

PHASE 1 HERITAGE IMPACT SCOPING REPORT

PETROLINE LIQUID FUEL STORAGE DEPOT
KENDAL: MPUMALANGA

FOR: **SRK Consulting**
P O Box 55291
Northlands
2116

Frans Roodt

May 2008

Tel: (015) 2257075
083 770 2131
Fax: 086 670 9130
E-Mail: hr19@mweb.co.za



P.O. Box 1600
POLOKWANE
0 7 0 0

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EXECUTIVE SUMMARY

Petroline Holdings Pty (Ltd) (Petroline) intends to develop a Liquid Fuel Storage Depot at Kendal in Mpumalanga, South Africa. SRK Consulting has been appointed to undertake the necessary environmental authorization. This report forms a specialist study within this wider process.

Two possible sites for the depot were earmarked – the preferred site (Vlakfontein/Klipfontein) is located north of Kendal at the R545 off ramp to the N12, and the alternative site adjacent to Kendal Township south of the R555 on Ptn. 39 of the farm Heuvelfontein.

The Vlakfontein / Klipfontein site contains an old mining settlement, which is regarded as significant within the context of Mining history of the area although the buildings are probably younger than 60 years. Mitigation measures are recommended to record this history and to undertake a heritage assessment of the buildings in terms of subsection 3(3) of the National Heritage Resources Act.

The Heuvelfontein site will impact on the historical character of the Kendal Township by virtue of the economic impact that such a development will have on the Township and surrounding area. It is also recommended that a heritage assessment be undertaken of the Townscape.

From a heritage resources management point of view, there is no objection with regard to the development on condition that the recommended mitigation measures are implemented. The outcomes of these heritage assessments will determine the future management requirements of the sites.

1. INTRODUCTION AND TERMS OF REFERENCE

Petroline (Pty) Ltd is planning to construct a petroleum pipeline to run from Matola (Mozambique) to Kendal (in Mpumalanga - South Africa). This report addresses the development of a proposed liquid fuels storage depot at Kendal resulting from this proposed pipeline. The National Energy Regulator of South Africa (NERSA) has issued a license to Petroline to construct the proposed pipeline subject to *inter alia* compliance with environmental regulatory requirements.

The proposed pipeline will be developed in one phase, as follows:

1. Section of pipeline from Matola to Nelspruit where a storage depot is proposed
2. Pipeline from Nelspruit to Kendal, where a further depot is proposed.

The author was contracted to undertake a heritage resources scoping survey of the proposed Petroline Liquid Fuel Storage Depot at Kendal. The aim was to determine the presence or not of heritage resources such as archaeological and historical sites and features, graves and places of religious and cultural significance, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features.

Terms of reference: Undertake a Phase 1 Heritage Impact Assessment and submit a specialist report, which addresses the following:

- Executive summary;
- Methodology used to obtain supporting information;
- Overview of relevant legislation;
- Results of all investigations;
- Interpretation of information;
- Assessment of impacts (including cumulative impacts) associated with all the stages of the project (construction, operation, closure and post closure);
- Assessment of effectiveness of management measures proposed by the client;
- Recommendations on other management measures;
- References.

The gives an overview of the heritage status of the Kendal liquid fuel storage sites; In-depth studies in hotspot areas; Identification and characterisation of potential impacts for construction, operation and closure; Recommendations for mitigation of negative impacts and enhancement of benefits. The significance of heritage resources was assessed in terms of criteria defined in the methodology section and the impact of the proposed development on these resources are evaluated.

2. LEGAL REQUIREMENTS

The application constitutes an activity, which may potentially be harmful to heritage resources that may occur in the demarcated area. The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (section 34), archaeological sites and material (section 35) and graves and burial sites (section 36). In order to comply with the legislation, the Applicant requires information about the heritage resources, and their significance that may occur in the demarcated area. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

In terms of the National Heritage Resources Act (1999) the following is of relevance:

Historical remains

Section 34(1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Archaeological remains

Section 35(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface, or otherwise disturb any archaeological or palaeontological site or any meteorite

Burial grounds and graves

Section 36 (3)(a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

- (c) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (b) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

Culture resource management

Section 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development* ...

must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature, and extent of the proposed development.

***“development”** means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carry out any works on or over or under a place*;
- (e) any change to the natural or existing condition or topography of land, and
- (f) any removal or destruction of trees, or removal of vegetation or topsoil;

***“place** means a site, area or region, a building or other structure* ...”

***“structure** means any building, works, device or other facility made by people and which is fixed to the ground, ...”

3. METHOD

3.1 Sources of information

The sources of information were the field reconnaissance and the information gained from the scoping phase of the study.

A pedestrian survey of the demarcated area was undertaken on foot. Standard practices of observation were followed. The sites and general conditions on the terrain were photographed with a CANON Digital camera.

3.2 Limitations

No significant limitations were experienced.

3.3 Categories of significance

The significance of archaeological sites is ranked into the following categories.

No significance: sites that do not require mitigation.
Low significance: sites, which <i>may</i> require mitigation.
Medium significance: sites, which require mitigation.
High significance: sites, which must not be disturbed at all.

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit, and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. Many aspects must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed. These are generally sites graded as of low or medium significance.

3.4 Terminology

Early Stone Age:	Predominantly the acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.
Middle Stone Age:	Various lithic industries in SA dating from ± 250 000 yr. - 30 000 yrs. before present. In this area the Pietersburg Industry is dominant.
Late Stone Age:	The period from ± 30 000-yr. to contact period with either Iron Age farmers or European colonists.
Early Iron Age:	Most of the first millennium AD
Middle Iron Age:	10 th to 13 th centuries AD

Late Iron Age:	14 th century to colonial period. <i>The entire Iron Age represents the spread of Bantu speaking peoples.</i>
Historical:	Mainly cultural remains of western influence and settlement from AD1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA.
Phase 1 assessments:	Scoping surveys to establish the presence of and to evaluate heritage resources in a given area
Phase 2 assessments:	In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling.
Sensitive:	Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. <i>Sensitive</i> may also refer to an entire landscape / area known for its significant heritage remains.

4. DESCRIPTION

Two sites in the Kendal area were selected for assessment:

4.1 Vlakfontein / Klipfontein (Preferred site)

Co-ordinates: S26° 00' 43.0" E28° 57' 46.6". (Map reference 1:50 0000 2628 BB).

This site comprises two portions of land on bordering farms, namely, portion 20 of the farm Vlakfontein 569 JR and portion 23 of the farm Klipfontein 566 JR. This site lies adjacent to the R545 just north of the Kendal / Balmoral off ramp to the N12. This site contains residential houses originally built for the Alfa Mine (according to a resident, Mr. Venter). It borders by maize fields to the east and a Petronet pump station is located approximately 1 km east of the site.

4.2 Heuvelfontein (Alternative site)

Co-ordinates: S26° 03' 21.0" E28° 57' 23.8". (Map reference 1:50 0000 2628 BB).

This consists of portion 39 of the farm Heuvelfontein 215 IR and is located immediately adjacent to the Kendal village and old railway station, just southern of the R555 between Delmas and Ogies.

5. ARCHAEOLOGICAL AND HISTORICAL REMAINS

5.1 STONE AGE REMAINS

No Stone Age archaeological material was observed on any of the two sites.

5.2 IRON AGE REMAINS

No Iron Age archaeological remains were observed on any of the two sites.

5.3 HISTORICAL REMAINS

Vlakfontein / Klipfontein

Portion 20 of the farm Vlakfontein contains old mine houses, which was apparently built in the early 1950's (Figures 1 – 4). The properties were purchased by the Venter family in the 1970's and are today still used as residences. Most of the houses have been altered and modified, but at least four seem to be in their original state.

These buildings are not yet 60 years old and thus technically not protected by the National Heritage Resources Act. However, this group of buildings is considered significant within the context of the mining history of the area.

Subsection 3(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of-

(a) *its importance in the community, or pattern of South Africa's history;*

It is taken for granted that it is the intention to demolish these building. Because of their importance in relation to the Mining history of the area, it is recommended that the history of the settlement be recorded and that a heritage assessment be undertaken of the buildings before demolition is allowed.

Heuvelfontein

The proposed site does not contain any standing structure, but historical buildings occur opposite the railway line to the south (Figures 5 – 6). The buildings inside the Kendal village/town are mostly older than 60 years, but in a rundown condition (Fig. 7). Some old structures also occur north of the R555 (Fig. 8).

Although none of the structures are directly threatened by the proposed development, there will be a secondary impact resulting from this development in the form of renewal and additional constructions resulting from the expected economic revival of the town, which may lead to the demolition of older buildings. For this reason a full heritage impact assessment of the townscape is recommended should this site be selected for the proposed development.

5.4 GRAVES AND BURIAL GROUNDS

No graves were observed on any of the two sites.

6. DISCUSSION

The assessment of the two Kendal sites was thorough. No archaeological remains were detected and the probability of there being archaeological material on the sites is <20%.

Recent historical buildings are present on the **Vlakfontein / Klipfontein** site, which are regarded as significant, although less than 60 years old, in the context of the mining history of the area in terms of subsection 3(3) of the NHRA. Mitigation for recording of the history of the settlement and the conducting of a full heritage assessment of the houses is recommended. This assessment may recommend that at least one of the buildings be conserved as example of the period, which could be put to alternative sympathetic use.

Should the proposed development be undertaken at Heuvelfontein in the direct vicinity of Kendal, the development will negatively impact on its historical townscape. For this reason a heritage assessment of the Townscape is recommended before its historical nature is altered as a result of the development. The outcome of the assessment will determine the future heritage management plan if necessary.

Notwithstanding this, we are not opposed to the development, as the sustainable socio-economic benefits of the project will be considerable and beneficial to the local community.

From a heritage resources management point of view we have no objection with regard to the development on any of the two proposed sites on condition that the recommendations below is implemented.

7. RECOMMENDATION

1. Should the Vlakfontein / Klipfontein site be selected for development, it is recommended that the history of the mining settlement be recorded, and that a heritage assessment be undertaken of the buildings.
2. Should the Heuvelfontein site be selected for development, it is recommended that a heritage assessment be undertaken of the townscape.

8. BIBLIOGRAPHY

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FRANS ROODT (BA Hons, MA Archaeology, Post Grad Dip. in Museology; UP)
Principal Investigator for R & R Cultural Resource Consultants.



Fig 1. Mine house in original form – Vlakfontein / Klipfontein site.



Fig 2. View of two adjacent Mine houses in original form – Vlakfontein / Klipfontein site.



Fig 3. Altered Mine house – Vlakfontein / Klipfontein site.



Fig 4. Northern most house, altered – Vlakfontein / Klipfontein site.



Fig 5. Heuvelfontein buildings opposite railway line.



Fig 6. Detail of house in Fig 5 – Heuvelfontein site.



Fig 7. Kendal street view.



Fig 8. Historical structure north of R555 – Heuvelfontein site.

Table 2.1: Framework for Assessing Environmental Impacts (CULTURAL RESOURCES)

SEVERITY OF IMPACT	RATING
Insignificant / non-harmful	1
Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4
Disastrous / extremely harmful	5

SPATIAL SCOPE OF IMPACT	RATING
Activity specific	1
Area specific	2
Whole project site / local area	3
Regional	4
National	5

DURATION OF IMPACT	RATING
One day to one month	1
One month to one year	2
One year to ten years	3
Life of operation	4
Post closure / permanent	5

FREQUENCY OF ACTIVITY / DURATION OF ASPECT	RATING
Annually or less / low	1
6 monthly / temporary	2
Monthly / infrequent	3
Weekly / life of operation / regularly / likely	4
Daily / permanent / high	5

FREQUENCY OF IMPACT	RATING
Almost never / almost impossible	1
Very seldom / highly unlikely	2
Infrequent / unlikely / seldom	3
Often / regularly / likely / possible	4
Daily / highly likely / definitely	5

CONSEQUENCE

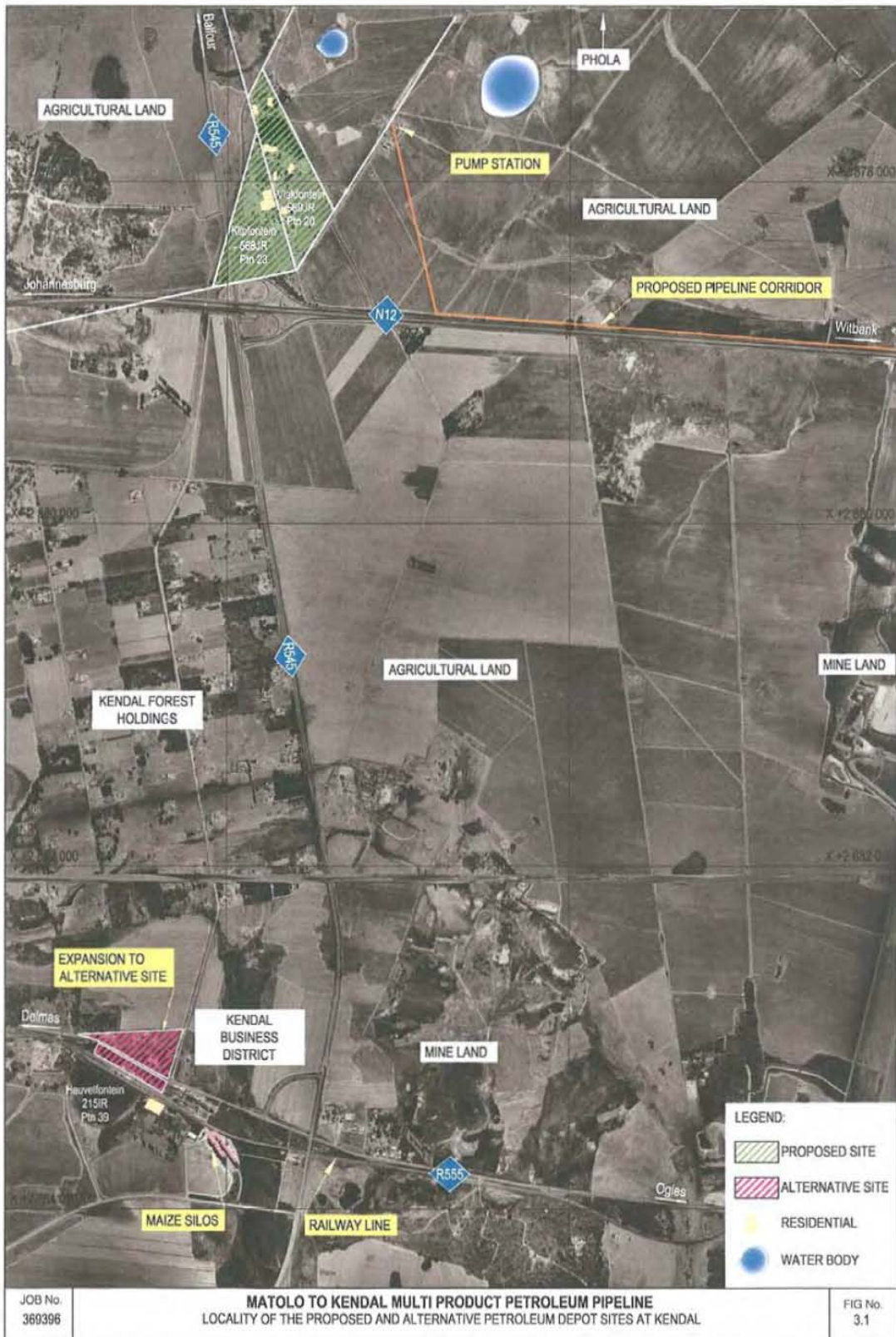
LIKELIHOOD

Table 2.2: Significance Rating Matrix

CONSEQUENCE (Severity + Spatial Scope + Duration)															
LIKELIHOOD (Frequency of activity + Frequency of impact)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Table 2.3: Positive/Negative Mitigation Ratings

Colour Code	Significance Rating	Value	Negative Impact Management Recommendation	Positive Impact Management Recommendation
	Very high	126-150	Improve current management	Maintain current management
	High	101-125	Improve current management	Maintain current management
	Medium-high	76-100	Improve current management	Maintain current management
	Low-medium	51-75	Maintain current management	Improve current management
	Low	26-50	Maintain current management	Improve current management
	Very low	1-25	Maintain current management	Improve current management



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Locality Map.