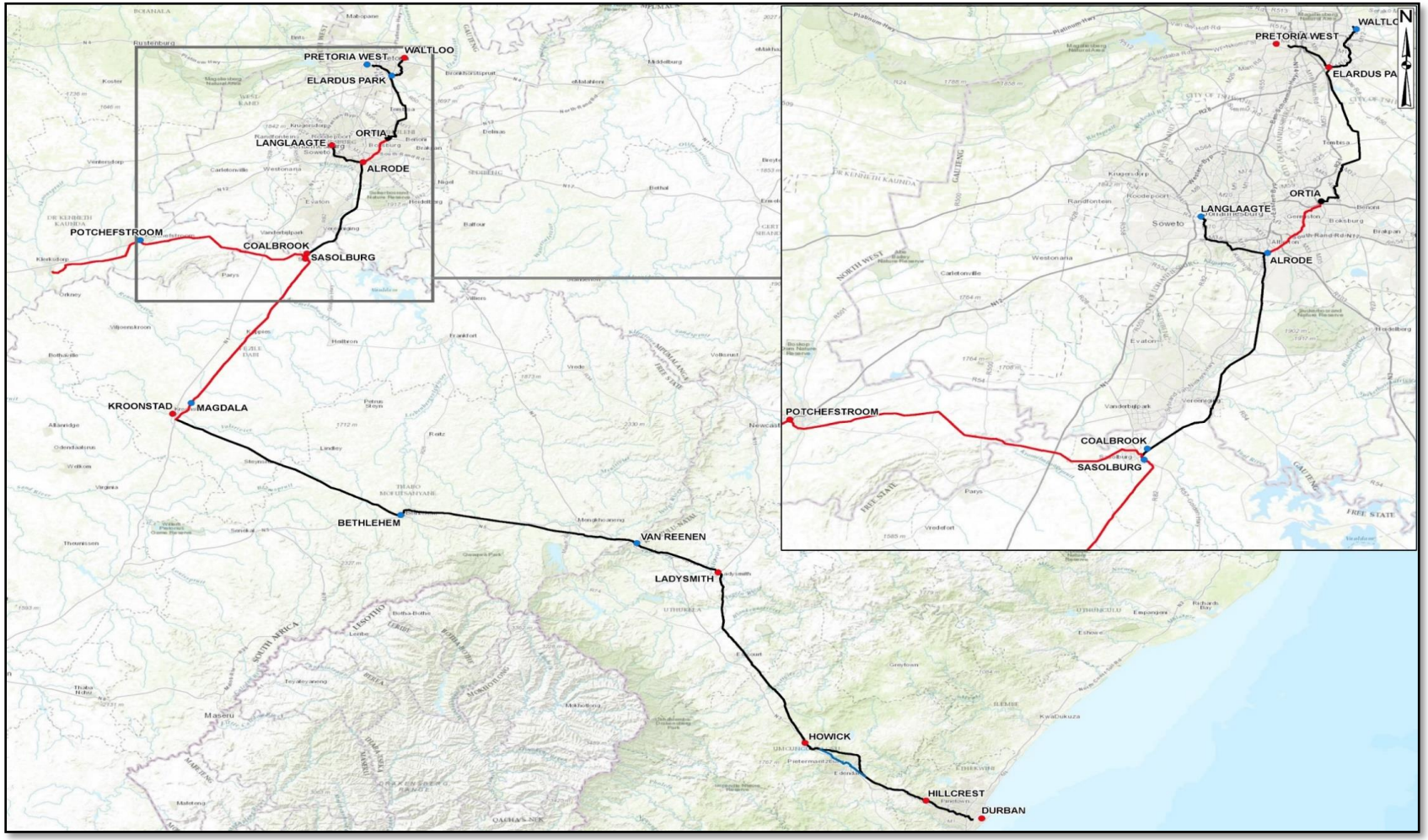


Figure 3-2: Locality map (VGI)

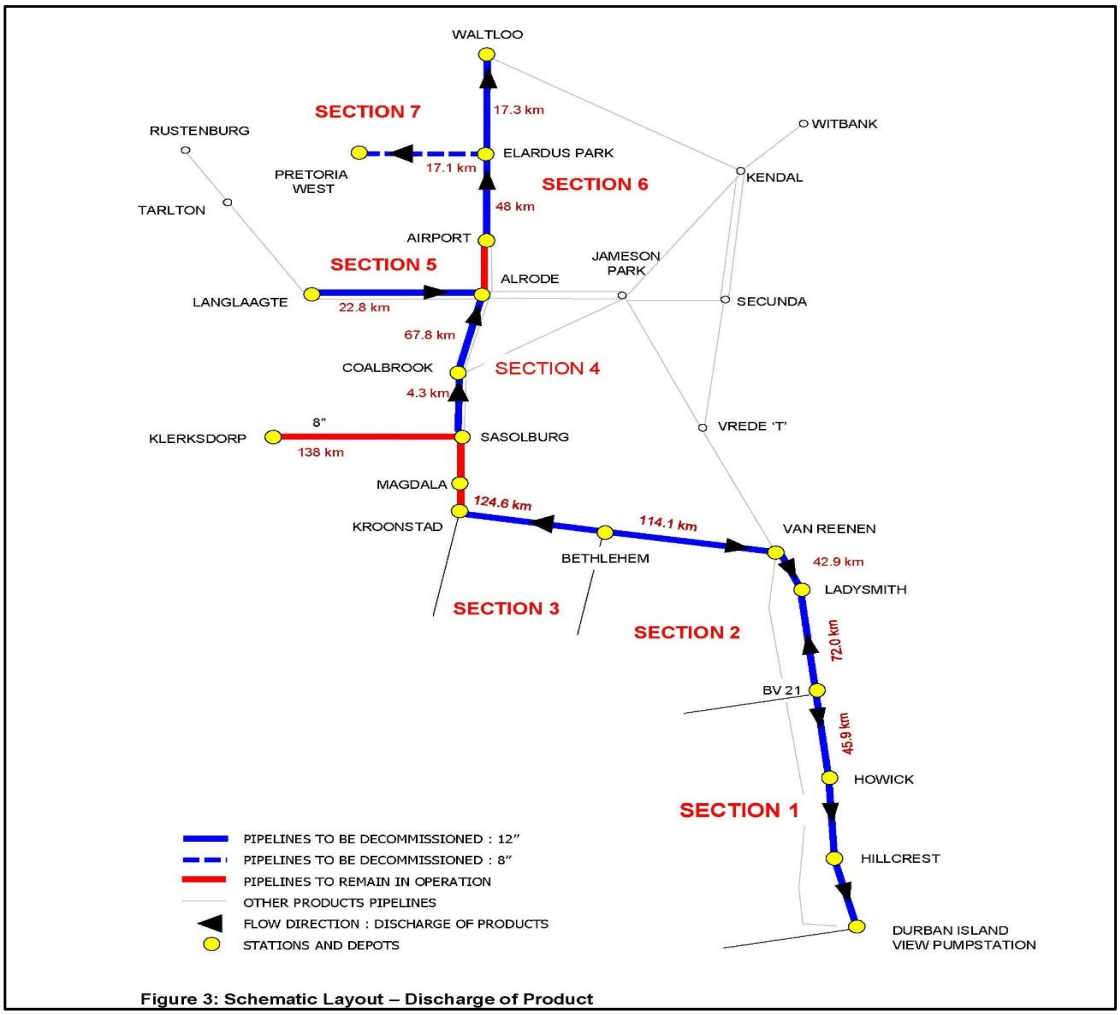


Figure 3-3: Pipeline schematic (VGI)

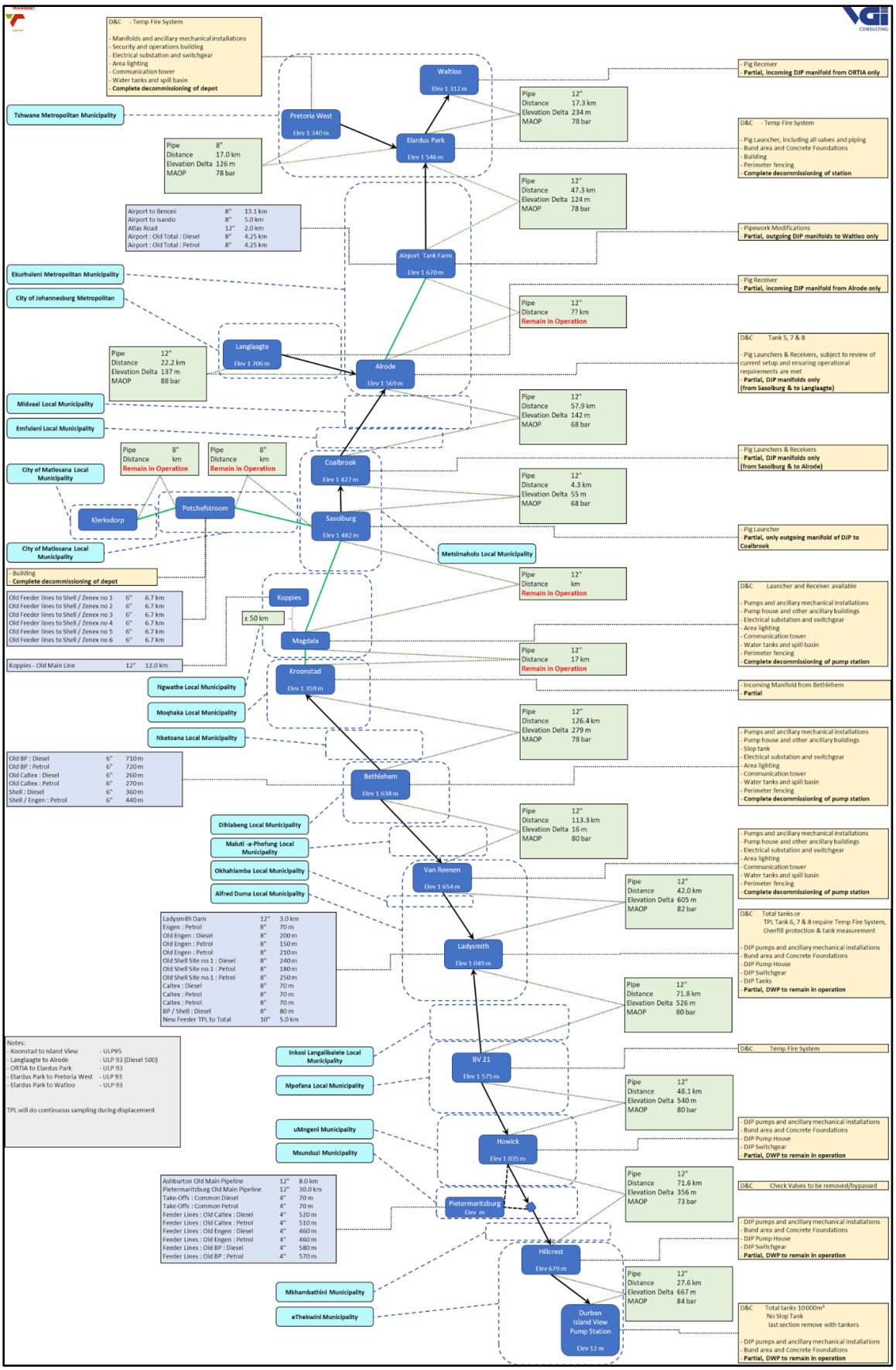


Figure 3-4: Project diagram (VGI)

3.2 Route Sections

As can be seen from the figures above, Figure 3-1 to 3-4, the route stretches from Durban (Kwa-Zulu Natal Province) to Pretoria (Gauteng Province). This is an extremely long route and in order to understand or determine the impact of the decommissioning of this pipeline along the route, it was decided to divide the route into different categories, based on the land use. These categories are based on the type of land use of the different areas and the impact the project would have on that specific land use. It is assumed that the project would have the same impact on areas with similar land uses. Therefore, not each plug-in point and pump station will be discussed but the points will be clustered into the various categories and the impacts associated with the decommissioning of the pipeline or pump station within that category will be discussed.

The following three (3) land use categories were selected:

Built-up Areas: This refers to areas that are mainly built-up or developed and includes residential, commercial, industrial, mining areas but also infrastructure such as roads and railway lines. It also includes informal settlements, townships or villages. This could include built-up areas within the urban edge or outside the urban edge and therefore also addresses the built-up areas within rural settings. The term, built-up area, was used instead of urban areas in order to prevent any confusion with the definition as per NEMA: EIA Regulations (Act 107 of 1998).

Natural Areas: This refers to areas that are in a 'natural' state. It includes conservation areas within or outside the built-up areas, nature reserves / parks and the natural areas between towns, such as grasslands or mountains. It also refers to 'natural' areas within a built-up area such as rivers, streams or wetlands.

Farming / Agricultural Areas: This refers to areas that are pre-dominantly used for agricultural purposes and therefore includes cultivated land, grazing fields, farmsteads and the farm worker's residential areas. This will also include agricultural small holdings, except if the small holdings have been transformed to a higher density residential area or a more industrial area.

Refer to Figures 3.5 – 3.8 below for examples of the three land use categories and to Tables 3.2 – 3.4 below for the breakdown of the various plug-in points into the land use categories.

3.3 Plug-in points

A plug-in point is a point at which physical work is conducted along the pipeline route. Refer to maps in Appendix C as well as Tables 3-2 to 3-4 and Figures 3-5 to 3-8 below.

At the plug-in points, holes are excavated. The one side of the pipe (cut and fill side), will have an excavated hole of 4m x 4m while the other end of the pipeline will have a 2m x 2m excavated area.

The objective is to plug / fill sections of the pipe to prevent subsidence and the pipe from acting as a conduit.

3.4 Block valves

A block valve is a point along the pipeline that controls the flow of the product within the pipeline. Since the pipeline will be cleaned and decommissioned there will be no use for the valves and the valves will therefore be removed. Refer to maps in Appendix C as well as Tables 3-5 to 3-7 and Figure 3-7 below.

Figure 3-5: Example of plug-in points located in a built-up area

Photo 7: Plug-in (298 A - B) located along a local road, Swinburne

Photo 8: Plug-in (323 E & 324 F) located along Th R74, Harrismith

NATURAL AREAS

Figure 3-6: Example of plug-in points located in a natural area

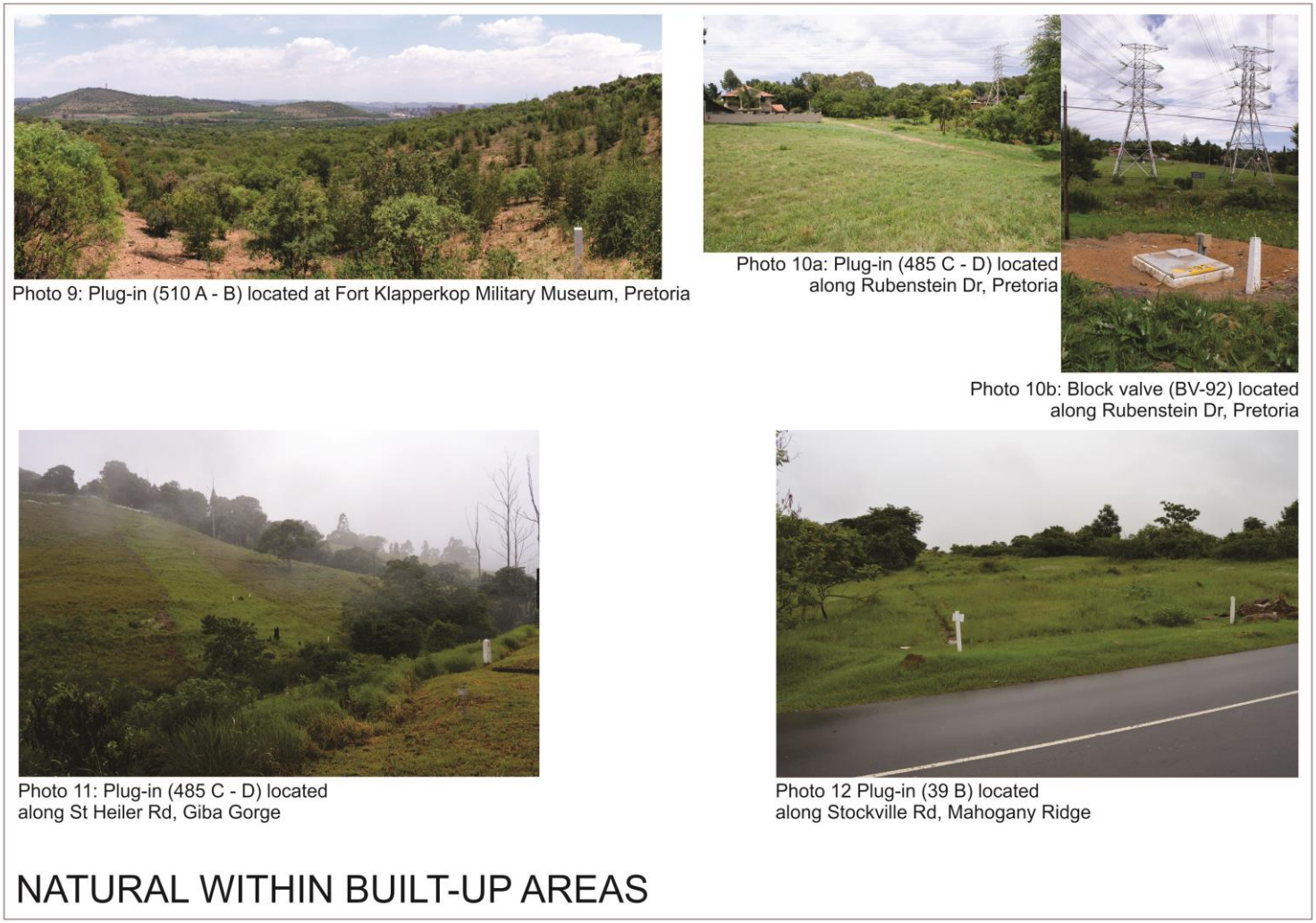


Figure 3-7: Example of plug-in points located in a natural area but surrounded by built-up areas

Figure 3-8: Example of plug-in points located in a farming/ agricultural area

Table 3-2: List of the Plug-In points located within Built-up Areas

BUILT-UP AREA				
Plug-in Point	**Plug-in Point**	**Plug-in Point**	**Plug-in Point**	**Plug-in Point**
C525-AOC1-PS1-J	C0-AOC12-PS7-I	C368-A	C92-A	C558-K
C521-AOC1-PS1-G	C0-AOC12-PS7-J	C363-E	C91-F	C557-J
C520-F	C445-H	C362-D	C88-E	C557-I
C509-C	C443-G	C362-C	C87-D	C556-H
C508-A	C442-F	C343-B	C87-C	C556-G
C483-A	C442-E	C343-A	C81-A	C555-F
C484-B	C441-D	C339-D	C67-I	C555-E
C485-C	C440-C	C339-C	C66-H	C554-D
C497-C	C439-B	C333-D	C65-G	C554-C
C501-I	C439-A	C324-F	C57-D	C553-B
C502-L	C0-AOC13/14-PS8/9-B	C81-B	C50-F	C553-A
C503-M	C0-AOC14/15-PS9/10-C	C297-I	C47-B	C552-T
C504-O	C0-AOC15-PS10-D	C297-H	C47-A	C552-S
C459-A	C408-C	C296-G	C45-B	C551-R
C0-AOC2-A1	C409-F	C295-F	C40-D	C550-Q
C0-AOC2-A2	C410-H	C289-F	C40-C	C549-P
C460-C	C411-A	C287-E	C38-A	C548-O
C460-D	C411-B	C286-D	C36-C	C547-N
C461-B	C0-AOC16-PS11-B1	C286-C	C34-B	C546-M
C462-C	C0-AOC16/17-PS11/12-B2	C285-B	C33-A	C545-L
C464-E	C0-AOC17/18-PS12/13-B3	C254-E	C29-J1	C545-K
C469-D	C412-AOC19/20-PS14/15-B	C254-D	C28-H	C544-J
C480-C	C413-AOC22/23-PS17/18-C	C253-C	C24-G	C544-I
C480-D	C0-AOC23-PS18-D1	C253-B	C23-F	C543-H
C481-E	C414-E	C249-H	C22-E	C543-G
C481-F	C414-F	C247-G	C21-D	C542-F
C482-A	C415-A	C234-D	C20-C	C541-E
C482-B	C423-A	C234-C	C19-B	C540-D
C0-AOC7-PS2-G	C423-B	C233-B	C19-A	C539-C
C458-AOC7/8-PS2/3-F	C424-C	C233-A	C18-J	C537-P
C457-AOC8/9-PS3, PS4-E	C433-E	C232-G	C18-I	C537-O
C456-AOC9/10-PS4/5-D	C436-A	C229-F	C17-H	C536-N
C455-AOC10-PS5-C	C436-B	C228-E	C11-G	C536-M
C0-AOC11-PS6-B1	C437-AOC34-PS24-C	C225-D	C10-F	C535-L
C454-B	C438-AOC34-PS24-F	C224-C	C4-E	C535-K
C449-A	C406-EndPipe	C216-B	C3-D	C534-J
C448-D	C405-D	C215-A	C2-C	C533-I
C447-C	C404-C	C179-D	C1-B	C529-B
C446-B	C372-C	C179-C	C1-A	C529-A
C446-A	C369-B	C92-B	C558-L	

Table 3-3: List of the Plug-In points located within Natural Areas

NATURAL AREA					
Plug-in Point	**Plug-in Point**	**Plug-in Point**	**Plug-in Point**	**Plug-in Point**	**Plug-in Point**
C518-D	C392-A	C290-G	C193-B	C143-G	C48-C
C516-C	C391-D	C283-A	C192-A	C139-F	C46-D
C510-B	C391-C	C282-H	C180-E	C125-A	C46-C
C508-B	C390-B	C279-G	C178-B	C124-G	C42-A
C486-F	C383-D	C278-F	C178-A	C123-F	C41-F
C487-G	C383-C	C268-H	C177-F	C122-E	C41-E
C489-I	C382-B	C267-G	C173-E	C121-D	C39-B
C492-J	C382-A	C266-F	C172-D	C120-C	C37-E
C493-K	C380-D	C265-E	C169-C	C119-B	C37-D
C493-L	C378-C	C264-D	C168-B	C118-A	C32-M
C494-M	C376-B	C264-C	C168-A	C115-C	C31-L
C496-A	C376-A	C263-B	C167-H	C114-B	C31-K
C500-H	C356-B	C263-A	C167-G	C110-A	C30-J2
C506-R	C354-A	C262-F	C166-F	C109-E	C29-I
C462-D	C353-F	C262-E	C166-E	C109-D	C563-H
C472-C	C353-E	C261-D	C165-D	C108-C	C563-G
C473-E	C350-F	C261-C	C165-C	C107-B	C562-F
C475-A	C350-E	C260-B	C164-B	C86-B	C562-E
C479-A	C348-B	C259-A	C163-A	C85-A	C538-B
C479-B	C347-A	C258-B	C162-D	C78-H	C538-A
C448.1-F	C342-B	C256-A	C162-C	C78-G	C532-H
C448.1-E	C342-A	C255-G	C161-B	C77-F	C532-G
C407-A	C341-F	C255-F	C161-A	C77-E	C531-F
C0-AOC29-B1	C340-E	C246-F	C160-H	C73-B	C531-E
C0-AOC29-B2	C338-B	C235-E	C160-G	C73-A	C530-D
C420-AOC31-PS21-C	C338-A	C214-I	C159-F	C72-F	C530-C
C422-AOC31/32-PS21/22-D	C337-E	C213-H	C159-E	C72-E	C528-F
C432-D	C325-A	C213-G	C158-D	C71-D	C528-E
C402-B	C323-E	C210-D	C157-C	C69-C	C527-D
C402-A	C322-D	C210-C	C156-B	C68-B	C527-C
C401-B	C316-E	C209-B	C156-A	C68-A	C526-B
C400-A	C315-D	C208-A	C155-F	C61-F	C526-A
C398-D	C314-C	C207-I	C153-E	C60-E	
C398-C	C308-B	C201-H	C152-D	C56-C	
C397-B	C307-A	C200-G	C150-C	C55-B	
C397-A	C302-G	C200-F	C149-B	C54-A	
C396-C	C299-B	C199-E	C148-A	C51-G	
C396-B	C298-A	C197-D	C147-I	C49-E	
C392-B	C290-H	C196-C	C144-H	C48-D	

Table 3-4: List of the Plug-In points located within Agricultural/Farming Areas

AGRICULTURAL/ FARMING AREA			
Plug-in Point	**Section of the Pipeline**	**Co-ordinates**	
C470-AOC3-A	C386-C	C317-F	C129-D
C0-AOC4-E1	C385-B	C301-F	C127-C
C476-C	C384-B	C301-E	C126-B
C477-B	C384-A	C300-D	C106-A
C477-AOC5-C	C381-E	C300-C	C105-H
C477-D	C377-B	C294-E	C104-G
C478-E	C377-A	C294-D	C104-F
C0-AOC6-F	C375-F	C293-C	C103-E
C0-AOC6-G	C375-E	C292-B	C102-D
C410-G	C374-D	C291-I	C101-C
C0-AOC20/21-PS15/16-C	C374-C	C291-A	C100-B
C0-AOC21/22-PS16/17-C1	C373-B	C274-E	C99-A
C415-B	C373-A	C273-D	C95-G
C0-AOC24-C	C361-B	C272-C	C94-F
C0-AOC24-D	C358-A	C271-B	C94-E
C0-AOC25-PS19-E	C357-D	C270-A	C93-D
C0-AOC26-PS20-A1	C357-C	C269-J	C93-C
C0-AOC27-A2	C352-D	C269-I	C84-B
C0-AOC27-A3	C352-C	C252-A	C84-A
C0-AOC28-A4	C351-B	C250-I	C83-F
C0-AOC28-A5	C351-A	C212-F	C83-E
C416-A	C349-D	C211-E	C82-D
C417-B	C349-C	C188-E	C82-C
C418-AOC30-A	C346-F	C187-D	C80-D
C419-A	C346-E	C186-C	C80-C
C419-B	C345-D	C185-B	C79-B
C0-AOC32/33-PS22/23-E	C344-C	C183-A	C79-A
C0-AOC33-PS23-F	C332-C	C182-H	C76-D
C403-A	C331-B	C182-G	C76-C
C399-F	C330-A	C181-F	C75-B
C399-E	C328-G	C138-E	C75-A
C395-A	C327-F	C138-D	C561-D
C394-E	C327-E	C137-C	C561-C
C393-D	C326-D	C136-B	C560-B
C393-C	C326-C	C135-A	C560-A
C390-A	C325-B	C133-I	C559-N
C389-B	C321-C	C132-H	C559-M
C388-A	C320-B	C131-G	C74-D
C387-A	C319-A	C130-F	C74-C
C386-D	C318-G	C130-E	

Table 3-5: List of the Block valves located within Built-up Areas

BUILT-UP AREA		
Block valve	**Block valve**	**Block valve**
BV-02	BV-33_b	BV-70_b
BV-04	BV-34	BV-73
BV-06	BV-35	BV-77
BV-07	BV-45	BV-83
BV-08	BV-46	BV-91
BV-14B	BV-57_a	BV-94
BV-15	BV-57_b	BV-PW1
BV-16	BV-58	BV-BHM
BV-28	BV-59	BV-L2
BV-29	BV-69	BV-L3
BV-33_a	BV-70_a	BV-MGA

Table 3-6: List of the Block valves located within Natural Areas

NATURAL AREA		
Block valve	**Block valve**	**Block valve**
BV-03	BV-30	BV-72
BV-05	BV-32	BV-84
BV-10	BV-37	BV-85
BV-13	BV-52	BV-92
BV-13	BV-53	BV-93
BV-22	BV-54	BV-PW2
BV-23	BV-55	BV-PW3
BV-27	BV-71	

Table 3-7: List of the Block valves located within Agricultural/Farming Areas

NATURAL AREA		
Block valve	**Block valve**	**Block valve**
BV-09	BV-26	BV-49
BV-11	BV-31	BV-50
BV-12	BV-36	BV-51
BV-14A	BV-38	BV-56
BV-16	BV-39	BV-75
BV-17	BV-40	BV-76
BV-18	BV-41	BV-86
BV-19	BV-42	BV-87
BV-20	BV-43	BV-88
BV-21	BV-44	BV-89
BV-24	BV-47	BV-90
BV-25	BV-48	

4 PROJECT

4.1 Details

Table 4-1: Project Description

Project title:	Proposed decommissioning of the Transnet Durban to Johannesburg Pipeline (DJP) after deactivation, i.e. product (hydrocarbon) displacement and cleaning.
Project description:	Proposed decommissioning of the Transnet Durban to Johannesburg Pipeline (DJP) and associated infrastructure. Decommissioning means take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned (as per NEMA definition). Sections of the pipeline and certain depots will be decommissioned. Decommissioning will take place after deactivation which would involve the displacement of product (removal of product) and cleaning (purging of pipeline with preferably an inert substance such as nitrogen). At the decommissioning phase, the pipeline is therefore classified as empty and clean. History: Durban to Johannesburg Pipeline was established in 1965 to supply refined petroleum product (petrol, diesel, jet fuel) to Gauteng. It is a 12 inch (328mm) pipe and stretches from Durban to Waltloo. During the operational period, it was found that the pipeline had an inherent welding defect, which increased the risk of pipeline failure and the impact to the environment due to spillages. In 2004, after several studies, it was decided to retire this pipeline by 2012 to manage the inherent defect and the risk to the environment. On 28 March 2018, the DJP was stopped from operation as the replacement pipeline system was completed. The following depots will be fully decommissioned (demolition and dismantling): • Van Reenen • Bethlehem • Magdala • Elardus Park • Pretoria West • Potchefstroom

	For these depots all above ground infrastructure will be demolished and removed to 0.5m below ground and the sites will be rehabilitated. Above ground infrastructure include: • Buildings • Pumps, motors, above ground pipework, valves and associated equipment • Spill basins and bunded areas • Valve chambers • Electrical and communication infrastructure • Power and water will be tied off • Fencing and security infrastructure The following depots will be partly decommissioned: • Durban • Hillcrest • Howick • Ladysmith • Kroonstad • Langlaagte • Alrode • Waltloo • Sasolburg • Coalbrook The following sections of the pipeline will remain in operation: • Kroonstad – Sasolburg • Alrode – Airport The following sections of the pipeline will be decommissioned: • Durban – Hillcrest • Hillcrest - Howick • Howick – Ladysmith • Ladysmith – Van Reenen • Van Reenen – Bethlehem • Bethlehem – Kroonstad • Sasolburg – Alrode • Airport – Waltloo • Elardus Park – Pretoria West • Alrode – Langlaagte The following mothballed sections will also be decommissioned: • Ashburton • Pietermaritzburg old main Pipeline • Koppies • Airport to Benoni • Airport to Isando • Atlas Road

	• Bethlehem TOP Feeder lines in Durban, Pietermaritzburg, Ladysmith, Bethlehem, Airport, Pretoria West and Potchefstroom will also be decommissioned. The pipe will be left in the ground (in-situ) as this is deemed international accepted practice due to the extensive environmental impact that would occur in uplifting the pipe. The pipe will be segmented at regular intervals to limit its ability to act as a conduit. Certain sections of the pipe will also be filled with grout (i.e. at road and railway crossings) to avoid any risk of subsidence. Limited sections may be uplifted, where it inhibits development or where stakeholders require such (i.e in road reserves). These sections will be identified in the next phase of planning.
Project Phases	<u>Deactivation:</u> This process does not form part of this application and is conducted as part of the normal operating procedures. This involves the displacement of the product (removal of the product) and cleaning of the pipeline. Once decommissioning of the pipeline starts, the pipeline is classified as empty and clean. <u>Decommissioning (this application):</u> The <u>decommissioning phase</u> includes the following activities: • access to the areas being decommissioned are gained; • site establishment takes place; • heavy machinery, material and skips (waste bins) are transported to site; • removal of valve chambers; • at the plug-ins, holes are excavated. The one side of the pipe (cut and fill side), will have an excavated hole of 4m x 4m while the other end of the pipeline will have a 2m x 2m excavated area. If a camp site is erected the camp site will be next to the pipeline and the total area that will be disturbed will be approximately 10m x 10m; • demolishing of the depots. This will include removal of equipment, demolishing of the buildings, levelling of the area (topography); • cleaning up of the site and contractor's camp; and • removal of all material and waste. The final phase is the <u>rehabilitation phase.</u> The aim of the rehabilitation phase is to try and return the area to the state it was in before construction and if not possible, to a better state. Rehabilitation efforts and removal of all unnatural structures, slopes and

	materials will result in conditions for potential re-establishment of vegetation communities/ ecosystems and the associated fauna resulting in reinstating the land capability (Biodiversity Company, 2019).

4.2 Need and desirability

Addressing need and desirability is a way of ensuring sustainable development. Therefore, the project must be ecologically sustainable and socially and economically justifiable.

Economic investment by applicant:	R450 million
Need & desirability to decommission	Age: The pipeline is past its operational lifetime as it was established in 1965. Environmental risk: During the operational period, it was found that the pipeline had an inherent welding defect, which increased the risk of pipeline failure and the impact to the environment due to spillages. Function: A replacement pipe was commissioned in 2018 to fulfill the function of the pipeline.
Fatal flaws:	No fatal flaws were identified and the decommissioning was found desirable as the function has been replaced. Leaving the pipeline in the ground was found the best practicable option causing least environmental disturbance.

5 LEGAL FRAMEWORK

5.1 Constitution of the Republic of South Africa (CRSA)

The Constitution of the Republic of South Africa (CRSA), 1996 (Act 108 of 1996) places a duty on the State to protect the environment. Section 24 states that:
"Everyone has the right
a. to an environment that is not harmful to their health or well-being; and
b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
   i. prevent pollution and ecological degradation;
   ii. promote conservation; and
   iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

The right in the CRSA is given effect in several articles of national legislation including the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended.

5.2 National Environmental Management Act (NEMA)

The National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended is the overarching environmental legislation in South Africa.

5.2.1 Sustainable development

The principle of Sustainable Development has been established in the CRSA and given effect by the NEMA. Section 1(29) of NEMA states that sustainable development means the integration of social, economic and environmental factors into the planning, implementation and decision-making process so as to ensure that development serves present and future generations. Thus, Sustainable Development requires that:

- The disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied.
- That waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner.
- That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.
- Negative impacts on the environment, on people's environmental rights be anticipated; and, prevented, and where they cannot altogether be prevented, are minimised and remedied.

Duty of care is addressed in Section 28 of the NEMA.

In terms of sustainable development:

- ***An ecologist evaluated ecosystems and potential loss of biodiversity on the route (TBC, 2019). To minimise the disturbance of ecosystems and loss of biodiversity which has developed over the past more than 50 years, the pipeline will be***

decommissioned and left in the ground since the uplifting of the pipe will cause severe disturbance to the environment.

- ***The pipeline will be empty and clean prior to decommissioning to minimise pollution potential since the inherent welding defect posed an environmental pollution risk during the operational phase.***
- ***A cultural heritage specialist evaluated the landscape for sites that constitute the nation's cultural heritage. No sites of heritage significance requiring conservation were found (Archaetnos, 2019).***
- ***Waste is minimised through leaving the pipe in the ground. Waste generated due to demolition at the depots and valve chambers have to be managed according to the Environmental Management Programme (EMPr).***
- ***Other potential negative impacts identified will also be managed through the EMPr.***

5.2.2 NEMA regulations

Government Notice Regulation (GNR) 982, 983, 984 and 985 of 4 December 2014 contain the latest regulations pertaining to Environmental Impact Assessment (EIA) under sections 24(5), 24M and 44 of the NEMA. These were amended / updated on 7 April 2017 under GNR 324, 325, 326 & 327.

GNR 982 as amended / updated in GNR 326 stipulate requirements in terms of processes to be followed and information to be included in documentation.

GNR 984 as amended / updated in GNR 325 was considered and no applicable activities were identified.

All activities identified for this project, which require environmental authorisation, are contained in GNR 983 as amended / updated in GNR 327 as well as GNR 985 as amended / updated in GNR 324 due to its location.

5.2.3 Listed activities applicable

The following listed activities require environmental authorisation:

GNR & Date	Activity Number and Description	Project Description
GNR 983 as amended / updated in GNR 327 of 7 April 2017	Activity 31: The decommissioning of existing facilities, structures or infrastructure listed in terms of Listing Notice 2 of 2014: The development and related operation of facilities or infrastructure for the bulk transportation of dangerous goods - (ii) in liquid form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity of more than 50 cubic metres per day.	The existing pipeline and certain existing depots will be decommissioned. Decommissioning means take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned. The pipeline and depots were used for the bulk transportation of refined petroleum product (petrol, diesel, jet fuel) between Durban and Johannesburg from 1965 to 2018.

GNR & Date	Activity Number and Description	Project Description
		The following depots will be fully decommissioned (demolition and dismantling): • Van Reenen • Bethlehem • Magdala • Elardus Park • Pretoria West • Potchefstroom For these depots all above ground infrastructure will be demolished and removed and the sites will be rehabilitated. The following sections of the pipeline will be decommissioned: • Durban – Hillcrest • Hillcrest - Howick • Howick – Ladysmith • Ladysmith – Van Reenen • Van Reenen – Bethlehem • Bethlehem – Kroonstad • Sasolburg – Alrode • Airport – Waltloo • Elardus Park – Pretoria West • Alrode – Langlaagte The following mothballed sections will also be decommissioned: • Ashburton • Pietermaritzburg old main Pipeline • Koppies • Airport to Benoni • Airport to Isando • Atlas Road • Bethlehem TOP
	Activity 19: The infilling or depositing of any material of more than 10 cubic metre into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metre from a watercourse.	Soil or sand may have to be moved to access pipes crossing watercourses in order to fill these with grout to stabilise and prevent future collapse/subsidence after decommissioning.

GNR & Date	Activity Number and Description	Project Description
GNR 985 as amended / updated in GNR 324	**Activity 12:** The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. h. North West iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	More than 300m^2 indigenous vegetation will be cleared in areas identified as critical biodiversity areas (CBA), Ecological Support Areas (ESA), Endangered Ecosystems etc. along the route due to decommissioning activities.

5.3 National Environmental Management: Biodiversity Act (NEMBA)

5.3.1 Commitment to biodiversity conservation

Although South Africa became a signatory to the Convention of Biological Diversity in 1998, the more recent enactment of national legislation has affirmed our country's commitment to biodiversity and conservation as required in the CRSA. The National Environmental Management: Biodiversity Act (NEMBA), 2004 (Act 10 of 2004) has been promulgated by the South African President and was published in the Government Gazette in June 2004 (Volume 467; No. 26426). One of the objectives of this Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and to ensure the sustainable use of indigenous biological resources.

The Act, in protecting biodiversity, deals with:

- the protection of threatened ecosystems and species;
- the control of alien invasive species;
- the control of genetically modified organisms; and
- regulates bioprospecting.

As with NEMA, NEMBA incorporates and gives effect to international agreements relating to biodiversity.

5.3.2 Protection of threatened ecosystems and species

Ecosystems that are Critically Endangered, Endangered or Vulnerable can be listed in terms of Section 52 of the Act as threatened ecosystems at both national and provincial level. For example, Critically Endangered ecosystems are defined in the Act as being 'ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation'. Importantly, any land-use change application occurring within an ecosystem listed as Critically Endangered or Endangered will automatically require environmental authorisation.

The route goes through CBA, ESA and endangered ecosystems.

Threatened or Protected Species Regulations of 2013 (GNR388 of 2013): Part 2 of NEMBA provides for listing of species that are threatened or in need of protection to ensure their survival in the wild, while regulating the activities, including trade, which may involve such listed threatened or protected species and activities which may have a potential impact on their long-term survival. In February 2007, the Minister of Environmental Affairs and Tourism published a list of Critically Rare, Endangered, Vulnerable and Protected Species, according to Section 56(1) of the Act, which was updated again in 2013.

According to the Biodiversity Assessment, 24 Species of Conservation Concern (SCC) were found in the servitude (64m corridor).

5.3.3 Control of alien invasive species

The list of alien and invasive species is intended to provide a legal framework to manage and control alien species that are considered invasive and that have the potential to threaten biodiversity, water resources and agricultural potential. NEMBA has identified all species that should be considered as alien or invasive species, as well as the restricted activities relating to each species. It is now required by law (from 1 October 2014), for landowners to investigate the type and extent of alien invasive species growing on their property and to implement an effective control and eradication management plan.

Alien and invasive species were found along the route within the servitude. Refer to Alien and Invasive Species Regulations, 2014 (GNR598). An alien invasive eradication programme will have to be established by TPL to control alien and invader vegetation found within the servitude (refer to EMPr) as part of the maintenance programme of the servitude.

5.4 National Environmental Management: Protected Areas Act (NEMPAA)

The National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act 57 of 2003) provides protection for ecologically viable areas representative of South Africa's biodiversity. The following protected areas occur along the route:

- Klapperkop Nature Reserve - Elarsdus Park – Pretoria West portion of route
- Rietvlei Nature Reserve – Elardus Park – Airport – Alrode – Langlaagte portion of the route.
- Drakensberg (Van Reenen) – Bethelehem – Van Reenen – Estcourt – Pietermaritzburg portion of the route.

5.5 National Environmental Management: Waste Act (NEMWA)

In terms of the National Environmental Management: Waste Act (NEMWA), 2008 (Act 59 of 2008), the following is relevant to this project:

- DEA's Draft guidelines on the Separation of Waste at Source, 2018.
- GNR 926 of 29 November 2013. National Norms and Standards for the Storage of Waste. ***The storage of waste material on the depots has to comply with these Norms and Standards.***
- GNR1093 of 11 October 2017. National Norms and Standards for the Sorting, Shredding, Grinding, Crushing, Screening or Bailing of General Waste.
- GNR 634 of 23 August 2013. Waste classification and Management Regulations (WCMR).

- GNR 635 of 23 August 2013. National Norms and Standards for the Assessment of Waste for landfill disposal.
- GNR331 of 2 May 2014. National Norms and Standards for the remediation of contaminated land and soil quality.

5.6 National Water Act (NWA)

5.6.1 Water uses

The National Water Act (NWA), 1998 (Act 36 of 1998) Section 21 defines water use as:
(a) taking water from a water resource.
(b) storing water.
(c) impeding or diverting the flow of water in a watercourse.
(d) engaging in a stream flow reduction activity contemplated in section 36.
(e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1).
(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit.
(g) disposing of waste in a manner which may detrimentally impact on a water resource.
(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process.
(i) altering the bed, banks, course or characteristics of a watercourse.
(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.
(k) using water for recreational purposes.

The only potentially applicable water uses are Section 21 (c) and (i) water uses if the activities occur within the regulated zones of rivers, streams or wetlands at crossings.

5.6.2 Legal requirements

The NWA states in Section 22 (1) that a person may only use water –
(a) without a licence –
  (i) if that water use is permissible under Schedule 1;
  (ii) if that water use is permissible as a continuation of an existing lawful use; or
  (iii) if that water use is permissible in terms of a general authorisation issued under section 39;
(b) if the water use is authorised by a licence under this Act; or
(c) if the responsible authority has dispensed with a licence requirement under subsection (3).

General Authorisations will be applied for where work is conducted within regulated zones of rivers, streams or wetlands, based on discussion with DWS.

5.7 Conservation of Agricultural Resources Act (CARA)

Conservation of agricultural potential:
The aim of the Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983) is to provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

To achieve this aim, the following objectives are included:

- To provide for the conservation of the natural agricultural resources of the Republic by the maintenance of the production potential of land;
- The combating and prevention of erosion and weakening or destruction of the water sources, and
- The protection of the vegetation and the combating of weeds and invader plants.

Combating weeds and invader plants:

In 1984, regulations were passed in terms of the CARA, regulations declaring about 50 species "weeds" or "invader plants". On 30 March 2001, the Minister of Agriculture promulgated an amendment to these regulations. This amendment then contained a more comprehensive list of species that are declared weeds and invader plants dividing them into three (3) categories. These categories are as follows:

- Category 1: Declared weeds that are prohibited on any land or water surface in South Africa. These species must be controlled, or eradicated where possible.
- Category 2: Declared invader species that are only allowed in demarcated areas under controlled conditions and prohibited within 30m of the 1:50 year flood line of any watercourse or wetland.
- Category 3: Declared invader species that may remain, but must be prevented from spreading. No further planting of these species is allowed.

In terms of the amendments to the regulations under the CARA, landowners are legally responsible for the control of alien invasive vegetation species on their properties. An alien invasive eradication programme will have to be established to control alien and invader vegetation as per the EMPr. To prevent erosion and the weakening or destruction of water sources, the pipe will be filled with a slurry mix at water crossings.

5.8 National Heritage Resources Act (NHRA)

5.8.1 Legislation

The National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999) requires protection of the following cultural heritage resources:

a. Archaeological artifacts, structures and sites older than 100 years;
b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography;
c. Objects of decorative and visual arts;
d. Military objects, structures and sites older than 75 years;
e. Historical objects, structures and sites older than 60 years;
f. Proclaimed heritage sites;
g. Grave yards and graves older than 60 years;
h. Meteorites and fossils; and
i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

a. Places, buildings, structures and equipment of cultural significance;
b. Places to which oral traditions are attached or which are associated with living heritage;
c. Historical settlements and townscapes;
d. Landscapes and features of cultural significance;
e. Geological sites of scientific or cultural importance;
f. Archaeological and paleontological importance;
g. Graves and burial grounds;

h. Sites of significance relating to the history of slavery; and
i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.).

The following sites are along the route but at least 200m away from the route:
- Fort Klapperkop (Grade II site) – Waltloo – Elardus Park – Pretoria West portion of route.
- Voortrekker Monument (Grade I site) - Waltloo – Elardus Park – Pretoria West portion of route.

5.8.2 Requirements

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area of concern (area to be developed) as well as the possible impact of the development thereon. An Archaeological Impact Assessment only looks at archaeological resources.

A HIA must be done under the following circumstances:
a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length;
b. The construction of a bridge or similar structure exceeding 50m in length;
c. Any development or other activity that will change the character of a site and exceed 5 000m^2 or involve three (3) or more existing erven or subdivisions thereof;
d. Re-zoning of a site exceeding 10 000 m^2; or
e. Any other category provided for in the regulations of the SAHRA or a provincial heritage authority.

A HIA was conducted. No sites of heritage significance were found.

5.9 Other documents

The following documents were also considered:

- Department of Environmental Affairs (DEA), 2017. Integrated Environmental Management Guideline. Guideline on need and desirability. ISBN 978-0-9802694-4-4.
- DEA, 2017. Public participation guideline in terms of NEMA, 1998 EIA regulations. ISBN 978-0-9802694-2-0.

6 ENVIRONMENTAL SETTING

6.1 Socio-economic Environment

The following section is just an overview of the Socio-Economic Assessment and further details can be viewed in the report in Appendix D.

According to Scherzer and Kilian (2019), the pipeline traverses a wide range of different landscapes and socio-economic land uses. These land uses vary from urban areas with commercial use to informal developing areas and high-income developing areas, it also includes agricultural fields (crop and grazing fields), wetland areas and river crossings. There are therefore a variety of role players along the pipeline route but the level of change that these role players will experience due to the decommissioning of the pipeline will be negligible.

The social and socio-economic impacts of decommissioning the pipeline are relatively minor since the pipeline will not be removed. This also means that there will be no re-occurring negative impacts associated with site establishment type activities. The pipeline has already been replaced with an alternative pipeline and there will therefore be no loss in the positive benefits of economic fuel transportation.

The following concerns were raised and is addressed as part of the Impact Assessment, Section 9:

- Will the decommissioning present any risks to landowners or the public?
- If left in-situ, will the decommissioned pipeline or depots disrupt or sterilise any future socio-economic land-use options?
- Will maintenance of the servitude and sites become a socio-economic land management burden or risk?
- What will the impact of the no-go option be?
- What are the cumulative impacts?

6.2 Biophysical Environmental Overview

The following section is just an overview of the findings of the Biodiversity Assessment, the report is included as part of Appendix D and can be viewed for the detailed impact assessment.

The pipeline runs from Durban to Pretoria and crosses a wide variety of habitats/ecosystems. These ecosystems were divided into three groups; terrestrial ecosystems, wetland ecosystems and the riverine systems. The terrestrial ecosystems were firstly selected using various topographical datasets and a total of 544 sites were identified for the field survey. These sites were further reduced to 129 sites based on the inherent sensitivity of the areas. Of the 129 sites, 61 sites had a moderate-high to high sensitivity, 44 sites had a moderate, moderate-low sensitivity and 24 sites were rated as low sensitivity. The sensitivity of the sites was based on the overall habitat quality and state, the SCC present as well as the function of the landscape features in the area.

Several Critical Biodiversity Areas (CBAs) with protected species such as *Podocarpus latifolius*, *Crinum bulbispermum and Hypoxis hemerocallidea* were identified as well as SCC such as *Smaug giganteus*, *Geronticus calvus*, *Eupodotis caerulescens*, *Phoenicopterus roseus* were identified, the full list of SCC can be viewed as part of the specialist studies (Appendix D).

The wetland ecosystems were identified based on the datasheets available as well as field investigations. A total of 356 individual wetland hydrogeomorphic units were identified and delineated within the 32m survey area on either side of the pipeline route (64m corridor). The majority of wetlands along the pipeline route were found to be in a 'Largely Natural' to 'Moderately Modified' state, which is a reflection of the large extent of undeveloped or remote (and intact) rural land traversed by the pipeline. Most of these systems were found in the Free State and Kwa-Zulu Natal with only a few of the Class B systems found in Gauteng.

The watercourses in the project area drain into the Vaal, the Pongola and Mtamvuna Water Management Areas (WMAs). A total of 30 riverine assessments were conducted to characterise the watercourses encountered during the proposed pipeline decommissioning. The watercourses ranged from seriously modified (class E/F) to largely natural (class B) according to biotic integrity of macroinvertebrate assemblages. A single protected fish species was collected during the study in the Vaal and Suikerbosrand systems, *Labeobarbus kimberleyensis*.

6.3 Heritage Overview

The following section is just an overview of the Heritage Impact Assessment and further details can be viewed in the report in Appendix D.

According to Van Vollenhoven and Smit (2019), the entire pipeline runs along areas that have been disturbed over the last few years. The commissioning of the initial pipeline with its servitude in itself is seen as a disturbance and the study area is therefore seen as a low risk area for finding cultural resources.

During the decommissioning of the pipeline there is a possibility that both Stone Age and Iron Age material could be unearthed. There is also a possibility that the Iron Age material will be decontextualized and already disturbed due to the commissioning of the pipeline and other human impacts taking place over the last few years.

The pipeline and its associated infrastructure were constructed in 1965 and is therefore not older than 60 years and doesn't fall under the protection of the National Heritage Resources Act (Act 25 of 1999). No other structures older than 60 years were noted along the pipeline route.

During the site survey, no heritage resources or new sites were identified but, it should be noted that some historical buildings and other sites may be found in towns along the pipeline route or rural areas. There is also always a possibility that archaeological/ historical sites, features or artefacts could be found when digging or excavating the soil. In these instances, work must stop immediately and a qualified archaeologist must be called to investigate the occurrence.

6.4 Supporting information

Appendix D contains copies of the specialist studies.

7 ALTERNATIVES CONSIDERED

7.1 Land use alternative

For alternative land use where structures are to be established, the pipeline will have to be relocated and / or the servitude given back to the landowner.

7.2 Alternative to strategy

Uplifting the pipeline is not the best practicable option as it will cause major environmental disturbance since the pipeline stretches over a distance of more than 700km.

7.3 Alternative use for pipe

Leaving the pipeline in the ground implies that it can in future be used for another purpose such as fibre cables.

7.4 No-go alternative

The no-go alternative would be to refuse the project. This will result in:

- depots vulnerable to vandalism and theft; and
- increased risk of settlement / subsidence under road and rail sections not filled.

8 PUBLIC PARTICIPATION PROCESS

8.1 Summary

Table 8-1: Summary of the public notices and notification process

Newspaper notice:	Newspapers in which and dates when notices appeared: • Highway Mail (page 13, 15 November 2019) • Hillcrest Fever (page 8, 12 November 2019) • The Mercury (page 12, 11 November 2019) • Isolezwe (page 28, 11 November 2019) • Estcourt and Midlands News (page 10, 15 November 2019) • Ladysmith Gazette (page 20, 15 November 2019) • Bethelehem & Harrismith Chronicle • Kroon News (page 6, 12 November 2019) • Parys Gazette (page 4, 7 November 2019) • Potchefstroom Herald (page 20, 7 November 2019) • Sedibeng Ster (page 10, 13 -19 November 2019) • Vaal Ster (page 14, 12 – 18 November 2019) • Tame Times (page 2, 12 November 2019) • Pretoria Moot Rekord (page 10, 15 November 2019) • Pretoria Far East Rekord (page 13, 15 November 2019) • Citizen (page 31, 8 November 2019) Refer to Appendix E for tear sheets.
Site notices:	Date placed: October 2019 – January 2020 Size of notices along route: 600 X 400 mm Size of notices at depots: 800 X 600 mm Number of notices placed: ± 800 Location: Refer to Appendix E. Refer to Figures 8-1 – 8-2 for size and wording.
Interested and Affected Parties (I&APs):	Number of I&APs notified by email: 207 Number of I&APs notified by registered mail / telegram: Number of I&APs notified by SMS: 397 Number of I&APs registered: 604 Number of comments received: 17 Refer to Table in Appendix E.
Comments received:	Yes.
Comments relate to:	Refer to Table 8-1.

8.2 Introduction

The Public Participation Process (PPP) aims to provide all Interested and Affected Parties (I&APs) with clear, accurate and comprehensible information about the project for the proposed decommissioning of the Transnet DJP after deactivation, i.e. product (hydrocarbon) displacement and cleaning. In addition, the process seeks to provide I&APs with the opportunity to indicate their viewpoints on issues and concerns about the proposed project.

This process, therefore, enhances transparency and accountability in decision-making, as it allows all I&APs to suggest ways of avoiding, reducing or mitigating potential negative impacts, as well as enhance positive impacts of the proposed project. All inputs from the I&APs are considered in the planning process. Consequently, clear recording of all issues and concerns raised have been maintained in a comments and response register. This register has been updated when new issues or concerns were raised.

This section provides a methodical description of the PPP followed. It also contains a complete record of public notices, details of all registered I&APs and all communications to and from I&APs pertaining to the application.

8.3 Approach

The aim of the PPP is not only to adhere to the required legislation, but also to give as many stakeholders and I&APs as possible, an opportunity to be actively involved in this process.

The PPP has been carried out in accordance with Chapter 6 of the NEMA and in support of the EIA Regulations of 2014 as amended. Based on these Regulations, published in terms of Sections 39 to 44 of GNR 982 amended in GNR 326 of NEMA, the following steps were undertaken:

- Potential I&APs were identified through obtaining contact details from TPL in terms of their landowners database as well as supervisors for sections of the pipeline, conducting site visits to the areas (November – December 2019), conducting interviews (telephonically), through notices placed along the route and at depots (Figures 8-1 – 8-3) as well as through placing notices in local and national newspapers;
- A stakeholder register was compiled in terms of Regulation 42 that includes national, provincial and local authorities, government departments, organisations, as well as landowners that may have an interest;
- I&APs were given more than four (4) months to register and raise concerns (November 2019 – March 2020) which included 30 days to comment on the draft BAR from 1 – 31 March 2020. A soft copy was made available at Public Libraries or on an electronic link upon request. Any concerns that have been raised by I&APs were acknowledged, noted and addressed (Table 8-2) by the EAP where possible; and
- A recorded summary of concerns raised by I&APs, as well as the responses from the EAP, will be kept throughout the entire process.

8.4 Public awareness

8.4.1 Site Notices

Site notices, measuring 800 mm x 600 mm at depots and 600 mm X 400 mm along the route, were placed at locations where these would be most visible to the public concerned such as on depot fences or on markers and at valve chambers.

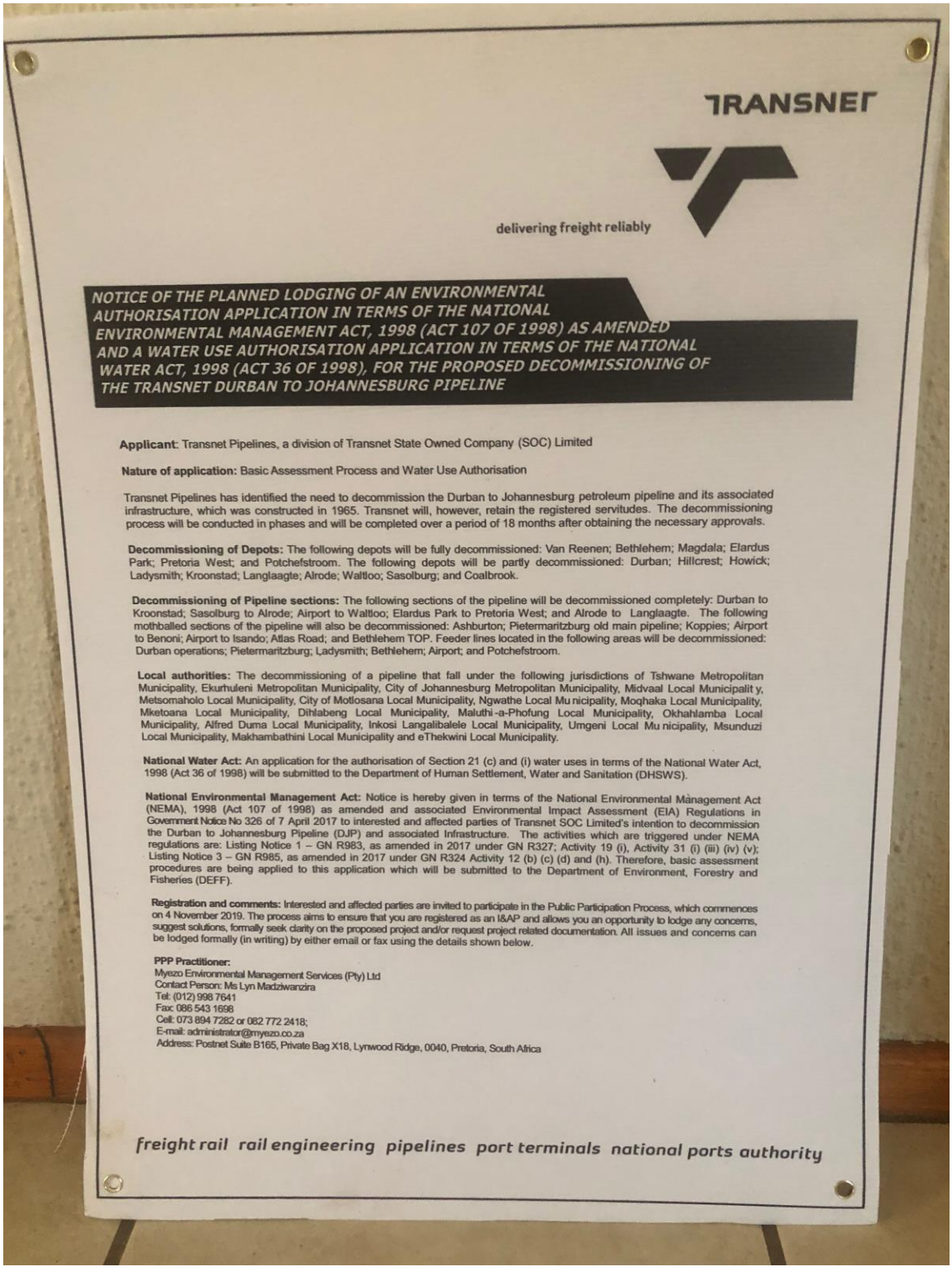
Each notice contained details regarding the applicant (Transnet), the nature of the activity (decommissioning of the Transnet DJP after deactivation), and the contact details of the PPP practitioner (Myezo Environmental Management Services) (See Figure 8-1). The placement of the site notices was recorded by taking photographs of the placed notices on site, as well as by recording the GPS coordinates of these positions. See Figures 8-2 – 8-3. These notices remained on the site for the duration of the process (November 2019 – April 2020).

8.4.2 Newspaper Notice

A detailed newspaper notice was placed as follows:

- Highway Mail (page 13, 15 November 2019)
- Hillcrest Fever (page 8, 12 November 2019)
- The Mercury (page 12, 11 November 2019)
- Isolezwe (page 28, 11 November 2019)
- Estcourt and Midlands News (page 10, 15 November 2019)
- Ladysmith Gazette (page 20, 15 November 2019)
- Bethelehem & Harrismith Chronicle
- Kroon News (page 6, 12 November 2019)
- Parys Gazette (page 4, 7 November 2019)
- Potchefstroom Herald (page 20, 7 November 2019)
- Sedibeng Ster (page 10, 13 -19 November 2019)
- Vaal Ster (page 14, 12 – 18 November 2019)
- Tame Times (page 2, 12 November 2019)
- Pretoria Moot Rekord (page 10, 15 November 2019)
- Pretoria Far East Rekord (page 13, 15 November 2019)
- Citizen (page 31, 8 November 2019)

The aim of placing a notice in the local and national newspapers was to create a greater awareness of the project and to invite a broader spectrum of I&APs to register and be part of the process.



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NOTICE OF THE PLANNED LODGING OF AN ENVIRONMENTAL AUTHORISATION APPLICATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AS AMENDED AND A WATER USE AUTHORISATION APPLICATION IN TERMS OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), FOR THE PROPOSED DECOMMISSIONING OF THE TRANSNET DURBAN TO JOHANNESBURG PIPELINE

Applicant: Transnet Pipelines, a division of Transnet State Owned Company (SOC) Limited

Nature of application: Basic Assessment Process and Water Use Authorisation

Transnet Pipelines has identified the need to decommission the Durban to Johannesburg petroleum pipeline and its associated infrastructure, which was constructed in 1965. Transnet will, however, retain the registered servitudes. The decommissioning process will be conducted in phases and will be completed over a period of 18 months after obtaining the necessary approvals.

Decommissioning of Depots: The following depots will be fully decommissioned: Van Reenen; Bethlehem; Magdala; Elardus Park; Pretoria West; and Potchefstroom. The following depots will be partly decommissioned: Durban; Hillcrest; Howick; Ladysmith; Kroonstad; Langlaagte; Alrode; Waltloo; Sasolburg; and Coalbrook.

Decommissioning of Pipeline sections: The following sections of the pipeline will be decommissioned completely: Durban to Kroonstad; Sasolburg to Alrode; Airport to Waltloo; Elardus Park to Pretoria West; and Alrode to Langlaagte. The following mothballed sections of the pipeline will also be decommissioned: Ashburton; Pietermaritzburg old main pipeline; Koppies; Airport to Benoni; Airport to Isando; Atlas Road; and Bethlehem TOP. Feeder lines located in the following areas will be decommissioned: Durban operations; Pietermaritzburg; Ladysmith; Bethlehem; Airport; and Potchefstroom.

Local authorities: The decommissioning of a pipeline that fall under the following jurisdictions of Tshwane Metropolitan Municipality, Ekurhuleni Metropolitan Municipality, City of Johannesburg Metropolitan Municipality, Midvaal Local Municipalit y, Metsomaholo Local Municipality, City of Motlosana Local Municipality, Ngwathe Local Mu nicipality, Moqhaka Local Municipality, Mketoana Local Municipality, Dihlabeng Local Municipality, Maluthi -a-Phofung Local Municipality, Okhahlamba Local Municipality, Alfred Duma Local Municipality, Inkosi Langalibalele Local Municipality, Umgeni Local Mu nicipality, Msunduzi Local Municipality, Makhambathini Local Municipality and eThekwini Local Municipality.

National Water Act: An application for the authorisation of Section 21 (c) and (i) water uses in terms of the National Water Act, 1998 (Act 36 of 1998) will be submitted to the Department of Human Settlement, Water and Sanitation (DHSWS).

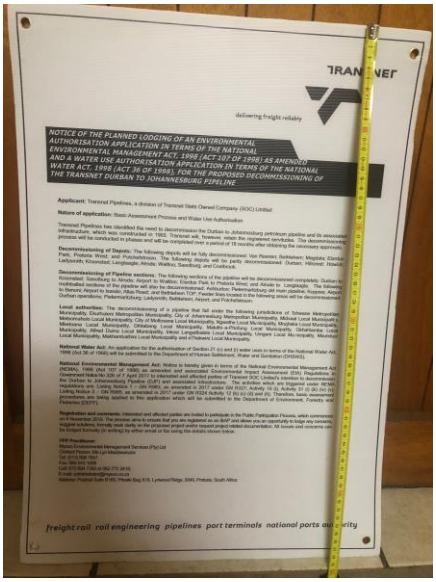
National Environmental Management Act: Notice is hereby given in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended and associated Environmental Impact Assessment (EIA) Regulations in Government Notice No 326 of 7 April 2017 to interested and affected parties of Transnet SOC Limited's intention to decommission the Durban to Johannesburg Pipeline (DJP) and associated Infrastructure. The activities which are triggered under NEMA regulations are: Listing Notice 1 – GN R983, as amended in 2017 under GN R327; Activity 19 (i), Activity 31 (i) (iii) (iv) (v); Listing Notice 3 – GN R985, as amended in 2017 under GN R324 Activity 12 (b) (c) (d) and (h). Therefore, basic assessment procedures are being applied to this application which will be submitted to the Department of Environment, Forestry and Fisheries (DEFF).

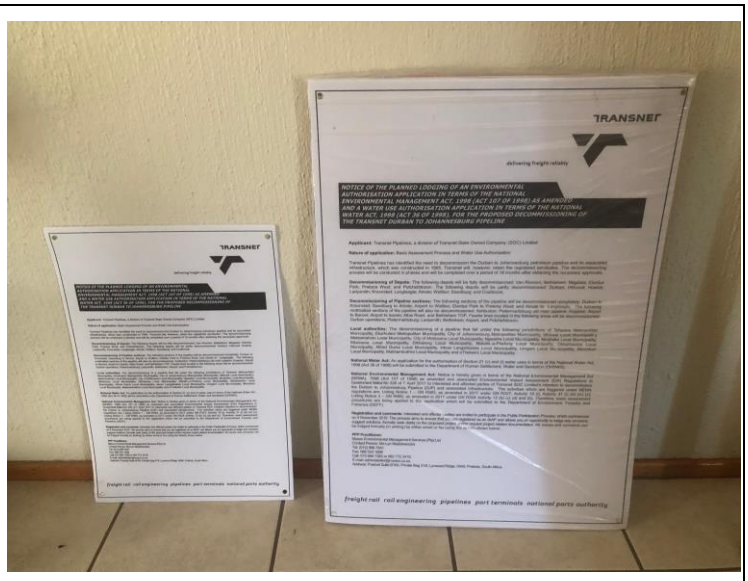
Registration and comments: Interested and affected parties are invited to participate in the Public Participation Process, which commences on 4 November 2019. The process aims to ensure that you are registered as an I&AP and allows you an opportunity to lodge any concerns, suggest solutions, formally seek clarity on the proposed project and/or request project related documentation. All issues and concerns can be lodged formally (in writing) by either email or fax using the details shown below.

PPP Practitioner:
Myezo Environmental Management Services (Pty) Ltd
Contact Person: Ms Lyn Madziwanzira
Tel: (012) 998 7641
Fax: 086 543 1698
Cell: 073 894 7282 or 082 772 2418;
E-mail: administrator@myezo.co.za
Address: Postnet Suite B165, Private Bag X18, Lynwood Ridge, 0040, Pretoria, South Africa

freight rail rail engineering pipelines port terminals national ports authority

Wording of notice





Sizes of notices	
Notice for depots Measurement: 800 mm x 600 mm	Notice for route (left) versus notice for depot (right)

Figure 8-1: Wording and size of notices placed

Site notice placed at the Elardus Park Depot

	
Site Notice placed at Plug-In – R622, Mooirivier	Site Notice Placed at the Valve Chambers – Jacques & Rubenstein Rd, Pretoria.

Figure 8-2: Example of Notices placed at a depot and along the pipeline

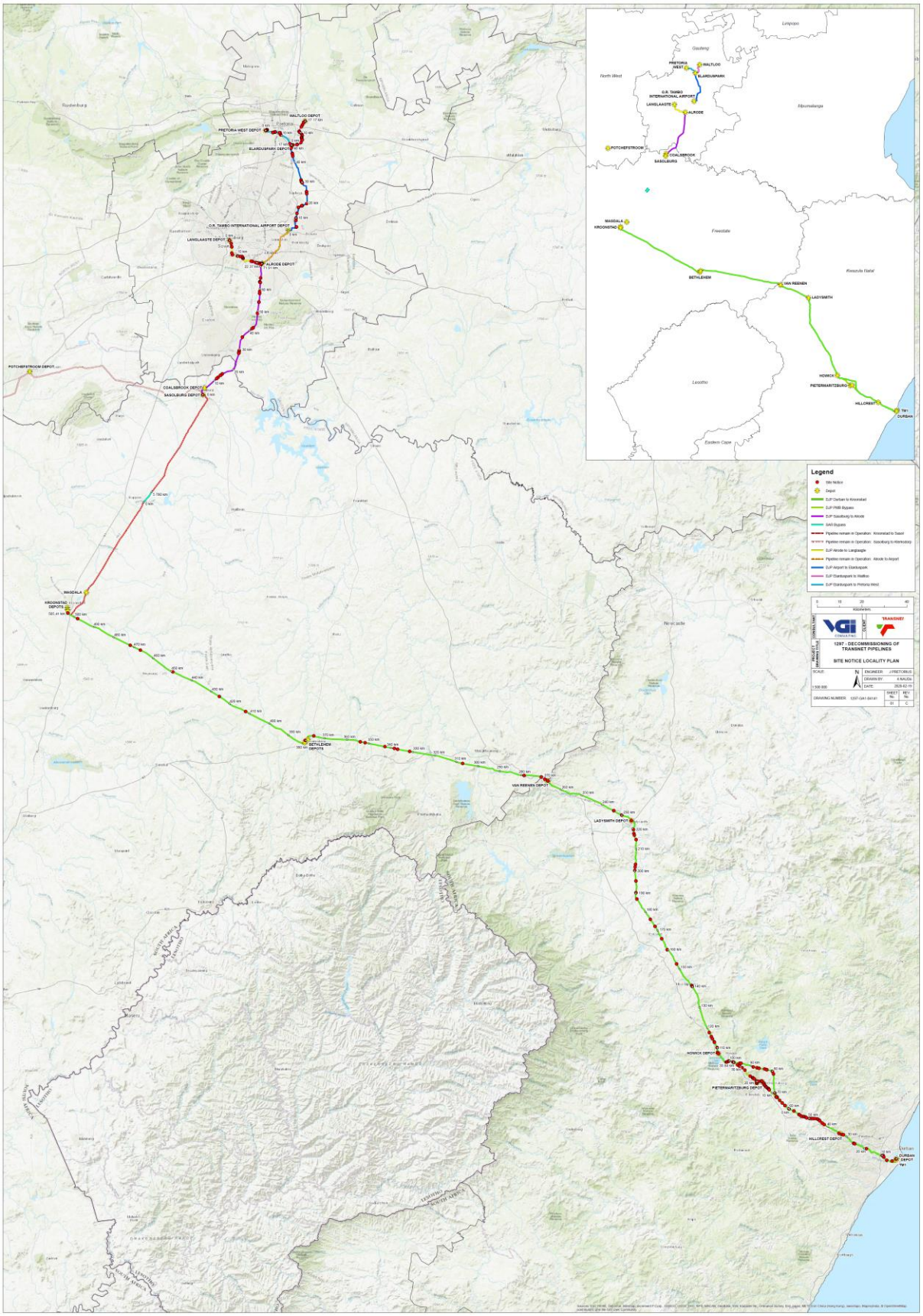


Figure 8-3: Aerial view of location of site notices

8.5 Comments and Response Register

Any concerns that were raised by I&APs during the process were recorded and addressed by the EAP where possible (see Table 8-2). All proof of communication can be seen in Appendix E.

Furthermore, all registered I&APs were given an opportunity to comment in writing (1 – 31 March 2020), on the draft BAR before its submission to the competent authority, DEA, in April 2020.

Many job seekers contacted the team and general enquiries for jobs were not noted in the comments and responses register.

8.6 BAR Submission

The draft BAR (this document) has been made available for public review at Public Libraries (soft copy) located in municipalities affected by the project, and electronically (link) from 1 – 31 March 2020. All I&APs have therefore been given an opportunity to comment on this document for a period of 30 days. Once the period for comments lapsed, all comments made were included in the comments and response register.

After submission of the draft BAR to the authorities, during the public review period, the authorities listed below, were also afforded an opportunity to submit their comments to be addressed in the final BAR.

Thereafter, the final BAR (including all supporting documentation) will be submitted to DEA for consideration. A decision will be provided by DEA in terms of their considerations and findings and if authorised, conditions of the authorisation will be provided.

Table 8-2: List of I&APs

Landowners: A total of 666 landowners were notified.

Authorities:

- **Local authorities:**
  - Ethekwini Local Municipality
  - Makhambatheni Local Municipality
  - Msunduzi Local Municipality
  - uMngeni Local Municipality
  - Mooi Mphofana Local Municipality
  - Inkosi Langalibalele Local Municipality
  - Alfred Duma Local Municipality
  - Okhahlamba Local Municipality
  - Maluthi-A-Phofung Local Municipality
  - Dihlabeng Local Municipality
  - Nketoana Local Municipality
  - Moqhaka Local Municipality
  - Ngwathe Local Municipality
  - City of Motlosana Local Municipality
  - Metsimaholo Local Municipality
  - Midvaal Local Municipality
  - City of Tshwane Metropolitan Municipality
  - Ekurhuleni Metropolitan Municipality
  - City of Johannesburg Metropolitan Municipality
  - Ward councillors
- Provincial authorities
  - Gauteng Department of Agricultural and Rural Development (GDARD)
  - North West Department of Economic Development, Environment, Conservation & Tourism (NW DEDECT)
  - Free State
  - KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA)
- National authorities
  - Department of Environmental Affairs
- Other
  - National Energy Regulator of South Africa (NERSA)

Table 8-3: Comments and responses (Myezo Environmental Management Services)

IAPs Name	Comment	Date Received	Response	Date
Gareth Preen	Please clarify how Transnet proposes to decommission the pipeline where it traverses through and underneath private residential properties?	4-Jan-20	Please note that you have been registered as an IAP for this project. I am kindly requesting that you share your residential and or postal address with us and contact numbers if possible. Your residential address will allow us to add you to the appropriate database considering that we are dealing with a long stretch of pipeline and our IAP database is divided into sections. All above ground structures will be decommissioned (dismantling and demolition) and removed. Underground structures will be left intact. The pipelines will be decommissioned after the displacement of product and cleaning of the pipeline with nitrogen. Therefore, at the decommissioning phase, the pipeline will be classified as clean and empty with no risk to human health. However, be advised that all main crossings including river, road and rail crossings will not be removed but will be filled with grout to avoid any risk of subsidence or water conduit effects. Hence, if there are any such features around your property, then the pipeline might be decommissioned and will not be removed. Please feel free to contact me should you require further information.	6-Jan-20
Nothando Mjoli	As discussed, I live in Alinta Complex which is on Comaro Road and Bellairs Drive, Glenvista, Johannesburg. The Transnet pipeline runs through the complex, as such please advise whether the pipeline that runs through the Alinta will be decommissioned?	28-Nov-19	Kindly note that after checking our maps, the pipeline running through Alinta Complex might be the one for which this Public Participation is for. Therefore, you have been registered as an Interested and Affected Persons for this project. In response to the decommissioning of the pipeline, please note that the following pipelines will be decommissioned: (i)Durban to Kroonstad; (ii)Sasolburg to Alrode; (This pipeline runs through Glenvista) (iii)Ortia to Waltloo; (iv)Elardus Park to Pretoria West; and (v)Alrode to Langlaagte.	10-Dec-19
Nothando Mjoli	The Transnet pipeline runs through the Alinta complex, in Johannesburg South, and would like to make submissions for the decommissioning and complete removal of the pipeline. Concerns raised are: 1. The servitude is not endorsed on the individual title deeds, as such potential buyers/owners are not on the face of it, aware of the Transnet servitude; 2. Due to the lack of awareness the pipeline could easily be perforated by an unaware resident/owner; 3. There is uncertainty as to whether all the necessary precautionary safety steps were taken by the developer. A storm which caused severe damage in the complex, resulted in the pipeline being exposed as such a serious concern; 4. There is a school, Trinity House, which has recently been built right next to Alinta. Whilst the pipeline does not run through the school, but there is a risk that if anything happens in Alinta, the school will also be affected; 5. At a recent AGM, the BoT (Board of Trustees) informed owners that pipes in the complex were being replaced more often than they should due to erosion which is being caused by the pipeline. As such the residents of Alinta are incurring additional costs as a direct impact of the pipeline; 6. BoT has recently advised owners that it is in discussions with insurers regarding the complex insurance cover in light of the pipeline. Assessments are yet to be conducted by the insurers, but some of the insurers have advised that there is high probability that damage caused by the pipeline may not be covered or alternatively a higher premium may have to be paid. Again the residents will potentially be negatively impacted The above is a very brief overview of the concerns. I would plead with Transnet to please urgently decommission and completely remove the pipeline running through the complex. We are worried about the potential loss of life and damage to property.	28-Nov-19	Please be advised that all main crossings including river, road and rail crossings will not be removed but will be filled with grout to avoid any risk of subsidence or water conduit effects. Hence, if there are any such features around your complex, then the pipeline might be decommissioned and will not be removed. You will be notified of the closing of the commenting period before the closing date as discussed. At the end of the all your comments will be submitted to Transnet and your concerns will be addressed.	10-Dec-19

Dr Layla Cassim	I'm also an owner at Alinta and second Thando's concern about the petrol line running under our complex. It's good to know that there are plans to decommission the line. Do you have any feedback regarding timeframes for the decommissioning? It's been a very stressful few months for all the residents of Alinta. We are concerned about the health and safety risks of the petrol line, as well as possible damage to our property.	5-Dec-19	Thank you for sending your concern and comment. Project background Durban to Johannesburg Pipeline was established in 1965 to supply refined petroleum product (petrol, diesel, jet fuel) to Gauteng. It is a 12 inch (328mm) pipe and stretches from Durban to Waltloo. During the operational period, it was found that the pipeline had an inherent welding defect, which increased the risk of pipeline failure and the impact to the environment due to spillages. In 2004, after several studies, it was decided to retire this pipeline by 2012 to manage the inherent defect and the risk to the environment. On 28 March 2018, the DJP was stopped from operation as the replacement pipeline system was completed. Response Considering the background above, it is only the pipeline not in use that is to be decommissioned. Please be advised that currently the project Environmental Assessment Practitioner (EAP) is compiling environmental studies to be submitted to the Competent Authority for Authorisation. Once Environmental authorization is obtained the abonnement and demolition phase will last 12-18 months. Linear nature of the project results in reduced time period at the positions where work is completed. Transnet will discuss final time periods with effected property owners.	10-Dec-19
Nothando Mjoli	Please advise on the progress of the consultation process for the removal of the pipeline.	9-Feb-20	We are still conducting the Public Participation Process Stage. We will notify you of the closing date of this stage and advice on the way forward.	9-Feb-20
Dr Layla Cassim	I've copied Lyn in this email - she is responsible for the impact assessment regarding the decommissioning of the petrol line. Nothando and I have written to Lyn to be registered as affected parties in the matter, who would then be kept informed of developments re the petrol line. We also think that perhaps Glenvista Village would also like to be registered as affected parties, since the petrol line servitude also runs under your complex.	16-Jan-20	Thank you Layla. Kindly note that Jurinda has been registered as an IAP for this project. Jurinda please feel free to submit your comments.	19-Jan-20
Paul Freemantle	Could you explain in lay mans terms on how this will effect me and my property? The process was stared on the 4th November 2019 how come i have only received this mail now?	22-Dec-19	Thank you for your response and comments. Brief explanation The proposed project involve the decommissioning of the Transnet Durban to Johannesburg Pipeline (DJP) and associated infrastructure. Decommissioning means take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned. Sections of the pipeline and certain depots will be decommissioned. This removal or dismantling of the pipeline might affect you if the pipeline passes through your property or your property is located close to the pipeline in question. Therefore, for this process you are kindly requested to send comments, concerns or any input regarding the decommissioning of this pipeline. The process was stared on the 4th November 2019 how come i have only received this mail now? Kindly note that this is a preliminary public consultation whereby Transnet would want to register and engage with interested and Affected Parties (IAPs) to ensure that their concerns are addressed and	24-Dec-19
Paul Freemantle	Thanks for the explanation. The pipeline passes through my property so what could i expect to happen in my property?	23-Dec-19	As indicated in our initial email, kindly note that the following pipelines will be decommissioned: (i) Durban to Kroonstad; (ii) Sasolburg to Alrode; (iii) Ortia to Waltloo; (iv) Elardus Park to Pretoria West; and (v) Alrode to Langlaagte. Thus, if your property falls within one of these pipeline stretches, all above ground pipelines will be removed and underground pipelines will be cleaned to avoid pollution. However, be advised that all main crossings including river, road and rail crossings will not be removed but will be filled with grout to avoid any risk of subsidence or water conduit effects. Hence, if there are any such features around your property, then the pipeline might be decommissioned and will not be removed. You are kindly advised that you still have 30 days to send through your comments and you will be notified of the closing date for the commenting period before the closing date. At the end of the all your comments will be submitted to Transnet and your concerns will be addressed. Please feel free to contact me should you need further information	6-Jan-20

Lesley Murray	Could you explain in lay mans terms on how this will effect me and my property?	22-Dec-19		10-Dec-20
Louise Kritzinger	I am enquiring about the proposed decommissioning of the Transnet Durban to Johannesburg pipeline Basic Assessment Process and Water Use Authorisation. I am specifically interested in the section going through the Faerie Glen Nature Reserve in Pretoria. I found the notice on the boundary fence of the reserve. Please provide me with more information and what the decommission of the pipeline will entail.	6-Jan-20	Thank you for getting in touch. Please note that your organisation has been registered as an IAP for this project and you are the contact person. Project Background The proposed project involve the decommissioning of the Transnet Durban to Johannesburg Pipeline (DJP) and associated infrastructure. Decommissioning means take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned. Sections of the pipeline and certain depots will be decommissioned. This removal or dismantling of the pipeline might affect you if the pipeline passes through your property or your property is located close to the pipeline in question. Therefore, for this process you are kindly requested to send comments, concerns or any input regarding the decommissioning of this pipeline.	10-Jan-20
Carol Martin	Please will you register the following two organisations as Interested and Affected Parties? Both organisations are affected as the pipeline runs along the Moreletaspruit in the east of the City of Tshwane. Is it planned to simply leave the pipe in the ground or will there be any excavations? I note that it is planned to retain the servitude.	4-Dec-19	Kindly note that both organisations have been registered as an IAPs for this project and you are the contact person. I am kindly requesting for your physical and or postal addresses. Kindly note the following information in response to your question. All above ground structures will be decommissioned (dismantling and demolition) and removed. Underground structures will be left intact. The pipelines will be decommissioned after the displacement of product and cleaning of the pipeline with nitrogen. Therefore, at the decommissioning phase, the pipeline will be classified as clean and empty with no risk to human health. However, be advised that all main crossings including river, road and rail crossings will not be removed but will be filled with grout to avoid any risk of subsidence or water conduit effects. Hence, if there are any such features around your property, then the pipeline might be decommissioned and will not be removed.	10-Feb-20
Adelene Marais	Is it possible to send a detail description of what the decommission process will entail and possible impacts on the environment Your assistance will be highly appreciated	23-Dec-19	Thank you for your response. Please find the project background below. Project Background The proposed project involve the decommissioning of the Transnet Durban to Johannesburg Pipeline (DJP) and associated infrastructure. Decommissioning means take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned. Sections of the pipeline and certain depots will be decommissioned. This removal or dismantling of the pipeline might affect you if the pipeline passes through your property or your property is located close to the pipeline in question. Therefore, for this process you are kindly requested to send comments, concerns or any input regarding the decommissioning of this pipeline. Please be advised that possible impacts of the project will be included in the Basic Assessment Report that is being compiled. Please be advised that you will be notified once the draft BAR is complete and open for comments.	10-Jan-20
Adelene Marais	I will wait for the BAR. Normally all the concerns are addressed in the BAR	10-Feb-20	Noted	
Jason le Roux	I would please like to register as an IAP for the BA regarding the decommissioning of the Transnet Pipeline. Jason le Roux jasonleroux200@gmail.com Have you already appointed a wetland specialist. If not may I please quote for the project?	9-Feb-20	Thank you for your response. Please provide us with your contact numbers and address as this will allow us to capture all the required details as a registered IAP. Please be advised that this Public Participation Process is being undertaken to allow those who will be affected by the decommissioning of the pipeline to submit their comments and concerns. Thus, it is not an opportunity for us to appoint specialists for the project.	9-Feb-20
Osborne Gwamanda	This email was sparked by your Notice of Planned Lodging of EA & WULA Application: Decommissioning of Transnet Durban to Johannesburg Pipeline (DJP)... I am a 36-year old unemployed Senior Hydrologist (Water Resources Planning & Management) actively seeking employment. Kindly find attached herewith my CV and credentials for your company's consideration, now or for future reference. I am based in Durban and JHB. With my knowledge and experience in the Water Sector (including Stormwater Management), both in government and the private sector, I feel that I can be of good use to your Water & Environmental Management Division at Myezo Environmental Management Services (Pty) Ltd.	1-Feb-20	Thank you for your email. Please be advised that this Public Participation Process is being undertaken to allow those who will be affected by the decommissioning activities of the pipeline in question to submit their concerns and comments. Thus, it is not an employment opportunity.	9-Feb-20

Michelle Lotz	Please note that all EIAs undertaken in the Durban Metropolitan Area (eThekwini) must be submitted to our offices for assessment. Kindly provide 4 hard copies and 6 soft copies (CD or Flash drive) to our EIA submissions office, c/o Nhle Zuma, room 200, City Engineers Building, 166 KE Masinga Road, Durban	23-Jan-20	Thank you for the email. Please be advised that this project extends beyond the boundaries of a metropolitan or district municipality thus the competent authority is the National Department as stipulated by the regulations. Also, kindly note that this project is for Transnet, which is a State Owned Company. By this virtue, environmental studies conducted by SOCs are submitted to the Department. Please feel free to submit more comments regarding the project.	10-Jan-20
Jan Human	I represent Allerpark Boerdery (Pty) Ltd, the owner of parts of Danse Kraal and Anste Properties CC, the owner of parts of Eenvogel Vlei. Both these properties are affected by the proposed decommissioning of the Durban-Kroonstad pipeline. Could you elaborate what the decommissioning will involve and how this could affect the landowners.	9-Feb-20	Thank you for your comments. Project background. All above ground structures will be decommissioned (dismantling and demolition) and removed. Underground structures will be left intact. The pipelines will be decommissioned after the displacement of product and cleaning of the pipeline with nitrogen. Therefore, at the decommissioning phase, the pipeline will be classified as clean and empty with no risk to human health. However, be advised that all main crossings including river, road and rail crossings will not be removed but will be filled with grout to avoid any risk of subsidence or water conduit effects. Hence, if there are any such features around your property, then the pipeline might be decommissioned and will not be removed. Thus the removal of the pipeline might affect your client	9-Feb-20

9 IMPACT ASSESSMENT

9.1 Methodology

The significance of the adverse environmental impacts identified were assessed in terms of their:

- Duration;
- Extent;
- Probability; and
- Severity.

The above was used to determine the significance of an impact without any mitigation, as well as with mitigation.

Nature of an impact: An impact's nature can be positive (+) or negative (-).

Consequence: Considers duration, extent and severity

Consequence = duration + extent + severity

Table 9-1: Environmental risk and impact assessment criteria

DURATION (D)		
Immediate	Less than 1 month	1
Short-term	2 - 24 months	2
Life of project	Operational phase (decommissioning)	3
Post-closure	Time of rehabilitation and for re-establishment of natural systems	4
Residual	A permanent impact (100 years or more)	5
EXTENT (E)		
Site specific	Site of the proposed work	1
Local	Site and immediate surroundings (property)	2
Regional	Municipal area	3
Provincial	Provincial area	4
National	Republic of South Africa	5
PROBABILITY (P)		
Rare	<5% probability of occurrence – may occur in exceptional circumstances	1
Unlikely	15% - 6% probability of occurrence – could potentially occur at some time	2
Possible	45% - 16% chance of occurrence – might occur at some time	3
Likely	65% - 46% probability of occurrence – will probably occur in most circumstances	4
Almost Certain	90% - 66% probability of occurrence – is expected to occur	5
Definite	100%- will occur	6
SEVERITY (S)		
Catastrophic (critical)	Total change in area of direct impact, relocation not an option, death, toxic release off-site with detrimental effects, irreversible loss, huge financial loss	6

Significant (High)	> 70% change in area of direct impact due to loss of significant aspect, extensive injuries, long term loss in capabilities, off-site release to high extent, major financial implications	5
Serious	50 – 70% long-term loss, extensive rehabilitation / restoration / treatment required, high financial impact, still restricted in extent	4
Moderate (medium)	20 – 49% change, medium term loss in capabilities, rehabilitation / restoration / treatment required, on-site release with outside assistance, medium financial impact	3
Minor	10 – 19% change, short term impact that can be absorbed, on-site release, immediate containment, low financial implications	2
Insignificant (low)	< 10 % change in the area of impact, no financial implications, localised impact, a small percentage of population	1

[Duration (D) + Extent (E) + Severity (S)] x Probability (P) = Impact Significance (IS)

IMPACT SIGNIFICANCE (IS)		
Impact Significance	**IS score range**	**Description**
Low (L)	<15	The impact is minor or insubstantial; it is of little importance to any stakeholder and can easily be rectified.
Moderate Low (ML)	16 - 45	The impact is limited in extent, even if the intensity is major; the probability will only be likely, the impact will not have a significant impact considered in relation to the bigger picture; no major material effect on decisions and will require only small-scale management intervention bearing moderate costs.
Moderate High (MH)	46 - 70	The impact is significant to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
High (H)	71 <	The impact could render options controversial or the entire project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in project decision-making.

9.2 Impact Assessment Ratings

The impacts and associated significance ratings for the decommissioning phase of the project for the various alternatives were assessed (Tables 9.2 and 9.3). The no-go option (Table 9.4) would not meet the project objective.

The planning phase activities are considered to be of a negligible impact significance as these typically involve desktop assessment and site inspections. A very low temporary impact may be experienced due to the increased presence of humans and vehicles / machinery.

The deactivation phase activities, displacement of fuel and cleaning of the line is addressed as part of the operational EMPr (see Appendix F).

Table 9-2: Decommissioning - Impacts and Significance for the Natural Areas, CBA, SCC Species, Watercourse

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA - Damage or loss of habitat	Weeds and alien species will be introduced and seeds will spread due to disturbance	N	2	4	4	10	6	60 Moderate High	N	2	4	4	10	3	30 Moderate Low
	Vegetation will be removed in order to establish a site camp, access the site and excavate to reach the pipeline.	N	2	5	3	10	6	60 Moderate High	N	2	5	3	10	2	20 Moderate Low
	Destruction, further loss and fragmentation of the vegetation community classified as CBA or protected areas.	N	3	4	4	11	5	55 Moderate High	N	3	4	4	11	2	22 Moderate Low
	Destruction of protected plant species	N	3	5	4	12	4	48 Moderate High	N	3	5	4	12	2	24 Moderate Low
	Staff members/ Contractors might create new pathways across the natural vegetation.	N	2	5	3	10	5	50 Moderate High	N	2	5	3	10	3	30 Moderate Low
	Dumping of waste outside the designated area.	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	1	9 Low
	Burning of vegetation on site.	N	2	4	3	9	6	54 Moderate High	N	2	4	3	9	1	9 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Vehicles damaging vegetation when driving around the site or accessing the site.	N	2	4	3	9	6	54 Moderate High	N	2	4	3	9	2	18 Moderate Low
	Storing of material and soil stockpiles outside the designated areas	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	1	9 Low
FAUNA & AVIFAUNA - Loss of species, including the SCC species	Removal of the plant species providing habitat	N	2	4	4	10	5	50 Moderate High	N	2	4	4	10	3	30 Moderate Low
	Injury / death to fauna and avifauna due to poaching	N	3	4	4	11	5	55 Moderate High	N	3	4	4	11	1	11 Low
	Dumping of waste and material outside the designated area	N	2	4	4	10	5	50 Moderate High	N	2	4	4	10	2	20 Moderate Low
	Fires	N	2	4	4	10	5	50 Moderate High	N	2	4	4	10	1	10 Low
	Reduced dispersal/migration of fauna	N	3	4	4	11	5	55 Moderate High	N	3	4	4	11	2	22 Moderate Low
	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise	N	3	4	3	10	5	50 Moderate High	N	3	4	3	10	2	20 Moderate Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to dust	N	3	4	3	10	5	50 Moderate High	N	3	4	3	10	2	20 Moderate Low
	Movement of vehicles in order to access the site but also while working on site.	N	2	4	4	10	5	50 Moderate High	N	2	4	4	10	2	20 Moderate Low
WETLAND - Damage or loss of wetland	Weeds and alien species will be introduced and seeds will spread due to disturbance	N	2	4	4	10	6	60 Moderate High	N	2	4	4	10	3	30 Moderate Low
	Some of the vegetation within the watercourse and buffer area will be removed in order to access and remove the valve chambers.	N	1	4	3	8	6	48 Moderate High	N	1	4	3	8	3	24 Moderate Low
	Staff members/ Contractors might create new pathways within the watercourse areas and buffer zones.	N	2	4	2	8	6	48 Moderate High	N	2	4	2	8	3	24 Moderate Low
	Dumping of waste outside the designated area.	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Burning of vegetation on site.	N	2	4	4	10	6	60 Moderate High	N	2	4	2	8	3	24 Moderate Low
	Vehicles driving through the watercourse and damaging vegetation.	N	2	4	4	10	6	60 Moderate High	N	2	4	4	10	2	20 Moderate Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Dumping of material within the watercourse or buffer area	N	2	4	4	10	6	60 Moderate High	N	2	4	4	10	2	20 Moderate Low
	Spillage/leak of hydrocarbon or other hazardous material	N	2	4	4	10	6	60 Moderate High	N	2	4	4	10	2	20 Moderate Low
	Loss of wetland vegetation beneath fill materials storage / mixing areas and increased potential for sediment input.	N	1	4	4	9	6	54 Moderate High	N	1	4	4	9	2	18 Moderate Low
	Erosion and siltation will result in destruction of the remaining vegetation	N	2	4	4	10	6	60 Moderate High	N	2	4	4	10	2	20 Moderate Low
SURFACE WATER - Pollution or loss of surface water	Spillage of fuel / oil from vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Spillage of chemicals, cement or slurry	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Emergency maintenance or fixing of vehicles / machinery / equipment on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Washing of vehicles / machinery / equipment on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Compaction of the soil due to activities and movement of vehicles / machinery will increase the runoff	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Siltation and Erosion	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
	Washing up (bathing, hand washing and washing of dishes / containers or clothes)	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Excessive water usage	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	1	6 Low
GROUNDWATER Pollution of the ground water system	Spillage of fuel / oil from vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Spillage of chemicals, cement or slurry	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Emergency maintenance or fixing of vehicles / machinery / equipment on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Washing of vehicles / machinery / equipment on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Compaction of the soil due to activities and movement of vehicles / machinery	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Ablution facilities risk leakage / spillage	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
	Washing up (bathing, hand washing and washing of dishes / containers)	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
SOIL - Pollution and Compaction	Removal of vegetation	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	3	21 Moderate Low
	Spillage of fuel / oil from vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Spillage of chemicals, cement or slurry	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Emergency maintenance or fixing of vehicles / machinery / equipment on site	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	1	6 Low
	Washing of vehicles / machinery / equipment on site	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	1	7 Low
	Erosion of soil	N	2	2	3	7	6	42 Moderate	N	2	2	3	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
								Low							
	Unnecessary loss of soils due to site preparation	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	1	6 Low
	Compaction of the soil due to activities and movement of vehicles / machinery	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	3	21 Moderate Low
	Washing away of soil from stockpiles	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
AIR QUALITY - Polluting or decreasing the quality of the air	Fires on site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low
	Emissions from vehicles	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	2	14 Low
	Waste flying through the air.(windblown litter)	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Airborne particles flying through the air	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Particulate matter and dust flying off moving vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Particulate matter may be lifted from the site and pose a health threat (ingestion / inhalation)	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	2	14 Low
VISUAL IMPACT - Change in the sense of place or decreasing the aesthetic value	Site clearance / removal of vegetation	N	2	2	4	8	6	48 Moderate High	N	2	2	2	6	2	12 Low
	Dust created during the site establishment activities	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	2	12 Low
	Waste on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	2	12 Low
HEALTH - Spreading of diseases / degradation in health	Using the field for ablution instead of toilets	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	3	15 Low
	Dust created during site establishment	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	3	18 Moderate Low
	Dumping of waste on site	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
	Workers not using / wearing PPE	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
	Burning of material / hazardous waste on site	N	2	2	5	9	5	45 Moderate	N	2	2	5	9	1	9 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
								Low							
	Spreading of diseases	N	3	2	5	10	5	50 Moderate High	N	3	2	5	10	2	20 Moderate Low
	Dehydration due to a lack of drinking water	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
NOISE	Noise from activities	N	2	2	4	8	6	48 Moderate Low	N	2	2	4	8	4	32 Moderate Low
TRAFFIC - disturbance to the flow of traffic	Increase in vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	3	18 Moderate Low
	Traffic congestions due to the activities	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	3	18 Moderate Low
SAFETY & SECURITY	Theft of material and equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	The site is unsafe for locals, especially kids playing on site or residents passing through the site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Home owner security at risk due to influx of workers into area	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low
	Vehicles at risk of theft or vandalism	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	Unfair treatment of staff member can lead to dispute or strikes	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	2	12 Low
	Safety risk when crossing busy roads to get to work site	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	Using inappropriate working methods or equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
	Workers not wearing the correct PPE	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
SOCIO-ECONOMIC	Risk of ground subsidence affecting other public services or landowner activities	N	2	4	3	9	3	27 Moderate Low	N	2	4	1	7	1	7 Low
	Disruption arising during the decommissioning activities	N	1	1	2	4	2	8 Low	N	1	1	1	3	1	3 Low
	Decommissioning the pipeline will sterilise future land-use options	N	2	5	2	9	3	27 Moderate Low	N	2	5	1	8	1	8 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Decommissioning the depot will sterilise future land-use options	N	2	5	2	9	2	18 Moderate Low	N	2	4	1	7	1	7 Low
	Maintenance of the pipeline servitude will become a burden/risk	N	2	5	1	8	2	16 Moderate Low	N	2	5	1	8	1	8 Low
	Maintenance of the depot will become a burden/risk	N	2	5	2	9	3	27 Moderate Low	N	2	5	1	8	2	16 Moderate Low

Table 9-3: Decommissioning - Impacts and Significance for the Agricultural Areas (crop & grazing veld)

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA - Damage or loss of habitat due to decommissioning activities	Weeds and alien species will be introduced and seeds will spread due to disturbance	N	2	4	3	9	6	54 Moderate High	N	2	4	3	9	3	27 Moderate Low
	Vegetation will be removed in order to establish a site camp, access the site and excavate to reach the pipeline.	N	2	4	3	9	6	54 Moderate High	N	2	4	3	9	3	27 Moderate Low
	Staff members/ Contractors might create new pathways across the natural vegetation.	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	3	27 Moderate Low
	Dumping of waste outside the designated area.	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	2	18 Moderate Low
	Burning of vegetation on site.	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	1	7 Low
	Vehicles damaging vegetation when driving around the site or accessing the site.	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	3	27 Moderate Low
	Storing of material and soil stockpiles outside the designated areas	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	2	18 Moderate Low
FAUNA & AVIFAUNA -	Removal of the plant species providing habitat	N	2	4	4	10	5	50 Moderate	N	2	2	2	6	3	18 Moderate

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
Loss of species, including the SCC species								High							Low
	Injury / death to fauna and avifauna due to poaching	N	3	4	4	11	5	55 Moderate High	N	2	2	2	6	2	12 Low
	Dumping of waste and material outside the designated area	N	2	4	4	10	5	50 Moderate High	N	2	2	2	6	2	12 Low
	Fires	N	2	4	4	10	5	50 Moderate High	N	2	2	2	6	2	12 Low
	Reduced dispersal/migration of fauna	N	3	4	4	11	5	55 Moderate High	N	2	2	2	6	3	18 Moderate Low
	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise	N	3	4	3	10	5	50 Moderate High	N	2	2	2	6	3	18 Moderate Low
	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to dust	N	3	4	3	10	5	50 Moderate High	N	2	2	2	6	3	18 Moderate Low
	Movement of vehicles in order to access the site but also while working on site.	N	2	4	4	10	5	50 Moderate High	N	2	2	2	6	3	18 Moderate Low
GROUNDWATER - Pollution of the	Spillage of fuel / oil from vehicles or containers	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
ground water system	Spillage of chemicals, cement or slurry	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Emergency maintenance or fixing of vehicles / machinery on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Washing of vehicles / machinery on site	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Compaction of the soil due to activities and movement of vehicles / machinery	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Ablution facilities risk leakage / spillage	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
	Washing up (bathing, hand washing and washing of dishes / containers)	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
SOIL - Pollution and Compaction	Removal of vegetation	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	3	21 Moderate Low
	Spillage of fuel / oil from vehicles or containers	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Spillage of chemicals, cement or slurry	N	2	2	3	7	6	42 Moderate	N	2	2	3	7	1	7 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
								Low							
	Emergency maintenance or fixing of vehicles / machinery on site	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	1	6 Low
	Washing of vehicles / machinery on site	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	1	7 Low
	Erosion of soil	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Unnecessary loss of soils due to site preparation	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	1	6 Low
	Compaction of the soil due to activities and movement of vehicles / machinery	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	3	21 Moderate Low
	Washing away of soil from stockpiles	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
AIR QUALITY - Polluting or decreasing the quality of the air	Fires on site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low
	Emissions from vehicles	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Waste flying through the air.	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Particles flying through the air	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	1	7 Low
	Particulate matter and dust flying off moving vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Particulate matter may be lifted from the site and pose a health threat	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	2	14 Low
VISUAL IMPACT - Change in the sense of place or decreasing the aesthetic value	Site clearance / removal of vegetation	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Dust created during the activities	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Waste on site	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
HEALTH - Spreading of diseases / degradation in health	Using the veld for ablution instead of toilets	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	3	15 Low
	Dust created during activities	N	2	2	2	6	6	36 Moderate	N	2	2	2	6	3	18 Moderate

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
								Low							Low
	Dumping of waste on site	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
	Workers not using / wearing PPE	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
	Burning of material / hazardous waste on site	N	2	2	5	9	5	45 Moderate Low	N	2	2	5	9	1	9 Low
	Spreading of diseases	N	3	2	5	10	5	50 Moderate High	N	3	2	5	10	2	20 Moderate Low
	Dehydration due to a lack of drinking water	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
NOISE	Noise from activities	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	4	28 Moderate Low
TRAFFIC - disturbance to the flow of traffic	Increase in vehicles	N	2	2	3	7	4	28 Moderate Low	N	2	2	3	7	2	14 Low
	Traffic congestions due to the activities	N	2	2	3	7	4	28 Moderate Low	N	2	2	3	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
SAFETY & SECURITY	Theft of material and equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	The site is unsafe for locals, especially kids playing on site or residents passing through the site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low
	Home owner security at risk due to influx of workers into area	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low
	Vehicles at risk of theft or vandalism	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	Unfair treatment of staff member can lead to dispute or strikes	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	2	12 Low
	Safety risk when crossing busy roads to get to work site	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	Using inappropriate working methods or equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
	Workers not wearing the correct PPE	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
SOCIO-ECONOMIC	Risk of ground subsidence affecting other public services or landowner activities	N	2	4	3	9	3	27 Moderate Low	N	2	4	1	7	1	7 Low
	Disruption arising during the decommissioning activities	N	1	1	2	4	2	8 Low	N	1	1	1	3	1	3 Low
	Decommissioning the pipeline will sterilise future land-use options	N	2	5	2	9	3	27 Moderate Low	N	2	5	1	8	1	8 Low
	Maintenance of the pipeline servitude will become a burden/risk	N	2	5	1	8	2	16 Moderate Low	N	2	5	1	8	1	8 Low
	Maintenance of the depot will become a burden/risk	N	2	5	2	9	3	27 Moderate Low	N	2	5	1	8	2	16 Moderate Low

Table 9-4: Decommissioning - Impacts and Significance for the Built-Up Areas

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA - Further damage or loss of vegetation due to decommissioning activities	Weeds and alien species will be introduced and seeds will spread due to disturbance	N	2	4	3	9	6	54 Moderate High	N	2	4	3	9	2	18 Moderate Low
	Vegetation will be removed in order to establish a site camp, access the site and excavate to reach the pipeline.	N	2	4	2	8	6	48 Moderate High	N	2	4	2	8	2	16 Moderate Low
	Dumping of waste outside the designated area.	N	2	4	2	8	5	40 Moderate Low	N	2	4	2	8	1	8 Low
	Burning of vegetation on site.	N	2	4	2	8	6	48 Moderate High	N	2	4	2	8	1	8 Low
	Vehicles damaging vegetation when driving around the site or accessing the site.	N	2	4	2	8	6	48 Moderate High	N	2	4	2	8	2	16 Moderate Low
	Storing of material and soil stockpiles outside the designated areas	N	2	4	2	8	5	40 Moderate Low	N	2	4	2	8	1	8 Low
SURFACE WATER - Pollution/ Contamination of	Spillage of fuel / oil from vehicles or containers	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Spillage of chemicals, cement or slurry	N	2	2	2	6	6	36 Moderate	N	2	2	2	6	1	6 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
storm water/ runoff								Low							
	Emergency maintenance or fixing of vehicles / machinery on site	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Washing of vehicles / machinery on site	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
	Compaction of the soil due to activities and movement of vehicles / machinery will increase the runoff	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Siltation and Erosion	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
	Excessive water usage	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	1	5 Low
GROUNDWATER Pollution of the ground water system	Spillage of fuel / oil from vehicles or containers	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Spillage of chemicals, cement or slurry	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
	Emergency maintenance or fixing of vehicles / machinery on site	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Washing of vehicles / machinery on site	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
	Ablution facilities risk leakage / spillage	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
SOIL - Pollution and Compaction	Removal of vegetation	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Spillage of fuel / oil from vehicles or containers	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Spillage of chemicals, cement or slurry	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
	Emergency maintenance or fixing of vehicles / machinery on site	N	1	2	2	5	5	25 Moderate Low	N	1	2	2	5	1	5 Low
	Washing of vehicles / machinery on site	N	2	2	2	6	5	30 Moderate Low	N	2	2	2	6	1	6 Low
	Erosion of soil	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Unnecessary loss of soils due to site preparation	N	1	2	2	5	6	30 Moderate	N	1	2	2	5	1	5 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
								Low							
	Compaction of the soil due to activities and movement of vehicles / machinery	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Washing away of soil from stockpiles	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
AIR QUALITY - Polluting or decreasing the quality of the air	Fires on site	N	2	2	2	6	5	30 Moderate Low	N	2	2	2	6	1	6 Low
	Emissions from vehicles	N	2	2	2	6	5	30 Moderate Low	N	2	2	2	6	2	12 Low
	Waste flying through the air.	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Particles flying through the air	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
	Particulate matter and dust flying off moving vehicles	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	2	12 Low
	Particulate matter may be lifted from the site and pose a health threat	N	2	2	2	6	5	30 Moderate Low	N	2	2	2	6	2	12 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
VISUAL IMPACT - Change in the sense of place or decreasing the aesthetic value	Site clearance / removal of vegetation	N	2	2	1	5	6	30 Moderate Low	N	2	2	1	5	2	10 Low
	Dust created during the activities	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
	Waste on site	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	1	6 Low
HEALTH - Spreading of diseases / degradation in health	Dust created during activities	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
	Dumping of waste on site	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	1	5 Low
	Workers not using / wearing PPE	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
	Burning of material / hazardous waste on site	N	2	2	5	9	5	45 Moderate Low	N	2	2	5	9	1	9 Low
	Spreading of diseases	N	3	2	3	8	5	40 Moderate Low	N	3	2	3	8	1	8 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Dehydration due to a lack of drinking water	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	1	6 Low
NOISE	Noise from activities	N	2	2	4	8	6	48 Moderate High	N	2	2	4	8	4	32 Moderate Low
TRAFFIC - disturbance to the flow of traffic	Increase in vehicles	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	3	18 Moderate Low
	Traffic congestions due to the activities	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	3	18 Moderate Low
SAFETY & SECURITY	Theft of material and equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	The site is unsafe for locals, especially kids playing on site or residents passing through the site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low
	Home owner security at risk due to influx of workers into area	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low
	Vehicles at risk of theft or vandalism	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Unfair treatment of staff member can lead to dispute or strikes	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	2	12 Low
	Safety risk when crossing busy roads to get to work site	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	Using inappropriate working methods or equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
	Workers not wearing the correct PPE	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
SOCIO-ECONOMIC	Risk of ground subsidence affecting other public services or landowner activities	N	2	4	3	9	3	27 Moderate Low	N	2	4	1	7	1	7 Low
	Disruption arising during the decommissioning activities	N	1	1	2	4	2	8 Low	N	1	1	1	3	1	3 Low
	Decommissioning the pipeline will sterilise future land-use options	N	2	5	2	9	3	27 Moderate Low	N	2	5	1	8	1	8 Low
	Decommissioning the depot will sterilise future land-use options	N	2	5	2	9	2	18 Moderate Low	N	2	4	1	7	1	7 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Maintenance of the pipeline servitude will become a burden/risk	N	2	5	1	8	2	16 Moderate Low	N	2	5	1	8	1	8 Low

Table 9-5: Decommissioning - Impacts and Significance for the TPL Depots

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA - Damage or loss of existing vegetation due to decommissioning activities	Additional weeds and alien species will be introduced and seeds will spread due to disturbance of existing vegetation and soil.	N	1	4	2	7	5	35 Moderate Low	N	1	2	2	5	3	15 Low
	Dumping of waste outside the designated area.	N	1	4	2	7	5	35 Moderate Low	N	1	2	2	5	1	5 Low
	Burning of vegetation on site.	N	1	4	2	7	5	35 Moderate Low	N	1	2	2	5	1	5 Low
	Vehicles damaging vegetation when moving within the depot or accessing the depot.	N	2	4	3	9	5	45 Moderate Low	N	2	2	3	7	2	14 Low
FLORA - Biodiversity/ Habitat gain due to rehabilitation of the depots	Eradication of weeds and alien invasive species and planting of indigenous plant species.	P	2	4	2	8	3	24	P	2	4	2	8	5	40
FAUNA & AVIFAUNA - Loss in species	Injury / death to fauna and avifauna due to poaching	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
due to the decommissioning of the depots	Dumping of waste and material outside the designated area	N	2	4	2	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low
	Fires	N	2	4	2	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low
	Movement of vehicles in order to access the site but also while working on site.	N	2	4	2	8	5	40 Moderate Low	N	2	4	2	8	2	16 Moderate Low
FAUNA & AVIFAUNA - Biodiversity/ Species gain due to rehabilitation of the depots	Increase in species due to planting of indigenous plant species.	P	2	4	2	8	3	24	P	2	4	2	8	5	40
SURFACE WATER - Pollution/ Contamination of surface water (storm water/ runoff)	Spillage of fuel / oil from vehicles or containers	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	2	12 Low
	Spillage of chemicals	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	1	6 Low
	Emergency maintenance or fixing of vehicles / machinery on site	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	2	12 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Ablution facilities risk leakage / spillage	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
	Washing of vehicles / machinery on site	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	1	7 Low
	Excessive water usage	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	1	6 Low
SOIL - Pollution/ Contamination of Soil	Spillage of fuel / oil from vehicles or containers	N	1	2	3	6	6	36 Moderate Low	N	2	2	3	7	2	14 Low
	Spillage of chemicals	N	1	2	3	6	6	36 Moderate Low	N	2	2	3	7	1	7 Low
	Emergency maintenance or fixing of vehicles / machinery on site	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	1	6 Low
	Washing of vehicles / machinery on site	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	1	7 Low
	Unnecessary loss of soils due to site preparation	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	1	6 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Compaction of the soil due to activities and movement of vehicles / machinery	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	2	14 Low
	Washing away of soil from stockpiles	N	1	2	3	6	6	36 Moderate Low	N	1	2	3	6	2	12 Low
AIR QUALITY - Polluting or decreasing the quality of the air	Fires on site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low
	Emissions from vehicles	N	2	2	3	7	5	35 Moderate Low	N	2	2	3	7	2	14 Low
	Waste (paper, plastic bags) flying through the air.	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
	Particulate matter and dust flying through the air due to the demolition of buildings	N	2	2	3	7	6	42 Moderate Low	N	2	2	3	7	2	14 Low
VISUAL IMPACT - Change in the sense of place or decreasing the aesthetic value	Site clearance / removal of equipment / demolition	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	2	12 Low
	Dust created during the decommissioning activities	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	2	12 Low
	Waste on site	N	2	2	3	7	6	42	N	2	2	2	6	2	12

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
								Moderate Low							Low
HEALTH - Spreading of diseases/ degradation in health	Using the veld for ablution instead of toilets	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	3	15 Low
	Dust created during activities	N	2	2	2	6	6	36 Moderate Low	N	2	2	2	6	3	18 Moderate Low
	Dumping of waste on site	N	1	2	2	5	6	30 Moderate Low	N	1	2	2	5	2	10 Low
	Workers not using / wearing PPE	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
	Burning of material / hazardous waste on site	N	2	2	5	9	5	45 Moderate Low	N	2	2	5	9	1	9 Low
	Spreading of diseases	N	3	2	5	10	5	50 Moderate High	N	3	2	5	10	2	20 Moderate Low
	Dehydration due to a lack of drinking water	N	1	2	5	8	5	40 Moderate Low	N	1	2	5	8	1	8 Low
NOISE	Noise from decommissioning related activities	N	2	2	4	8	6	48 Moderate Low	N	2	2	4	8	3	24 Moderate Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
TRAFFIC - disturbance to the flow of traffic	Increase in vehicles	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	3	18 Moderate Low
	Traffic congestions due to the activities	N	2	2	3	7	6	42 Moderate Low	N	2	2	2	6	3	18 Moderate Low
SAFETY & SECURITY	Theft of decommissioning equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	The site is unsafe for locals, especially kids playing on site or residents passing through the site	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	1	8 Low
	Home owner security at risk due to influx of workers into area	N	2	2	4	8	5	40 Moderate Low	N	2	2	4	8	2	16 Moderate Low
	Vehicles at risk of theft or vandalism	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low
	Unfair treatment of staff member can lead to dispute or strikes	N	1	2	3	6	5	30 Moderate Low	N	1	2	3	6	2	12 Low
	Safety risk when crossing busy roads to get to work site	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	2	14 Low

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Using inappropriate working methods or equipment	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
	Workers not wearing the correct PPE	N	1	2	4	7	5	35 Moderate Low	N	1	2	4	7	1	7 Low
SOCIO-ECONOMIC	Risk of ground subsidence affecting other public services or landowner activities	N	2	4	3	9	3	27 Moderate Low	N	2	4	1	7	1	7 Low
	Disruption arising during the decommissioning activities	N	1	1	2	4	2	8 Low	N	1	1	1	3	1	3 Low
	Decommissioning the depot will sterilise future land-use options	N	2	5	2	9	2	18 Moderate Low	N	2	4	1	7	1	7 Low
	Maintenance of the depot will become a burden/risk	N	2	5	2	9	3	27 Moderate Low	N	2	5	1	8	2	16 Moderate Low

Table 9-6: No-go Impacts and Significance

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA - Damage or loss of existing vegetation	Maintenance of the depot or no maintenance at all could result in the introduction of weeds and alien species.	N	2	4	3	9	5	45 Moderate Low	N	2	2	2	6	3	18 Moderate Low
	Using the vacant depot site as illegal dumping site.	N	2	4	3	9	5	45 Moderate Low	N	2	2	2	6	1	6 Low
FAUNA & AVIFAUNA - Loss in species due to the decommissioning of the depots	Dumping of waste and no maintenance at the depots can result in the invasion of pests	N	2	4	3	9	5	45 Moderate Low	N	2	4	3	9	2	18 Moderate Low
SURFACE WATER - Pollution/ Contamination of surface water (storm water/ runoff)	Leaking of hydrocarbons	N	2	2	4	8	6	48 Moderate High	N	2	2	4	8	1	8 Low
	Ablution facilities risk leakage if not properly maintained and secured	N	2	2	4	8	6	48 Moderate High	N	2	2	4	8	1	8 Low
SOIL - Pollution/	Leaking of hydrocarbons	N	1	2	4	7	6	42 Moderate Low	N	2	2	4	8	1	8 Low

Contamination of Soil	Ablution facilities risk leakage if not properly maintained and secured	N	1	2	4	7	6	42 Moderate Low		N	2	2	4	8	1	8 Low
VISUAL IMPACT - Change in the sense of place or decreasing the aesthetic value	Depot sites being neglected or vandalised.	N	2	4	2	8	6	48 Moderate High		N	2	4	2	8	1	8 Low
	Waste/illegal dumping on site	N	2	4	2	8	6	48 Moderate High		N	2	4	2	8	1	8 Low
HEALTH - Spreading of deceases/ degradation in health	Dumping of waste on site or vandalising the depots could result in pests being introduced such as rats.	N	2	2	3	7	6	42 Moderate Low		N	2	2	3	7	2	14 Low
	Health risk due to leakage or spillage of hydrocarbons	N	2	2	3	7	5	35 Moderate Low		N	2	2	3	7	2	14 Low
SAFETY & SECURITY	Theft of decommissioning equipment	N	1	2	4	7	5	35 Moderate Low		N	1	2	4	7	2	14 Low
	Depots sites neglected and vandalised could become a hotspot for criminal activities such as drugs.	N	3	4	4	11	5	55 Moderate High		N	3	4	4	11	2	22 Moderate Low

10 ENVIRONMENTAL MANAGEMENT PROGRAMME

10.1 Alterations to the EMPr

As EMPrs should remain dynamic and flexible, certain conditions may require the EMPr to be revised. These conditions may include the following:

- Changes in legislation;
- Published/gazetted norms and standards;
- Occurrence of unanticipated impacts or impacts of greater significance, intensity and extent than anticipated;
- Conditions in environmental authorisation or water use authorisation which do not form part of the EMPr;
- Inadequate mitigation measures, i.e. where the level of an environmental parameter is not conforming to the required level despite the implementation of the mitigation measure; and
- Secondary impacts which occur as a result of the mitigation measures.

10.2 Responsibility

TPL will be responsible for the implementation of all mitigation and management measures as well as the compliance with this EMPr and any license and authorisation conditions.

TPL will delegate its responsibilities to an Environmental Control Officer (ECO) during the decommissioning phase.

Each contractor involved in the project will comply with the EMPr.

The ECO will be suitably qualified to perform the necessary tasks and will be appointed at a level such that he/she can interact effectively with site contractors, labourers and the public.

The ECO will be required to perform the following tasks:

- Monitoring and execution of the EMPr by being on site regularly (weekly);
- Inspect the site as required to ensure adherence to the management actions of the EMPr and authorisations/licences (compliance assessments/audits);
- Complete Site Inspection Forms on a weekly basis;
- Provide inputs to or compile the environmental compliance assessment report;
- Liaise with contractors on issues relating to implementation of, and compliance with, the EMPr and authorisations/licences;
- Maintain a record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; and
- Maintain a public-complaints register in which all complaints are recorded.

The conditions of the authorisation/licences and EMPr will be brought to the attention of all persons (employees, workers, consultants, contractors etc.) associated with the undertaking of these activities and TPL will take such measures that are necessary to bind such persons to the conditions thereof (contracts with penalties for non-compliances).

TPL can further enforce this by running workshops in order to raise environmental awareness. These workshops should cover aspects such as fire prevention, strict use of ablution facilities and general duty of care. A pamphlet can be handed out on socially acceptable and environmentally responsible conduct such as water conservation, waste management etc.

Entity:	Responsible Person:	Contact details:
TPL	Ms Nqobile Victoria Dlamini (Environmental Manager)	083 607 6084
Environmental Control Officer	Dr Alfonso Niemand	083 225 4426

10.3 Activities causing potential impacts

The following activities are activities that could cause potential impacts if not managed properly or if no mitigation measure is implemented:

- Removal of vegetation;
- Establishment of the decommissioning site;
- Access roads and movement of machinery/heavy vehicles/equipment on site;
- Pathways created by workers;
- Creating conditions for alien invasive species to breed or grow;
- Hydrocarbon spills/ leakages;
- Poor waste management and littering;
- Dumping of material/waste;
- Stockpiling of soil and material;
- Poor management of water (storm water & potable water);
- Poor management of ablution facilities;
- Random events such as fire;
- Poaching or removal of fauna species.

10.4 Potential Impacts

10.4.1 Negative Impacts

- Destruction, further loss and fragmentation of the vegetation community classified as CBA or protected areas;
- Destruction of protected plant species;
- Displacement of faunal community (including threatened and protected species) due to habitat loss, direct mortalities and disturbance (noise, dust and vibration);
- Loss of SCC faunal species (road mortalities and/or poaching);
- Infringement by humans into the remaining natural grassland areas, with associated impacts such as poaching, litter as well as introduction of pests, diseases and feral species;
- Infringement by humans into the watercourse areas, with associated impacts such as litter, spills as well as introduction of alien invasive species;
- Erosion due to clearance of vegetation, compaction of soil or poor management of stockpiling areas;
- Pollution/contamination of soil, surface water and groundwater due to leakages or spillages of fuel, oil and hazardous substances;
- Pollution/contamination caused by littering or dumping of building waste (rubble);
- Dust and noise.

10.4.2 Positive impacts

- Restoration of areas that were previously a built-up area such as the Van Reenen Depot, replacing buildings with a more natural landscape;
- Eradication of alien invasive species;
- Restoration or enhancement of natural grassland along sections of the pipeline;
- The pipeline will be clean and therefore the possibilities of leaks or contamination due to leaks will be improbable;
- The plug-ins and filling of sections along the pipeline will prevent the pipe from falling in / collapsing and causing damage or spills.

10.4.3 No-go Option impacts

- Possibility of pipes collapsing;
- Subsidence risk;
- Water conduit effect risk;
- The depots will be vulnerable to vandalism and theft or even become a shelter for homeless people;
- The depots could also become a dumping place if not in use;
- Increase in weeds and alien invasive species due to no maintenance at the depots;
- Risk of subsidence due to empty pipe corroding away over time;
- Risk of pipe acting as a water conduit.

10.5 Management measures

Dedicated measures have been identified to manage the impacts identified above (Tables 9.2 – 9.5). The purpose of the EMPr is to ensure that undue or reasonably avoidable adverse impacts of the project are prevented; that impacts which cannot be prevented are managed to reduce their significance; and that the positive benefits of the project are enhanced. TPL is responsible for the implementation of recommendations and mitigation/management measures and HydroScience cannot and will not take responsibility for the actions of TPL or lack thereof.

Table 10-1: Identified potential impacts and proposed management measures for the Decommissioning of the pipeline and depots

1. Environmental Awareness Training

Management Outcome: All on-site staff are aware of and understands the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All staff must receive environmental awareness training; • All new staff coming onto site must receive environmental awareness training; • All staff are aware of the conditions and controls linked to the Environmental Authorisation, Water Use Authorisation (WUA) and within the EMPr; • The responsible operator of vehicle / equipment / machinery must have the required training to make use of the spill kit in emergency situations; • All staff are made aware of their individual roles and responsibilities in achieving compliance with the environmental authorisation, WUA and EMPr; • The Contractor must erect and maintain information posters at key locations on site; • Environmental awareness training should include the following: i. Description of significant environmental impacts, actual or potential, related to their work activities; ii. Mitigation measures to be implemented when carrying out specific activities; iii. Emergency preparedness and response procedures; iv. Emergency procedures; v. Procedures to be followed when working near or within sensitive areas;	Contractor	Presentations should be as visual as possible - it can include posters, power point, videos or any other material that will assist in the training.	Environmental awareness training must be done before decommissioning starts and as soon as new staff members start on site. Environmental posters must be on site at all times and must be visible / readable.	ECO	As and when required	Photos Attendance Register Training material

vi. Water usage and conservation; vii. Solid waste management procedures; viii. Sanitation procedures. • A record of all environmental awareness training courses undertaken as part of the EMPr must be available; • Educate workers on the dangers of open and/or unattended fires; • An attendance register of all staff that received environmental awareness training must be kept; • Course material must be available and presented in all appropriate languages; • Environmental training and topics can form part of the daily Toolbox Talks.						

2. Site Establishment

Management Outcome: Impacts on the environment are minimised when establishing new infrastructure and the development footprints are kept to a minimum and within demarcated site establishment area.

Potential Impacts:

- Loss of vegetation and fauna habitat
- Activities may lead to displeasing aesthetics, such as the storage of materials, excavation activities and the use and storage of machines / vehicles / equipment
- Pollution of soil and groundwater due to spills on site

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• A Method Statement must be provided by the contractor prior to any on-site activity that includes: o overnight vehicle / machinery parking areas; o stockpile and lay down areas; o the batching area / plant; o equipment cleaning areas; o eating and ablution facilities; o waste management; o access route. • Location of the site camp must be within an approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; • Sites should be located where possible on previously disturbed areas; • Sites must be located within servitude and the 64m corridor along the pipeline (32m to each side of the pipeline); • If possible, no temporary facilities or portable toilets to be setup within 50m of any watercourse, including streams, dams and drainage lines (even if dry); • Prefabricated structures should be prioritised for the contractor's camp due to the temporary nature of the activities, in order to reduce on site fabrication;	Contractor	Area can be identified during a site visit.	Before site establishment starts	ECO	During all site visits	Photos

• Where possible, structures can be placed on plinths to avoid clearing areas and the impact footprint; • No staff to be accommodated on the property; • Signs (safety) must be erected at the entrance to the working site; • The visual impact is limited to the decommissioning phase and therefore of short duration. • All storage areas should be marked as "Laydown" areas, should be barricaded and kept neat and tidy at all times. • Housekeeping should be done daily.						

3. No-Go Areas

Management Outcome: Access to no-go areas prevented

Potential Impacts:

- Loss of vegetation and fauna habitat
- Loss of biodiversity
- Pollution of soil and groundwater due to spills

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Identification of No-Go areas is to be informed by the environmental assessment, site walk through and any additional areas identified during site establishment; • Highly sensitive areas and the associated buffers were identified by The Biodiversity Company and must be adhered to (Section 8.1 and Appendix A of the specialist report); • Erect, demarcate and maintain a temporary fence around the perimeter of the site establishment area; • Unauthorised access and development related activity inside No-Go areas is prohibited; • In this case, the No-Go area will also include the 32m buffer zone that needs to be setup and implemented, as per the delineated maps; • Areas where Yellow Wood trees occur must be demarcated, if some of the plants need to be relocated permits will need to be sourced.	Contractor	During a site inspection, barricading of no-go areas.	Before site establishment starts	ECO	During all site visits	Photos

4. Access Roads

Management Outcome: Minimise impact to the environment through the planned and restricted movement of vehicles to/on site.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss of biodiversity through the damage of vegetation or killing of fauna
- Compaction of soil
- Erosion

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• During site planning, all access roads must be identified and assessed to ensure that the best route is chosen; • Access to the site must fall within the assessed area; • Maximum use of existing roads must be made; • Where there is no access roads, the pipeline servitude must be used as access road; • Access is to be established by vehicles passing over the same track on natural ground, multiple tracks are not permitted.	Project Manager Project Engineer Contractor	Site walk-about before site establishment.	During planning and site establishment	ECO	During all site visits	Photos

5. Fencing where required / applicable

Management Outcome: To minimise impact to the environment and ensure safe and controlled access to the site through the erection of a fence and gates where required.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss of biodiversity through the damage of vegetation or killing of fauna
- Compaction of soil
- Erosion
- Security breaches

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Use existing gates to gain access to all parts of the site; • All gates must be fitted with locks and be kept locked after working hours; • All demarcation fencing and barriers must be maintained in good working order for the duration of the site establishment period; • Fencing/ barricading must be erected around the camp, batching plants, hazardous storage areas, and all designated no-go areas, where applicable; • All fencing must be developed of high-quality material bearing the SANS mark; • The use of razor wire as fencing must be avoided; • On completion of the project, all temporary fences are to be removed and where possible re-used by the contractor at new projects; • The contractor will ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Contractor		Before site establishment starts	ECO	During all site visits	Photos

6. Storm and Waste Water Management

Management Outcome: An effective system of storm water run-off control is implemented, where required and impacts to the environment caused by storm water and wastewater discharges during activities are avoided.

Potential Impacts:

- Pollution of downstream watercourse
- Pollution of soil
- Erosion and siltation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Appropriate pollution control necessary to prevent discharge of water containing polluting matter or visible suspended solids; • Runoff from the batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location legally approved to accept the wastewater and approved by the Project Manager (keep safe disposal certificate); • All spillages of hydrocarbons onto surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriately licensed waste disposal facility (keep safe disposal certificate); • Natural storm water runoff, not contaminated by operations and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO.	Contractor		Measures implemented before site establishment starts and checked during activities.	ECO	During all site visits	Photos

7. Solid Waste Management

Management Outcome: Wastes are appropriately stored, handled and safely disposed of at a licensed waste facility**.**

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Compaction of soil
- Pollution of soil due to spillages associated with dumping of solid waste
- Establishment of Alien Invasive Plant Species

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
General: • All measures regarding waste management must be undertaken using an integrated waste management approach; and • A suitable position must be found and clearly demarcated for waste collection and storage; Prevention of waste: • Waste material storage areas should be safe, secure and weather-proof to prevent damage to material (resulting in waste generation) and theft. Area with impermeable base or in sealed containers. • Due to the additional movement of people, there will be increased litter production and higher probability of littering. Therefore, there should be on-site signs raising the awareness of the impacts of littering on the natural environment and weekly litter patrols to collect litter. • Train staff/contractors to operate in an environmentally responsible manner (closing of taps for water conservation, reporting spills, no littering etc.). • No planned maintenance or servicing of vehicles / machinery / equipment on site. If emergency maintenance is required to on-site vehicles, machinery and/or equipment, drip trays and / or absorbent mats will be placed underneath the vehicles /	Contractor		Measures must be implemented before site establishment starts and must be controlled during activities.	ECO	During all site visits	Photos Documents

machinery / equipment where maintenance work is conducted to prevent grease/oil spillages impacting the environment or generating waste (contaminated soil). <u>Reduction / minimisation of waste:</u> • Reduce waste quantities and disposal costs through a reduction in the materials ordered. • "Take-back" schemes – setting up schemes with suppliers to take back surplus materials. • Engage with the supply chain to supply products and materials that use minimal packaging. <u>Reuse / recycling of waste:</u> • Separate / sort / segregate waste for collection and recycling - make arrangements with recycling contractors to provide clearly marked bins for material separation / sorting. Make sure that contractors are aware of the placement of the bins and their responsibility to separate / sort materials. • Though no special disposal methods are required for non-hazardous waste, non-biodegradable refuse such as glass bottles, plastic bags, etc., must be stored in suitable containers to allow for recycling and emptied on an as-required basis for recycling purposes during the working phase. • Segregate packaging for reuse. <u>Waste handling on site:</u> • Separate / segregate / sort waste into different containers. • Collect waste in suitable containers (drums / skips / bins on site). • Waste containers should be marked, or colour coded to indicate which types of waste can be disposed to it. Staff to be trained in this regard to segregate waste. • Ensure sufficient containers are available for storage of waste prior to removal off site to prevent overflow and littering on the site and surroundings. • Ensure no litter, refuse, waste and rubble generated on the premises will be placed, dumped or deposited on this site, adjacent or surrounding properties during the working phase. • The waste collection and storage site must be maintained in a clean and orderly fashion.						

• Waste must be disposed, as soon as possible to a municipal transfer station, skip or on a licensed landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours and attracting pests. Empty containers regularly and waste should not be stored on site in excess of 30 days. • Waste collection bins with secure covers (scavenger and weatherproof) must be provided to prevent fauna entering the container. Waste containers must not to be left standing without a cover as this may attract fauna to inspect the skip and possibly cause death or injury to the fauna. • Waste may not be burnt on site. • Hazardous waste must be stored separately from general waste on an impermeable surface within a bund wall and disposed of at a licensed hazardous waste site if not recycled. • Comply with the Norms and Standards for Waste Storage (GNR 926 of 29 November 2013). <u>Waste removal & disposal:</u> • Companies that transport the waste must be registered / licenced to do so. • Site must be easily accessible for trucks picking up or dropping off the skips. • Remove waste from site for recycling or disposal to the local licensed municipal landfill / waste management facility on a regular basis (at least weekly or when container is full). • No burning or burying of waste. • Any hazardous waste will be stored and handled according to the relevant legislation and only disposed to licensed disposal facilities. <u>Documentation:</u> • Report on the quantities of different waste streams managed on each site (landfill, reuse, recycling, energy recovery). • Ensure copies of all waste manifests (safe disposal certificates) are kept, showing responsible handling, transport and disposal by a reputable waste handler. • Include measure in contract that will ensure contractors are required to clean their work area after construction.						

8. Protection of Watercourses

Management Outcome: Pollution and contamination of the watercourse environment as well as potential erosion are prevented.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss of biodiversity
- Soil erosion and siltation
- Pollution of the watercourse
- Establishment of Alien Invasive Plant Species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All watercourses and water bodies must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, hydrocarbons, chemicals, slurry, wash and contaminated water or organic material resulting from the Contractor's activities; • In the event of a spill, prompt action must be taken to clear the polluted or affected areas; • No equipment / machinery / vehicles must traverse any rivers/streams (perennial or non-perennial), seasonal or permanent wetlands; • Erosion potential to be monitored at all times during the activities. Any erosion to be corrected immediately. • Site to be inspected after the first heavy rain falls after completion of the site establishment phase to assess erosion. Thereafter it can form part of the regular maintenance plan. • The delineated / identified buffer area must be maintained. No temporary lay-down areas or site office in this area. Only very limited development should be allowed in the buffer zone. • When working in or near any watercourse or wetland, the following environmental controls and consideration must be taken:	Contractor		Measures must be implemented before site establishment starts and must be controlled during activities.	ECO	During all site visits	Photos

○ During the execution of the project, appropriate measures to prevent pollution and contamination of the watercourse must be implemented e.g. including ensuring that equipment / vehicles / machinery is well maintained; ○ Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the watercourse; and ○ Appropriate rehabilitation and re-vegetation measures for the watercourse (wetland area and rivers/streams) must be implemented timeously as per the biodiversity specialist recommendations.						

9. Vegetation Clearing

Management Outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed sites for plug-ins.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss in biodiversity
- Compaction of soil
- Establishment of Alien Invasive Plant Species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• During vegetation clearance, methods should be employed to minimize potential harm to fauna species. Clearing has to take place in a phased and slow manner, commencing from the interior of the site progressing outwards towards the boundary to maximize potential and time for mobile species to move to adjacent areas; • Prior and during vegetation clearance any larger fauna species noted should be given the opportunity to move away from the machinery; • Fauna species such as frogs and reptiles that have not moved away should be carefully and safely removed to a suitable location beyond the extent of the development footprint by a suitably qualified ECO trained in the handling and relocation of animals; • Removal of alien invasive species. • Rivers, watercourses and other water bodies must be kept clear of vegetation cuttings/removals; • All vegetation removed during the site establishment period must be disposed of at a registered “green” landfill site or composting site or in an appropriate manner as agreed by the ECO unless it is indigenous vegetation which could be used during reinstatement;	Contractor and ECO	Site survey or walkabout	Before site establishment and during activities	ECO	During all site visits	Photos

• If herbicides / pesticides are used, only a registered control operator must carry this out or it must be carried out under the supervision of a registered control operator, or someone who is appropriately trained and a daily register must be kept of any usage; • Trees, shrubs, grass, natural features and topsoil which are not removed during vegetation clearance shall be protected from damage during decommissioning; • Removal and disposal of alien invasive plant species must be done in an appropriate manner as required by law - Alien Invasive Species Regulations 2014 (NEMBA Act 10 of 2004); • Rehabilitation must be done according to the specifications as discussed in Section 21 below. • The following vegetation species were identified as vulnerable and must be protected during site clearance: – Yellow Wood – African Potato – Orange River Lily – Fan-leaved Boophone – Marula Tree – Blue Hyacinth – Small Red Iris						

10. Protection of fauna

Management Outcome: Minimise the disturbance to fauna.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss in biodiversity due to catching and killing
- Establishment of Alien Invasive Plant Species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• No poaching must be tolerated under any circumstances; • No fishing will be allowed during the site establishment phase. • A qualified zoologist or the ECO must conduct a pre-site establishment survey/ walkabout to ensure that the following species do no occur within the expected working area (the working area includes the plug-in, block valve area and the access road) – Sungazers – Southern Bald Ibis – Blue Korhaan – Giant Girdled Lizard – Grey Crowned Crane – Cape Clawless Otter – Rock Monitor	Contractor ECO/ Zoologist	Site survey or walkabout	Before site establishment and during activities	ECO	During all site visits	Photos Record of site survey/ walkabout

11. Protection of heritage resources

Management Outcome: Minimise the disturbance to heritage resources.

Potential Impacts:

- Loss of heritage resources
- Damage to heritage resources

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; • All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material before work recommences.	Contractor		During activities	ECO	During all site visits	Photos

12. Safety of the public

Management Outcome: all precautions are taken where possible to minimise the risk of injury, harm or complaints.

Potential Impacts:

- Damage to property
- Injuries
- Vehicle accidents
- Traffic congestions will become a nuisance

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Demarcate and restrict public access to the working area; • Ensure that there is signage all over the site that warns the public of activities; • Ensure that there are sufficient road signs so that the public are aware of vehicles moving around; • Points men/women must be appointed to direct traffic or warn motorist of any danger on the roads; • All unattended open excavations must be adequately fenced or demarcated; • Adequate protective measures must be implemented to prevent unauthorised access to areas and climbing of structures; • Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	Contractor		Proper planning must be done before establishment and implemented during activities	ECO	During all site visits	Photos

13. Sanitation

Management Outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Potential Impacts:

- Risk of diseases
- Spillages could occur
- Odour

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**

• Mobile dry chemical toilets are installed on-site if no other ablution facilities are available;
• Ablution facilities and / or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;
• Proper hand washing facilities, including soap, must be provided if it is not included as part of the chemical toilets;
• Where mobile chemical toilets are required, the following must be ensured:
  ○ If possible, toilets must be located no closer than 50m to any watercourse or water body;
  ○ Toilets are secured to the ground to prevent them from blowing over;
  ○ No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr for waste disposal;
  ○ Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;
  ○ Toilets are serviced regularly and the ECO or SHEQ must inspect toilets to ensure compliance to health standards;
  ○ A copy of the safe waste disposal certificates must be maintained.
	Contractor	Records of disposal certificates.	Toilets must be provided before site establishment starts and removed once rehabilitation is completed.	ECO	During all site visits	Photos
						Documents

14. Emergency Procedures

Management Outcome: emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; • The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; • All staff must be made aware of emergency procedures as part of environmental awareness training; • The relevant local authority's fire department must be made aware of a fire as soon as it starts; • In the event of emergency mitigation measures being necessary to contain the spill or leak, it must be implemented as per the section below - Hazardous Substances.	Contractor	Notice boards at the site camp. Toolbox talks to include it as a topic.	Must be done before site establishment starts and implemented during activities.	ECO	During all site visits	Photos Documentation

15. Hazardous Substances

Management Outcome: safe storage, handling, use and disposal of hazardous substances.						
Potential Impacts: • Contamination of soil or watercourse due to leaks/ spills						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• The use and storage of hazardous substances to be minimised and substituted with non-hazardous and non-toxic alternatives where possible; • All hazardous substances will be stored in suitable containers as defined in the Method Statement provided by the contractor; • Containers will be clearly marked to indicate contents, quantities and safety requirements; • All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers (110% of container capacity); • An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis; • All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS); • All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet; • Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available; • The Contractor must ensure that hydrocarbons is stored in appropriate storage tanks or in bowsers; • The tanks / bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The	Contractor		Planning done prior to site establishment and implemented during activities.	ECO	During all site visits	Photos

impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks / bowsers (110% statutory requirement plus an allowance for rainfall); • The floor of the bund must be sloped, draining to an separator; • Provision must be made for re-fuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; • All empty dirty drums must be stored on a drip tray or within a bunded area; • No unauthorised access into the hazardous substances' storage areas shall be permitted; • No smoking must be allowed within the vicinity of the hazardous storage areas; • Adequate fire-fighting equipment must be made available at all hazardous storage areas; • An appropriately sized spill kit kept on-site relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; • The responsible operator must have the required training to make use of the spill kit in emergency situations; • In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act (Act 59 of 2008) and the Norms and Standards for waste storage (GNR 926 of 29 November 2013).						

16. Batching Area

Management Outcome: To control concrete and cement batching activities in order to minimise spillages and contamination of soil, surface water and groundwater.

Potential Impacts:

- Contamination / pollution of watercourse or soils

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Concrete mixing must be carried out on an impermeable surface (such as boards and/or within a bunded area with an impermeable surface or wheelbarrow, if batches are small) or make a hard surface and remove when done; • Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; • A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; • Hardened concrete from the washout facility can either be reused or disposed of at an appropriate licenced disposal facility; • Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; • Sand and aggregates containing cement must be kept damp to prevent the generation of dust; • Any excess sand, stone and cement must be removed or reused from site on completion of activities period and disposed at a registered disposal facility.	Contractor		During activities.	ECO	During all site visits	Photos

17. Dust Emission

Management Outcome: Dust prevention measures are applied to minimise the generation of dust.

Potential Impacts:

- Nuisance for residents or people at work
- Health risk

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Take all reasonable measures to minimise the generation of dust; • Removal of vegetation must be limited to the working area/ footprint; • Exposed surfaces must be re- vegetated or stabilised as soon as it is possible; • During high wind conditions, the ECO will evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; • Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water; particularly during prolonged periods of dry weather. Such measures must also include the use of temporary stabilising measures (e.g. chemical soil binders, straw, brush packs, chipping).	Contractor		During activities.	ECO	During all site visits	Photos

18. Noise

Management Outcome: To prevent unnecessary noise to the environment and surrounding community by ensuring that noise from activities is mitigated.						
Potential Impacts: • Nuisance for residents or people at work • Health risk						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Operating hours must be adhered to, weekdays from 07:00 – 18:00; • Activities must be limited to daylight hours; • If possible, activities must be limited to the week and should activities take place over a weekend, the I&APs and landowners must be consulted with.	Contractor		During activities.	ECO	During all site visits	Photos Documents Emails

19. Fire prevention

Management Outcome: Prevention of uncontrollable fires.

Potential Impacts:

- Possible injuries
- Air pollution due to smoke
- The smoke can be a health risk
- Loss of habitat
- Damage to property

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Designated smoking areas must be allocated; • Bins must be provided for cigarette buds at the designated smoking area; • Firefighting equipment must be available on all vehicles located on site; • The local Fire Protection Agency (FPA) must be informed of activities; • Contact numbers for the FPA and emergency services must be communicated in environmental awareness training, toolbox talks and displayed at a central location on site.	Contractor		During activities.	ECO	During all site visits	Photos

20. Stockpile and Stockpiling Areas

Management Outcome: To reduce erosion and sedimentation as a result of stockpiling.						
Potential Impacts: • Soil erosion and siltation						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All material that is excavated during the activities (during earthworks) must be stored appropriately on site in order to minimise impacts to watercourses and wetlands; • All stockpiled material must be maintained and kept clear of weeds and alien invasive species by undertaking regular weeding and control methods; • Stockpiles must not exceed 2 m in height; • During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g. cloth, tarpaulin etc.); • Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor		During activities.	ECO	During all site visits	Photos

21. Landscaping and Rehabilitation/ Remediation

Management Outcome: No environmental degradation occurs as a result of the project.

Potential Impacts:

- Soil erosion
- Infestation of weeds and alien invasive species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Implementation of rehabilitation plan. o Areas were infrastructure was demolished must be landscaped back to original contours and rehabilitated to the surrounding land use; o The replacement of the topsoil must be done within the rehabilitated areas. The topsoil will be ripped and reseeded. Any contamination of the topsoil must be avoided by ensuring machinery is well maintained and leak free. If contamination has occurred the area must be ameliorated immediately; o The infringement by local people and the associated impacts such as livestock will hinder the rehabilitation process, thus accessibility to the rehabilitated areas must be prohibited as far as possible; o The rehabilitated areas must be revegetated as soon as possible to reduce the risk of increased runoff from bare areas. Vehicles will be driving around the site and must stay within the designated routes. This will prevent compaction of soils outside of the disturbed area. If areas have been compacted, the soil must be ripped to remedy the effects of compaction; and o During the rehabilitation effort, movement of large machinery as well as staff will resemble roles and movement as per the site establishment phase, thus management measures are similar, such as demarcating	Contractor		After decommissioning.	ECO	During all site visits	Photos

the footprint area and/or “no go” areas will prevent unregulated access and activities • All spoil and waste will be disposed to a licensed waste site and certificates of safe disposal provided; • The slopes that are inclining (such as Van Reenen Depot) is a risk for severe soil erosion; Geojute netting and Geojute logs are suggested for mitigation; • Berms that have been created should have a slope of 1:4 and be replanted with indigenous species and grasses; • Stockpiled topsoil must be used for rehabilitation; • Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; • Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; • Subsoil must be ripped before topsoil is placed; • If possible, the project must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; • Where impacted through site establishment related activity, all sloped areas must be stabilised to ensure proper rehabilitation is affected and erosion is controlled as per the instruction from the ECO; • Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; • Where required, re-vegetation can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: o Annual and perennial plants are chosen; o Pioneer species are included; o Species chosen must grow in the area or be feasible to grow; o Root systems must have a binding effect on the soil; o The final product should not cause an ecological imbalance in the area. o Lifestyle Seeds (https://lifestyleseeds.co.za/)						

○ Silverhill Seeds (http://www.silverhillseeds.co.za/default.asp)						

22. Communication

Management Outcome: Proper communication with landowners, neighbours and the public						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Notify landowners, neighbours and councillors at least 7 days before activities start of the intention to commence with the decommissioning of the depots or the decommissioning of the pipeline. This should be done as the project progresses from one area/neighbourhood to the following. • Keep a complaint register on site. • A notice board should be visible at each site with the contact information of the Project Manager, Contractor, Emergency Contact and ECO. • In addition to the contact information there should also be a timeframe of when work will commence and when it will be completed.	Project Manager/ TPL Contractor	Telephone calls Emails Notifications/ Posters	Before decommissioning starts. During decommissioning	ECO	During all site visits	Photos Emails Signed register

10.6 Monitoring programme

All records will be kept for at least five (5) years.

The following aspects need to be monitored and audited:
a) Compliance with EMPr, environmental authorisation, water use authorisation and any other licenses' conditions

- Appoint an Environmental Control Officer (ECO)

b) Noise, Nuisance and Disturbance Monitoring

- A record of complaints must be kept as well as the measures taken to address these complaints.

c) OHSA Compliance

- Register to indicate that all the employees and contractors have been informed as to their rights under the Act; and
- Accident records as per the Act - reported to the Department of Trade and Industry (DTI) and the Department of Labour (DOL).

10.7 Record keeping and reporting

10.7.1 Compliance recording and reporting

Accurate and up-to-date records will be kept by the ECO of all system malfunctions resulting in non-compliance with the EMPr, environmental authorisation and licenses.

10.7.2 Incident recording and reporting

TPL will also, within 24 hours, ensure that the relevant authorities (DEA, DOL, DTI etc.) are notified of the occurrence or detection of any incident which has the potential to cause, or has caused pollution of the environment, health or safety risks or which is a contravention of any EMPr, environmental authorisation or license condition. TPL is then to submit an action plan indicating measures, which will be taken to:

- Correct the impacts resulting from the incident;
- Prevent the incident from causing any further impact; and
- Prevent a recurrence of a similar incident.

10.7.3 Complaints recording and reporting

A complaints register will be kept and all complaints from the public / community will be noted therein as well as measures taken to rectify the situation as described above.

10.8 Environmental awareness plan

10.8.1 Objectives

The objectives of an environmental awareness plan are to:

- Inform employees, landowners, contractors and visitors of any environmental risk which may result from their presence, work or activities, and
- Inform employees, landowners, contractors and visitors of the manner in which the identified possible risks must be dealt with in order to avoid pollution or degradation of the environment and health and safety hazards.

In general, the purpose of implementing an environmental awareness plan is to optimise the awareness of those on the property and partaking in the activities, which have the potential to impact negatively on the environment, and in doing so, promote the goal of sustainable development.

10.8.2 Communication

Both objectives of the environmental awareness plan indicate that employees, landowners, contractors and visitors must be informed of environmental matters. Information sharing is only possible through effective communication channels.

The goal for proficient communication is to provide structures for effective communication, participation and consultation that relate to the occupational health and safety hazards, environmental hazards and the Safety, Health, Environment and Quality (SHEQ) management system.

The objective of the communication procedure is to ensure effective communication flow, involvement of all levels of employees in the communication chain and to comply with the requirements in terms of ISO 9001:2008 clause 5.5.3 and ISO 14001:2004 clause 4.4.3.

10.8.3 Communication responsibility

It will be the responsibility of the Safety, Health, Environment and Quality (SHEQ) officer to communicate the environmental awareness plan with employees, landowners, contractors and visitors. Should the SHEQ struggle with information or should there be a query regarding certain environmental issues it can be discussed with the appointed ECO.

The communication can be done in the following way:

- As part of the toolbox talks;
- Posters or information sheets on the notice board, within the ablution facility or at specific spots such as the drinking water or waste bins;
- Visitors entering the site could be given an induction or a brochure of the main environmental risks;
- Environmental awareness training for the contractors and their staff members as well as the TPL employees that will be working on site. This should be done before the decommissioning commences.

10.8.4 Aspects covered

The following Environmental Risks/ Aspects should be covered as part of the Environmental Awareness Plan:

- Water saving;
- Waste Management / Recycling;
- Importance of PPE;
- What are CBAs or SSCs;
- Erosion;
- Alien Invasive Species;
- Risk of spillages (fuel, oil, cement and hazardous material);
- Dust
- Noise
- Importance of nature and why we protect it.

11 CONCLUSIONS & RECOMMENDATIONS

Based on the impact assessment (Section 9), it is clear that the decommissioning of the Transnet Pipeline will have a negative impact on the environment. The impact is created when the depots are decommissioned and structures are removed and demolished, the valve chambers are removed and closed, and the pipeline is plugged along sections that might be vulnerable to collapsing. The significance of the impact will, however, vary depending on the landscape (land use) and the vulnerability or sensitivity of the environment in which it is located. The pipeline route was divided into three (3) categories; built-up areas, agricultural (crops & grazing veld) areas as well as natural areas. The depots were assessed separately since the decommissioning activities are different from the plug-ins and the removal/closure of the valve chambers.

The decommissioning of the depots was considered to have a moderate low impact before mitigation and a low impact after mitigation measures have been implemented successfully. The main reason for this argument is that the depots are located in an already disturbed area and the environment associated with the depots are typical built-up or urban areas. Impacts will be limited to waste management, noise, dust, traffic congestion and in some instances, there could be damage to surrounding fauna and flora (Van Reenen). Mitigation measures are, however, feasible and with good housekeeping the impacts can be reduced to low for the decommissioning of the depots.

Sections of the pipeline located within built-up areas will have a significance rating of moderate low to low and after mitigation is implemented successfully it can be reduced to low. Most of the impacts associated with the decommissioning of the pipeline within the built-up areas are more of a nuisance and include traffic congestions, dust, noise, waste and mismanagement of the soil stockpiles. These impacts / nuisances can however be mitigated by implementing good housekeeping measures.

The section of the pipeline that runs through agricultural fields vary from plug-in points located on the edge of crop fields as well as plug-in points located within grazing fields. In both instances, the natural habitat has been disturbed and the significance of the impacts were regarded as moderate low. There were, however, points within the agricultural category that were regarded as sensitive due to the presence of an SCC, a watercourse (river/stream or wetland) and CBAs. Mitigation measures are, however, still feasible and if implemented successfully the impact can be reduced to low.

The last category includes the natural habitat or environment. These sites were regarded as sensitive even though the areas were disturbed when the pipeline was implemented and the servitudes created. The sites are regarded as sensitive due to the SCC found along the section of the pipeline, the watercourse (river, stream or wetland) or the CBAs. In most instances, the vegetation is still in a very good condition and access to the sites must be planned carefully and good housekeeping on the plug-in sites will be essential. Mitigation measures are feasible and if implemented successfully, the impact can be reduced to moderate and even low.

11.1 EAP Opinion

It is the opinion of the EAP that the project may continue based on the following:

- Most of the study area has previously been disturbed due to the construction of the depots as well as the implementation of the pipeline and associated servitudes;
- In some instances, the servitude is maintained (mowing of lawn) and therefore the natural vegetation is even more disturbed or more regularly disrupted;
- The impact assessment for the pipeline indicates that impacts will be low for sections of the pipeline that runs through built-up areas. The impacts will be more of a nuisance that is created by noise, litter, traffic congestion, erosion/displacement of soil and dust.

- Sections where the pipeline runs through agricultural fields will vary from low to moderate, since most of these areas are already disturbed due to the planting of crops or the roaming and grazing of animals.
- The sections of the pipeline that traverse the CBAs, runs along a watercourse or where there are SSCs were regarded as highly sensitive but with the implementation of the correct mitigation measures, the proposed project should not have a substantial negative impact on those areas.
- Mitigation measures are feasible and can be implemented.
- There is already another pipeline in place to fulfil the socio-economic function of transporting fuel from the harbour to the rest of the country.

11.2 Conditions

The project can be authorised under the following conditions:

- Compliance with EMPr.
- Proper implementation of the rehabilitation recommendations as per The Biodiversity Company's Report.
- Approval of the General Authorisation under the NWA.
- Access to the various sites are carefully planned, restricted and existing pathways are used.
- Field surveys are conducted, as per The Biodiversity Company's Report, prior to site establishment in both CBA and SSC areas to ensure that no species are harmed. Both the access route as well as the plug-in site must be surveyed.
- Proper notifications are done before accessing properties.

12 REFERENCES

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Legislation:

- Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983)
- Constitution of the Republic of South Africa (CRSA), 1996 (Act 108 of 1996)
- National Environmental Management Act (NEMA), 1998 (Act 107 of 1998)
- National Environmental Management: Biodiversity Act (NEM:BA), 2004 (Act 10 of 2004)
- National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act 57 of 2003)
- National Environmental Management: Waste Act (NEM:WA), 2008 (Act 59 of 2008)
- National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999)
- National Water Act (NWA), 1998 (Act 36 of 1998)