

18 June 2016

ATTENTION:

South African Heritage Resources Agency – Archaeology, Palaeontology & Meteorites Unit (SAHRA – APM Unit)

PREPARED ON BEHALF OF:

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SAHRIS CaseID 8818 –

NEOTEL OPTIC FIBRE CABLE, KATHU – NORTHERN CAPE.

INTERIM REPORT: PHASE 2 ARCHAEOLOGICAL MONITORING, AREA 1

1) INTRODUCTION –

Neotel, on behalf of the project proponent, Vodacom, proposed the Neotel Optic Fibre Cable development, Kathu, Northern Cape, comprising the installation of approximately 40km of optic fibre cable along provincial and local roads in Kathu and its' immediate surrounds, including roughly 21.5km of underground and 18.5km overhead cable installation. Enviroworks, was appointed as independent Environmental Assessment Practitioner (EAP) to manage the Environmental Authorization (EA) application on behalf of the project proponent and subsequently as Environmental Control Officer (ECO) to ensure environmental compliance during the construction phase. With reference to heritage compliance requirements for the EA application Enviroworks commissioned a Heritage Impact Assessment (HIA) in terms of the National Heritage Resources Act, No 25 of 1999 (NHRA 1999), Section 38(1)(a), with the relevant HIA referenced as:

- o Rossouw, L. 2015. (National Museum, Bloemfontein). *Exemption of a Phase 1 Heritage Impact Assessment for a Proposed New Overhead and Underground Installation of a Vodacom Optic Fibre Cable along Provincial Road and Local Reserves in the Vicinity of Kathu, NC Province.*

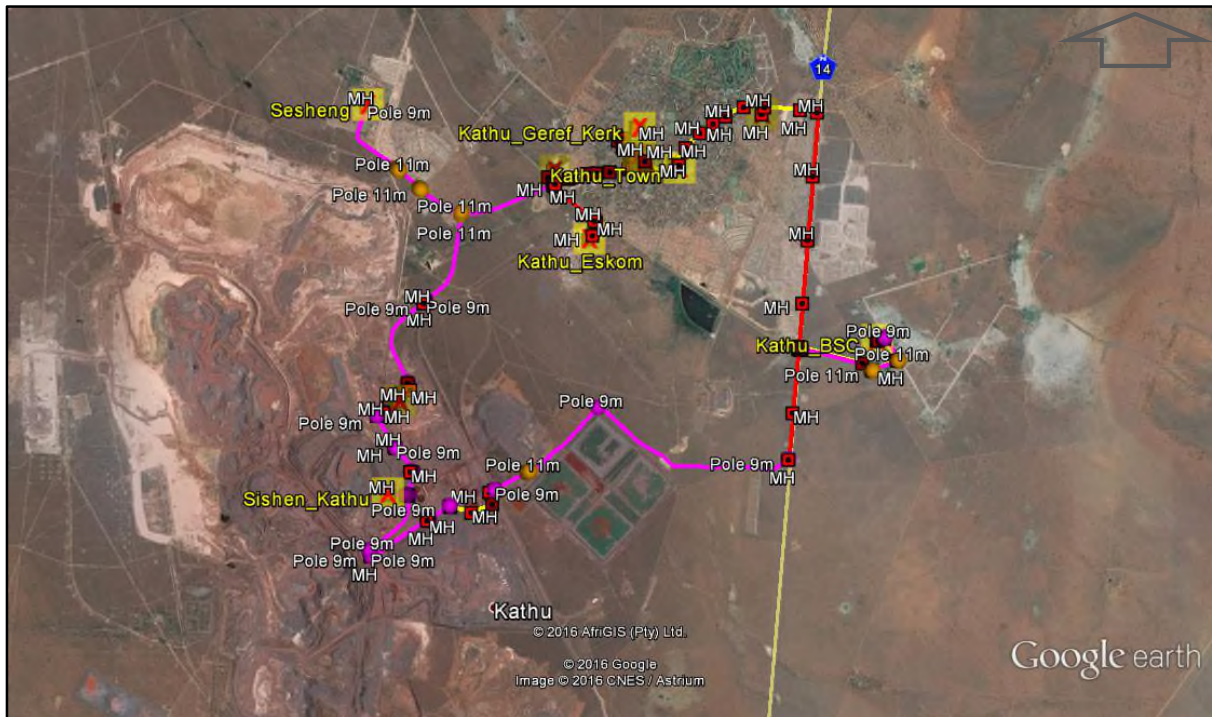
Rossouw (2015), based on desktop heritage information made recommendations for the proposed development, including amongst others archaeological monitoring along a selected section of the development alignment. The SAHRA Final Comment (2016) on the HIA stipulated heritage compliance requirements for development as:

'... The following recommendations and mitigation measures must be incorporated into the Environmental Management Programme (EMPr):

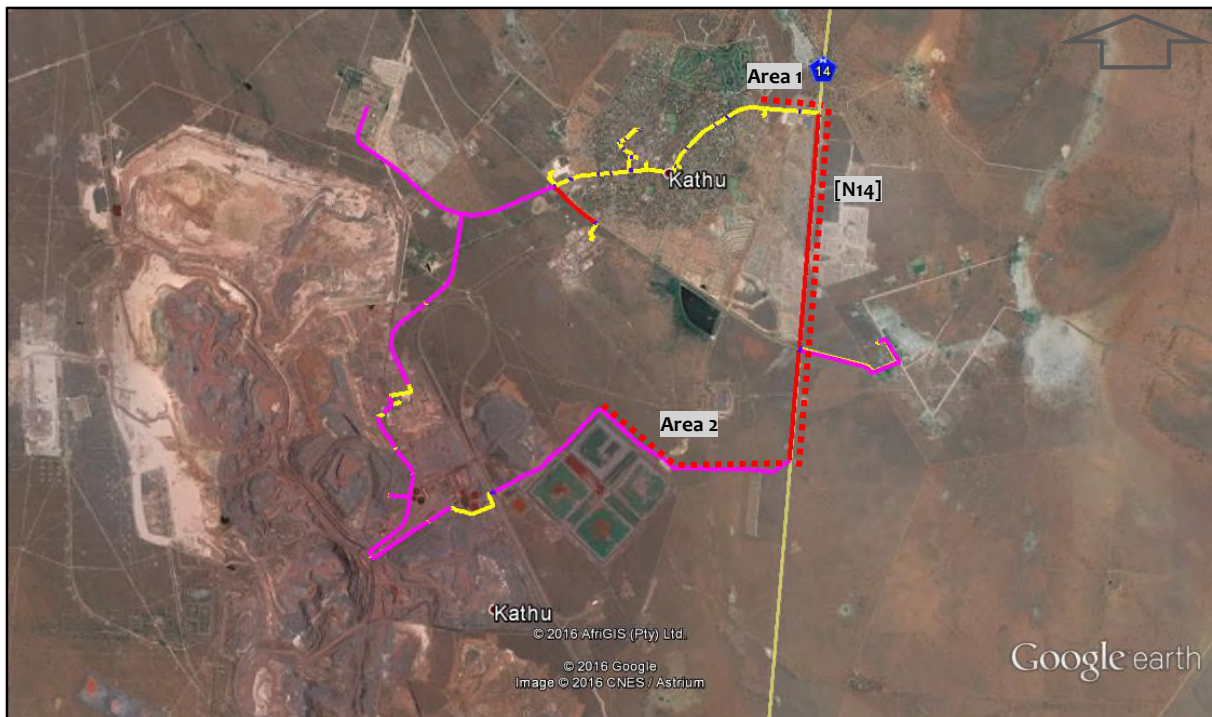
- *The section of proposed underground cable located between S27°41'26.80; E23°03'52.86" and S27°41'27.96"; E23°04'19.60" must be monitored during the construction phase. A watching brief must be conducted by a qualified archaeologist during the construction phase of the project. A watching brief report detailing the results and findings of the monitoring must be submitted to SAHRA for comment. [Referred to as Area 1.]*
- *Additionally, the section of proposed overhead cables between -27.732756°/23.040074° and -27.738599/23.069755 must be monitored during the construction phase. This section of proposed overhead cables is not located along a provincial road and the level of disturbance is much lower. The likelihood of in-situ archaeological sub-surface remains is higher and any uncovered heritage resources may form part of the greater Kathu Pan Archaeological Landscape. As above, a watching brief must be completed along with a watching brief report for his section. [Referred to as Area 2.]*
- *Detailed chance find procedures must be developed and incorporated into the EMPr for implementation. These procedures must ensure that standard protocols and steps are followed should any heritage resources be*

uncovered during the construction phase of the project. These procedures should outline the steps and reporting structure to be followed in the instance that heritage resources are found.'

This document aims to preliminary report on heritage compliance focussing on Area 1 of the development, as stipulated in the 1st bulleted SAHRA requirement and secondary thereto comments on the 3rd bulleted compliance requirement. At the time of this writing construction impact at Area 2 is still pending.



Map 1: Layout of the Neotel Optic Fibre Cable, Kathu development (courtesy Enviroworks)



Map 2: Heritage compliance sections along the Neotel Optic Fibre Cable, Kathu development

2) ARCHAEOLOGICAL MONITORING – AREA 1

Archaeological monitoring along Area 1 comprised an approximate 0.73km portion of the line route alignment. Fieldwork along the line route was conducted on 1-3 June 2016, directly preceding physical impact of development in the area; with development having proceeded upon completion of archaeological assessment.

The optic fibre cable development in Area 1 is to be situated within the local road reserve, to the north of the access road, and with the immediate approximate 1.5m context width thereof described as situated between municipal water lines (water and sewerage) to its north and a telecom line to the south, implying a greatly disturbed sub-surface context due to former excavation works. The general area was characterized by surface artefacts, including samples of Earlier (ESA), Middle (MSA) and to a lesser extend probable macrolithic Later Stone Age (LSA) artefacts. Surface artefacts are interpreted as the direct result of former services excavations.

Sub-surface monitoring was done by means of six (6) test pits, spaced approximately 150m apart, situated at:

- 1) KTP1.1 - S27°41'26.2"; E23°03'52.6";
- 2) KTP1.2 - S27°41'26.4"; E23°03'58.2";
- 3) KTP1.3 - S27°41'26.7"; E23°04'03.9";
- 4) KTP1.4 - S27°41'26.8"; E23°04'09.8";
- 5) KTP1.5 - S27°41'27.2"; E23°04'14.8";
- 6) KTP1.6 - S27°41'27.5"; E23°04'20.2".



Map 3: Test pit localities KTP1.1 to KTP1.6 situated along the Area 1 portion of the line route

Test pits comprised approximate 1.5x1.5m in size pits, dug down to roughly 1m, being the depth required for the optic fibre cable development (with notable depth restrictions at KTP1.5 and KTP 1.6 due to hard anthropogenic sterile sub-surface calcrete members).

- KTP1.1 comprised an already excavated manhole pit, with the installed manhole positioned immediately to the west thereof. Large, boulder size chunks of calcrete characterized both the surface (due to former services excavations) and the sub-surface, with lithic artefacts visibly imbedded in calcrete chunks.
- KTP1.4 comprised a large exposed area where municipal works exposed existing lines for repairs, and cross cutting the optic fibre cable alignment area and the telecom line to the south thereof. (Concerns on municipal line routes furthermore resulted in a number of shallow, approximately 50cm in depth trenches having been dug at selected intervals along the line route.)

- KTP1.2, KTP1.3, KTP1.5 and KTP1.6 were excavated under archaeological supervision by Megastrut staff.

Due to the disturbed sub-surface context artefacts were merely selected from test pit dump material, where relevant as test pits were excavated. No sections were deemed suitable for a more refined systematic method of artefact collection and recording. Selected Megastrut staff assisted in artefact identification and selection.

Artefacts collected from test pits are representative of the archaeological sub-surface, but greatly disturbed contexts limit archaeological interpretation to basic typology and technology only. Disturbed stratigraphic or sub-surface sections did not yield the potential of stratigraphic sequencing or associated information that could be retrieved therefrom, such as dating which may have been possible in better context soils. ESA, MSA and probable macrolithic LSA artefacts, reflecting lithic types identified on the surface, were collected.

KTP1.2 and KTP1.3 yielded the highest number of artefacts, collected from strict Hutton sand contexts, up to 1m bgl (below ground level). Lesser numbers of artefacts were identified from KTP1.1, typified by a primary red Hutton sand context, with an intersecting grey member at approximately 20-30cm bgl, but this inferred to be the result of former road compaction. The KTP1.1 area, both surface and sub-surface, was further characterized by large calcrete boulders with lithic artefacts embedded in the calcrete. Very little artefactual material was collected from KTP1.4, KTP1.5 and KTP1.6. KTP1.4 yet again comprised a basic disturbed Hutton sand context, but with municipal excavation exceeding 1m in depth, and up to approximately 1.6-2m bgl, indicating that Hutton sand in the area may form a fairly convoluting or radically east-west sloping sub-surface member. KTP1.5 and KTP1.6 were both dug into built-up road reserve areas, implying that the topmost greyish 30-40cm bgl levels effectively comprised ex-situ compaction material. KTP1.5 was dug to approximately 80cm-1m bgl, when a hard, slightly convoluting anthropogenic sterile calcrete member was reached. At KTP1.6 this member was reached at approximately 60-80cm bgl, implying very limited Hutton sand or anthropogenic material present. Context information thus points towards lenses or members of Hutton sand containing artefacts, and with these intersecting sub-surface calcrete features containing artefacts and calcrete members devoid of lithics. At KTP1.5 and KTP1.6 calcrete members, though convoluting were more horizontal, preliminary pointing to stiller conditions of formation; slow rising moisture content in ground water or fairly stationary pan / lake conditions. At KTP1.1 fairly vertical calcrete sections and boulders indicate differing formation contexts within an enveloping an existing anthropogenic member. Test pits indicate a predominance of artefacts within the Hutton sands towards the west of Area 1, with artefacts radically receding in number, associated with anthropogenic depth restrictions towards the east of alignment route. Despite the disturbed, secondary context of the artefacts, excavated from between two existing service line excavations, the above interpretation is deemed to hold true, based on construction excavation and backfill methodology - excavated trench material from service lines are often used as backfill in the immediate vicinity from which they were excavated.

[NOTE: Absence of on-site archaeological photographic documentation due to a burglary incident at the ArchaeoMaps office on 10 June 2016 – SAPS, EL Case Number 238/06/2016].

Artefacts collected from test trenches will be subjected to basic analysis. This analysis sheet will constitute the final documentation on the Area 1 archaeological monitoring for the Neotel Optic Fibre Cable development, Kathu. Despite the disturbed context of the artefacts, analysis thereof (and permanent curation of the collection) may well contribute (to a secondary level only) to furthering the scientific understanding of the greater Kathu Pan Archaeological Landscape, and more specifically so to Phase 2 excavated material from the Heritage Mall development. It is recommended that a SAHRA Permit be applied for in retrospect to accommodate permanent curation of lithic material. Should such a permit not be approved, artefacts can be re-deposited at the test pit areas they originated from.

3) PROTOCOL FOR FINDS AND CONTINUING ARCHAEOLOGICAL MONITORING ALONG THE N14

Based on the findings of the Area 1 archaeological monitoring, with cognisance to the notable reduction in artefact quantities towards the east of the area coined with the shallow sub-surface anthropogenic calcrete basal member, but with reference to possible better, or less disturbed sub-surface sections along the N14, selected Megastrut staff, who assisted with artefact identification and selection during the Area 1 archaeological monitoring, reasonably trained in knapping characteristics of anthropogenic vs. natural stone, core vs. flake tool technology and the identification of period representative *fossiles directeurs* (signatory artefact types) have been instructed to collect lithic *fossiles directeurs*

if, and when identified during the course of construction along the N14. Should any such artefacts be encountered they will be reported on to SAHRA. The presence of artefacts and related context information along the N14 may serve, from an interpretive point of view, a continuing interpretation between Area 1 and Area 2, where as stated in the SAHRA Final Comment (2016) better contexts of archaeological lithic material may well be expected.

Collection, and subsequent reporting on archaeological lithic material along the N14, if and when identified will be done within the broader framework of the Neotel Optic Fibre Cable, Kathu, Northern Cape, developments' *Heritage Protocol for Incidental Finds during the Construction Phase* [see Appendix A], with reference also to the 3rd bulleted heritage compliance requirement as stipulated in the SAHA Final Comment (2016).

4) CONCLUSION AND RECOMMENDATIONS

This Phase 2 interim archaeological monitoring report on the Neotel Optic Fibre Cable development – Area 1, Kathu, Northern Cape, comprises the 1st level reporting to SAHRA on heritage compliance by the project proponent; it will be supplemented with an analysis sheet of collected artefacts per test pit. Phase 2 archaeological monitoring, done by means of 6 test pit excavations, immediately preceding development impact along Area 1, meet SAHRA 'watching brief' compliance requirements, as stipulated in the SAHRA Final Comment (2016).

Phase 2 archaeological monitoring indicated that development will impact on lithic Stone Age resources, but that the immediate location of the line route, with its direct approximate 1.5m in width context described as situated between municipal water lines (water and sewerage) to its north and a telecom line to the south, implies secondary disturbed contexts of retrieved lithic artefacts. Relative approximations are based on basic construction methodology; excavated trench material from service lines are often used as backfill in the immediate vicinity from which they were excavated. Resultantly retrieved artefacts are from poor contexts. Artefact types retrieved include ESA, MSA and probable macrolithic LSA samples; basic typological and technological analysis of which may be supplementary to existing and probable future research and archaeological Cultural Resources Management (CRM) Phase 2 collections from Kathu and its immediate surrounds.

- **Recommendations:** ArchaeoMaps is intending to apply for a SAHRA permit in retrospect, aiming to ensure that collected material be permanently curated as supplementary to existing and probable future research and archaeological CRM Phase 2 collections from Kathu and its immediate surrounds. It is recommended that SAHRA considers the permit application favourably. [Should such a permit not be approved artefacts can be re-deposited at the test pit areas they originated from.]

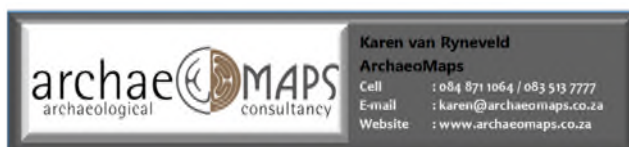
5) ACKNOWLEDGEMENTS

A word of acknowledgement needs to be passed to Megastrut, for the generous allocation of staff to ArchaeoMaps during the Phase 2 archaeological monitoring of Area 1, with specific reference to staff who assisted with test pit excavations and more senior staff designated to artefact identification, selection and basic training pertaining also to the mentioned N14 section of the line route.

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HERITAGE IMPACT ASSESSMENT (HIA) – NEOTEL OPTIC FIBRE CABLE, KATHU – NORTHERN CAPE.

Heritage Protocol for Incidental Finds during the Construction Phase

Should any palaeontological, archaeological or cultural heritage resources, including human remains / graves, as defined and protected by the NHRA 1999, be identified during the construction phase of development (including as a norm during vegetation clearing, surface scraping, trenching and excavation phases), it is recommended that the process described below be followed.

➤ On-site Reporting Process:

1. The identifier should immediately notify his / her supervisor of the find.
2. The identifier's supervisor should immediately (and within 24 hours after reporting by the identifier) report the incident to the on-site SHE / SHEQ officer.
3. The on-site SHE / SHEQ officer should immediately (and within 24 hours after reporting by the relevant supervisor) report the incident to the appointed ECO / ELO officer. [Should the find relate to human remains the SHE / SHEQ officer should immediately notify the nearest SAPS station informing them of the find].
4. The ECO / ELO officer should ensure that the find is within 72 hours after the SHE / SHEQ officers report reported on SAHRIS and that a relevant heritage specialist is contacted to make arrangements for a heritage site inspection. [Should the find relate to human remains the ECO / ELO officer should ensure that the archaeological site inspection coincides with a SAPS site inspection, to verify if the find is of forensic, authentic (informal / older than 60 years), or archaeological (older than 100 years) origin].
5. The appointed heritage specialist should compile a 'heritage site inspection' report based on the site specific findings. The site inspection report should make recommendations for the destruction, conservation or mitigation of the find and prescribe a recommended way forward for development. The 'heritage site inspection' report should be submitted to the ECO / ELO, who should ensure submission thereof on SAHRIS.
6. SAHRA / the relevant PHRA will state legal requirements for development to proceed in the SAHRA / PHRA Comment on the 'heritage site inspection' report.
7. The developer should proceed with implementation of the SAHRA / PHRA Comment requirements. SAHRA / PHRA Comment requirements may well stipulate permit specifications for development to proceed.
 - Should permit specifications stipulate further Phase 2 archaeological investigation (including grave mitigation) a suitably accredited heritage specialist should be appointed to conduct the work according to the applicable SAHRA / PHRA process. The heritage specialist should apply for the permit. Upon issue of the SAHRA / PHRA permit the Phase 2 heritage mitigation program may commence.
 - Should permit specifications stipulate destruction of the find under a SAHRA / PHRA permit the developer should immediately proceed with the permit application. Upon the issue of the SAHRA / PHRA permit the developer may legally proceed with destruction of the palaeontological, archaeological or cultural heritage resource.
 - Upon completion of the Phase 2 heritage mitigation program the heritage specialist will submit a Phase 2 report to the ECO / ELO, who should in turn ensure submission thereof on SAHRIS. Report recommendations may include that the remainder of a heritage site be destroyed under a SAHRA / PHRA permit.
 - Should the find relate to human remains of forensic origin the matter will be directly addressed by the SAPS: A SAHRA / PHRA permit will not be applicable.

NOTE: Note that SAHRA / PHRA permit and process requirements relating to the mitigation of human remains requires suitable advertising of the find, a consultation, mitigation and re-interment / deposition process.

➤ Duties of the Supervisor:

1. The supervisor should immediately upon reporting by the identifier ensure that all work in the vicinity of the find is ceased.
2. The supervisor should ensure that the location of the find is immediately secured (and within 12 hours of reporting by the identifier), by means of a temporary conservation fence (construction netting) allowing for a 5-10m heritage conservation buffer zone around the find. The temporary conserved area should be sign-posted as a 'No Entry – Heritage Site' zone.

3. Where development has impacted on the resource, no attempt should be made to remove artefacts / objects / remains further from their context, and artefacts / objects / remains that have been removed should be collected and placed within the conservation area or kept for safekeeping with the SHE / SHEQ officer. It is imperative that where development has impacted on palaeontological, archaeological and cultural heritage resources the context of the find be preserved as good as possible for interpretive and sample testing purposes.
4. The supervisor should record the name, company and capacity of the identifier and compile a brief report describing the events surrounding the find. The report should be submitted to the SHE / SHEQ officer at the time of the incident report.

➤ **Duties of the SHE / SHEQ Officer:**

1. The SHE / SHEQ officer should ensure that the location of the find is recorded with a GPS. A photographic record of the find (including implementation of temporary conservation measures) should be compiled. Where relevant a scale bar or object that can indicate scale should be inserted in photographs for interpretive purposes.
2. The SHE / SHEQ officer should ensure that the supervisors report, GPS co-ordinate and photographic record of the find be submitted to the ECO / ELO officer. [Should the find relate to human remains the SHE / SHEQ officer should ensure that the mentioned reporting be made available to the SAPS at the time of the incident report].
3. Any retrieved artefacts / objects / remains should, in consultation with the ECO / ELO officer, be deposited in a safe place (preferably on-site) for safekeeping.

➤ **Duties of the ECO / ELO officer:**

1. The ECO / ELO officer should ensure that the incident is reported on SAHRIS. (The ECO / ELO officer should ensure that he / she is registered on the relevant SAHRIS case with SAHRIS authorship to the case at the time of appointment to enable heritage reporting].
2. The ECO / ELO officer should ensure that the incident report is forwarded to the heritage specialist for interpretive purposes at his / her soonest opportunity and prior to the heritage site inspection.
3. The ECO / ELO officer should facilitate appointment of the heritage specialist by the developer / construction consultant for the heritage site inspection.
4. The ECO / ELO officer should facilitate access by the heritage specialist to any retrieved artefacts / objects / remains that have been kept in safekeeping.
5. The ECO / ELO officer should facilitate coordination of the heritage site inspection and the SAPS site inspection in the event of a human remains incident report.
6. The ECO / ELO officer should facilitate heritage reporting and heritage compliance requirements by SAHRA / the relevant PHRA, between the developer / construction consultant, the heritage specialist, the SHE / SHEQ officer (where relevant) and the SAPS (where relevant).

➤ **Duties of the Developer / Construction Consultant:**

The developer / construction consultant should ensure that an adequate heritage contingency budget is accommodated within the project budget to facilitate and streamline the heritage compliance process in the event of identification of incidental palaeontological, archaeological and cultural heritage resources during the course of development, including as a norm during vegetation clearing, surface scraping, trenching and excavation phases, when resources not visible at the time of the surface assessment may well be exposed.