

## **Responses from Stakeholders**

**Comments To:**

**Environmental Impact Assessment and  
Waste Management License Application for  
new 30 Year ash disposal facility at Kendal  
Power Station**

(DEA Ref No 14/12/16/3/3/68)  
(NEAS Reference: DEA/EIA/00001624/2013)

**COMMENT SHEET ON THE DRAFT SCOPING REPORT**

**DUE DATE FOR COMMENTS: 18 July 2013**

**Submitted to:**

**EIA Public Participation Office**

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**Prepared by:**

**Dr JA Meyer  
Appointed Consultant for TOPIGS SA (Pty) Ltd**

## Key Statement

Following consideration of the draft scoping report, "Kendal Power Station - 30 year Ash Disposal Facility: DEA Reference No: 14/12/16/3/3/3/68, June 2013 Project 12935, the key statement noted below is arrived at. Supporting statements appear thereafter.

The DSR notes that some of the aims are to:

- Provide information on the proposed project
- Provide I&APs with a description of the baseline environment and
- Define the ToRs for specialist studies.

It is submitted that a baseline description has not been conducted and that the DSR, although a rather large document, fails to describe the potential hazards from the fly ash and coarse ash that would reasonably be expected to have been conducted from appropriate existing analytical methodology and a review of international literature.

This information should be included in the source description but it is not. Furthermore, the pathways aspect that is described for many issues pertaining to site selection, does not account for the baseline conditions of the receiving environment for the hazardous pollutants that are involved.

Some noticeable omissions are apparent in both the descriptive detail, list of relevant GNs and ToRs which be detailed for adequate specialist studies to be conducted.

These include the GN 704 (of 4 June 1999) and the GN 32816 (of 24 December 2009).

It is argued that inclusion of the stipulations for the protection of wetlands in the DSR would have been appropriate in the proposed site selection methodology and may have altered the decisions relating to the "no-go" option. The detailed sources and receptor sampling and analytical methodology should be clearly stated in the ToRs in order to prevent their omission in the EIA.

It is lastly noted that many of these issues have been raised with the proponent and the consultant in DSR and EIA processes conducted in the catchment for Kusile Power Station and New Largo Colliery. Whilst these are separate projects the cumulative impact and information shared should by now be meaningfully incorporated.

## 1. Key Comments

### 1.1 Section 1.1 of DSR:

Some of the stated aims listed are:

- “Provide information to the authorities as well as Interested and Affected Parties (I&APs) on the proposed project as well as a description of the baseline environment “
- Indicate how I&APs have been afforded the opportunity: to contribute to the project; to verify that their issues, raised to date, have been considered; and to comment on the findings of the impact assessments;
- Define the Terms of Reference (ToR) for specialist studies to be undertaken in the EIA; and
- Present the findings of the Scoping Phase in a manner that facilitates decision-making by the relevant authorities.

However, the DSR does not provide comprehensive analytical descriptions of the waste to be disposed of, nor does it provide literature on the composition thereof.

Whilst it is recognized in section 4.2 that the waste is to consist of fly ash and coarse ash from coal burning operations, reference is only made to the detection of Cr (IV).

Consequently this raises concerns that the DSR not only fails to inform the I&APs of the hazardous pollutants relevant for the consideration of impacts and proposed site selection, but fails to conduct basic baseline description, which in turn raises doubts about the ability of the areas selected to absorb any additional burden.

It is reasonable to expect that internationally published Hazardous Air Pollutants and environmental hazardous chemicals associated with fly ash and coarse ash to be included and described as part of the DSR.

It should be noted that this has been indicated to the proponent (Eskom Holdings) and to the consultant tasked with undertaking the DSR (Zitholele Consulting) and air quality specialists at the Kusile Power Station EMC meetings and public stakeholder meetings already attended, in which the contact details for the Senior Scientist at Pelindaba Analytical Laboratories was provided for the methodology for sample collection and analytical determination.

Reference made to the cumulative nature of the planned operations is acknowledged in the DSR and should thus take cognizance of the I&APs inputs to the catchment and general receiving environment already made.

Despite the input already provided no such appropriate baseline determination has been conducted, an omission which not only fails to address the stated aims (see above) but also precludes an assessment of the public health and environmental impacts that may apply.

## **1.2 Wetlands**

Sections 3.2.2; 3.3 and 3.5 refer:

In these sections references are provided for the relevant Acts and GNs that may be applicable, including GN R 544, GN 718, Section 21 of the NWA and Act 45 of 1964 and Act 43 of 1983 (Table 3.4), but the omission of the GN 704 (4 June 1999) is critical.

Section 3.5 notes that:

The identified study area contains a large number of rivers and streams (including the Wilge River), wetlands and pans. Some of these water resources is likely to be affected by the development of the ash disposal facility. As a consequence, this project is likely to require a water use license in terms of Section 21 of the NWA.

Despite this recognition of the presence of surface water and wetlands, the GN 704 (of 4 June 1999) is not mentioned.

According to the National Water Act (Act No 36 of 1998) the Regulation on the use of water for mining and related activities aimed at the protection of water resources, GNR No 704, section 4(b) of the schedule states that:

4. Restrictions on Locality

No person in control of a mine or activity may-

- (b) ...carry on any underground or open cast mining, prospecting or any other operation or activity under or within the 1:50 year flood-line or within a horizontal distance of 100m from any watercourse or estuary, whichever is the greatest.

Whilst section 5.4.1. notes that a 500 m buffer was considered as a “no-go area” during the consideration of a feasible location, the proposed areas appear to potentially contravene the 100m buffer from the edge of the temporary zone of wetlands as detailed in GN 704.

Without the stipulated 1: 50 year flood line or the delineation studies to determine the appropriate buffer zones of the potentially impacted upon wetlands and rivers, it is not possible to determine the extent of the impact or to arguably determine the feasibility of the proposed site sufficiently.

Whilst it is noted in Section 10 that the wetland delineation will be performed during the EIA process, the inclusion of buffer zones from a desktop study using the existing images would have conceivably been a crucial consideration that would have guided the process of site selection and thus consideration.

Similarly, as relevant to activities contemplated under Section 21 (e) of the NWA, the appropriate buffer zones from groundwater and surface water should also be included. It is not clear if this was done for the DSR as not all the groundwater points are indicated, although the proposed sites do appear to be within the 200m zones recommended by the reference documentation the GNs provide (Water Research Commission Technical Reports).

Whilst it is noted in the DSR that the 500m buffer zone from wetlands as required by the NWA resulted in Iteration 1: No feasible areas identified, this apparently led to continual reductions in the buffer zone in an attempt to arrive at a feasible site.

### **1.3 Impact Assessments: Air and Water Quality:**

Sections 3.2.2; 3.3 and 3.5 refer again:

In these sections references are provided for the relevant Acts and GNs that may be applicable, including GN R 544, GN 718, Section 21 of the NWA and Act 45 of 1964 and Act 43 of 1983 (Table 3.4), but the omission of the GN 32816 (24 December 2009) is critical.

It is unclear why in Table 9.1 “ no mention is made under the section on “Air Quality” regarding the actual composition of the hazardous waste in question, with only references to dust being made. This would apparently support the concerns noted regarding the lack of baseline data gathered during the DSR regarding hazardous air pollutants that are recognized in the scientific literature and environmental agencies.

Although the term “ash” does appear under the “Surface and Ground water” section, the same concerns regarding the lack of baseline data remain.

These analytical description issues relating to the hazardous substances relevant, current baseline values and appropriate sources, pathways and receptor topics should be clearly defined and described in the DSR in order to ensure that they are actually conducted during the following phases.

As these are not clearly detailed under the ToR in Section 10 of the DSR, further omissions of appropriate sampling and analytical methodology remains a concern.

Some omissions appear for no reason, for example, groundwater quality does not appear in the listed activities yet is relevant given the presence of water users reliant on this resource and possible impacts by leachate (which is noted in Table 9.1). Again during section 10.2.7 no clear indication of monitoring the relevant pollutants in groundwater quality is provided.

Section 10.2.5 refers to the Water Research Council. It is not clear who this represents or why they have the appropriate database. Does the consultant actually intend to refer to the Water Research *Commission*?

### Air Quality:

In the Schedule of Government Notice No. 32816 (24 Dec 2009) the National Ambient Air Quality Standards are established (NEM: Act 34 of 2004), with section 2.3 on Ambient air quality measurement requirements stating that the assessment of all ambient pollutant concentrations shall be conducted in terms of the relevant sections of the National Framework for Air Quality Management. Section 3 on National Ambient Air Quality Standards addresses SO<sub>2</sub>, NO<sub>2</sub>, Particulate matter, ozone, benzene, lead and carbon monoxide.

It is also widely reported in the literature that trace elements may be captured by fly ash and coarse ash with consequent significant environmental concerns as many are reported to be carcinogenic, toxic and potential endocrine disruptors.

It is thus proposed that this aspect needs to be addressed more fully and comprehensively and clearly noted in the ToRs where these issues and the issues noted below are dealt with:

- National Ambient Air Quality Standards are established (NEM: Act 34 of 2004), with Ambient air quality measurement requirements stating that the assessment of **all** ambient pollutant concentrations shall be conducted in terms of the relevant sections of the National Framework for Air Quality Management. Section 3 on National Ambient Air Quality Standards addresses SO<sub>2</sub>, NO<sub>2</sub>, Particulate matter, ozone, benzene, lead and carbon monoxide but **monitoring needs to include** a comprehensive list of potentially hazardous constituents related to coal, combustion thereof, storage of combustion products and related activities, including transport of both coal and combustion products. Additional key elements include:
  - trace elements captured by fly ash and coarse ash with consequent significant environmental concerns as many are reported to be carcinogenic, toxic and potential endocrine disruptors.
    - The key carcinogenic elements most frequently cited include arsenic, cadmium, nickel and zinc, whilst toxicity concerns are most often reported for selenium and mercury.
    - Potentially hazardous trace elements associated with fly ash include:
      - Arsenic; Aluminium; Antimony; Barium; Beryllium; Bromide; Cobalt; Chromium; Copper; Iron; Lanthanum; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Silicon; Strontium; Tungsten; Uranium; Vanadium.
    - Macro elements include Fluoride, Sulphur and Nitrogen. Other potential hazards include PAHs and VOCs.



- According to studies published regarding health impacts associated with coal-fired power plants and disposal of coal combustion products concern exists for both air quality and water quality impacts. Numerous environmental studies also observe hazardous substances in a variety of exposure media, from soil to aquatic organisms utilized for human consumption. Public health studies cite 84 separate hazardous air pollutants to be associated with coal-fired power plants. Given the sensitivity of the catchment involved for all the sites in terms of wetlands and surface water, and the reliance on groundwater by many of the affected landowners, water quality impacts need to be monitored for the same constituents noted above for air quality.
- In addition, as noted in the previous comments submitted, concerns regarding Turbidity, Suspended Solids, COD, Ammonia and microbiological indicator organisms are also valid due to the impacts for construction activities and stormwater runoff. These should thus also be monitored to assess environmental impact on a continuous basis as it is understood that the construction of the ash disposal facility or facilities will not be a single event but rather an ongoing process as storage requirements increase over time.

#### Sections 5.2.2 & 10

It is noted in section 5.2.2. that choices between further operational alternatives still require inputs from the air quality specialists. Accordingly, it is emphasized that the appropriate analytical hazardous pollutants be included in the assessment process.

This is again emphasized as in section 10.2.10 no specific mention is made of Hazardous Air Pollutants. It is reasonable to expect that given the recognition thereof related to coal combustion and ash disposal sites that this should be detailed as a priority with a clear list of elements and methodology included.

Section 10.2.16 describes the ash classification, but still does not list as one of the objectives the appropriate recognition of hazardous air pollutants and ash pollutants noted in the scientific literature. This should again be clearly defined, listed and stated upfront in the DSR that such analytical and literature consideration will be conducted and included in the EIA.

### Hazard and Risk Assessment

Whilst section 10.3 does describe some general concepts of hazards and risks, the fundamental basis of source description is not clearly noted, with the source in this instance being internationally recognized as hazardous to both public and environmental health. It is argued that during the DSR these issues should be defined and clearly listed.

This is furthermore relevant to the development of monitoring programmes required for compliance with the relevant sections of the NWA.

### Mining Activities

It is noted in section 8.6.3 regarding “Sensitivities” that existing mineral rights exist on numerous properties in the study area. More detail would be beneficial regarding proposed prospecting rights, planned mining permits etc., in the area as this will conceivably influence aspects relating to the impact assessment process as sources and pathways may be altered.

### Construction:

No mention is made of handling the waste stream from human effluent and other hazardous wastes associated with the construction phase, both of the ash dump and conveyor systems.

No indication is given of the number of people involved and assurances to prevent contamination of the environment (including wetlands, surface and groundwater) by their waste and construction-related hazards.

It is argued that this should form part of the DSR process as construction can be assumed to be a process requiring a significant amount of time and people.

## **2. General**

The sources, pathway and receptor approach is fundamental to the assessment of hazards and risks and accepted world-wide, and implied in the relevant NEMA and NWA Acts.

Observation in terms of sampling, analytical determination and transparent reporting, of the relevant potentially hazardous constituents should be included for all these aspects noted in the points above (waste stream and other possible sources; pathways as relevant, e.g. air, soil, water, plant; for relevant receptor types).

This should not only be presented as background and baseline information in the DSR but clearly defined in the ToRs for the further specialist studies.

**Environmental Impact Assessment and Waste Management License Application for new 30 Year ash disposal facility at Kendal Power Station**

(DEA Ref No 14/12/16/3/3/3/68)  
(NEAS Reference: DEA/EIA/00001624/2013)

**EIA Public Participation Office**

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**COMMENT SHEET ON THE DRAFT SCOPING REPORT**

Available for public review from 6 June 2013 to 16 July 2013

Please complete by 16 July 2013 and return to the EIA Public Participation Office (as above)

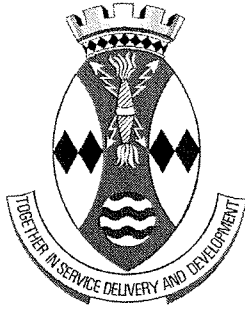
|   |  |            |   |  |
|---|--|------------|---|--|
| TITLE   | MR   | FIRST NAME | Tlotlo  |  |
| INITIALS  | T  | SURNAME    | PHELE   |  |
| ORGANISATION<br><small>(Please do not use any acronyms)</small> | Kusile Mining (Pty) Ltd                              |            |   |  |
| ADDRESS   | WCMAS building, corner OR Tambo and Susanna, Witbank |            | POSTAL CODE   | 1035   |
| TEL NO  | 013 656 4666   | FAX NO     | 013 656 3954  |  |
| CELL  | 0706 180 132   | EMAIL      | tlotlo@kusilemining.com   |  |
| SIGNATURE   |  |            | Farm name and portion number if you are a directly affected landowner | Heuvelfontein 218 IR<br>Portion 79<br>SCHOONGEZICHT 218 IR<br>Portion 24, 38, 27, 44<br>Rem Ext of Port 24, 43 |
| DATE  | 24/06/2013   |            |   |  |

**COMMENTS (Please use separate sheets if necessary)**

- Have your questions, concerns, issues and suggestions been captured? If not, please indicate below.  
Yes, but there has been no feed back.
- Of the issues already covered, do you wish to add additional aspects that have not yet been mentioned?  
- Get the electronic map of the four proposed sites and overlay them on Kusile Mining portions.  
- Propose a meeting between Kusile, Eskom, Zitholele
- Please tell us, did you find the Draft Scoping Report useful? Please indicate below.

|                  |                                     |                     |
|------------------|-------------------------------------|---------------------|
| YES, USEFUL      | <input checked="" type="checkbox"/> | Please tell us why: |
| NEED IMPROVEMENT | <input type="checkbox"/>            |                     |
| NO, NOT USEFUL   | <input type="checkbox"/>            |                     |
- Any other comments you may have:

**THANK YOU FOR YOUR CONTRIBUTION**



# EMALAHLENI

## Local Municipality

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eMalahleni  
MPUMALANGA  
1035

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Ga-Nala, Quintin Street  
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Ogies, Hoofweg Street  
Tel.: 013 643 1027

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Our Ref: 1/2/1/1  
Refer To: P. Fenyane

15 July 2013

Zitholele Consulting  
P.O. Box 6002  
HALFWAY HOUSE  
1685

Email address: [nicolenev@zitholele.co.za](mailto:nicolenev@zitholele.co.za)  
Fax: 086 674 6121

Madam,

**RE: INTEGRATED ENVIRONMENTAL AUTHORISATION AND WASTE  
MANAGEMENT LICENSE APPLICATION FOR THE PROPOSED 30 YEAR ASH  
DISPOSAL FACILITY AT KENDAL POWER STATION, OGIES, EMALAHLENI, DEA  
REF NO. 14/12/16/3/3/3/68**

Madam,

Receipt of your information regarding the above matter is acknowledged.

Kindly be informed that Emalahleni Local Municipality has studied the report and attended the focus group meeting held on the 20<sup>th</sup> June 2013 at Nkangala District Municipality offices. The following concerns were raised for your attention:

Emalahleni is being identified as a high priority area in terms of Air Pollution. This kind of a project might have an impact on the already affected air quality in the area. Another concern is the issue of leachate management and systems put in place for ground water monitoring. We also raised the question of the possible plans for the rehabilitation of the current ash facility once its no longer used.

We hope that these concerns will be given attention and considered.

Yours faithfully

  
**T. JANSEN VAN VUUREN**  
ADMINISTRATOR

23 May 2013

Ref: PYP/W4/07/05/18/14906

Ms Patiswa Mnqokoyi  
Zitholele Consulting (Pty) Ltd  
PO Box 6002  
**HALFWAY HOUSE**  
1685

Dear Ms Mnqokoyi

**NOTICE OF AN INTEGRATED ENVIRONMENTAL AUTHORISATION AND WATER USE LICENSE APPLICATION FOR THE PROPOSED ASH DISPOSAL AT KENDAL POWER STATION**

Your Background Information Document dated November 2012 has reference.

Transnet Pipelines (ex-Petronet), being a division of Transnet SOC Limited, has no objection in principle to the proposed ash disposal facility at Kendal Power Station crossing or in close proximity of the Ø323,8mm & Ø508,0mm and Ø457,2mm pipelines within Transnet's 7m and 9,44m wide pipeline servitudes respectively as indicated on your Kendal cadastral map, subject to Transnet's servitude rights contained in Deed of Cession of Servitude numbers K994/1996s, 50/1971s, 628/1971s, 169/1971s, 1/1971s, 919/1972s, and 884/1971s hereunder being observed.

We unfortunately do not endorse plans. We also do not dictate separation distances outside of our pipeline servitudes because we have no jurisdiction beyond them. Separation distances shall be dictated and approved by the Local Authority.

- (a) Transnet shall have and enjoy free and unobstructed access to the pipeline servitudes at all times for maintenance and repair purposes.
- (b) No buildings or structures shall be constructed within the servitude areas.
- (c) No cover (soil backfill covering the pipeline from the bottom of the trench over padding sand up to natural ground level) shall be removed nor shall more than 3m be added over the servitude areas.
- (d) No heavy vehicles or power equipment for ground levelling etc. are permitted over the pipeline servitude areas unless otherwise authorised by this office.

A division of  
**Transnet SOC Ltd**  
Registration Number  
1990/000900/30

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IB Skosana #E Tshabalala DLJ Tshepe A Singh\* (Group Chief Financial Officer)  
\*Executive #Indian

[www.transnet.net](http://www.transnet.net)

Group Company Secretary: ANC Ceba

- (e) No roads, water mains, sewers, drains or other services shall be constructed across the servitudes unless otherwise agreed to by this office. In this regard a formal written application is required by this office together with plans and sectional drawings in triplicate of the proposed service to cross the servitudes in order to establish whether additional protection of the pipeline will be necessary.
- (f) No works such as fencing or posts with deep foundations may be erected nor shall deep rooted trees or shrubs be planted in the servitude areas which are likely to damage or endanger the pipeline or the protective wrapping.
- (g) No works such as fencing or posts with deep foundations may be erected nor shall deep rooted trees or shrubs be planted in the servitude areas which are likely to damage or endanger the pipeline or the protective wrapping.
- (h) NO BLASTING IS ALLOWED WITHIN THE PIPELINE SERVITUDE. Application to carry out blasting within 500m of a pipeline must be made to this office in writing in terms of paragraph 17.1 Chapter 10 of the regulations embodied in the Explosives Act and Regulations (Act 26 of 1956) as amended.
- (i) All costs for additional protection to the pipeline shall be to your account.
- (j) **To ensure the pipeline is not subject to any artificial induced landslide movements , no changes to the natural ground surface configuration as by cut and fill earthworks, drainage works, etc. , related to the development shall take place on any property on which the pipeline servitude is located , or which is contiguous thereto, within close proximity to the petroleum/gas products pipeline servitude in an upslope and downslope distance therefrom , without certification of the long-term stability of such works being provided by a Geotechnical Professional person who is qualified to provide such certification.**
- (k) Should you need the exact depth and pipeline location or any pipeline related information, please contact **Mr Robbie van Bulderen, Servitude Supervisor at (017) 727 8300 or 083 458 1358 at least 14 days** before the date on which you wish to commence work in the vicinity of the pipelines.

**The MHI Regulation 60 of the Occupational Health and Safety Act (OHS Act 85 of 1993) states that: "..... the Local Government shall permit new property development only where there is a separation distance which will not pose a risk in terms of the risk assessment: Provided further that the local government shall prevent any development adjacent to an installation that will result in that installation being declared a major hazard installation" (Lexis Nexis 2005:24).**

As this proposed development is likely to change/affect Transnet Pipelines' MHI status, the developer is requested to conduct a risk assessment and forward it to the approving authorities to ensure that the required safety distances are identified and established.

The developer's attention is drawn to the fact that a pipeline poses different risks to different receptors such as Hospitals, Crèches, locations where large concentrations of people gather etc. The risk posed by the pipeline can be mitigated to an extent that benefits the developer and the public at large. A risk assessment that gives a baseline risk for a pipeline with standard design

features with its associated risk isopleths for the type of product conveyed in the line, and the risk subsequent to the introduction of risk mitigating measures must be requested. Any cost of risk mitigation shall be the sole responsibility of the developer.

The developer must be requested to make all prospective owners aware of the existence of the pipeline as it operated under high pressure. It is imperative that all Title Deeds are endorsed with details of the pipeline servitudes.

It has been found that if the servitude is accommodated in a corridor, it invariably becomes insanitary, overgrown and clogged with rubbish. It also becomes a haven for miscreants and a definite security risk to Transnet and the adjacent property owners. It should also be noted that Transnet hold servitudinal rights only for pipeline and does not wish to hold dominion. In view of the above a corridor is highly undesirable.

Transnet prefers that servitudes be accommodated as far as possible in open areas such as parks, sport and school fields in order that easy access to the pipeline can be maintained. Where that is not possible it is preferred that the servitude be accommodated in a road reserve in such a way that the servitudes and the road reserve boundary form one line. It is however, realized that this is not always practical as essential township services are often situated in this area. As an alternative it is recommended that the servitude be accommodated in the frontages of erven which are usually subject to a building restriction. In this instance the edge of the road reserve and the edge of the pipeline servitudes must form one line to avoid fence posts being erected directly on top of the pipeline.

Only if no other alternative is available, it is suggested that the pipeline be located in the back of erven but in such a manner that the servitudes are located wholly in one erf and not with the center line of the pipeline on the boundary of the property.

**SERVICE CROSSINGS OVER THE PIPELINE**

The following typical standard conditions and requirements for underground services, fencing/boundary walls, minor road crossings and surface improvements are forwarded for your information and reference.

Yours Sincerely



**Mr M. T. HADEBE**  
**SERVITUDE MANAGEMENT**

**SIGNATURE**

**DATE**

**APPLICANT** :.....

.....

**SERVITUDE SUPERVISOR** :.....

.....



***Transnet Pipelines Standard Crossing Conditions and Requirements  
For Underground Services (Cables, Pipes, etc.)***

1. The service/s shall cross below the pipeline/s with a minimum clearance of 500mm. This level must be maintained for a minimum distance of 3m on either side of the centre line of the pipeline/outermost pipelines.
2. Where the service/s run/s parallel to the pipeline/s it/they shall not encroach upon Transnet's pipeline servitude/s.
3. No manholes or any other permanent structure shall be erected within the pipeline servitude/s.
4. It is preferred that no joints in a service shall be situated within the pipeline servitude/s. Should this, however, not be possible the joints shall be placed such that they are equidistant from the centre line of the pipeline/outermost pipelines.
5. NO BLASTING IS ALLOWED WITHIN A PIPELINE SERVITUDE. Application to carry out blasting within 500m of a pipeline must be made to this office in writing in terms of paragraph 17.1, chapter 10 of the regulations embodied in the Explosives Act and Regulations (Act 26 of 1956) as amended.
6. Excavation and backfilling within the area of the pipeline servitude/s shall be undertaken by and at the applicant's cost. Such work must be undertaken by hand without the use of mechanical or power equipment.

All excavation work to be carried out within Transnet's pipeline servitude/s will comply with the OHS Act (Act 85 of 1993) and SABS 1200 D : Earthworks specification.

7. In backfilling the excavation the applicant shall provide a minimum of 150mm of selected soft padding around the pipeline/s where it/they was/were exposed. The padding must be properly compacted, in layers, by hand.

This padding sand must meet with the approval of Transnet's representative on site. It must have a pH value of 5,5 or higher and texture which will not cake when drying out. The diameter of the largest particle of sand must not be greater than 1,5mm.

Examples of padding sand which have been used in the past, amongst others, include the following:

- i) plaster sand
- ii) washed Umgeni River sand
- iii) suitably leached mine sand

It should, however, be noted that crusher dust is not acceptable  
No backfilling may be carried out unless authorised by Transnet's representative.

8. The pipeline/s shall not be left exposed unnecessarily.
9. All fragile services such as PVC pipes, earthenware, pitch fibre pipes and cables laid within the pipeline servitude/s shall be protected with concrete or similar protective slabs laid over them for a distance of 3m on either side of the centre line of the pipeline/outermost pipelines.
10. In the interest of safety to the applicants service it is recommended that the route of his service at the point/s of crossing be indicated by 6 metres of hazard tape being placed 600 mm below the ground and/or that the actual point/s of crossing be indicated by 3 (three) permanent and clearly visible markers. These markers should be provided and maintained by and at the applicants' cost.
11. All steel pipes and cables crossing the pipeline/s shall be suitably wrapped or sheathed with an acceptable anti-electrolysis insulating covering for the full width of the pipeline servitude/s.

It is, however, recommended that in your own interest this protection be extended for a minimum distance of 30m on either side of Transnet's pipeline/s measured perpendicular to its axis/their axes.

All steel pipes 100mm diameter or larger must have cross bonding facilities installed. This means that the applicant will supply a test point connected to their pipe and a minimum of two red PVC insulated flexible test leads of 35mm<sup>2</sup> between the applicants test point and Transnet Pipelines test point.

Where pipelines run parallel to one another with a separation distance of 50m and less (refer to clause 2), test points will be installed where the pipelines converge and diverge. If the pipelines run parallel for longer distances, a cross bond test point will be installed every 500m.

This is to enable independent the monitoring of possible electrolytic interaction between pipeline/s.

All costs incurred will be to the applicant's account. Where applicable, quotations will be furnished on request.

13. Should authorisation be granted that work may proceed, Transnet's representative must be contacted prior to any work being undertaken within Transnet's pipeline servitude/s. Details of contact person will be furnished when application is made to carry out work.
14. Transnet shall not be liable for any damage, including consequential loss or damage whether direct or indirect which might be caused to the applicant's service during normal operations, routine maintenance and repairs to the pipeline/s.
15. a) The APPLICANT shall and hereby does indemnify TRANSNET against -
  - i) any damage to TRANSNET's own property, whether movable or immovable, including any consequential damage directly flowing from physical damage to any such property;
  - ii) liability in respect of any damage to the property, whether movable or immovable of the APPLICANT or third parties;
  - iii) liability in respect of the death of or injury to any employees of TRANSNET or the APPLICANT or any third party;
  - iv) any legal costs or expenses reasonably incurred in connection with claims or actions arising out of any of the foregoing;

whenever such damage, injury or death is due to or arises out of the construction, installation or existence of the WORKS or any portion thereof, or the use thereof by the APPLICANT, provided that the APPLICANT shall incur no liability for any damage, injury or death which is due to wilful misconduct or gross negligence on the part of TRANSNET or any of its employees.

- b) TRANSNET shall notify the APPLICANT forthwith of the occurrence of any damage or the receipt of any claim or damage for or against which the APPLICANT is prima facie liable to indemnify TRANSNET in terms of paragraph (a) of the clause and shall, in respect of such claim or demand abide by the directions of the APPLICANT as to whether and on what terms it shall be settled, compromised or contested, it being understood and agreed that whatever action may be taken by TRANSNET pursuant to such directions of the APPLICANT shall be at the APPLICANT's risk and expense.
16. These conditions only apply to construction of the applicant's service across Transnet's pipeline servitude/s and do not grant you the right to do any excavations in future for repair or maintenance purposes. Should such future excavations within the servitude area/s be necessary permission will have to be requested timeously from this office. In cases of emergency, this office or Transnet's representative as mentioned above, may be contacted telephonically for such permission.

## **TRANSNET PIPELINES STANDARD CROSSING CONDITIONS AND REQUIREMENTS FOR FENCING/BOUNDARY WALLS**

1. No posts/foundations shall be placed directly on top of the pipeline/s. Ideally, such posts/foundations shall be placed on either side of the underground pipeline/s in order that the centre of the line/s of the pipeline/s shall, after construction be located centrally between the posts/foundations.
2. The depth of the posts/foundations shall not exceed 450mm.
3. No mechanical driven equipment may be used within the area of the pipeline servitude/s unless otherwise authorised by this office.
4. **NO BLASTING IS ALLOWED WITHIN THE PIPELINE SERVITUDE.** Application to carry out blasting within 500m of the pipeline must be made to this office in writing in terms of paragraph 17.1 chapter 10 of the regulations embodied in the Explosives Act and Regulations (Act 26 of 1956) as amended.
5. Should authorisation be granted that work may proceed, Transnet Pipelines' representative must be contacted prior to any work being undertaken within Transnet's pipeline servitude/s. Details of contact person will be furnished when application is made to carry out work.
6. Transnet shall not be liable for any damage, including consequential loss or damage whether direct or indirect which might be caused to the applicant's service during normal operations, routine maintenance and repairs to the pipeline/s.
7. (a) The APPLICANT shall and hereby does indemnify TRANSNET against -
  - (i) any damage to TRANSNET'S own property, whether movable or immovable, including any consequential damage directly flowing from physical damage to any such property;
  - (ii) liability in respect of any damage to the property, whether movable or immovable of the APPLICANT or third parties;
  - (iii) liability in respect of the death of or injury to any employees of TRANSNET or the APPLICANT or any third party;
  - (iv) any legal costs or expenses reasonably incurred in connection with claims or actions arising out of any of the foregoing;

whenever such damage, injury or death is due to or arises out of the construction, installation or existence of the WORKS or any portion thereof, or the use thereof by the APPLICANT, provided that the APPLICANT shall incur no liability for any damage, injury or death which is due to wilful misconduct or gross negligence on the part of Transnet or any of its employees.

- (b) TRANSNET shall notify the APPLICANT forthwith of the occurrence of any damage or the receipt of any claim or damage for or against which the APPLICANT is prima facie liable to indemnify Transnet in terms of paragraph (a) of this clause and shall, in respect of such claim or demand abide by the directions of the APPLICANT as to whether and on what terms it shall be settled, compromised or contested, it being understood and agreed that whatever action may be taken by Transnet pursuant to such directions of the APPLICANT shall be at the APPLICANTS risk and expense.

**ANY UNAUTHORISED ACTIVITIES WITHIN THE PIPELINE SERVITUDE IS STRICTLY PROHIBITED. APPLICATION TO CARRY OUT ANY WORK WHATSOEVER, WITHIN A TRANSNET PIPELINE SERVITUDE, MUST BE MADE, TOGETHER WITH DETAILED PLANS IN TRIPLICATE, TO:-**

**Servitude Manager  
Transnet Pipelines  
P O Box 3113  
DURBAN  
4000**

**TRANSNET PIPELINES STANDARD CROSSING CONDITIONS AND  
REQUIREMENTS FOR SURFACE IMPROVEMENTS  
(DRIVEWAYS, PAVING, PARKING AREAS)**

1. No cover is to be removed nor more than 2m added over the pipeline servitude/servitudes. Cover over the top of the pipeline/s shall not be less than 1 metre.
2. No permanent structures other than the proposed driveway/paving/ parking area shall be constructed across or within the servitude/s area.
3. **NO BLASTING IS ALLOWED WITHIN THE PIPELINE SERVITUDE.** Application to carry out blasting within 500m of the pipeline must be made to this office in writing in terms of paragraph 17.1 chapter 10 of the regulations embodied in the Explosives Act and Regulations (Act 26 of 1956) as amended.
4. No mechanical driven equipment may be used within the area of the pipeline servitude/s unless otherwise authorised by this office.
5. Should authorisation be granted that work may proceed, Transnet Pipelines' representative must be contacted prior to any work being undertaken within Transnet's pipeline servitude/servitudes. Details of contact person will be furnished when application is made to carry out work.
6. Transnet shall not be liable for any damage, including consequential loss or damage whether direct or indirect which might be caused to the applicant's service during normal operations, routine maintenance and repairs to the pipeline.
7. (a) The APPLICANT shall and hereby does indemnify Transnet against;
  - (i) any damage to TRANSNET'S own property, whether movable or immovable, including any consequential damage directly flowing from physical damage to any such property;
  - (ii) liability in respect of any damage to the property, whether movable or immovable of the APPLICANT or third parties;
  - (iii) liability in respect of the death of or injury to any employees of Transnet or the APPLICANT or any third party;
  - (iv) any legal costs or expenses reasonably incurred in connection with claims or actions arising out of any of the foregoing;

whenever such damage, injury or death is due to or arises out of the construction, installation or existence of the WORK or any portion thereof, or the use thereof by the APPLICANT, provided that the APPLICANT shall incur no liability for any damage, injury or death which is due to wilful misconduct or gross negligence on the part of Transnet of any of its employees.

- (b) TRANSNET shall notify the APPLICANT forthwith of the occurrence of any damage or the receipt of any claim or damage for or against which the APPLICANT is prima facie liable to indemnify Transnet in terms of paragraph (a) of this clause and shall, in respect of such claim or demand abide by the directions of the APPLICANT as to

whether and on what terms it shall be settled, compromised or contested, it being understood and agreed that whatever action may be taken by TRANSNET pursuant to such directions of the APPLICANT shall be at the APPLICANTS risk and expense.

ANY UNAUTHORISED ACTIVITIES WITHIN THE PIPELINE SERVITUDE IS STRICTLY PROHIBITED. APPLICATION TO CARRY OUT ANY WORK WHATSOEVER, WITHIN A TRANSNET PIPELINE SERVITUDE, MUST BE MADE, TOGETHER WITH DETAILED PLANS IN TRIPLICATE, TO

Servitude Manager  
Transnet Pipelines  
P O Box 3113  
Durban  
4000

## ***Transnet Pipelines Standard Conditions And Requirements For Minor Road Crossings***

1. The pipeline/s shall be exposed for the full width of the road reserve where the road crosses the pipeline servitude/servitudes plus 3m on either side. The pipeline shall then be examined, primed and double wrapped for this length.
2. The cover over the top of the pipeline/s shall not be less than 1m nor more than 3m unless otherwise agreed to by this office.
3. Excavation and backfilling within the area of the pipeline/s servitude/servitudes shall be undertaken by the applicant. Such excavation and backfilling shall be undertaken by hand without the use of mechanical or power equipment. The pipeline/s shall be exposed to provide a minimum clearance of 750mm between the pipeline/s and the walls and 500mm between the bottom of the pipeline/s and the floor of the trench. Where exposed the pipeline/s shall not be left unsupported for lengths greater than 10m.

All excavation work to be carried out within Transnet's pipeline servitude/s will comply with the OHS Act (Act 85 of 1993) and SABS 1200 D: Earthworks specification.

4. In backfilling the excavation the applicant shall provide a minimum of 150mm of selected soft padding around the pipeline/s where it/they was/were exposed. The padding must be properly compacted, in layers, by hand.

This padding sand must meet with the approval of Transnet Pipelines' representative on site. The pH value must not be less than 5,5. The bedding and padding material must be fine sand or fine non-cohesive soil, free from stone, gravel, lumps and which does not cake or form lumps when drying out. The P.I. (Plasticity Index) must not exceed 6. The diameter of the largest particle of sand must not be greater than 2mm. Prior to any delivery to site an independent lab test will be required of the sand to be delivered on site and any number of tests may be conducted.

Examples of padding sand which have been used in the past, amongst others, include the following:

- i) plaster sand
- ii) washed Umgeni River sand (Kwa Zulu-Natal)
- iii) suitably leached mine sand (Gauteng)

It should, however be noted that crusher dust is not acceptable.

No backfilling may be carried out unless authorised by Petronet's representative.

5. The pipeline/s shall not be left exposed unnecessarily.
6. Petronet will supply the primer and wrapping tape, and will arrange to examine, prime and double wrap the pipeline/s.
7. All costs for the crossing, including labour and material, shall be to the applicant's account and a quotation will be furnished on request.
8. **NO BLASTING IS ALLOWED WITHIN A PIPELINE SERVITUDE.** Application to carry out blasting within 500m of a pipeline must be made to this office in writing in terms of paragraph 17.1, chapter 10 of the regulations embodied in the Explosives Act and Regulations (Act 26 of 1956).
9. Should authorisation be granted that work may proceed, Transnet Pipelines' representative must be contacted prior to any work being undertaken within Transnet's pipeline servitude/servitudes. Details of contact person will be furnished when application is made to carry out work.

10. Transnet shall not be liable for any damage, including consequential loss or damage whether direct or indirect which might be caused to the applicant's service during normal operations, routine maintenance and repairs to the pipeline/s.

11. (a) The APPLICANT shall and hereby does indemnify Transnet against;

- (i) any damage to Transnet's own property, whether movable or immovable, including any consequential damage directly flowing from physical damage to any such property;
- (ii) liability in respect of any damage to the property, whether movable or immovable of the APPLICANT or third parties;
- (iii) liability in respect of the death of or injury to any employees of Transnet or the APPLICANT or any third party; or
- (iv) any legal costs or expenses reasonably incurred in connection with claims or actions arising out of any of the foregoing;

whenever such damage, injury or death is due to or arises out of the construction, installation or existence of the WORKS or any portion thereof, or the use thereof by the APPLICANT, provided that the APPLICANT shall incur no liability for any damage, injury or death which is due to wilful misconduct or gross negligence on the part of Transnet or any of its employees.

(b) Transnet shall notify the APPLICANT forthwith of the occurrence of any damage or the receipt of any claim or damage for or against which the APPLICANT is prima facie liable to indemnify Transnet in terms of paragraph (a) of this clause and shall, in respect of such claim or demand abide by directions of the APPLICANT as to whether and on what terms it shall be settled, compromised or contested, it being understood and agreed that whatever action may be taken by TRANSNET pursuant to such directions of the APPLICANT shall be at the APPLICANTS risk and expense.

12. These conditions only apply to construction of your service across Transnet's pipeline servitude/s and do not grant you the right to do any excavations in future for repair or maintenance purposes. Should such future excavations within the servitude area be necessary permission will have to be requested timeously from this office. In cases of emergency, this office or Transnet Pipelines' representative as mentioned above, may be contacted telephonically for such permission.

**ANY UNAUTHORISED ACTIVITIES WITHIN THE PIPELINE SERVITUDE IS STRICTLY PROHIBITED. APPLICATION TO CARRY OUT ANY WORK WHATSOEVER, WITHIN A TRANSNET PIPELINE SERVITUDE, MUST BE MADE, TOGETHER WITH DETAILED PLANS IN TRIPLICATE, TO**

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