



# **KORAB RESOURCES LIMITED**

## **ANNUAL REPORT**

**EL 24855**

**Batchelor, N. T.**

**YEAR 6**

**Period Ending 23 January 2012**

**By**

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**For**

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## **SUMMARY**

During Year 6 Korab Resources completed the deepening of KORC10-004 by diamond drilling from 60m to 234.3m depth.

In addition further detailed mapping in the vicinity of the hole was done.

### **1. INTRODUCTION**

This document is the sixth annual report for EL (formerly SEL) 24855 covering the period 24 January 2011 to 23 January 2012. The tenement is part of Korab's Batchelor Project as described in earlier annual reports.

### **2. TENEMENT STATUS**

EL 24855 was granted to Savanna Mineral Resources Pty. Ltd., a wholly owned subsidiary of New World Alloys (previously Mt. Grace Resources NL), on the 24th January 2006. Korab Resources Ltd had a joint venture with Savanna to earn an interest in the EL and was the operator and manager of this joint venture. EL 24855 was transferred to Korab Resources on 4 April 2008.

EL 24855 consists of 11 sub-blocks totaling 20.27 square kilometers. Although the EL has been due for reduction three times, Korab has successfully argued for total waivers on all occasions in view of the access problems due to the inflexible freehold landowner and the continuing success in locating prospective stratigraphy.

### **3. LOCATION**

EL 24855 is located west of the Stuart Highway and south of Batchelor Road approximately 100kms south of Darwin. The licence is crossed by the recently bitumised Crater Lake Road thus giving good all-year access to the licence. See Figure 1.

### **4. GEOLOGY**

The licence falls within the Rum Jungle Uranium Field (RJUF) which itself is part of the Pine Creek Orogen. Previous annual reports have described in some detail the regional setting of this and other Korab tenements nearby.

The local geology as shown by recent NTGS mapping (Lally 2003), shows that the licence is situated to the southeast of the Archaean Rum Jungle Complex and is underlain by the following Early Proterozoic stratigraphic units:- Mt Partridge Group, Crater Formation, Coomalie Dolostone, Whites Formation and Wildman Siltstone. The Wildman Siltstone within EL 24855 also includes the Acacia Gap Quartzite and Mt Deane Volcanic Members. NTGS mapping also shows the intrusive Zamu Dolerite to be present.

## **5. PREVIOUS EXPLORATION**

A check at the NTGS has shown that considerable exploration has been done in the vicinity of EL 24855 in the past.

Most previous exploration has targeted uranium, gold, base metals and magnesite, the last for its magnesium metal content. Additional detailed information on previous explorers' activities is given in the annual reports for Years 1, 2 and 3 as submitted by Korab Resources.

## **6. EXPLORATION PROGRAM AND TARGETS**

Korab Resources' targets on this licence are volcano-sedimentary base metals, vein type uranium and quartz stockworks gold mineralisation.

Korab has identified the Mt Deane Volcanic Member of the Wildman Siltstone as having significant sulphide nickel potential on this and contiguous tenements so this stratigraphic unit is targeted on EL 24855.

The 2011 program was to consist of the drilling of 12 new RC holes, as shown on Figure 3, and the deepening of KORC10-004 by diamond drilling to drill through the Mt Deane Volcanic Member, mafic/ultramafic sill.

The company was not able to complete their planned RC drill program due to the DoR failing to issue the required Authorisation under the Mining Management Act in time. An interim Authorisation was granted to allow the diamond drilling to be done.

## **7. METHODS**

### **7.1 Land Owner Liaison**

All landowners within the Korab EL 24855 tenement are kept informed of exploration activities.

### **7.2 NTGS Geologists visit**

In 2008 when Korab first identified anomalous nickel values in the mapped Mt Deane Volcanics on a contiguous licence, as required, this was reported to the NTGS.

In September 2011 a group of NTGS senior geologists were encouraged to come on a field visit to examine several key outcrops of the Mt Deane Volcanics on several of Korab's tenements in the RJMF. This included a visit to the well outcropping Mt Deane Volcanics near drill hole KORC10-004.

### **7.3 Geology Mapping**

The Mt Deane Volcanic Member in the vicinity of Korab's RC drilling has been mapped by the NTGS as Zamu Dolerite. Detailed mapping of that unit over a one kilometer strike length was done during the year.

Mapping was done by foot traversing in a NS direction at 100m intervals. Further similar mapping is required to the west and east.

### **7.4 Drill Site Preparation**

Prior to bringing the diamond rig on site an inspection by the drilling contractor identified additional minor earthworks that needed doing.

### **7.5 Diamond Drilling**

A contract was negotiated with Darwin based driller, Mr. Leon Merrington with his company H2O Pty. Ltd. Drilling was performed by a relatively new, track-mounted Delta Base 525 rig manufactured in Poland. Ancilliary equipment consisted of a 20,000 litre water truck

Their crew consisted of a part-time drilling supervisor, a driller and one offsider. The crew was housed in a Batchelor caravan park.

### **7.6 Core Sampling, Logging and Hole Surveys**

Sampling of the core was planned to be done by collecting one metre of each five metres initially, with follow up sampling as required.

Logging of the core was to be done as soon as possible after hole completion and after HyLogger scanning.

The hole was planned to be surveyed by Reflex Camera if there was any suggestion of hole drift.

### **7.7 Magnetic Susceptibility Scanning**

Magnetic susceptibility reading will be taken on the core at suitable regular intervals and recorded. The Magnetic Susceptibility Meter was borrowed from the NTGS store.

## **7.8 NTGS “HyLogger” Spectral Scanning of Core**

With the NTGS HyLogger fully operational in the Farrell Crescent facility, arrangements were made with Belinda Smith, Project Geologist-HyLogger, to have the Korab diamond drill core scanned. Belinda had advised that best results are obtained from core by using intact, unmarked core.

## **7.9 Assaying**

All rock chip and RC chip sample assaying has been done by the Darwin based NTEL laboratories with Au,Pd and Pt done in Perth by Genalysis. Results are shown in Appendix 4.

## **7.10 Petrographical/Mineralogical Studies**

Five samples of selected core were sent to Pontifex & Associates for thin and polished section mineralogical examination.

The suite of samples sent to Pontifex consisted of a part slice of core as follows:

- Sample 13751 65-66m
- Sample 13757 95-96m
- Sample 13764 130-131m
- Sample 13774 180-181m
- Sample 13779 205-206m

## **7.11 Drill hole and Drill Sites Rehabilitation**

After completion of the drilling all sites have been rehabilitated as per Korab’s MMP. Photographic evidence has been collected and will be incorporated in the annual update of the MMP in due course.

# **8. WORK DONE AND RESULTS**

## **8.1 Land Owner Liaison**

The only landowners affected by Korab’s 2010 activities have been John Albany and the Stanley Group of companies.

The former was advised of Korab’s need for access along his fence line. There was no repetition of Mr Ron Stanley’s attempt to intervene with Korab’s drilling activity as there had been in 2010.

## 8.2 NTGS Geologists Visit

On Tuesday 20<sup>th</sup> September, NTGS geologists, Dr. Masood Ahmad, Dr. Andrew Wygralak, Dr Linda Glass and Mazhar Khan visited EL 24855 as part of a tour to several outcrops of the Mt Deane Volcanics on Korab tenements.

Their visit to EL 24855 included examination of the well outcropping ultramafic units that are shown as Zamu Dolerite on published government maps.

Dr Masood Ahmad's brief email following the groups visit included the following two paragraphs:

*"This short trip has added significantly to our understanding of the mafic/ultramafic magmatism in the older succession (>2000 Ma) of the Pine Creek Orogen. The Mount Dean Volcanics are therefore equivalent to the Stag Creek Volcanics in the South Alligator Region. You are right that the dolerite exposed to the west of Acacia Gap quartzite is not Zamu but possibly an intrusive equivalent of the Mount Dean Volcanics."*

*and*

*"Your discovery of nickeliferous mafic/ultramafic rocks in the Batchelor area with over a 1000 ppm Ni is certainly interesting and need to be followed up as it may have bearings on the Cu-Ni-Co in the Browns area and Au-Pt-Pd in some occurrences east and south of the Waterhouse dome."*

The entire email from Dr Ahmad is attached as Appendix 5.

## 8.3 Geology Mapping

Figure 2 is a plot of the mapping carried out to define in detail the boundaries of the Mt Deane volcanics on the Siltstone prospect in the vicinity of Korab's 2010 and 2011 planned and completed drill holes.

The Mt Deane Volcanic unit in general shows up well as very deeply weathered chocolate brown rock. Samples of the rock usually show pseudogossanous textures due to the weathering out of the carbonates in the rock. Talc when present gives a matted appearance and soapy feel. It is not possible to distinguish true gossan development of sulphides from the pseudogossan from carbonates.

The intrusive sill of the Mt Deane Volcanic Member defined to date is approximately 1100m long by 100m wide with a dip of approximately 45 degrees to the south. The sill is conformable with the enclosing Wildman Siltstone and is not extrusive but intrusive.



#### **8.4 Access and Drill Site Earthworks**

The existing track access for the drilling in 2010 of KORC10-004 was with minor modifications suitable for the diamond drill rig that came on site on 8<sup>th</sup> October 2011.

A sump was put in close by the rig position and an additional trench was put in down slope to trap any water overflowing from the primary sump.

#### **8.5 Diamond Drilling**

Drilling commenced from the 60m depth in KORC10-004 on 8<sup>th</sup> October 2011. A single NQ2 bit was used for the entire 174.3 metres of drilling. The mafic/ultramafic lithology allowed 100% core recovery and most core came unbroken from the barrel.

The drilling of the 174.3m took much longer than expected due to mechanical breakdowns and staffing issues.

Drilling was completed on the 18<sup>th</sup> October 2011 and the rig departed the site on the 20<sup>th</sup> October 2011 after delays completing the down hole survey.

#### **8.6 Core Sampling, Logging and Hole Surveys**

The NQ2 core was stored in standard metal trays .Core sampling consisted of collecting one metre of half core at 5m intervals. Details of sampling are shown in Appendix 1 and on the field drill logs, Appendix 2.

Core cutting and sampling was done **after** the entire hole had been put through the NTGS HyLogger.

The KODD11-004 diamond hole was surveyed as drill rods were removed at the following depths with Dip and Azimuth as shown:

- 61.0m            Dip 89.1            Azim 160.9
- 100m            Dip 89                Azim 135.0
- 150m            Dip 88.8            Azim 116.0
- 186m            Dip 88.7            Azim 108.4
- 234m            Dip 88.6            Azim 97.9

#### **8.7 Magnetic Susceptibility Scanning**

76 Magnetic Susceptibility readings were taken on the core. Values ranged from a max of 104 to a minimum of 0.11. The average was 29.96.

The maximum reading came from 179m near from where a sample had been taken for mineralogical TS and PS work. Pontifex & Assoc reported the sample as being of an altered peridotite.

## 8.8 NTGS “HyLogger” Scanning

The HyLogger scanning data for the core of KODD11-004 is now in Korab’s data base. Figure 6 is one spectral image of the entire hole. It shows well the distribution of the talc, carbonate and other alteration products of the original mafic/ultramafic rock.

## 8.9 Assaying

Assay results of the core samples of the one metre sections taken at 5m intervals from 60m to 234.3m are shown in Appendix 1 and Appendix 3.

The core was assayed for the following elements by the methods listed:

- Ag, As, Co, Cr, Cu, Mn, Ni, Pb, Sb, Sn, U, V and Zn by G440M/ ICPMS
- Ca, Fe, Mg, S and Ti by G400I/ ICPOES
- Au, Pd and Pt by Genalysis, Adelaide, FACH/AA240

A summary of assay results for KODD11-004 follows: (shown in ppm unless indicated)

	Max	Av	Min
Ag	0.15	0.10	0.05
Au	2 ppb	n/a	n/a
As	178	58	2
Ca	10.8%	3.9	0.15
Co	147	110	6
Cr	1260	719	100
Cu	285	96	9.6
Fe	14.4%	11	3.8
Mg	16.1%	11.2	1.84
Mn	1930	1355	117
Ni	1730	1081	46.2
Pb	20	5	1.6
Pd	37ppb	n/a	n/a
Pt	49ppb	n/a	n/a
S	2.33%	0.5	0.02
Sb	7.35	0.94	0.25
Sn	2.4	1.3	0.6
Ti	2.2%	0.94	0.26
U	5.72	1.34	0.38
V	640	181	100
Zn	369	134	25.5

Significant results:

- **Ni** remains high with an average of 0.11%.
- **Mg and Ca** are high reflecting the carbonate alteration of the lithology
- The **Pd and Pt** maxima came from a single sample (13757)
- **S** values are highly variable in the lithology.

As shown on Figure 5 KODD11-004 returned a 96m section averaging 0.148% Ni from 90-186m.

### **8.10 Pontifex & Assoc Mineralogy report**

Appendix 4 is of the Pontifex & Assoc Mineralogical report No 10023 complete with photos.

The report summarises that the six samples of core examined ... “represent low temperature altered and metamorphosed mafic and ultramafic rocks. The mafic rocks occur above and below definite and probable ultramafic rocks.”

“The most clearly preserved ultramafic sample is at 130m (13764), containing largely parallel olivine shapes altered to talc and carbonate.”

“A less clearly preserved probable ex-peridotite at 180m (13774) is altered to talc-chlorite and carbonate.”

The report significantly identified three nickel sulphide varieties in the core samples; pentlandite, millerite and polydymite. The report also ... “suggests higher sulphur activities in the shallower samples” ... because of the distribution of pyrite vs pyrrhotite.

### **8.11 Drill Site Rehabilitation**

The drill site and its sump have been rehabilitated.

## **9. CONCLUSIONS**

The successful drilling of KODD11-004 has produced good core samples which have been assayed, logged, HyLogger scanned and mineralogically examined.

These methods have conclusively shown that the Mt Deane Volcanics at the Siltstone prospect include some cumulate ultramafics with identified peridotites. The Pontifex report concludes that there is dolerite (mafic) at the top and bottom of the sill.

Although no concentrations of sulphides have been intersected the fact that three types of nickel sulphides have been identified is of significance.

The body of Mt Deane Volcanics at the Siltstone prospect has been delineated in detail over a 1.1km strike length with a width of 100m and dipping 45 degrees south.

An interpretation of the sill shows possible thickening at depth or folding as shown in Figure 5.

## **10. RECOMMENDATIONS**

During Year 7 of Exploration Licence 24855 Korab Resources plans to drill the holes that had been planned for 2011 but were unable to be drilled due to late issuing of Authorisation 0590-4.

(1) RC drillholes targeting Mt Deane Volcanics

EAMP (MMP) Sites 1, 7, 9, 10, 11, 12

Sites 7, 9, 10 require dozed road access

6 RC holes x 100m = 600m

(2) DD drillholes targeting Mt Deane Volcanics

EAMP (MMP) Site 3 requiring dozed access

1x 200m diamond hole

(3) RC drillholes targeting AEM Anomalies

EAMP (MMP) Sites 4, 5, 6

3 RC holes x 100m = 300m

Assaying of above drill samples

Petrographic studies

Although Korab Resources aims to complete the above drilling, prioritising of similar work on adjoining tenements may require the juggling of budgets.

It is expected that the minimum expenditure for Year 7 of Exploration Licence 24855 will be \$60,000.00.

## **11. EXPENDITURE STATEMENT YEAR 5**

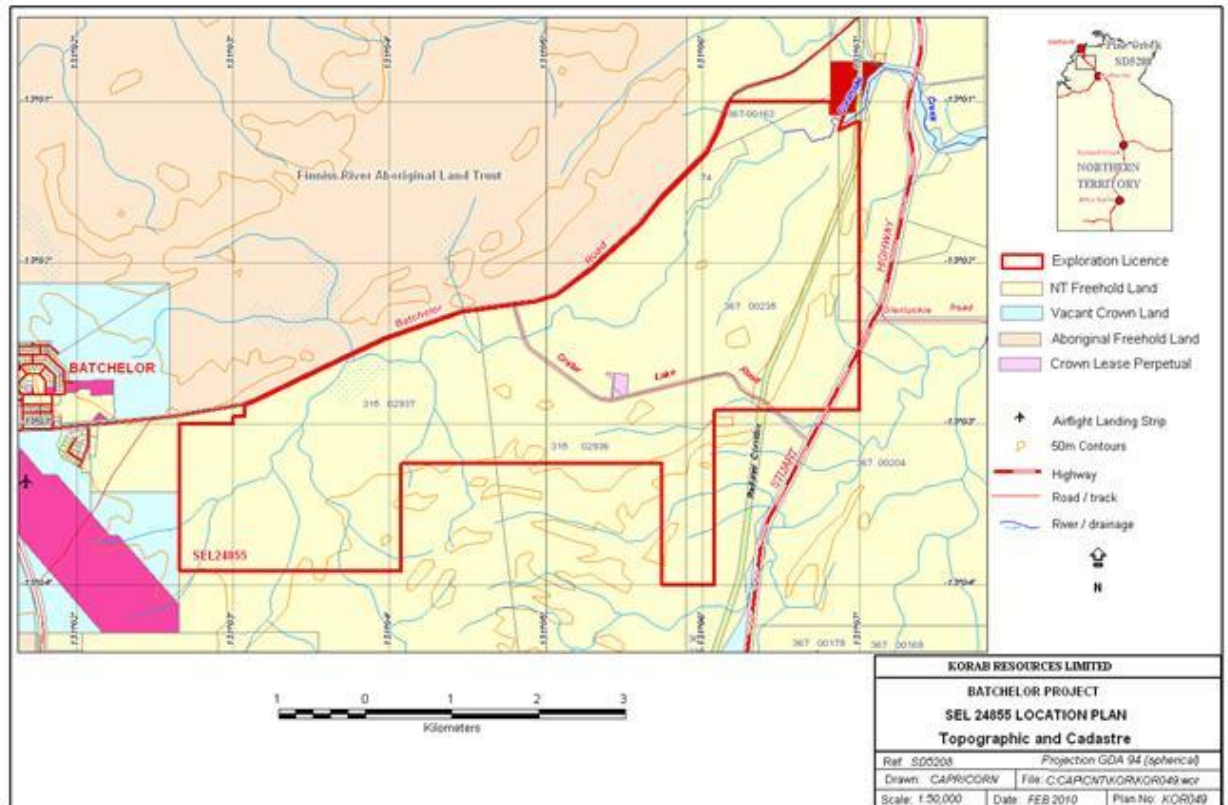
The covenant for Year 6 of EL 24855 was \$75,000.

The expenditure statement for Year 6 is shown in Appendix 6.

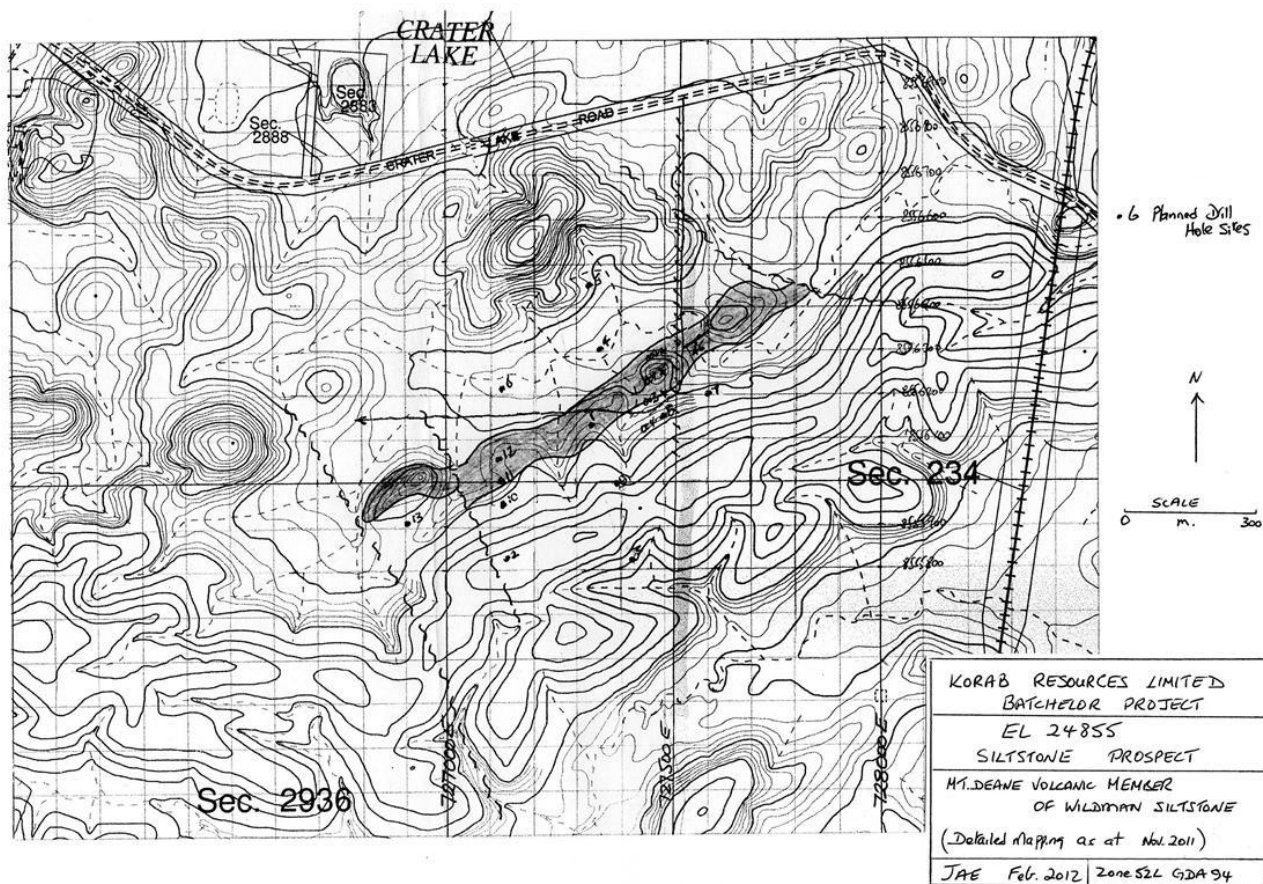
## **12. PROGRAM AND BUDGET FOR YEAR 7**

The Year 7 Budget for EL 24855 incorporating the recommendations as listed above is proposed at \$60,000.

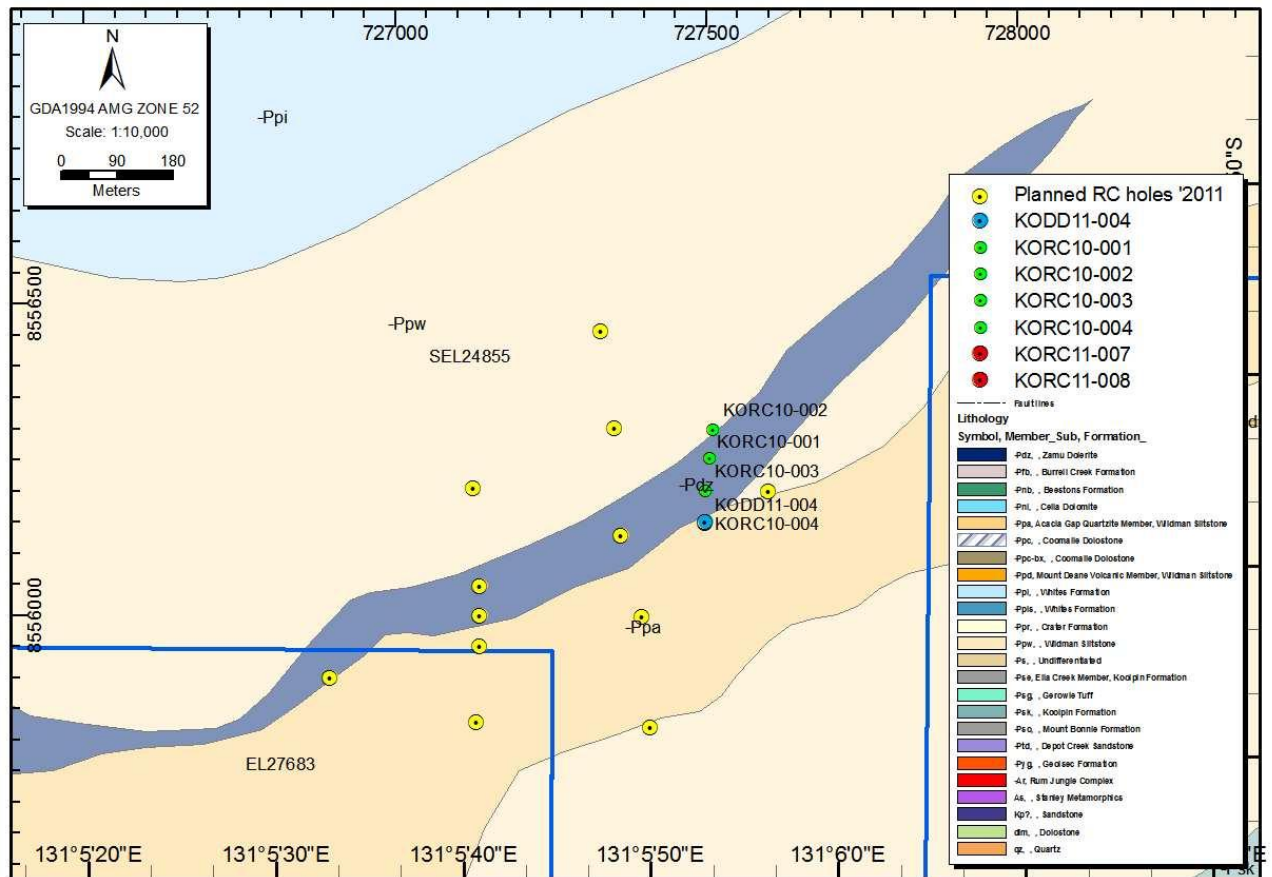
**Figure 1: SEL 24855 Location Plan: Topographic and Cadastre**



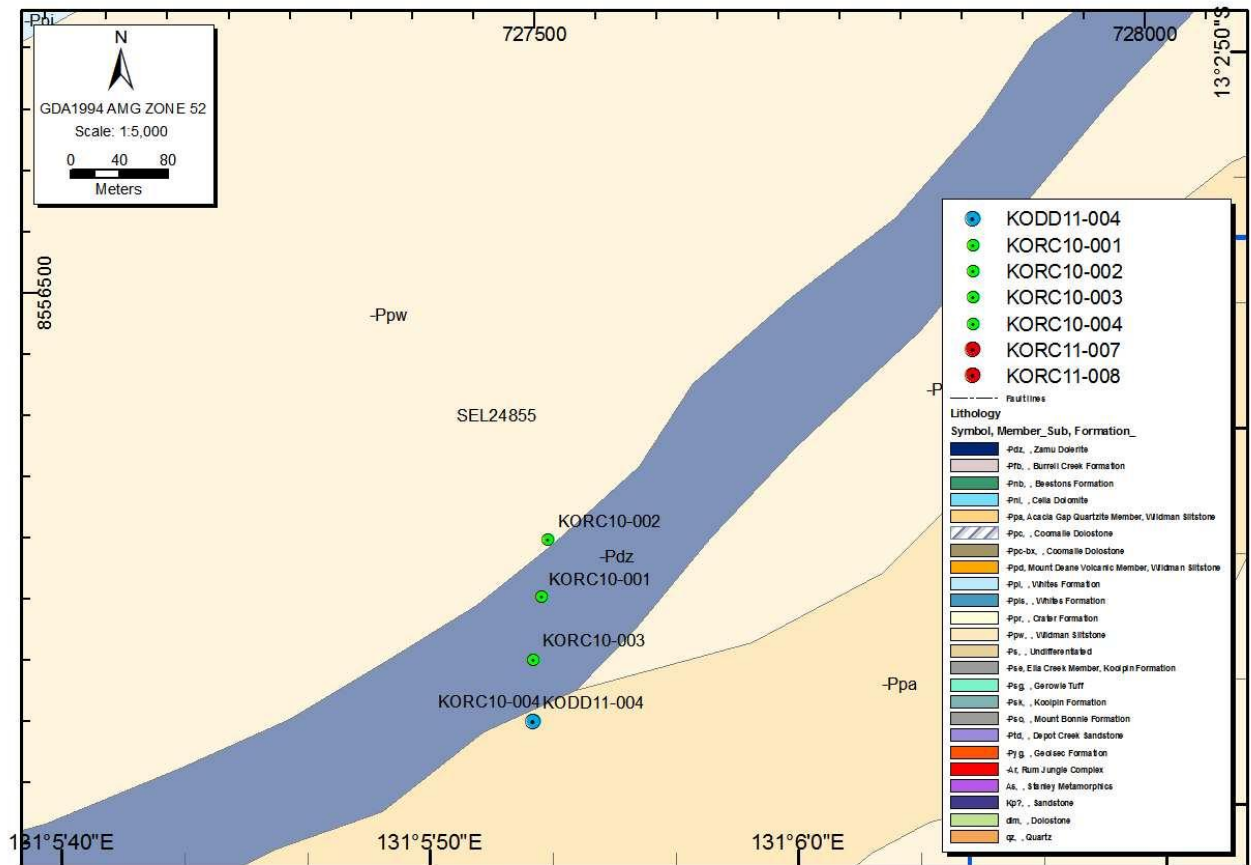
**Figure 2: EL 24855 Detail of Mt Deane Volcanics: Siltstone Grid**



**Figure 3 EL 24855 Location of all planned drill holes**



**Figure 4      EL 24855      Detailed location KODD11-004**





**Geological Map of the Longhielmo Section**

**Scale:** 0 to 20m.  $V = H$  Scale.

**Geological Units and Features:**

- Black Shales:** Located in the upper left, dipping to the right.
- MAPS / ULTRAMAFICS:** Highly altered, located in the center-left.
- METASEDIMENTS:** Located in the center-right.
- Structural Features:**
  - Line 727500 E:** A horizontal line across the top right.
  - Line 727500 E:** A vertical line on the left side.
  - Line 727500 E:** A vertical line on the right side.
  - Line 727500 E:** A vertical line on the far right side.

**Sample Locations and Descriptions:**

- 15151:** 3m from 10m N. (0-15m) (1m chips)
- 15152:** 3m from 10m N. (0-15m) (1m chips)
- 15153:** 3m from 10m N. (0-15m) (1m chips)
- 15154:** 3m from 10m N. (0-15m) (1m chips)
- 15155:** 3m from 10m N. (0-15m) (1m chips)
- 15156:** 3m from 10m N. (0-15m) (1m chips)
- 15157:** 3m from 10m N. (0-15m) (1m chips)
- 15158:** 3m from 10m N. (0-15m) (1m chips)
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- 15174:** 3m from 10m N. (0-15m) (1m chips)
- 15175:** 3m from 10m N. (0-15m) (1m chips)
- 15176:** 3m from 10m N. (0-15m) (1m chips)
- 15177:** 3m from 10m N. (0-15m) (1m chips)
- 15178:** 3m from 10m N. (0-15m) (1m chips)
- 15179:** 3m from 10m N. (0-15m) (1m chips)
- 15180:** 3m from 10m N. (0-15m) (1m chips)

**Other Notes:**

- Proposed deepening of KORC-003 to 18m.**
- Line 727500 E**
- Line 727500 E**
- Line 727500 E**
- Line 727500 E**

**Figure 6**      **HyLogger Image KODD11-004 Core**

