



# UMSIZI REPORT

## HYDRO SCIENCE

### DECOMMISSIONING OF TRANSNET DURBAN – JOHANNESBURG PIPELINE (DJP) AND ASSOCIATED STRUCTURES

### SOCIO-ECONOMIC SPECIALIST STUDY

December 2019

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## ACRONYMS

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EMP	Environmental Management Plan
EIA	Environmental Impact Assessment
DJP	Transnet's Durban-Johannesburg Pipeline
NEMA	National Environmental Management Act, 1998 (Act 107 Of 1998)
SIA	Social Impact Assessments

## ADHERENCE TO REGULATORY REQUIREMENTS

**Table 1: Adherence to Regulatory Requirements, Regulation No R. 326 published in terms of the National Environmental Management Act, 1998 (Act 107 of 1998)**

No	Appendix 6: Specialist Reports	Where covered in Report
1	A specialist report prepared in terms of these Regulations must contain— (a) details of— (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	Section 1.3
	(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Section 1.3 and Appendix 1
	(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.3
	(cA) an indication of the quality and age of base data used for the specialist report	Section 5.1
	(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Sections 3, 6 and 7.4
	(d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	N/a
	(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 5.1
	(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Sections 4, 6.2 and 7
	(g) an identification of any areas to be avoided, including buffers;	N/a
	(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	N/a
	(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 5.4
	(j) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment or activities;	Section 7
	(k) any mitigation measures for inclusion in the EMPr;	Section 7

No	Appendix 6: Specialist Reports	Where covered in Report
	(l) any conditions for inclusion in the environmental authorisation;	Section 7 and Section 9
	(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	N/a
	(n) a reasoned opinion— (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 9
	(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 5.3
	(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/a
	(q) any other information requested by the competent authority.	N/a

# 1. INTRODUCTION

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## 1.1 BACKGROUND

Transnet Pipelines (Transnet) is proposing to decommission portions of its fuel pipeline between Durban and Johannesburg (the DJP pipeline). This 12-inch (328 mm) pipeline was established in 1965. Due to the extensive environmental impact of lifting the pipeline, the pipeline will remain in-situ. This is in line with international best practise.

Decommissioning the pipeline requires environmental authorisation in terms of the National Environmental Management Act, 1998 and associated EIA 2014 regulations as amended in 2017.

HydroScience have been appointed to undertake the Basic Environment Impact Assessment process required in terms of the EIA Regulations. HydroScience appointed Umsizi Sustainable Social Solutions (Umsizi) to prepare this Socio-economic Specialist Study as part of the Basic Environment Impact Assessment Report.

## 1.2 QUALIFICATIONS AND EXPERIENCE OF THE SPECIALIST

Umsizi is a company specialising in Social and Labour Plans, Socio-Economic Baseline Surveys, Local Economic Development, Social Impact Assessments and Stakeholder Engagement. Umsizi works primarily with mining and other industrial companies along with the communities and other stakeholders surrounding these projects.

The specialists who compiled this report are:

- **Mr. Paul Scherzer (Socio-Economic Specialist)** is a registered Professional Natural Scientist (Registration No. 400030/05) and an experienced Environmental Assessment Practitioner, previously certified with the Interim Certification Board (Registration No. 0072/05). He has a BSc (Agriculture) and a MA in Food, Society and International Food Governance and 21 years' assessment experience across a range of industry sectors including pipelines and canals, roads, dams, sewage treatment plants and electrical infrastructure (transmission lines and sub-stations). He has undertaken projects throughout South Africa as well as in Malawi, Mozambique, Botswana, Uganda, Tanzania, Swaziland and the Republic of Sao Tomé and Príncipe.

Mr Scherzer was the specialist primarily responsible for preparing this report and a signed Declaration of Independence is included in Appendix 1.

- **Mr. John-Mark Kilian (Project Leader)**, has a BA Honours Degree with specialization in Socio-Economic Development Studies. He has over 20 years' experience in SIAs and addressing the socio-economic components of development projects. During his career he has been involved in large-scale social impact assessments, resettlement and livelihood restoration programmes, as well as the development and implementation of local economic development programmes across Southern Africa and Africa. He has worked closely with communities, industry and government in the development and implementation of numerous programmes focussed on the socio-economic development and empowerment of people, communities and regions. John-Mark speaks at numerous conferences, workshops and undertakes Masterclass training for stakeholders in these fields of expertise. He is recognised as a leader in his field in South Africa based on his proven track record and success.

### 1.3 PURPOSE AND SCOPE OF THIS SPECIALIST STUDY

The purpose of this report is to identify and assess any potential socio-economic impacts associated with proposed decommissioning alternatives being considered and to recommend mitigation measures where necessary.

## 2. LEGAL ASPECTS

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The following legislation is applicable.

### 2.1 CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA ACT, 1996 (ACT NO. 108 OF 1996) AS AMENDED

The Constitution is the supreme law of South Africa, against which all other laws are measured. It sets out of several fundamental environmental rights, important ones of which are described hereunder.

#### **The Environmental Clause**

Section 24 of the Constitution outlines the basic framework for all environmental policy and legislation: It states:

*“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”.*



**Access to Information**

Section 32 of the Constitution provides that everyone has the right of access to any information held by the State or another juristic person, and that is required for the exercise or protection of any rights.

**Fair Administrative Action**

Section 33 of the Constitution provides the right to lawful, reasonable and procedurally fair administrative action.

**Enforcement of Rights and Administrative Review**

Section 38 of the Constitution guarantees the right to approach a court of law and to seek legal relief in the case where any of the rights that are entrenched in the Bill of Rights are infringed or threatened.

## 2.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND REGULATIONS (AS AMENDED)

NEMA is South Africa's overarching environmental legislation. It provides the legislative framework for Integrated Environmental Management in South Africa. The Act gives meaning to the right to an environment that is not harmful to health or well-being, entrenched in Section 24 of the Constitution. In addition, NEMA provides for: equitable access to natural resources, environmental protection and the formulation of environmental management frameworks. The Act is underpinned by the global concept of sustainable development. Section 2 of NEMA provides a set of principles that apply to the actions of all organs of state where activities may significantly affect the environment.

The interpretation, administration and application of NEMA are guided by fundamental principles of sustainable development, provided in Chapter 1 of the Act. "Development must be socially, environmentally and economically sustainable" (s 2(3)) and requires the consideration of all relevant factors, which are elaborated by the following principles:

- The sustainability principle.
- The life-cycle, cradle-to-grave principle.
- The 'polluter pays' principle.
- The precautionary principle.
- The duty of care principle.
- Fair and transparent public consultation.

## 2.3 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED IN 2017)

The 2014 EIA Regulations updated in 2017 in Government Notices R 324, R 325, R 326 and R 327 of 7 April 2017, published in terms of Section 24 of the NEMA, regulate environmental management in South Africa.

Activities that require authorisation from the competent authority prior to their commencement are listed in Government Notices R 327, R 325 and R 324. The procedures dealing with the EIA Regulations are contained in GN R 326.

These regulations define 'decommissioning' as the taking out of active service permanently or dismantling partly or wholly, or closure of a facility to the extent that it cannot be readily recommissioned.

The proposed pipeline decommissioning triggers these requirements and hence the need for to apply for environmental authorisation.

## 2.4 OTHER RELEVANT LEGISLATION AND GUIDELINES

There is a range of other legislative requirements and international guidelines that control the transportation of fuel products in pipelines. These include:

- Petroleum Pipelines Act, No. 60 of 2003.
- Gas Act, No 48 of 2001.
- Recognised design and maintenance procedures developed by institutes such as the American Society of Mechanical Engineers and the American Petroleum Institute.
- ISO 14001 (Environmental Management System) aimed at preventing and minimising environmental pollution and ensuring compliance with environmental legislation, among others.

In addition, Transnet has its own policy requirements and guidelines that cover:

- Emergency plans both on-site and off-site.
- Environmental management processes.
- Servitude management plans.
- Fire systems at all facilities.

Transnet has an existing EMP for the DJP to address any environmental management requirements associated with the pipeline and activities associated with the pipeline.

## 3. PROJECT DESCRIPTION

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### 3.1 PIPELINE BACKGROUND

Transnet owns and maintains over 3,800 km of high-pressure steel pipelines that transport bulk fuels around the country. These fuels include petrol, diesel, crude oil, jet fuel as well as Methane Rich Gas.

Transportation of large volumes of fuel around the country is safer and more economical when done via underground pipelines, as opposed to alternatives such as road or railway transport.

The Durban-Johannesburg pipeline (DJP) was commissioned in 1965 to supply refined petroleum from the Durban Port to Gauteng. This pipeline was in operation for 53 years. During the latter part of its operation the pipeline was found to have inherent weld defects that increased the risk of pipeline failure and the risk to the environment if a large spill occurred.

Recognising that the DLP had come to the end of its lifespan, Transnet initiated the process to construct a new pipeline and this replacement fuel pipeline was commissioned in 2018. Thus, DJP pipeline, although it still has fuel inside it, is no longer operating.

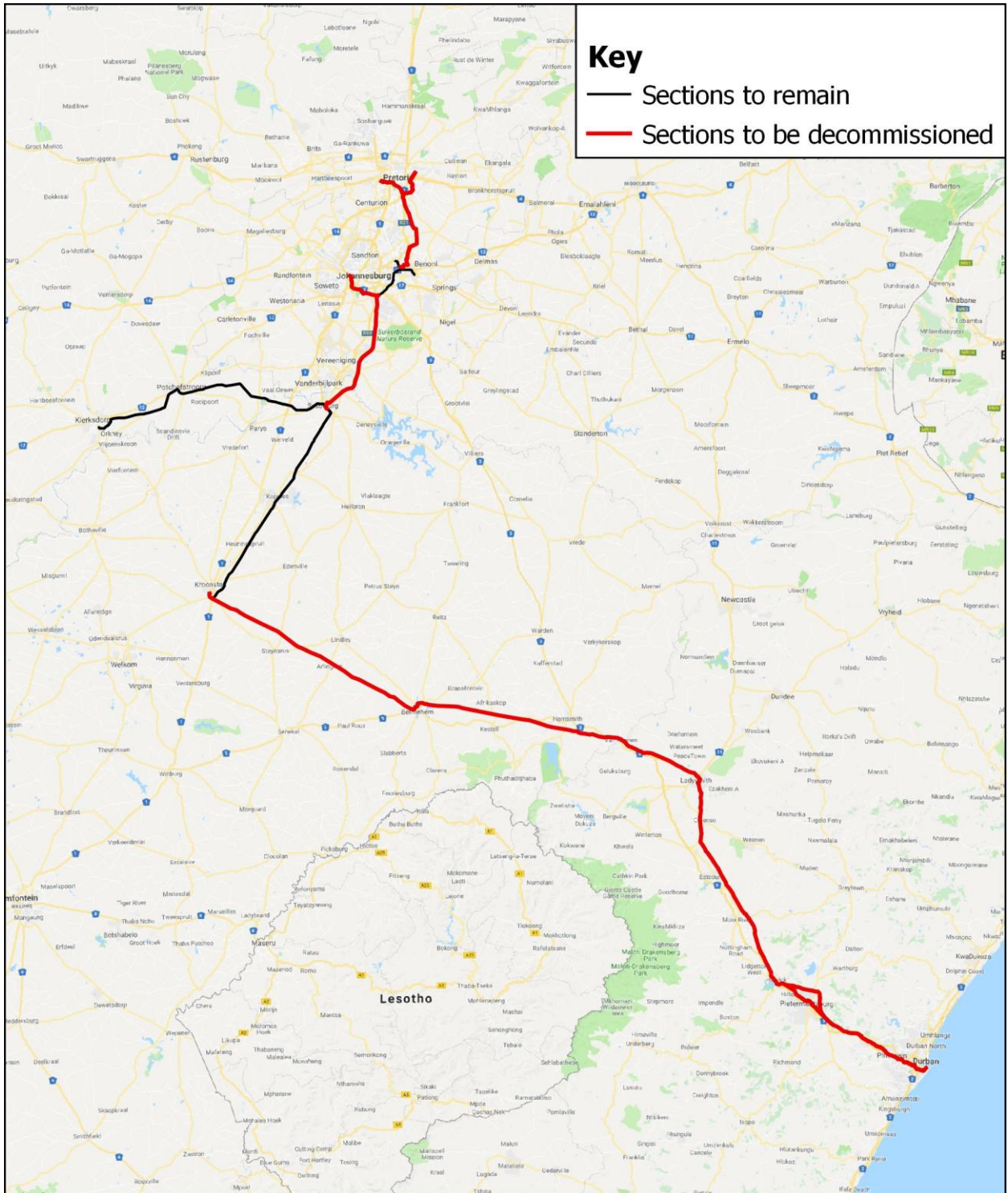
There are three sections of the pipeline that will remain in use, along with some of the aboveground pumpstation infrastructure, where the latter is also used by other pipelines.

### 3.2 INFRASTRUCTURE TO BE DECOMMISSIONED

#### 3.2.1 PIPELINE SECTIONS TO BE DECOMMISSIONED

The majority of the DJP will be decommissioned but three sections will remain in use and do not form part of this application (Figure 1). These sections are the sections from:

- Alrode to Airport (ORTIA).
- Sasolburg to Kroonstad.
- Sasolburg via Potchefstroom to Klerksdorp.



**Figure 1: Pipeline sections to be decommissioned**

### 3.2.2 DEPOTS TO BE DECOMMISSIONED

Some of the pumpstations and depots will also be decommissioned, with all above ground infrastructure being removed, whilst other depots will only be partly decommissioned.

The following depots will be fully decommissioned (Figure 2):

- Pretoria West.
- Van Reenen.
- Bethlehem.
- Magdala.
- Elardus Park.
- Potchefstroom.

The following depots will only be partly decommissioned:

- Durban.
- Hillcrest.
- Howick.
- Ladysmith.
- Kroonstad.
- Langlaagte.
- Alrode.
- Salsolburg.
- Coalbrook.



Pretoria West



Van Reenen



Bethlehem

**Figure 2: Depots to be fully decommissioned**



Magdala



Elardus Park



Potchefstroom

Figure 2: Depots to be fully decommissioned (cont)

### 3.3 PIPELINE COMPONENTS

Apart from the actual underground pipeline, the following infrastructure is associated with these underground pipelines:

- Pumpstations and depots.  
These include infrastructure such as:
  - Buildings,
  - Pumps, motors and associated equipment,
  - Spill basins and bunded areas,
  - Electrical and water services,
  - Communication infrastructure,
  - Fencing and security infrastructure.
- Valve chambers and pipeline markers.  
All pipelines have valve chambers at high-points and low-points of the pipeline to allow for air and debris in the pipeline to be removed. Transnet also has concrete pipeline markers along the pipeline to identify the pipeline route.

### 3.4 DECOMMISSIONING ACTIVITIES

Fuel removal and pipeline cleaning need to occur prior to the decommissioning process commencing. Importantly, these do not form part of the actual decommissioning process, but are actions necessary prior to decommissioning commencing.

- Fuel removal/displacement.  
Although the pipeline is currently not being used, it still has fuel in it. Displacement is a set of activities undertaken to remove product from an out-of-service pipeline. These activities can include modifications to components to facilitate removal of the product, construction of temporary supporting infrastructure and pigging activities (see text box).

The displaced existing fuel will be sold on to customers.

- Cleaning.  
The pipeline needs to be accepted as empty prior to the cleaning process commencing. Pre-determined criteria will be agreed upon to confirm when the pipeline has been emptied.

Once emptied, the pipeline will then be cleaned also by using the pipeline pigging process. Cleaning is the process of making the pipeline 'safe' in terms of having reached a predetermined level of residue. These cleaning levels can vary depending on if the pipeline in question is to be reused for another purpose, abandoned or lifted.

For this project acceptable levels of residue for abandoning the pipeline will be developed and will need to be reached for the pipeline to be accepted as clean.



### Pipeline Pigging

Pigging is the process where a device, known as a 'pig', is sent through the pipeline to perform various cleaning, testing, product removal and other pipeline functions. Pigs can be made of various materials, such as soft-hard foam, rubber, or polyurethane. The design of the pig depends on the purpose i.e. to clean debris or rust from the inside of the pipeline, or to just remove liquid product.

The pig is then sent through the pipeline at a specific speed according to the task required. For this DJP pipeline high-pressure gas will be used to move the pig through the pipeline.



**Figure 3: Examples of pipeline pigs**

Images courtesy of <https://www.indiamart.com>

Once these two processes have been completed, the formal decommissioning of the pipeline will commence and involve the following activities:

- Pipeline filling at specific locations.  
The pipeline will be plugged and filled with slurry at specific river, road and railway crossings. This is to prevent any future risk of ground subsidence in these key areas.
- Demolition and dismantling of redundant infrastructure.  
Where there is above ground infrastructure such as buildings, spill basins and sump tanks, this infrastructure will be demolished and removed. These decommissioned pumpstation and depot areas will then be rehabilitated.

## 4. ALTERNATIVES

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The following alternatives are possible:

- **No-go alternative**  
This means not decommissioning or cleaning the pipeline but just leaving the pipeline in its current state i.e. not in use but full of fuel. This is not considered an environmentally or socially desirable alternative. Most parts of the pipeline will never be used again due to the inherent weld defects identified. As the pipeline continues to age, the risk of spills and the associated environmental and social impacts, will increase. If the pipeline is simply emptied and left, there will still be the risk of future environmental pollution. The decommission process involves achieving set targets for pipeline cleanliness prior to decommissioning.

For the above ground infrastructure, the no-go options will simply mean the slow deterioration through decay, theft and vandalism of any existing infrastructure. This will increase the risk of unauthorised settlement on abandoned land as well as becoming a visual and environmental issue to the surrounding land-users.

Thus, the no-go alternative is not considered feasible.

- **Lifting the pipeline**  
The other alternative is to remove the fuel, clean the pipeline and then lift the entire pipeline and dispose of it at a land-use site or recycle portions of the steel where possible.

As shown later in Section 6, the pipeline currently runs through urban built up areas where there has been significant encroachment onto the servitude, under important economic road and railway networks, farming areas under irrigation and environmentally sensitive wetlands and rivers.

To lift the entire pipeline would entail significant costs for the lifting work alone, apart from the extensive infrastructure repair and socio-economic disruption it would cause. Thus, this is not considered a viable option for the entire pipeline but remains an option that can be negotiated on a case-by-case basis.

## 5. APPROACH AND LIMITATIONS

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### 5.1 APPROACH AND METHODOLOGY

The data used for this report included the GIS shapefiles of the pipeline servitude route and depot locations provided by Transnet and their appointed engineers. Information on the pipeline decommissioning process was obtained from Transnet presentations, Question and Answer documents and the Project Decision-Register record.

This assessment has been undertaken at a desktop level, using documentation on the process and land-use information identified visually from Google Earth through which the pipeline traverses.

### 5.2 ASSESSMENT METHODOLOGY

The following impact assessment methodology, provided by the HydroScience, has been used.

The significance of the adverse environmental impacts identified have been 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 (-).

**Table 2: Impact Assessment criteria**

<b>DURATION (D)</b>		
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
<b>EXTENT (E)</b>		
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
<b>PROBABILITY (P)</b>		
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
<b>SEVERITY (S)</b>		
Insignificant (low)	< 10 % change in the area of impact, no financial implications, localised impact, a small percentage of population	1
Minor	10 – 19% change, short term impact that can be absorbed, on-site release, immediate containment, low financial implications	2
Moderate (medium)	20 – 49% change, medium term loss in capabilities, rehabilitation / restoration / treatment required, on-site release with outside assistance, medium financial impact	3
Serious	50 – 70% long-term loss, extensive rehabilitation / restoration / treatment required, high financial impact, still restricted in extent	4
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
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

Impact Significance = [Duration + Extent + Severity] x Probability

<b>IMPACT SIGNIFICANCE (IS)</b>		
<b>Impact Significance</b>	<b>IS score range</b>	<b>Description</b>
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.

### 5.3 CONSULTATION PROCESS

All public participation consultation and interaction has been undertaken by the Public Participation Consultant. The Public Participation Consultant and Socio-Economic Specialist have communicated where necessary.

### 5.4 LIMITATIONS AND GAPS IN KNOWLEDGE

No significant limitations or gaps in knowledge, which could materially affect this assessment, have been identified.

## 6. DESCRIPTION OF ENVIRONMENT

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This section provides a brief overview of some of the key aspects of the social and biophysical environment relevant to this socio-economic assessment.

### 6.1 AFFECTED DISTRICT AND LOCAL MUNICIPALITIES

The pipeline to be decommissioned occurs within the following District and Local Municipalities:

- City of Tshwane Metropolitan Municipality
- City of Ekurhuleni Metropolitan Municipality
- City of Johannesburg Metropolitan Municipality
- Sedibeng District Municipality
- Midvaal Local Municipality
- Emfuleni Local Municipality
- Fezile Dabi District Municipality
- Metsimaholo Local Municipality
- Tlokwe Local Municipality
- Moqhaka Local Municipality
- Thabo Mofutsanyana District Municipality
- Nketoana Local Municipality
- Dihlabeng Local Municipality
- Maluthi-a-Phofung Local Municipality
- uThukela District Municipality
- Okhahlamba Local Municipality
- Alfred Duma Local Municipality
- Inkosi Langalibalele Local Municipality
- uMgungundlovu District Municipality
- Mooi Mpofana Local Municipality
- Umgeni Local Municipality
- Msunduzi Local Municipality
- Makhambathini Local Municipality
- eThekweni Metropolitan Municipality

## 6.2 SOCIO-ECONOMIC LAND-USE

The pipeline to be decommissioned traverses a wide range of different landscapes and socio-economic land-uses. Examples of these land-uses are provided in the text and images below.

### **Existing servitude areas in urban areas**

There are many existing built up urban areas where the pipeline servitude runs alongside and under the existing road servitude and other service servitudes.

The land-use in these areas will not change. Provided the pipeline decommissioning does not affect these other services there is likely to be little impact.



### **Commercial agricultural infrastructure and operations**

There are farms with existing agricultural irrigation infrastructure and crops planted across the pipeline servitude.

This land-use is likely to remain as commercial farming land, either for crops or grazing. Lifting the pipeline in such areas would have a significant negative economic impact upon these farms.



### **Agricultural grazing land**

The pipeline crosses large portions of land which is used for commercial or communal grazing. The land-use potential and location of many of these areas will ensure that this land continues to only be used for grazing into the future.





### **Informal developing areas**

There are a few informal areas where rapidly developing housing and increasing density will encroach on the servitude and/or even occur over the pipeline. Although in some of these areas the pipeline still follows existing access roads, encroachment is still likely.



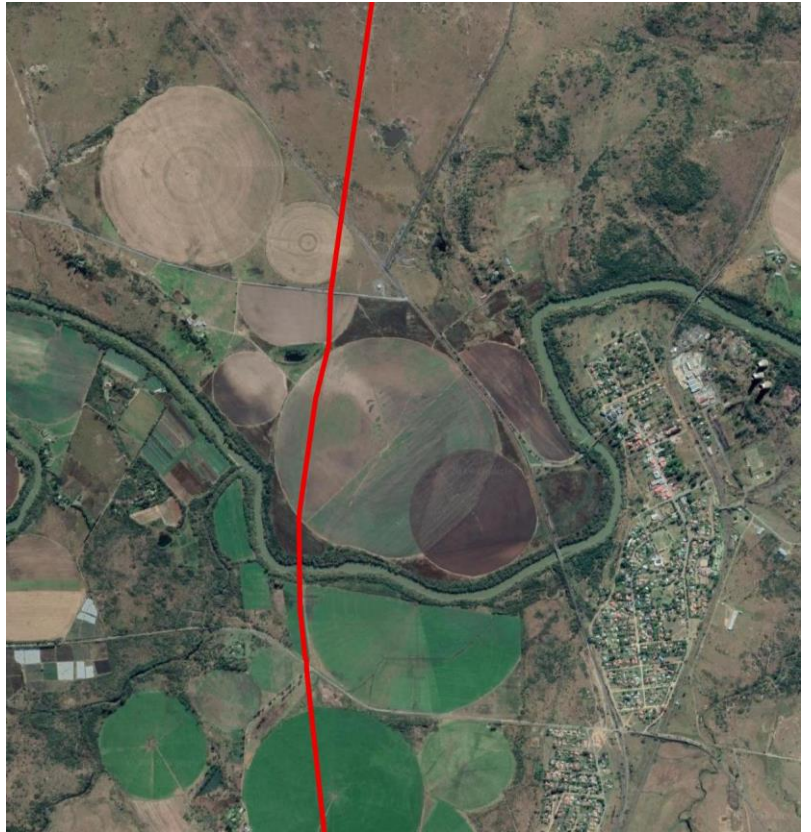
### **High-income developing areas**

The pipeline runs through some areas which were previously farmland and/or small holdings, but which have since developed into high-income lifestyle residential areas and estates.



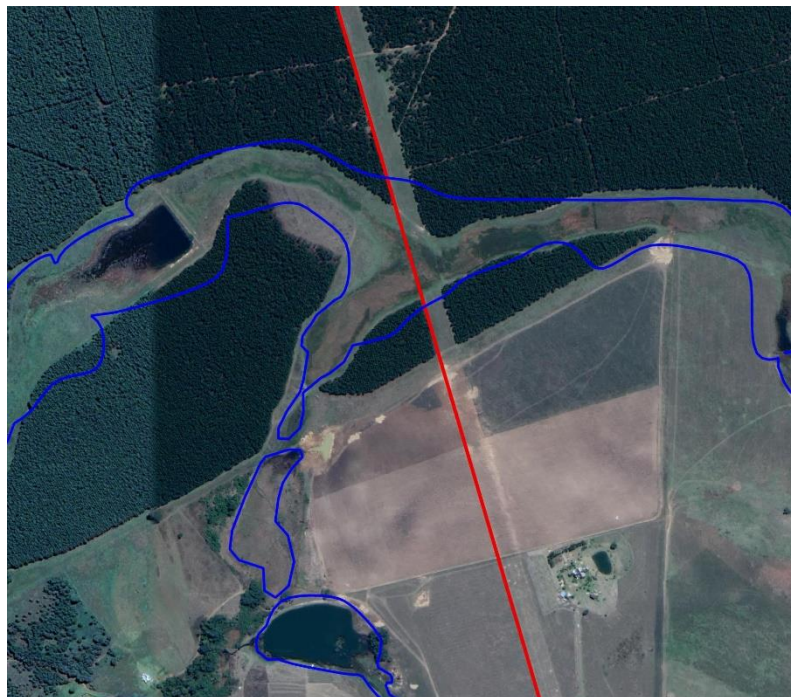
### **River crossings**

The pipeline crosses some rivers used for irrigation as well as domestic, livestock and/or recreational water uses.



### **Wetland crossings**

The pipeline crosses under numerous wetland stream areas both within agricultural and forestry areas as well as in urbanized areas.



### 6.3 SOCIO-ECONOMIC AND INSTITUTIONAL ENVIRONMENT

The socio-economic and institutional environments within which this pipeline occurs are, thus, quite varied. The various role players include Transnet, the pipeline and servitude owner, as well as various Local Municipalities and land-users, including private individuals, companies, other state departments and parastatals as well as traditional authorities.

The level of change that many of these roleplayer's will experience, as a result of this decommissioning, will be negligible.

## 7. DESCRIPTION OF IMPACTS AND MITIGATION

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From a social perspective, most project impacts occur during the construction phase, whilst from a socio-economic perspective, many impacts are as a result of opportunities gained or lost due to the project. However, as this underground fuel pipeline has been in place since 1965 i.e. approximately 54 years, and will not be removed, the social and socio-economic impacts of decommissioning this pipeline are relatively minor.

An alternative pipeline has already been commissioned, so the positive benefits of economic fuel transportation will not be lost. As the pipeline will remain *in-situ* the negative impacts of construction type activities will not re-occur.

The following issues, phrased as questions, and the associated impacts have been identified and discussed in this section and assessed in Section 8. The no-development option, which in this case is to not decommission the pipeline, has also been considered, as well as cumulative impacts.

### 7.1 WILL THE DECOMMISSIONING PRESENT ANY RISKS TO LANDOWNERS OR THE PUBLIC?

Through more urbanised areas, the pipeline predominately follows existing road reserves or service corridors. Through farmland areas it often follows existing roads as well as also crossing more directly across the landscape.

This servitude has been in existence for decades now and it is safe to assume that many neighbouring households and communities will barely be aware of the pipeline's existence or its purpose. Most land-use developments have already been designed to accommodate the pipeline servitude.

As the pipeline will not be lifted there will be little or no disruption to surrounding landowners. Furthermore, as the pipeline will be emptied and cleaned, the risk of spills or pollution affecting these landowners will now be even less than it may have been for the last few decades.

The pipeline will be plugged and filled with slurry at specific river, road and railway crossings.

The impact of ground subsidence under rivers in the future is considered negligible. The main risk under rivers is the possibility of the pipeline corroding and becoming a conduit for water or polluting the water source. Any pollution risk will now be significantly reduced because the pipeline will be empty and will be cleaned to an agreed standard. The risk of the pipeline becoming a conduit and diverting river flow will be managed by filling the pipeline at major crossings with a sand slurry mixture. This mixture will be erodible, so that even if the pipeline corrodes over time, this fill-material will not remain as another permanent barrier.

If the pipeline does slowly corrode over time, there is a risk of subsidence affecting the safety of major roads or railways. This risk is being dealt with by filling the pipeline with a slurry mix under major road and railway networks.

Any subsidence that would occur, even without this filling, is predicted to be minor. Any possible problem areas, if they occur, will be identified and acted upon by the respective Road and Railway authority prior to it becoming a risk to the public.

The blocking and filling of the pipeline will require a relatively small labour team and a contractor to be on-site at different locations to undertake this work. Transnet has an existing EMP which it uses for on-site works and relevant mitigation measures that will address common contractor issues on private property such as i.e. access to properties, gates being left open, crime or loitering etc.

The relevant conditions of this existing EMP are provided and emphasised below (Transnet, 2012).

### 7.1.1 PROPOSED MITIGATION MEASURES

- Site camps must be located inside the TPL depots as the first preference.
- If the contractor chooses to locate the camp on private land, he must get prior written permission from both TPL Project Manager and the landowner.
  - The contractor must repair damage that the construction works has caused to neighbouring properties.
  - A meeting is to be held on site between the TPL Project Manager and Environmental Specialist, Project Environmental Officer and Contract Project Manager to approve all remediation activities and to ensure that the site has been restored to its original state.
- Ablutions:
  - Where waterborne sewage is not available, temporary chemical toilets must be provided by a contractor. Such toilets must be available for all site staff, both at the camp and on site as agreed by the Contract Project Manager. Toilets should be no closer than 50 m from any river, stream or wetland.
  - The construction of “long drop” toilets is forbidden.
  - Under no circumstance may open areas or the surrounding bush be used as a toilet facility.
  - Should chemical toilets be used, an appropriate contractor must be employed to service these facilities on an ongoing basis. All waste generated from the chemical toilets must be disposed of at an approved waste-water treatment facility.
- Waste management:
  - Bins and or skips shall be provided at convenient intervals for disposal of waste within the construction camp.
  - Hazardous waste that requires disposal (cement, empty paints tins, solvents, oily rags, used fuel/oil etc.) must be placed in a suitable leak proof skip or wheelie bin for disposal at an approved hazardous waste disposal facility.

- The Contractor is responsible for the arrangement and removal of all waste from the site, generated through demolition activities. Waste must be removed to the approved recycling, treatment or disposal facility.
- No burning and littering of waste on site is permitted.

## 7.2 IF LEFT IN-SITU, WILL THE DECOMMISSIONED PIPELINE OR DEPOTS DISRUPT OR STERILISE ANY FUTURE SOCIO-ECONOMIC LAND-USE OPTIONS?

As highlighted in Section 6.2 in many areas, the surrounding developments have already taken cognisance of the servitude and pipeline in their development layouts. Farming activities such as, grazing and crop production, have continued over the servitude for the past decades and will continue. The forestry industry, which occurs predominately only in small sections of KwaZulu-Natal, have also accommodated the servitude either as fire-break sections and/or along access road areas.

As Transnet will retain the pipeline servitude, there will in fact be no change in status for any of these landowners in terms of above ground activities along the pipeline.

However, there is always the potential that some land-use developments could in future be affected by the disused pipeline and servitude. An example is where the layout of a new residential or business estate development cannot be optimised due to an old disused servitude and pipeline.

Although, Transnet wishes to keep the entire servitude in-tact, Transnet is open to negotiations in terms of servitude relocations, or land-use exemptions and/or wayleaves on a case-by-case basis with any potential developer, as the need arises. In the case of a relocation, an alternative servitude would need to be agreed upon and registered at the developer's cost.

The implications of entering negotiations to re-route the servitude will now also be far easier as the new servitude would just need to be included and registered on the development plans, without actually needing to lift and reroute an operational fuel pipeline.

Nine of the depots will only be partly decommissioned. For these there will be no real change to the socio-economic environment, the depot footprint will remain as is and only some of the internal infrastructure will be decommissioned and removed.

For the depots to be decommissioned, all above ground infrastructure and structures will be decommissioned (dismantling and demolition) and removed after which the sites will be permanently rehabilitated.

Some depots are in urban areas such as Pretoria West, Bethlehem, Eldarus Park, and Potchestroom. This land will be valuable and could be used for other developments. Transnet may be approached by either the local municipality or other property developers to negotiate the purchase these areas from Transnet.

For the two depots in more rural areas, Van Reenen and Magdala, Transnet should liaise with the surrounding farm landowner to either allow them to utilise the area, or deregister this portion of the servitude or sell the erf, depending on what has been registered at the Deeds Office.

### 7.2.2 PROPOSED MITIGATION MEASURES

- Transnet should negotiate with surrounding land-owners, particularly in rural areas, and the Local Municipality in urban areas, to reach an agreement on the best use of the land once all depot infrastructure has been removed.

## 7.3 WILL MAINTENANCE OF THE SERVITUDES AND SITES BECOME A SOCIO-ECONOMIC LAND MANAGEMENT BURDEN OR RISK?

Abandoned servitudes and vacant land sites can become areas used for the dumping of waste, or illegal settlement by people or simply become unkept areas infested with alien invasive vegetation.

This will not be a problem where the pipeline has been crossing existing used farmland where the landowners have been predominately growing crops or grazing over the servitude. This activity will continue. Nor will it be a challenge in urban areas.

The main area of concern is where plots of vacant land with no use arise after the depots are fully decommissioned. Transnet may decide to re-use some of the infrastructure for alternative purposes or will demolish all infrastructure and rehabilitate the site. Transnet is encouraged to enter into negotiations with surrounding landowners should they wish to purchase the depot sites.

However, it is important that any decommissioned and rehabilitated sites do not start to get used for waste disposal or illegal settlement. Where this occurs, Transnet who will still be the owner of the servitude will still need to manage and maintain its servitude.

### 7.3.1 PROPOSED MITIGATION MEASURES

- Transnet must maintain a formal process through which surrounding landowners can raise concerns around illegal and/or other landuse issues upon the Transnet servitudes, along with appropriate mechanisms to ensure suitable action is taken promptly.

## 7.4 NO GO OPTION AND CUMULATIVE IMPACTS?

Most impacts, both positive and negative, associated with this pipeline have already occurred either during construction or over the duration of the pipeline's operation. Decommissioning the pipeline will not result in any further similar impacts.

Transnet is no longer using this pipeline but intends to keep the servitude. Thus, the 'no-development' option in this case is to simply leave the pipeline as is i.e. full of fuel and uncleaned. Apart from this being a waste of fuel and economic resources, the risk of the pipeline leaking and pollution spills occurring will increase over time. This will increase the risk to surrounding landowners and their environment. Thus, the do-nothing or no-decommissioning option is not considered a responsible or feasible alternative.

As already highlighted in Section 4, decommissioning the pipeline and lifting it will result in significant negative impacts. Land-use options such as agricultural irrigation schemes, national road and rail networks, urban paving, and wetlands and rivers etc. would all need to be disturbed and reinstated. The pipeline would then need to be transported and disposed of at a registered waste site. The cost and negative cumulative socio-economic disruption that would occur with this alternative are significantly high. This alternative is not considered feasible.

Emptying and cleaning the pipeline will reduce the risk of any pollution from small leaks and risks without changing or affecting current land-use activities.

Furthermore, Transnet's decision to retain the servitude may also reduce the likelihood of future cumulative impacts.

Once urban areas or land-uses have been established it becomes almost impossible to establish new service servitudes into these areas without large disruptions or costs. Keeping this pipeline servitude intact and registered may reduce the need for future additional servitudes to be registered. This servitude could either be re-used by Transnet for a future pipeline, or eventually sold to other service providers for other infrastructure such as, for example, fibre-optic cables.

### 7.4.1 PROPOSED MITIGATION MEASURES

- Implement the proposed decommissioning as planned.



## 8. IMPACT ASSESSMENT

### 8.1 ASSESSMENT

Table 3 assesses the significance of the identified potential impacts, both with and without the management measures (mitigation) described in the relevant sections of Section 7.

**Table 3: Impact Significance**

Description of Impact	Nature of Impact	With or Without Mitigation	Duration	Extent	Probability	Severity	Score	Impact Significance
<b>Will the decommissioning present any risks to landowners or the public?</b>								
Risk of ground subsidence affecting other public services or landowner activities	<i>Negative</i>	<i>Without mitigation</i>	4	2	3	3	27	Moderate Low
	<i>Negative</i>	<i>With mitigation</i>	4	2	1	1	7	Low
Disruption or impacts arising during the decommissioning activities	<i>Negative</i>	<i>Without mitigation</i>	1	1	2	2	8	Low
	<i>Negative</i>	<i>With mitigation</i>	1	1	1	1	3	Low
<b>Will the decommissioning disrupt or sterilise any future socio-economic land-use options?</b>								
<i>Possible impact of decommissioned pipeline upon future land-use options?</i>	<i>Negative</i>	<i>Without mitigation</i>	5	2	3	2	27	Moderate Low
	<i>Negative</i>	<i>With mitigation</i>	5	2	1	1	8	Low
<i>Possible impact of decommissioned depot sites upon future land-use options?</i>	<i>Negative</i>	<i>Without mitigation</i>	5	2	2	2	18	Moderate Low
	<i>Negative</i>	<i>With mitigation</i>	4	2	1	1	7	Low
<b>Will maintenance of the servitudes and sites become a socio-economic land management burden or risk?</b>								
<i>Decommissioned pipeline servitude</i>	<i>Negative</i>	<i>Without mitigation</i>	5	2	2	1	18	Moderate Low
	<i>Negative</i>	<i>With mitigation</i>	5	2	1	1	8	Low
<i>Decommissioned depot servitude</i>	<i>Negative</i>	<i>Without mitigation</i>	5	2	3	2	27	Moderate Low
	<i>Negative</i>	<i>With mitigation</i>	5	2	2	1	16	Moderate Low
<b>No-go option and potential cumulative impact?</b>								
If left in-situ and not decommissioned i.e. <b>the no-go alternative</b>	<i>Negative</i>	N/a	5	5	3	3	39	Moderate Low
If decommissioned and lifted	<i>Negative</i>	N/a	3	5	6	5	78	High
If left in-situ and decommissioned	Positive	N/a	5	5	1	1	11	Low

## 9. SPECIALIST OPINION

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Based on this assessment it is the opinion of this specialist that the proposed decommissioning of the DJP should be authorised as planned. From a socio-economic perspective the pipeline has no further use and to lift the pipeline would result in significant social impacts and disruptions. To decommission the pipeline *in-situ* in accordance with international best practice is the alternative with the least socio-economic impacts.

Furthermore, maintaining and keeping the existing servitude registered is in this specialist's opinion a wise approach as it will maintain an existing recognised 'service infrastructure corridor' into urban areas. This could be used in future to provide other valuable socio-economic services of any kind.

Few impacts and none of any significance have been identified. The following key areas of mitigation need to be incorporated into the EMP:

- Transnet's existing onsite EMP needs to be complied with, particularly the mitigation measures extracted for attention in Section 7.1.2.
- Transnet should negotiate with surrounding land-owners, particularly in rural areas, and the Local Municipality in urban areas, to reach an agreement on the best use of the land once all depot infrastructure has been removed.
- Transnet must maintain a formal process through which surrounding landowners can raise concerns around illegal and/or other landuse issues upon the Transnet servitudes, along with appropriate mechanisms to ensure suitable action is taken promptly.

## 10. CONCLUDING REMARKS

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Transnet's Durban-Johannesburg pipeline has been in service since 1965 but due to concerns over the integrity of the pipeline it has since been replaced by a new fuel pipeline. Transnet now intends to formally decommission the old pipeline in line with best international practices.

This assessment has not identified any concerns with the approach recommended and Umsizi Sustainable Social Solutions supports the formal decommissioning of this pipeline.

## 11. REFERENCES

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Transnet Pipelines. 2012. *Environmental Management Plan for DJP Petroleum Products Displacement*. Doc Env-Pro\_002, Revision 02

## **APPENDIX 1: SPECIALIST DECLARATION OF INDEPENDENCE**

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