



# **Annual Report for the Period**

**April 2016 to March 2017**

**EL15/2009**

**Hawkes Creek North**

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**Date: March 2017**

## **ABSTRACT**

This report details the work undertaken in relation to licence EL15/2009 Hawkes Creek North during the 12 month period to March 4 2017. No exploration work was undertaken at the licence site. As the resource has higher levels of impurities than currently capable of being processed at TAM's Wynyard factory, work continued on process improvement investigations. By the end of the third quarter of the year, having completed investigations on a pilot unit, the final design of an enhanced magnetics removal system was completed. Following fabrication and control system development the system was ready for installation at Wynyard in March 2017.

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## **1. INTRODUCTION**

Tasmanian Advanced Minerals Pty Ltd (TAM) is actively mining high purity silica from three locations in Tasmania, one near Corinna and two areas near the Arthur River in northwest Tasmania. The Blackwater mine is on the south side of the river two to four kilometres west of Kanunnah Bridge and the Hawkes Creek mine is a further five kilometres to the west, but on the north side of the river. All mined silica is screened on each site, segregated according to chemical impurity profile, and trucked to TAM's processing facility at Wynyard. Processing involves blending the feed to predetermined chemical impurity levels, removal of discrete particle impurities, drying, and particle size control and separation.

TAM's tenements in the area are shown in Figure 1. EL15/2009 adjoins TAM's currently operating Hawkes Creek mine 27M/2009 to the north and west. The licence is held by TAM.

The silica resource on the EL15/2009 is present as a ridge intersected by three gullies, and designated First Hill Northwest through to Fourth Hill Northwest.

Datum used in this report is GDA94.

## **2. REVIEW OF PREVIOUS WORK**

Previous work on the licence comprises two small test pitting programs, in 2010 and 2011. The results were reported in Turner 2010 and Turner 2012 respectively. In 2014 a bulk test pit program was undertaken, reported in Stuart 2015. The locations of the small test pits, and the three bulk test pits are shown in Figures 2 and 3 respectively.

The previous work indicated the presence of silica flour, tightly packed silica lump, and rocky agate in a series of four hills along a north-west alignment.

The silica flour deposit on Second Hill NW is thin and narrow. Assuming a width of 15m and an average depth of 3.5m a very speculative resource estimate for the deposit was given as 34,125 tonnes.

On Third and Fourth Hills Northwest a 3m thickness isopach was interpolated from the test pit data. The combined area enclosed by the 3m isopach at Third and Fourth Hills NW is substantial and 16 test pits with an average thickness of silica flour of 4.9 m fall inside the isopach. Assuming an overall average thickness of 4m of silica flour within the 3m isopach allows the following speculative resource estimate to be made 64,400 tonnes.

The bulk testing program revealed the quality of the silica to be extremely variable. Whereas in other extractive operations of TAM, poor quality silica can be separated from good quality by selective mining techniques and quality control procedures, the proportion of high impurity silica in the bulk test pits was too high, and the variability too great to permit commercially viable selective mining.

### **3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD**

No exploration work was conducted on the licence itself. Work in relation to the licence focussed on enhancing the impurity removal capability of the Wynyard silica processing facility, particularly in relation to chromite removal.

In the first half of the reporting period equipment testing and design modification continued for a new magnet system. Later in the period, having determined the optimum design, a control system was developed and fabrication commenced.

Installation of the new equipment took place in March 2017, and testing of high chromite feeds will be made in April and May 2017.

### **4. DISCUSSION OF RESULTS**

Laboratory testing demonstrated permanent magnets could reduce chromite testing from >20ppm Cr to under 2ppm with ideal magnetics capture conditions. Follow-up pilot unit testing achieved up to 75% reduction, less than ideal removal but sufficient to achieve targeted product specifications when EL15/2009 is blended with silica from TAM's other leases at the rate of <15% of the total feed.

The pilot plant testing needs to be verified with actual commercial scale testing in the Wynyard facility. This will be done following completion of the magnet system installation.

## 5. CONCLUSIONS

In TAM's processing facility hydrocyclones remove small size fraction impurities, and spirals and magnets remove larger size heavy minerals, and magnetic and para magnetic minerals such as chromite.

Chromite impurity problems are not limited to EL15/2009. Significant areas of TAM's mining leases have chromite contamination, accordingly process development work to enhance chromite removal at Wynyard is a high priority in order to extend mine life and lower mining costs.

Testing of high chromite feeds following the installation of the new magnet system in April and May will have high priority.

## 6. ENVIRONMENT

Not applicable, no work on the licence itself was undertaken.

## EXPENDITURE

Expenditure for the exploration (process development) program is given below:

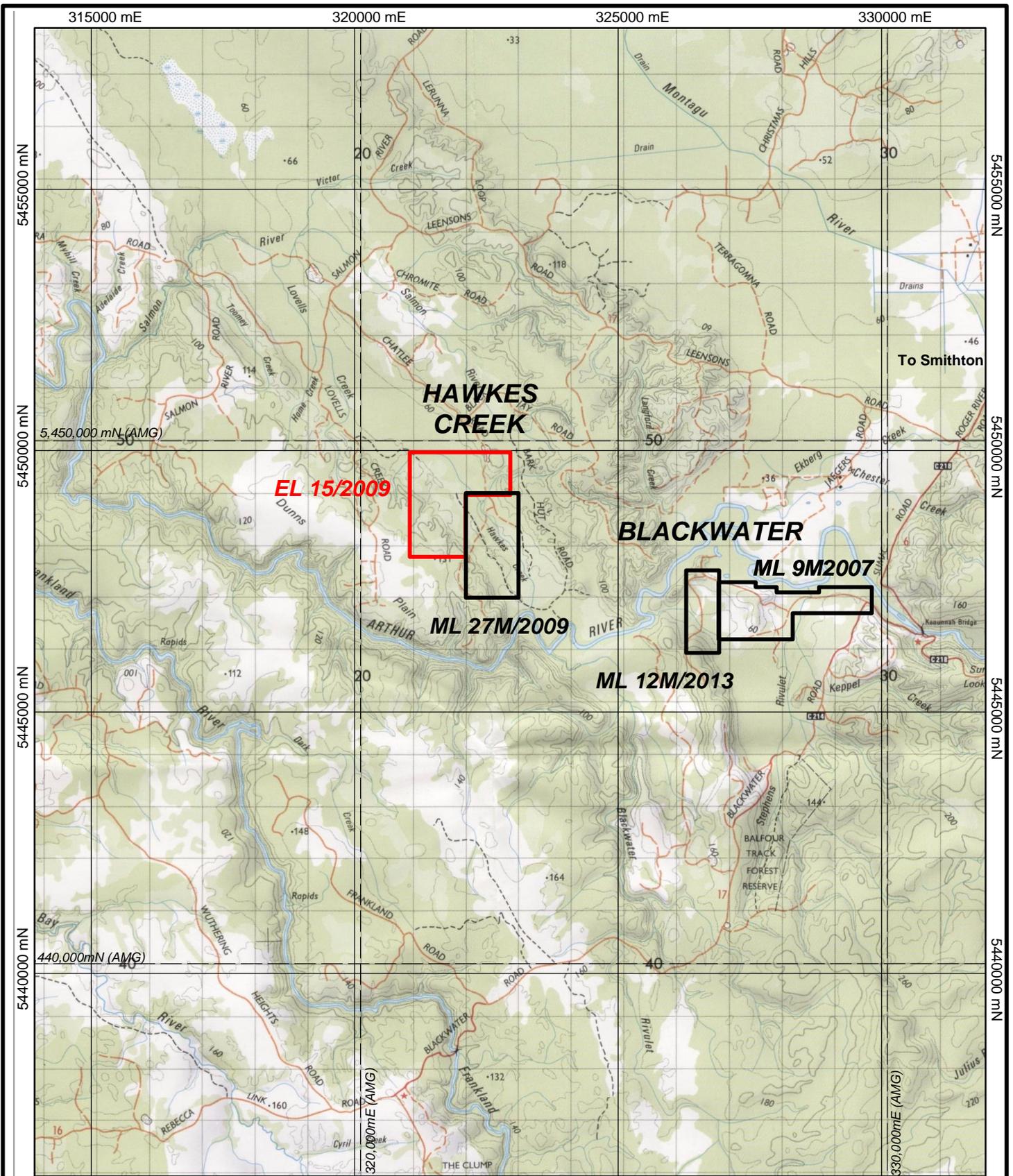
<b>Activity</b>	<b>Expenditure</b>
Purchase Magnets	\$ 54,000
Develop Control System	\$ 48,055
Purchase Fittings, Valves etc	\$ 1,057
Laboratory & Administration	\$ 10,311
<b>Total</b>	<b>\$113,424</b>

## **REFERENCES**

Turner, N. J. 2010. EL15/2009 Hawkes Creek; EL35/2003 Stephens Rivulet and Hawkes Creek; ML 9M2007 Blackwater. Combined interim report on work in February-March, 2010.

Turner, N.J. 2012. EL15/2009 Hawes Creek; ML 27M/2009 Hawkes Creek. Combined report November, 2011 – March, 2012

Stuart, C.C. 2015. Annual Report for the Period April 2014 to March 2015 EL15/2009 Hawkes Creek North.

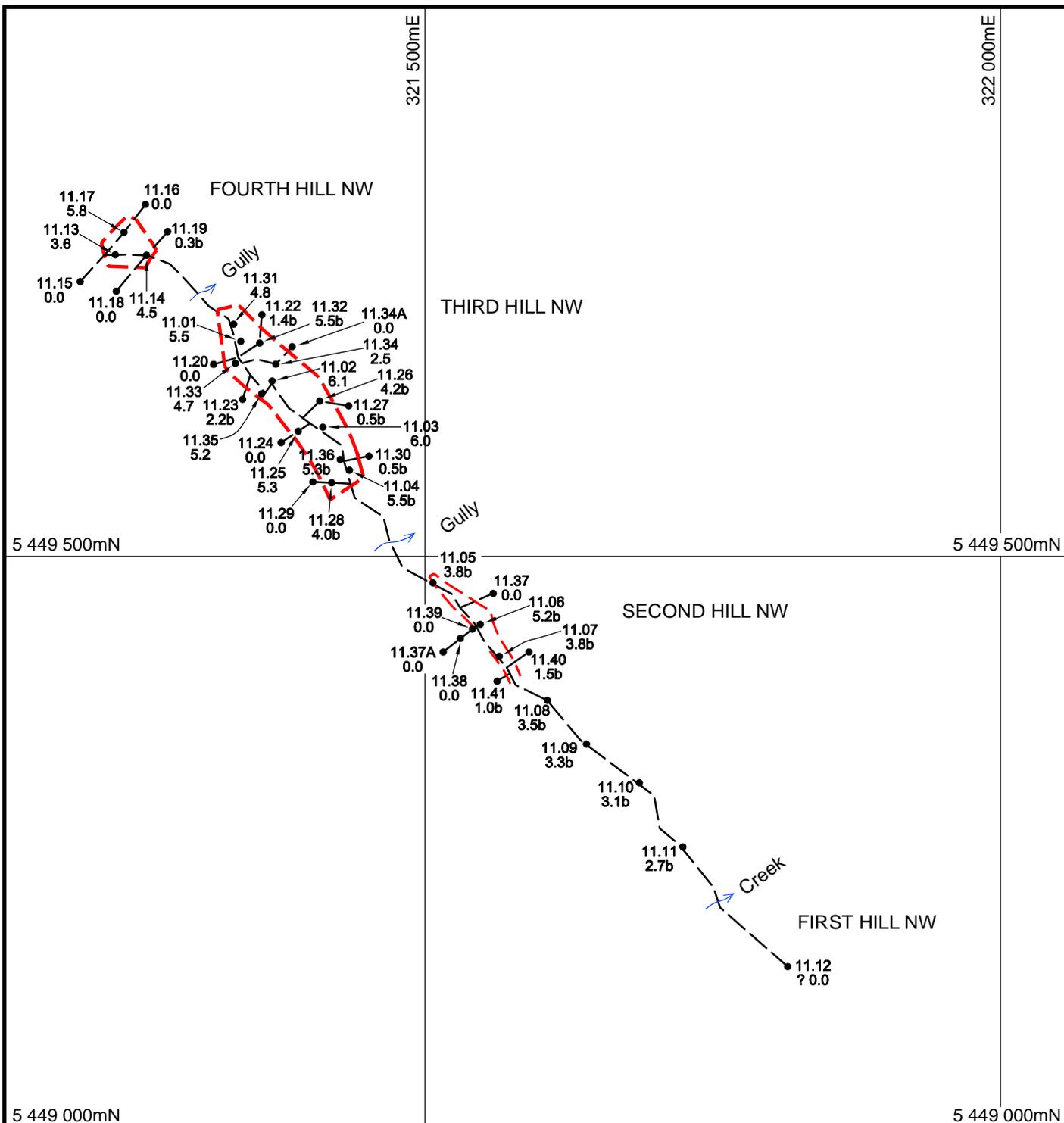


**TASMANIAN ADVANCED MINERALS Pty Ltd**  
**BLACKWATER AND HAWKES CREEK TENEMENTS AT 18.02.15**

**ML 27M/2009 and EL 15/2009 - HAWKES CREEK**

# LOCATION PLAN

Date: 18/02/15	File : AR-Tenements 100k.wor
Scale: 1:100,000	Projection: MGA Zone 33 (GDA94)
Figure No	1



**LEGEND**

- Rough Track
- 11.33 4.7 Test pit with the number (11.33) and thickness (4.7m) of pale silica flour and lump silica.
- - - Interpolated 3m thickness line or isopach.
- b Indicates that the bottom of the pale silica was reached.

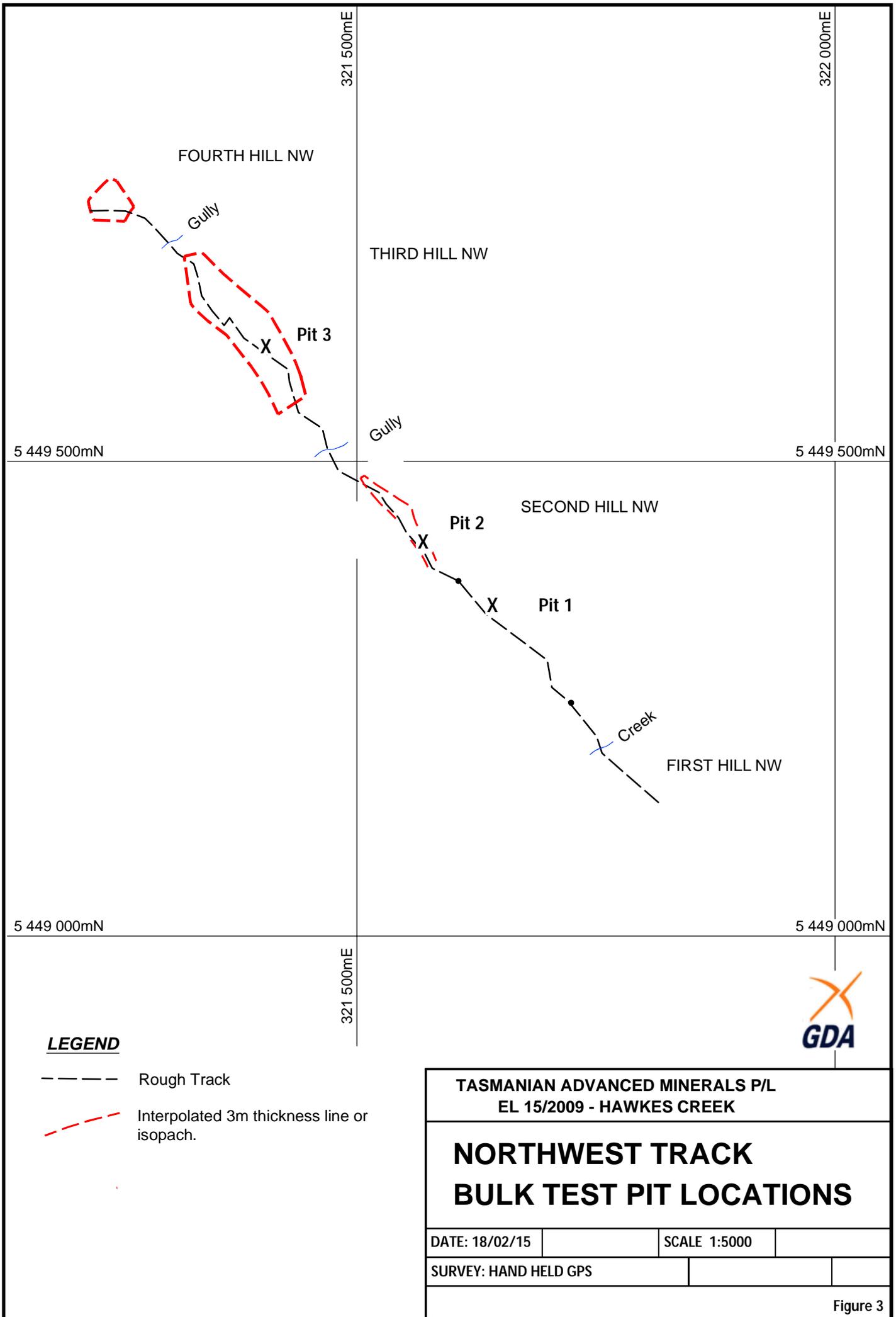


TASMANIAN ADVANCED MINERALS P/L  
EL 15/2009 - HAWKES CREEK

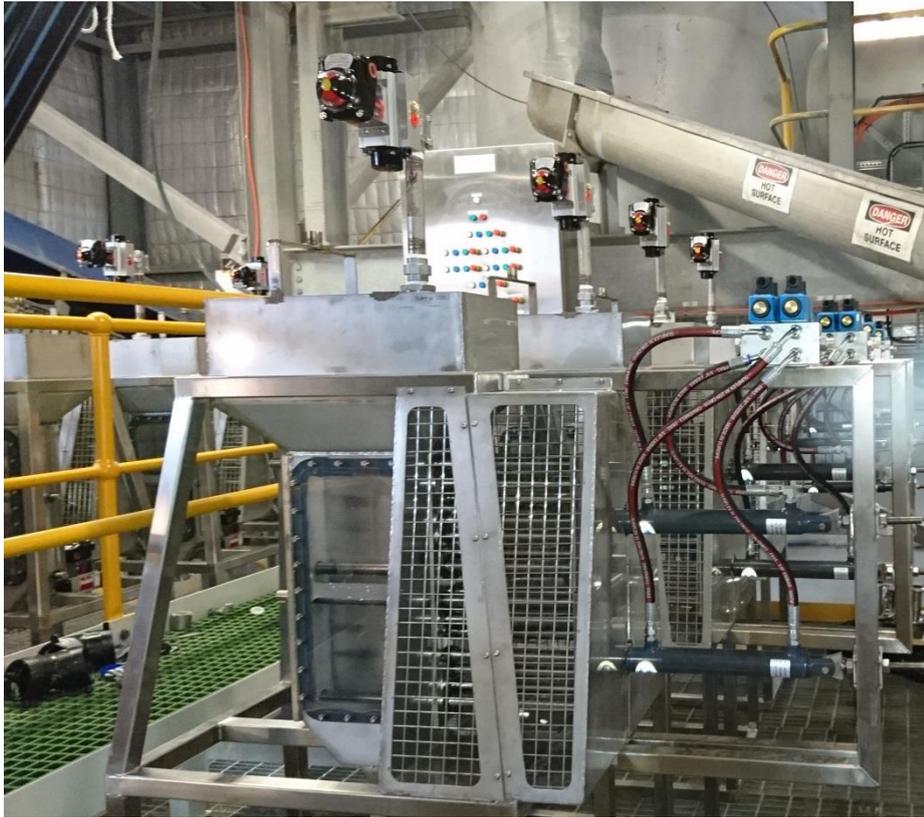
**TEST PITS ALONG THE  
NORTHWEST TRACK**

Compiled : Nic Turner	Drawn : Gillian Bennett	Date : 23/03/12	Scale : 1:5000
Survey : Hand held GPS, Tape and Compass		File : HC-TP-NWTrack.dwg	Figure : 2

**N. J. Turner Geological Services Pty Ltd**



**Appendix 1: Activity Photographs**  
**Magnet System Installation on-going – March 2017**



**(from above)**

