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2013
COMBINED
ANNUAL TECHNICAL REPORT No GR210/11
EL 27372 (Rover)
EL 27292 (Rover North)

For the Period 27 May 2012 to 26 May 2013

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Title Holder:	Adelaide Exploration Pty Ltd
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Keywords
Rover Field, Tennant Creek, Ironstone, Gold, Copper, Bismuth, Warramunga Group, Diamond Drilling, Geological Modelling, Mineral Inventory.

1 Summary

Exploration Licence 27372 (Rover) and Exploration Licence 27292 (Rover North) were granted to Adelaide Exploration Limited on 27 May 2010. The tenements replaced former Exploration Licences 7739 and 8912, which expired after ten year terms.

Exploration activities during the current reporting period 27 May 2012 to 26 May 2013 have comprised:

- EL: 27292
  - Office Studies including economic evaluation
- EL: 27372
  - Interpretation of drilling results from previous years
  - Compilation of drill database in preparation for mineral inventory studies and general purposes. Sorting and storage of laboratory pulps on site.
  - Minor earthworks to maintain fire break around Rover Camp
  - Rehabilitation of past diamond drill holes
  - Mineral Inventory (ie non-JORC ore resource estimation) studies on the Rover 4 Prospect
  - Various studies of a corporate nature, plus reporting etc

All exploration activities carried out have been targeting copper-gold mineralisation associated with 'Tennant Creek-Style' deposits within the Rover Field located some 80km southwest of Tennant Creek.

2 Introduction

The following report is the fourth Combined Annual Technical Report for Exploration Licences 27372 (Rover) and 27292 (Rover North). Exploration during the reporting period 27 May 2012 to 26 May 2013 predominantly comprised activities around defining a non JORC compliant Mineral Inventory for the Rover 4 deposit:

- AMC Consultants Pty Ltd (AMC) was commissioned by Adelaide Resources Limited (ADN) to develop a geological model and mineral inventory of the Rover 4 prospect (Rover 4), as defined in AMC's proposal 'AP12005 Rev 2 Rover 4 Geological Modelling and Resource Estimation pdf (Scope) This work was completed in June and July 2012.
- Geological Model:
- Mineral Inventory: 1.28Mt @ 1.06% Cu, 0.37g/t Au, 2.83ppm Ag

The Cu and Au mineralisation within the Rover project area is hosted within variably altered Early Proterozoic 'ironstones' (Warramunga Formation), in association with an array of other component elements (i.e. Bi, As, Co, Mo).

3 Location and Access

Exploration Licences EL 27372 and EL 27292 are located approximately 75-85 kilometres southwest of Tennant Creek (Figure 1).

Access is via an unsealed track, which leaves the Stuart Highway five kilometres south of Tennant Creek and travels west to the currently abandoned aboriginal Outstation of Kunayungku. From Kunayungku the track heads generally south-southwest to access the Rover Field tenements. This latter section of track was constructed during Peko Mines Rover Field exploration program conducted in the 1970's and was refurbished in 2005.

The track in general is properly formed up with table drains and is generally navigable even after relatively heavy rain.

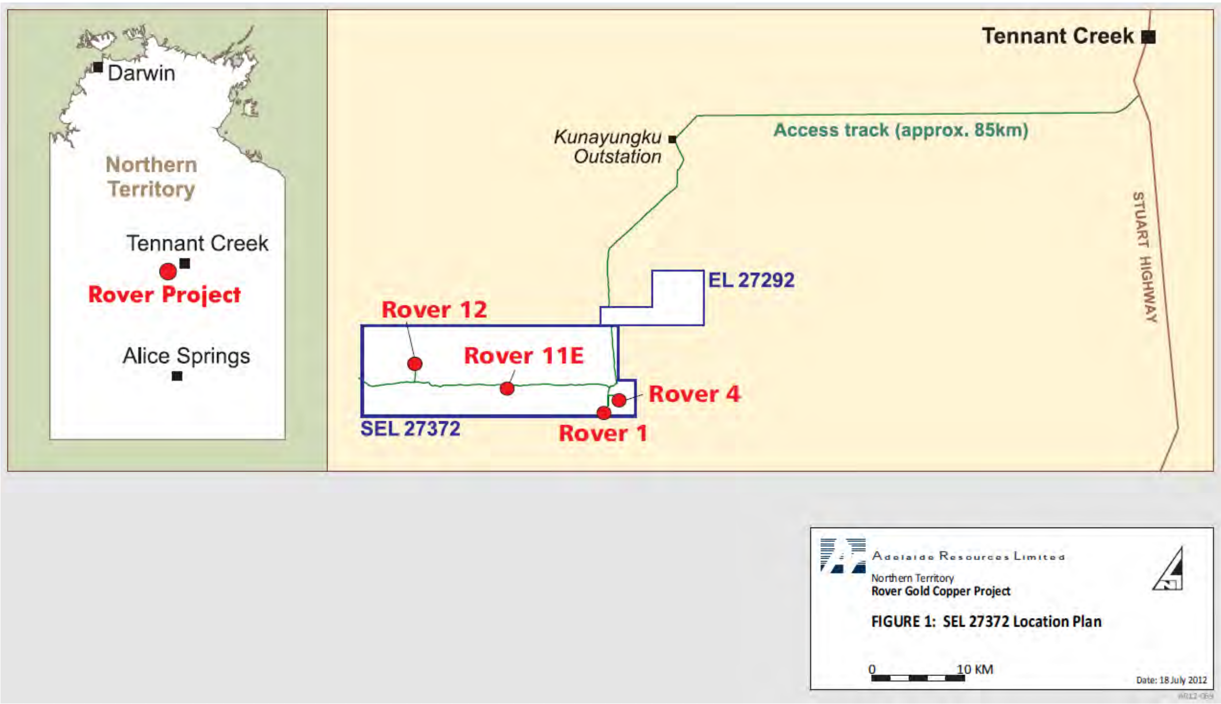


Figure 1: Rover Project, Prospect Location Plan.

4 Tenure

Exploration Licence (EL) 27292 covers an area of twelve (12) blocks and covers a portion of the area that was formerly held by Adelaide Exploration Pty Ltd under Exploration Licence 8921. EL 27292 was granted to Adelaide Exploration Pty Ltd on 27 May 2010 for a term of six (6) years expiring on 26 May 2016.

Substitute Exploration Licence (EL) 27372 covers an area of seventy-seven (77) blocks and covers former Exploration Licences 7739 and 25512 that were also held by Adelaide Exploration Pty Ltd. EL 27372 was granted to Adelaide Exploration Pty Ltd on 27 May 2010 for a term of four (4) years expiring on 26 May 2014.

Both EL 27292 and EL 27372 fall on Aboriginal Freehold Land held by the Karlantijpa South Aboriginal Land Trust.

5 Climate and Landform

The area secured by EL 27372 and EL 27292 is a flat and featureless plain covered by sand. Total relief across the tenement is less than 10m averaging an RL of about 295m (Australian Height Datum). Vegetation in the area is governed by the semi-arid climate. Soft spinifex (Triodia pungens) is abundant and scattered ghost gums (Eucalyptus papuana) and snappy gum (E. brevifolia) are conspicuous. Mulga (Acacia aneura) may form thick scrub while numerous acacia species are present in sandy areas.

The Tennant Creek district lies within the tropics however its distance from the ocean limits the amount of moisture available. The climate is hot in summer and relatively mild in winter. Yearly average rainfall at Tennant Creek is about 459mm falling predominantly in the summer months (December to February). Prevailing winds at the surface are from the southeast. Mean daily temperature maxima range from about 24 C in July to over 37 C in December.

6 Regional Geology

The geological terrain of the Tennant Creek region consists of a deformed and complex Lower Proterozoic metasedimentary basement intruded by several generations of Proterozoic granite. This basement terrain is overlain by relatively undeformed and generally flat lying younger sediments of the Middle Cambrian to Devonian Wiso Basin to the west and Late Proterozoic to Devonian Georgina Basin to the east. These basins have subsequently been blanketed by extensive shallow colluvial, alluvial and aeolian cover sediments belonging to the current Holocene landscape regime.

6.1 Tennant Creek Field Geology

The historic Tennant Creek mining district occupies an area of some 90 km x 50 km within the Proterozoic basement. The characteristic gold-copper-bismuth deposits of the district are hosted by discordant ironstone (magnetite-hematite) bodies within Warramunga Formation metasediments, which represent the basal section of the Proterozoic sequence.

The Warramunga Formation is overlain by a deformed and largely volcanic sequence previously referred to as the Flynn Subgroup, but now denoted the Ooradidgee Group. This unit includes previously defined stratigraphic units such as the Whippet Sandstone, Bernborough Formation and Warrego Volcanics.

The Warramunga Formation and Ooradidgee Group are unconformably overlain to the north by younger Proterozoic Tomkinson Creek Group and to the south by younger Proterozoic Hatches Creek Group.

The Tennant Creek goldfield is located within a well-defined inlier of the older Warramunga Formation rocks within a more extensive Proterozoic terrain. The dominant Warramunga lithologies consist of shales, siltstones, tuffs and greywackes accompanied by prominent argillaceous iron-rich units ('banded iron formations') referred to locally as hematitic shales. At least three major episodes of granite emplacement and associated volcanic activity are currently recognised in the region, referred to as the Tennant Creek Supersuite, the Treasure Suite and the Devils Suite.

6.2 Rover Field Geology

The Proterozoic basement of the Rover Field is concealed by shallow Wiso Basin cover, and basement geology has been interpreted from available drilling and airborne magnetic surveys.

Basement geology in the Rover area is interpreted as being a close analogy of the Tennant Creek Field with Warramunga Formation hosting the ironstone bodies of the Rover Field occupying a well-defined inlier within younger Proterozoic rocks assigned to the Ooradidgee Group (or Flynn Subgroup) and overlying Hatches Creek Group. The interpreted Warramunga Formation in the Rover Field is therefore contained within a basement inlier of very similar character to that at Tennant Creek, and is of a similar scale and orientation to the so-called 'Central Field' at Tennant Creek.

Lithologies interpreted to be Warramunga Group intersected in drill core at Rover are indistinguishable from Warramunga formation sediments at Tennant Creek. These include sequences of deformed and greenschist facies metamorphosed greywacke, shales, mudstones and minor tuff beds. "Hematite shales" are also recorded in many of the Rover drill holes.

Several historic holes at Rover have failed to intersect Warramunga sediments, instead encountering felsic and mafic volcanic sequences. These may represent possible correlates to the Flynn Subgroup/Ooradidgee Group.

The flat lying Cambrian sediments of the Wiso Basin cover comprise siltstones and carbonates (predominantly dolomite), while a thin basal conglomerate is observed in many drill holes completed in the Rover Field.

Thin Quaternary cover at Rover is dominated by aeolian sand.

Weathering is lateritic in nature with a prominent ferruginous layer comprised of iron pisoliths present just a few metres below surface. This ferruginous layer is the likely source to short wavelength low amplitude (~2 nT) "noise" observed in ground magnetic data collected in the field. Weathering persists to approximately 100m below surface.

Ground water is present in the Wiso Basin sediments and significant flows can be obtained from relatively shallow depths (<30m). Narrow porous and permeable zones within carbonate below the base of weathering also contain ground water. Water quality in the Rover Field is verging on potable.

7 Previous Exploration

7.1 1960's - Initial Exploration

Exploration activity in the Rover area was triggered by the release of BMR aeromagnetic data in the early 1960's, in which some strong magnetic anomalies were identified. The area was secured by Australian Ores & Minerals (AOM) as A. to P. 2451 in the mid-1960s to investigate four magnetic anomalies corresponding to prospects later named as Rover 1, 6, 11 and 12.

7.2 1970's to early 1980's

The Geopeko – AOM Joint Venture An exploration joint venture formed by Geopeko and AOM in 1971 conducted follow up ground magnetic and gravity surveys and magnetic modelling of Rover targets.

Drill testing commenced in May 1972, initially focusing on Rover 1. The first hole (R1 DDH1) intersected Warramunga Group metasediments at 142m downhole, Tennant Creek – style alteration from around 400m, and minor ironstone lode at around 500m downhole. Gold values were relatively low, up to a maximum in the range 1.3 – 1.4g/t. The second hole (R1 DDH2 parent and 7 wedged deflections) intersected high grade Au – Cu mineralisation, including 15m at 17.3g/t Au and 0.7% Cu in hole R1 DDH2-2 at around 525m below surface.
Rover 1 was tested by 14 parent diamond drill holes (R1 DDH1 to R1 DDH14) and 17 wedged deflections, returning several additional high grade gold intersections at around 400m and 550 m below surface.

From 1978 to 1983 the original Rover tenement (roughly corresponding to area of current EL 27372) was explored by a joint venture between Geopeko, Shell, and AOM. It is understood that it was the intention of the joint venture that this original Rover tenement contain all the numbered Rover magnetic targets (i.e. Rover 1 to Rover 23). It was later found that the Rover 1 target was located on the boundary of the area currently held as EL 27372 and an adjoining Desertex Joint Venture tenement to the south, (currently EL 24541 held by Westgold Resources). Until late 2009 it had been assumed that the main body of ironstone and contained mineralisation at Rover 1 was located just to the south of the EL 27372 boundary in the adjoining ground.

The original Rover joint venture (Geopeko, Shell, AOM) was dissolved in 1983 and the original Rover tenement was relinquished due to access problems and a perceived lack of potential of the known prospects.
In 1987, Geopeko reapplied for a new licence (EL 5547) over the area of current EL 27372 (Rover), and it is believed that adjoining EL 27292 (formerly EL 8921 (Rover North)) was added

later. The Traditional Owners granted both titles without veto, but Geopeko was then unable to negotiate an acceptable access agreement.

Ownership of the Rover tenements then passed to Normandy Mining as a result of the purchase of NBH Geopeko Tennant Creek assets in 1991.

The surviving diamond drill core from Geopeko's early Rover holes were stored at Warrego Mine and later relocated to storage in the Davidson Street core storage yard in Tennant Creek. Core from the holes drilled within SEL27372 was regarded as attached to the tenement, and was subsequently acquired along with the tenement.

7.3 The Geopeko – Shell Desertex Joint Venture

The separate Desertex joint venture between Geopeko and Shell commenced on 15 March 1976, and applied to a large area surrounding the original Rover EL 5547 (now SEL 27372). Shell farmed in to earn 40% by 30 June 1982 by sole funding an agreed level of expenditure. On 21 October 1982 Geopeko elected to dilute and on 31 Dec 1984 the two parties agreed to freeze their interests at Geopeko 51.42% and Shell 48.58%, and to share care taking costs equally pending a decision on the future of the project. Subsequent mergers and acquisitions resulted in Newmont Australia holding 51.42% and AngloGold holding 48.58% at the time Adelaide Resources acquired the Rover Project.

Exploration by the Desertex joint venture between 1976 and 1982 is reported to have identified 66 prospects representing discrete magnetic anomalies identified from airborne and ground magnetic surveying.

Hydrothermally-altered Warramunga Formation sediments are reported to have been intersected at 10 of 18 prospects that were drill tested, and mineralisation at 3 prospects was tested by 6 or more drill holes, (Rover 1, Explorer 108, and Explorer 142).

It is understood that exploration was suspended in 1982 because Peko and the Central Land Council could not agree on access conditions. As a result, the traditional owners vetoed all EL applications by the Desertex joint venture from 1982 to 1995.

7.4 1990's – Normandy Mining

Exploration of the Babylon Field, including the Rover Field in the Tennant Creek District.

Normandy Mining was active as both miner and explorer for a long period in the Tennant Creek District, originally through its interest in Australian Development NL. They acquired the NBH-Peko tenement holdings in 1991.

Normandy used the term Babylon Field to refer to an extensive NW-SE trending belt of tenements located around 100 km of Tennant Creek, where several Warramunga Formation inliers were recognised in the Proterozoic basement. Normandy launched a new exploration phase in this belt in 1995, initially on 3 tenements granted on the Tennant Creek Station portion of the eastern Babylon Field. Negotiations were also ongoing from this time with other tenement holders and the Central Land Council to extend access to the remainder of the Babylon Field, (including Rover).

Following depletion of reserves and closure of White Devil Mine in 1999, Normandy scaled back its investment in the Tennant Creek District, including exploration, and commenced the process of orderly disposal of its Tennant Creek assets.

These assets (including Rover) were described in considerable detail in an Information Memorandum of March 2000 offering them for sale. After some delay, disposal of Normandy's Tennant Creek assets proceeded as planned, and in June 2001 ownership passed to Giants Reef Mining Ltd who proceeded to develop the small Chariot deposit and to continue district exploration. This transaction excluded Normandy's interests in the Babylon Field exploration tenements, including Rover, which were retained by Normandy for potential farm out.

7.4.1 Babylon Field Exploration

During the 1990's Normandy Mining carried out two new airborne magnetic surveys to support anticipated future exploration:

- 1997 World Geoscience Billiatt area survey in July 1997, at 40m terrain clearance and 75m line spacing
- 1999 Kevron survey of the Rover area at 100/ 200 m line spacing, 40m terrain clearance

Much of the remainder of the Babylon Field is covered by the NTGS Bonney Well airborne survey flown in October 1999 using 60m-terrain clearance and 200m-line spacing.

The processed images from these three surveys were stitched together by Normandy Mining and included in the data acquired by Adelaide Resources. The composite image gives an exceptional synoptic view of basement geology below the concealing Wiso Basin sediments south of Tennant Creek.

Following the decision to withdraw from Tennant Creek, Normandy carried out a major compilation project to capture and evaluate all data from previous exploration work in the Babylon Field, including Rover. The resulting Information Memorandum was completed in April 2001, and is believed to have been compiled initially for internal purposes, but with an eventual objective of negotiating withdrawal via farm out or some other joint venture arrangement with, for example, Anglogold, the surviving Desertex Joint Venture partner at the time. No progress was achieved prior to Normandy being taken over by Newmont early in 2002.

In 2004 Newmont re-activated the process and sought expressions of interest in its 100% owned Rover tenements (EL's 7739 and 8921) from selected junior exploration companies with interests in the region.

Adelaide Resources was invited to submit a tender to acquire the 100% owned tenements, and was selected by Newmont as the successful tenderer.

7.4.2 Rover Field Exploration

The Information Memorandum compiled by Normandy was included in the extensive database acquired by Adelaide Resources along with the Rover tenements. This Memorandum provides useful summaries of Geopeko's previous exploration of the Rover Field targets, and was an essential starting point for the evaluation by Adelaide Resources of the prospectivity and potential of the Rover Field.

Normandy also carried out a substantial re-assay program of samples from Rover 1 (and Explorer 142 and Explorer 108) to confirm the validity of the assay data reported previously by Geopeko. It was concluded that the accuracy of higher-grade assays was adequate to define intersections of potential economic interest, but the reported low-level gold and copper assays were found to be of variable quality, and were considered unreliable.

Normandy's ongoing negotiations with the Central Land Council and traditional owners were finally successful in 2000 when agreement was reached on further exploration of the Rover Field tenements. By this time Normandy had decided on divestment of its Tennant Creek interests, and no ground based exploration was carried out prior to Adelaide Resources acquisition of the ground in early 2005.

8 Summary of Previous Exploration by Adelaide Resources

During the period from 5 June 2005 to 26 May 2011 Adelaide Resources has completed exploration programs that have focused on geophysical surveying/modelling and drilling. Exploration activities completed through the period are summarised as follows:

8.1 Exploration Activities 5 June 2005 to 4 June 2006:

- Rover 12–three pre-collared diamond holes (R12ARD1to R12ARD3) for total 1677.8m.

8.2 Exploration Activities 5 June 2006 to 4 June 2007:

- Rover 12–two pre-collared diamond holes (R12ARD4 & R12ARD7) for total 1198.6m.
- Rover 14 – one pre-collared diamond hole (R14ARD8) for total 240.9m.
- Rover 4–two pre-collared diamond holes (R4ARD5 & R4ARD6) for total 967.8m.

8.3 Exploration Activities 5 June 2007 to 4 June 2008:

- Rover 4 – three vertical RC holes (R4ARD9 to R4ARD11) for total 683 metres.
- R4ARD9 was abandoned at 120 metres
- R4ARD10 was drilled successfully, intersecting hematite dominant ironstone with 15 metres at 2.07% Cu and 0.15 g/t Au from 221 metres.
- R4ARD11 was stopped at 214.4 metres.
- The program was prematurely terminated due to drilling equipment failure.

8.4 Exploration Activities 5 June 2008 to 4 June 2009:

- Rover 4 – Five pre-collared diamond cored holes (three vertical and two inclined) and one vertical diamond tail were drilled at the Rover 4 prospect during the period May to July 2008 for a total 2,200.6 metres drilled. The holes followed up the encouraging results identified in RC hole R4ARD10 drilled in 2007.

- Helimagnetic Surveying – 5,233 line km at 50 m line spacing over the tenement area.
- Gravity Surveying – 2,123 stations read over eastern part of EL 7739 (SEL 27372).
- Geophysical modelling and target generation.
- Water Sampling – three 'drinking water screen' analyses, one each from Rover 4, Rover 12 and Rover 14 prospect areas.
- CLC Sacred Site Clearance in April 2009.
- Partial rehabilitation of 2008 Rover 4 drill sites.

8.5 Exploration Activities 5 June 2009 to 4 June 2010:

- Western Gravity Survey: 2,307 gravity stations read across the central magnetic corridor over the Rover 12, 16, 14 and 11 prospects; Two north-south extensions to provide gravity data across the Rover 13 and Rover 8 prospects.
- Drilling Operations: EL 7739 - Fifteen pre-collared diamond drill holes comprising 969 metres rotary mud drilling and 6,137.5 metres of diamond drilling (7,097.8 metres in total). One pre-collared diamond hole in adjacent tenement EL 25512. Drilling operations were carried out at the following prospects:
  - Rover 4 –
    - Seven holes (R4ARD21, R4ARD24 to R4ARD28) within EL 7739 plus
    - One hole R4ARD20 in adjacent tenement EL 25512.
  - Rover 1 – three holes (R1ARD29, R1ARD30 and R1ARD30-1)
  - Rover 2 – one hole (R2ARD17)
  - Rover 27 – one hole (R27ARD18)
  - Rover 11 East – one hole (R11ARD19)
  - Rover 20 – one hole (R20ARD23)
  - Rover 1-North – one hole (R1NARD22)
- Geochemistry: A total 2,519 half core samples and 132 standards submitted for geochemical analysis for Au-Ag-As-Ba-Bi-Ca-Ce-Co-Cu-Fe-K-La-Mg-Mo-Pb-S-U-Zn & SG.
- Ten samples submitted for petrological analysis.
- Down Hole 3-Component Magnetic surveying of eleven drill holes.
- 2009 drill sites at Rover 2, 27, 4, 1, 11 and 20 were rehabilitated.
- An Annual and Final Technical Report for the period for EL 7739 was submitted to the Department in October 2010.

8.6 Exploration Activities 27 May 2010 - 26 May 2011 (EL27372 & 27292)

- Twenty one (21) pre-collared diamond holes (R1ARD31 to R4ARD45) and ten (10) wedged daughter holes for a total of 1,104 metres of rotary mud drilling and 7,956 metres of HQ and NQ2 diamond coring for a total of 9,060 metres drilled.
- In addition, five (5) holes drilled from neighbouring Westgold Resource's tenement EL 24541 were extended from the tenement boundary into EL27372 for an extra 981m.
- A total 3,184 half core samples (at 1 metre intervals or less) and 165 standards (1 std/20 samples = 5%) were submitted to the ALS Laboratory in Adelaide for Ag-As-Ba-Bi-Ca-Co-Cu-Fe-K -La-Mg-Mo-Pb-SU-Zn by ICP-AES, Au by 30gm Fire Assay and specific gravity (SG) by OA-GRA08d.

8.7 Exploration Activities 27 May 2011 - 26 May 2012 (EL27372 & 27292)

- Gravity Surveying; 1,869 stations at Rover 4, 11 (East, Central & West), 14 and 16 prospects within EL 27372 and at the Rover 3 prospect within EL 27292 **see Figure 2**.
- Twenty one pre-collared diamond holes and five daughter holes for a total of 1,318.8 metres of rotary mud drilling and 9,502.75 metres of HQ and NQ2 diamond coring, for 10,821.55 total metres drilled at four prospects – Rover 4, 1, 11 and 12, all in EL 27372.
  - **Rover 1**: Holes completed to 2011 confirmed a significant part of the west-northwest trending Western Zone ironstone/stringer alteration system extends across the tenement boundary into EL 27372. In 2011 3 diamond holes were drilled within the Western Zone, for a total 194.7m rotary mud and 1,872.4m HQ and NQ2 diamond core. Two holes (R1ARD51 & R1ARD54) drilled to test westerly extensions to the ironstone/stringer zone, intersected two significant intervals of magnetite and hematite ironstone. Rover 1 drill hole location plan see **Figure 3**.
    - In R1ARD51 magnetite (and hematite) ironstone occurred through the intervals 326.12m to 403.47m and 412m to 435.24m. Copper-gold mineralisation was intersected in the upper ironstone, with the interval 332m to 364m assaying 32m @ 0.78% Cu and 0.26% Au, including a higher grade interval of 10m @1.79% Cu and 0.4g/t Au from 354m to 364m. The lower ironstone contained only low grade copper mineralisation with a best interval of 5m @ 0.59% Cu through the interval 414 - 419m.
    - In R1ARD54 magnetite (and hematite) ironstone was found in 335.77m to 410.69m and 452.86m to 467.13m, with broad intervals of weak copper-gold mineralisation.
    - R1ARD51 and R1ARD54 confirmed the ironstone system remains open to the west, with a strike of at 180m on the Adelaide Resources side of the tenement boundary.
    - Drill hole R1ARD56 designed to replace hole R1ARD41-3 was abandoned above the target zone. The hole which failed to test the primary target zone and was stopped at the boundary of EL 27372, intersected magnetite (+/-hematite +/-Quartz) ironstone from 449.1m -455.41m and 458.2m -480.41m. The zone included an interval of pervasively brittle fractured magnetite-pink quartz ironstone with fine carbonate veins and late diffuse magnetite-bismuth-talc-sulphide veining similar to the high grade gold zone intersected in hole R1ARD41-1 (2010) immediately south of the tenement boundary. The interval contained strongly anomalous copper-gold-bismuth, to a maximum of 1m @ 1.1% Cu, 3.07g/t Au and >1% Bi (479 to 480m).

  - **Rover 4**: 14 diamond holes and 2 daughter holes see **Figure 4**, were completed, for 916.3m rotary mud and 5,186.52m HQ and NQ2. All holes were drilled to target depth. R4ARD60 and R4ARD55 were abandoned prematurely due to drilling problems. Drilling was carried out across the Eastern, Central and Western zones at Rover 4, testing margins of defined alteration/mineralisation. All but two holes (R4ARD60/61) intersected the main target alteration zone. Significant Cu +/- Au mineralisation was intersected in many holes, most notably:
    - R4ARD46 - 4m@1.1%Cu & 1.67g/tAu (229-233m), & 2m@11.79g/tAu (245-247m)
    - R4ARD48 - 12m @ 1.36% Cu and 0.29 g/t Au (314-326m)
    - R4ARD52 - 28m @ 1.62% Cu (221-249m) and 15m @ 2.37% Cu (225-240m)
    - R4ARD57 - 7m @ 1.67% Cu and 0.33 g/t Au (240-247m)
    - R4ARD63 - 5m @ 3.84% Cu and 0.43g/t Au (314-319m) and 38m @ 0.53% Cu and 0.19g/t Au (369- 407m)
    - R4ARD63-1 - 2m @ 1.3% Cu and 0.29 g/t Au (316-318m), 2m @ 0.28% Cu and 1.04 g/t Au (343-345m) and 5m @ 1.7% Cu and 0.43g/t Au (370-375m)

- **Rover 11**: Two diamond holes (R11ARD65 & R11ARD66, see **Figure 5** were completed, for 101.9m rotary mud and 712.17m HQ and NQ2 to test a gravity anomaly defined in 2011. The gravity anomaly appears to be offset to the east of the Rover 11 magnetic anomaly previously tested by holes R11 An3 DDH1 and R11ARD19. R11ARD65 and R11ARD66 both intersected strongly altered metasediments, including an interval of pervasive jasper-hematite and dolomite alteration, but only minor sulphide mineralisation. Hole R11ARD65 intersected an interval of brittle shearing (292-295m) with visible bismuth (and copper) mineralisation, that included a maximum assay of 1m @ 1.04g/t Au, 0.47% Bi, 0.23% Cu (292-293m). R11ARD66 intersected weak copper mineralisation to a maximum of 4m @ 0.4% Cu (281-285m).
- **Rover 12**: Two diamond holes and three daughter holes (see **Figure 6**) were drilled, for 105.9m rotary mud and 2,028.29m HQ and NQ2. Parent hole 12ARD59 and daughter holes R12ARD59-1 and R12ARD59-2 were drilled to test whether two separate magnetic anomalies could be a single magnetic ironstone body. The target at 339650mE / 7793157mN occurs at 400 metres depth (approx. 65 below the modelled top of the magnetic source). Parent hole R12ARD59 veered to the west of the target, intersecting a wide zone of strongly altered sediments with a narrow interval of magnetite ironstone at 401.93 - 402.15m associated with sheared black chlorite altered metasediment. Daughter holes R12ARD59-1 and R12ARD59-2, drilled below the parent hole, intersected longer intervals of magnetite ironstone.
    - R12ARD59-1, magnetite ironstone from 415.6m-433.6m, assaying as 17m@0.76%Cu (417-434m), including 3m@1.16% (426-429m) and 1m@1.13%Cu (432-433m).
    - R1ARD59-2 intersected magnetite ironstone between 484.18 to 490.44 metres and 495.33 to 499.28 metres. The upper ironstone assayed as 7m @ 0.72% Cu (484-491m), including 1m @ 1.41% Cu (488-489m). The lower ironstone was strongly sulphidic but dominantly as pyrite, assaying as 5m @ 0.47% Cu (495-500m). In addition to the ironstone sequences, an interval of strongly sheared and altered metasediment with strong visible copper mineralisation was intersected higher in the hole. The interval 405.21 to 408.13 metres is a strongly foliated sandy textured metasediment with pervasive black chlorite-magnetite-sulphide alteration that assayed 4m @ 1.22% Cu and 5.57 g/t Au (405-409m), including 1m @ 1.39% Cu and 13.5 g/t Au (406- 407m). This interval appears similar to the short interval of sandy textured (semi ironstone) unit intersected in parent hole R12ARD59. A massive sulphide (chalcopyrite dominant) vein associated with intensively sheared black chlorite altered metasediment was intersected through the interval 414.5 to 414.9m followed by a zone of tightly folded, strongly sheared and intensively (black) chlorite altered metasediment. The interval 414-416 metres assayed as 2m @ 5.08% Cu and 0.35g/t Au (including 1m @ 8.69% Cu and 0.31g/t Au 414-415m, associated with the massive sulphide (chalcopyrite) vein zone).Parent hole R12ARD64 and daughter hole R12ARD64-1 were drilled inclined from the south to test for continuity of mineralisation east of earlier holes DDH 1 and DDH 2 drilled by Geopeko in the 1970’s and R12ARD 1-3 and R12ARD7 drilled by Adelaide Resources in 2005/2006, which intersected a series of weak moderately copper mineralised ironstones. R12ARD64 intersected weakly copper mineralised ironstone through the interval 564.94 to 579.9 metres. Daughter hole R12ARD64-1 intersected three thin ironstone intervals 461.45m to 462.6m, 481.42m to 483m and 501.62m -503.58m, and a massive ironstone from 511.32m -520.78m, all containing relatively weak copper mineralisation, to a maximum of 1m @ 1.31% (482-483m).

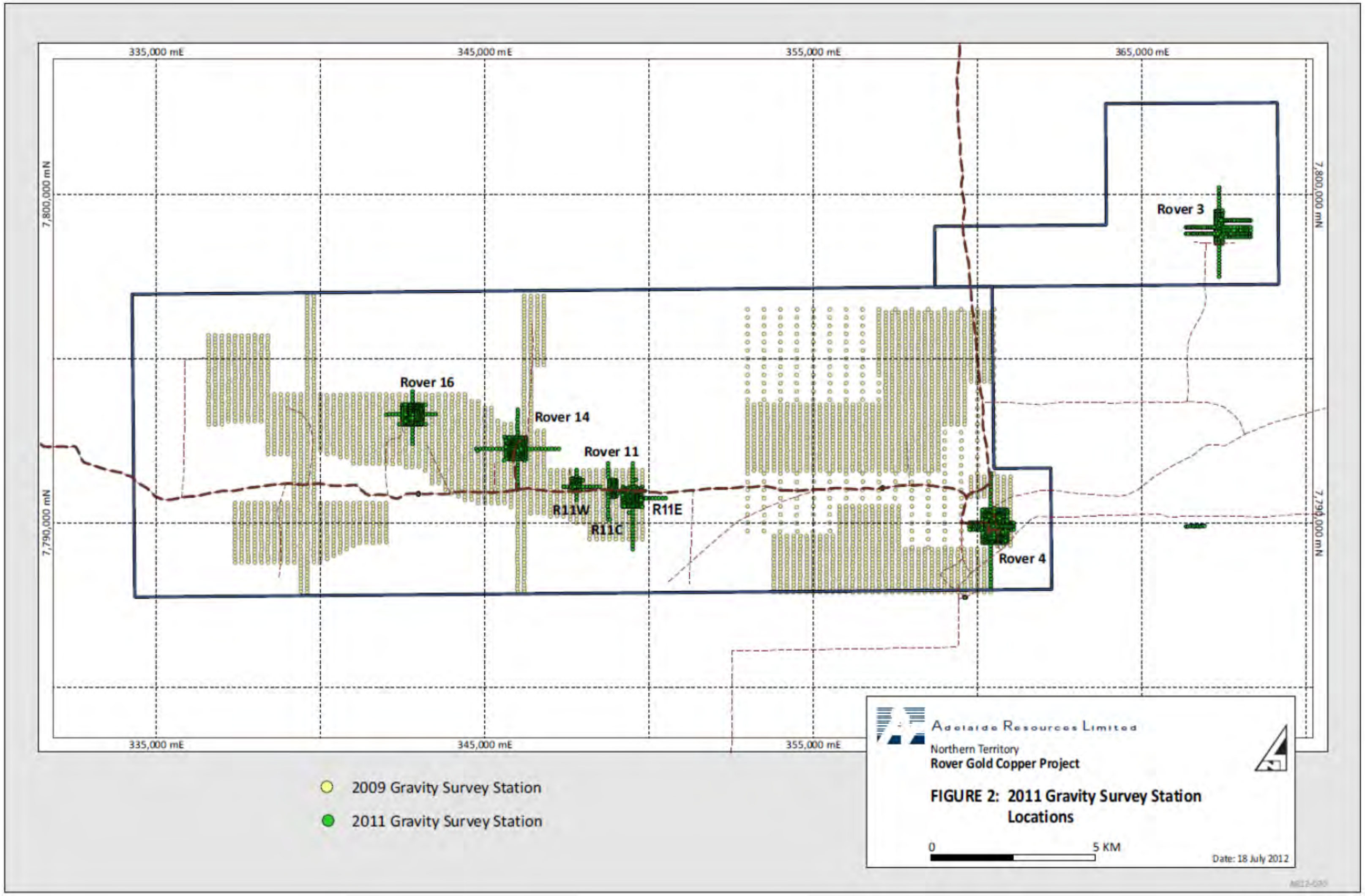


Figure 2: Gravity Survey Station Locations

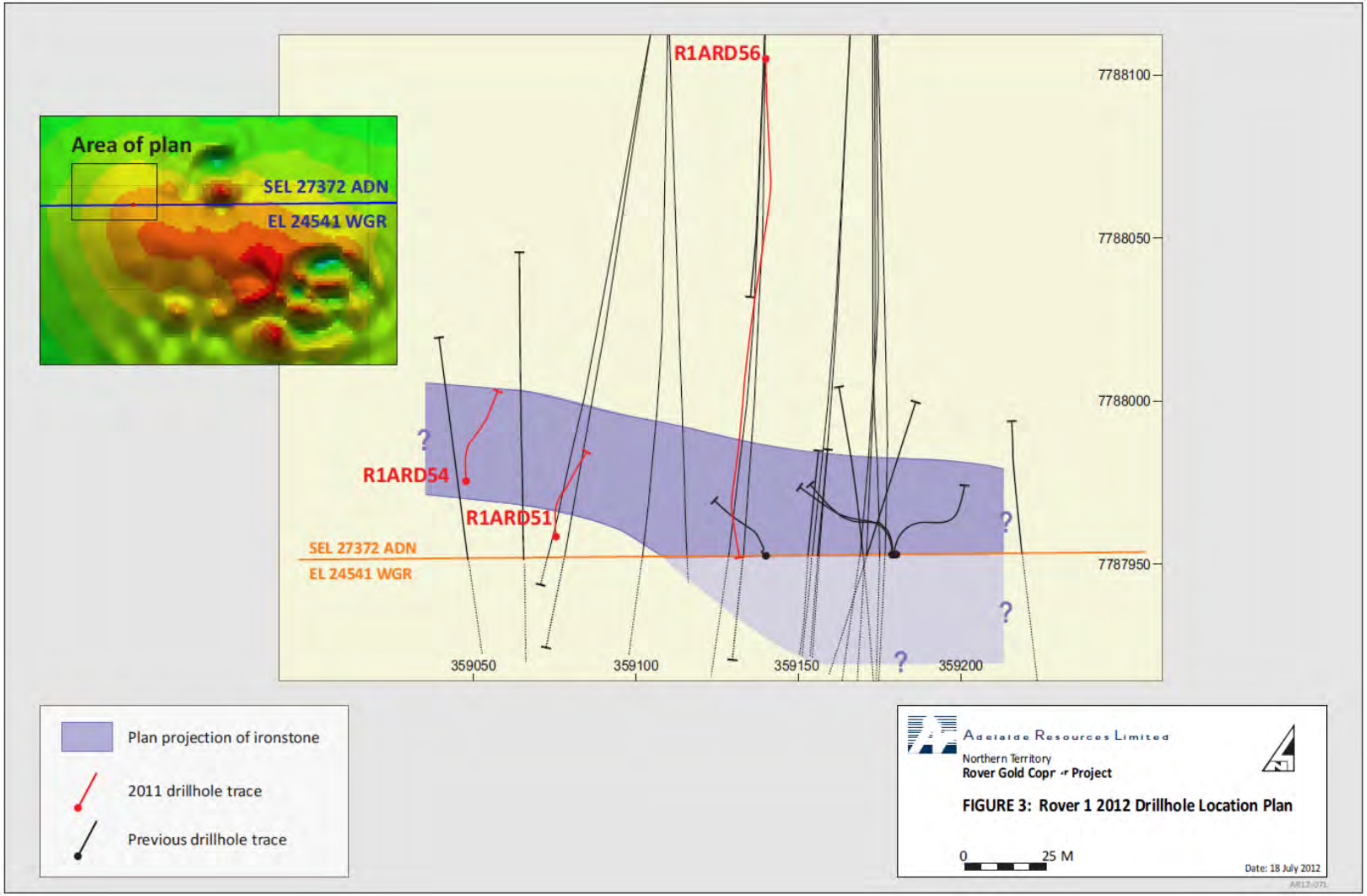


Figure 3: Rover 1 – 2012 Drill Hole Location Plan

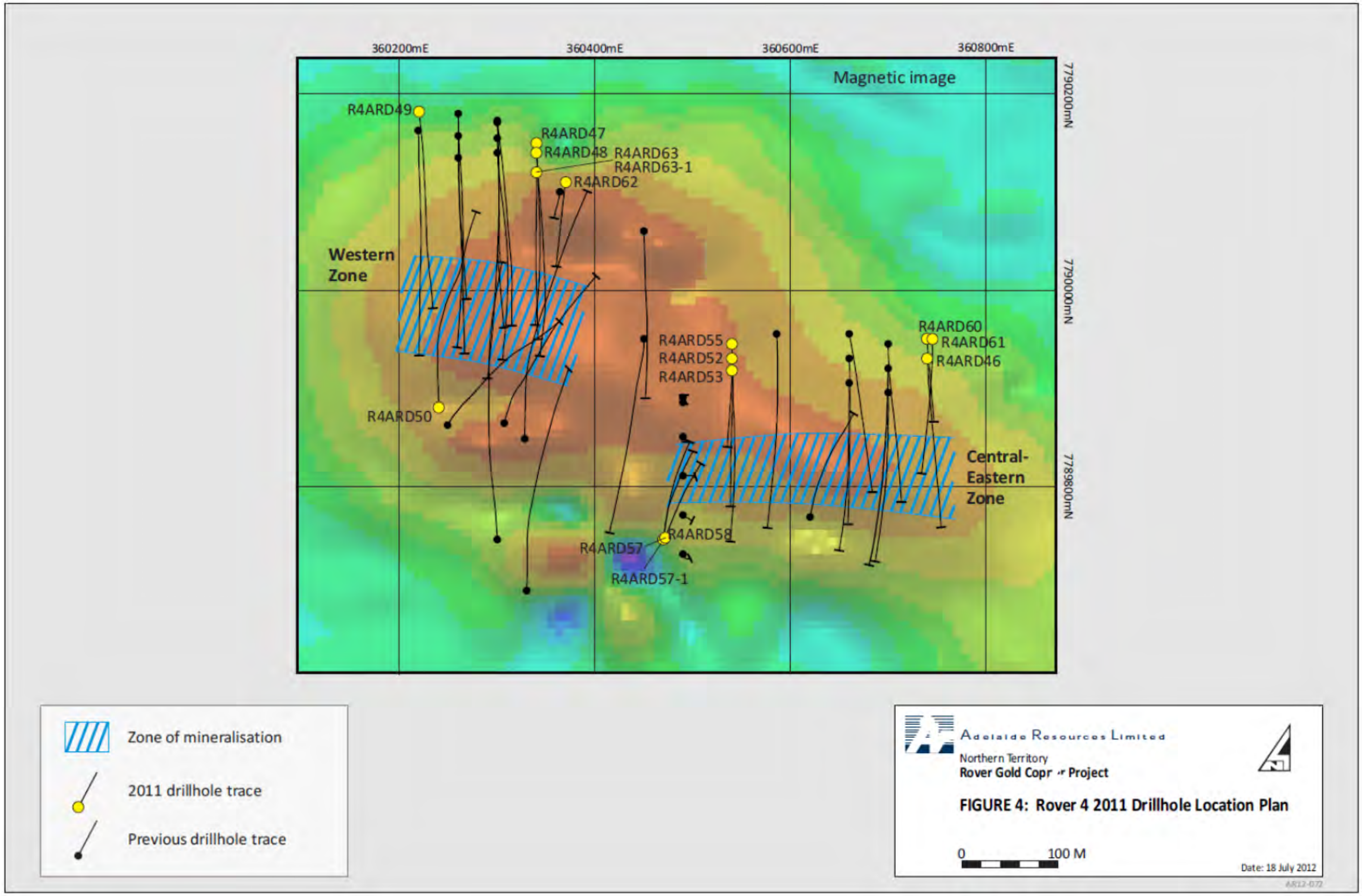


Figure 4: Rover 4 – 2011 Drill Hole Location Plan

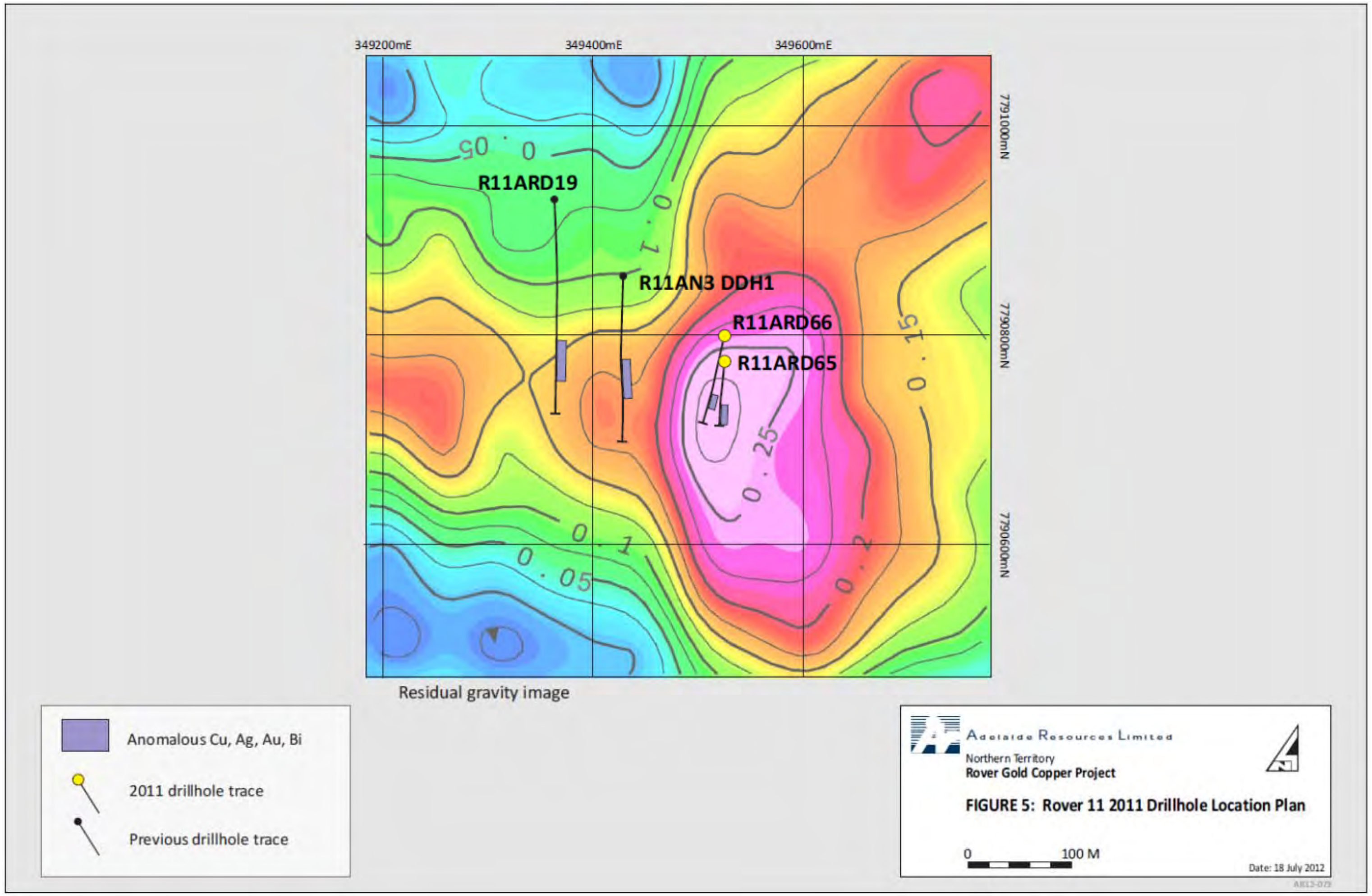


Figure 5: Rover 11 – 2011 Drill Hole Location Plan

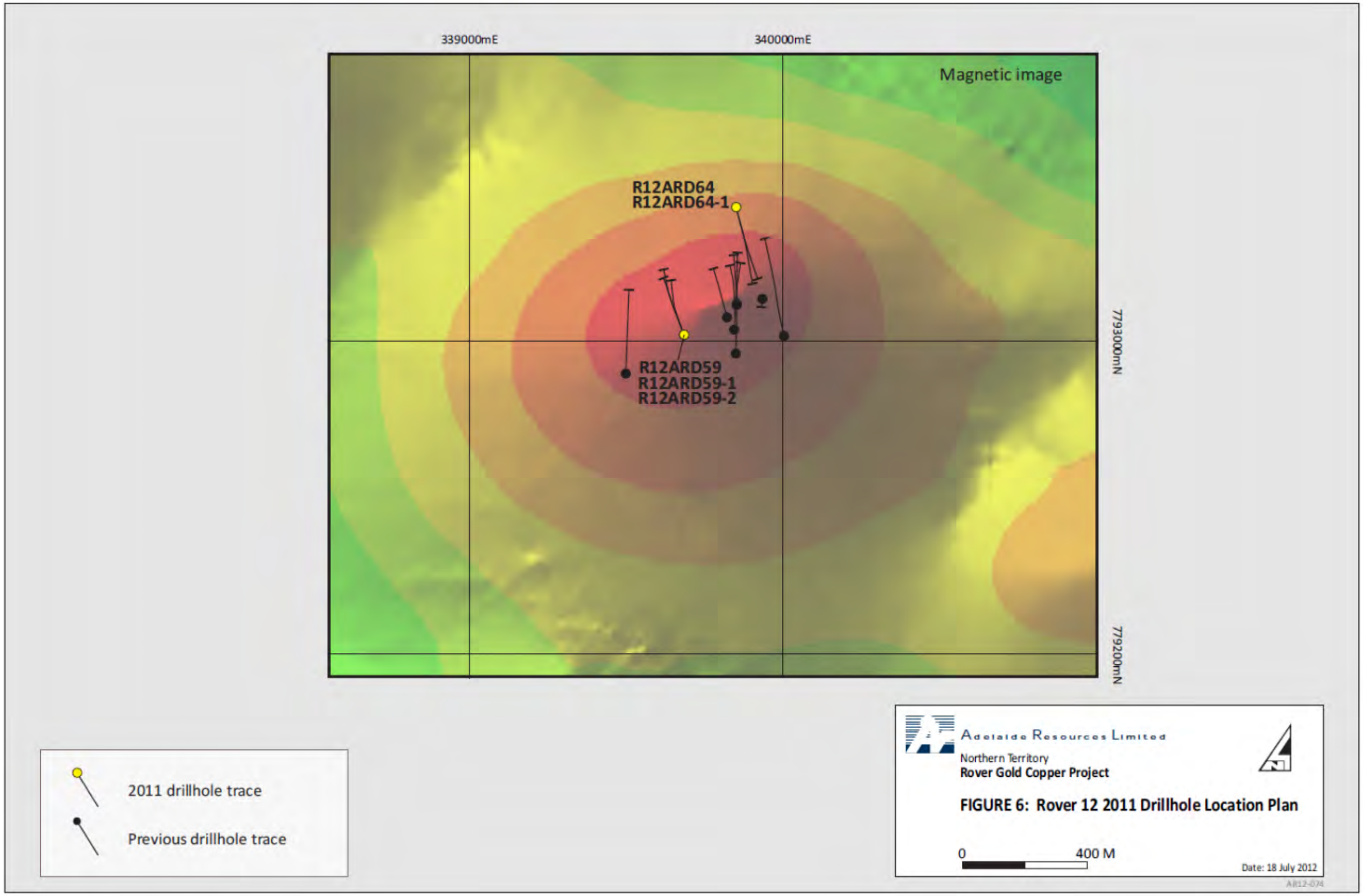


Figure 6: Rover 12 – 2011 Drill Hole Location Plan

9 Recent Exploration Activity –27 May 2012 -26 May 2013.

9.1 Summary

Exploration activities during the reporting period 27 May 2011 to 26 May 2012 comprised

- EL: 27292
  - Office Studies including economic evaluation
- EL: 27372
  - Interpretation of drilling results from previous years
  - Compilation of drill database in preparation for mineral inventory studies and general purposes. Sorting and storage of laboratory pulps on site.
  - Minor earthworks to maintain fire break around Rover Camp
  - Rehabilitation of past diamond drill holes
  - Construction of a 3 dimensional geological model of the Rover 4 deposit
  - Calculation of a Mineral Inventory (ie a non-JORC ore resource estimation) on the Rover 4 deposit
  - Various studies of a corporate nature, plus reporting etc

9.2 Geological Model and Resource Estimation.

9.2.1 Introduction

AMC Consultants Pty Ltd (AMC) was commissioned by Adelaide Resources Limited (ADN) to develop a geological model and mineral inventory of the Rover 4 prospect a summary of that report follows the full report and is attached in Appendix 1. This work was completed in June and July of 2012.

9.2.2 Data

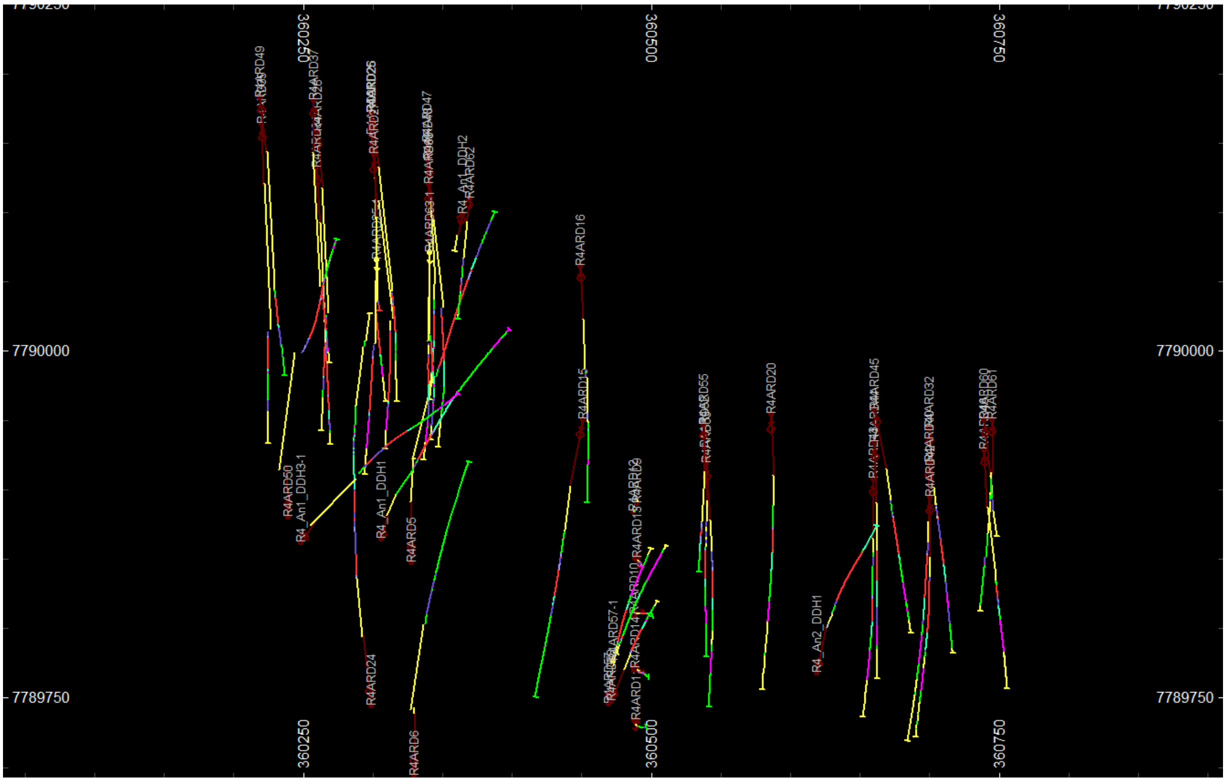
To complete the study AMC was supplied with the following raw data extracts in comma delimited (*.csv) file format (see Table 11).

Table 1: Drill hole Data Extracts Provided by ADN

File Name	Date Stamp	Description
R4 COLLAR_Update.xlsx	29/06/2012	Final surveyed collar data
R4 SURVEY.xlsx	13/06/2012	Downhole survey data
R4 STRUCTURE.xlsx	13/06/2012	Logged structural data – α and β.
R4 MAG SUSC.xlsx	13/06/2012	Magnetic susceptibility data
R4 RQD.xlsx	13/06/2012	RQD Data
Copy of R4 ASSAY_cgd edits 2 .xlsx	26/06/2012	Final assay data file
R4 LITHO_Draft Ver2.xlsx	25/06/2012	Final lithological log file

The final Rover 4 drillhole file used in the estimation contains assay information for 47 drillholes, comprising 44 diamond holes ('DD') and 3 reverse circulation (RC) holes (1 'RCDD' and 2 'RC'). The total drilled metres was 18,122 m. Drillhole 'R4ARD50' was excluded from the estimation data set due to concerns with respect to accuracy of its collar location. A projected plan view of the raw drill hole file is shown in **Figure 7**.

Figure 7: Plan view of Rover 4 Drill hole Locations

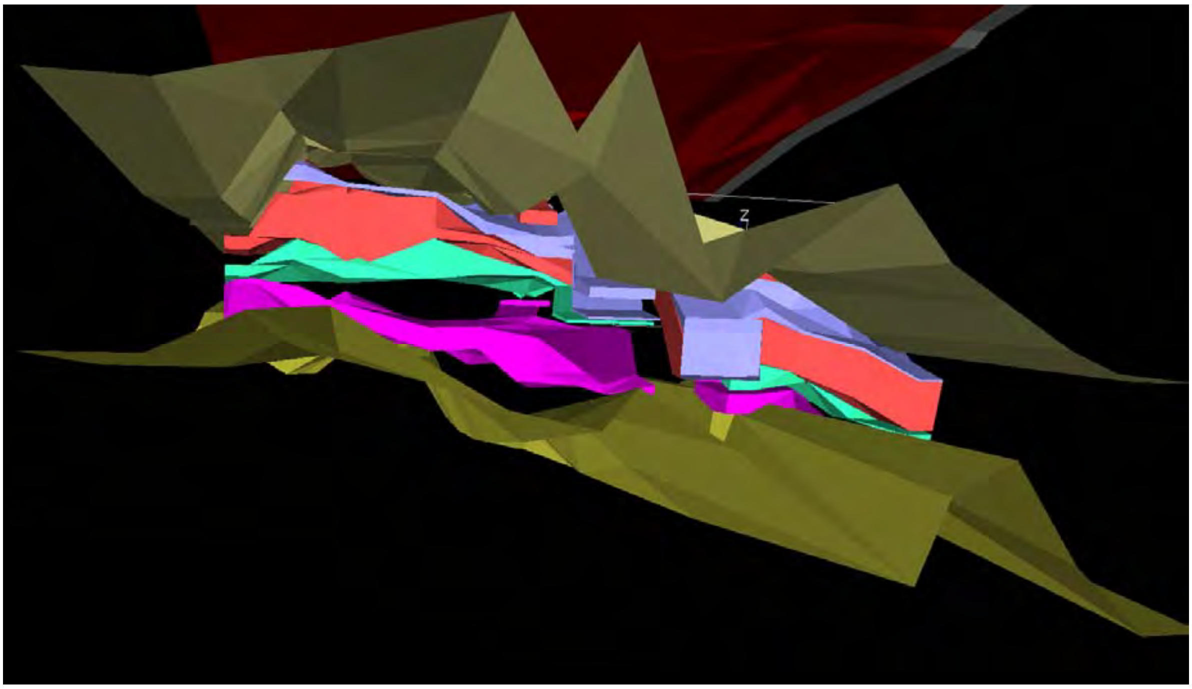


9.2.3 Geological Modelling

AMC developed wire framed 3-D geological interpretations of the ironstone zones and other pivotal geological and mineralogical domain boundaries from all available drill hole data. ADN personnel were closely involved in this interpretation process and provided detailed input and review of both the geological and mineralogical domain boundaries that were developed. These wire framed interpretations were used to develop a cell model that represents the volume associated with the various domains.

The lithological domain interpretation was incorporated into the drill hole sample coding and model cell coding using a field called CODEABBV. Each different geology domain was identified in the CODEABBV field using numerical flag identifiers, see **Figure 8**.

Figure 8: Projected View of Lithological Domains (CODEABBV)



The CODEABBV domain flags are described in Table 2. The names of the wireframes used to achieve the domain flagging are included for future reference.

Table 2 CODEABBV Domain Flags

Description	CODEABBV	Datamine Wireframe Name
bCL MS	1	msundb6_tr/pt
CL MS	2	–
Cover	3	cvr3_tr/pt
DSS DO	4	dssdo4_tr/pt
mSMAZ IS	5	smaz5_tr/pt
MS Undifferentiated – Upper	6	msunda6_tr/pt
MS Undifferentiated – Lower	6	msundb6_tr/pt
QP	7	qp7_tr/pt
SBX	8	sbx8_tr/pt
baSK	9	–

For the purposes of estimation the following lithological domains were combined:

- bCL MS (CODEABBV=1) and CL MS (CODEABBV=2)
- mSMAZ IS (CODEABBV=5) and baSK (CODEABBV=9).

9.2.4 Mineralised Domain Interpretation

The mineralised domain interpretation was incorporated into the drillhole sample coding and model cell coding using a field called MINZON. There were two distinct mineralised domains interpreted:

- A less continuous inner core of assays generally >0.3% Cu (Figure 9).
- A reasonably continuous outer halo of assays generally >0.1% Cu (
- Figure 10).

The MINZON domain flags are described in Table 9.

Table 9 MINZON Domain Flags

Description	MINZON	Datamine Wireframe Name
>0.3% Cu Domain	1	cu03_tr/pt
>0.1% Cu Domain	2	cu01_tr/pt
Waste	–	N/A

Figure 9: Projected View of Cu>0.3% Mineralisation Interpretation (MINZON=1)

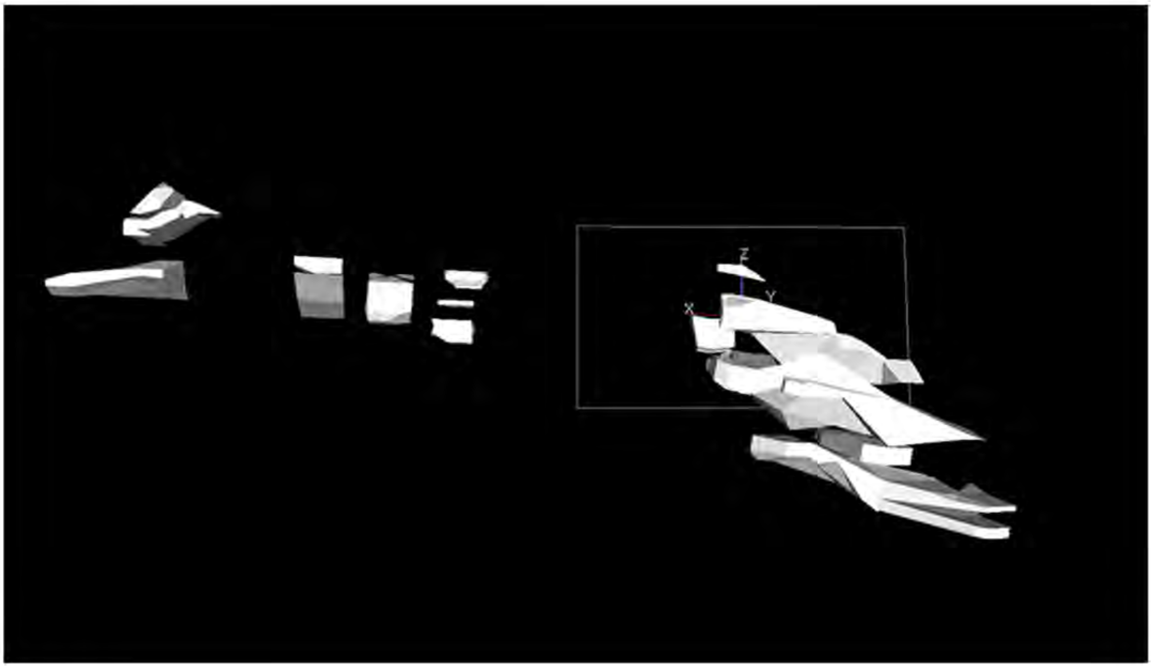
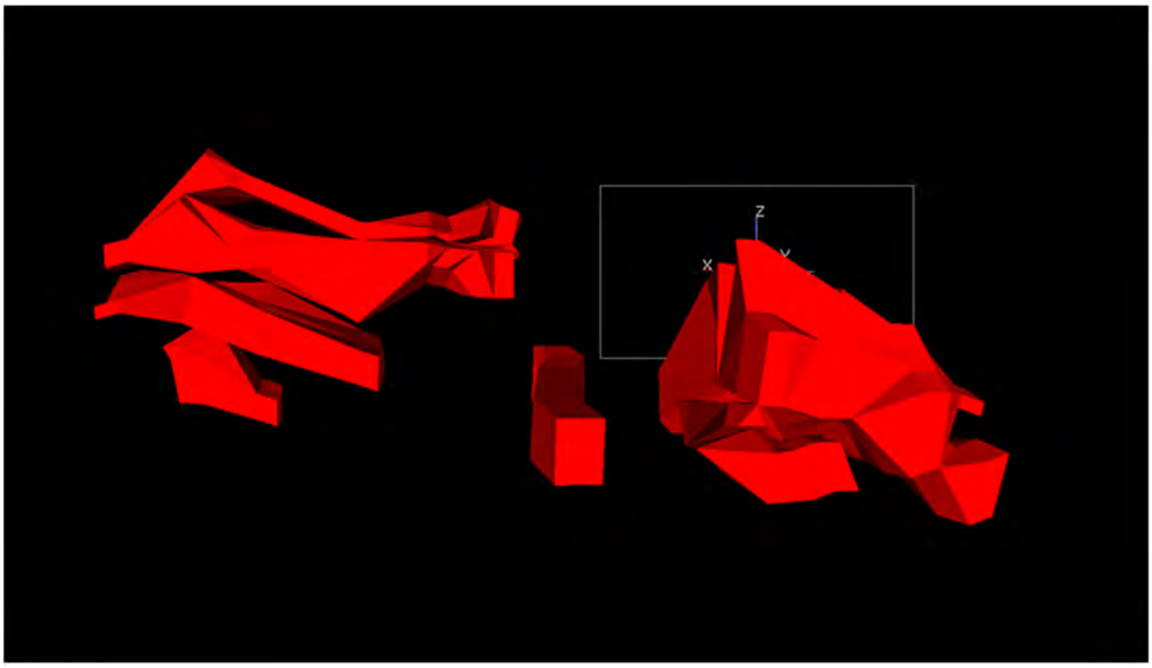


Figure 10: Projected View of Cu>0.1% Mineralisation Interpretation (MINZON=2)



Based on the current drilling, it is interpreted that the mineralization and lithological domains are offset by a fault shear zone located at or around 360 425 m E.

For the purposes of estimation, the sample data set was bisected along 360 425 m E, and samples and model cells either side of this easting were flagged with a ZONE code to enable the two domains to be estimated separately.

The ZONE codes are as outlined in Table 4.

Table 4 ZONE Domain Flags

Description	ZONE
Samples located >360 425 m E	1
Samples located =<360 425 m E	2

The requirement to top cut outlying assay values was assessed from the statistics. As the maximum Cu grade is 7.55% Cu top-cuts were considered unnecessary.
The maximum Au grade is 15.1 g/t. One top-cut was applied: to drill hole 'R4ARD14' (269 – 270 m) with Au reset from 38g/t to 15.1g/t, which represents the second highest Au value.

A geological cell model was constructed in Datamine using the prototype parameters shown in Table 5.

Table 5 Cell Model Prototype Parameters

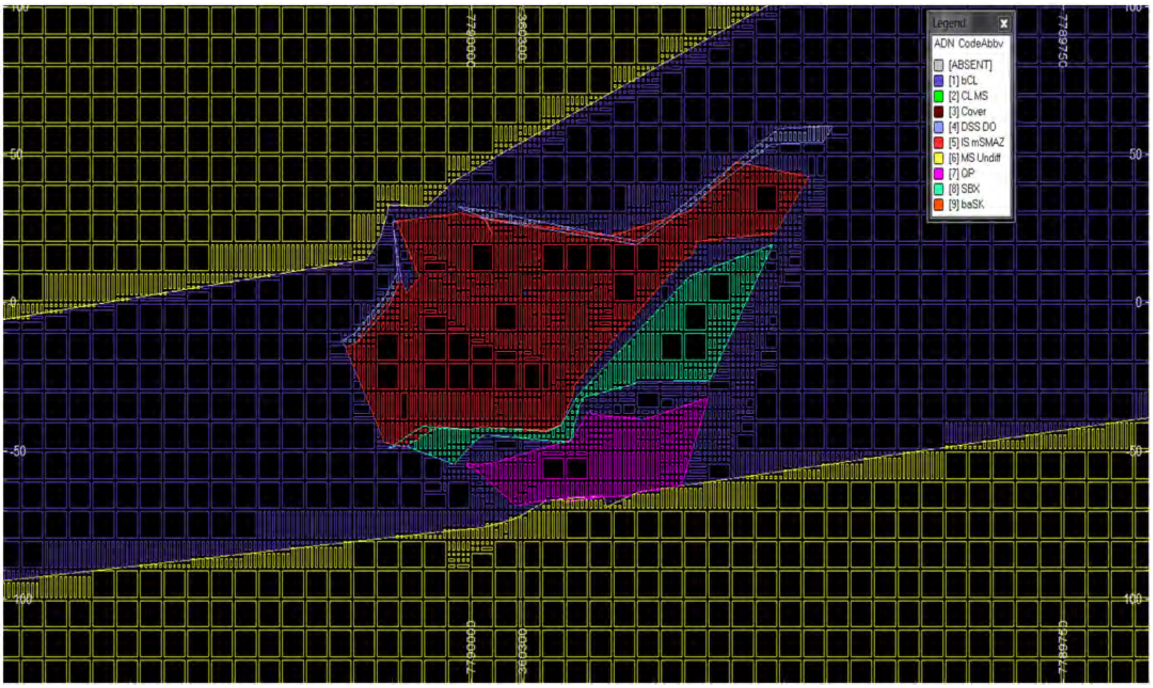
Coordinates	Minimum	Maximum	Range	No. of Cells	Cell Size
Easting	360 200 m E	360 800 m E	600 m	60	10 m
Northing	7 787 700 m N	7 790 250 m N	550 m	55	10 m
Elevation	-200 m RL	300 m RL	500 m	50	10 m

Subcelling down to 2 m E x 2 m N x 2 m RL was utilised to ensure domain boundaries were honoured as accurately as possible.

An oblique sectional view of the cell model depicting the various geological units (CODEABBV) is shown in Figure 11.

The selected model prototype parameters were determined after due consideration of the drill hole spacing over the entire deposit.

Figure 11: Oblique Section View of Cell Model (Section 360 305 m E)



9.2.5 Grade Estimation

On completion of the geological cell model AMC estimated grades and SG into the cells. This was undertaken in a manner that reflects the spatial population distributions of the input drill hole dataset.

The grade estimation used inverse distance weighting to the power of two (ID^2) method to provide ADN with a reasonable representation of the overall mineral inventory.

The search parameters define the volume from which the samples are selected. In the case of the Rover 4 model estimates, the search volume is an ellipse with dimensions and orientations designed to suit the overall trend of the mineralised zone.

Statistical validation of the estimates was undertaken to provide a global understanding of the performance of the estimation process. This involved the analysis of estimation performance data from each domain. The following observations are made from the estimation performance data:

- The mean number of samples used in estimation generally hovers around the half-way point between the minimum and maximum, thus demonstrating appropriate sample sourcing within the assigned search range. If the mean number of samples was close to the minimum allowable, this would indicate that the search neighbourhood was too small, and if the mean number of samples was close to the maximum allowable, indicating that the search neighbourhood was too large.

- On average, 97% of Cu estimates were populated in either the first or second pass. This is reflected in the average SVOL_CU typically being less than 2.

Visual validation was completed on oblique sections (at 20 m increments) and plan (at 10 m increments) for Cu (see
Figure 12) and Au (see Figure 13) and no major aberrations were observed.

Figure 12: Example of Visual Validation for Cu

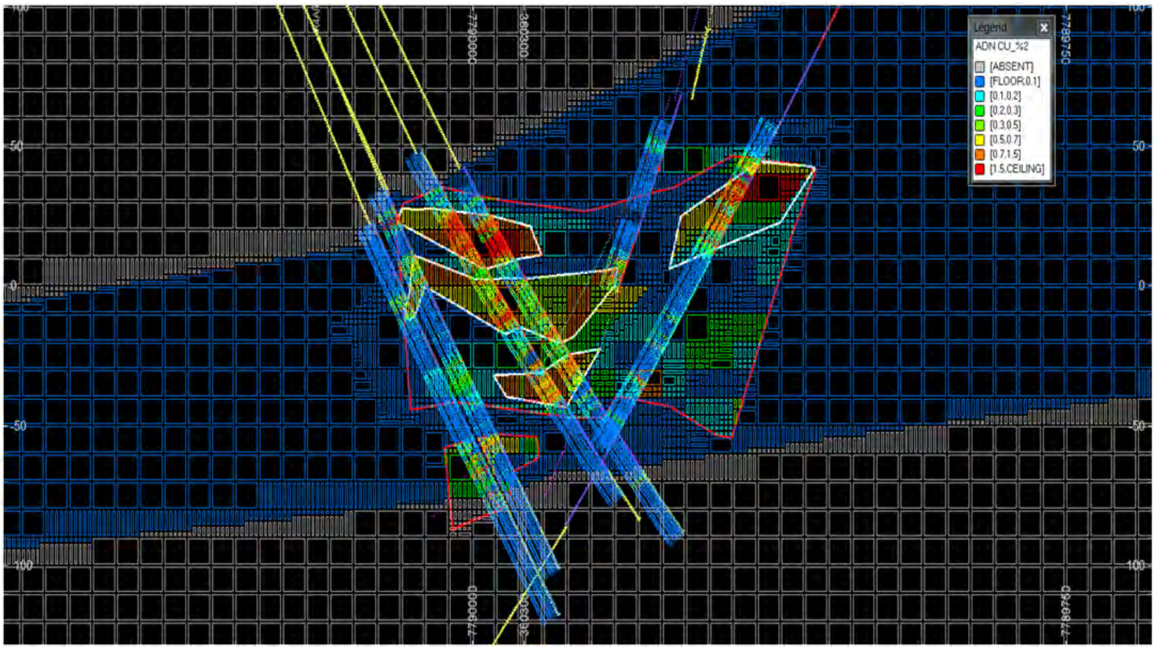
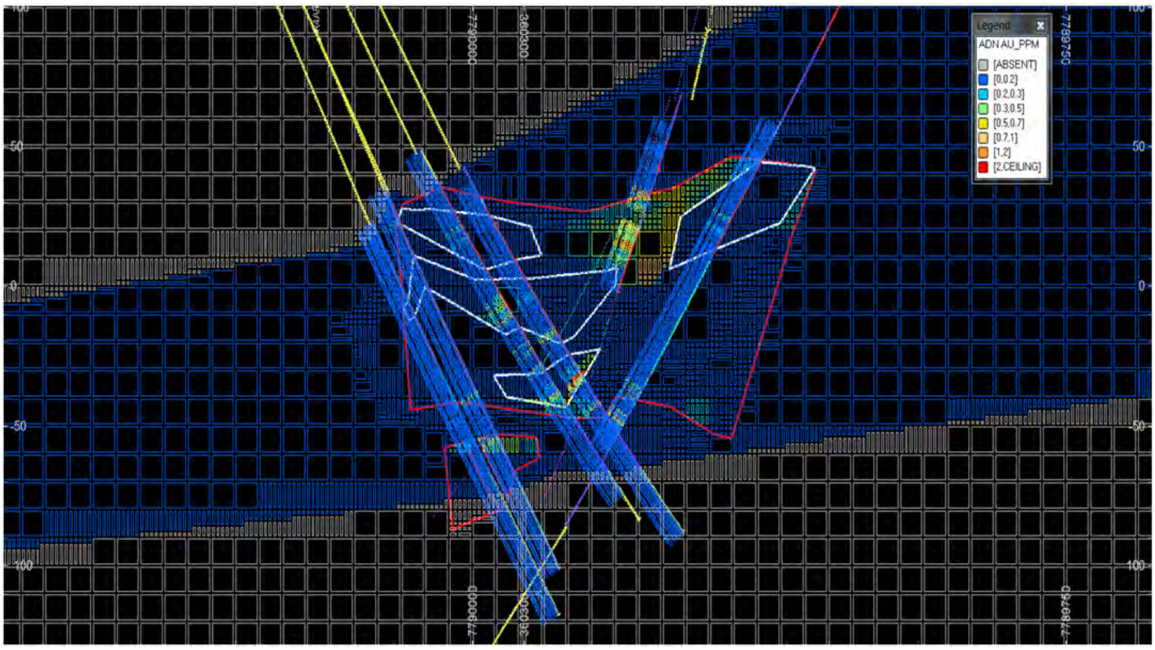


Figure 13: Example of Visual Validation for Au



In summary, the estimates are generally suitably representative of the data from which they were derived.

9.3 Mineral Inventory Estimate

Results reported within the 0.3% Cu Domain and the 0.1% Cu Domain from the resource estimation for Rover 4 follow (see Table 9):

Table 9: Mineral Inventory Estimate within 0.3% Cu Domain

Cu Domain	Tonnes	Cu %	Au ppm	Ag ppm	Fe %	K %	S %	Bi ppm	Mo ppm	Density	CUEQ
>0.3 %	1,280,160	1.06	0.37	2.83	23.48	0.02	3.03	279	74	3.25	1.35
>0.1 %	3,209,136	0.16	0.13	0.60	15.99	0.22	0.51	74	17	2.95	0.25
Total	**4,489,296**	**0.42**	**0.20**	**1.24**	**18.12**	**0.17**	**1.23**	**132**	**33**	**3.04**	**0.57**

The grade model file used to report the mineral inventory is called '*r4_resmod.dm*'.

9.3.1 CUEQ Calculation

Copper Equivalent (CUEQ), is calculated using the formula supplied by ADN, as follows:
$CUEQ = Cu + Au \times 0.689 + Ag \times 0.0114$ Where,
Cu is the copper grade in percent
Au is the gold grade in grams per tonne
Ag is the silver grade in grams per tonne

9.4 Exploration Potential

From review of the available data and the completed interpretations the following observations are made:

- **The mineralisation, as depicted by the 0.3% and 0.1% Cu domains, remains largely open in all directions.**

- There is a lack of clarity within the interpreted fault/shear corridor separating the East and West domains. The impact of this, with respect to potential exploration targets, is unknown.

- The volume of the SMAZ unit (CODEABBV=5), which is considered the main geophysical target, is ~7.34Mt (based on an average SG=3.2). It is recommended that ADN undertake a review of the available geophysical information and determine whether the interpreted SMAZ zone explains the tenor of the gravity and magnetic susceptibly signature for Rover 4.

9.5 Qualifications

This work has been completed to a level suitable for internal company purposes only.

At ADN's direction, no classification according to the JORC Code has been taken into consideration at this stage; therefore the estimates are described as a mineral inventory.

9.6 Recommendations

The following recommendations are considered appropriate to improve the understanding of at the geological, mineralogical and structural controls at Rover 4:

- Resolution of the data validation issues embedded in the available structural data.
- Transformation of the α and β structural logging data into dip and dip direction coordinates. This may assist in improving the understanding of the orientation of the domain boundaries and would improve the clarity of any structural controls.
- Assessment of Au distribution characteristics and, dependent on results, completion of an Au grade domain interpretation(s). This study focused on domaining Cu based on the better continuity observed in this data, however it is considered important in future work, for the distribution of the Au mineralization to be better understood.
- Consideration of the potential domaining of Fe-oxides within the SMAZ unit (CODEABBV=5) and investigation into the association, if any, with the Cu and Au mineralization.
- Further resolution around the transition between bCL and CL within the zone of interest. This may assist in defining an alteration halo, which, if such a halo exists, may have an association with the overall mineralization envelope.
- If public reporting is required at any time on the future, ADN will need to consider undertaking the additional activities outlined in the Scope (refer to Table 2). These activities include QA/QC, variography, grade estimation by kriging, resource classification, and the preparation of a formal resource report.

9.7 Conclusion

The Non JORC compliant inventory of the copper and gold mineralisation at the Rover 4 Prospect confirms that it has **excellent potential to deliver satellite feed** for a mill processing Rover Field ores however is currently too small to justify standalone development.

10 Rehabilitation

Adelaide Resources continues to undertake progressive partial rehabilitation of drill sites. Partial rehabilitation of all drill sites has been completed. Partial rehabilitation included backfilling of dry drill sumps, levelling and re-contouring of drill pads/sites, clearing sites of all rubbish and drilling consumables. Work during this reporting period predominantly involved capping of holes and rehabilitating surface areas at Rover 11 East and Rover 12.

All drill hole collars have now been capped (using industry standard PVC caps) to prevent wildlife entry but to also enable re-entry to the holes if required.

A Rehabilitation Status Report was submitted to the Northern Territory Department of Resources in September 2012 and pertains to activity from April 2011 to September 2012. A summary of current rehabilitation status (to 26 May 2013) is attached as Table 7.

TABLE 7: Rehabilitation Status Summary
Adelaide Resources Rover Project - Tenements EL 27372 and EL 27292

HoleID	Year Drilled	Collar East94	Collar North94	Datum	Sumps Backfilled	Drill pad re-levelled	Rubbish removed	PVCCap (sealed)	Permanent (Final) Cap
Rover 4									
R4ARD46	2011	360738.869	7789928.603	GDA94	Yes	Yes	Yes	Yes	No
R4ARD47	2011	360339.135	7790150.562	GDA94	Yes	Yes	Yes	Yes	No
R4ARD48	2011	360340.142	7790137.969	GDA94	Yes	Yes	Yes	Yes	No
R4ARD49	2011	360219.223	7790182.873	GDA94	Yes	Yes	Yes	Yes	No
R4ARD50	2011	360239.519	7789880.139	GDA94	Yes	Yes	Yes	Yes	No
R4ARD52	2011	360538.660	7789930.419	GDA94	Yes	Yes	Yes	Yes	No
R4ARD53	2011	360540.132	7789918.492	GDA94	Yes	Yes	Yes	Yes	No
R4ARD55	2011	360537.538	7789945.830	GDA94	Yes	Yes	Yes	Yes	No
R4ARD57	2011	360469.808	7789745.754	GDA94	Yes	Yes	Yes	Yes	No
R4ARD57-1(D)	2011	360469.808	7789745.754	GDA94	Yes	Yes	Yes	Yes	No
R4ARD58	2011	360472	7789747	GDA94	Yes	Yes	Yes	Yes	No
R4ARD60	2011	360740	7789950	GDA94	Yes	Yes	Yes	Yes	No
R4ARD61	2011	360745	7789950	GDA94	Yes	Yes	Yes	Yes	No
R4ARD62	2011	360370	7790110	GDA94	Yes	Yes	Yes	Yes	No
R4ARD63	2011	360340	7790120	GDA94	Yes	Yes	Yes	Yes	No
R4ARD63-1(D)	2011	360340	7790120	GDA94	Yes	Yes	Yes	Yes	No
Rover 1									
R1ARD51	2011	359074.104	7787960.294	GDA94	Yes	Yes	Yes	Yes	No
R1ARD54	2011	359046.964	7787976.282	GDA94	Yes	Yes	Yes	Yes	No
R1ARD56	2011	359139.582	7788102.922	GDA94	Yes	Yes	Yes	Yes	No
Rover 11 East									
R11ARD65	2011	349526	7790775	GDA94	Yes	Yes	Yes	Yes	No
R11ARD66	2011	349526	7790780	GDA94	Yes	Yes	Yes	Yes	No
Rover 12									
R12ARD59	2011	339683	7793020	GDA94	Yes	Yes	Yes	Yes	No
R12ARD59-1(D)	2011	339683	7793020	GDA94	Yes	Yes	Yes	Yes	No
R12ARD59-2(D)	2011	339683	7793020	GDA94	Yes	Yes	Yes	Yes	No
R12ARD64	2011	339850	7793425	GDA94	Yes	Yes	Yes	Yes	No
R12ARD64-1(D)	2011	339850	7793425	GDA94	Yes	Yes	Yes	Yes	No

Note - (D) = Daughter hole.

11 Expenditure Statement

Expenditure statements for EL 27372 and EL 27292 were submitted to the DOR on 26 June 2013.

Expenditure for the year ending 26 May 2013 totalled $353,075 for EL 27372 and $2,554 for EL 27292.

This figure exceeds the combined expenditure covenant of $335,000 for the same period however as the expenditure on EL 27372 is less than the covenant of $135,000 Adelaide Resources has applied for a variation of covenant.

Appendix 1: AMC Consultants Pty Ltd: Rover 4 Geological Modelling and Resource Estimation

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F +61 8 8201 1899
E amcadelaide@amcconsultants.com.au

12 December 2012

Chris Drown
Managing Director
Adelaide Resources Limited
69 King William Road
Unley SA 5061

Dear Chris,

The following short report has been prepared to provide a brief overview to Adelaide Resources Limited of the geological model and mineral inventory for the Rover 4 Prospect, as defined in our proposal 'AP12005 Rev 2 Rover 4 Geological Modelling and Resource Estimation.pdf'.

Yours sincerely
>>SIGNATURE REMOVED<<<

Rebecca Barry
Principal Mining Analyst

Distribution list:
2 copies to Mr C. Drown, Adelaide Resources Limited Office
1 electronic copy to AMC Adelaide office

QUALITY CONTROL

The signing of this statement confirms this report has been prepared and checked in accordance with the AMC Peer Review Process. AMC's Peer Review Policy can be viewed at www.amcconsultants.com.

Project Manager	The signatory has given permission to use their signature in this AMC document	12 December 2012
	Rebecca Barry	
Peer Reviewer	The signatory has given permission to use their signature in this AMC document	12 December 2012
	Sharron Sylvester	

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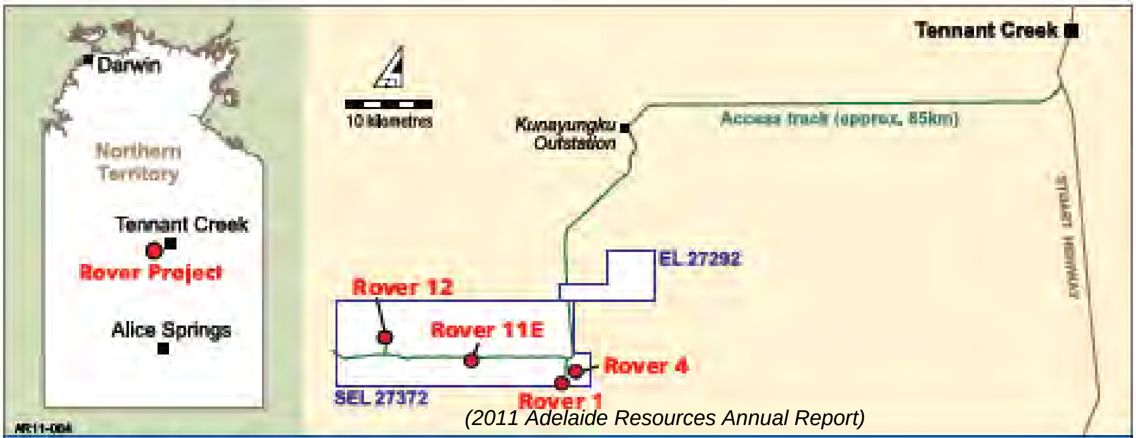
1 INTRODUCTION

AMC Consultants Pty Ltd (AMC) was commissioned by Adelaide Resources Limited (ADN) to develop a geological model and mineral inventory of the Rover 4 prospect (Rover 4), as defined in AMC's proposal 'AP12005 Rev 2 Rover 4 Geological Modelling and Resource Estimation.pdf' (Scope). This work was completed in June and July of 2012.

The Rover 4 Prospect is located in to the south-west of Tennant Creek, in the Northern Territory (see Figure 1.1).

Figure 1.1 Location Plan – Rover Project



(2011 Adelaide Resources Annual Report)

Figure 1: Rover Project Location Plan.

The Cu and Au mineralisation within the Rover project area is hosted within variably altered Early Proterozoic 'ironstones' (Warramunga Formation), in association with an array of other component elements (i.e. Bi, As, Co, Mo).

2 DATA VALIDATION AND PREPARATION

2.1 Drillhole Data

2.1.1 Data Provided by Client

To complete the study AMC was supplied with the following raw data extracts in comma delimited (*.csv) file format (see Table 2.1).

Table 2.1 Drillhole Data Extracts Provided by ADN

File Name	Date Stamp	Description
R4 COLLAR_Update.xlsx	29/06/2012	Final surveyed collar data
R4 SURVEY.xlsx	13/06/2012	Downhole survey data
R4 STRUCTURE.xlsx	13/06/2012	Logged structural data – α and β.
R4 MAG SUSC.xlsx	13/06/2012	Magnetic susceptibility data
R4 RQD.xlsx	13/06/2012	RQD Data
Copy of R4 ASSAY_cgd edits2.xlsx	26/06/2012	Final assay data file
R4 LITHO_Draft Ver2.xlsx	25/06/2012	Final lithological log file

2.1.2 Data Validation

The data validation involved routine checking for common issues such as absent, negative, or obviously-incorrect data, overlapping or duplicate intervals, and alphanumeric data within numeric fields (commonly associated with below limit of detection values).

Queries relating to collar, survey and assay information were resolved through detailed written communication with ADN.

Issues with the structural data remain outstanding. These were considered a lesser priority due to the level of accuracy defined by the Scope.

The macro used to prepare the drillhole files is called *'data_import_120702.mac'.*

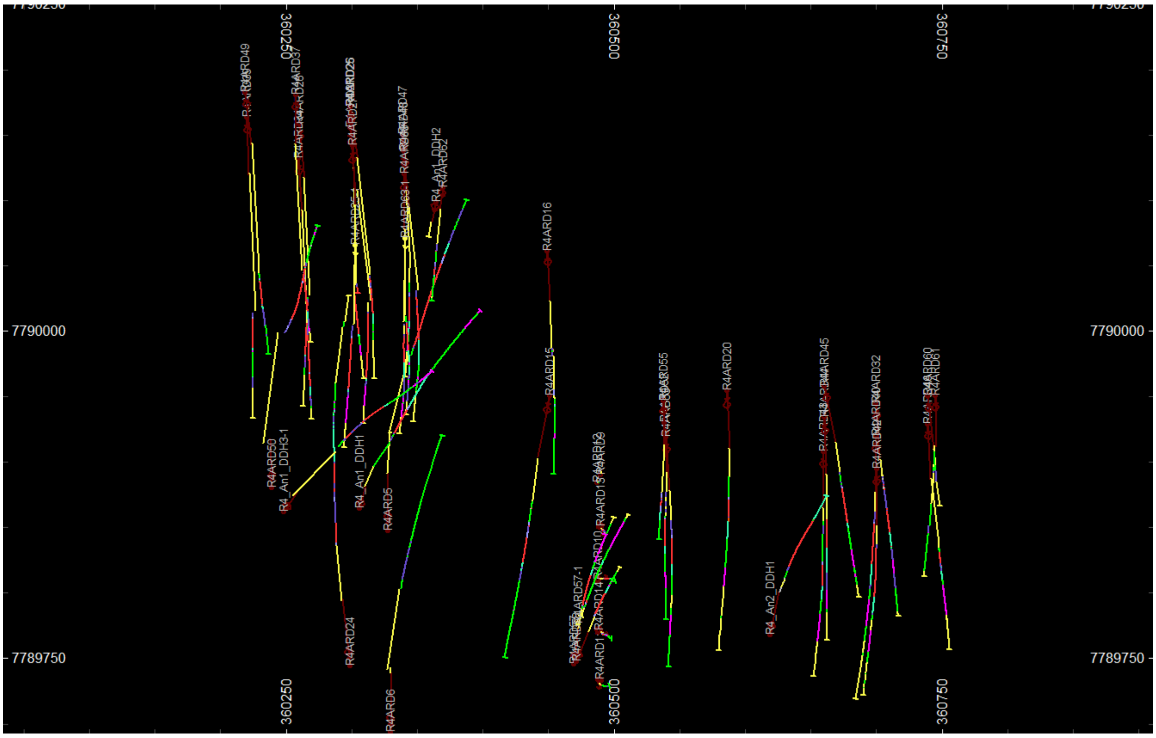
2.1.3 Drillholes included in Study

The drillholes used in this study are tabulated in Appendix 1.

The final Rover 4 drillhole file used in the estimation contains assay information for 47 drillholes, comprising 44 diamond holes ('DD') and 3 reverse circulation (RC) holes (1 'RCDD' and 2 'RC'). The total drilled metres was 18,122 m. Drillhole 'R4ARD50' was excluded from the estimation data set due to concerns with respect to accuracy of its collar location.

A projected plan view of the raw drillhole file (*'holes_d_0702.dm'*) is shown in Figure 2.1.

Figure 2.1 Plan view of Drillhole Locations



2.1.4 Assays Fields

Assay data was used as supplied and validated for the following:

- Cu
- Au
- Ag
- Fe
- K
- S
- Bi
- Mo

For copper, a combined copper assay field (CU_%2) was developed based on Cu assayed by two different methods – where CU_% data was available this information overprinted the Cu_PPM data for a particular sample.

2.2 QA/QC

The Scope of this study did not include any allowance for review of QA/QC data.

Whilst completing other phases of work, a preliminary review of the standards data provided was completed, and whilst not in scope, these results were discussed briefly with ADN.

3 DOMAIN INTERPRETATION

As outlined in the Scope, AMC developed wireframed 3-D geological interpretations of the ironstone zones and other pivotal geological and mineralogical domain boundaries from all available drillhole data.

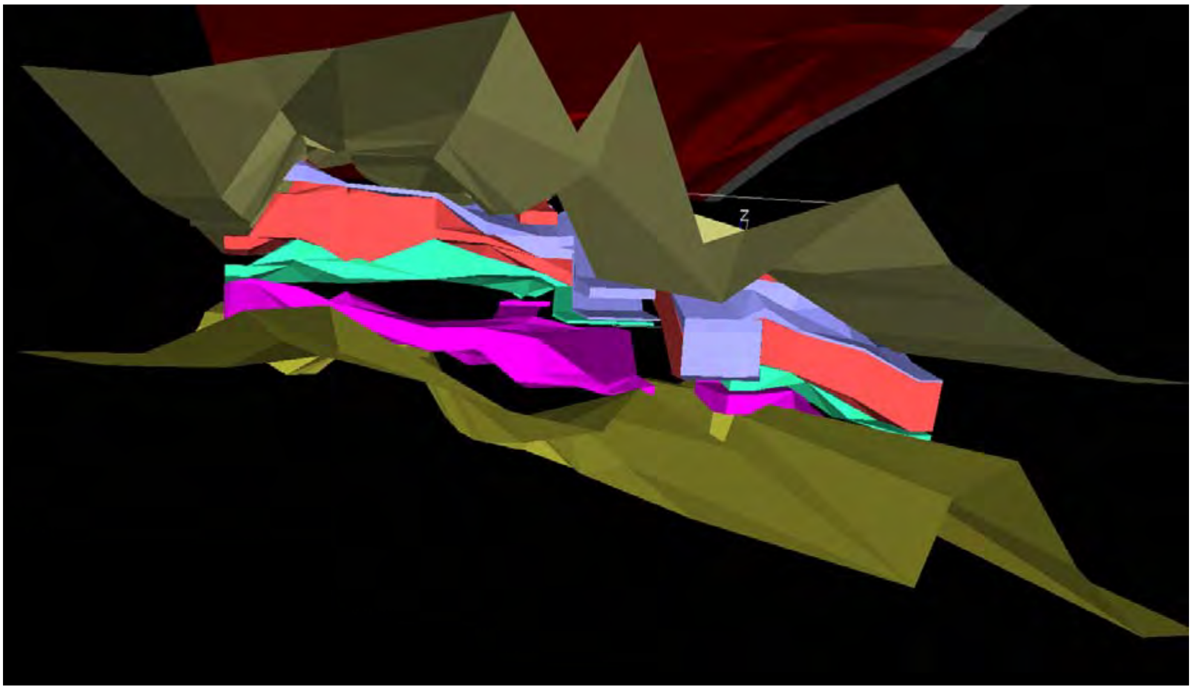
ADN personnel were closely involved in this interpretation process and provided detailed input and review of both the geological and mineralogical domain boundaries that were developed.

These wireframed interpretations were used to develop a cell model that represents the volume associated with the various domains.

3.1 Geology Domain Interpretation

The lithological domain interpretation was incorporated into the drillhole sample coding and model cell coding using a field called CODEABBV. Each different geology domain was identified in the CODEABBV field using numerical flag identifiers (see Figure 3.1).

Figure 3.1 Projected View of Lithological Domains (CODEABBV)



The CODEABBV domain flags are described in Table 3.1. The names of the wireframes used to achieve the domain flagging are included for future reference.

Table 3.1 CODEABBV Domain Flags

Description	CODEABBV	Datamine Wireframe Name
bCL MS	1	msundb6_tr/pt
CL MS	2	–
Cover	3	cvr3_tr/pt
DSS DO	4	dssdo4_tr/pt
mSMAZ IS	5	smaz5_tr/pt
MS Undifferentiated – Upper	6	msunda6_tr/pt
MS Undifferentiated – Lower	6	msundb6_tr/pt
QP	7	qp7_tr/pt
SBX	8	sbx8_tr/pt
baSK	9	–

For the purposes of estimation the following lithological domains were combined:

- bCL MS (CODEABBV=1) and CL MS (CODEABBV=2)
- mSMAZ IS (CODEABBV=5) and baSK (CODEABBV=9).

3.2 Mineralised Domain Interpretation

The mineralised domain interpretation was incorporated into the drillhole sample coding and model cell coding using a field called MINZON.

There were two distinct mineralised domains interpreted:

- A less continuous inner core of assays generally >0.3% Cu (Figure 3.2).
- A reasonably continuous outer halo of assays generally >0.1% Cu (Figure 3.3).

The MINZON domain flags are described in Table 3.2.

Table 3.2 MINZON Domain Flags

Description	MINZON	Datamine Wireframe Name
>0.3% Cu Domain	1	cu03_tr/pt
>0.1% Cu Domain	2	cu01_tr/pt
Waste	–	N/A

Figure 3.2 Projected View of Cu>0.3% Mineralisation Interpretation (MINZON=1)

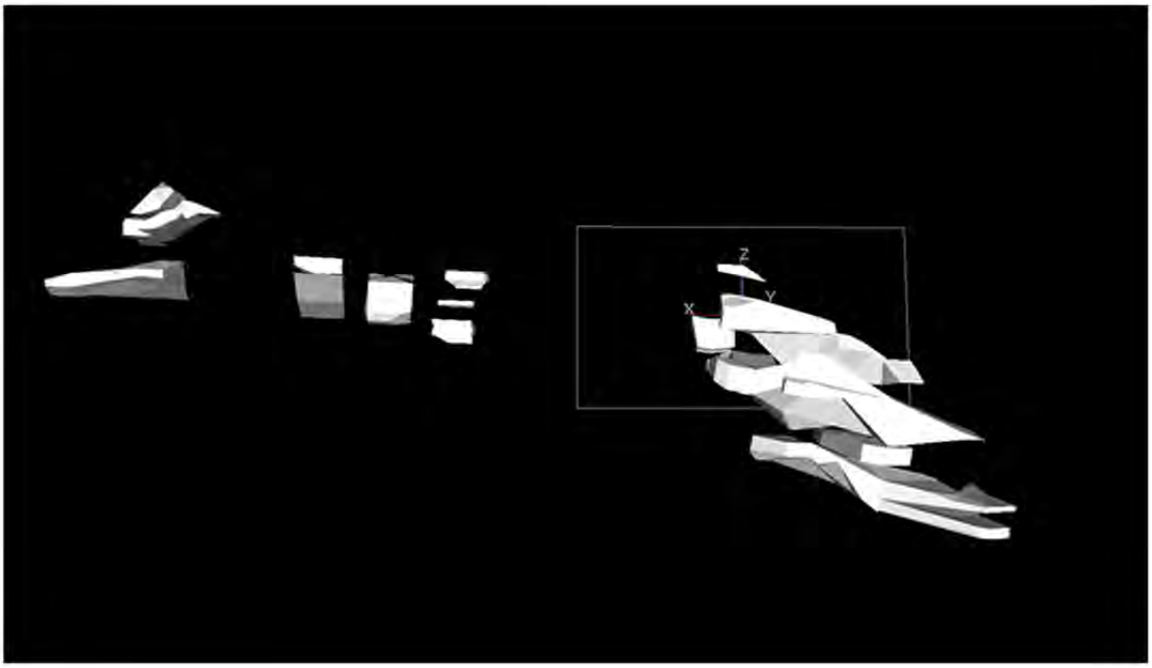
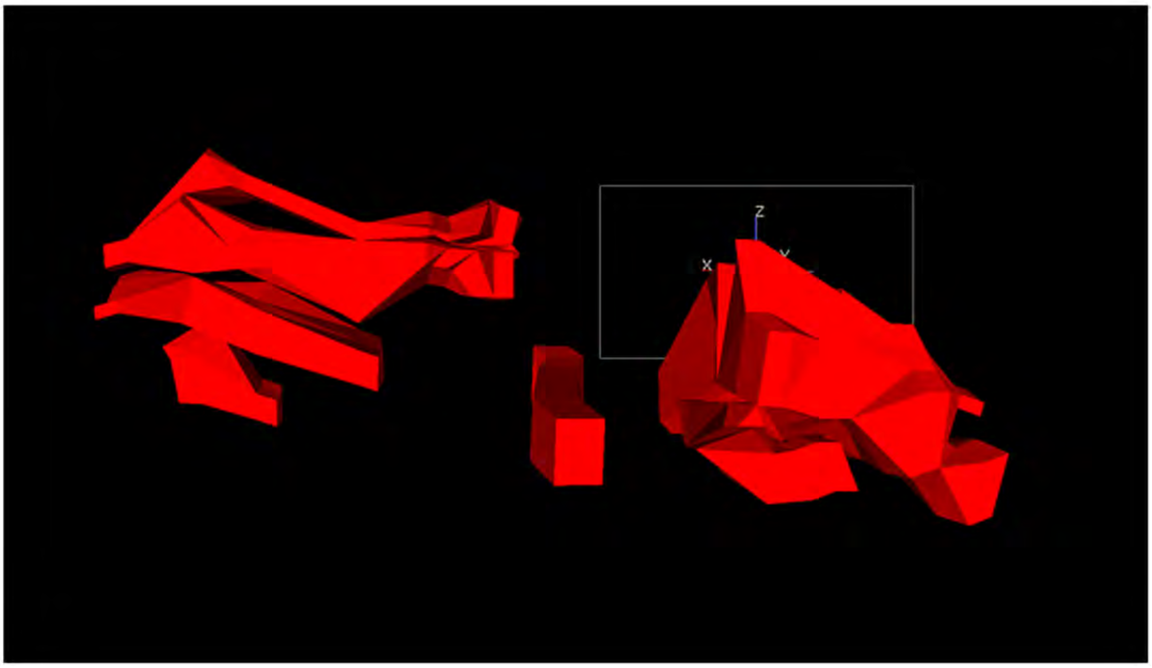


Figure 3.3 Projected View of Cu>0.1% Mineralisation Interpretation (MINZON=2)



3.3 Structural Domain Interpretation

Based on the current drilling, it is interpreted that the mineralization and lithological domains are offset by a fault shear zone located at or around 360 425 m E.

For the purposes of estimation, the sample data set was bisected along 360 425 m E, and samples and model cells either side of this easting were flagged with a ZONE code to enable the two domains to be estimated separately. The ZONE codes are as outlined in Table 3.3.

Table 3.3 ZONE Domain Flags

Description	ZONE
Samples located >360 425 m E	1
Samples located =<360 425 m E	2

3.4 Drillhole Sample Flagging and Preparation

3.4.1 Drillhole Flagging

Drillhole samples were flagged to identify which lithological domain (CODEABBV), mineralised domain (MINZON) and structural domain (ZONE) they represent. Each sample was flagged according to where the mid-point of the sample lies relative to the domain wireframes.

The flagged drillhole file is called *'r4flag_d.dm'*.

3.5 Domain Implementation – ESTIFLAG Code

For the purposes of implementing the intended domain restrictions in grade estimation, a field, called ESTIFLAG, was developed based on following:

ESTIFLAG = (ZONE x 100) + (MINZON x 10) + LITHCODE

Where,

ZONE = is the ZONE flag as defined in Section 3.3.

MINZON = is the mineralised Cu domain flag as defined in Section 3.2.

LITHCODE = a LITHCODE of 5 applied to cells/samples designated as SMAZ (i.e. CODEABBV=5) and a LITHCODE of 1 applied to all other non-SMAZ cells/samples (i.e. CODEABBV≠5).

A full listing and description of each of the ESTIFLAGS is provided in Table 3.4.

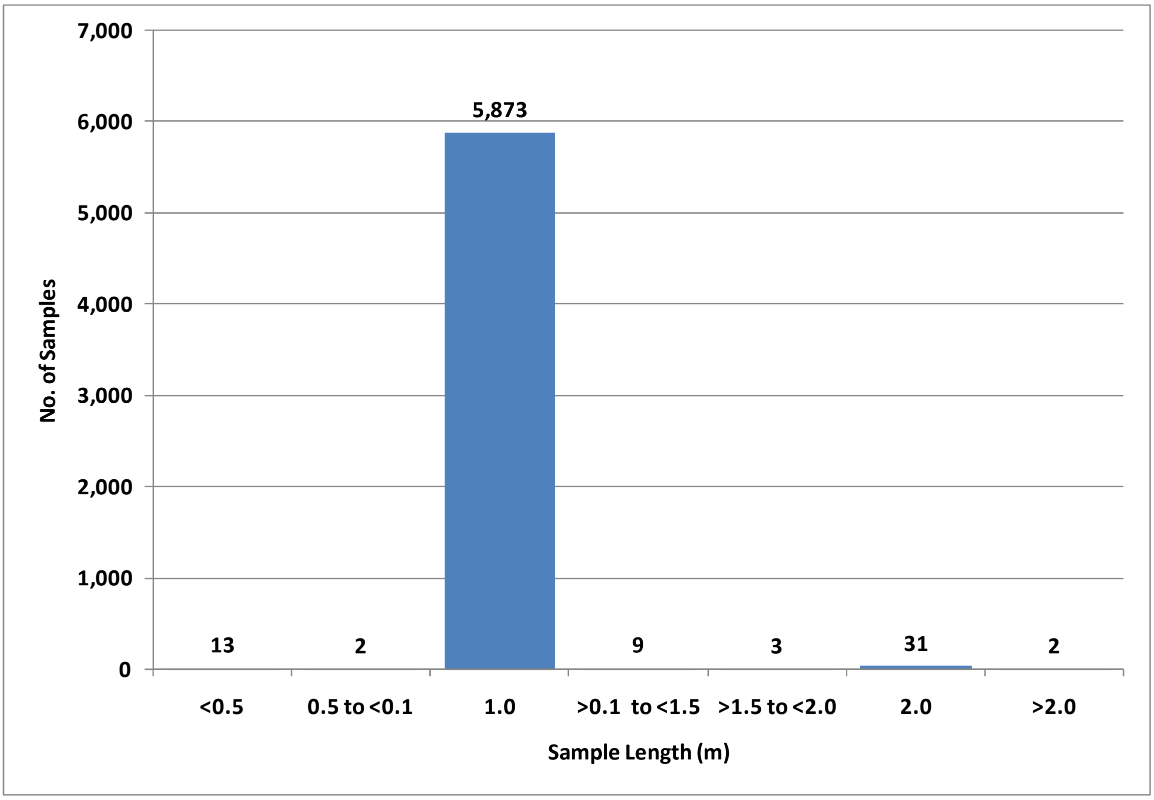
Table 3.4 ESTIFLAG Descriptions

ESTIFLAG	ZONE	MINZON	LITHCODE	Description
111	1	1	1	East; Cu>0.3; non-SMAZ
115			5	East; Cu>0.3; SMAZ
121		2	1	East; Cu>0.1; non-SMAZ
121			5	East; Cu>0.1; SMAZ
211	2	1	1	West; Cu>0.3; non-SMAZ
215			5	West; Cu>0.3; SMAZ
221		2	1	West; Cu>0.1; non-SMAZ
225			5	West; Cu>0.1; SMAZ

3.5.1 Raw Sample Lengths and Compositing

The majority of the raw samples were 1 m in length (see Figure 3.4).

Figure 3.4 Histogram of Raw Sample Lengths



The purpose of compositing is to ensure all samples have the same sample support. The term 'sample support' is a geostatistical concept that refers to the space on which an observation is defined (i.e. length of a sample interval, volume of sampled material, percentage recovery, etc). While compositing is typically used to resolve issues of sample support, it also results in a loss of resolution at boundaries and a change in the natural variability of the sample data. Therefore compositing should only be used when the benefits of improved sample support outweigh the negative effects.

Because the majority of the raw samples in the Rover 4 database already have the same sample support, compositing in not necessary in this case.

3.6 Statistical Analysis of Interpretation Domains

The effectiveness of the domain flagging was validated by checking the statistical characteristics of the drillhole data.

To obtain an overview of the statistics of the various flagged domains, a means analysis was undertaken. The arithmetic means of the grade data in the flagged drillhole data ('r4*flag_d.dm'*) are presented for the different ESTIFLAGs in Appendix 2.

It can be seen from the statistics that the number of samples for ESTIFLAG = 111 and ESTIFLAG = 211 are relatively low (30–40 samples), which reflects the relatively low number of samples that are external to the SMAZ domain (CODEABBV=5) and within the 0.3% Cu domain in both the East and West Zones. As a consequence, the grade estimation within these two ESTIFLAGs is less robust; however, it was considered necessary to segregate out these two ESTIFLAGs based on their difference in alteration/lithological profile.

3.6.1 Top Cutting

The requirement to top cut outlying assay values was assessed from the statistics.

The maximum Cu grade is 7.55% within ESTIFLAG = 215. No Cu top-cuts were considered necessary.

The maximum Au grade is 15.1 g/t within ESTIFLAG = 121. One top-cut was applied: to drillhole 'R4ARD14' (269 – 270 m) with Au reset from 38g/t to 15.1g/t, which represents the second highest Au value.

4 CELL MODEL PREPARATION

A geological cell model was constructed in Datamine using the prototype parameters shown in Table 4.1.

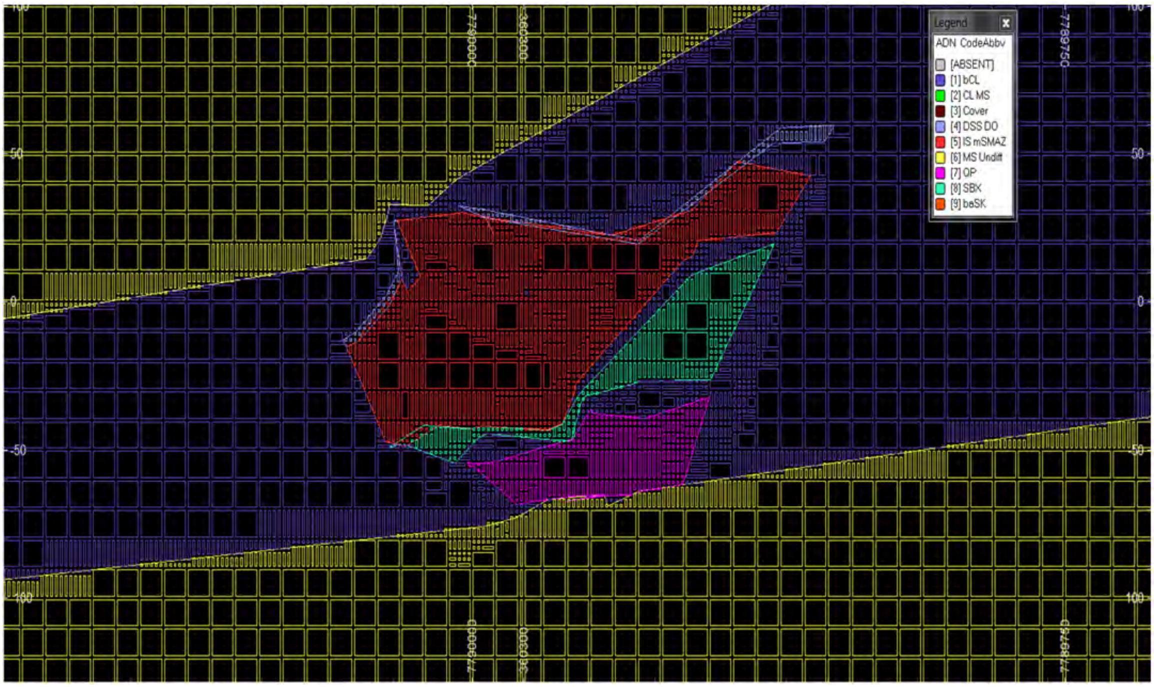
Table 4.1 Cell Model Prototype Parameters

Coordinates	Minimum	Maximum	Range	No. of Cells	Cell Size
Easting	360 200 m E	360 800 m E	600 m	60	10 m
Northing	7 787 700 m N	7 790 250 m N	550 m	55	10 m
Elevation	-200 m RL	300 m RL	500 m	50	10 m

Subcelling down to 2 m E x 2 m N x 2 m RL was utilised to ensure domain boundaries were honoured as accurately as possible.

An oblique sectional view of the cell model depicting the various geological units (CODEABBV) is shown in Figure 4.1.

Figure 4.1 Oblique Section View of Cell Model (Section 360 305 m E)



The selected model prototype parameters were determined after due consideration of the drillhole spacing over the entire deposit.

The geological cell model is called '*r4_volmod.dm*'.

The Datamine macro used to develop the geological cell model and completed the subsequent grade estimation is called *'Model_AMC_120727.mac'*.

5 GRADE ESTIMATION

As outlined in the Scope, on completion of the geological cell model AMC estimated grades and SG into the cells. This was undertaken in a manner that reflects the spatial population distributions of the input drillhole dataset.

The grade estimation used inverse distance weighting to the power of two (ID2) method to provide ADN with a reasonable representation of the overall mineral inventory.

5.1 Estimation Parameters

The search parameters define the volume from which the samples are selected. In the case of the Rover 4 model estimates, the search volume is an ellipse with dimensions and orientations designed to suit the overall trend of the mineralised zone.

The search parameters used in this study are detailed in Table 5.1.

Table 5.1 Search Parameters – All Grades

		ZONE=1		ZONE=2	
	MINZON	**1**	**2**	**1**	**2**
Search Ellipse Orientation	SANGLE1	290	290	290	290
	SANGLE2	-5	-5	20	20
	SANGLE3	70	70	70	70
First Search Pass	Dimension X (m)	30	30	40	40
	Dimension Y (m)	25	25	30	30
	Dimension Z (m)	20	20	20	20
	Min. No. Samps	4	6	4	6
	Max. No. Samps	20	20	20	20
Second Search Pass	Search. Volume Factor	2	3	2	3
	Min. No. Samps	4	2	4	2
	Max. No. Samps	20	20	20	20
Third Search Pass	Search Volume Factor	3	10	3	10
	Min. No. Samps	2	2	2	2
	Max. No. Samps	20	20	20	20

The search parameter file is called *'estparsv.dm'*.

5.2 Search Ellipse Orientations – Estimation Zones

The estimation parameter file is called '*estparep.dm'*.

All subcells were assigned the grade of the parent cell on the basis of matching ESTIFLAG flags.

Estimates were obtained for all of the following grade components, based on the assay data:

- Cu
- Au
- Ag
- Fe
- K
- S
- Bi
- Mo

Ancillary estimation performance data were collected to provide a basis for validating the estimation process. These ancillary data are listed in Table 5.2. Some of these performance data relate to the mechanical processes during estimation, (i.e. NSAM_CU, SVOL_CU etc), while others are statistical.

The grade model file is called '*r4_gradmd.dm'*.

Table 5.2 Ancillary Estimation Performance Data

Ancillary Field	Description
NSAM_CU	No. of composites used to estimate Cu grade into each parent cell
SVOL_CU	Search volume in which each cells' head Cu grade estimate was obtained
VAR_CU	Variance of the head Cu estimates in each cell
MINDIS_CU	Relative distance from cell centroid to nearest Cu sample

5.3 Validation of Grade Estimation

5.3.1 Statistical Validation

Statistical validation of the estimates was undertaken to provide a global understanding of the performance of the estimation process. This involved the analysis of estimation performance data from each domain.

The following observations are made from the estimation performance data:

- The mean number of samples used in estimation (NSAM_CU) generally hovers around the half-way point between the minimum and maximum, thus demonstrating appropriate sample sourcing within the assigned search range. If the mean number of samples was close to the minimum allowable, this would indicate that the search neighbourhood was too small, and if the mean number of samples was close to the maximum allowable, this would indicate that the search neighbourhood was too large. Note – ESTIFLAGs 111 (East Zone; >0.3% Cu Domain; Non-SMAZ) and 211 (West Zone – 0.3% Cu Domain – non-SMAZ) each have relatively few samples; for ESTIFLAG 115 (East Zone; >0.3% Cu domain; SMAZ) the level of continuity between sections and sample density is relatively low.
- On average, 97% of Cu estimates were populated in either the first or second pass. This is reflected in the average SVOL_CU typically being less than 2.

5.3.2 Visual Validation

Visual validation was completed on oblique sections (at 20 m increments) and plan (at 10 m increments) for Cu (see Figure 5.1) and Au (see Figure 5.2) and no major aberrations were observed.

Figure 5.1 Example of Visual Validation for Cu

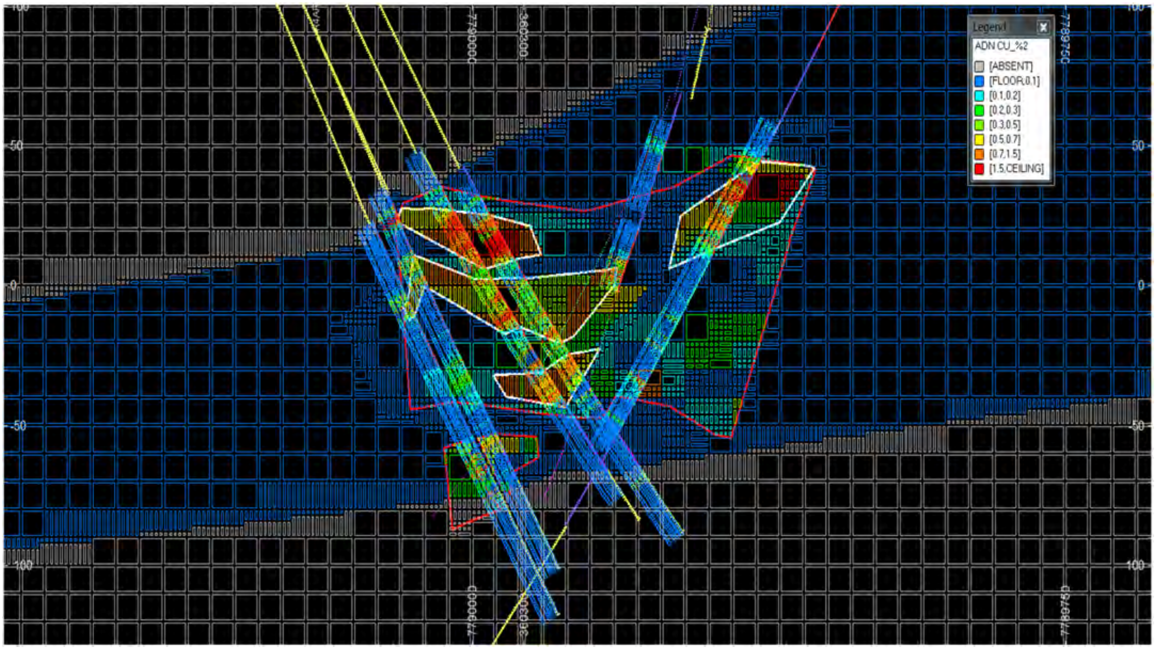
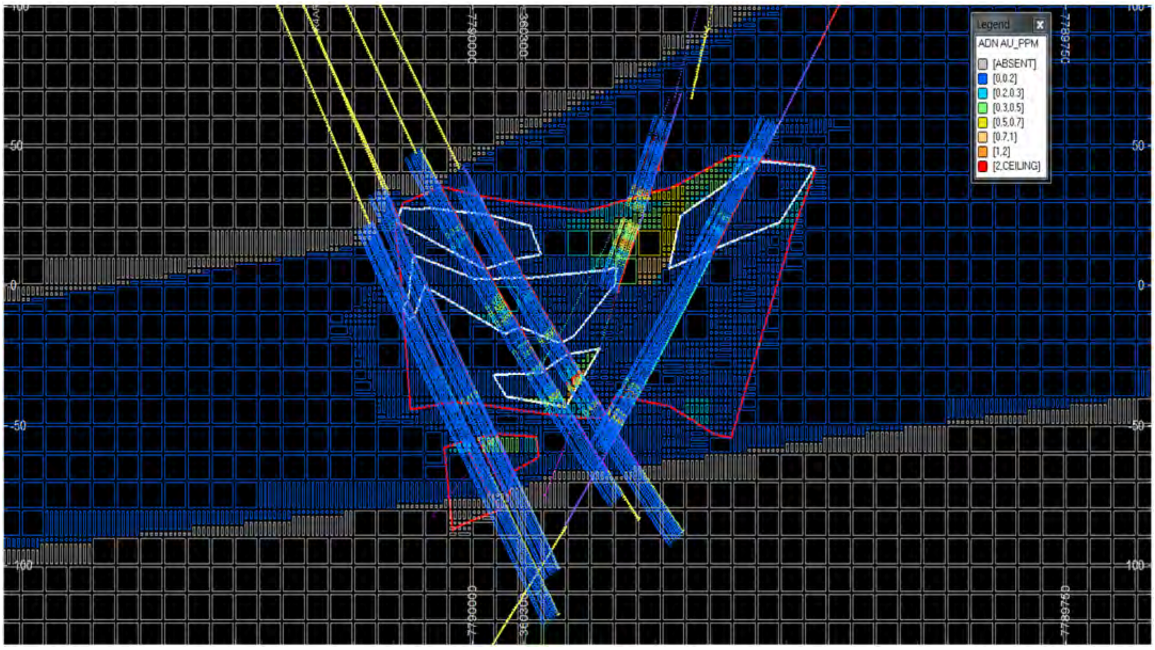


Figure 5.2 Example of Visual Validation for Au



5.3.3 Summary of Validation of Grade Estimation

In summary, the estimates are generally suitably representative of the data from which they were derived.

The mean of the estimates is sensitive to the number of data used to derive those estimates. Smaller domain populations demonstrate larger differences between the mean composite grades and the mean estimate grades (e.g. ESTIFLAG=111, 115 and 211).

6 MINERAL INVENTORY AND EXPLORATION POTENTIAL

6.1 Mineral Inventory Estimate

Results reported within the 0.3% Cu Domain and the 0.1% Cu Domain from the resource estimation for Rover 4 follow (see Table 6.1):

Table 6.1 Mineral Inventory Estimate within 0.3% Cu Domain

Cu Domain	Tonnes	Cu %	Au ppm	Ag ppm	Fe %	K %	S %	Bi ppm	Mo ppm	Density	CUEQ
>0.3 %	1,280,160	1.06	0.37	2.83	23.48	0.02	3.03	279	74	3.25	1.35
>0.1 %	3,209,136	0.16	0.13	0.60	15.99	0.22	0.51	74	17	2.95	0.25
Total	**4,489,296**	**0.42**	**0.20**	**1.24**	**18.12**	**0.17**	**1.23**	**132**	**33**	**3.04**	**0.57**

The grade model file used to report the mineral inventory is called '*r4_resmod.dm*'.

6.2 CUEQ Calculation

Copper Equivalent (CUEQ), is calculated using the formula supplied by ADN, as follows:

$$CUEQ = Cu + Au \times 0.689 + Ag \times 0.0114$$

Where,

Cu is the copper grade in percent

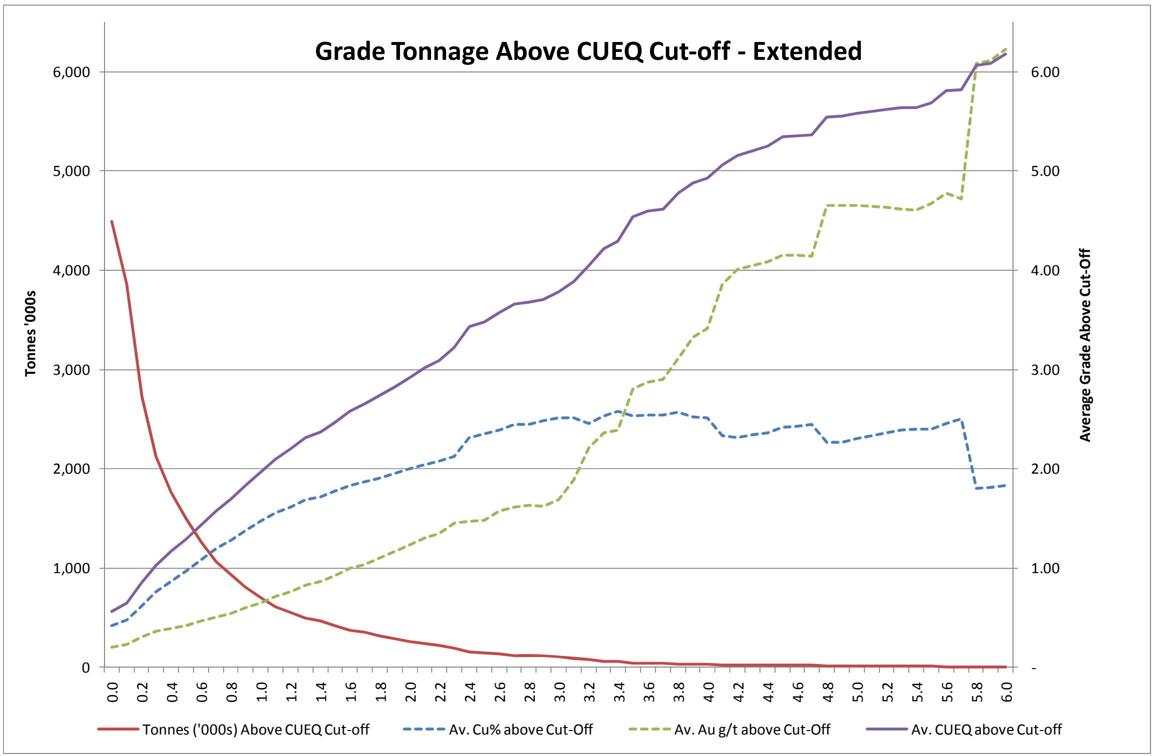
Au is the gold grade in grams per tonne

Ag is the silver grade in grams per tonne

6.3 Grade Tonnage Curve

A grade tonnage curve of the estimates has been prepared (see Figure 6.1) and other data (including by Cu cut-off) is presented in Appendix 3.

Figure 6.1 Grade Tonnage Curve – CUEQ



6.4 Exploration Potential

From review of the available data and the completed interpretations the following observations are made:

- The mineralization, as depicted by the 0.3% and 0.1% Cu domains, remains largely open in all directions.
- There is a lack of clarity within the interpreted fault/shear corridor separating the East and West domains. The impact of this, with respect to potential exploration targets, is unknown.
- The volume of the SMAZ unit (CODEABBV=5), which is considered the main geophysical target, is ~7.34Mt (based on an average SG=3.2). As discussed, it is recommended that ADN undertake a review of the available geophysical information and determine whether the interpreted SMAZ zone explains the tenor of the gravity and magnetic susceptibly signature for Rover 4.

7 QUALIFICATIONS & RECOMMENDATIONS

7.1 Qualifications

This work has been completed to a level suitable for internal company purposes only.

As per the Scope, and at ADN's direction, no classification according to the JORC Code[1] has been taken into consideration at this stage; therefore the estimates are described as a mineral inventory.

7.2 Recommendations

The following recommendations are considered appropriate to improve the understanding of at the geological, mineralogical and structural controls at Rover 4:

- Resolution of the data validation issues embedded in the available structural data.
- Transformation of the α and β structural logging data into dip and dip direction coordinates. This may assist in improving the understanding of the orientation of the domain boundaries and would improve the clarity of any structural controls.
- Assessment of Au distribution characteristics and, dependent on results, completion of an Au grade domain interpretation(s). This study focused on domaining Cu based on the better continuity observed in this data, however it is considered important in future work, for the distribution of the Au mineralization to be better understood.
- Consideration of the potential domaining of Fe-oxides within the SMAZ unit (CODEABBV=5) and investigation into the association, if any, with the Cu and Au mineralization.
- Further resolution around the transition between bCL and CL within the zone of interest. This may assist in defining an alteration halo, which, if such a halo exists, may have an association with the overall mineralization envelope.
- If public reporting is required at any time on the future, ADN will need to consider undertaking the additional activities outlined in the Scope (refer to Table 2). These activities include QA/QC, variography, grade estimation by kriging, resource classification, and the preparation of a formal resource report.

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1 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code 2004 Edition, Effective December 2004, Prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

APPENDIX 1

DRILLHOLES WITH ASSAY DATA INCLUDED IN THIS STUDY

Drillholes with Assay Data included in this Study

BHID	Date Drilled	Hole Type	Depth (m)	Easting	Northing	RL	Dip	Azimuth
R4_An1_DDH1	9-Jul-76	DD	429.0	360 306.31	7 789 863.93	294.24	-78.0	15.0
R4_An1_DDH2	24-Aug-76	DD	169.0	360 364.25	7 790 098.74	294.31	-80.0	185.0
R4_An1_DDH3	11-Sep-76	DD	192.0	360 248.76	7 789 861.32	294.36	-78.0	30.0
R4_An1_DDH3-1	30-Sep-76	DD	407.0	360 248.76	7 789 861.32	294.36	-78.0	30.0
R4_An2_DDH1	17-May-77	DD	282.0	360 619.32	7 789 767.29	294.31	-70.0	10.0
R4ARD5	15-Sep-06	DD	483.9	360 328.28	7 789 846.49	294.08	-60.0	360.0
R4ARD6	12-Sep-06	DD	483.9	360 330.00	7 789 693.00	295.00	-64.0	360.0
R4ARD9	17-Sep-07	RC	120.0	360 490.00	7 789 890.00	295.00	-90.0	360.0
R4ARD10	20-Sep-07	RC	348.0	360 488.45	7 789 809.84	294.09	-90.0	360.0
R4ARD11	23-Sep-07	RCDD	306.2	360 489.33	7 789 732.92	294.06	-90.0	360.0
R4ARD12	24-May-08	DD	195.7	360 487.48	7 789 883.55	294.15	-90.0	360.0
R4ARD13	28-May-08	DD	331.3	360 490.00	7 789 850.00	295.00	-90.0	360.0
R4ARD14	7-Jun-08	DD	393.5	360 488.99	7 789 770.67	294.07	-90.0	360.0
R4ARD15	17-Jun-08	DD	391.8	360 448.99	7 789 950.32	293.99	-60.0	180.0
R4ARD16	30-Jun-08	DD	443.4	360 449.60	7 790 061.02	293.92	-67.0	175.0
R4ARD20	1-Jul-09	DD	426.4	360 586.07	7 789 954.29	293.94	-62.0	176.0
R4ARD21	11-Jul-09	DD	441.2	360 299.78	7 790 155.59	294.04	-61.0	173.0
R4ARD24	1-Aug-09	DD	548.6	360 298.44	7 789 743.76	294.08	-62.0	355.0
R4ARD25	12-Sep-09	DD	308.0	360 299.08	7 790 171.00	294.04	-64.0	176.0
R4ARD25-1	12-Sep-09	DD	446.7	360 299.08	7 790 171.00	294.04	-64.0	176.0
R4ARD26	25-Sep-09	DD	462.2	360 299.03	7 790 172.24	294.08	-65.0	176.0
R4ARD27	1-Oct-09	DD	447.3	360 300.28	7 790 141.79	293.98	-61.5	176.0
R4ARD28	9-Oct-09	DD	474.1	360 260.16	7 790 158.33	294.02	-64.0	176.0
R4ARD32	19-Apr-10	DD	372.1	360 700.01	7 789 944.07	293.91	-65.0	176.0
R4ARD34	25-Jun-10	DD	434.8	360 259.96	7 790 132.16	293.86	-64.0	178.0
R4ARD37	24-Jul-10	DD	447.7	360 257.30	7 790 180.17	293.98	-66.0	178.0
R4ARD39	31-Aug-10	DD	501.4	360 220.23	7 790 163.12	294.01	-65.0	177.0

BHID	Date Drilled	Hole Type	Depth (m)	Easting	Northing	RL	Dip	Azimuth
R4ARD40	27-Sep-10	DD	459.1	360 699.77	7 789 919.99	293.98	-64.0	180.0
R4ARD42	16-Oct-10	DD	396.0	360 699.97	7 789 894.46	293.99	-64.0	177.0
R4ARD43	30-Oct-10	DD	384.5	360 659.07	7 789 907.53	293.99	-65.0	177.0
R4ARD44	17-Nov-10	DD	384.6	360 660.45	7 789 933.13	294.01	-65.0	177.0
R4ARD45	25-Nov-10	DD	369.4	360 660.50	7 789 957.42	293.83	-65.0	169.8
R4ARD46	21-May-11	DD	388.2	360 738.87	7 789 928.60	293.93	-65.0	173.8
R4ARD47	6-Jun-11	DD	447.3	360 339.14	7 790 150.56	294.07	-64.0	175.3
R4ARD48	20-Jun-11	DD	450.4	360 340.14	7 790 137.97	294.05	-64.0	175.3
R4ARD49	6-Jul-11	DD	495.3	360 219.22	7 790 182.87	294.01	-66.0	173.8
R4ARD52	2-Aug-11	DD	390.6	360 538.66	7 789 930.42	293.94	-67.0	176.8
R4ARD53	12-Aug-11	DD	402.6	360 540.13	7 789 918.49	293.97	-65.5	176.8
R4ARD55	21-Aug-11	DD	297.5	360 537.54	7 789 945.83	293.91	-70.0	176.8
R4ARD57	29-Aug-11	DD	399.5	360 469.81	7 789 745.75	294.09	-75.0	4.8
R4ARD57-1	7-Sep-11	DD	372.2	360 469.81	7 789 745.75	294.09	-75.0	4.8
R4ARD58	13-Sep-11	DD	330.4	360 472.00	7 789 747.00	295.00	-75.0	19.8
R4ARD60	21-Sep-11	DD	213.3	360 740.00	7 789 950.00	295.00	-66.0	176.3
R4ARD61	2-Oct-11	DD	354.1	360 745.00	7 789 950.00	295.00	-66.5	176.3
R4ARD62	8-Oct-11	DD	447.4	360 370.00	7 790 110.00	295.00	-65.0	176.3
R4ARD63	19-Oct-11	DD	431.9	360 340.00	7 790 120.00	295.00	-64.5	178.8
R4ARD63-1	26-Oct-11	DD	420.8	360 340.00	7 790 120.00	295.00	-64.5	178.8

APPENDIX 2

RAW SAMPLE GRADE MEANS BY ESTIFLAG

Raw Sample Grade Means by ESTIFLAG

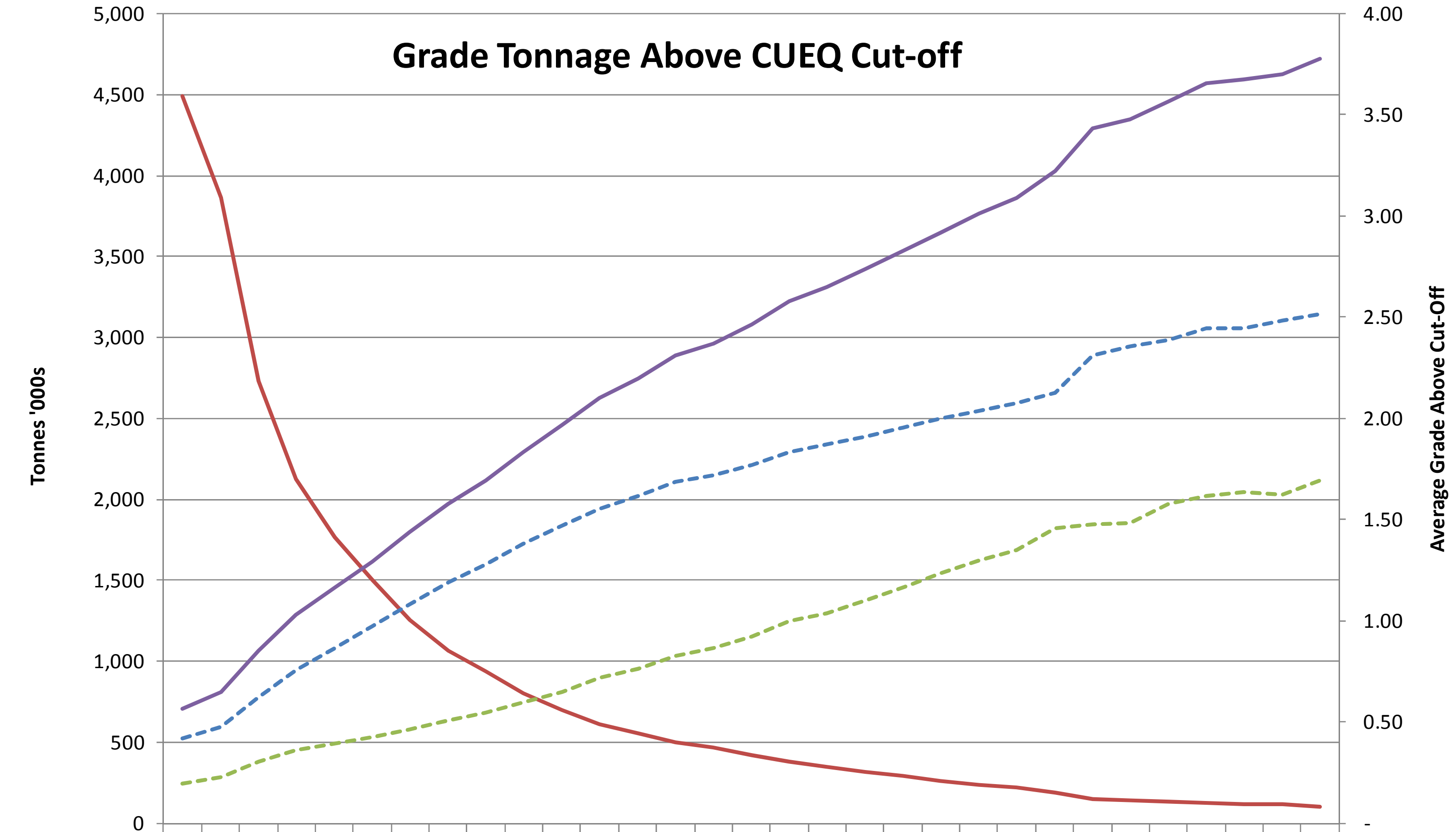
ESTIFLAG	Field	No. Samples	MIN	MAX	MEAN	VAR	SDEV	SE
100	CU_%2	2 453	0.0000	3.17	0.0441	0.0235	0.1532	0.0031
	AU_PPM	2 453	0.0000	15.10	0.0528	0.1495	0.3866	0.0078
	AG_PPM	2 453	0.0250	6.30	0.1855	0.3911	0.6253	0.0126
	FE_%	2 389	0.5700	40.20	9.2720	29.2874	5.4118	0.1107
	K_%	1 780	0.0050	5.19	1.2720	1.3696	1.1703	0.0277
	S_%	2 294	0.0050	15.00	0.2244	0.6537	0.8085	0.0169
	BI_PPM	2 453	1.0	8 660.0	34.1	54166.7	232.7375	4.6991
	MO_PPM	1 780	0.5	403.0	5.3	344.8	18.5690	0.4401
	SG	1 647	2.5200	4.00	2.7826	0.0401	0.2003	0.0049
111	CU_%2	30	0.0216	6.30	0.9252	1.2399	1.1135	0.2033
	AU_PPM	30	0.0100	6.58	0.6393	2.5775	1.6055	0.2931
	AG_PPM	30	0.0250	27.90	2.4700	25.7834	5.0777	0.9271
	FE_%	30	6.6800	32.40	16.1970	59.8433	7.7358	1.4124
	K_%	28	0.0050	0.23	0.0489	0.0046	0.0680	0.0128
	S_%	28	0.2000	14.75	3.1089	10.5789	3.2525	0.6147
	BI_PPM	30	5.0	1 845.0	336.6	285 634.8	534.4	97.6
	MO_PPM	28	2.0	485.0	48.0	8348.0	91.4	17.3
	SG	30	2.7100	3.63	3.0627	0.0991	0.3148	0.0575
115	CU_%2	214	0.0008	5.55	1.1366	1.0483	1.0239	0.0700
	AU_PPM	214	0.0050	6.58	0.4699	1.1507	1.0727	0.0733
	AG_PPM	214	0.0250	39.50	2.6239	20.8603	4.5673	0.3122
	FE_%	214	4.7000	50.00	22.8374	122.4247	11.0646	0.7564
	K_%	199	0.0050	0.09	0.0084	0.0001	0.0087	0.0006
	S_%	199	0.0800	21.70	2.3748	10.9110	3.3032	0.2342
	BI_PPM	214	1.0	10 000.0	426.5	1 370 584.0	1170.7	80.0
	MO_PPM	199	0.5	603.0	55.7	7242.9	85.1	6.0
	SG	210	2.6800	4.53	3.3581	0.2020	0.4495	0.0310
121	CU_%2	587	0.0002	1.805	0.1631	0.0742	0.2724	0.0112
	AU_PPM	587	0.0050	15.10	0.2770	0.9824	0.9911	0.0409
	AG_PPM	587	0.0250	31.80	0.4856	4.4342	2.1058	0.0869
	FE_%	582	1.1100	31.00	9.1827	16.4987	4.0619	0.1684
	K_%	495	0.0050	3.52	0.5987	0.4568	0.6759	0.0304
	S_%	551	0.0050	27.50	0.5674	2.6700	1.6340	0.0696
	BI_PPM	587	1.0	7940.0	151.8	306 362.3	553.5	22.8

ESTIFLAG	Field	No. Samples	MIN	MAX	MEAN	VAR	SDEV	SE
	MO_PPM	495	0.5	1215.0	15.7	4 545.5	67.4	3.0
	SG	504	2.5600	3.78	2.7824	0.0337	0.1835	0.0082
125	CU_%2	421	0.0000	2.67	0.1356	0.0518	0.2277	0.0111
	AU_PPM	421	0.0000	12.35	0.0970	0.5073	0.7123	0.0347
	AG_PPM	421	0.0250	13.00	0.6333	2.1483	1.4657	0.0714
	FE_%	377	3.6800	43.80	16.5236	59.6161	7.7211	0.3977
	K_%	335	0.0050	0.15	0.0087	0.0001	0.0098	0.0005
	S_%	335	0.0100	27.50	0.8345	4.5640	2.1364	0.1167
	BI_PPM	421	1.0	994.0	57.0	18 009.6	134.2	6.5
	MO_PPM	335	0.5	633.0	20.8	3 846.5	62.0	3.4
	SG	357	2.6600	4.09	3.0941	0.0604	0.2458	0.0130
200	CU_%2	1 003	0.0000	0.83	0.0308	0.0048	0.0692	0.0022
	AU_PPM	1 000	0.0050	7.50	0.0380	0.0790	0.2811	0.0089
	AG_PPM	1 000	0.0250	6.60	0.2439	0.5292	0.7274	0.0230
	FE_%	950	0.0600	38.40	10.9683	30.0943	5.4858	0.1780
	K_%	633	0.0050	5.01	0.8133	1.5846	1.2588	0.0500
	S_%	731	0.0050	16.35	0.3021	2.4943	1.5793	0.0584
	BI_PPM	1 000	1.0	2190.0	20.8	9 202.3	95.9	3.0
	MO_PPM	633	0.5	281.0	6.1	440.6	21.0	0.8
	SG	632	2.4500	3.62	2.7665	0.0331	0.1819	0.0072
211	CU_%2	41	0.0460	2.55	0.8727	0.4557	0.6751	0.1054
	AU_PPM	41	0.0050	2.59	0.6016	0.6778	0.8233	0.1286
	AG_PPM	41	0.0250	9.80	2.6226	4.9374	2.2220	0.3470
	FE_%	41	7.7600	43.00	18.8207	89.4707	9.4589	1.4772
	K_%	41	0.0050	1.46	0.0970	0.0813	0.2850	0.0445
	S_%	41	0.1600	18.15	3.5561	15.2458	3.9046	0.6098
	BI_PPM	41	1.0	1735.0	208.9	132 841.4	364.5	56.9
	MO_PPM	41	4.0	630.0	114.8	16 688.1	129.2	20.2
	SG	41	2.6300	3.81	3.0400	0.0909	0.3015	0.0471
215	CU_%2	374	0.0139	7.55	1.0193	1.0203	1.0101	0.0522
	AU_PPM	374	0.0050	3.29	0.1488	0.0761	0.2758	0.0143
	AG_PPM	374	0.0250	40.80	2.6242	22.1386	4.7052	0.2433
	FE_%	351	5.1300	50.00	25.3413	117.3587	10.8332	0.5782
	K_%	346	0.0050	1.46	0.0115	0.0061	0.0783	0.0042
	S_%	346	0.0300	38.10	3.4574	29.6820	5.4481	0.2929
	BI_PPM	374	1.0	1755.0	84.9	26 320.9	162.2	8.4

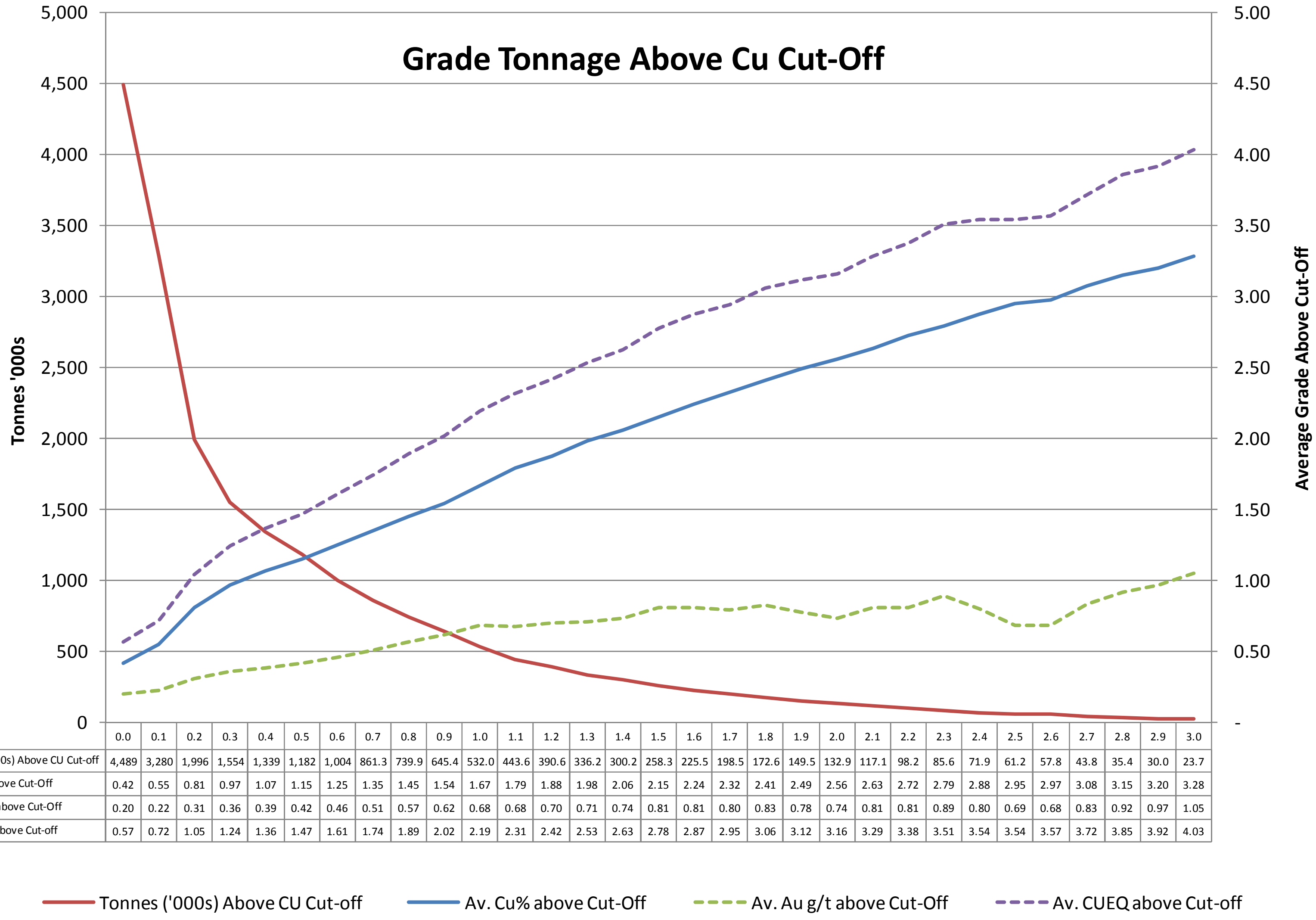
ESTIFLAG	Field	No. Samples	MIN	MAX	MEAN	VAR	SDEV	SE
	MO_PPM	346	1.0	1710.0	82.3	25 184.3	158.7	8.5
	SG	346	2.6300	4.39	3.3019	0.1438	0.3793	0.0204
221	CU_%2	778	0.0001	3.60	0.2013	0.1178	0.3432	0.0123
	AU_PPM	778	0.0050	4.97	0.1669	0.2354	0.4852	0.0174
	AG_PPM	778	0.0250	43.20	0.6620	6.3581	2.5215	0.0904
	FE_%	719	3.3500	31.60	10.9848	13.5627	3.6828	0.1373
	K_%	546	0.0050	4.68	0.4560	0.5921	0.7695	0.0329
	S_%	659	0.0050	8.45	0.4056	0.3864	0.6216	0.0242
	BI_PPM	778	1.0	2810.0	57.1	25 885.7	160.9	5.8
	MO_PPM	546	0.5	634.0	14.8	1 228.6	35.1	1.5
	SG	546	2.5600	3.51	2.7355	0.0113	0.1061	0.0045
225	CU_%2	567	0.0002	4.08	0.1667	0.1021	0.3195	0.0134
	AU_PPM	567	0.0050	1.30	0.0463	0.0147	0.1213	0.0051
	AG_PPM	567	0.0250	10.10	0.4978	1.2382	1.1127	0.0467
	FE_%	510	5.2900	46.40	19.7363	83.8807	9.1586	0.4056
	K_%	448	0.0050	0.82	0.0103	0.0017	0.0409	0.0019
	S_%	448	0.0050	7.86	0.4549	0.7032	0.8386	0.0396
	BI_PPM	567	1.0	800.0	37.9	5 974.6	77.3	3.2
	MO_PPM	448	0.5	242.0	21.7	1 067.1	32.7	1.5
	SG	448	2.6000	4.10	3.0888	0.0815	0.2855	0.0135

APPENDIX 3

GRADE TONNAGE CURVES



	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
Tonnes ('000s) Above CUEQ Cut-off	4,489	3,859	2,731	2,121	1,766	1,501	1,259	1,065	935.3	804.0	699.5	610.1	554.2	495.7	465.8	422.9	375.7	349.5	319.2	289.2	262.2	236.7	217.9	187.7	151.4	144.4	132.1	120.9	118.4	114.7	104.2
Av. Cu% above Cut-Off	0.42	0.48	0.62	0.76	0.87	0.97	1.08	1.19	1.28	1.38	1.47	1.55	1.61	1.68	1.72	1.77	1.83	1.87	1.91	1.96	2.00	2.04	2.08	2.13	2.31	2.35	2.39	2.44	2.45	2.48	2.52
Av. Au g/t above Cut-Off	0.20	0.23	0.30	0.36	0.39	0.42	0.47	0.51	0.54	0.60	0.65	0.72	0.76	0.83	0.87	0.92	1.00	1.03	1.10	1.16	1.23	1.30	1.35	1.46	1.48	1.48	1.58	1.62	1.64	1.62	1.69
Av. CUEQ above Cut-off	0.57	0.65	0.85	1.03	1.17	1.29	1.44	1.58	1.69	1.83	1.97	2.10	2.20	2.31	2.37	2.46	2.58	2.65	2.74	2.83	2.92	3.01	3.09	3.22	3.43	3.48	3.57	3.65	3.67	3.70	3.78



	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
Tonnes ('000s) Above CU Cut-off	4,489	3,280	1,996	1,554	1,339	1,182	1,004	861.3	739.9	645.4	532.0	443.6	390.6	336.2	300.2	258.3	225.5	198.5	172.6	149.5	132.9	117.1	98.2	85.6	71.9	61.2	57.8	43.8	35.4	30.0	23.7
Av. Cu% above Cut-Off	0.42	0.55	0.81	0.97	1.07	1.15	1.25	1.35	1.45	1.54	1.67	1.79	1.88	1.98	2.06	2.15	2.24	2.32	2.41	2.49	2.56	2.63	2.72	2.79	2.88	2.95	2.97	3.08	3.15	3.20	3.28
Av. Au g/t above Cut-Off	0.20	0.22	0.31	0.36	0.39	0.42	0.46	0.51	0.57	0.62	0.68	0.68	0.70	0.71	0.74	0.81	0.81	0.80	0.83	0.78	0.74	0.81	0.81	0.89	0.80	0.69	0.68	0.83	0.92	0.97	1.05
Av. CUEQ above Cut-off	0.57	0.72	1.05	1.24	1.36	1.47	1.61	1.74	1.89	2.02	2.19	2.31	2.42	2.53	2.63	2.78	2.87	2.95	3.06	3.12	3.16	3.29	3.38	3.51	3.54	3.54	3.57	3.72	3.85	3.92	4.03