

**BONDS RANGE PROJECT  
TASMANIA  
EL28/2002**

**SIX MONTH PROGRESS REPORT  
31<sup>ST</sup> JANUARY 2006 TO 31<sup>ST</sup> JULY 2006**

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<p>The conclusions and recommendations expressed in this report / table represent the opinions of the Authors based upon the data available and provided to them. The opinions and recommendations provided from this information are in response to a request from the client and no liability is accepted for commercial decisions or actions resulting from them.</p>
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**ABSTRACT**

The following is a 'Progress Report on Exploration Activities' at Exploration Licence 28/2002, Bonds Range, for the six-month period starting on the 31 January 2006 and finishing on the 31 July 2006'.

Activities during the six-month period include;

- Conducting a soil geochemical programme in areas deemed to be 'prospective' from processed ASTER satellite data and historical exploration datasets.
- Validation and review of existing data before capturing it in proprietary Geoinformatics database systems (e.g. FracSIS) and carrying out three dimensional modelling of the data. Followed by target generation and ranking of targets using further proprietary software and systems (e.g. Monte Carlo).

The report has been written to meet any additional reporting requirements stemming from the six-month deferral in exploration expenditure granted to the company by the MRT on the 21 December 2005.

All exploration activities are being conducted in an environmentally sensitive manner.

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# **1 INTRODUCTION**

This report is a summary of the exploration activities conducted on the Bonds Range exploration licence, EL28/2002 (Figure 1), for the period of 31 January 2006 to 31 July 2006. The licence covers a total area of 54km<sup>2</sup> and is due to expire on the 31<sup>st</sup> January 2008. A Farm in and Joint Venture Agreement between Adamus and Bass commenced in April 2005. Bass is currently managing exploration at the licence from a base at the Hellyer Mine site.

The license is located in the northwest corner of Tasmania and contains a portion of the prospective Mount Read Volcanics belt ("MRV"). This belt hosts a number of large VHMS deposits in the nearby area, including, Hellyer (Pb-Zn-Ag-Au) and Que River (Pb-Zn) as well as having potential to host younger Devonian aged deposits including tin and gold (e.g. Mt Bischoff). Exploration at Bonds Range is likely to be for Cambrian VHMS deposits and Devonian granite and hydrothermal related deposits (eg Ten Mile Creek).

The reports main objective is to meet any additional reporting requirements after the Department of Mineral Resources Tasmania granted a six month deferral of expenditure on 21 December 2005.

## **1.1 Location:**

The Bonds Range License is located northeast of Rosebery, on the west coast of Tasmania (Figure 1). A partial relinquishment at the end of the second year resulted in the license area being reduced from the originally granted block of 106km<sup>2</sup> to three blocks that total 54 km<sup>2</sup> in area. The licence area can be found on the Sophia and Hellyer (1:100,000) map sheets.

The southern two blocks are bound to the west by Lake Macintosh and to the east by the Cradle Mountain – Lake St Claire World Heritage Area. They can be accessed by driving south along the Cradle Mountain Lodge Road and then west along the northern boundary track of the World Heritage Area. The Cradle Mountain Link Road (C132) touches the south-eastern corner of the northern block giving direct access. Access to most of the licence is either by quad bike, on foot or by helicopter.

Topographically the area runs along the Bonds Range and is quite variable displaying steep wooded slopes, deeply incised valleys and grassed flat plateaus and broad plains. The licence area encroaches on several conservation areas. Including the Vale of Belvoir and Black Bluff Conservation Areas.

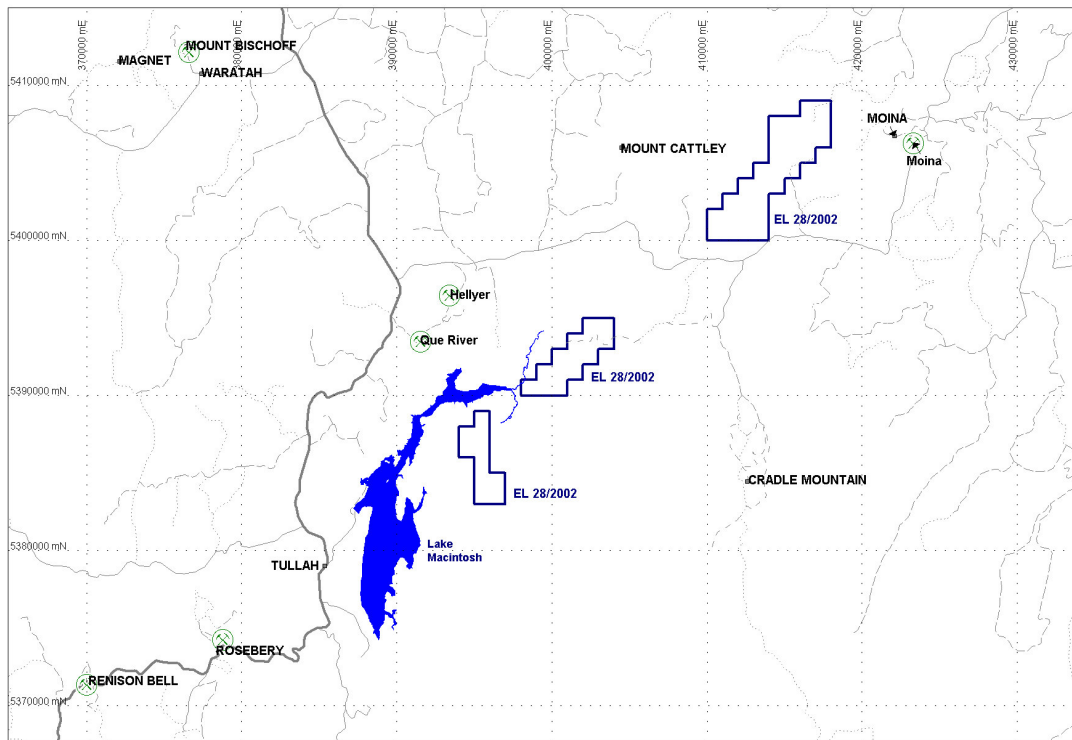


Figure 1. Bonds Range Tenement (EL28/2002). Located in North-western Tasmania.

## 1.2 Geology Overview:

The oldest rocks in the licence area belong to the Mesoproterozoic to Neoproterozoic Tyennan Metamorphics (Seymour *et.al.*, 2006) and possibly underlie much of Tasmania including the Dundas Trough. The Mt Read Volcanics (“MRV”) are a Cambrian belt of rocks that lie unconformably on top of the Tyennan Metamorphics. Owen Group sediments are Cambrian to Devonian in age and overlay the MRV in the west and north of the licence. Tertiary basalts and Quaternary sediments are mostly confined to the northern most license block, where they crop out over the southern half of it. Refer to the Regional Geology Map in Figure 2.

### 1.2.1 Tyennan Metamorphics

The Meso-Neoproterozoic Tyennan Metamorphics are confined to the southern half of the southern most license block. According to Bulletin 72 (Seymour *et.al.*, 2006), the Tyennan Metamorphics are a complex thrust stack of two units:

- A low-grade (up to greenschist facies) assemblage of metaquartzite and graphitic metapelite. Derived from an early Neoproterozoic sedimentary sequence broadly similar to the Rocky Cape Group of northwest Tasmania.
- A high-grade (up to eclogite facies) assemblage of garnetiferous schist-quartzite-(amphibolite) and mafic meta-igneous rocks. Recent dating favours a Mesoproterozoic age (Franklin Metamorphic Complex).

The Romulus East Prospect is located in the Tyennan Metamorphics.

### **1.2.2 The Mount Read Volcanics**

The Mt Read Volcanics are a belt of volcanic, volcanoclastic and sedimentary rocks of Mid- Cambrian age. The belt is famous for hosting Tasmania's world-class polymetallic VHMS deposits (eg Rosebery, Hellyer, Que River).

#### *Andesite Occurrence*

The northernmost licence block is mapped as having an occurrence of andesite amongst Tyndell Group correlates. The andesite may indicate the presence of a new or equivalent cycle of volcanism to the Hellyer-Que River Volcanics. Or it may be of less significance belonging to the basal beds of the Tyndall Group.

#### *Western Volcano-Sedimentary Sequence*

A small area in the northernmost license block is mapped as belonging to the Western Volcano-Sedimentary Sequence. This unit is coeval with the Central Volcanic Complex of the MRV though older than the above Tyndall Group. It is described as including beds of lithicwacke turbidite, mudstone, siltstone and shale. It also contains subordinate intrusive and volcanic rocks, which are commonly andesitic (Seymour *et.al.*, 2006).

#### *Bonds Range Quartz Feldspar Biotite Porphyry*

The Bonds Range Quartz-Feldspar-Biotite (+Hornblende) Porphyry crops out over significant areas in each licence block. It is recorded as being complex showing variations in colour, grain size, degree of alteration and deformation, and phenocryst assemblage (Geol Rep 4). It hosts a quartz-hematite stockwork (containing gold mineralisation) at Ten Mile Creek.

#### *Tyndall Group*

The Tyndall Group is a unit of quartz-bearing volcanoclastic sandstone and conglomerate. Though also contains minor volcanic, intrusive and ignimbritic rocks of mixed felsic and andesitic provenance (Seymour *et.al.*, 2006).

### **1.2.3 The Owen Group**

The Owen Group is Cambrian to Ordovician in age and sits unconformably on the Mt Read Volcanics. The unit typically includes large volumes of coarse siliclastic conglomerate composed dominantly of metaquartzite clasts derived from the Tyennan Metamorphics, but also includes turbidite and shallow marine sandstone units (Seymour *et.al.*, 2006). It is not likely to host any exhalative styles of mineralisation such as Taylor and Mathison (1990) report for the younger Gordon Group. However, it could host mineralisation associated with Late Devonian–Early Carboniferous granitoids.

### **1.2.4 Tertiary Basalts**

Radiometric dates from basalts across Tasmania indicate an age range of between 16.4Ma and 64.5Ma (Everard *et al.*, 2004). At the licence these basalts cover a significant amount of the north most licence block. These basalts most likely sit on the Back Peak Beds and the Sticht Range Formation. These units host historical copper workings to the south at Lake Dora and Mt Selina (Rust *et al.*2005).

### **1.2.5 Quaternary Sediments**

Pleistocene glacial deposits and Holocene alluvium cover a portion of the northern most license block. These units sit on the Tertiary basalt and underlying units of the MRV (Rust *et al.*2005).

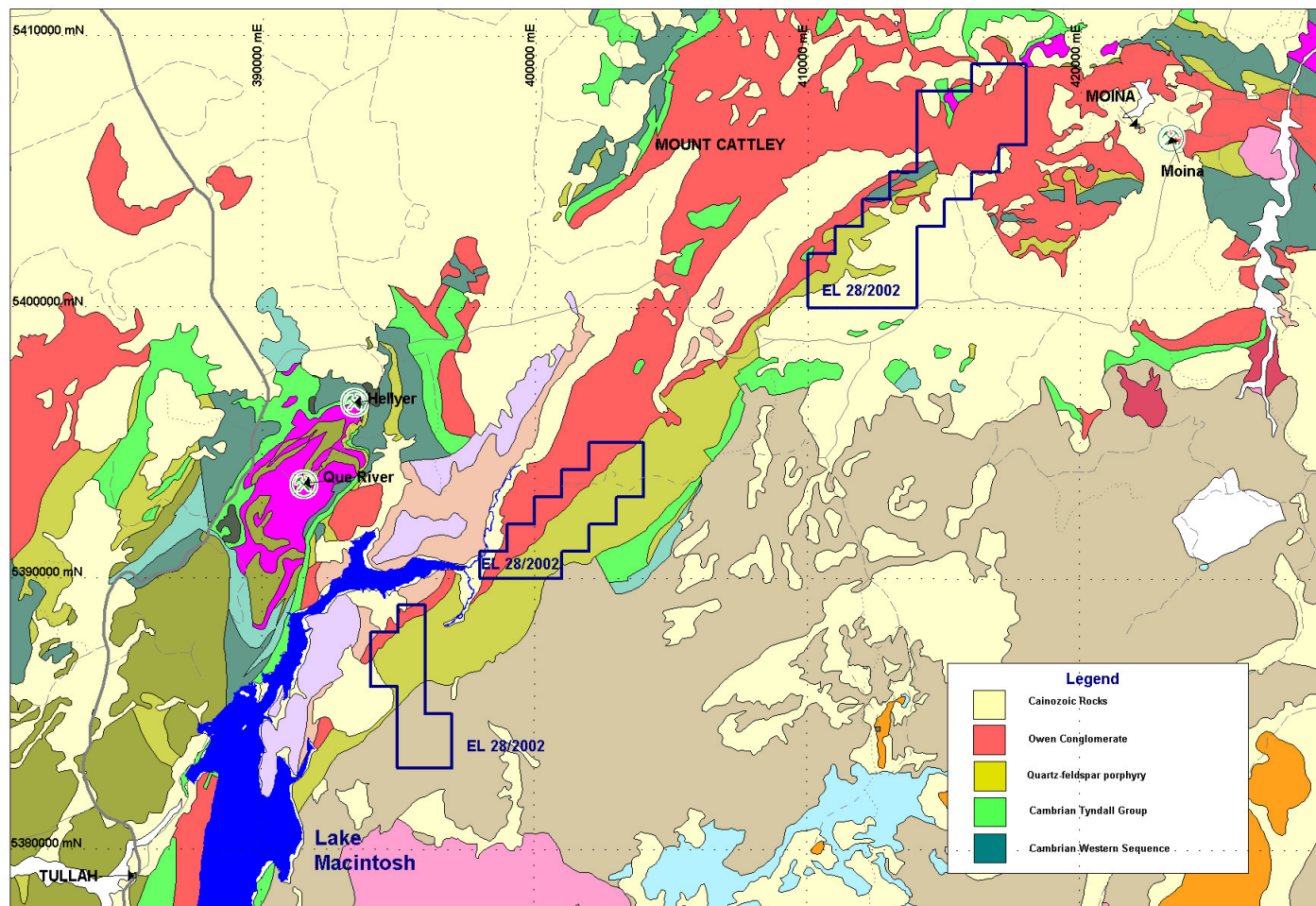


Figure 2. Regional Geology showing Licence Area boundaries, roads and towns.

### **1.3 Exploration Rationale:**

EL28/2002 was acquired for two reasons. The first was to explore for polymetallic VHMS deposits similar to those in the adjacent Hellyer and Que River mineral field. The second was to explore for gold deposits of several possible genetic styles.

#### *Northern Licence Block*

The northernmost licence block offers the best prospectivity for VHMS deposits. This licence block has mapped occurrences of andesite, Western Volcanic Sequence and the younger Tyndall Group. Owen Group Conglomerates contain gold workings in the area and may be thin enough in places to enable testing of the MRV units beneath their cover. The Back Peak Beds and Stitch Range Formation are less prospective for VHMS deposits though in areas of little or no Tertiary Basalt or Quaternary Sediment cover are worth exploring.

#### *Southern Two Licence Blocks*

The southern two licence blocks also contain several workings and prospects. These workings and prospects mostly test epigenetic (fault hosted) styles of base metal and gold mineralisation. The Cambrian Bonds Range QFBP hosts the Ten Mile Creek prospect where quartz-hematite veining extends over a 2 kilometre strike length. Samples collected from chlorite and sericite wall rock alteration at minor workings at the prospect produced gold grades as high as 8.08ppm.

## **2. WORK COMPLETED**

### **2.1 Historical Mining:**

Historical work in the license area commenced in the mid 1890's with the discovery of an auriferous gossan, by prospector B.L.F.G. Thomas, near the northern end of the Bonds Range. Primarily searching for base metals, bismuth, tin and gold, a number of leases were taken up around this area, including a number of small scale mining ventures at Blacks, Golden Cliff, Mt Stormont and further south towards Speeler and Fleece Creeks. At the Blacks Mine trenches and a number of prospecting shafts and tunnels were excavated into pink quartzite and conglomerate with pyrite quartz veining. Limited small-scale alluvial mining was undertaken in the adjacent creeks. This field was worked up until the outbreak of World War One. Assay results for the field show a degree of variation, due in part to the presence of nuggety free gold. The Blacks Mine reported dump samples of between 5 to 14 dwt per ton, whilst Mr Hartwell Condor, in a 1903 visit to the area, reported a number of samples between 3 to 6 dwt per ton from dumps associated with small shafts and drives. There are a number of other historical workings in the area to the northeast including the Davenport gold workings. (Rust, 2005)

### **2.2 Exploration Prior to Current Licence Area:**

Modern exploration efforts in the Bonds Range region commenced in the mid 1960's. A summarized version of the history reported in the Bonds Range 2005 Annual Report can be found below:

**Date:** 1965 - 1971

**Company:** Picklands Mather Company International

**Exploration Philosophy:** Focus on locating base metals (Cu, Zn, Pb), gold and osmiridium utilising geophysical methods, mapping and stream sediment sampling.



**Work Completed:** A total of 52 stream sediment samples were collected from the Lea River, Fall River, The Vale of Belvoir and the drainages into Lake Lea from the Black Bluff Range.

**Results and Conclusions:** No further work was recommended by Smith (1968).

**Date:** 1970 - 1989

**Company:** Aberfoyle Limited

**Exploration Philosophy:** Focus on locating base metal deposits (Cu, Zn, Pb).

**Work Completed:** In work relevant to Bonds Range; Aberfoyle undertook soil, rock chip and trench sampling for Cu, Pb, Zn and Ag in the Fleece Creek and Back Peak areas (Krummei, 1970). Joint Venture partners Geopeko Limited and Cypress Minerals Australia undertook geophysical (EM), geochemical (soil, stream sediment, rock chip) and diamond drilling programmes between 1979-1987.

**Results and Conclusions:** An anomalous rock chip from the Carter prospect returned 4.04%Pb, 2.3%Zn, 16g/t Ag and 0.08g/t Au. Results from the diamond drilling were disappointing. No further work was recommended by Jones (1986a&b).

**Date:** 1973 - 1974

**Company:** Tasminex

**Exploration Philosophy:** Focused on a radiation anomaly in stream waters taken from a tributary flowing into the Lea River.

**Work Completed:** Technical reports could not be found.

**Results and Conclusions:** Technical reports could not be found.

**Date:** 1974 - 1978

**Company:** Cominco Exploration Pty Ltd & Paringa Mining and Exploration Company Pty Ltd in joint venture with Aberfoyle Limited.

**Exploration Philosophy:** Originally part of EL2/70 the area was relinquished then reacquired after the discovery of the Que River deposit.

**Work Completed:** A total of 97 stream sediment samples were collected.

**Results and Conclusions:** No significant results were reported (Rabone 1975).

**Date:** 1974 - 1983

**Company:** Geopeko Limited and Union Oil Development Corporation.

**Exploration Philosophy:** Focused on exploring for VHMS deposits early on. There was a shift in exploration focus to Sn-W and gold mineralisation towards the end of the licenses life.

**Work Completed:** Over 1,397 geochemical samples (soil, rock chip, stream sediment, panned concentrate) were collected from a number (est. 10) of independent geochemical programmes. A Dighem II survey flown in early 1980 identified seven target areas. Follow up percussion drilling could not penetrate a surface basalt unit. A diamond drill hole at Mariner 6 failed to locate any significant mineralisation.

**Results and Conclusions:** A series of targets and prospects named Mariner 1 to 7 and occasionally suffixed with A, B or C were located. Despite some interesting results the license was relinquished in late 1983 (Pemberton, 1983).

**Date:** 1978 - 1983

**Company:** Alcoa Australia and Shell Australia

**Exploration Philosophy:** Focused on exploring for tin and tungsten mineralisation with VHMS deposits a secondary target.

**Work Completed:** Airborne magnetic surveys identified 24 targets. Geochemistry at the targets (stream, soil and rock-chip sampling) identified some weak Pb – Zn anomalism at Romulus West and Fury Flats. A separate stream sediment programme of 26 samples identified a tin, tungsten and gold anomaly along Ten Mile Creek. A peak gold concentration of 1.20g/t was recorded at 39935E and 5391550N. At Romulous East 7 rock chip samples from a quartz veined gossan returned peak values of 14.2% As, 2.6% Pb and 2.3g/t gold. A total of 59 stream sediment samples were collected in the same area. One sample returned a peak value of 2.80g/t gold from Backwater Creek (5387700N and 395500E).

**Results and Conclusions:** Results were generally disappointing and the licence was relinquished (Porter, 1976).

**Date:** 1980- 1983

**Company:** Aberfoyle Ltd, Geopeko Ltd and Paring Mining and Exploration Company Pty Ltd.

**Exploration Philosophy:** Focused on exploring for tin, tungsten and base metal VHMS deposits.

**Work Completed:** An airborne electromagnetic survey with follow-up soil and selected rock chip sampling.

**Results and Conclusions:** Results were generally disappointing and the licence was relinquished (Heithersay 1982, Pemberton and Sumpton 1984).

**Date:** 1984- 1990

**Company:** Renison Goldfields Consolidated Pty Ltd.

**Exploration Philosophy:** Focused on exploring for gold and base metal VHMS deposits.

**Work Completed:** A stream sediment sampling programme collected 122 samples from the Devonport Mine, Deep Creek along the Kauri Fault and the Mariner 4 and 6 areas. An assortment of geochemistry was conducted in the following areas; Mariner 4, 5, 6 and 7, Devonport Creek and its main western tributary, Devonport Mine, Iris River and Deep Creek. The programmes included; break of slope samples, rock chip samples, rock samples for petrology, soil sampling and channel sampling. A drilling programme of 21 short (<50m) diamond drill holes (SD001-SD021) was undertaken in the Stormont (Bi-Au) Mine and Fletchers Adit area during 1989-1990. Some grades up to 13 g/t Au were reported. This area lies to the east of the current Bonds Range licence.

**Results and Conclusions:** Following a review of all of the work completed the licence was relinquished (Castro and Fleming, 1990).

**Date:** 1984- 1992

**Company:** CRA Exploration Pty Ltd

**Exploration Philosophy:** Focused on exploring for gold deposits.

**Work Completed:** Rock chip sampling at Romulus East (24 samples) and Ten Mile Creek (15 samples). Two peak values of 1.04g/t and 8.08 g/t gold were returned from the sericitised porphyry at Ten Mile Creek. At Ten Mile Creek 27 bedrock samples were taken along a line (5391000N and 400000E). An additional 9 rock-chip and 2 stream sediment samples were also collected. Anomalous gold concentrations were recorded in samples taken from Hematitic stock-work samples.

Between 1988-1989 Aberfoyle entered into a Joint Venture with CRA. Work concentrated on Ten Mile Creek – with a programme of gridding, mapping and geochemical sampling. A total of 322 C-horizon soil samples were taken from the 2 kilometre long hematitic stock work zone. A number of anomalous results were identified and typically found to be associated with the hematitic stock work. A total of 45 rock-chip samples were collected. A stream sediment sampling programme to the northeast tried to locate extensions to the deposit.

Following departure of Aberfoyle from the joint venture a diamond drilling programme was undertaken at Ten Mile Creek in February 1992. Four holes (TMC1-4) utilizing a man portable drill rig was completed for a total of 153.7 metres. TMC2 returned a peak value of 3 metres at 0.11g/t gold. TMC3 returned values up to 0.12g/t gold. TMC4 returned the best result of 1 metre at 0.52g/t gold near the bottom of the hole between 48-49 metres. The hole was terminated as it entered a zone of intense stockwork and veining.

**Results and Conclusions:** Following a review of all of the work completed the licence was relinquished (Newnham, 1992).

**Date:** 1987- 1988

**Company:** Billiton Australia and Shell Company of Australia

**Exploration Philosophy:** Focused on exploring for gold and base metal VHMS mineralisation at Mariner 1 and 2 prospects.

**Work Completed:** A field programme comprising limited stream sampling, C-horizon soils, mapping and rock-chip sampling was conducted during the tenure period. A total of 158 soil samples were taken from the Mariner 2 area. A southeast trending ellipsoidal gold anomaly was located in the vicinity of 401500E and 5401200N with a peak value of 0.29ppm Au. Ten sites in the Fall and Iris River catchments were sampled and analysed using BLEG. Ten rock chip samples were also collected. Results were weakly anomalous (Randell, 1988a).

**Results and Conclusions:** Following a review of all of the work completed the licence was relinquished (Randell, 1988a).

**Date:** 1987- 1989

**Company:** Aberfoyle Ltd and CRA Exploration Pty Ltd under the Mount Read Volcanics Joint Venture.

**Exploration Philosophy:** Focused on exploring for gold and base metal VHMS mineralisation.

**Work Completed:** In the area North of Ten Mile Creek 50 C-horizon soil samples were collected. Three moderately anomalous samples were reported. A peak grade of 0.152 Au was reported from 5392220N and 401390E though could not be explained by the presence of veining or alteration. A handful of rock chip and stream sediment / BLEG

samples were collected though all reported disappointing results.

**Results and Conclusions:** Following a review of all of the work completed the licence was relinquished (Henham, 1989c).

**Date:** 1987- 1989

**Company:** Billiton and Shell Company of Australia.

**Exploration Philosophy:** Focused on exploring for base metal VHMS deposits.

**Work Completed:** Work comprised conducting broad spaced mapping and stream sediment sampling. A total of 20 BLEG and –80# duplicate stream samples were collected. One sample returned a value of 0.14 g/t in a North draining Creek near Back Peak (405840E and 5393100N). Exploration also involved ground truthing of Speeler Creek, Carters and Heap of Rocks prospects. At Carters and Heap of Rocks Prospect a total of 30 soil samples were collected to confirm previously identified anomalism. At the Speeler Creek Prospect a previously identified polymetallic anomaly (2200ppm Pb, 820ppm Zn and 0.25-0.35ppm Au) associated with a weak EM37 anomaly was targeted for drilling. Diamond drill hole BPD88-1 (166m @-50/132mag) was completed in December 1998.

**Results and Conclusions:** Results were uniformly discouraging and the licence was relinquished (Randell 1988b, 1989).

**Date:** 1987- 1998

**Company:** Aberfoyle Ltd.

**Exploration Philosophy:** Focused on exploring for base metal VHMS deposits.

**Work Completed:** Work comprised regional mapping and 2 diamond drill holes in 1988. Diamond drill hole MAC16 (367.4m) on the Fury Flats was drilled into the Central Volcanic Complex of the Mount Read Volcanics because of the presence of wall rock alteration typically associated with VHMS deposits. MAC20 (397.5m) on the Macintosh Creek aimed to test for mafic volcanic units beneath Tertiary basalt cover.

**Results and Conclusions:** No significant results were returned (McNeill 1989).

**Date:** 1994- 1997

**Company:** Rio Tinto Exploration Pty Ltd.

**Exploration Philosophy:** Focused on exploring for sediment hosted, low sulphide, Carlin style gold deposits.

**Work Completed:** A geochemical programme (-80# soil, stream sediment and panned concentrate sampling) was conducted over the Ordovician Gordan Limestone and Moina Sandstone during 1997. Caverners Creek and Mayday gold workings were rock-chipped (49 samples) and soil sampled (12 samples).

**Results and Conclusions:** The results were not encouraging (Menples 1996, Russell 1998).

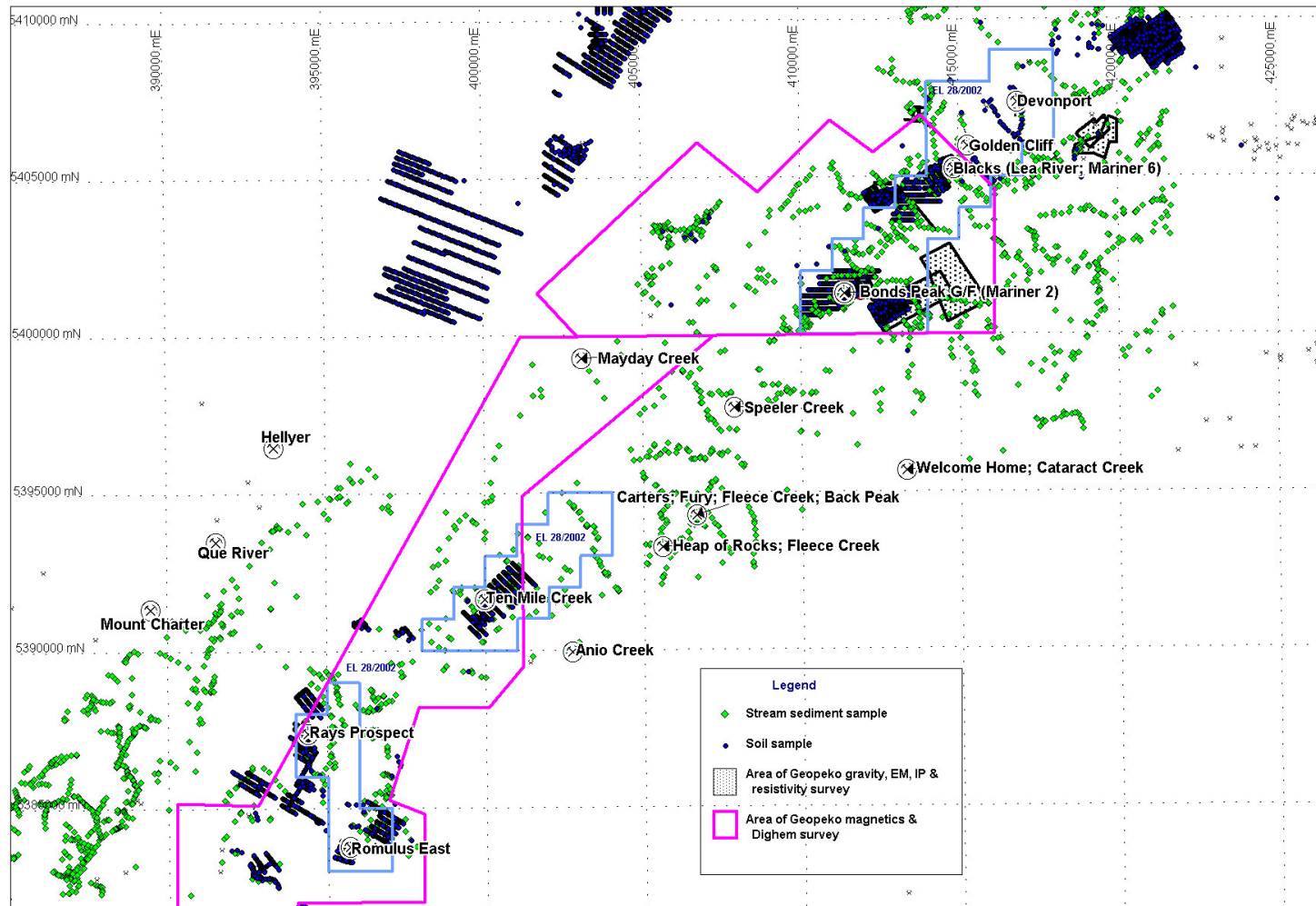


Figure 3. Historical Exploration Activity Map, showing old workings and prospects.

### **2.3 During Current Licence Area Pre 31<sup>st</sup> January 2005:**

- Literature reviews of historical exploration data, technical and annual reports.
- Compilation of historical data available from open file sources.
- Adamus conducted gridding and soil sampling over selected targets.
- Bass planned a soil geochemical programme.

DRAFT

### **3. EXPLORATION COMPLETED 31 JANUARY 06 TO 31 JULY 06**

The below section reports on exploration conducted between the 31 January and the 31 July 2006. The work conducted during this period included; (1) a soil geochemical program; and, (2) the compilation of data into a proprietary Geoinformatics database before three-dimensional modelling of the data and target generation was carried out.

#### Geochemical Programme

An 'exploration proposal' to conduct a soil sampling programme at Bonds Range was submitted to the MRT in November 2005. There were three main areas that were selected for soil sampling. Areas 1 and 2 were testing the Mariner 1-3 prospects and Area 3 was testing the Mariner 6 prospect (Geopeko first identified these prospects between 1974-83). The MRT granted the company approval in January 2006. Due to some hold-ups at the Kentish Council the programme was not commenced until April 2006. The last samples had been collected by the end of July 2006.

#### *Logistics*

The program was carried out on both conservation areas and private (freehold land). Consequently much of the area explored was densely vegetated and contained native fauna. Care was taken to look out for any areas infected with the *Phytophthora cinnamomi* fungus to enable the area to either be avoided or control measures to be put in place. None of the field staff reported entering any such areas though hygiene measures as outlined in the 'Mineral Exploration Code of Practice' were adhered to. The sampling procedures used are outlined below;

A Honda Big Red quad bike was floated to the nearest public road access point. The bike was then used to transport the samplers and sampling equipment to the general sampling area for that day. Any wet or muddy routes were avoided and in instances where they could not be avoided the bike was cleaned at the point of soiling. After completing a day of work the bike was then used to transport everything (as well as the collected samples) back to the main vehicle.

Access to the sample sites involved the cutting of 'minimal impact lines' at 200 metre intervals. Essentially a field technician with a chainsaw walked the lines cutting only that vegetation that was blocking access. This essentially equated to the cutting of larger shrubs along a total of 22.525 grid line kilometres.

Sample sites were measured out using a tape measure hip-chain at 50 metre intervals and were only ever accessed by foot with paths routinely less than 1 metre in width.

Once at a sample site if ground vegetation and litter was present it was scraped to the side. A hand auger was then used to drill between 20cm and 1.4 metres through vegetation and humic topsoil. A sample that varied between 0.8kg and 2.55kg was collected from the bottom of the hole. The hole was then backfilled and any vegetative litter raked back over the top of the area so that evidence of soil sampling was almost zero.

At all times during the cutting of grids and collecting of samples care was taken to avoid the transfer of soil or vegetation. With tools, shoes and clothing being cleaned of loose

soil or vegetation after each sample was collected to minimize the transport of noxious weeds and plant diseases.

The samples were transported back to the Hellyer base camp before being dispatched to Genalysis Laboratory Services Pty Ltd in WA for Au, Ag, As, Bi, Cu, Mo, Pb, Sb, Ti and Zn assay. Copper and Zinc were analysed for using Atomic Absorption Spectrometry (AAS). All other elements were analysed for using Inductively Coupled Plasma – Mass Spectrometry (ICP-MS).

A total of 505 samples were submitted for assaying. This included 463 field samples and a further 42 check samples that were submitted for quality control purposes.

### *Results*

Normalising and then summing groups of metals that are commonly associated (eg Pb-Zn-Ag, Pb-Zn, Cu-Zn, Cu-Zn-Au, Cu-Au) identified one main anomaly and two areas with elevated metal content in the Bonds Range programme. These anomalies are described below;

- The main anomaly is in the vicinity of the Mariner 3 prospect. At this prospect the southern most grid line 5,400,800mN shows anomalous lead, zinc and silver grades. Lead grades are typically above 75ppm, zinc typically greater than 70ppm and silver is elevated. Sample number 141,758 reports a lead grade of 4,468ppm (ie 0.45wt%), zinc grade 144ppm and silver 1.55ppm. Historical stream sediment samples down slope from the site are anomalous and support the anomaly. Additional sampling may be required to close the anomaly off to the south.
- The second area was the Mariner 2 prospect (Bonds Peak Prospect). At this prospect an area of elevated copper and zinc is measured across the northeast corner of the sampled area. The eastern end of line 5,401,400mN also shows elevated lead and silver concentrations. They peak at 626ppm lead and 0.24ppm silver. Additional sampling may be required to close this anomaly off in the east.
- The third area was at the western end of line 5,405,000mN. It could be described as being an area of elevated copper, lead, zinc, silver and gold grades. The most strongly metal endowed sample in the area is number 141,985 that contains 95ppm copper, 291ppm lead, 189ppm zinc and 0.13ppm silver.

Refer to Appendix 1 for assay results for the soil geochemical programme. Appendix 3 contains the data in digital text file formats.



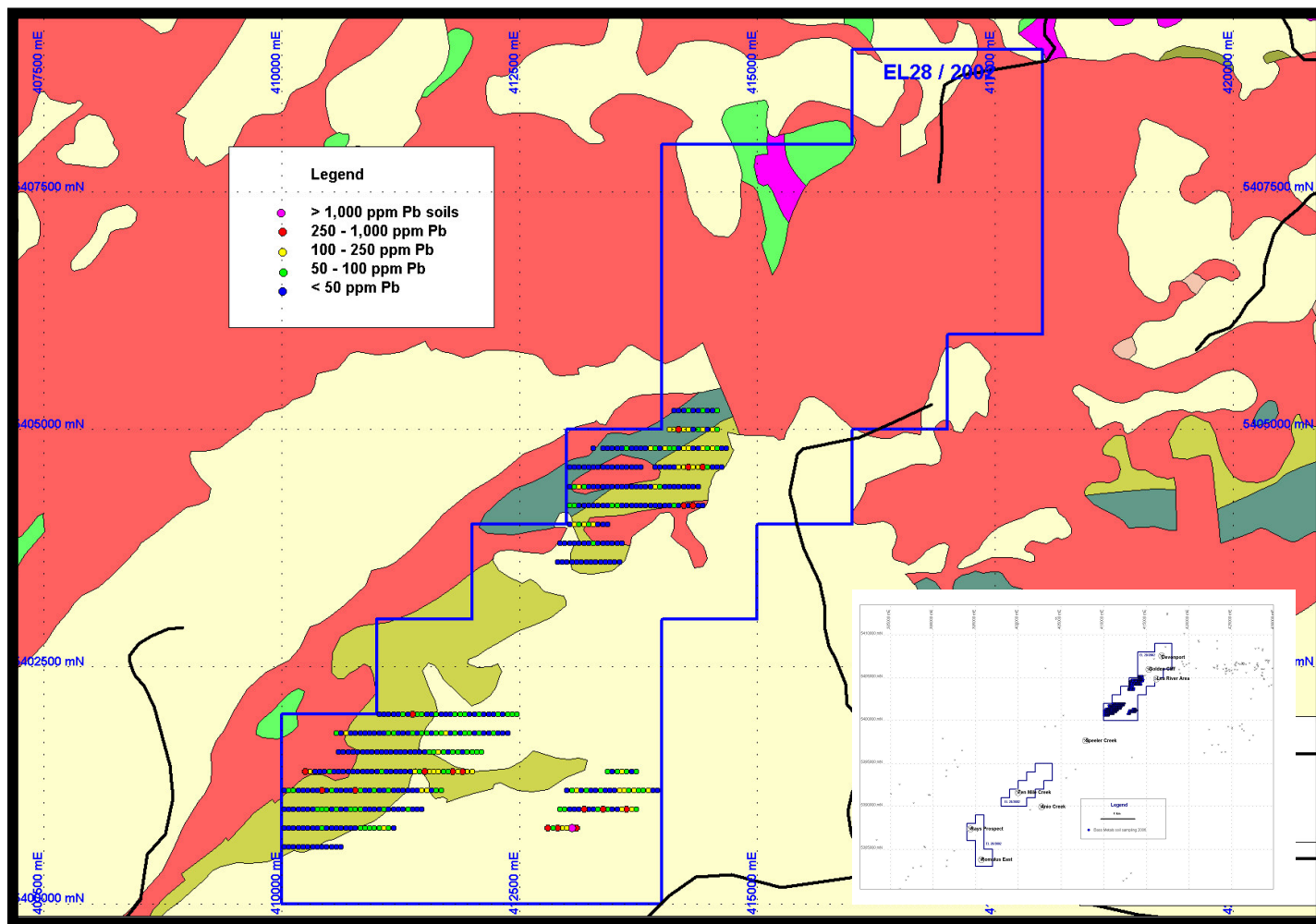
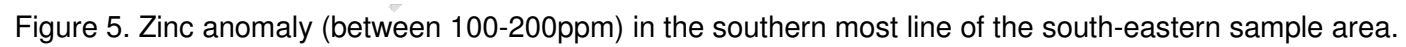


Figure 4. Lead anomaly (4,468ppm) in the southern most line of the south-eastern sample area.



## Geoinformatics Geological Modelling & Targeting

The Geoinformatics process involves the efficient capture of historical data in proprietary Geoinformatics database and software systems (eg IFS & FracSIS). Proprietary software and methods are then used to generate 3-dimensional geological models and targets (Monte Carlo Ranking). The Bonds Range work is part of a larger 'Intervention Project' called the MRVIP (Mount Read Volcanics Intervention Project - Stage 1b). The Stage –1b Project focuses on all of Bass Metals 13 regional licences. A final Stage-2 Project focused on regional target generation without consideration of licence boundaries though is not reported on here.

The Stage 1b Project attempts to incorporate Geoinformatics understanding of the three dimensional controls on world class VHMS mineralization to rapidly provide Bass with high-quality targets in the Bonds Range licence for rapid drill testing and other areas for follow-up field work including soil type geochemistry. Models were also developed for the targeting of intrusive related tin systems (e.g. Renison and Mt Bischoff) and intrusive related nickel skarn systems (e.g. Avebury). Targets were identified and ranked according to probabilistic Monte Carlo analysis of best-available 2D and 3D geoscientific data and allowed an assessment of exploration risk and uncertainty.

Much of the data for the project was obtained from open file reports. A data audit of 1,300 reports was completed by Dan Core, Graeme Cameron, Neville Panizza and Helen Ly. Work on the Stage 1b Project commenced in early February 2006 and was largely complete by July 2006. A target workshop with alliance personnel was held at Hellyer in July 2006 and final targets are being delivered in August 2006.

At Bonds Range Geoinformatics generated a total of seven VHMS style targets. All targets were at the northern end of the northern most licence block with the exception of one. They included two Mt Lyell style VHMS targets and two Rosebery - Hellyer style VHMS targets. A further two Rosebery (Hellyer) style VHMS targets were located east of the licence. The one target not found at the northern end was located on the south-western corner of the central licence block (Figure 6).

Refer to Appendix 3 for a summary Geoinformatics report.

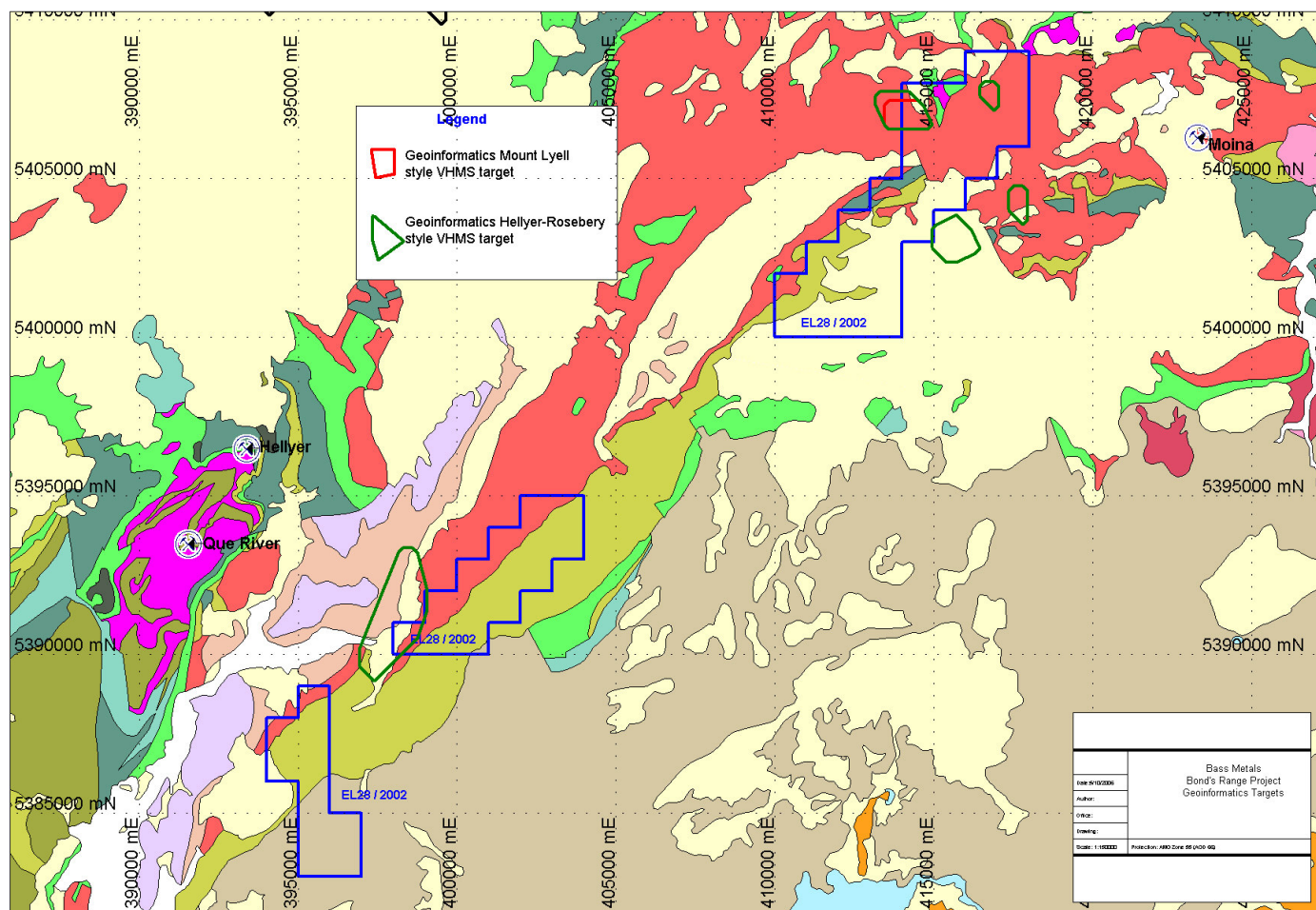


Figure 6. Bonds Range Geoinformatics VHMS targets.

#### 4. PROPOSED WORK PROGRAMME

Drill testing of the coincident Pb-Zn soil anomaly and geophysical anomaly is proposed at the Bonds Range Project. The current plan is to drill two 150m deep diamond holes into the anomaly.

#### Budget

Geologist & Technicians Time (\$800 day)  
Drilling (300m @ \$180/m)  
Assaying (\$20 sample)

	\$10,000
	\$54,000
	\$6,000
<b>Total</b>	<b>\$70,000</b>

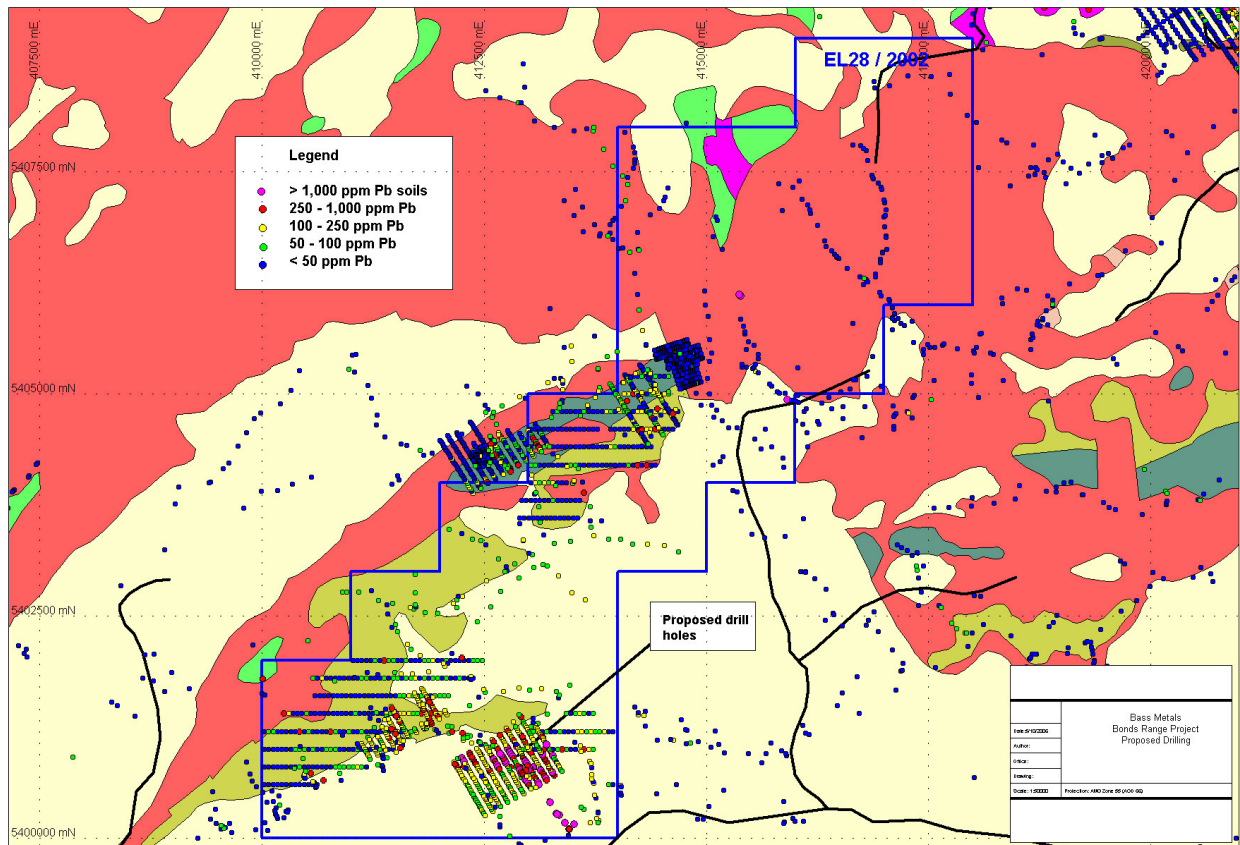


Figure 7. Location of planned drilling.

## 5. ENVIRONMENT

The bulk of the soil sampling programme was carried out in the Vale of Belvoir and Black Bluff Conservation Areas as well as on private freehold land (Figure 8). Prior to starting the program all staff were made aware of the importance of minimizing the impact that exploration activities had on the environment and the risks associated with spreading plant diseases and weeds as a result of day to day exploration tasks.

By the end of the programme approximately 25.525km of line cutting had been completed. All lines cut were less than 1 metre wide and entrances had been cut at an angle to existing tracks. A total of 463 samples were collected using a drill auger and the holes were backfilled after each sample had been collected. Vegetative litter was raked back over the hole before moving onto the next site so that evidence of a soil sample being taken was almost zero.

Following the completion of soil sampling all sample sites were infilled and rehabilitated and all rubbish was removed from the area. The gridlines that were cut have been partially covered so as to allow access at a later date should it be required. If no further access is deemed necessary lines will be rehabilitated in the manner required by the relevant state legislation.

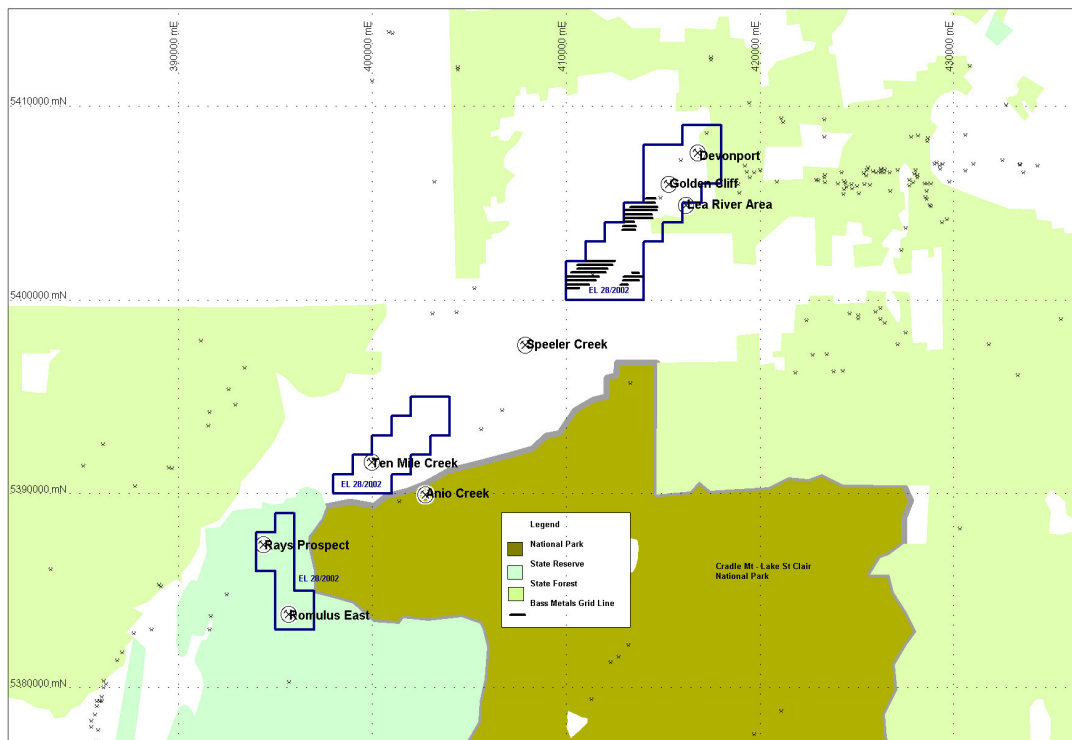


Figure 8. Environmental Activity Map showing the location of cut grid-lines Apr-Jul-2006.

## 6. EXPENDITURE

Period Ending	Mar-06	Jun-06	Jul-06	Totals
Administration	1,043.00	8,093.38	51.00	9,187.38
Geology-Personnel & Overheads.	9,311.35 <sup>1</sup>	28,680.82 <sup>1</sup>	3,683.00 <sup>1</sup>	41,675.17
Gridding		28,665.00	26,959.00	55,624.00
Geochemistry		15,398.57	7,551.00	22,949.57
Geophysics				
Drilling				
Feasibility Studies				
Rehabilitation				
Other – Safety Equipment	75.78	96.08		171.86
Adjustment (Admin<10%)				
<b>Total - Eligible</b>	10,430.13	80,933.85	38,224.00	<b>129,587.98</b>
<b>Cumulative Total</b>	57,822.48	138,756.33	177,000.33	177,000.33

Table 1. Expenditure 31 January 2006 to 31 July 2006.

*\*1 Including Geoinformatics costs.*

*\*2 Expenses for work commenced before the end of July 2006.*

Expenditure, for the six months 31 January 2006 to 31 July 2006, mainly comprised line cutting, soil sampling, analysis and data processing and interpretation. There was also MRVIP work undertaken by Geoinformatics on the licence during the period.



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## **APPENDIX 1**

**(Six Monthly Report)**

**Soil Sampling Location & Descriptions**

Sample No	AMG Northing	AMG Easting	Depth (m)	Horizon	Description	Colour
141501	5400600	410625	1.1	C	green quartz rock chips to rock	green
141502	5400600	410575	0.5	B	to rock	grey/brown
141503	5400600	410525	0.7	C	quartz rock chips	brown
141504	5400600	410475	1.1	B	quartz rock chips	brown
141505	5400600	410425	0.4	A/B	quartz rock chips	brown
141506	5400600	410375	1	C	green grey rock chips	or/brown
141507	5400600	410325	0.8	C	yellow rock chips	or/brown
141508	5400600	410275	0.5	C	yellow rock chips	or/brown
141509	5400600	410225	0.9	C	yellow rock chips	or/brown
141510	5400600	410175	1	C	green rock chips	or/brown
141511	5400600	410125	0.7	C	quartz rock chips	gr/or/brow
141512	5400600	410075	0.4	B	quartz rock chips	brown
141513	5400600	410025	0.4	B	quartz rock chips	brown
141514	5400800	411175	1.4	C	grey rock chips	grey/green
141515	5400800	411125	1.6	B/C	green rock chips	grey/green
141516	5400800	411075	1.6	A/B	poor sample	brown/blk
141517	5400800	411025	0.6	C	grey rock chips	yell/green
141518	5400800	410975	0.9	C	green rock chips	white/yell
141519	5400800	410925	1.2	C	green rock chips	grey/green
141520	5400800	410875	1.2	C	green rock chips	grey/green
141521	5400800	410825	1.6	A/B	poor sample	black
141522	5400800	410775	0.5	C	white/grey rock chips	grey/brown
141523	5400800	410725	0.8	C	grey rock chips	or/brown
141524	5400800	410675	1	C	green rock chips	or/brown
141526	5400800	410625	0.4	C	white rock chips	white/grey
141528	5400800	410575	0.3	C	white rock chips	white/grey
141529	5400800	410525	0.4	B	white rock chips	grey
141530	5400800	410475	0.3	B/C	white rock chips	green/brow
141531	5400800	410425	0.8	C	grey rock chips	brown
141532	5400800	410375	0.3	C	white rock chips	green/brow
141533	5400800	410325	0.8	C	grey rock chips	grey/brown
141534	5400800	410275	0.9	C	white rock chips	or/brown
141535	5400800	410225	0.3	B	white rock chips	brown
141536	5400800	410175	0.3	B/C	white rock chips	grey

141537	5400800	410125	0.7	C	quartz rock chips	brown
141538	5400800	410075	0.4	B/C	green rock chips	grey/brown
141539	5400800	410025	0.5	B/C	quartz rock chips	grey/blk
141540	5401000	411475	0.5	B	orange rock chips	or/brown
141541	5401000	411425	0.4	B	orange rock chips	or/brown
141542	5401000	411375	0.4	B	orange/green rock chips	or/brown
141543	5401000	411325	1	B	orange/grey rock chips	grey/or
141544	5401000	411275	0.5	A	orange/grey rock chips	grey/brown
141545	5401000	411225	0.8	B	quartz rock chips	grey/brown
141546	5401000	411175	0.5	A	grey rock chips	grey/blk
141547	5401000	411125	0.4	A	various rock chips	grey/blk
141548	5401000	411075	0.4	B	various rock chips	grey/or
141549	5401000	411025	0.5	B	orange rock chips	grey/or
141550	5401000	410975	0.6	C	orange rock chips	grey/or
141552	5401000	410925	0.6	B/C	orange rock chips	or/brown
141553	5401000	410875	0.7	B/C	various rock chips	grey/or
141554	5401000	410825	0.8	B/C	various rock chips	grey/or
141555	5401000	410775	0.3	A	grey rock chips	grey/brown
141556	5401000	410725	0.6	B/C	orange rock chips	or/brown
141558	5401000	410675	0.6	B	various rock chips	grey/or
141559	5401000	410625	0.4	B/C	various rock chips	grey/or
141560	5401000	410575	0.8	B/C	various rock chips	grey/or
141561	5401000	410525	0.7	B/C	various rock chips	grey/or
141562	5401000	410475	0.3	B	grey rock chips	grey
141563	5401000	410425	0.4	B	grey rock chips	grey
141564	5401000	410375	0.5	B/C	quartz rock chips	grey/brown
141565	5401000	410325	0.4	B/C	various rock chips	or/brown
141566	5401000	410275	1	B/C	white rock chips	grey/or
141567	5401000	410225	0.4	B/C	quartz rock chips	or/brown
141568	5401000	410175	0.3	B/C	quartz rock chips	grey
141569	5401000	410125	0.6	C	quartz rock chips	brown
141570	5401000	410075	0.3	B	quartz rock chips	blue/white
141571	5401000	410025	0.2	B	grey/white rock chips	grey/brown
141572	5401200	411675	0.4	A	orange rock chips	black
141573	5401200	411625	0.4	B/C	green/orange rockchips	or/brown

141574	5401200	411575	0.7	B/C	various rock chips	or/brown
141575	5401200	411525	1	C	various rock chips	yell/brown
141578	5401200	411475	1.1	B	grey rock chips	grey/green
141579	5401200	411425	1.3	A	poor sample	brown/blk
141580	5401200	411375	1	B	various rock chips	grey/green
141581	5401200	411325	0.6	C	white/orange rock chips	grey/or
141582	5401200	411275	1	B	various rock chips	brown/blk
141583	5401200	411225	1	C	green rock chips	grey/green
141584	5401200	411175	0.3	A	various rock chips	grey/brown
141586	5401200	411125	0.4	A	various rock chips	grey/brown
141587	5401200	411075	0.5	A	quartz rock chips	brown/blk
141588	5401200	411025	0.2	A/B	quartz rock chips	grey/brown
141589	5401200	410975	0.3	A	various rock chips	grey/blk
141590	5401200	410925	0.3	A	various rock chips	grey/brown
141591	5401200	410875	0.4	B	various rock chips	grey/brown
141592	5401200	410825	0.2	A	various rock chips	grey/brown
141593	5401200	410775	0.5	B	various rock chips	brown
141594	5401200	410725	0.4	B	various rock chips	or/brown
141595	5401200	410675	0.5	C	various rock chips	or/brown
141596	5401200	410625	0.6	B	various rock chips	grey/brown
141597	5401200	410575	0.2	A	various rock chips	grey/brown
141598	5401200	410525	0.2	A	various rock chips	brown/blk
141599	5401200	410475	0.2	A	various rock chips	grey/blk
141600	5401200	410425	0.2	A	poor sample	brown
141602	5401200	410375	0.3	A	grey rock chips	black
141603	5401200	410325	0.3	A	grey rock chips	black
141605	5401200	410275	0.2	A	grey rock chips	grey/brown
141606	5401200	410225	0.3	B	grey rock chips	grey/brown
141607	5401200	410175	0.2	A	grey rock chips	grey/brown
141608	5401200	410125	0.2	A	grey rock chips	grey/blk
141609	5401400	412000	1	C	orange rock chips	or/brown
141610	5401400	411950	0.8	C	orange rock chips	or/brown
141611	5401400	411900	0.8	C	orange rock chips	or/brown
141612	5401400	411850	1	C	green rock chips	green/or
141613	5401400	411800	0.7	C	quartz rock chips	or/brown

141614	5401400	411750	0.8	C	yellow rock chips	or/brown
141615	5401400	411700	1	C	orange rock chips	or/brown
141616	5401400	411650	0.6	C	orange rock chips	green/or
141617	5401400	411600	0.4	C	orange rock chips	or/brown
141618	5401400	411550	0.6	C	orange rock chips	or/brown
141619	5401400	411500	0.5	C	orange rock chips	or/brown
141620	5401400	411450	0.4	C	green/quartz rock chips	or/brown
141621	5401400	411400	1.2	C	quartz rock chips	orange
141622	5401400	411350	0.8	C	various rock chips	or/brown
141623	5401400	411300	0.8	C	quartz rock chips	grey/or
141625	5401400	411250	0.8	C	orange rock chips	or/brown
141626	5401400	411200	1	C	grey rock chips	green/grey
141628	5401400	411150	0.5	C	white rock chips	grey
141629	5401400	411100	0.6	C	white rock chips	grey/or
141630	5401400	411050	0.7	C	orange rock chips	or/brown
141631	5401400	411000	0.6	B/C	white rock chips	grey/or
141632	5401400	410950	0.4	B/C	white rock chips	grey
141633	5401400	410900	0.5	B/C	white rock chips	grey/or
141634	5401400	410850	0.4	C	green/quartz rock chips	grey
141635	5401400	410800	0.4	A/B	no rock chips	grey
141636	5401400	410750	0.4	B/C	green/quartz rock chips	grey/blk
141637	5401400	410700	0.4	C	quartz rock chips	grey
141638	5401400	410650	0.3	B	quartz rock chips	grey/blk
141639	5401400	410600	0.3	B	white rock chips	grey
141640	5401400	410550	0.2	A/B	white rock chips	black
141641	5401400	410500	0.4	C	various rock chips	grey
141642	5401400	410450	0.3	B	white rock chips	black
141643	5401400	410400	0.3	B/C	quartz rock chips	grey/blk
141644	5401400	410350	0.3	A/B	quartz rock chips	black
141645	5401400	410300	0.3	B	quartz rock chips	grey/blk
141646	5401400	410250	0.4	C	quartz rock chips	grey
141647	5401600	412100	0.6	B	various rock chips	brown
141648	5401600	412050	1.3	B/C	orange rock chips	grey/yellow
141649	5401600	412000	0.5	C	orange rock chips	orange
141651	5401600	411950	1	B/C	green/orange rock chips	grey/or

141653	5401600	411900	1.2	B/C	white rock chips	orange
141654	5401600	411850	1	C	green/orange rockchips	or/brown
141655	5401600	411800	1.4	C	white rock chips	grey/green
141656	5401600	411750	1.2	C	green/orange rockchips	grey/green
141657	5401600	411700	1	C	green rock chips	green/yell
141658	5401600	411650	0.6	C	green/orange rockchips	green/yell
141659	5401600	411600	0.6	C	orange rock chips	or/brown
141660	5401600	411550	1	C	white rock chips	green/or
141661	5401600	411500	1	C	quartz rock chips	green
141662	5401600	411450	1	C	quartz rock chips	green/brow
141663	5401600	411400	1	C	quartz rock chips	green
141664	5401600	411350	1.1	C	quartz rock chips	grey
141665	5401600	411300	1	C	green rock chips	green
141666	5401600	411250	0.8	C	green rock chips	green
141667	5401600	411200	0.8	B/C	no rock chips	grey/or
141668	5401600	411150	0.6	C	green rock chips	green
141669	5401600	411100	0.7	C	orange rock chips	or/brown
141670	5401600	411050	0.4	B	quartz rock chips	green/brow
141671	5401600	411000	0.4	A	quartz rock chips	grey/blk
141672	5401600	410950	0.4	A/B	quartz rock chips	grey/blk
141673	5401600	410900	0.4	A/B	quartz rock chips	grey/blk
141674	5401600	410850	0.2	A	quartz rock chips	grey/blk
141676	5401600	410800	0.4	B/C	various rock chips	grey/brown
141677	5401600	410750	0.3	A/B	grey rock chips	grey/blk
141678	5401600	410700	0.3	A/B	grey rock chips	grey/blk
141679	5401600	410650	0.3	A/B	quartz rock chips	grey/brown
141681	5401600	410600	0.4	A/B	grey rock chips	grey/blk
141682	5401800	412375	0.9	C	green rock chips	green/or
141683	5401800	412325	0.7	B	no rock chips	brown
141684	5401800	412275	0.6	B/C	green rock chips	green/brow
141685	5401800	412225	0.6	B	various rock chips	or/brown
141686	5401800	412175	1	C	orange rock chips	or/brown
141687	5401800	412125	1	C	various rock chips	or/brown
141688	5401800	412075	0.8	C	green rock chips	or/brown
141689	5401800	412025	1	C	green rock chips	or/brown

141690	5401800	411975	1.3	C	various rock chips	grey/green
141691	5401800	411925	1.4	C	white rock chips	grey/green
141692	5401800	411875	1.3	B/C	various rock chips	grey/or
141693	5401800	411825	0.8	C	green/white rock chips	grey/green
141694	5401800	411775	0.9	C	white rock chips	brown
141695	5401800	411725	1	C	green rock chips	or/brown
141696	5401800	411675	1.1	C	quartz rock chips	brown
141697	5401800	411625	1.2	B/C	quartz rock chips	green/brow
141698	5401800	411575	0.9	C	no rock chips	orange
141699	5401800	411525	0.3	C	green rock chips	brown
141700	5401800	411475	0.4	C	green/orange rockchips	or/brown
141702	5401800	411425	1	C	green rock chips	or/brown
141704	5401800	411375	1	C	yellow rock chips	or/brown
141705	5401800	411325	0.5	C	green rock chips	or/brown
141706	5401800	411275	0.5	C	green/orange rockchips	or/brown
141707	5401800	411225	0.6	C	orange rock chips	or/brown
141708	5401800	411175	0.6	C	orange rock chips	orange
141709	5401800	411125	0.2	B	quartz rock chips	grey/brown
141710	5401800	411075	0.4	A/B	quartz rock chips	grey/blk
141711	5401800	411025	0.5	A/B	quartz rock chips	grey/brown
141712	5401800	410975	0.3	A/B	grey rock chips	grey/blk
141713	5401800	410925	0.4	B	quartz rock chips	grey/brown
141714	5401800	410875	0.4	B	grey/orange rock chips	grey/brown
141715	5401800	410825	0.2	A/B	grey rock chips	grey
141716	5401800	410775	0.3	B	grey/quartz rock chips	grey
141717	5401800	410725	0.4	B/C	orange rock chips	grey/brown
141718	5401800	410675	0.4	B/C	orange rock chips	grey/brown
141719	5401800	410625	0.2	A/B	grey rock chips	grey/blk
141720	5401800	410575	0.2	A/B	grey rock chips	grey/blk
141721	5402000	412475	0.6	B/C	orange rock chips	or/brown
141722	5402000	412425	0.9	C	yellow rock chips	or/brown
141723	5402000	412375	0.5	B/C	green rock chips	or/brown
141724	5402000	412325	0.4	B	orange rock chips	brown
141726	5402000	412275	0.6	B/C	various rock chips	grey/brown
141727	5402000	412225	1	C	green rock chips	or/brown



141728	5402000	412175	0.8	C	green rock chips	green
141730	5402000	412125	1	C	green rock chips	green/brow
141731	5402000	412075	1.1	C	white rock chips	green/blue
141732	5402000	412025	1.1	B/C	white rock chips	grey/yellow
141733	5402000	411975	1	C	various rock chips	grey/or
141734	5402000	411925	1.2	B	green rock chips	black
141735	5402000	411875	0.4	B/C	green rock chips	brown
141736	5402000	411825	0.9	C	green/white rock chips	or/yellow
141737	5402000	411775	0.6	C	white rock chips	grey/brown
141738	5402000	411725	0.6	B	green rock chips	black
141739	5402000	411675	0.9	C	orange rock chips	orange
141740	5402000	411625	0.5	C	green/white rock chips	orange
141741	5402000	411575	0.5	C	green/white rock chips	grey/yellow
141742	5402000	411525	0.8	C	various rock chips	or/brown
141743	5402000	411475	0.5	B/C	various rock chips	grey
141744	5402000	411425	0.4	B/C	green/white rock chips	grey/brown
141745	5402000	411375	0.7	B/C	quartz/various rock chips	grey/or
141746	5402000	411325	1.2	C	white rock chips	orange
141747	5402000	411275	1.3	C	quartz/various rock chips	or/yellow
141748	5402000	411225	1	C	various rock chips	or/brown
141749	5402000	411175	0.4	B/C	white rock chips	grey/or
141751	5402000	411125	0.3	B/C	quartz/various rock chips	grey/or
141753	5402000	411075	1	C	white rock chips	orange
141754	5402000	411025	0.7	C	green/white rock chips	or/yellow
141755	5401200	410075	0.2	A	grey rock chips	grey/blk
141756	5401200	410025	0.4	A	grey rock chips	grey/brown
141757	5400800	413100	1.2	B/C	various rock chips	or/brown
141758	5400800	413050	0.7	B/C	various rock chips	or/brown
141759	5400800	413000	1.3	C	red/white rock chips	red
141760	5400800	412950	0.9	C	orange rock chips	orange
141761	5400800	412900	1.3	C	red/white rock chips	orange
141762	5400800	412850	1.3	C	various rock chips	orange
141763	5400800	412800	0.8	B/C	white rock chips	grey/or
141764	5401000	413725	0.8	C	various rock chips	grey/brown
141765	5401000	413675	0.8	C	green/white rock chips	grey

141766	5401000	413625	0.8	C	grey/blue rock chips	grey/blue
141767	5401000	413575	0.9	C	green/white rock chips	grey/brown
141768	5401000	413525	0.4	B	quartz/various rock chips	grey/brown
141769	5401000	413475	1.4	C	white rock chips	grey/brown
141770	5401000	413425	0.6	C	various rock chips	or/brown
141771	5401000	413375	0.7	B/C	various rock chips	or/brown
141772	5401000	413325	1	C	white rock chips	or/brown
141773	5401000	413275	1.1	C	white rock chips	or/yellow
141774	5401000	413225	1.2	C	red/white rock chips	red/brown
141776	5401000	413175	1.2	C	red/white rock chips	orange
141778	5401000	413125	1	C	various rock chips	orange
141779	5401000	413075	1	C	red/white rock chips	or/brown
141780	5401000	413025	0.6	C	various rock chips	grey/yellow
141781	5401000	412975	0.5	B/C	orange rock chips	or/brown
141782	5401000	412925	1	C	white rock chips	grey/yellow
141783	5401200	413950	1.4	C	green/white rock chips	or/red
141784	5401200	413900	1	C	orange rock chips	or/brown
141785	5401200	413850	1	C	orange rock chips	or/brown
141786	5401200	413800	0.3	C	orange rock chips	or/brown
141787	5401200	413750	1	C	green rock chips	or/brown
141788	5401200	413700	0.3	C	orange rock chips	or/brown
141789	5401200	413650	0.7	C	yellow rock chips	yell/brown
141790	5401200	413600	0.4	C	grey/orange rock chips	or/brown
141791	5401200	413550	0.8	C	orange rock chips	or/brown
141792	5401200	413500	1.1	C	red/white rock chips	red/orange
141793	5401200	413450	0.6	C	various rock chips	or/brown
141794	5401200	413400	1	C	white rock chips	red/orange
141795	5401200	413350	1	C	white rock chips	orange
141796	5401200	413300	0.9	C	white rock chips	red/orange
141797	5401200	413250	0.5	C	various rock chips	or/yellow
141798	5401200	413200	0.2	A	quartz/orange rock chips	brown
141799	5401200	413150	0.2	B	quartz/orange rock chips	orange
141801	5401200	413100	0.3	B	quartz/orange rock chips	orange
141803	5401200	413050	0.4	B	quartz/orange rock chips	or/brown
141804	5401200	413000	0.4	B	quartz/orange rock chips	or/brown

141805	5401400	413725	0.2	B/C	quartz/orange rock chips	or/brown
141806	5401400	413675	0.3	C	quartz/orange rock chips	or/brown
141807	5401400	413625	1	C	quartz rock chips	red/orange
141808	5401400	413575	0.3	C	red rock chips	red/orange
141809	5401400	413525	1	C	quartz rock chips	or/brown
141810	5401400	413475	0.5	C	orange rock chips	or/brown
141811	5401400	413425	0.5	C	orange rock chips	or/brown
141812	5403600	412900	1	C	white rock chip to rock	grey/yell
141813	5403600	412950	0.3	B	white rock chip to rock	black/grey
141814	5403600	413000	0.8	C	white rock chip to rock	orange/br
141815	5403600	413050	0.7	C	white rock chip to rock	grey/brown
141816	5403600	413100	0.3	C	orange,white rock chip to rock	grey/yell
141817	5403600	413150	0.5	B/C	white rock chip to rock	grey
141818	5403600	413200	0.4	B	grey rock chip to rock	grey
141819	5403600	413250	0.4	B	grey rock chip to rock	grey
141820	5403600	413300	0.5	A	grey rock chip to rock	black/grey
141821	5403600	413350	0.4	B	orange,white rock chip to rock	grey
141822	5403600	413400	0.3	A	grey rock chip to rock	grey
141823	5403600	413450	0.4	B/C	grey rock chip to rock	grey
141824	5403600	413500	0.4	B	grey rock chip to rock	grey/brown
141825	5403600	413500	0.4	B	grey rock chip to rock	grey/brown
141827	5403600	413550	1	C	white rock chip to rock	grey
141828	5403800	412925	0.4	C	white rock chip to rock	grey/brown
141829	5403800	412975	1	C	orange,white rock chip to rock	orange/br
141830	5403800	413025	0.4	C	white rock chip to rock	brown
141831	5403800	413075	0.8	C	white rock chip to rock	grey/yell
141832	5403800	413125	0.5	C	white rock chip to rock	grey/white
141833	5403800	413175	0.5	A/B	white rock chip to rock	black
141834	5403800	413225	0.8	C	white rock chip to rock	brown
141835	5403800	413275	0.5	C	white rock chip to rock	brown
141836	5403800	413325	0.5	C	white rock chip to rock	black/brow
141837	5403800	413375	0.4	C	white rock chip to rock	brown
141838	5403800	413425	0.3	C	green,white rock chip to rock	grey
141839	5403800	413475	0.4	C	white rock chip to rock	black/brow
141840	5403800	413525	0.4	B/C	white rock chip to rock	black/brow

141841	5403800	413575	0.6	B/C	white rock chip to rock	black/brow
141842	5404000	413025	0.3	B	grey rock chip to rock	grey
141843	5404000	413075	0.8	C	grey rock chip to rock	grey
141844	5404000	413125	0.2	A	grey rock chip to rock	grey/blk
141845	5404000	413175	0.3	B/C	grey rock chip to rock	grey
141846	5404000	413225	0.3	B	grey rock chip to rock	grey
141847	5404000	413275	0.6	B/C	grey rock chip to rock	grey
141848	5404000	413325	0.3	B/C	orange, grey rock chip to rock	grey
141849	5404000	413375	0.5	B	grey rock chip to rock	grey/blk
141851	5404000	413425	0.7	A/B	grey rock chip to rock	grey/blk
141852	5404000	413425	0.7	A/B	grey rock chip to rock	grey/blk
141853	5404200	413025	0.8	C	white rock chip to rock	grey/brown
141854	5404200	413075	0.8	C	orange, red rock chip to rock	orange/br
141855	5404200	413125	0.8	C	white rock chip to rock	grey
141856	5404200	413175	0.9	C	white rock chip to rock	grey/brown
141857	5404200	413225	1	C	white rock chip to rock	brown
141858	5404200	413275	0.9	C	white rock chip to rock	grey/brown
141859	5404200	413325	1.2	B/C	white rock chip to rock	brown
141860	5404200	413375	0.4	C	orange rock chip to rock	grey/brown
141861	5404200	413425	0.2	B/C	red and white rock chips to rock	grey/blk
141862	5404200	413475	0.5	C	orange, white rock chip to rock	orange/br
141863	5404200	413525	0.6	C	orange, white rock chip to rock	grey/or
141864	5404200	413575	0.3	A/B	white rock chip to rock	black
141865	5404200	413625	0.3	A/B	white rock chip to rock	black
141866	5404200	413675	0.2	A/B	white rock chip to rock	black
141867	5404200	413725	1.1	C	white rock chip to rock	yellow
141868	5404200	413775	0.3	A/B	white rock chip to rock	black
141869	5404200	413825	0.4	C	orange, white rock chip to rock	grey
141870	5404200	413875	1	C	green rock chips to rock	white/grn
141871	5404200	413925	1.1	C	white rock chip to rock	grey/yell
141872	5404200	413975	1	C	white rock chip to rock	grey/yell
141873	5404200	414025	0.8	B	white rock chip to rock	grey/blk
141874	5404200	414075	0.5	C	white rock chip to rock	grey
141875	5404200	414125	0.4	C	white rock chip to rock	grey
141876	5404200	414125	0.4	C	white rock chip to rock	grey

141878	5404200	414175	0.3	A/B	white rock chip to rock	black
141879	5404200	414225	0.5	B/C	white rock chip to rock	grey
141880	5404200	414275	0.5	B/C	white rock chip to rock	grey/blk
141881	5404200	414325	1	B	white rock chip to rock	grey
141882	5404200	414375	0.5	B/C	white rock chip to rock	grey
141883	5404200	414425	1	C	white rock chip to rock	grey
141884	5404400	413025	1	C	grey rock chip to rock	grey/brown
141885	5404400	413075	0.7	C	white rock chip to rock	black
141886	5404400	413125	0.8	C	white rock chip to rock	grey/brown
141887	5404400	413175	0.5	C	white rock chip to rock	grey/brown
141888	5404400	413225	0.5	B	white rock chip to rock	grey/blk
141889	5404400	413275	0.6	C	white rock chip to rock	grey/brown
141890	5404400	413325	0.5	C	red and white rock chips to rock	grey/brown
141891	5404400	413375	0.5	C	white rock chip to rock	grey/brown
141892	5404400	413425	0.4	B/C	white rock chip to rock	black/brow
141893	5404400	413475	1	B/C	white rock chip to rock	black/brow
141894	5404400	413525	0.5	B/C	red and white rock chips to rock	grey/blk
141895	5404400	413575	0.3	B/C	white rock chip to rock	grey/blk
141896	5404400	413625	0.2	A/B	white rock chip to rock	black
141897	5404400	413675	0.2	B/C	white rock chip to rock	grey/blk
141898	5404400	413725	0.3	B	white rock chip to rock	black
141899	5404400	413775	0.5	C	white rock chip to rock	grey
141900	5404400	413775	0.5	C	white rock chip to rock	grey
141902	5404400	413825	0.3	B	green,white rock chip to rock	black
141903	5404400	413875	0.5	C	white rock chip to rock	grey
141904	5404400	413925	0.4	C	white rock chip to rock	grey/blk
141905	5404400	413975	0.5	C	white rock chip to rock	grey/brown
141906	5404400	414025	0.4	B/C	white rock chip to rock	grey/brown
141907	5404400	414075	0.4	C	white rock chip to rock	grey/brown
141908	5404400	414125	0.3	B/C	white rock chip to rock	grey/brown
141909	5404400	414175	0.3	C	white rock chip to rock	grey
141910	5404400	414225	0.3	C	orange,white rock chip to rock	grey
141911	5404400	414275	0.2	C	white rock chip to rock	grey
141912	5404400	414325	0.5	B/C	white rock chip to rock	grey/brown
141913	5404400	414375	0.5	B	white rock chip to rock	black

141914	5404600	413025	1	C	white rock chip to rock	grey/brown
141915	5404600	413075	0.8	C	yellow,white rock chip to rock	brown/yell
141916	5404600	413125	0.3	B	white rock chip to rock	black
141917	5404600	413175	0.8	C	yellow,white rock chip to rock	grey/brown
141918	5404600	413225	0.5	B/C	white rock chip to rock	grey/brown
141919	5404600	413275	0.5	B	grey rock chip to rock	grey
141920	5404600	413325	0.7	A/B	grey rock chip to rock	grey/blk
141921	5404600	413375	0.3	A/B	grey rock chip to rock	grey/blk
141922	5404600	413425	0.5	A/B	grey rock chip to rock	grey/blk
141923	5404600	413475	0.4	A/B	grey rock chip to rock	grey/blk
141924	5404600	413525	0.2	A	grey rock chip to rock	grey/blk
141926	5404600	413575	0.3	A	grey rock chip to rock	grey/blk
141927	5404600	413575	0.3	A	grey rock chip to rock	grey/blk
141928	5404600	413625	0.3	A	grey rock chip to rock	grey/blk
141929	5404600	413675	0.8	A	grey rock chip to rock	grey/blk
141930	5404600	413725	0.5	A/B	grey rock chip to rock	grey/blk
141931	5404600	413775	0.6	B	grey rock chip to rock	grey
141932	5404600	413825				NO SAMPLE OUTCROP- conglomerate?
141933	5404600	413875				NO SAMPLE OUTCROP- conglomerate?
141934	5404600	413925	0.4	A	white rock chip to rock	grey
141935	5404600	413975	0.4	A	white rock chip to rock	black
141936	5404600	414025	0.5	B	white rock chip to rock	grey
141937	5404600	414075	0.3	A	orange,white rock chip to rock	grey
141938	5404600	414125	0.4	A/B	orange,white rock chip to rock	grey
141939	5404600	414175	0.4	B	orange,white rock chip to rock	grey
141940	5404600	414225	0.5	B	orange rock chip to rock	orange/br
141941	5404600	414275	0.6	B	orange,white rock chip to rock	orange/br
141942	5404600	414325	0.3	B	orange rock chip to rock	grey/brown
141943	5404600	414375	0.6	A/B	orange rock chip to rock	brown
141944	5404600	414425	0.4	C	orange rock chip to rock	orange/br
141945	5404600	414475	0.4	C	orange rock chip to rock	orange/br
141946	5404600	414525	0.3	C	orange rock chip to rock	orange/br
141947	5404600	414575	0.6	C	orange rock chip to rock	orange/br

141948	5404600	414625	0.4	C	orange rock chip to rock	orange/br
141949	5404800	413275	0.5	C	grey orange rock chip to rock	grey
141950	5404800	413275	0.2	C	grey orange rock chip to rock	grey
141952	5404800	413325	1	C	orange rock chip to rock	grey/brown
141953	5404800	413375	0.4	C	grey rock chip to rock	grey
141954	5404800	413425	0.5	C	grey rock chip to rock	grey
141955	5404800	413475	0.2	B/C	grey rock chip to rock	grey/blk
141956	5404800	413525	0.4	C	grey rock chip to rock	grey
141957	5404800	413575	0.3	C	grey rock chip to rock	grey
141958	5404800	413625	0.2	B	white rock chip to rock	grey/blk
141959	5404800	413675	0.2	B/C	grey rock chip to rock	grey/blk
141960	5404800	413725	0.6	A	no rock chips	black
141961	5404800	413775	0.2	C	grey rock chip to rock	grey
141962	5404800	413825	0.4	C	grey rock chip to rock	grey
141963	5404800	413875	0.3	C	orange rock chip to rock	orange/br
141964	5404800	413925	0.2	B/C	orange rock chip to rock	grey
141965	5404800	413975	0.2	C	orange, grey rock chip to rock	grey
141966	5404800	414025	0.2	B/C	grey, white rock chip to rock	grey
141967	5404800	414075	0.2	C	orange, grey rock chip to rock	grey
141968	5404800	414125	0.5	C	white rock chip to rock	grey
141969	5404800	414175	0.2	A	white rock chip to rock	black
141970	5404800	414225	0.5	C	orange rock chip to rock	grey/or
141971	5404800	414275	0.5	C	white rock chip to rock	grey
141972	5404800	414325	0.5	C	orange rock chip to rock	grey/or
141973	5404800	414375	0.3	C	white rock chip to rock	grey
141974	5404800	414425	0.3	C	orange rock chip to rock	orange/br
141975	5404800	414475	0.5	C	green rock chips to rock	green/or
141976	5404800	414525	0.5	C	grey rock chip to rock	grey/brown
141977	5404800	414575	0.3	C	green rock chips to rock	green/or
141978	5404800	414625	1	C	orange rock chip to rock	orange/br
141979	5404800	414675	0.9	C	green rock chips to rock	orange/br
141980	5404800	414675	0.9	C	green rock chips to rock	orange/br
141982	5405000	414025	0.4	C	white rock chip to rock	grey
141983	5405000	414075	0.4	C	white rock chip to rock	grey/or
141984	5405000	414125	0.7	C	white rock chip to rock	green/or

141985	5405000	414175	0.6	C	white rock chip to rock	orange/br
141986	5405000	414225	0.8	C	orange rock chip to rock	orange/br
141987	5405000	414275	0.3	B/C	orange rock chip to rock	brown
141988	5405000	414325	0.8	C	white rock chip to rock	orange/br
141989	5405000	414375	0.2	B/C	white rock chip to rock	grey
141990	5405000	414425	0.2	B/C	grey,white rock chip to rock	grey
141991	5405000	414475	0.3	C	red,grey rock chip to rock	grey/blk
141992	5405000	414525	0.2	C	grey rock chip to rock	brown
141993	5405000	414575	0.9	C	no rock chips	orange/br
141994	5405200	414125	0.6	B/C	grey rock chip to rock	grey
141995	5405200	414175	0.6	C	grey rock chip to rock	orange/br
141996	5405200	414225	0.3	C	orange rock chip to rock	grey
141997	5405200	414275	0.7	C	orange rock chip to rock	orange/br
141998	5405200	414325	0.4	C	grey,white rock chip to rock	grey
141999	5405200	414375	0.2	C	grey,white rock chip to rock	grey
142000	5405200	414425	0.5	C	orange rock chip to rock	orange/br
141499	5405200	414475	1.2	C	orange,grey rock chip to rock	orange/br
141498	5405200	414475	1.2	C	orange,grey rock chip to rock	orange/br
141497	5405200	414525	0.7	C	orange rock chip to rock	orange/br
141496	5405200	414575	0.6	C	orange rock chip to rock	orange/br



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**APPENDIX 2**  
**(Six Monthly Report)**  
**Soil Sampling Assays**

Sample_no	Northing	Easting	Au_ppb	Ag_ppm	As_ppm	Bi_ppm	Cu_ppm	Mo_ppm	Pb_ppm	Sb_ppm	Tl_ppm	Zn_ppm
141496	5405200	414575	4	0.17	2	0.4	11	2.7	81	0.32	0.6	52
141497	5405200	414525	2	0.17	2.1	0.36	7	2.1	31	0.35	0.52	51
141498	5405200	414475	4	0.14	2.1	0.34	9	2.4	20	0.54	0.5	62
141499	5405200	414475	0.001	0.11	2	0.35	12	2.8	20	0.56	0.49	59
141501	5400600	410625	4	0.21	1.6	0.1	8	0.6	17	0.25	0.26	94
141502	5400600	410575	2	0.09	0.9	0.22	10	1.7	28	0.12	0.26	13
141503	5400600	410525	4	0.12	0.5	0.19	15	3	33	0.28	0.19	23
141504	5400600	410475	5	0.06	0.7	0.14	11	4.2	17	0.21	0.1	7
141505	5400600	410425	2	0.06	1	0.08	15	7.7	16	0.15	0.09	10
141506	5400600	410375	3	0.05	1.1	0.19	22	0.5	18	0.14	0.08	57
141507	5400600	410325	3	0.14	1.1	0.31	18	0.9	26	0.29	0.09	46
141508	5400600	410275	0.001	0.08	1.8	0.23	21	1.8	31	0.19	0.09	54
141509	5400600	410225	2	0.03	2.7	0.25	32	1	18	0.19	0.09	47
141510	5400600	410175	4	0.04	1.9	0.22	10	3.1	19	0.24	0.13	21
141511	5400600	410125	3	0.03	1.7	0.31	9	4.4	25	0.22	0.2	13
141512	5400600	410075	3	0.06	0.8	0.17	10	2.7	22	0.17	0.37	17
141513	5400600	410025	5	0.04	1.3	0.09	13	6.7	47	0.19	0.09	7
141514	5400800	411175	9	0.06	1.9	0.2	11	2.3	48	0.25	0.23	55
141515	5400800	411125	2	0.12	5.7	0.24	16	2.5	55	0.31	0.65	70
141516	5400800	411075	0.001	0.31	7.1	0.33	14	0.9	116	0.26	0.68	80
141517	5400800	411025	3	0.09	2.6	0.28	13	2.7	79	0.43	0.2	101
141518	5400800	410975	1	0.05	0.8	0.22	9	2.1	59	0.23	0.34	88
141519	5400800	410925	1	0.07	2.1	0.34	11	0.8	74	0.28	0.18	124
141520	5400800	410875	1	0.07	1.3	0.31	9	1.5	68	0.3	0.19	98
141521	5400800	410825	2	0.08	1.6	0.15	12	2.6	73	0.21	0.51	36
141522	5400800	410775	3	0.04	1.3	0.08	9	3.5	25	0.32	0.17	13
141523	5400800	410725	3	0.05	2.9	0.18	7	2.8	46	0.5	0.22	85
141524	5400800	410675	3	0.15	1.8	0.18	11	2.8	40	0.37	0.35	45
141526	5400800	410625	2	0.08	1.8	0.12	6	3.2	28	0.35	0.27	19
141528	5400800	410575	4	0.05	1.1	0.13	8	3.6	32	0.18	0.24	11

141529	5400800	410525	1	0.05	1.6	0.31	15	4.6	40	0.22	0.18	11
141530	5400800	410475	2	0.06	1.3	0.08	14	9.3	24	0.21	0.07	6
141531	5400800	410425	5	0.07	1.9	0.34	39	5.5	60	1.54	0.16	59
141532	5400800	410375	1	0.03	1	0.1	8	5.2	12	0.12	0.15	8
141533	5400800	410325	3	0.05	1.6	0.3	10	5.2	28	0.52	0.16	25
141534	5400800	410275	2	0.02	1.5	0.2	7	5.3	16	0.26	0.15	17
141535	5400800	410225	4	0.02	2	0.2	11	4.3	15	0.25	0.22	14
141536	5400800	410175	2	0.15	3.1	0.19	17	8	15	0.31	0.1	10
141537	5400800	410125	1	0.06	1	0.93	8	6.7	41	0.23	0.13	7
141538	5400800	410075	6	0.04	1.5	0.12	10	3.5	17	0.18	0.21	14
141539	5400800	410025	6	0.02	1.2	0.07	16	6.3	12	0.19	0.07	8
141540	5401000	411475	3	0.02	3.8	0.38	15	3.5	24	0.43	0.2	73
141541	5401000	411425	6	0.001	7.8	0.14	4	2.2	12	0.32	0.12	116
141542	5401000	411375	3	0.02	2.8	0.19	11	1.4	21	0.43	0.19	75
141543	5401000	411325	4	0.11	33.6	0.12	2	2.6	60	0.26	0.66	55
141544	5401000	411275	0.001	0.09	1.7	0.12	14	6.6	39	0.25	0.21	11
141545	5401000	411225	4	0.05	1.3	0.24	10	4.2	46	0.39	0.14	38
141546	5401000	411175	3	0.05	1.8	0.1	10	2.7	33	0.18	0.31	12
141547	5401000	411125	5	0.06	2.7	0.13	12	3.8	33	0.21	0.19	12
141548	5401000	411075	5	0.08	3.1	0.22	15	3.9	59	0.43	0.14	63
141549	5401000	411025	2	0.08	2.1	0.08	9	3.9	24	0.32	0.13	91
141550	5401000	410975	2	0.04	1.6	0.13	10	3	21	0.23	0.1	40
141552	5401000	410925	0.001	0.09	3.2	0.23	15	2.8	25	0.43	0.2	92
141553	5401000	410875	12	0.04	2.1	0.16	6	3.6	31	0.28	0.17	33
141554	5401000	410825	3	0.04	1.9	0.85	6	2.1	50	0.68	0.23	56
141555	5401000	410775	3	0.04	1.7	0.13	8	2.4	81	0.62	0.43	72
141556	5401000	410725	0.001	0.04	3.2	0.17	11	2.8	59	0.56	0.3	63
141558	5401000	410675	4	0.1	2.6	0.14	5	3.1	42	0.36	0.21	59
141559	5401000	410625	4	0.03	2.6	0.14	3	2.5	22	0.43	0.23	27
141560	5401000	410575	3	0.09	2	0.23	4	3.2	54	0.42	0.35	34
141561	5401000	410525	4	0.14	0.8	0.07	1	1.5	20	0.21	0.24	72
141562	5401000	410475	3	0.18	1.9	0.16	11	7.9	50	0.27	0.12	7

141563	5401000	410425	2	0.15	1.9	0.18	10	5.6	53	0.27	0.18	10
141564	5401000	410375	0.001	0.21	1.9	0.41	7	5	60	0.26	0.22	37
141565	5401000	410325	4	0.16	2.8	0.46	10	4.7	32	0.44	0.21	22
141566	5401000	410275	0.001	0.1	1.3	0.19	4	3.2	24	0.15	0.27	15
141567	5401000	410225	5	0.06	1.8	0.2	12	4.9	21	0.31	0.26	17
141568	5401000	410175	5	0.05	1.7	0.32	9	6.6	34	0.2	0.15	12
141569	5401000	410125	9	0.06	1.4	0.69	11	6.9	41	0.31	0.22	13
141570	5401000	410075	4	0.1	3	0.26	19	6.8	33	0.32	0.2	11
141571	5401000	410025	5	0.04	2.8	0.13	13	6.5	25	0.26	0.1	9
141572	5401200	411675	0.001	0.71	3.5	0.36	25	2.8	80	0.36	0.57	70
141573	5401200	411625	2	0.14	3.7	0.34	9	3.4	54	0.54	0.35	68
141574	5401200	411575	0.001	0.1	2.9	0.32	9	4.4	43	0.49	0.26	100
141575	5401200	411525	6	0.12	3.8	0.34	18	3.1	133	0.68	0.24	130
141578	5401200	411475	1	0.21	3.9	0.16	14	3.5	166	0.51	0.36	76
141579	5401200	411425	0.001	0.15	2.2	0.1	8	0.7	15	0.12	0.28	46
141580	5401200	411375	1	0.08	4.6	0.11	11	2.4	47	0.19	0.31	18
141581	5401200	411325	9	0.05	2	0.15	8	3	25	0.24	0.22	31
141582	5401200	411275	3	0.04	6.7	0.07	14	9.3	37	0.27	0.18	9
141583	5401200	411225	20	0.06	1	0.18	8	2.6	41	0.47	0.25	67
141584	5401200	411175	4	0.16	2.1	0.09	13	4.9	48	0.31	0.18	11
141586	5401200	411125	0.001	0.09	2.2	0.08	17	5.5	93	0.28	0.24	14
141587	5401200	411075	2	0.06	1.9	0.05	13	7.6	32	0.33	0.13	8
141588	5401200	411025	3	0.07	2	0.06	27	11.4	19	0.38	0.03	11
141589	5401200	410975	0.001	0.07	2.8	0.08	18	6.8	51	0.28	0.15	40
141590	5401200	410925	5	0.25	3.1	0.11	14	6	36	0.32	0.19	13
141591	5401200	410875	0.001	0.04	2	0.09	9	7.7	18	0.31	0.15	11
141592	5401200	410825	2	0.09	3.4	0.17	14	4.2	62	0.45	0.51	27
141593	5401200	410775	0.001	0.12	3.8	0.3	18	2.8	308	0.57	0.99	96
141594	5401200	410725	0.001	0.02	2.5	0.19	6	4.3	25	0.51	0.31	39
141595	5401200	410675	3	0.04	3.3	0.11	7	4.5	26	0.44	0.34	31
141596	5401200	410625	0.001	0.01	2.2	0.07	4	3.8	35	0.32	0.22	9
141597	5401200	410575	15	0.1	4.1	0.14	12	7.5	39	0.43	0.17	10

141598	5401200	410525	0.001	0.23	3.4	0.34	21	12.4	62	0.3	0.12	12
141599	5401200	410475	2	0.11	3	0.11	16	6.2	21	0.3	0.08	17
141600	5401200	410425	3	0.76	2.8	0.25	15	4.4	454	0.26	0.26	35
141602	5401200	410375	9	0.2	2.5	0.22	7	3.2	45	0.2	0.16	18
141603	5401200	410325	5	0.13	2.5	0.19	11	3	41	0.18	0.12	5
141605	5401200	410275	23	0.09	2.1	0.73	6	3.4	35	0.32	0.27	13
141606	5401200	410225	6	0.09	2.2	0.43	5	3.7	39	0.35	0.24	11
141607	5401200	410175	3	0.05	2.3	0.35	5	3	34	0.31	0.21	11
141608	5401200	410125	0.001	0.04	2.5	0.42	5	4	65	0.14	0.12	7
141609	5401400	412000	0.001	0.2	4.6	0.33	23	1.7	159	0.58	0.22	197
141610	5401400	411950	0.001	0.07	3.4	0.32	5	2.2	132	0.46	0.29	56
141611	5401400	411900	2	0.06	3.3	0.71	26	1.8	310	0.45	0.15	197
141612	5401400	411850	2	0.16	6	0.45	13	3	151	0.41	0.22	162
141613	5401400	411800	0.001	0.1	2.9	0.35	19	2.1	278	0.55	0.2	148
141614	5401400	411750	2	0.09	3	0.31	17	1.4	74	0.69	0.19	333
141615	5401400	411700	4	0.06	3.3	0.37	16	2.2	78	0.56	0.24	298
141616	5401400	411650	0.001	0.24	5	0.33	32	1.4	162	0.32	0.13	197
141617	5401400	411600	0.001	0.06	2.8	1.12	9	3	233	0.64	0.25	117
141618	5401400	411550	2	0.06	5	0.59	17	2.6	206	0.44	0.14	132
141619	5401400	411500	0.001	0.01	2.9	0.34	8	4.4	626	0.72	0.12	79
141620	5401400	411450	0.001	0.02	2.4	0.17	7	4.4	92	0.26	0.09	75
141621	5401400	411400	7	0.08	2.2	0.18	9	1.5	144	0.48	0.19	82
141622	5401400	411350	3	0.04	3.6	0.28	10	4.5	46	0.4	0.22	76
141623	5401400	411300	1	0.04	1.7	0.13	3	2.3	27	0.24	0.15	50
141625	5401400	411250	0.001	0.1	3.4	0.32	12	2.1	46	0.31	0.13	97
141626	5401400	411200	0.001	0.22	2.2	0.12	9	3	47	0.34	0.18	74
141628	5401400	411150	3	0.04	1.8	0.05	5	4.3	15	0.15	0.19	16
141629	5401400	411100	4	0.06	3.1	0.14	3	1.8	24	0.33	0.3	69
141630	5401400	411050	0.001	0.07	4	0.18	8	3.1	63	0.38	0.2	103
141631	5401400	411000	0.001	0.01	4.7	0.18	3	3.7	20	0.53	0.18	26
141632	5401400	410950	1	0.04	2.6	0.1	3	4.9	21	0.26	0.08	5
141633	5401400	410900	402	0.12	3.8	0.12	4	5.2	26	0.41	0.18	18

141634	5401400	410850	4	0.07	2.5	0.06	7	4.5	27	0.17	0.09	23
141635	5401400	410800	4	0.04	2.7	0.07	6	3.9	15	0.26	0.1	5
141636	5401400	410750	3	0.09	3	0.08	8	6	33	0.23	0.11	4
141637	5401400	410700	3	0.14	2.4	0.12	2	4.4	21	0.29	0.17	5
141638	5401400	410650	0.001	0.04	3.1	0.17	8	6.4	27	0.27	0.09	4
141639	5401400	410600	2	0.14	5.3	0.16	15	6.5	18	0.51	0.05	16
141640	5401400	410550	2	0.13	4	0.15	16	6.3	32	0.29	0.01	11
141641	5401400	410500	3	0.11	4.5	0.26	5	7.2	77	0.23	0.08	4
141642	5401400	410450	3	0.08	4.3	0.1	14	8.7	24	0.29	0.03	5
141643	5401400	410400	2	0.06	3.1	0.08	5	7	23	0.23	0.07	5
141644	5401400	410350	0.001	0.04	2.1	0.11	15	6.8	18	0.18	0.04	5
141645	5401400	410300	3	0.05	1.9	0.17	7	4.9	109	0.22	0.12	6
141646	5401400	410250	0.001	0.1	1.4	0.24	11	8	824	0.23	0.04	1
141647	5401600	412100	2	0.02	3.1	0.26	24	3.9	74	0.24	0.15	78
141648	5401600	412050	0.001	0.001	1.6	0.24	13	0.4	77	0.12	0.12	55
141649	5401600	412000	2	0.001	3.9	0.18	17	5.8	54	0.3	0.14	53
141651	5401600	411950	1	0.07	2.5	0.22	10	1.7	94	0.27	0.13	134
141653	5401600	411900	7	0.01	2.9	0.08	12	2.8	22	0.4	0.07	105
141654	5401600	411850	4	0.02	3.1	0.19	27	2.3	60	0.27	0.11	66
141655	5401600	411800	3	0.04	2.2	0.19	18	5.1	51	0.33	0.11	43
141656	5401600	411750	5	0.16	3.3	0.27	11	6	45	0.38	0.28	55
141657	5401600	411700	3	0.1	2.4	0.21	11	5	69	0.36	0.2	77
141658	5401600	411650	4	0.14	2.4	0.23	22	1.4	136	0.22	0.15	126
141659	5401600	411600	3	0.04	2.4	0.07	6	3	70	0.24	0.29	47
141660	5401600	411550	7	0.05	2	0.23	6	1.4	73	0.26	0.29	227
141661	5401600	411500	3	0.04	2	0.2	9	3.8	42	0.32	0.16	43
141662	5401600	411450	2	0.02	2.1	0.42	7	6.5	36	0.42	0.19	40
141663	5401600	411400	2	0.03	2.5	0.35	11	6	45	0.38	0.15	42
141664	5401600	411350	0.001	0.04	1.9	0.16	7	3.7	32	0.19	0.13	36
141665	5401600	411300	0.001	0.02	1.6	0.16	6	2.8	25	0.27	0.18	106
141666	5401600	411250	3	0.04	1.8	0.13	10	6.8	25	0.43	0.24	92
141667	5401600	411200	2	0.02	1.7	0.1	5	1.6	30	0.19	0.16	50

141668	5401600	411150	0.001	0.05	2.3	0.11	5	3.4	28	0.24	0.23	106
141669	5401600	411100	0.001	0.02	3.2	0.24	7	3.4	30	0.26	0.22	81
141670	5401600	411050	6	0.02	1.2	0.04	7	10.2	6	0.18	0.1	5
141671	5401600	411000	2	0.13	1.8	0.06	9	3.3	15	0.15	0.09	12
141672	5401600	410950	2	0.09	1.3	0.07	10	4	49	0.21	0.16	8
141673	5401600	410900	2	0.04	1.4	0.03	6	3.3	5	0.07	0.02	2
141674	5401600	410850	3	0.07	1.9	0.08	6	3.3	16	0.19	0.13	5
141676	5401600	410800	7	0.04	2.7	0.07	7	4.2	16	0.17	0.04	2
141677	5401600	410750	3	0.04	3.4	0.08	7	10	16	0.19	0.02	2
141678	5401600	410700	5	0.03	2.7	0.09	8	5.6	14	0.21	0.02	2
141679	5401600	410650	4	0.13	3.8	0.09	14	9.2	13	0.28	0.08	3
141681	5401600	410600	2	0.07	8.2	0.13	9	7.6	34	0.2	0.001	2
141682	5401800	412375	4	0.02	4	0.27	29	3.8	43	0.3	0.08	95
141683	5401800	412325	4	0.03	2.8	0.17	16	2.9	43	0.16	0.11	74
141684	5401800	412275	2	0.05	2.1	0.2	19	3.4	43	0.19	0.1	74
141685	5401800	412225	0.001	0.03	2.7	0.24	17	2.1	63	0.17	0.17	82
141686	5401800	412175	2	0.03	4.3	0.16	14	3.4	44	0.21	0.08	47
141687	5401800	412125	1	0.02	2.8	0.14	20	2.5	43	0.17	0.06	60
141688	5401800	412075	0.001	0.02	2.4	0.14	47	1.7	51	0.16	0.08	107
141689	5401800	412025	0.001	0.001	3.3	0.16	20	3.3	40	0.2	0.09	60
141690	5401800	411975	0.001	0.11	1.4	0.22	42	0.4	54	0.16	0.19	108
141691	5401800	411925	3	0.22	1.2	0.26	34	0.1	85	0.18	0.14	88
141692	5401800	411875	0.001	0.24	2.3	0.2	23	1.2	43	0.24	0.14	140
141693	5401800	411825	2	0.16	2.9	1.47	10	3.5	63	0.35	0.11	79
141694	5401800	411775	1	0.04	1.8	0.15	9	4.1	25	0.29	0.11	24
141695	5401800	411725	2	0.07	2.3	0.24	6	3.8	102	0.39	0.1	98
141696	5401800	411675	0.001	0.02	1.7	0.25	13	6.2	62	0.42	0.12	55
141697	5401800	411625	5	0.05	2.2	0.29	35	4.8	55	0.44	0.12	136
141698	5401800	411575	1	0.25	5.4	0.12	17	3.4	27	0.44	0.17	45
141699	5401800	411525	4	0.1	3.7	1.83	78	3.1	86	0.42	0.26	65
141700	5401800	411475	1	0.05	4.3	0.71	30	1.5	76	0.41	0.16	133
141702	5401800	411425	0.001	0.1	3.7	0.15	11	2.1	23	0.42	0.27	40

141704	5401800	411375	5	0.05	4.6	0.26	20	2.2	57	0.4	0.32	50
141705	5401800	411325	3	0.02	3	0.1	5	2.6	24	0.36	0.29	26
141706	5401800	411275	1	0.03	4.2	0.14	4	1.8	26	0.32	0.21	71
141707	5401800	411225	3	0.02	4.4	0.18	4	3.2	41	0.31	0.25	26
141708	5401800	411175	5	0.02	2.6	0.12	2	3.4	60	0.49	0.11	38
141709	5401800	411125	4	0.02	1.9	0.06	11	8.9	92	0.13	0.06	7
141710	5401800	411075	3	0.001	2.9	0.05	5	10.3	22	0.18	0.15	12
141711	5401800	411025	2	0.04	3.6	0.07	12	3.7	22	0.18	0.24	12
141712	5401800	410975	0.001	0.06	2.2	0.08	6	7.8	30	0.11	0.2	11
141713	5401800	410925	3	0.04	2.7	0.08	11	4.3	21	0.29	0.33	15
141714	5401800	410875	0.001	0.03	2.2	0.06	6	10.1	12	0.21	0.23	8
141715	5401800	410825	2	0.03	2.4	0.06	11	10.1	33	0.23	0.22	7
141716	5401800	410775	2	0.03	2.3	0.05	8	12.6	16	0.16	0.22	6
141717	5401800	410725	4	0.02	2.6	0.06	7	5.4	23	0.14	0.19	13
141718	5401800	410675	1	0.03	3.4	0.13	5	6.1	126	0.16	0.15	10
141719	5401800	410625	4	0.07	3.6	0.15	20	7.3	30	0.34	0.04	15
141720	5401800	410575	2	0.05	7.7	0.05	11	15.2	59	0.41	0.05	6
141721	5402000	412475	2	0.07	4.2	0.43	20	2.7	90	0.27	0.24	63
141722	5402000	412425	2	0.05	4.8	0.31	38	2	68	0.33	0.24	113
141723	5402000	412375	1	0.06	5	0.33	26	3.1	51	0.3	0.21	76
141724	5402000	412325	1	0.001	4	0.26	15	6.2	35	0.22	0.15	47
141726	5402000	412275	0.001	0.13	5.6	0.2	9	7.4	88	0.24	0.53	40
141727	5402000	412225	3	0.13	4	0.19	26	1.8	47	0.14	0.14	93
141728	5402000	412175	3	0.07	3.6	0.22	40	0.2	39	0.09	0.14	143
141730	5402000	412125	1	0.03	4.5	0.25	29	3	38	0.23	0.23	111
141731	5402000	412075	24	0.04	3.1	0.24	36	0.6	51	0.19	0.17	138
141732	5402000	412025	23	0.12	4.4	0.18	12	3.9	41	0.31	0.14	59
141733	5402000	411975	4	0.04	3	0.17	8	2.2	45	0.23	0.18	93
141734	5402000	411925	3	0.09	4.2	0.22	11	5	94	0.23	0.33	59
141735	5402000	411875	2	0.06	5.9	0.25	6	6.5	97	0.47	0.42	75
141736	5402000	411825	0.001	0.03	5.3	0.23	13	3.4	61	0.41	0.25	124
141737	5402000	411775	0.001	0.001	2.9	0.14	7	7.1	44	0.38	0.22	52



141738	5402000	411725	2	0.03	3.2	0.08	14	7	35	0.23	0.17	26
141739	5402000	411675	0.001	0.001	4.3	0.87	12	2.5	33	0.28	0.24	123
141740	5402000	411625	0.001	0.02	4.1	0.14	11	3.3	53	0.35	0.23	125
141741	5402000	411575	0.001	0.02	4.1	0.15	6	4	45	0.28	0.18	62
141742	5402000	411525	0.001	0.03	4.8	0.18	7	3.2	33	0.47	0.21	104
141743	5402000	411475	0.001	0.31	4.6	0.65	13	3.7	93	0.33	0.37	100
141744	5402000	411425	0.001	0.25	3.8	0.23	10	4.4	56	0.25	0.21	215
141745	5402000	411375	0.001	0.17	4.6	0.66	16	0.5	319	0.22	0.08	233
141746	5402000	411325	0.001	0.03	3.5	0.16	7	2.8	43	0.37	0.08	81
141747	5402000	411275	2	0.01	4.3	0.22	8	1.4	51	0.26	0.1	116
141748	5402000	411225	0.001	0.03	5.2	2.17	5	3.6	29	0.36	0.16	139
141749	5402000	411175	0.001	0.02	4.6	0.15	5	4.2	26	0.25	0.16	27
141751	5402000	411125	3	0.03	4.8	0.14	6	4.5	47	0.27	0.18	32
141753	5402000	411075	0.001	0.001	4.3	0.1	7	3.5	26	0.39	0.16	41
141754	5402000	411025	2	0.06	4.9	0.19	7	2.2	26	0.18	0.18	69
141755	5401200	410075	4	0.07	4.1	0.42	9	3	64	0.15	0.21	11
141756	5401200	410025	0.001	0.04	4.7	0.25	3	4.8	43	0.2	0.19	8
141757	5400800	413100	0.001	0.09	10.2	0.17	58	0.2	362	0.16	0.32	110
141758	5400800	413050	33	1.55	301.7	0.36	59	2.3	4468	2.96	3.05	144
141759	5400800	413000	0.001	0.58	14.9	0.2	22	0.8	156	0.4	0.11	96
141760	5400800	412950	2	0.89	32.8	0.41	8	2.3	204	0.78	0.32	60
141761	5400800	412900	0.001	0.35	17.5	0.14	16	1.2	289	0.63	0.15	75
141762	5400800	412850	0.001	0.38	5.7	0.13	2	0.7	94	0.19	0.18	73
141763	5400800	412800	0.001	0.23	4	0.1	22	0.1	298	0.06	0.09	35
141764	5401000	413725	0.001	0.13	5.1	4.45	18	3.6	88	0.49	0.4	27
141765	5401000	413675	0.001	0.13	6.9	10.12	62	1.3	115	0.83	0.31	116
141766	5401000	413625	2	0.28	4.1	5.93	52	3.6	280	0.73	0.41	139
141767	5401000	413575	75	0.28	3.8	0.49	31	3.2	128	0.55	0.74	129
141768	5401000	413525	3	0.14	3.1	0.11	19	6.9	29	0.22	0.25	25
141769	5401000	413475	0.001	0.09	5.2	0.17	11	2	33	0.45	0.28	218
141770	5401000	413425	0.001	0.09	6.5	0.35	19	3.5	97	0.54	0.62	46
141771	5401000	413375	0.001	0.11	7.5	0.61	17	2.7	444	1.08	0.59	101

141772	5401000	413325	0.001	0.04	4.3	0.16	7	1.6	60	0.52	0.33	127
141773	5401000	413275	0.001	0.03	4	0.22	10	2.7	34	0.28	0.36	78
141774	5401000	413225	0.001	0.08	21.7	0.38	7	1.7	28	0.19	0.59	54
141776	5401000	413175	1	0.32	11.6	0.14	14	0.7	415	0.64	2.49	57
141778	5401000	413125	2	0.07	5.9	0.29	10	1.5	34	0.38	0.51	89
141779	5401000	413075	0.001	0.05	5	0.27	15	2	42	0.5	0.28	95
141780	5401000	413025	0.001	0.06	4.1	0.31	15	2.3	45	0.34	0.13	162
141781	5401000	412975	0.001	0.14	3.9	0.18	11	3	71	0.38	0.17	138
141782	5401000	412925	0.001	0.09	4.3	0.29	10	0.4	65	0.19	0.11	163
141783	5401200	413950	0.001	0.03	4.7	0.71	48	1.8	43	0.49	0.28	59
141784	5401200	413900	0.001	0.03	5.7	0.76	31	0.6	39	0.35	0.49	92
141785	5401200	413850	0.001	0.05	15.6	1.95	31	2.4	228	0.65	0.48	96
141786	5401200	413800	0.001	0.07	9.3	3.93	33	3.7	69	0.57	0.45	38
141787	5401200	413750	0.001	0.06	5.7	1.31	27	1.6	56	0.39	0.49	74
141788	5401200	413700	0.001	0.23	9.1	5.9	45	2.6	134	0.84	0.62	58
141789	5401200	413650	0.001	0.11	5.5	2.67	59	2.1	57	0.55	0.25	103
141790	5401200	413600	0.001	0.08	9.7	8.35	79	1.7	109	0.88	0.51	72
141791	5401200	413550	50	0.09	5	6.91	33	2.7	178	0.41	0.65	124
141792	5401200	413500	0.001	0.16	4.4	0.88	23	0.5	25	0.45	0.49	125
141793	5401200	413450	0.001	0.1	4.8	0.4	12	2.3	18	0.57	0.6	112
141794	5401200	413400	0.001	0.15	4.4	0.31	58	1.3	48	0.46	0.34	69
141795	5401200	413350	0.001	0.04	6	0.12	33	1.6	67	0.48	0.22	53
141796	5401200	413300	0.001	0.06	5.1	0.22	30	0.5	35	0.35	0.37	50
141797	5401200	413250	0.001	0.02	4.2	0.18	12	2.2	14	0.31	0.19	61
141798	5401200	413200	0.001	0.05	4.7	0.39	14	2.8	55	0.43	0.27	56
141799	5401200	413150	0.001	0.02	4.2	0.1	6	3.8	16	0.28	0.23	39
141801	5401200	413100	0.001	0.1	6	0.58	17	7.2	118	0.49	0.26	75
141803	5401200	413050	0.001	0.09	4.2	0.65	30	2.5	54	0.66	0.38	41
141804	5401200	413000	0.001	0.08	4.1	0.69	10	3.4	46	0.36	0.32	67
141805	5401400	413725	0.001	0.06	8.4	2.67	32	4	65	0.78	0.37	56
141806	5401400	413675	0.001	0.08	8.6	7.7	62	3.3	45	0.83	0.56	60
141807	5401400	413625	0.001	0.05	7.5	2.33	54	1.7	83	1.02	0.87	88

141808	5401400	413575	3	0.09	29	9.95	53	3.2	128	2.05	0.44	111
141809	5401400	413525	0.001	0.09	7.9	7.31	68	1.1	98	0.49	1.2	123
141810	5401400	413475	0.001	0.06	5.3	0.8	36	1.5	39	0.24	0.43	142
141811	5401400	413425	0.001	0.1	5.1	1.45	54	1.6	67	0.43	0.55	140
141812	5403600	412900	4	0.05	1	0.43	10	4	23	0.38	0.27	42
141813	5403600	412950	2	0.04	0.8	0.13	7	5.6	11	0.18	0.06	62
141814	5403600	413000	2	0.04	1.4	0.56	10	3	25	0.25	0.25	62
141815	5403600	413050	11	0.02	0.6	0.27	7	5.1	17	0.22	0.19	12
141816	5403600	413100	3	0.05	0.7	0.26	2	2.8	18	0.14	0.24	30
141817	5403600	413150	0.001	0.05	0.6	0.23	6	3.5	15	0.22	0.2	7
141818	5403600	413200	2	0.03	0.7	0.24	4	4.3	14	0.18	0.24	9
141819	5403600	413250	2	0.05	1.1	0.3	13	5.3	17	0.17	0.12	7
141820	5403600	413300	2	0.06	0.9	0.39	6	4.7	18	0.22	0.22	9
141821	5403600	413350	6	0.02	0.7	0.32	7	4	19	0.26	0.24	14
141822	5403600	413400	2	0.05	0.8	0.33	5	2.4	18	0.17	0.16	10
141823	5403600	413450	1	0.03	0.7	1.75	15	4.8	21	0.31	0.29	12
141824	5403600	413500	0.001	0.04	1.7	0.43	15	3.1	24	0.37	0.23	10
141827	5403600	413550	4	0.01	2.2	0.3	8	4.3	18	0.32	0.21	9
141828	5403800	412925	2	0.01	0.7	0.17	3	4.2	31	0.26	0.12	7
141829	5403800	412975	2	0.02	2.1	0.42	3	3.1	35	0.48	0.22	105
141830	5403800	413025	0.001	0.04	0.6	0.14	11	4.1	20	0.4	0.35	45
141831	5403800	413075	0.001	0.05	0.8	0.23	2	4.2	18	0.21	0.21	10
141832	5403800	413125	0.001	0.09	1.3	0.28	7	4.9	26	0.32	0.07	9
141833	5403800	413175	2	0.07	1.1	0.27	4	7.7	24	0.12	0.05	7
141834	5403800	413225	0.001	0.02	0.6	0.35	3	2.9	23	0.09	0.03	3
141835	5403800	413275	0.001	0.03	2	1.64	5	5.3	98	0.46	0.12	10
141836	5403800	413325	1	0.07	1.7	0.29	7	6.2	21	0.43	0.18	7
141837	5403800	413375	0.001	0.03	1.1	0.3	4	7.9	31	0.2	0.13	4
141838	5403800	413425	0.001	0.03	0.8	0.13	10	7.4	16	0.23	0.05	3
141839	5403800	413475	0.001	0.04	0.8	0.55	4	6.4	30	0.15	0.04	2
141840	5403800	413525	1	0.03	0.9	0.43	11	10	31	0.26	0.04	2
141841	5403800	413575	0.001	0.09	0.6	0.36	4	8.8	16	0.23	0.04	14

141842	5404000	413025	2	0.09	0.001	0.63	5	3	45	0.11	0.21	10
141843	5404000	413075	2	0.16	1.1	1.02	5	7.7	100	0.16	0.11	5
141844	5404000	413125	1	0.2	3.9	0.36	11	9.2	93	0.23	0.04	8
141845	5404000	413175	2	0.13	1.6	0.25	3	9.4	145	0.21	0.08	6
141846	5404000	413225	2	0.12	1.3	0.25	10	7.2	85	0.31	0.05	4
141847	5404000	413275	2	0.25	0.9	1.45	7	6.3	135	0.39	0.14	7
141848	5404000	413325	1	0.07	0.8	0.27	6	4.9	31	0.25	0.05	4
141849	5404000	413375	0.001	0.12	1.6	0.74	5	7	27	0.19	0.08	4
141851	5404000	413425	5	0.06	1.4	0.21	10	7.7	12	0.16	0.05	2
141853	5404200	413025	3	0.05	0.6	0.81	4	4.5	81	0.3	0.13	3
141854	5404200	413075	1	0.03	1.4	2.02	24	5.3	74	0.34	0.16	41
141855	5404200	413125	0.001	0.06	0.001	1.22	5	3.7	17	0.25	0.1	3
141856	5404200	413175	0.001	0.09	0.001	4.16	2	4.5	35	0.35	0.15	6
141857	5404200	413225	2	0.05	0.001	1.94	5	4.9	18	0.3	0.12	3
141858	5404200	413275	0.001	0.03	0.9	0.7	2	3.9	28	0.24	0.34	42
141859	5404200	413325	0.001	0.05	0.001	0.77	6	4.9	48	0.21	0.1	4
141860	5404200	413375	4	0.06	0.001	0.9	2	5.8	29	0.1	0.1	10
141861	5404200	413425	1	0.05	0.001	0.32	10	5.1	16	0.06	0.13	6
141862	5404200	413475	0.001	0.05	2.7	0.49	16	2.9	70	0.23	0.23	38
141863	5404200	413525	2	0.13	1.8	0.41	20	3.6	78	0.3	0.26	49
141864	5404200	413575	4	0.06	1	0.96	0.001	3.7	8	0.08	0.11	3
141865	5404200	413625	0.001	0.02	0.6	0.82	57	4.7	10	0.08	0.09	4
141866	5404200	413675	0.001	0.08	0.5	0.89	1	2.4	27	0.07	0.11	5
141867	5404200	413725	1	0.04	0.8	0.63	5	4.3	44	0.3	0.2	34
141868	5404200	413775	0.001	0.05	0.9	0.8	3	2.8	25	0.06	0.17	13
141869	5404200	413825	0.001	0.04	0.5	0.48	23	3.2	15	0.25	0.12	4
141870	5404200	413875	2	0.1	0.6	1.05	8	3.4	44	0.28	0.14	31
141871	5404200	413925	2	0.05	0.001	1.23	4	3.7	36	0.35	0.14	6
141872	5404200	413975	2	0.12	0.6	0.57	9	8.1	30	0.26	0.1	7
141873	5404200	414025	0.001	0.02	0.001	0.31	0.001	0.001	14	0.17	0.06	4
141874	5404200	414075	3	0.03	0.8	0.35	3	3.4	19	0.23	0.1	5
141875	5404200	414125	0.001	0.05	0.5	0.23	3	5.1	52	0.34	0.05	5

141878	5404200	414175	0.001	0.001	2	0.31	3	3.2	13	0.11	0.01	3
141879	5404200	414225	8	0.17	5	13.76	14	6.3	709	0.69	0.05	8
141880	5404200	414275	6	0.07	2	0.95	5	7.4	47	0.35	0.04	3
141881	5404200	414325	7	0.001	13.4	1.6	5	0.2	736	2.23	0.09	5
141882	5404200	414375	4	0.02	0.6	0.61	6	6.1	32	0.21	0.05	2
141883	5404200	414425	4	0.04	0.001	0.46	4	7.5	35	0.15	0.07	2
141884	5404400	413025	4	0.001	0.001	0.1	3	2.4	44	0.09	0.03	2
141885	5404400	413075	3	0.02	1.6	0.18	16	1	87	0.38	0.01	7
141886	5404400	413125	3	0.09	0.7	0.4	5	9.7	177	0.2	0.04	3
141887	5404400	413175	2	0.1	0.001	0.59	0.001	0.2	86	0.08	0.06	15
141888	5404400	413225	0.001	0.04	0.8	0.42	15	1	31	0.06	0.02	4
141889	5404400	413275	3	0.001	0.001	0.92	5	3.9	22	0.18	0.16	3
141890	5404400	413325	5	0.001	0.001	0.29	1	7.4	15	0.15	0.1	2
141891	5404400	413375	2	0.001	0.001	0.43	6	4.9	7	0.16	0.11	3
141892	5404400	413425	1	0.03	0.001	0.35	3	8.9	9	0.12	0.06	2
141893	5404400	413475	0.001	0.03	0.001	0.52	8	7.4	26	0.21	0.11	3
141894	5404400	413525	3	0.16	0.001	1.97	3	10.1	14	0.23	0.06	8
141895	5404400	413575	0.001	0.02	0.6	2.52	8	7.3	8	0.24	0.09	5
141896	5404400	413625	0.001	0.04	0.8	0.69	3	5.3	11	0.13	0.1	4
141897	5404400	413675	1	0.001	0.001	0.5	2	3.7	6	0.06	0.08	3
141898	5404400	413725	3	0.001	0.001	0.72	2	3.9	6	0.1	0.1	5
141899	5404400	413775	0.001	0.01	0.001	1.23	2	2.7	25	0.15	0.15	4
141902	5404400	413825	1	0.02	0.001	1.55	4	3.2	10	0.08	0.08	3
141903	5404400	413875	3	0.03	0.001	0.66	1	4	11	0.23	0.22	2
141904	5404400	413925	7	0.04	0.7	0.37	7	4.6	182	0.19	0.16	5
141905	5404400	413975	36	0.001	0.001	0.42	2	5.8	70	0.08	0.14	3
141906	5404400	414025	4	0.05	0.5	0.26	8	4.3	15	0.08	0.11	6
141907	5404400	414075	2	0.04	0.001	0.29	2	4.3	23	0.1	0.17	5
141908	5404400	414125	0.001	0.05	0.001	0.26	5	4.4	23	0.12	0.12	5
141909	5404400	414175	2	0.06	0.001	0.19	2	4.4	17	0.13	0.12	5
141910	5404400	414225	0.001	0.03	0.9	0.29	5	4.3	41	0.21	0.15	7
141911	5404400	414275	0.001	0.03	0.5	0.41	3	2.3	29	0.08	0.1	8

141912	5404400	414325	0.001	0.05	1.3	0.18	10	5	37	0.14	0.14	5
141913	5404400	414375	1	0.04	0.8	0.11	3	3.4	19	0.06	0.08	3
141914	5404600	413025	2	0.1	0.001	0.84	6	3.6	41	0.27	0.18	6
141915	5404600	413075	1	0.06	0.001	0.74	2	2.8	31	0.24	0.19	4
141916	5404600	413125	0.001	0.02	0.001	0.18	5	3	9	0.14	0.13	3
141917	5404600	413175	6	0.03	0.001	0.91	0.001	2.5	20	0.3	0.13	3
141918	5404600	413225	19	0.001	0.001	0.33	4	3.4	15	0.11	0.12	2
141919	5404600	413275	0.001	0.04	0.001	0.4	6	4.1	22	0.19	0.09	3
141920	5404600	413325	0.001	0.001	0.5	0.31	10	7.2	24	0.19	0.08	6
141921	5404600	413375	2	0.03	1.9	0.26	15	6.2	23	0.16	0.07	9
141922	5404600	413425	1	0.02	0.001	0.08	0.001	0.3	6	0.05	0.01	3
141923	5404600	413475	0.001	0.02	5.7	0.36	5	6.8	20	0.39	0.07	3
141924	5404600	413525	0.001	0.05	0.8	0.13	12	0.9	15	0.21	0.02	4
141926	5404600	413575	4	0.001	1.1	0.16	14	9	7	0.11	0.01	2
141928	5404600	413625	2	0.04	0.6	0.06	2	0.2	5	0.1	0.01	5
141929	5404600	413675	2	0.03	0.001	0.19	6	6.1	12	0.09	0.02	2
141930	5404600	413725	0.001	0.02	0.9	0.48	13	7.6	11	0.28	0.09	2
141931	5404600	413775	3	0.03	0.6	0.56	3	4	24	0.26	0.13	2
141934	5404600	413925	3	0.08	1.3	0.5	9	2.5	18	0.11	0.11	5
141935	5404600	413975	8	0.1	1.4	1.12	1	0.3	42	0.1	0.13	7
141936	5404600	414025	4	0.1	0.6	1.88	6	3.1	15	0.25	0.18	11
141937	5404600	414075	1	0.05	0.001	0.67	8	3.1	24	0.18	0.16	9
141938	5404600	414125	5	0.06	1	1.18	3	3.2	43	0.26	0.22	9
141939	5404600	414175	3	0.02	0.6	0.54	8	2.2	132	0.33	0.13	6
141940	5404600	414225	3	0.08	2.4	4.27	16	2.3	106	0.43	0.45	42
141941	5404600	414275	2	0.07	1.4	10.88	31	5	566	0.44	0.32	22
141942	5404600	414325	4	0.23	1.2	0.87	8	4.6	191	0.28	0.25	39
141943	5404600	414375	0.001	0.48	1.5	1.74	29	6.6	197	0.48	0.61	74
141944	5404600	414425	1	0.13	0.6	0.67	15	3.2	313	0.1	0.3	46
141945	5404600	414475	0.001	0.05	1	0.37	13	4.7	73	0.23	0.34	64
141946	5404600	414525	0.001	0.06	0.9	0.23	12	3.7	44	0.17	0.21	29
141947	5404600	414575	0.001	0.02	1.4	0.08	45	0.8	7	0.1	0.14	78

141948	5404600	414625	2	0.03	0.7	0.2	10	0.7	11	0.08	0.07	7
141949	5404800	413275	1	0.08	1.2	0.27	6	5.7	17	0.25	0.11	9
141950	5404800	413275	0.001	0.05	0.6	0.06	62	0.001	7	0.02	0.11	114
141953	5404800	413375	4	0.001	1.2	0.19	6	3.2	6	0.14	0.11	16
141954	5404800	413425	2	0.02	4.9	0.26	2	3.2	32	0.15	0.12	12
141955	5404800	413475	1	0.03	0.001	0.16	4	3	11	0.07	0.07	5
141956	5404800	413525	2	0.02	0.5	0.19	1	3.2	13	0.12	0.1	2
141957	5404800	413575	0.001	0.04	0.7	0.22	15	7.2	10	0.26	0.12	6
141958	5404800	413625	2	0.06	0.001	1.53	3	3.2	54	0.22	0.15	9
141959	5404800	413675	3	0.06	1.4	1.56	5	4.2	35	0.22	0.26	19
141960	5404800	413725	1	0.05	0.6	0.19	5	0.3	42	0.11	0.05	9
141961	5404800	413775	1	0.01	0.001	0.13	4	4.5	7	0.15	0.05	6
141962	5404800	413825	0.001	0.01	0.001	0.22	11	6.1	41	0.21	0.15	10
141963	5404800	413875	2	0.06	2.3	0.78	7	3.7	141	0.41	0.48	66
141964	5404800	413925	0.001	0.12	1.8	0.7	15	6.5	62	0.39	0.28	40
141965	5404800	413975	0.001	0.04	0.6	0.29	5	4.2	49	0.28	0.21	12
141966	5404800	414025	0.001	0.05	1	0.18	9	6.2	103	0.27	0.13	8
141967	5404800	414075	0.001	0.05	1	2.2	6	3.6	79	0.15	0.13	10
141968	5404800	414125	0.001	0.01	1.1	2.4	5	3.3	73	0.21	0.23	37
141969	5404800	414175	0.001	0.07	0.7	1.44	6	4	16	0.18	0.08	19
141970	5404800	414225	0.001	0.02	1.1	8.98	4	3.1	183	0.37	0.27	24
141971	5404800	414275	0.001	0.05	1.6	5.83	5	2.5	124	0.2	0.29	39
141972	5404800	414325	0.001	0.02	1.5	3.79	5	4.3	49	0.34	0.17	7
141973	5404800	414375	17	0.001	0.8	1	4	4.6	20	0.2	0.22	4
141974	5404800	414425	0.001	0.03	1.2	0.77	9	3.5	126	0.34	0.23	45
141975	5404800	414475	0.001	0.23	0.7	0.54	18	2.3	68	0.23	0.48	97
141976	5404800	414525	3	0.17	0.9	1.37	14	8.1	121	0.35	0.61	49
141977	5404800	414575	0.001	0.09	1.5	4.51	19	2.7	81	0.57	0.48	53
141978	5404800	414625	0.001	0.37	1.3	0.2	41	1.4	19	0.13	0.19	85
141979	5404800	414675	0.001	0.08	1	0.2	39	0.5	12	0.08	0.16	76
141980	5404800	414675	0.001	0.09	1.3	0.17	43	1	13	0.1	0.15	82
141983	5405000	414075	4	0.07	0.6	0.69	12	4.4	136	0.49	0.45	72

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**APPENDIX 3**  
**(Geoinformatics Report)**



## Probabilistic Targeting Using MOCA (Monte Carlo Targeting Software)

Probabilistic targeting is a model-driven method of targeting for mineral deposits using Monte Carlo (MOCA) probabilistic algorithms. It uses a petroleum systems approach that divides the mineralizing system into components that could include source, host, pathway, focus and trap. The major advantages of probabilistic targeting over other methods are:

- uncertainty and risk are incorporated into the targeting procedure
- a wide range of scores are generated for a small number of input layers making only a few key layers necessary
- reduction to a few key input layers demands rigorous geological assessment of the deposit / exploration model and critical evaluation of the input datasets, which improves the integrity and fidelity of targeting
- it employs a multiplicative probabilistic scoring method in contrast to additive methods used by most other targeting methods, thereby reducing the number of false positives by eliminating areas that lack any of the key features
- it provides an effective method of ranking targets and, if employed consistently, should allow for comparison of targets across projects

The key parameters for 3D MOCA targeting are the interpreted **fundamental controls on the targeted mineralization systems and three-dimensional modelling of structural and lithological features** to enable spatial location of the generated targets.

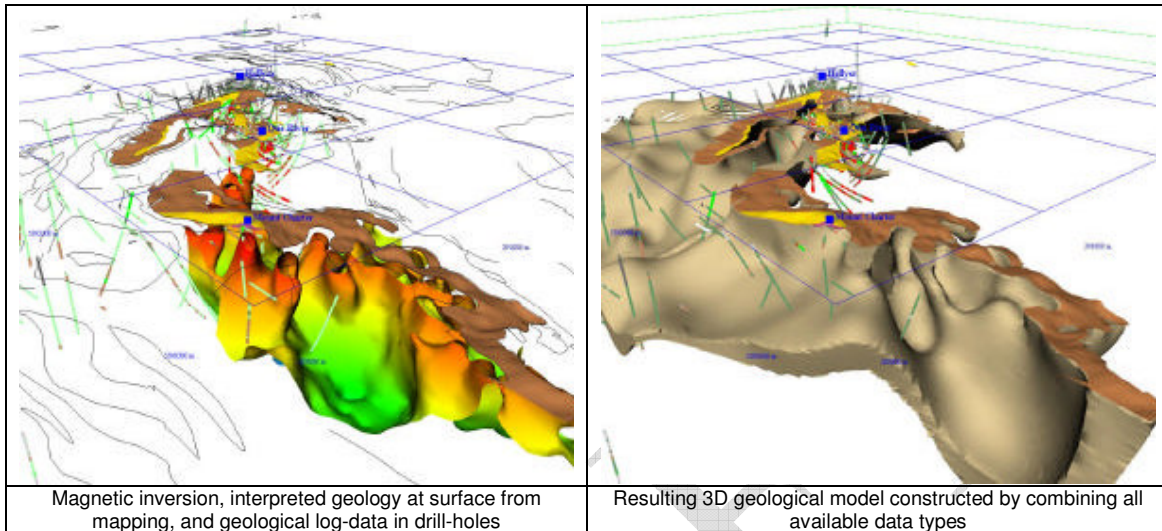
The controls on mineralization are derived from study of published literature, field observations, and observations made by other exploration companies released into the public domain.

Three-dimensional modelling of geology is constrained using geophysical data at both the local and regional scale. Magnetic and gravity inversions are coupled with available geological mapping and drill-hole data to create detailed local scale models whereas regional scale models incorporate analysis of the broader geophysical datasets.

In order to construct the 3D probability grid, a number of probability and uncertainty parameters must be applied to the modelled features.

Each geological feature modelled has an associated **probability and uncertainty that the feature exists (Pex and Uex)**. Pex and Uex account for uncertainties in data quality and interpretation. The probability is related to how many other possible interpretations there are for the data. For example, if you have a small round anomaly in a magnetics survey you could have a small intrusive body, a zone of magnetite alteration, or even a building. If these three possibilities are equally likely, the Pex of an intrusion is 0.33. If there were mapped intrusions in this area, the Pex would be increased to reflect the higher likelihood of the magnetic anomaly being an intrusion. The uncertainty accounts for the quality of data being used for the interpretation. For example, an intrusion picked from a magnetic survey with 400m line spacing would get a higher uncertainty than one picked from a survey with 50m line spacing.

Each feature also has an associated **probability and uncertainty that the feature has the desired effect (Peff and Ueff)**.



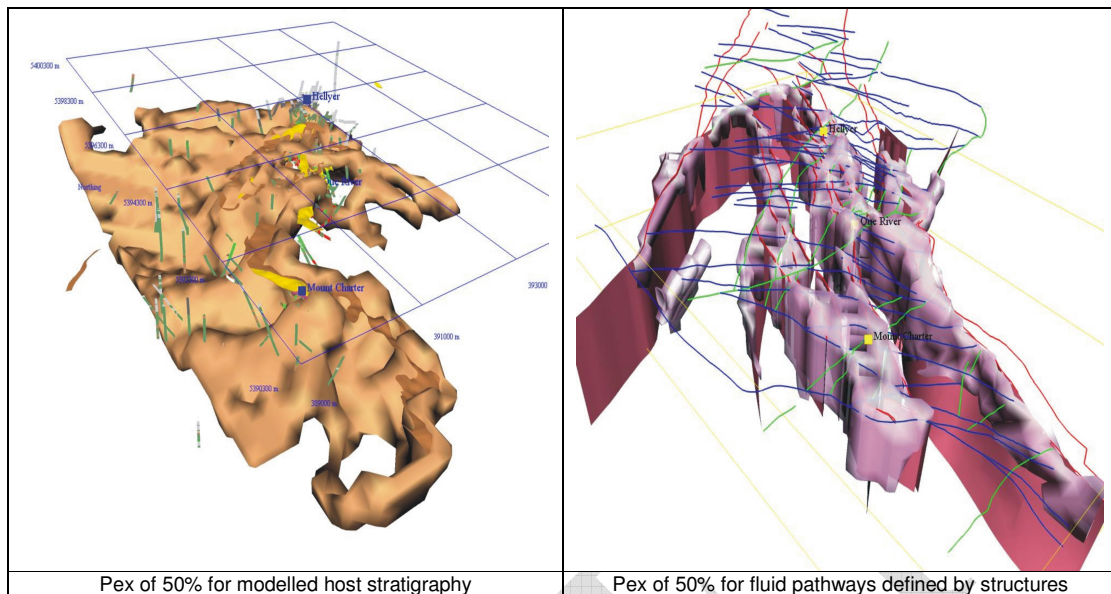
For example, when trying to estimate the probability that a certain fault is a pathway for mineralising fluids, Pex is the probability that a fault is present and Peff is the probability that the fault carried mineralising fluids. In this case the Peff could be higher for faults in a dilational syndepositional orientation (e.g NNE) at the time of mineralisation or it could be higher for faults with evidence of geochemical anomalies. The Ueff is an estimate of how well we can constrain the Peff. The Peff and Ueff are often subjective and it is unlikely that they will be correct values. However, relative estimates of these values should be possible. This implies that the actual values for the final probabilities for each layer and the probability of success will be approximate but that relative values should be valid.

**An area of influence (AOI)** is a buffer that is applied to each object when it is placed on the final output grids. This is applied because a given feature could influence a larger area than its mapped extent. For example, a fault on a map may actually comprise a structural zone with a wider influence on surrounding host rocks than suggested by a simple line on a map. The slope is the amount of probability to drop per kilometre after the AOI. This reflects the decreasing effect of an object as you move away from it and also tries to account for spatial uncertainty. The slope is reported in units of per km because the probability does not have any units. So a slope of 0.5/km indicates that the probability will be zero 2 km away from the AOI. The slope for an object is not constant because the spatial uncertainty is dependent on how well constrained an interpretation is. So if a unit that is pierced by drill holes will have a steeper slope near the drill holes and a broader slope away from them. Results from the MOCA targeting are presented on 3D probability grids. The targeting uses output probability grids with a 100m and 200m grid cell size.

To generate three-dimensional targets, the geological framework and probability grid is interrogated based on the four components of **host, pathway, focus, and trap**.

From earlier compilation of published interpretations and interpretations of the open-file data, the key **host** rocks to particular mineralization systems are identified. The

probability grid can be filtered to show areas of higher probability that the host stratigraphy is present.



Similarly, key structures interpreted as fluid conduits for mineralizing fluids are assigned buffer zones or areas of influence. Intuitively, areas of intersection of these **pathway** zones with host stratigraphy are the broader target areas.

Other features interpreted as integral in the localization of mineralization such as cross-cutting faults or folds are also assigned areas of influence and each structure continues to retain its original Pex/Peff. This represents the **focus** input layer.

The **trap** input layer incorporates evidence that the target metal/sulphides were precipitated within a preferred host horizon. The primary consideration for the trap site is therefore the recognition of geological, geochemical, and/or geophysical evidence for metal precipitation.

Three datasets respectively were chosen to test for trap sites;

- Drilling data with recorded evidence of sulphide precipitation, either directly observable or reflected in assay analyses,
- Surface geochemical data including C-horizon soil sampling, MMI analyses, rock-chips or stream sediment sampling,
- Ground and airborne electromagnetic (EM) data to test for coherent massive sulphide material providing sufficient electrical continuity and conductivity to directly indicate a VHMS trap environment.

Both the drilling and geochemical data can be considered discontinuous datasets and not amenable to the production of ubiquitous gridded coverage across the modelled region. Consequently, these data were used adjunctively to test for multivariate metal anomalism at each Host-Pathway-Focus (HPF) site generated by the 3D MOCA targeting algorithm.

Probabilities of existence and effect are multiplied as such to give a probability of success for each given target area. These are directly comparable with other targets and the method thereby acts as a transparent ranking tool in terms of prospectivity.

***Modified from a description of the Geoinformatics Inc. MOCA process supplied by Dan Core and Graeme Cameron from that company.***