
PHASE 1 HERITAGE IMPACT ASSESSMENT REPORT

HERITAGE IMPACT ASSESSMENT SCOPING REPORT
FOR THE PROSPECTING RIGHTS APPLICATION CORE
AND PERCUSSION BOREHOLES: ON THE FARM
KEIKAMSPOORT 71 PORTION 16 NEAR PRIESKA IN THE
NORTHERN CAPE PROVINCE.

PREPARED BY:



PREPARED FOR:

TSEBEPIX PTY (LTD)

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Disclaimer; Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. G&A Heritage and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.

Statement of Independence

As the duly appointed representative of G&A Heritage, I Stephan Gaigher, hereby confirm my independence as a specialist and declare that neither I nor G&A Heritage have any interests, be it business or otherwise, in any proposed activity, application or appeal in respect of which the Environmental Consultant was appointed as Environmental Assessment Practitioner, other than fair remuneration for work performed on this project.

SIGNED OFF BY: STEPHAN GAIGHER



MANAGEMENT SUMMARY

Site name and location: Heritage Impact Assessment Scoping Report for the Prospecting Rights Application Core and Percussion Boreholes: on the Farm Keikamspoor 71 Portion 16 near Prieska in the Prieska District of the Northern Cape Province.

Municipal Area: Siyathemba District Municipality

Developer: Tsebepix Pty. (Ltd.)

Consultant: G&A Heritage, P.O. Box 522, Louis Trichardt, 0920, South Africa.
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Date of Report: 26 July 2018

The purpose of the management summary is to distil the information contained in the report into a format that can be used to give specific results quickly and facilitate management decisions. It is not the purpose of the management summary to repeat in shortened format all the information contained in the report, but rather to give a statement of results for decision making purposes.

This study focuses on the Prospecting Rights Application Core and Percussion Boreholes: on the farm Keikamspoor 71 Portion 16 near Prieska in the Prieska District of the Northern Cape Province.

This study encompasses the heritage impact investigation. A preliminary layout has been supplied to lead this phase of this study.

The study focusses exclusively on the borehole footprints which are expected to not exceed 5m x 5m. In fact the actual pressure drill holes will be 16,5cm in diameter and the core drill holes will be less than 10cm in diameter. Access will be through pulled drilling sled rigs and therefore no access roads will be constructed.

SCOPE OF WORK

A Heritage Impact Assessment (including Archaeological, Cultural heritage, Built Heritage and Palaeontological Assessment) to determine the impacts on heritage resources within the study area.

The following are the required to perform the assessment:

- A desk-top investigation of the area;
- A site visit to the proposed development site;
- Identify possible archaeological, cultural, historic, built and palaeontological sites within the proposed development area;
- Evaluate the potential impacts of construction and operation of the proposed development on archaeological, cultural, historical resources; built and palaeontological resources; and
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural, historical, built and palaeontological importance.

The purpose of this study is to determine the possible occurrence of sites with cultural heritage significance within the study area (borehole and trench footprints). The study is based on archival and document studies combined with fieldwork investigations.

PALAEONTOLOGY

Paleontology is discussed in the stand-alone report attached to this.

FINDINGS

The areas surveyed (borehole footprints) showed different heritage significance. The sites at Keikamspoor 71 Portion 16 contained some Stone Age artifacts. No deposit or manufacturing sites were evident in the areas surveyed.

RECOMMENDATIONS

Provided the activities stays with prospecting boreholes, there is no need for any further work. Should mining activities be considered, the areas should be submitted to a full Heritage Impact Assessment.

FATAL FLAWS

No fatal flaws were identified.

TABLE OF CONTENTS

MANAGEMENT SUMMARY	iii
1. Introduction	12
1.1 Legislation and methodology.....	12
2. Background Information.....	15
2.1 Prospecting Rights Application.....	15
2.1.1 Project Description	15
2.1.2 Site Description	16
2.1.3 Public Participation.....	16
2.1.4 Site Location.....	16
2.1.5 Alternatives Considered	19
2.1.6 GPS Track Paths	19
3. Regional Cultural Context.....	20
3.1 Palaeontology	20
3.2 Stone Age	22
3.3 Iron Age.....	23
3.4 The Historic Era.....	23
3.5 Cultural Landscape	24
3.6 Archival Research	35
3.6.1 Scientific publications	36
3.6.2 SAHRIS Database Studies	37
3.6.3 Historic Maps.....	38
4. Findings	40
4.1 Fieldwork Results.....	40
4.1.1 Stone Tools	40
4.1.2 Stone Walls	44
4.1.3 Foundations	45
4.2 Location of Boreholes: Keikamspoor 71, Portion 16	47

v

HIA: Keikamspoor 71

5. Methodology	49
5.1 Inventory.....	49
5.2 Evaluating Heritage Impacts	49
5.3 Fieldwork.....	49
5.4 Public Participation	50
6. Measuring Impacts	50
6.1 Type of Resource.....	51
6.2 Type of Significance	51
6.2.1 Historic Value	51
6.2.2 Aesthetic Value	51
6.2.3 Scientific Value.....	51
6.2.4 Social Value	52
6.2.5 Ethnic Significance	53
6.2.6 Economic Significance	53
6.2.7 Scientific Significance.....	53
6.2.8 Historic Significance	53
6.2.9 Public Significance	53
6.2.10 Other	54
6.3 Degrees of Significance	54
6.3.1 Significance Criteria.....	54
6.3.2 Rarity.....	54
6.3.3 Representivity.....	55
7. Assessment of Heritage Potential.....	55
7.1 Assessment Matrix.....	55
7.1.1 Determining Archaeological Significance	55
7.2 Assessing site value by attribute	56
7.3 Impact Statement.....	56
7.3.1 Assessment of Impacts	56
7.4 Indicators of Impact Severity	57

7.5 Historic Significance	58
7.6 Architectural Significance	58
7.7 Spatial Significance	59
8. Impact Evaluation	59
8.1 Determination of Significance of Impacts	59
8.2 Impact Rating System	60
8.2.1 Rating System Used to Classify Impacts.....	60
9. Anticipated Impact of the Development.....	63
9.1 All Heritage Significant Sites.....	63
9.1.1 Obscured or Buried Heritage Site of Significance, Including Palaeontology	63
9.1.2 Stone Tools	64
9.1.3 Stone Walls	64
9.1.4 Old Homestead	65
9.1.4 Foundations	66
9.2 Assessing Visual Impact	66
9.3 Assumptions and Restrictions	66
10. Assessment of Impacts.....	67
10.1 Impact Statement.....	67
10.1.1 Paleontological sites.....	67
10.1.2 Built Environment	67
10.1.3 Pre-Contact Sites	74
10.1.4 Post-Contact Sites.....	74
10.1.5 Cultural Landscape	74
10.1.6 Mitigation.....	76
11. Resource Management Recommendations.....	76
12. Conclusion	77
13. References Cited	78

LIST OF FIGURES

Figure 1. Locality of the of the Farm Keikamspoor 71 Portion 16 in relation to Prieska	17
Figure 2. Location Map, Keikamspoor 71 Portion 16 indicating Percussion and Core- Boreholes and Drilling	17
Figure 3. Location Map, Keikamspoor 71 Portion 16 indicating Percussion and Core- Boreholes and Drilling	18
Figure 4. Location Map, Keikamspoor 71 Portion 16 indicating Percussion and Core- Boreholes and Drilling	18
Figure 5. Topographical Map 2922 DD 2005	19
Figure 6. Stone formation table	20
Figure 7. Stratigraphy of the Kalahari Group (from Partridge, 2006)	21
Figure 8. <i>PalaeoSensitivity</i> Map	21
Figure 9. General Landscape of the Farm Keikamspoor 71 Portion 16	24
Figure 10. Access road	25
Figure 11. Scatters of calcrete and banded iron stone	25
Figure 12. Calcrete and magnetite outcrop	26
Figure 13. Large concentrations of banded iron stone	26
Figure 14. Calcrete and banded iron stone deposit	27
Figure 15. Red Kalahari Sand mixed with magnetite	27
Figure 16. Shepherd's tree or Wit-gat (<i>Boscia albitrunca</i>)	28
Figure 17. The "Valley" at Keikamspoor indicating homogenous Red Kalahari Sands	28
Figure 18. Scatters of magnetite in the "Valley"	29
Figure 19. Large concentration of magnetite and banded iron stone	29
Figure 20. Magnetite outcrop with variations in plant cover (some recent mud brick remains)	30
Figure 21. Red Kalahari Sands	30
Figure 22. Prominent magnetite outcrops close to homestead	31
Figure 23. View towards the north over the "Valley"	31
Figure 24. Magnetite and banded iron stone concentrations	32
Figure 25. View towards the north and the pass	32

Figure 26. Changes in stone sediment on northern slopes.....	33	
Figure 27. The plains on the northern side of the ridge.....	33	
Figure 28. Looking south from the plains	34	
Figure 29. Calcrete and iron stone deposits.....	34	
Figure 30. Looking south.....	35	
Figure 31. Iron stone deposits next to access road.....	35	
Figure 32. Stone tools	36	
Figure 33. Stone Tools and Layout figure for Doornfontein (Beaumont & Boshier, 1974)		37
Figure 34. 2922 DD (1965)	39	
Figure 35. 2229 DD (1988)	39	
Figure 36. 2922 DD 2005.....	40	
Figure 37. LSA Tools <i>in situ</i>	41	
Figure 38. MSA cores and LSA tools of iron stone.....	41	
Figure 39. Examples of natural banded iron stone.....	42	
Figure 40. Examples of natural banded iron stone.....	42	
Figure 41. LSA Flakes and reworked cores	43	
Figure 42. LSA iron stone microliths.....	43	
Figure 43. Aerial view of enclosures.....	44	
Figure 44. Dry stone walled enclosures close to homestead	45	
Figure 45. Farm homestead.....	46	
Figure 46. Stone foundations	46	
Figure 47. Concrete and brick dam	68	
Figure 48. Concrete dam and wind pump.....	69	
Figure 49. Concrete dam	69	
Figure 50. Aerial view of old homestead	70	
Figure 51. Old homestead outbuildings.....	71	
Figure 52. Old homestead with kitchen lean-to	71	
Figure 53. Homestead.....	72	
Figure 54. Out buildings	72	

2018/07/26

Figure 55. Front facade of homestead73

Figure 56. Dam close to homestead73

Figure 57. Dam with homestead in background.....74

LIST OF ABBREVIATIONS

Bp.....	Before Present
EIA	Early Iron Age
ESA.....	Early Stone Age
Fm.....	Femtometre (10 ⁻¹⁵ m)
GPS	Geographic Positioning System
HIA	Heritage Impact Assessment
I&AP.....	Interested and Affected Parties
LIA.....	Late Iron Age
LSA	Late Stone Age
MYA	Million Years Ago
MSA	Middle Stone Age
NHRA.....	National Heritage Resources Act no 22 of 1999
SAHRA.....	South African Heritage Resource Agency
S&EIR.....	Scoping & Environmental Impact Reporting
Um	Micrometre (10 ⁻⁶ m)
WGS 84	World Geodetic System for 1984

HERITAGE IMPACT REPORT

HERITAGE IMPACT ASSESSMENT SCOPING REPORT FOR THE PROSPECTING RIGHTS APPLICATION FOR THE CORE AND PERCUSSION BOREHOLES ON THE FARM KEIKAMSPOORT 71 PORTION 16 NEAR PRIESKA IN THE NORTHERN CAPE PROVINCE.

1. INTRODUCTION

1.1 LEGISLATION AND METHODOLOGY

G&A Heritage was appointed by *Tsebepix (Pty) Ltd.* to undertake a heritage scoping assessment for the Prospecting Rights Application for Core and Percussion Boreholes on the Farm Keikamspoor 71 Portion 16 near Prieska in the Prieska District of the Northern Cape Province.

Section 38(1) of the South African Heritage Resources Act (25 of 1999) requires that a heritage study is undertaken for:

- (a) Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) Construction of a bridge or similar structure exceeding 50 m in length; and
- (c) Any development, or other activity which will change the character of an area of land, or water –
 - (1) Exceeding 10 000 m² in extent;
 - (2) Involving three or more existing erven or subdivisions thereof; or
 - (3) Involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
- (d) The costs of which will exceed a sum set in terms of regulations; or
- (e) Any other category of development provided for in regulations.

While the above describes the parameters of developments that fall under this Act., Section 38 (8) of the NHRA is applicable to this development. This section states that;

(8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

In regards to a development such as this that falls under Section 38 (8) of the NHRA, the requirements of Section 38 (3) applies to the subsequent reporting, stating that;

- (3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2) (a): Provided that the following must be included:
 - (a) The identification and mapping of all heritage resources in the area affected;

- (b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7;
- (c) An assessment of the impact of the development on such heritage resources;
- (d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- (e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- (f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- (g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.
 - (1) Ancestral graves,
 - (2) Royal graves and graves of traditional leaders,
 - (3) Graves of victims of conflict (iv) graves of important individuals,
 - (4) Historical graves and cemeteries older than 60 years, and
 - (5) Other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);
- (h) Movable objects, including ;
 - (1) Objects recovered from the soil or waters of South Africa including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (2) Ethnographic art and objects;
 - (3) Military objects;
 - (4) Objects of decorative art;
 - (5) Objects of fine art;
 - (6) Objects of scientific or technological interest;
 - (7) Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and
 - (8) Any other prescribed categories, but excluding any object made by a living person;
- (i) Battlefields;
- (j) Traditional building techniques.

A **'place'** is defined as:

- (a) A site, area or region;
- (b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- (c) A group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

'Archaeological' means:

- (a) Material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- (b) Rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
- (c) Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;

(d) Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Paleontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

The removal of graves is subject to the following procedures as outlined by the SAHRA:

- Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the SAHRA;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

The limitations and assumptions associated with this heritage impact assessment are as follows:

- Field investigations were performed on foot and by vehicle where access was readily available.
- Sites were evaluated by means of description of the cultural landscape, direct observations and analysis of written sources and available databases.
- It was assumed that the site layout as provided by *Tsebepix (Pty) Ltd.* is accurate.
- We assumed that the public participation process performed as part of the Basic Assessment process was sufficiently encompassing not to be repeated in the Heritage Assessment Phase.

Table 1. Impacts on the NHRA Sections

Act	Section	Description	Possible Impact	Action
National Heritage Resources Act (NHRA)	34	Preservation of buildings older than 60 years	No impact	None
	35	Archaeological, paleontological and meteor sites	Yes	Mitigation and chance finds protocol
	36	Graves and burial sites	No Impact	None
	37	Protection of public monuments	No impact	None
	38	Does activity trigger a HIA?	Yes	HIA

Table 2. NHRA Triggers

Action Trigger	Yes/No	Description
Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length.	No	N/A
Construction of a bridge or similar structure exceeding 50m in length.	No	N/A
Development exceeding 5000 m ²	Yes	Prospecting Rights Application: Keikamspoor 71 Portion 16
Development involving more than 3 erven or sub divisions	No	N/A
Development involving more than 3 erven or sub divisions that have been consolidated in the past 5 years	No	N/A

Re-zoning of site exceeding 10 000 m ²	Yes	Prospecting Rights Application: Keikamspoor 71 Portion 16
Any other development category, public open space, squares, parks or recreational grounds	No	N/A

2. BACKGROUND INFORMATION

2.1 PROSPECTING RIGHTS APPLICATION

2.1.1 PROJECT DESCRIPTION

Tsebepix (Pty) Ltd has applied for a Prospecting Right for Copper, Zinc, Lead, Gold, Silver, Diamonds, Sulphur, Pyrite, Molybdenum, Iron, Niobium, Phosphate, Salt, Rare Earths and Zirconium on the Farm Keikamspoor 71 Portion 16, near Prieska in the Prieska District of the Northern Cape Province which application was accepted by the Department of Mineral Resources.

Prospecting activities are planned to be conducted in phases over a period of four years.

Description of planned non-invasive activities:

(These activities do not disturb the land where prospecting will take place e.g. aerial photography, desktop studies, aeromagnetic surveys, etc.)

Phase 1:

In order to direct the exploration program in an efficient manner, there will be a review of all available information and data gathered by previous exploration on the farm. A desktop study will be undertaken of the base metal potential of the area. A site investigation of the target areas will be undertaken to identify infrastructure and determine any potential problems that may need to be addressed.

Phase 2:

Any anomalous features identified will be mapped in detail. The various rock types and their contacts will also be mapped.

Phase 3:

A 3 line kilometer magnetic survey (or any other suitable geophysical method) will be undertaken using a proton 5 magnetometer over selected areas as identified during the desktop study. This study will result in identifying potential base metal / sulphide mineralization.

Phases 5, 7 & 9:

Drill samples will be collected in one-meter intervals and logging will be done by a qualified geologist who will record the lithology, mineralogy, degree of mineralization and structural features. Mineralized samples will be analyzed at an internationally recognized (ISO certified) laboratory.

Phase 10:

A detailed feasibility report, containing resource calculations, will be compiled after drilling operations have been completed to evaluate the economic viability of the project.

Description of Planned Invasive Activities:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc.)

Phase 4: Percussion drilling

Percussion drilling will be used initially to identify the position of a suspected base metal deposit. The position of the boreholes is dependent on the results of the review of historical activities, geological mapping, desktop study and geophysical survey.

Forty boreholes, on average 50m deep each, are planned. The collar position of all boreholes will be surveyed. All drilling will be short term and undertaken by a contractor using truck-mounted equipment.

Angled percussion holes are planned to locate and intersect the mineralization. A traverse line or grid drilling is used to identify and define the extent of any mineralization. The sizes of the boreholes drilled will be determined by such factors as cost, proposed sampling, availability of drilling machines and the volume of sample required, among others.

Each drill site will be rehabilitated. The boreholes will be filled with drill chips and covered with topsoil.

Phases 6: Core drilling

Depending on the results from the non-invasive prospecting activities as well as the percussion drilling phase, further confirmation and exploratory drilling may be required. Core drilling will only be used if mineralization has been found. The position of the boreholes is dependent on the results of the non-invasive activities.

Ten boreholes, on average 75m deep, are planned for phase 6, but depending on results this could be more. The collar position of all boreholes will be surveyed.

Each drill site will be rehabilitated before a new site is established. The boreholes will be covered with a metal plate and 0.2m previously stored topsoil.

2.1.2 SITE DESCRIPTION

A temporary site shall be established at each drill site consisting of the following:

- Drill rig.
- Water tank for domestic use.
- Chemical toilets.

Each drill site shall be rehabilitated before a new site is established and the borehole drilled.

2.1.3 PUBLIC PARTICIPATION

The surface owners and other interested and affected parties of the proposed prospecting activities to be undertaken by Tsebepix will be informed to ensure that the rights and needs of all parties are taken into account.

Registering as an I&AP will ensure that you are placed on a database of persons to be informed of any progress regarding the proposed activity. Copies of all relevant documentation will be made available to registered I&AP's.

2.1.4 SITE LOCATION

The Application Areas are situated approximately 20km south of the small town of Prieska in the Northern Cape Province.

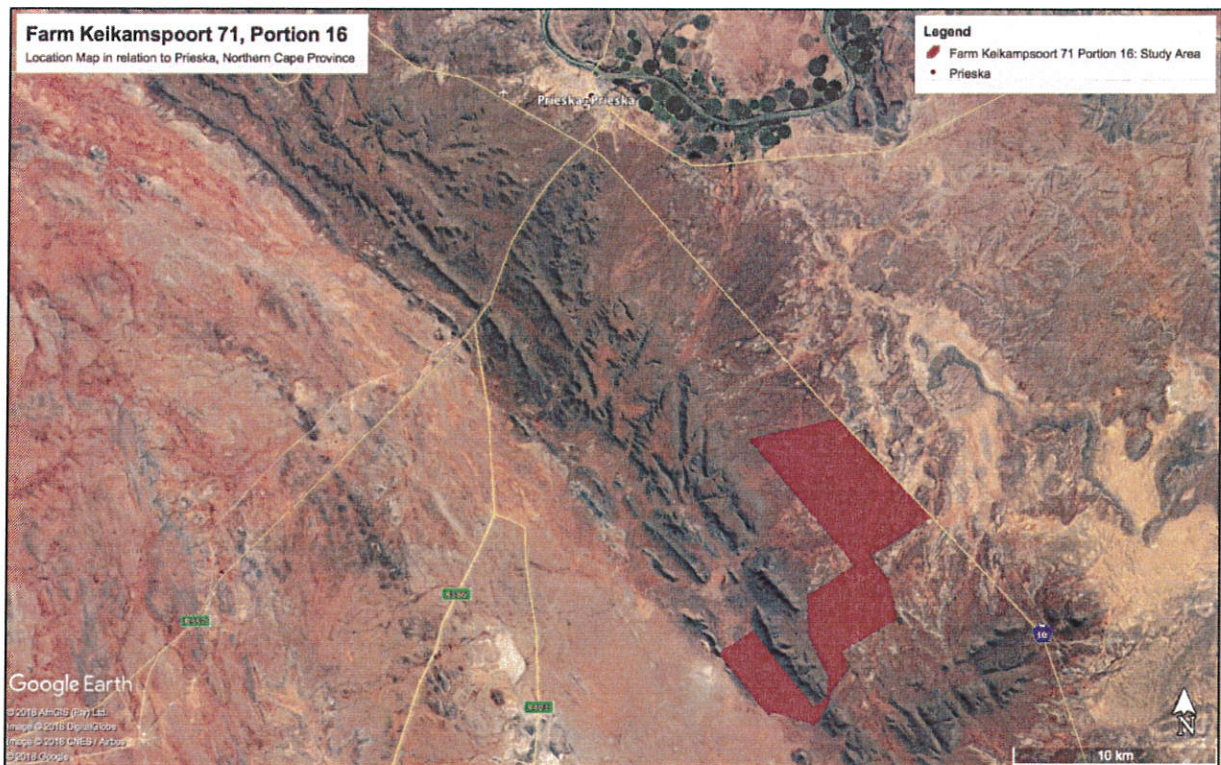


Figure 1. Locality of the of the Farm Keikampspoort 71 Portion 16 in relation to Prieska

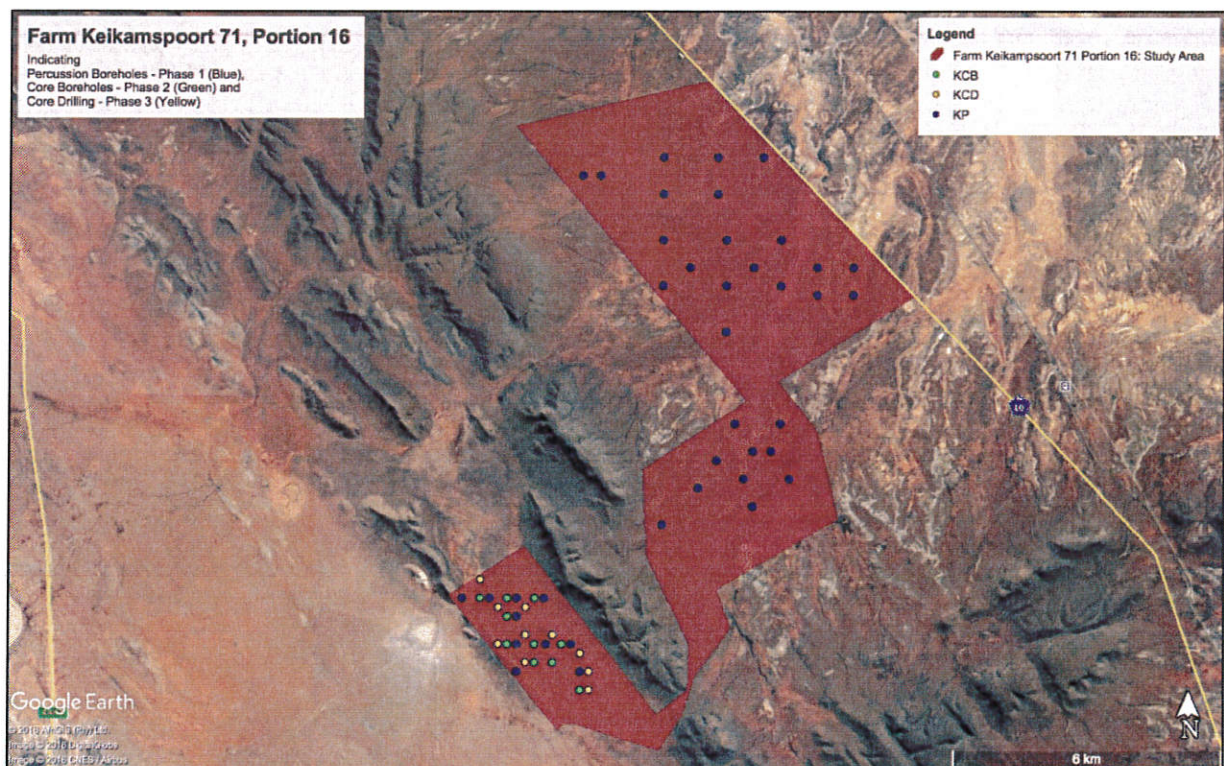


Figure 2. Location Map, Keikampspoort 71 Portion 16 indicating Percussion and Core- Boreholes and Drilling

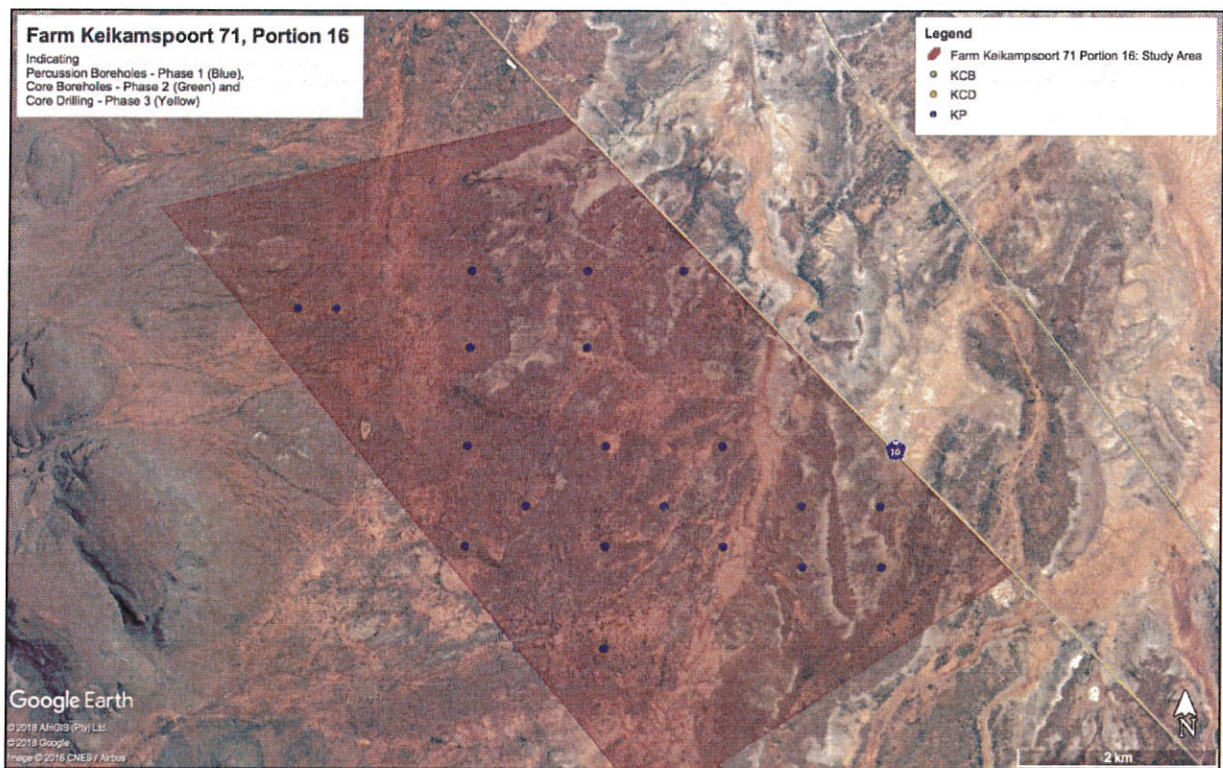


Figure 3. Location Map, Keikamspoor 71 Portion 16 indicating Percussion and Core- Boreholes and Drilling

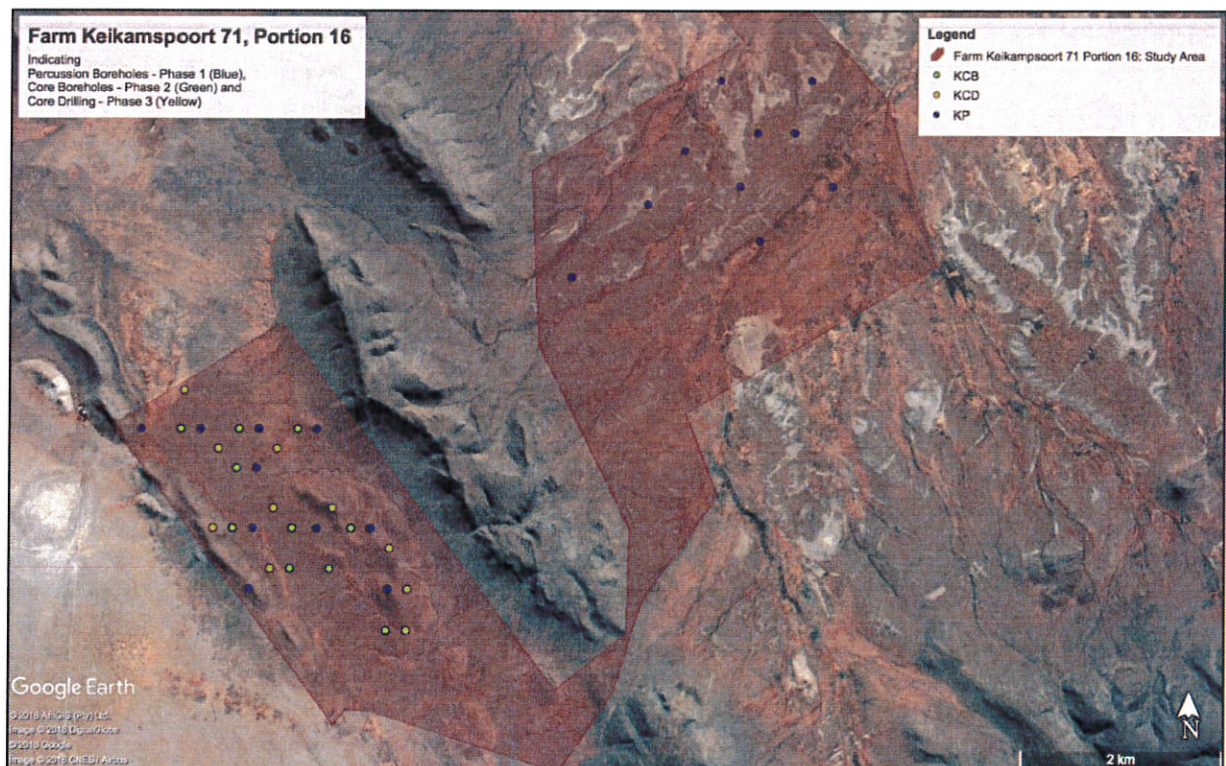


Figure 4. Location Map, Keikamspoor 71 Portion 16 indicating Percussion and Core- Boreholes and Drilling

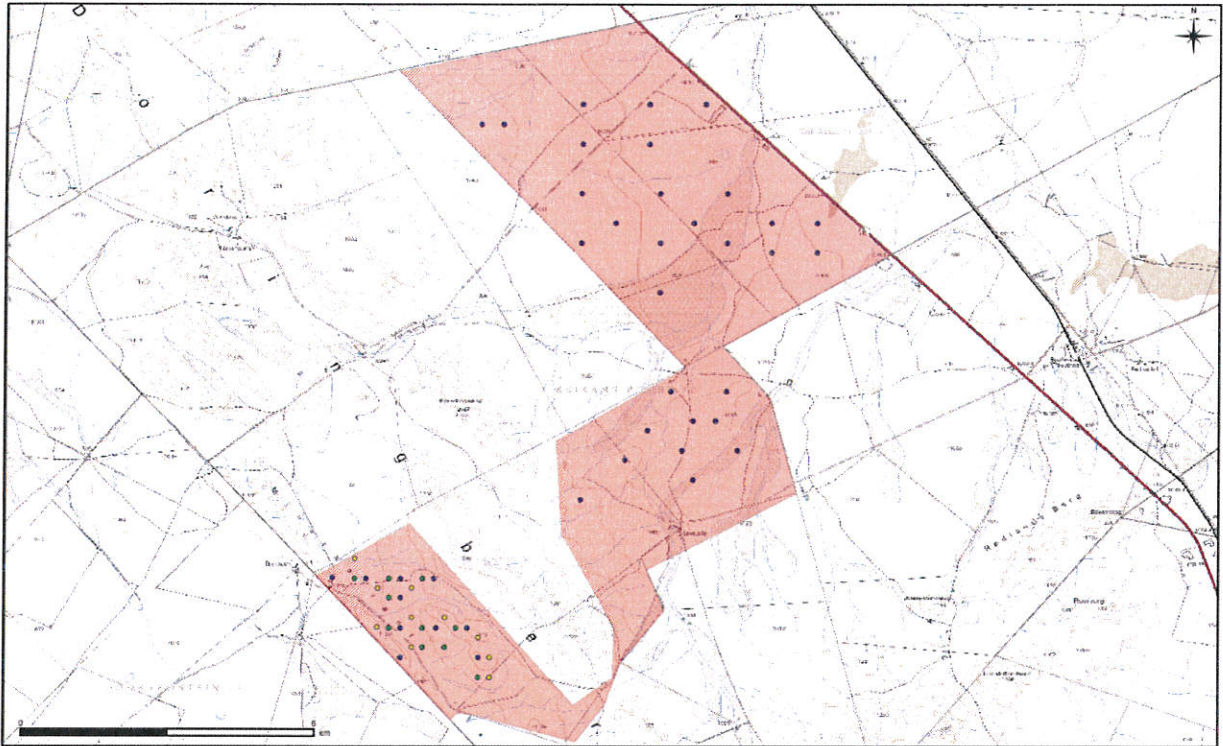


Figure 5. Topographical Map 2922 DD 2005

2.1.5 ALTERNATIVES CONSIDERED

None

2.1.6 GPS TRACK PATHS

The indicated drill sites correspond to the investigation site and as such GPS track paths will be superfluous.