Stanton Deposit Resource Estimation Report

For

Northern Cobalt Ltd – Wollogorang Project

April 2018

Prepared by

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Executive Summary

The Author was contracted by Northern Cobalt Limited (NCL) to undertake the Mineral Resource Estimate (MRE) for the Stanton deposit, which forms part of the larger Wollogorang project in the Northern Territory. The scope of work comprised

- data collation and review
- interpretation and modelling
- geostatistical analysis of cobalt, nickel, copper and sulphur
- Mineral Resource Estimation and reporting to JORC 2012 standard

The results of the Mineral Resource Estimate are provided in the table below. The Mineral Resources are reported at a cut-off of 300 ppm Co and have an effective date of 6th April 2018.

Mineral Resource Estimate for the Stanton Deposit - 6th April 2018						
	Oxidation	Tonnes	Co ppm	Ni ppm	Cu ppm	S ppm
Inferred	Oxide	8,000	544	324	2,099	137
	Transition	242,000	843	424	795	4,012
Indicated	Oxide	406,000	1,155	475	1,639	125
	Transition	286,000	1,782	888	942	4,215
Total		**942,000**	**1,260**	**586**	**1,215**	**2,364**

The information in this release that relates to the Estimation and Reporting of Mineral Resources has been compiled by Dr Graeme McDonald. Dr McDonald acts as an independent consultant to Northern Cobalt Limited on the Stanton Deposit Mineral Resource estimation. Dr McDonald is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience with the style of mineralisation, deposit type under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (The JORC Code). Dr McDonald consents to the inclusion in this report of the contained technical information relating to the Mineral Resource Estimation in the form and context in which it appears.

Geology, mineralisation and weathering wireframes were generated in Micromine software using drill hole data supplied by NCL. Resource data was flagged with unique weathering, lithology and mineralisation domain codes as defined by the wireframes and composited to 1m lengths. The composites were analysed and top-cuts applied.

Grade continuity analysis was undertaken in Micromine software for Co, Ni, Cu and S for the mineralised domain and models were generated in all three directions. Parameters were used in the block model estimation. A block model with a parent block size of 5x5x2m with sub-blocks of 1.25 x 1.25 x 0.5m has been used to adequately represent the mineralised volume, with sub block estimated at the parent block scale.

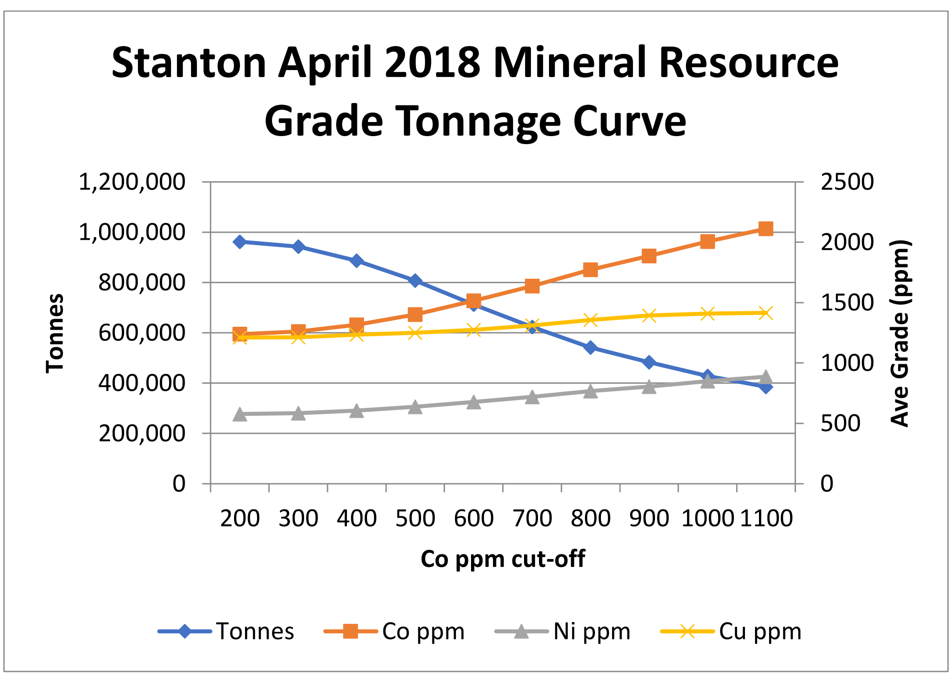
Density values were supplied by NCL and are consistent with expected values for the lithologies present and the degree of weathering. Within the block model, density has been assigned based on lithology and weathering state.

The Mineral Resource has been classified on the following basis:

- No areas of in-situ Mineral Resource satisfied the requirements to be classified as **Measured Mineral Resources.**
- Portions of the model that have drill spacing of 20m by 20m, and where the confidence in the estimation is considered high have been classified as **Indicated Mineral Resources**.
- Areas that have drill spacing of greater than 20m by 20m, and/or with lower levels of confidence in the estimation or potential impact of modifying factors have been classified as **Inferred Mineral Resources.**

To the best of the Authors knowledge, at the time of estimation there are no known issues that could materially impact on the eventual extraction of the Mineral Resource.

The grade-tonnage curve for the Stanton Deposit is shown below.



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1 INTRODUCTION

The author was contracted by Northern Cobalt Limited (NCL) to undertake the Mineral Resource Estimate (MRE) for the Stanton Co-Ni-Cu deposit. The Stanton deposit is located approximately 870km SE of Darwin in the Northern Territory and forms part of NCL's Wollogorang Project.

This report has been prepared in accordance with the Code and Guidelines for the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves – 2012 Edition (JORC Code, 2012 Edition). It documents the work completed, assumptions made and the results of the MRE process. Section 3 of the JORC Table 1 has been completed and is attached as an Appendix.

1.1 Disclaimer

The Author of this report has no prior association with NCL in regard to the mineral assets and has no interest in the outcome of the technical assessment. The Author is independent of NCL and has no beneficial or economic interests in any of the mineral assets being reported on. The Author is renumerated by way of a professional fee as negotiated with NCL.

The report is based on information available up to and including the date of this report. The author has endeavoured, by making all reasonable enquiries, to confirm the authenticity, accuracy and completeness of the technical data upon which this report is based. Statements and opinions are current as of the date of this report and could alter over time depending on further exploration results, mineral prices and other relevant market factors.

The Author consents to this report being distributed, in full, in the form and context in which it was commissioned.

1.2 Project Scope

The Author was requested by NCL to develop a resource model and update the MRE for the Stanton deposit in accordance with the JORC Code (2012 Edition). Specifically, the Author undertook the following tasks in accordance with normal industry standards :

- Reviewed diamond drill holes and developed an understanding of the local geology and mineralisation
- Developed a geological interpretation on cross sections
- Generated a 3D geological interpretation from interpreted cross sections
- Created domain interpretations for cobalt, nickel and copper
- Developed a block model of the deposit
- Undertook a geostatistical analysis of the data
- Estimated grades for cobalt, nickel, copper and sulphur
- Developed an independent RE for the Stanton Deposit (JORC Code 2012)
- Prepared an independent mineral resource estimation report
- Prepared summary documentation suitable for ASX release including Table 1 of the JORC Code (2012)

2 LOCATION AND GEOLOGY

2.1 Location

The Stanton Deposit is located in the Wollogorang region of the Northern Territory, adjacent to both the Queensland border and Gulf of Carpentaria. The project is located approximately 60km NNW of Wollogorang Station and 870km SE of Darwin (Figure 1).

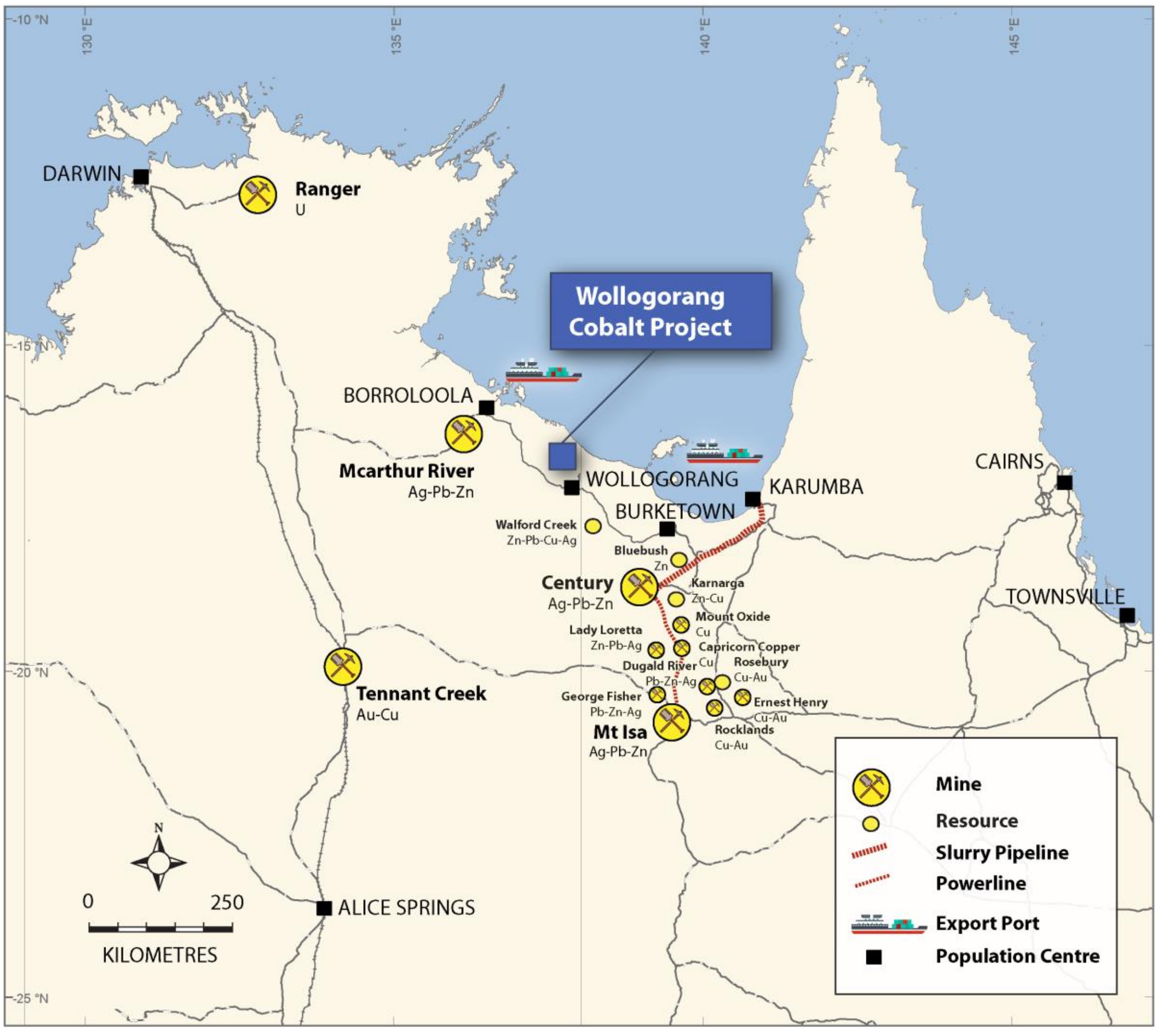


Figure 1 – Location of the Wollogorang Cobalt Project area

2.2 Tenure

The Stanton Deposit is located on exploration licence EL31272 (Figure 2). The whole Wollogorang Cobalt Project within the Northern Territory consists of 8 tenements covering an area of 4,986 km^2. Two addition tenement applications currently also exist on the Queensland side of the border.

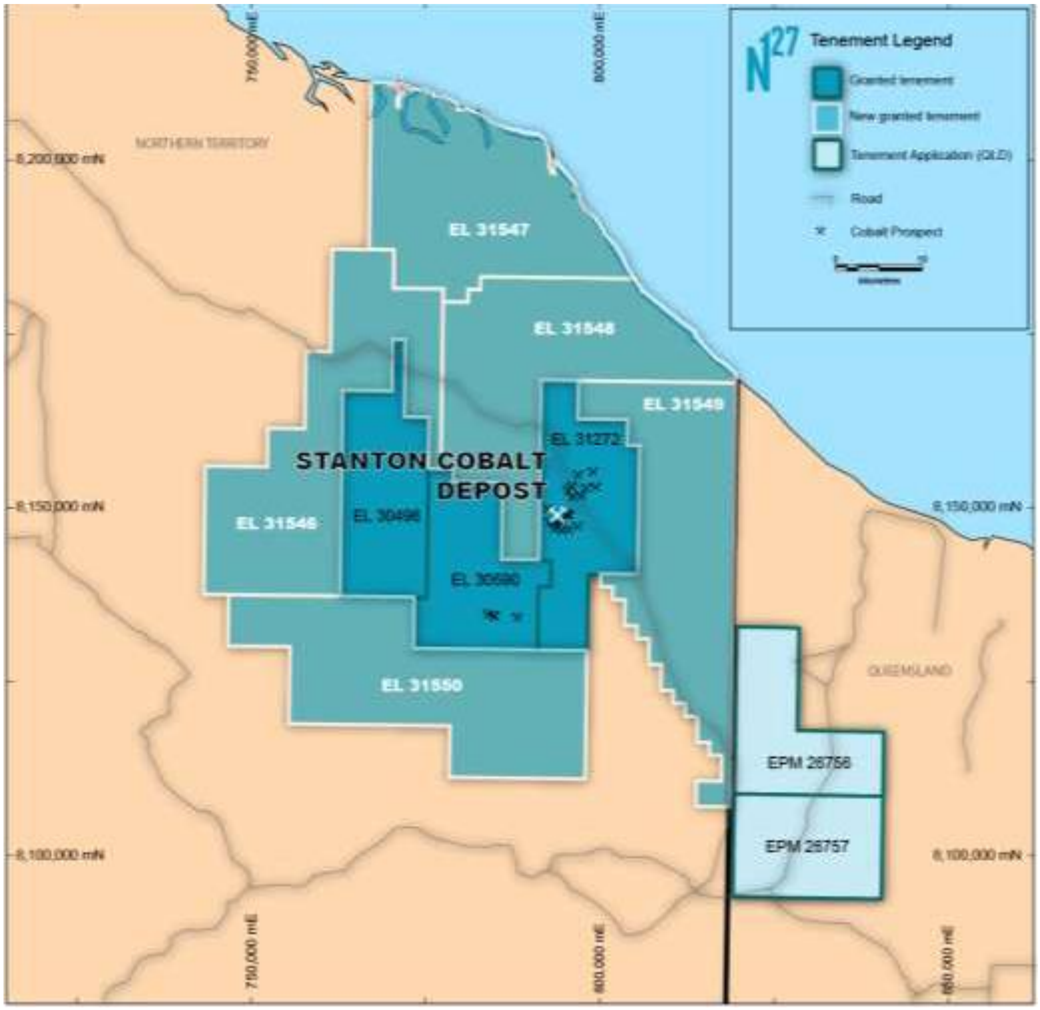


Figure 2 – Location of the Stanton Deposit within the Wollogorang Cobalt Project area tenure.

2.3 Local Geology

The following description of the local geology is primarily based on the work of David Rawlings (Rawlings, 2002, 2006) who completed a PhD on the nearby Redbank Copper Deposit and examined other mineralisation within the area while working for the Northern Territory Geological Survey (NTGS).

The local geology is dominated by the mid Proterozoic Gold Creek Volcanics of the Tawallah Group (Figure 3). The Gold Creek Volcanics consist of a series of basaltic lavas and shallow intrusives, interlayered with oxidised sandstone, carbonate and siltstone units (Figure 4). This formation is conformably underlain by the reduced sedimentary facies of the Wollogorang Formation which comprises dolostones, sandstones and carbonaceous shale. The Gold Creek Volcanics are discomformably overlain by a felsic volcanic package (Pungalina Formation) that includes a rhyolite ignimbrite (Hobblechain Rhyolite) and a number of clastic units.

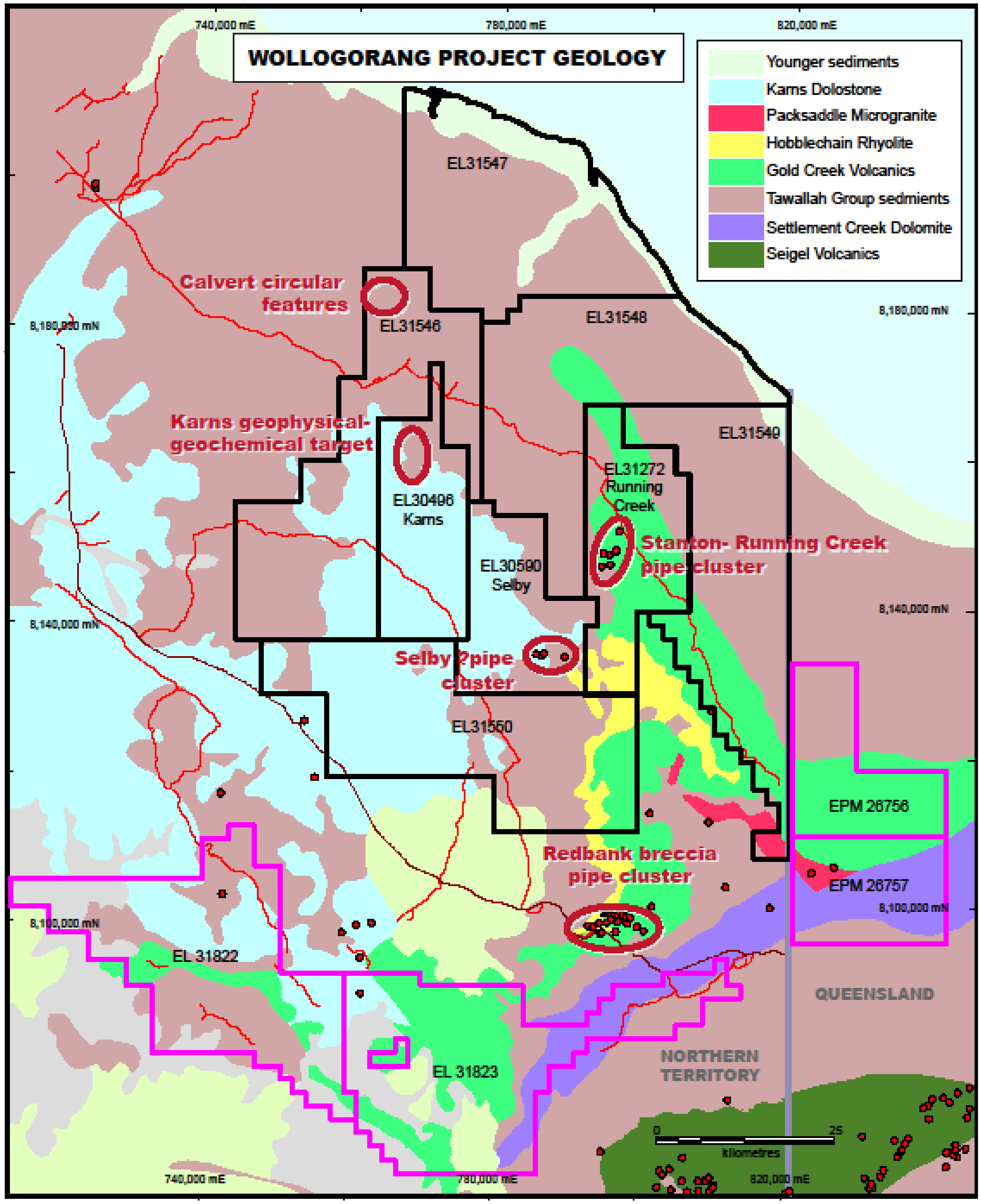


Figure 3 – Regional geological interpretation of the Wollogorang Cobalt Project area.

The local geology is generally not well exposed due partly to the flat lying to gently dipping nature of the stratigraphy and the thin layer of eluvial cover and vegetation growth.

(modified from Rawlings, Cooke and Bull, 1996)

Figure 4 – Local straitigraphy of the Gold Creek Volcanics.

2.4 Mineralisation

Mineralisation within the Stanton Deposit and surrounding Wollogorang Project area is stratabound and mostly constrained within the oxidised upper dolomitic mudstone and sandstone unit of the Gold Creek Volcanics. Minor mineralisation also occurs in the interlayered basalt and sandstone units above and below the primary host unit to depths of about 100m. The intensity and grade of mineralisation is greatest within circular intensely brecciated zones interpreted to be breccia pipe like structures. These breccia pipes are up to 100m in diameter with often abrupt stratigraphic juxtapositions with implied faulted margins and downward movement of pipe interior. The breccia composition ranges from monomict to polymict and comprises clasts of sandstone, mudstone and basalt in a mud-sand matrix.

The mineralisation within the near surface oxidised zones is dominated by malachite, azurite, chalcocite, native copper and asbolone ($(Ni,Co)_{2-x}Mn^{4+}(O,OH)_4 \cdot nH_2O$). At depth the mineralization is dominated by the sulphides chalcopyrite and siegenite ($(Co,Ni)_3S_4$). The sulphides occur as disseminated 1-5mm sized euhedral crystals in both coherent and brecciated mudstone and sandstone within the breccia pipe and in quartz-dolomite veins within altered basalt.

3 DATA

3.1 Principal Data Sources

Throughout the 1990's CRA Exploration Pty Ltd undertook significant amounts of work within the area, primarily looking for large scale sediment hosted base metal deposits. As a part of this effort a large number of RC and diamond drill holes were drilled regionally with some locally at the Stanton Deposit. This data has been captured from historical reporting and now forms part of a historical database.

In addition to this historical data, late in 2017, NCL undertook its own RC and diamond drilling at the Stanton deposit with positive results. This drilling was designed to confirm and infill the older CRA drilling with a view to providing new data to be used as part of an updated Resource Estimate at the project.

Throughout the start of 2018, NCL have been in the process of combining all of this data into a common Datashed Database. However, for the purposes of this MRE update the following Excel files were provided by NCL.

- 20180131_Drill Logs_Final For DB Loading
- 20180131_Stanton_Assay Results Final
- 20180131_Hist_tblDH_All Data_Final

3.2 Drill Hole Data

The Stanton drill hole dataset used for the MRE contains a total of 115 holes for 10,732.55m of drilling (Table 1). Comprising 14 RC holes and 21 DD holes drilled by CRA between 1990 and 1995. A total of 70 RC and 10 DD holes were drilled by NCL in late 2017.

The majority of holes have been drilled vertically, with a small proportion (15) drilled with a dip of -60° either to the north or south. A plan showing the spatial relationship of the drill holes is included as Figure 5. With the exception of the 2017 DD holes drilled by NCL all of the holes have assays associated with them. At the time of this report the assays for the 2017 DD holes were still pending, however, these holes were used as part of the geological interpretation.

Not all of this drilling occurs within the interpreted mineralised zone. In total, of the historic CRA drilling, only 15 DD and 5 RC were used for the MRE. However, 61 RC holes from the NCL drilling have been included for use in the MRE. A complete list of holes interpreted to contain mineralisation is included in Appendix 1.

It is significant to note that only one hole (DD95RC156) has been disregarded completely due to uncertainty surrounding the collar location of this hole.

Operator	Hole Prefix	Type	Number	Metres	Date
CRA	PD90RC	RC	5	89	1990
CRA	PD92RC	RC	7	389	1992
CRA	DD93RC	DD	2	260.70	1993
CRA	DD94RC	DD	17	2,320.05	1994
CRA	PD94RC	RC	2	171	1994
CRA	DD95RC	DD	2	200.40	1995
NCL	17RC	RC	70	6,529	2017
NCL	17DD	DD	10	773.40	2017
Total			**115**	**10,732.55**	

Table 1 : Summary of drill holes provided for use in the MRE

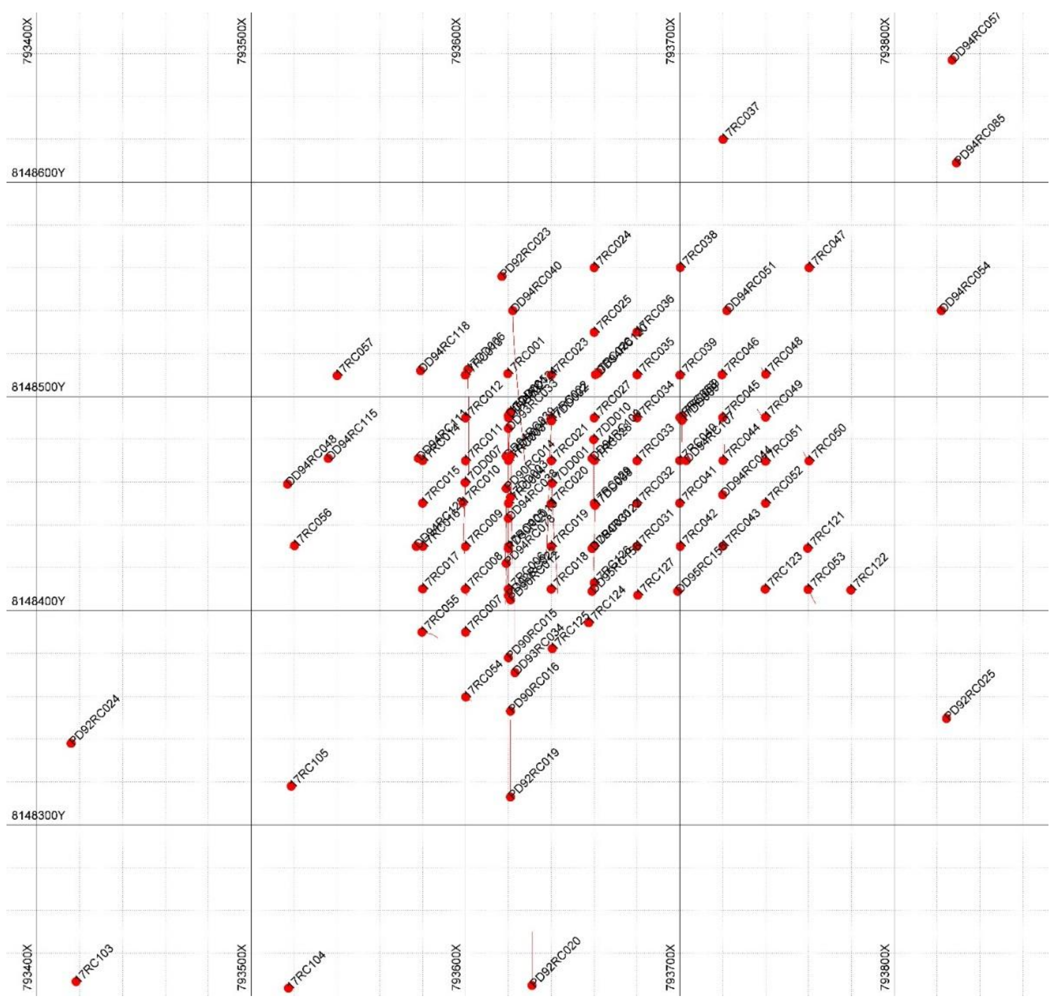


Figure 5 – Stanton drill hole location plan

3.3 Topographic Surface

Within the immediate vicinity of the Stanton Deposit, the topography is very flat and with an average elevation of approximately 77m above sea level.

No topographic data was supplied. However, as the NCL drill hole collars have been located using DGPS, the RL values were utilised to create a DTM surface. A number of points consistent with nearby locations were added to extend the surface beyond the limits of the drilling. Given the flat topography and the relatively closed spaced drilling, this method was deemed to have a satisfactory level of detail. A triangulated wireframe DTM surface (*Stanton_Collar_DTM*) was created in Micromine.

3.4 Database Validation

The Author has conducted random checks of the geological logs and assay data contained in open file reports and raw assay data files to the digital data supplied. No errors were detected.

The 10 DD holes drilled by NCL were examined and the logging confirmed. The nature and appearance of the mineralisation was also confirmed and the weathering profile observed.

3.5 Downhole Surveys

For the CRA drilling, downhole surveys were only conducted for 2 of the holes. All other holes are assumed to follow the initial set up direction. Given that the majority of holes are vertical together with the relatively flat lying stratigraphy and mineralisation this will have minimal impact on the interpretation.

Downhole surveys were conducted for all of the NCL drilling using a Reflex EZ-GYRO.

3.6 Sample Recovery

During the previous MRE by Ravensgate (Reid, 2017), it was noted that some of the historic drill hole logs contained core recovery details. It was decided at the time based on this information to exclude some samples due to poor drill core recovery. However, in light of the increased amount and coverage of the recent drilling it has been concluded that the previously excluded historic samples are still representative and should be included. This is based on similarities with nearby samples within the same holes and good continuity shown with adjacent holes. The only remaining concern from the historic drilling is a single sample from hole DD94RC038 with extremely elevated Co, Ni and Cu assays at 94100, 5900 and 9100 respectively. Within the current MRE, these assays have all had a top cut applied and an examination of the resulting block model indicates that the influence of these high grades is within acceptable limits and supported by other high grade assays.

In terms of the RC drilling, there is no documentation that describes the sample quality for the historic CRA drilling. Reports of the RC drilling by NCL indicates that the majority of the samples are excellent with only minor cavities intersected that affect sample quality. Of particular note is hole 17RC030. Several samples from this hole were missing and it was noted that there was no sample return due to a cavity and therefore no assay. The intervals in question are 36 – 39m and 40 -41m.

3.7 QAQC

A QAQC report was provided by NCL on the RC drilling undertaken in late 2017. This report is included as Appendix 2.

This report was reviewed and other than a small number of obviously incorrectly labelled samples there appeared to be no significant issues associated with the standards, duplicates and blanks. No check assays have been completed at an independent umpire laboratory and doing this will add significantly to the confidence in this data set. The data however, is considered to be of a good quality and standard to be used for the Mineral Resource Estimate.

There is no QAQC data available for the historic CRA data. However, the samples were collected by a large reputable company and the assays determined at a reputable laboratory that would have used processes and techniques considered to be industry standard at the time.

3.8 Twin Hole Analysis

As part of the 2017 RC drilling campaign, NCL twinned 9 of the old CRA diamond drill (DD) holes. The distance between the hole collars varied from 1 to 3m.

One of the pairs, namely 17RC126 and DD95RC156, displayed distinctly different downhole assays. Given the relatively good correlations displayed by all the other pairs is was decided that this pair would not be used for further analysis and that the assays for hole DD95RC156 would not be included in the Resource Estimate. The reasons for the discrepancy is unknown but location of the hole DD95RC156 is questionable as the collar has not been found due to extensive rehabilitation of previous drilling. This is supported by the fact that it is the only DD95 series hole that was twinned and all other holes are from the DD94 series.

Unfortunately, the RC and DD holes were sampled at different intervals. Therefore, both sets of data were composited to 1m sample lengths so a better direct comparison could be made. The sample pairs together with average difference between holes are listed in Table 2. Downhole plots of the sample pairs have been included in Appendix 3. The data indicates that for the majority of hole pairs the Co values are on average higher in the NCL RC holes. A similar pattern is observed for Ni. However, only half of the pairs demonstrate the same pattern for Cu. These trends require further investigation as it appears that there may be a bias between the RC and the DD sampling techniques or between the assay techniques used during the analysis of the different drill programs. Unfortunately, at the time of writing, NCL did not have assays for any of their own DD core for comparison with their own RC drilling. Some possible explanations include :

- Differences in sample digestion techniques between mid 1990's and 2017. A 4 acid digestion was used for the 2017 RC samples, however, the digestion technique for the CRA DD samples as yet can not be confirmed. The analytical technique (ICP) is common between the different assays.
- Preferential physical losses of soft, friable Co/Ni oxide material during core cutting

Given the reputation of both the laboratory and the exploration company at the time the DD samples were collected and assayed it is difficult to discount the data as being valid. Therefore, for the purposes of this Mineral Resource Estimate the old historic data has been included. It is recommended that further work be carried out before a decision is made to exclude the data. Such as ;

- Attempting to sample and validate any remaining CRA drill core in storage at the Northern Territory Geological Survey (NTGS)
- Assess for possible core losses during cutting
- Further investigate historic data, records and other avenues to verify historic assay digestion techniques and consequences
- Compare NCL RC assays with DD core assays when the data become available.

Hole Pair	Ave Difference	Co	Ni	Cu
17RC02 & DD94RC124	Absolute	76.5	51.2	74.3
	%	38.0	43.1	30.5
17RC03 & DD94RC039	Absolute	455.6	255.9	-590.0
	%	57.8	49.6	-37.2
17RC14 & DD94RC111	Absolute	-13.2	-9.5	-96.8
	%	-8.0	-10.5	-34.2
17RC16 & DD94RC123	Absolute	5.2	3.5	-8.9
	%	4.5	6.5	-5.3
17RC26 & DD94RC120	Absolute	33.0	32.4	115.0
	%	23.6	42.7	68.6
17RC28 & DD94RC100	Absolute	247.1	25.3	6.3
	%	44.9	7.3	1.4
17RC30 & DD94RC122	Absolute	204.6	-191.1	-336.8
	%	24.3	-25.3	-28.4
17RC40 & DD94RC107	Absolute	24.4	19.0	224.1
	%	7.9	14.2	73.7

Table 2 – Twin hole pairs and differences in average assays between them.

4 GEOLOGICAL INTERPRETATION AND MODELLING

As part of the MRE process, all of the interpretation and modelling for the Stanton deposit was undertaken using Micromine software. Geological and mineralisation interpretations were completed on 20m spaced N-S oriented sections. 3D wireframes were subsequently created and used for the MRE.

4.1 Lithological Domains

Examination of the logging codes of both the CRA and NCL drilling identified a small number of key lithologies. A brief description of each is as follows :

Laterite – Dark red/brown strongly weathered and cemented pisolitic soil. Thin near surface capping.

Sandstone – Light grey, medium grained and well sorted quartz rich sandstone, often well cemented.

Siltstone – Light grey to buff coloured fine grained siltstone, often with well developed bedding.

Basalt – Often pale orange/brown to grey/green with intense alteration. Displays common igneous textures such as vesicules.

Breccia – Composed of variably sized angular to rounded clasts of sanstone, siltstone and basalt within a primarily sediment matrix.

The Stanton Deposit is dominated by a complex central brecciated zone surrounded by a sequence of flat lying interlayered sandstone, siltstone and basaltic units. From the data, it is likely that the core zone is bounded by faults on all sides (Figure 6).

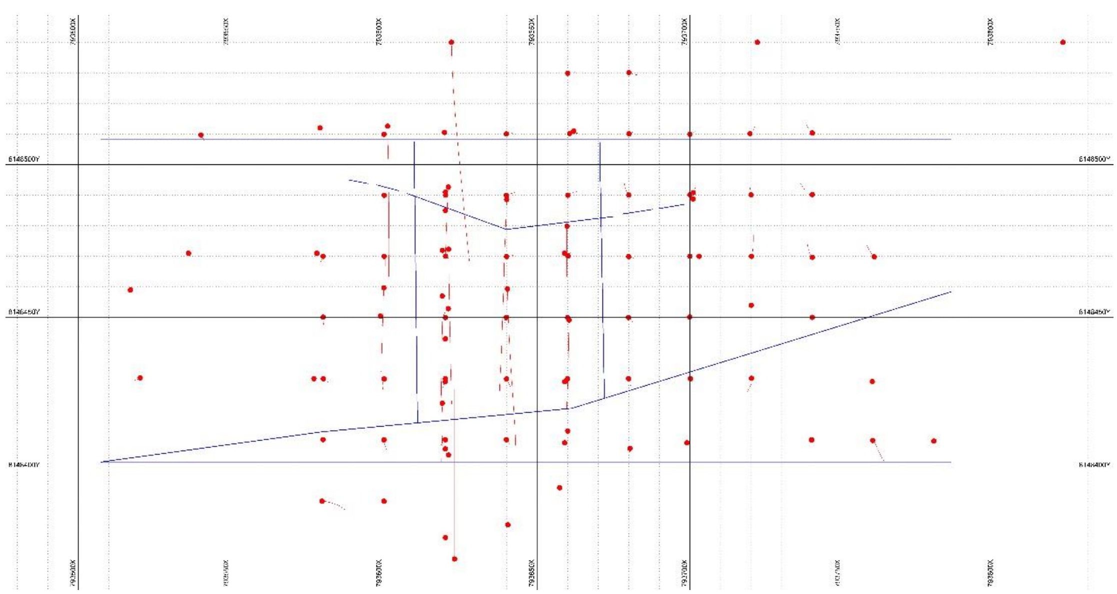


Figure 6 – Location of controlling faults (Blue) relative to drill hole locations. The Stanton Fault is represented by the larger southern NE – SW trending structure.

A brief description of the stratigraphy and lithological units is shown in Table 3. For simplicity the interbedded sandstone and siltstone horizons were combined into sediment units defined as S0 – S3. The interbedded basaltic units have been termed B1 – B3. Further sandstones and basalts do occur lower in the stratigraphy but are not mineralised and are therefore not discussed here.

Unit	Description
L	Thin, up to 3m thick, lateritic soil horizon mainly across the central and NW of the deposit. Host to minor supergene mineralisation.
S0	Relatively thin (up to 5m) sandstone only present in the NW of the project area.
B1	Basaltic unit that is up to 13m thick. Distributed across the central and northern parts of the project area. Thicker in the west and thins to the east indicating possible flow direction. Mineralised in parts, mostly near contacts.
S1	Thick (30m) sediment unit dominated by an upper sandstone and a lower siltstone. Widely distributed and the main host for mineralisation. Heavily brecciated within the central core of the deposit.
B2	30-35m thick basaltic unit that is widely distributed. Mineralised in parts, mostly near contacts. Continuity disrupted through central core of the deposit.
S2	5m thick predominantly sandstone unit with minor siltstones. Widely distributed. Host to the majority of the lower mineralisation.
B3	Basaltic unit up to 18m thick. Widely distributed and continuous. Weakly mineralised at contacts.
S3	6m thick lower most sandstone unit. Widely distributed and continuous. Not mineralised.

Table 3 – Local Stanton stratigraphy and description of lithologies used as part of the lithological interpretation.

A lithological interpretation was undertaken using all available drill holes. Each of these units were interpreted along 20m spaced N-S oriented sections. A surfaces approach was used whereby the base of each unit was mapped as shown in Figure 7. This method also adequately allows for the rapid changes in lithology evident across faults boundaries. These strings were then joined from section to section to create a 3D wireframed bottom surface for each unit. These surfaces were validated against each other to check for inconsistencies and intersection.

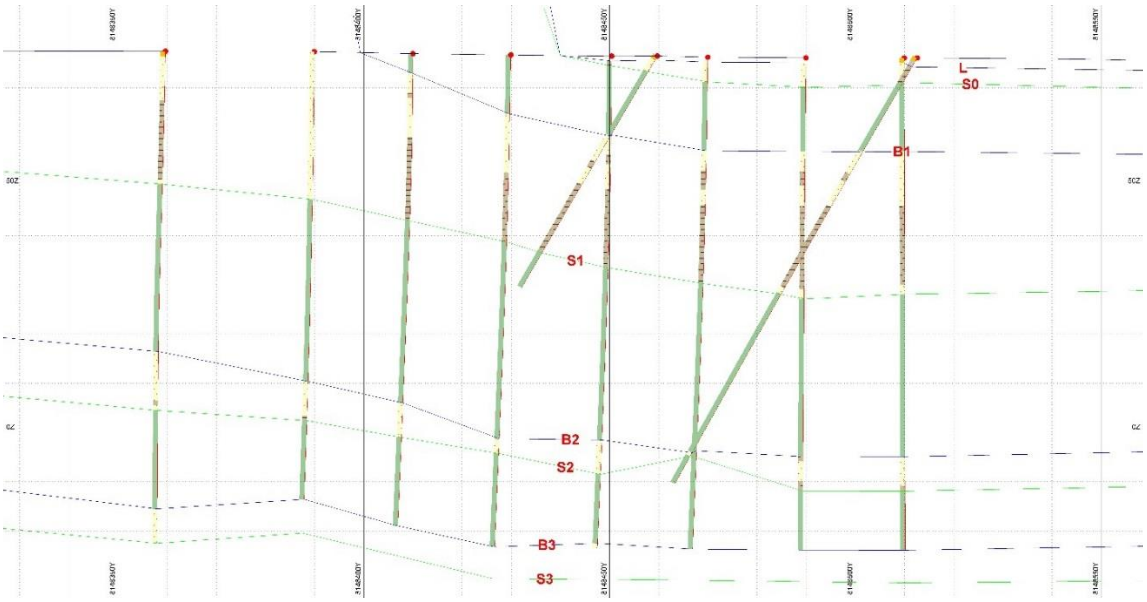


Figure 7 – Cross section 793600E, showing drilling and lithological interpretation. The base of each unit is labelled in red.

4.2 Mineralised Domains

The mineralised domains are based on a 250ppm Co grade threshold to define the limits of the mineralised envelopes. This element and grade was chosen as Co is the primary target element and 250ppm appears to be a natural transition between an obvious low-grade population and a higher grade mineralised population (Figure 8).

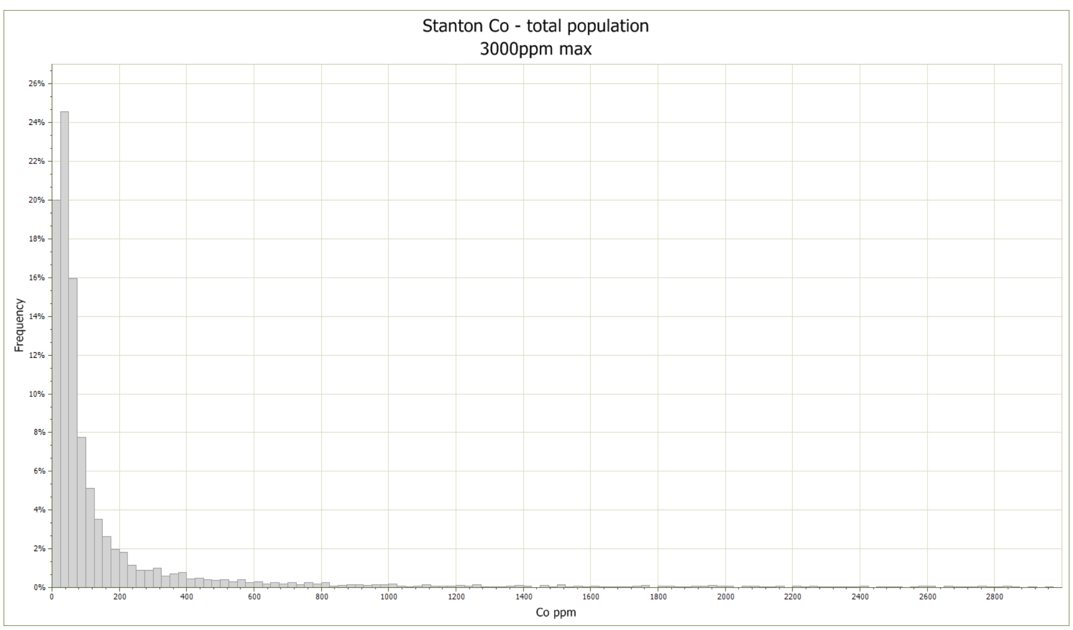


Figure 8 – Histogram of Co assays showing an obvious low grade population transitioning into higher grade samples at approximately 250ppm Co.

The mineralised domains were identified on each section based on a nominal minimum downhole width of 2m and a maximum internal dilution of 2m while trying to honour geological controls and maintain continuity (Figure 9). Compared to previous estimates the greater drill hole density has allowed a better understanding of the mineralisation. As such, the mineralisation has been interpreted to transgress bounding faults in most situations, although some thinning and/or grade variability is identified across these zones. Wireframes were created by joining sectional strings together and successfully validated for open sections, intersecting triangles and invalid connections.

The result is a number of common mineralised domains that together with the weathering and geological surfaces can be used for sample and block model flagging.

Figure 9 – Cross Section 793680E showing downhole assays filtered to +250ppm Co and the mineralised interpretation envelopes in red.

4.3 Weathering

Examination of NCL diamond drill core highlighted the complexities associated with the weathering profile with often both oxide and sulphide material being present at the same locations. It was decided that an oxide surface could be generated based on a combination of the weathering interpretation from drill logs, the first appearance of sulphides and the jump in sulphur assays (Figure 10). This depth to this surface is approximately 35m but does vary across the deposit. Material above this surface was called oxide and material below this surface transitional. It is unlikely that any true fresh rock is present at the depths being investigated.

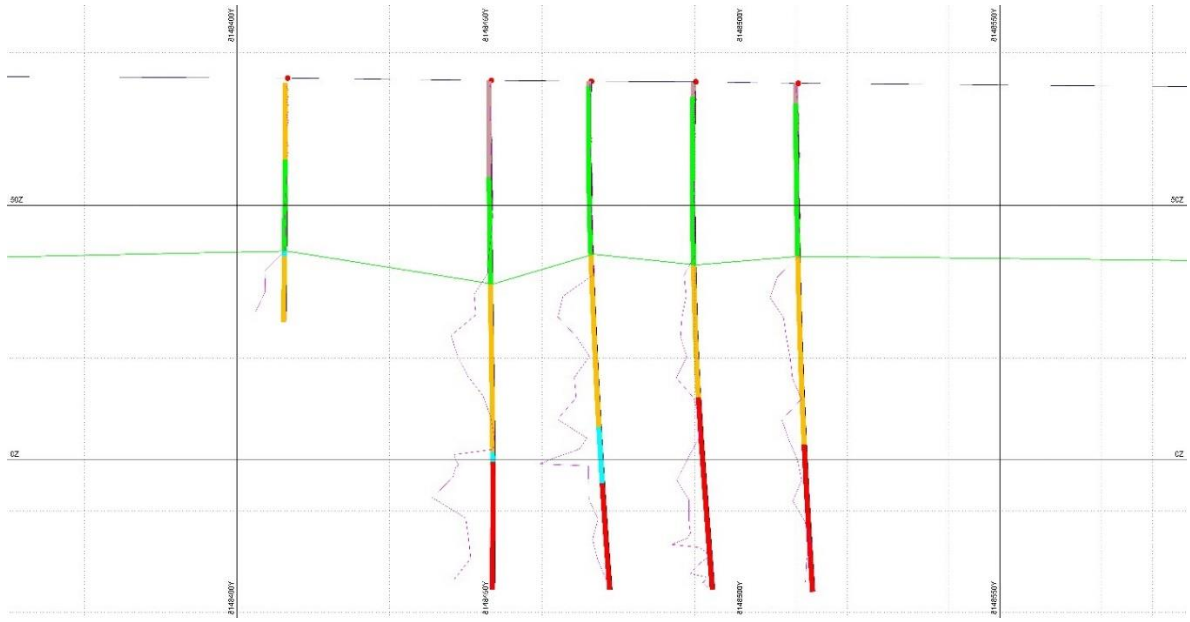


Figure 10 – Cross section 793740E showing logged weathering on the drill holes and sulphur assays as the purple line. The base of oxidation is mapped as the green line at approximately 35m depth.

5 STATISTICS

The statistical analysis was undertaken using Micromine software. Mineralisation domains together with the weathering and lithological surfaces have been used to flag samples for analysis.

5.1 Sample Statistics

Raw sample statistics for the mineralised Co domain are shown in Table 4. Co and Ni generally display a positive correlation. This is reflected in the fact that both elements display similar statistics and distributions between the oxide and transition domains. With higher concentrations displayed within the transitional material. Cu displays the opposite trend. Cu values are much higher in the oxide zone when compared to the transitional zone. S occurs at very low levels within the oxide zone and is much higher within the transitional zone, reflecting the greater abundance of sulphides.

Element	Weathering	Samples	Mean (ppm)	Min (ppm)	Max (ppm)	Total Mean (ppm)
Co	Oxide	750	1,210	30	22,700	1,341
	Transition	946	1,445	35	94,100	
Ni	Oxide	750	468	18	3,430	603
	Transition	945	711	20	10,100	
Cu	Oxide	750	1,737	60	36,000	1,259
	Transition	938	875	2	42,100	
S	Oxide	519	123	<50	650	2,317
	Transition	690	3,968	<50	60,600	

Table 4 – Summary raw sample statistics for the mineralised Co domain by weathering type.

5.2 Composite Length Analysis

Analysis of the raw sample data from all drilling at the project indicated a dominant common sample length of 1m (Figure 11). A significant proportion of samples are 4m in length, however, these in general do not lie within the mineralised domain. Therefore, the drill hole data has been composited downhole, using a 1m composite interval, prior to running the estimation process and thus reducing any bias due to sample length. The compositing was run taking in to account the lithological, weathering and mineralisation domains to ensure that no composite intervals cross any boundaries.

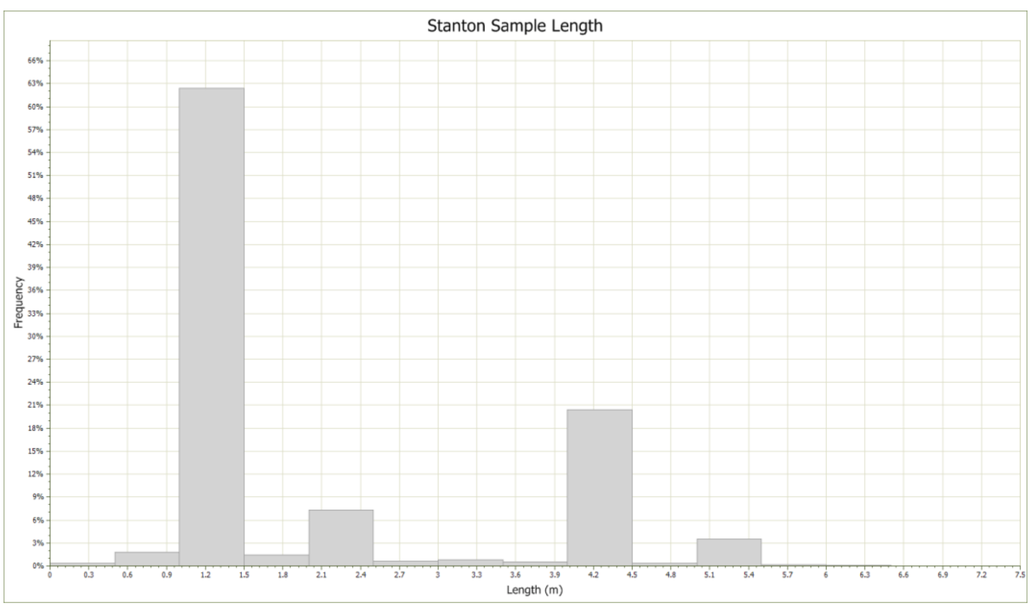


Figure 11 – Histogram of composite sample lengths for the Stanton Project

5.3 Top-Cutting

Composited samples from within the mineralised domain were analysed via histogram and probability plots and a number of outlier samples were identified. As a result, top cuts were applied to reduce the effect of these outliers. Details of the top cuts applied are shown in Table 5.

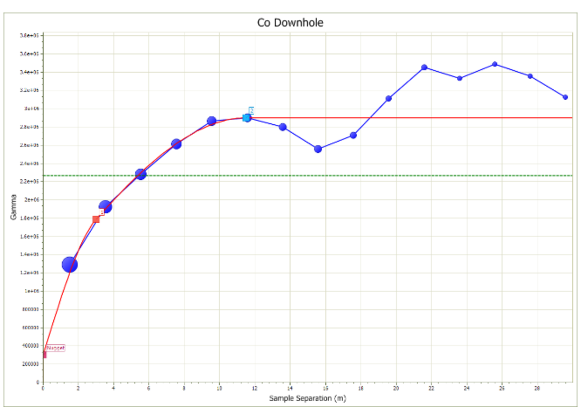
	Co	Ni	Cu	S
CoV (pre cut)	2.40	1.37	1.91	1.76
Top Cut Applied (ppm)	10,000	4,000	16,000	25,000
Samples Affected	9	9	8	5
CoV (post cut)	1.23	1.13	1.60	1.57

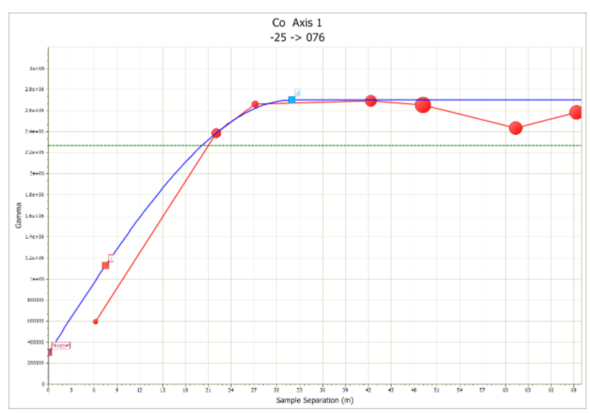
Table 5 – Details of top cuts applied to the composited samples from the mineralised domain.

6 VARIOGRAPHY

Variograms were generated from the composited samples for the mineralised domain to assess the spatial continuity of the elements Co, Ni, Cu and S and as inputs to the kriging algorithm used to interpolate grades. For Co, Ni and Cu, the weathering surface was treated as a soft boundary and modelling was undertaken with all samples. For S there is a significant difference between the oxide and transitional data sets and these were therefore modelled independent of each other. In this case the weathering surface was treated as a hard boundary.

The number of samples and the relatively close drill hole density has allowed meaningful directional variograms to be calculated. These are shown in Figures 12 to 16 and summarised in Table 6 for each element modelled.





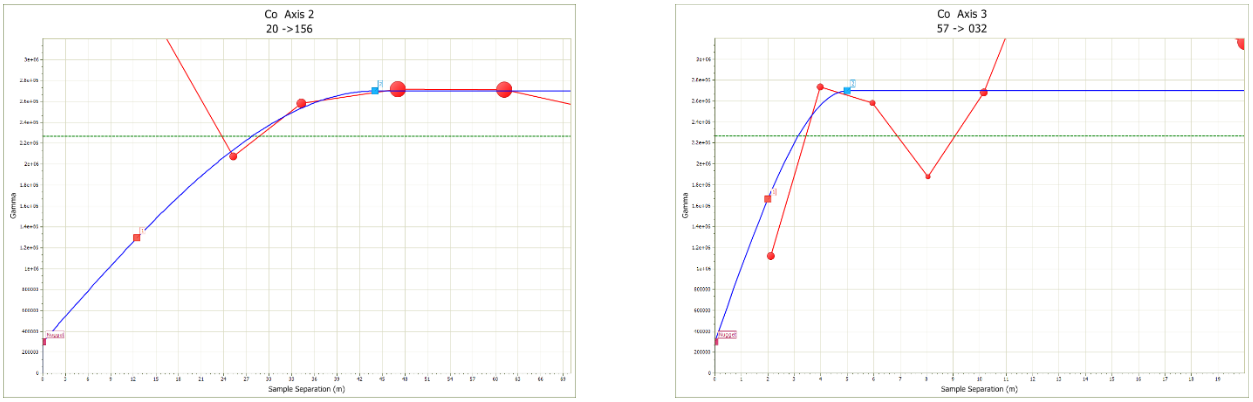


Figure 12 – Co variograms, mineralised domain.

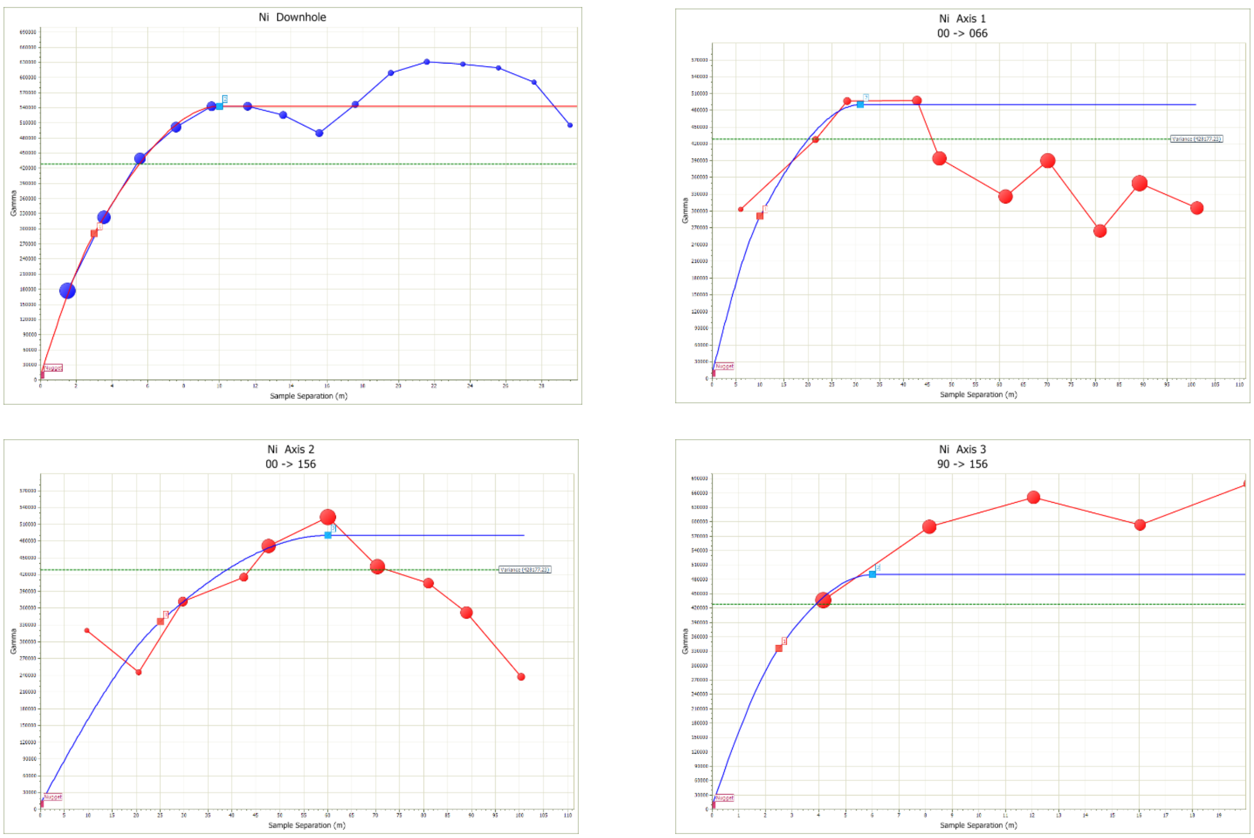


Figure 13 – Ni variograms, mineralised domain.

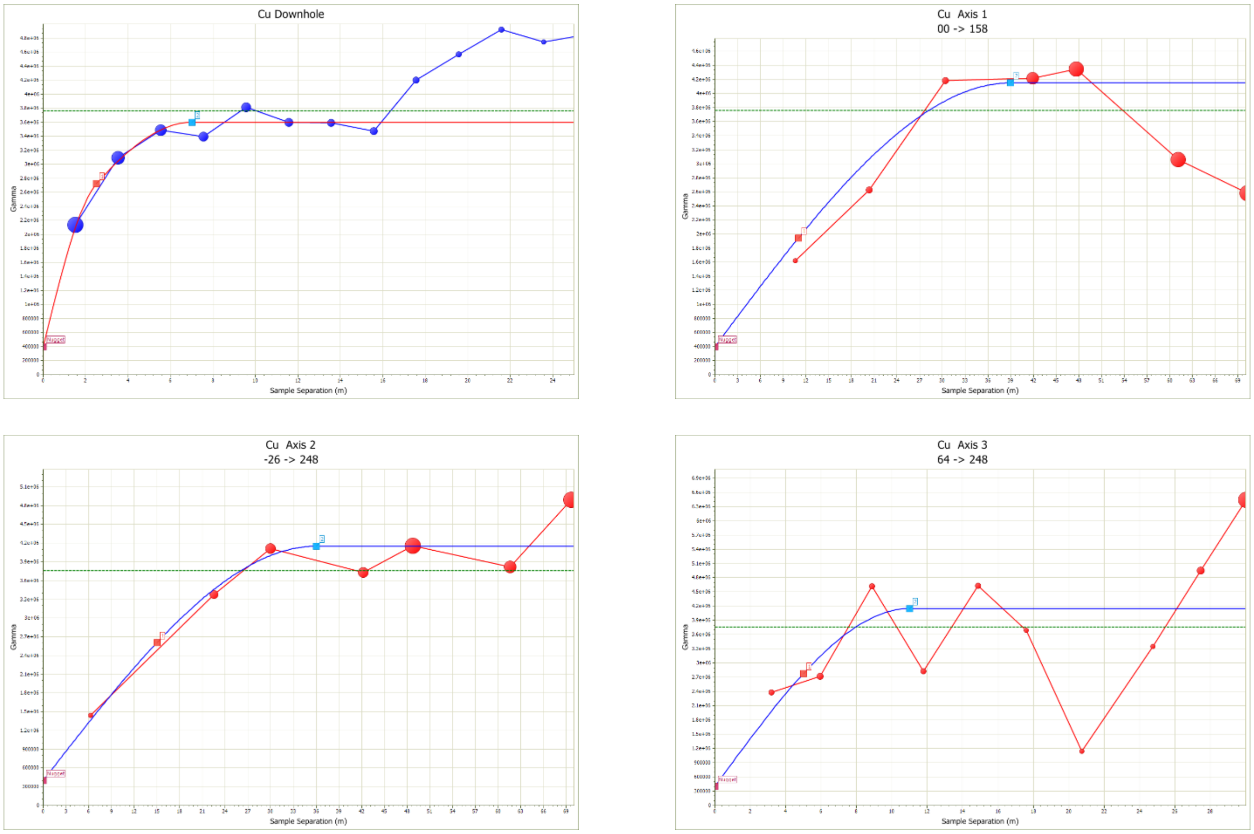
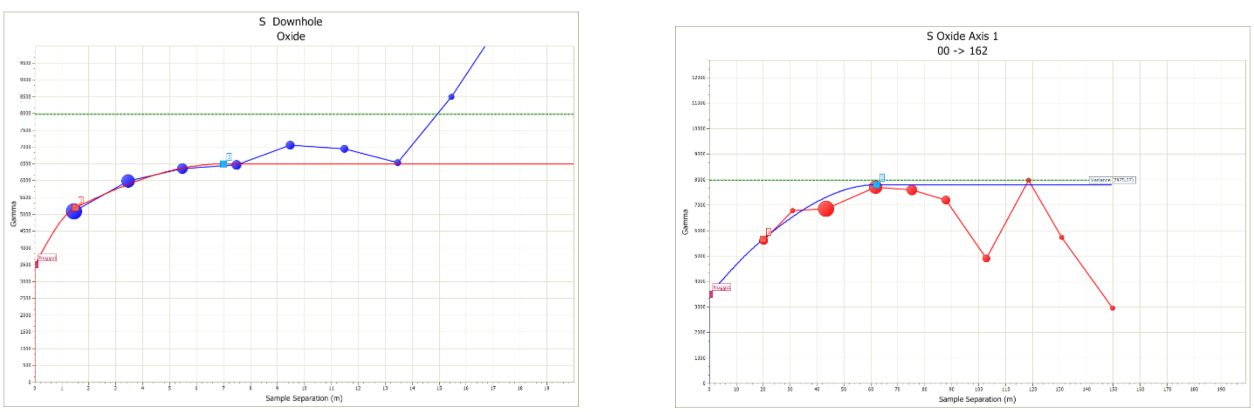


Figure 14 – Cu variograms, mineralised domain.



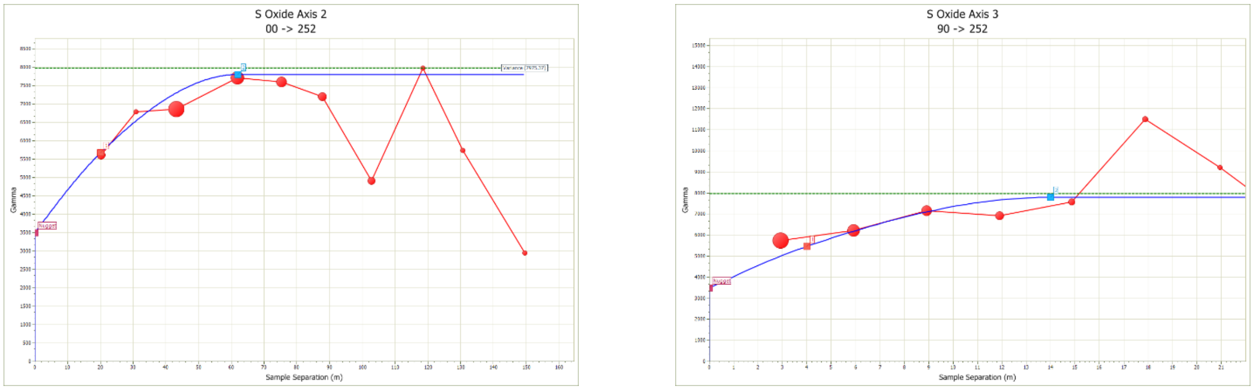


Figure 15 – S variograms, mineralised oxide domain.

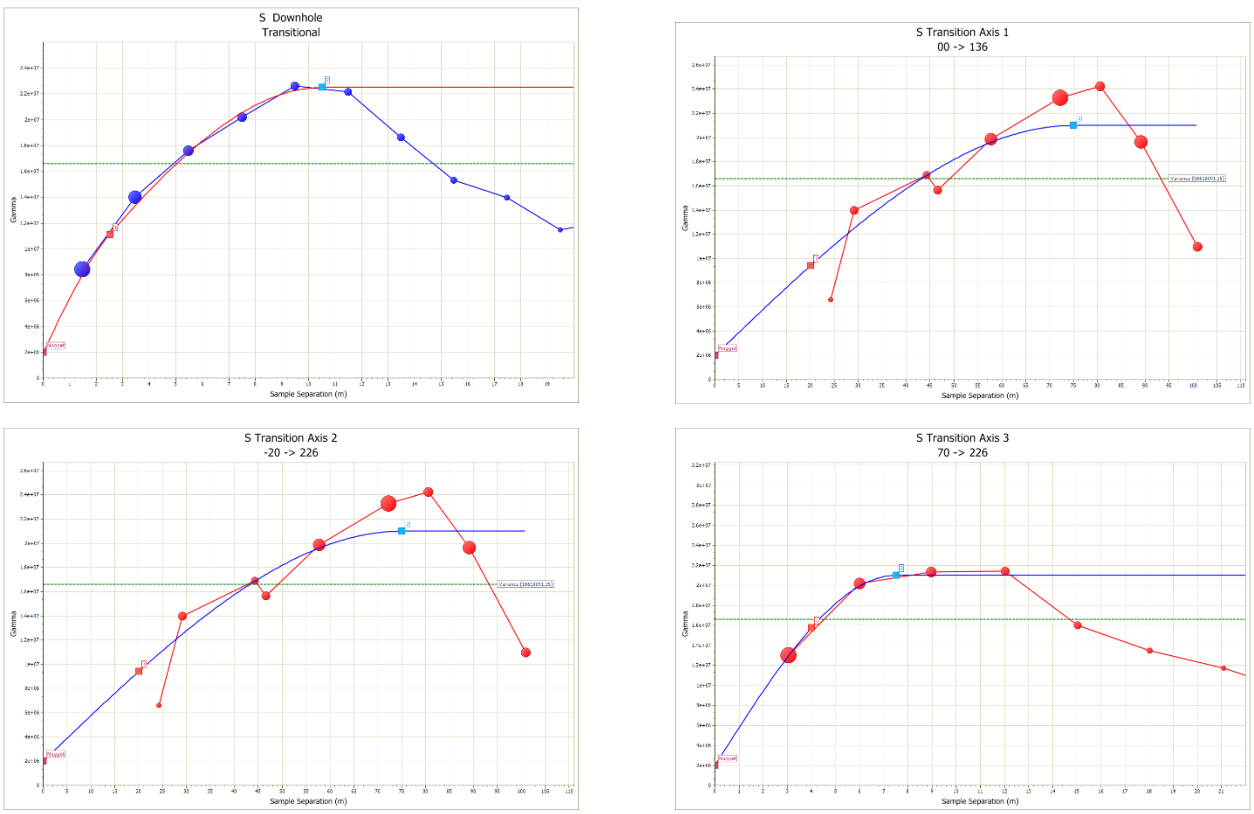


Figure 16 – S variograms, mineralised transitional domain.

	Direction	Nugget	Structure 1		Structure 2	
			Sill	Range	Sill	Range
Co	Axis 1 -25 -> 076	300 000	0	7.5	2400000	32
	Axis 2 20 -> 156		0	12.5	2400000	44
	Axis 3 57 -> 032		0	2	2400000	5
Ni	Axis 1 00 -> 066	30 000	105000	10	375000	31
	Axis 2 00 -> 156		105000	25	375000	60
	Axis 3 90 -> 156		105000	2.5	375000	6
Cu	Axis 1 00 -> 158	900 000	0	11	3750000	39
	Axis 2 -26 -> 248		0	15	3750000	36
	Axis 3 64 -> 248		0	5	3750000	11
S (oxide)	Axis 1 00 -> 162	3 900	300	20	4000	62
	Axis 2 00 -> 252		300	25	4000	48
	Axis 3 90 -> 252		300	4	4000	14
S (transition)	Axis 1 00 -> 136	4 000 000	0	20	19000000	75
	Axis 2 -20 -> 226		0	20	19000000	40
	Axis 3 70 -> 226		0	4	19000000	7.5

Table 6 – A summary of the variogram model parameters.

7 ESTIMATION AND MODELLING

7.1 Block Dimensions

The resource model was generated using Micromine software.

Given the relatively close drill hole spacing and narrow zones of mineralisation, a relatively small block size has been chosen. The block size is considered appropriate for the drill hole spacing. Block model extents and dimensions are given in Table 7 and a description attributes is provided in Table 8.

	X	Y	Z
Min Coordinates	793500	8148330	-60
Max Coordinates	793820	8148600	78
Parent Block Size	5	5	2
Min Block Size	1.5	1.5	0.5

Table 7 – Summary of block model extents and block sizes.

Attribute	Description
East	Coordinate in the X direction
North	Coordinate in the Y direction
RL	Coordinate in the Z direction
_East	Dimension in the X direction
_North	Dimension in the Y direction
_RL	Dimension in the Z direction
Weath	Weathering domain. O – Oxide, T - Transitional
Min Dom	Mineralised Domain. Co – Within mineralised domain based on Co interpretation, W – Waste material outside of mineralised domain
Geol	Geological unit based on stratigraphic interpretation and modelling. L – Laterite, S0 – S3 Sedimentary Units, B1 – B3 Basaltic Units, U – Undefined
SG_Weath	Specific Gravity flagged by weathering domain
SG_Geol	Specific Gravity flagged by geological unit
Co Cut	Estimated Co grade (ppm)
Ni Cut	Estimated Ni grade (ppm)
Cu Cut	Estimated Cu grade (ppm)
S Cut	Estimated S grade (ppm)
KR_VAR	Kriging variance – Co mineralised domain runs
KR_EFF	Kriging efficiency – Co mineralised domain runs
Run	Estimation run number
Points	Total number of composites contributing to estimated grade
Count	Total number of holes contributing to estimated grade
AVE DIST	Average distance to composites
Res Cat	Resource classification 1 = inferred, 2 = indicated, 3 = measured

Table 8 – A summary of block model attributes.

7.2 Estimation Parameters

The block model interpolation was undertaken using ordinary kriging. Co, Ni, Cu and S grades were estimated into 5x5x2m sized block using a 4x4x4 block discretisation. Grades for each element were estimated using individual weightings derived from the variograms. For Co, Ni and Cu the mineralised domain was estimated with a hard boundary with the base of oxidation considered to be a soft boundary. For S, the mineralised domain and base of oxidation were considered as hard boundaries and each weathered domain estimated independently.

Non-mineralised blocks were estimated using the same weightings as that used for the mineralised domains.

In general, 4 runs were required to populate most blocks. Any remaining blocks were populated by increasing the radius and relaxing the search criteria. Details of sample search criteria used in the estimation as well as individual runs are provided in Tables 9 and 10.

	Factor	Azimuth	Plunge
Axis 1	1.0	90	0
Axis 2	0.8	180	0
Axis 3	0.1	180	90

Table 9 – Search ellipse parameters

	Run 1	Run 2	Run 3	Run 4
Radius	30	60	90	120
Sectors	4	4	4	4
Max Pts/sector	12	12	12	12
Min Total Points	4	4	4	2
Min Holes	2	2	2	1

Table 10 – Summary of estimation parameters

7.3 Bulk Density

The Author was provided with a table of specific gravity (SG) determinations by NCL. The SG measurements were made by NCL staff using the Archimedes water displacement method on HQ core drilled by NCL in late 2017. In total 643 measurements were undertaken, representing approximately 1 sample per metre of core. A wide range of different lithologies, weathering states and mineralisation types was covered by the analyses.

The large majority of samples had SG values within the range of 2.0 – 2.5 g/cm^3. One obvious outlier with an SG of nearly 4.0 was excluded from the data. A total of 283 samples were flagged as coming from within the mineralised Co domain and these samples were analysed further. Table 11 shows the breakdown of the SG determinations by lithology and weathering type.

Material Type	Number of Samples	Ave. SG (g/cm^3)
S0	17	2.20
S1	165	2.28
S2	13	2.39
S3	-	-
B1	64	2.20
B2	18	2.28
B3	6	2.29
Total	**283**	**2.27**
Oxide	132	2.24
Transitional	151	2.29

Table 11 – Summary of the SG averages for different lithologies and weathering types.

An analysis of the difference between using the lithology SG values or the weathering SG values in determining the global tonnage within the block model was undertaken. It was found that there was a difference of approximately 0.5% in the global tonnage of the Co mineralised domain between the two methods. This small difference was deemed to be insignificant. Therefore, a simplistic approach was taken and the weathering SG values were used in estimated tonnages within the final resource model. A value of 2.24 g/cm^3 was used for the oxide material and a value of 2.29 g/cm^3 was used for the transitional material.

7.4 Block Model Validation

The block model has been validated visually in section (Figure 17) along with a statistical comparison of the block model grades against composite grades to ensure that the block model is a realistic representation of the input grades.

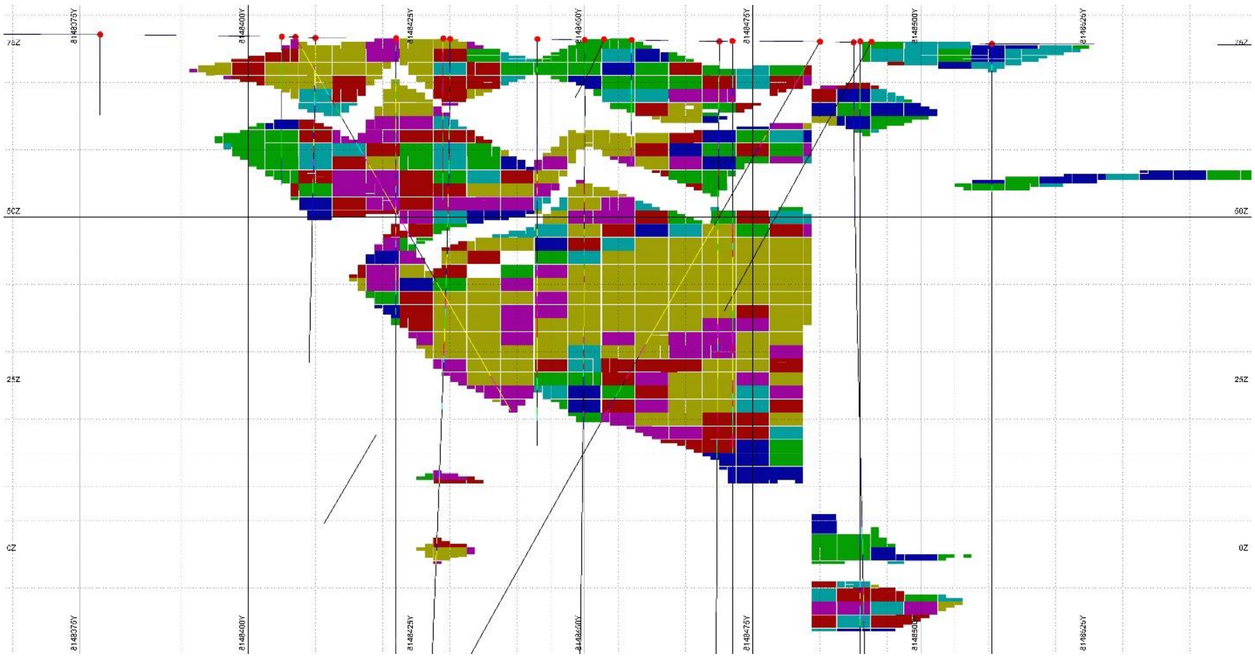
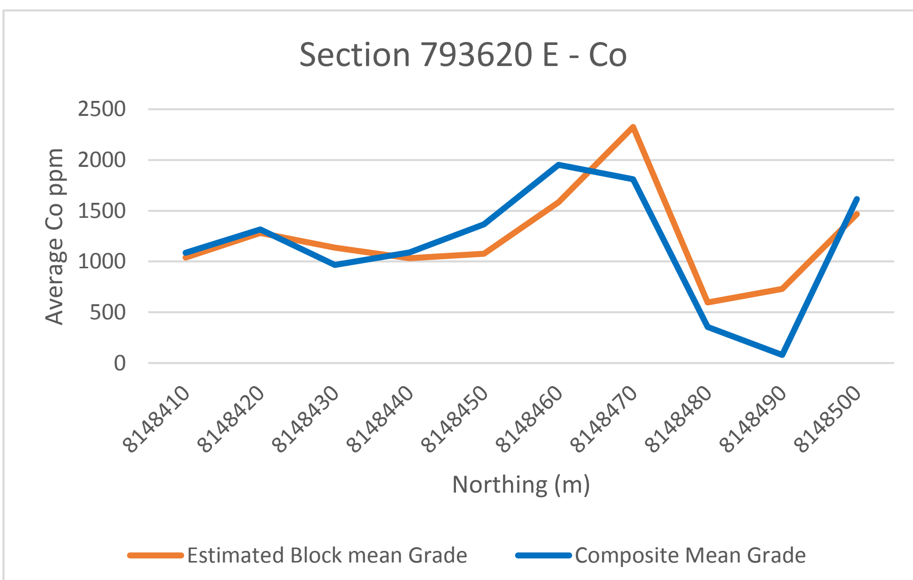


Figure 17 – Visual validation of block model on section 793620 E. Drill hole traces and block model are coloured according to Co grade.

Swathe plots of the Co and Cu block model grades versus composite grade along a representative section 793620 E are shown in Figure 18.



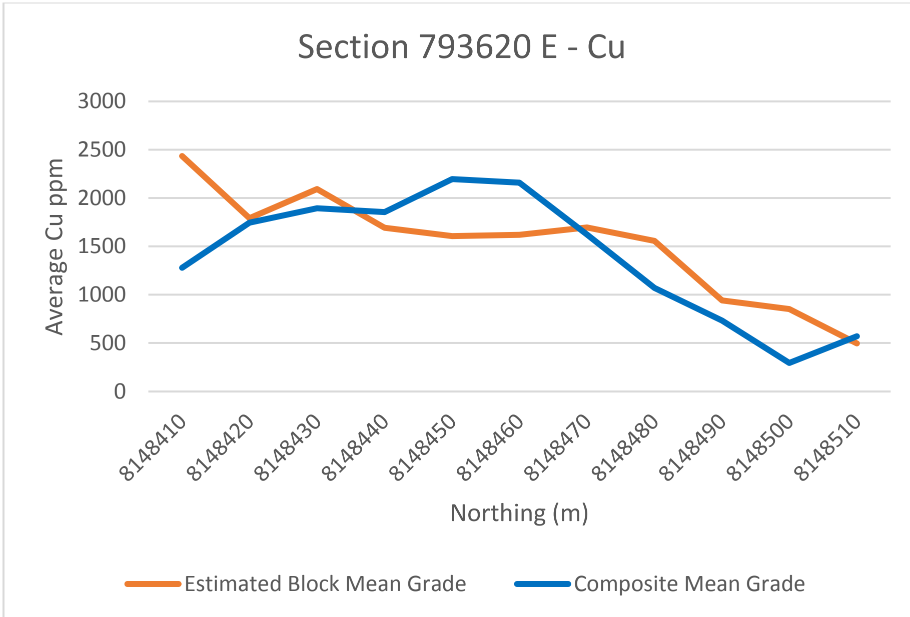


Figure 18 – Co and Cu swathe plots for section 793620 E for the mineralised domain.

The author considers that the OK estimated grades are an accurate representation of the input grades for the mineralised domain.

7.5 Resource Classification

Classification of the Stanton Co Cu deposit is in keeping with the "Australasian Code for Reporting of Mineral Resources and Ore Reserves" (the JORC Code). All classifications and terminologies have been adhered to. The categories of Mineral Resources as outlined by the code are as follows :

- **Measured** – Tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence.
- **Indicated** – Tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence.
- **Inferred –** Tonnage, grade and mineral content can be estimated with a reduced level of confidence.

The resource classification has been applied to the Mineral Resource Estimate based on the drilling data spacing, grade and geological continuity and data integrity (Figure 19). The resource has been classified on the following basis.

- No areas of the Mineral Resource satisfied the requirements to be classified as **Measured Mineral Resource**
- Portions of the model that have drill spacing of 20m by 20m, and where the confidence in the estimation is considered high have been classified as **Indicated Mineral Resources**.

- Areas that have drill spacing of greater than 20m by 20m, and/or with lower levels of confidence in the estimation or potential impact of modifying factors have been classified as **Inferred Mineral Resources.**

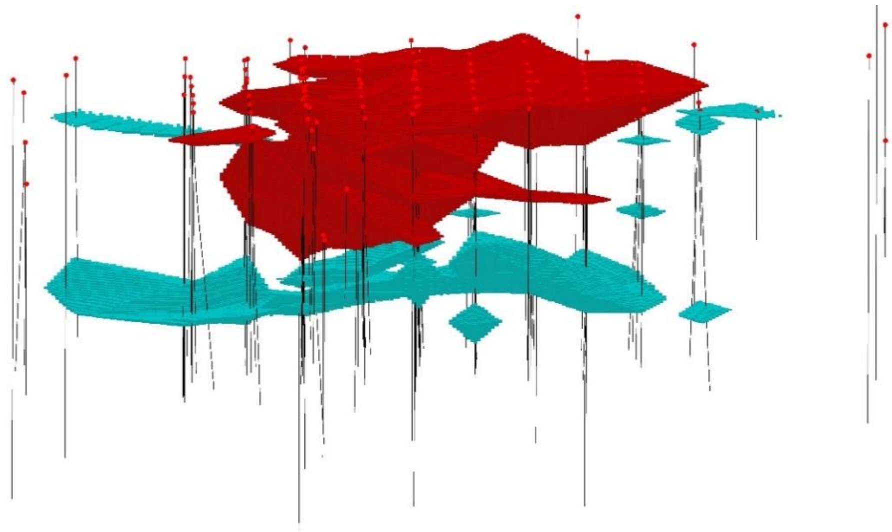


Figure 19 –Stanton Mineral Resource estimate coloured by resource category. Red is indicated and blue is inferred.

8 MINERAL RESOURCE STATEMENT

The current Mineral Resource Inventory for the Stanton Deposit has been reported at a cut-off grade of 300ppm Co as detailed in Table 12. Initially a 500ppm cut-off was considered as it was reflective of what has been used at other similar deposits in recent years. However, given significant price increases over recent times for Co in particular and the fact that Stanton is a multi-element deposit, it was deemed that a 300ppm Co cut-off would be more appropriate at this time.

Mineral Resource Estimate for the Stanton Deposit - 6th April 2018						
	Oxidation	Tonnes	Co ppm	Ni ppm	Cu ppm	S ppm
Inferred	Oxide	8,000	544	324	2,099	137
	Transition	242,000	843	424	795	4,012
Indicated	Oxide	406,000	1,155	475	1,639	125
	Transition	286,000	1,782	888	942	4,215
Total		**942,000**	**1,260**	**586**	**1,215**	**2,364**

Table 12 – Stanton Deposit Mineral Resource, reported above a 300ppm Co cut-off grade.

The grade tonnage curve for the Stanton Deposit is displayed in Figure 20.

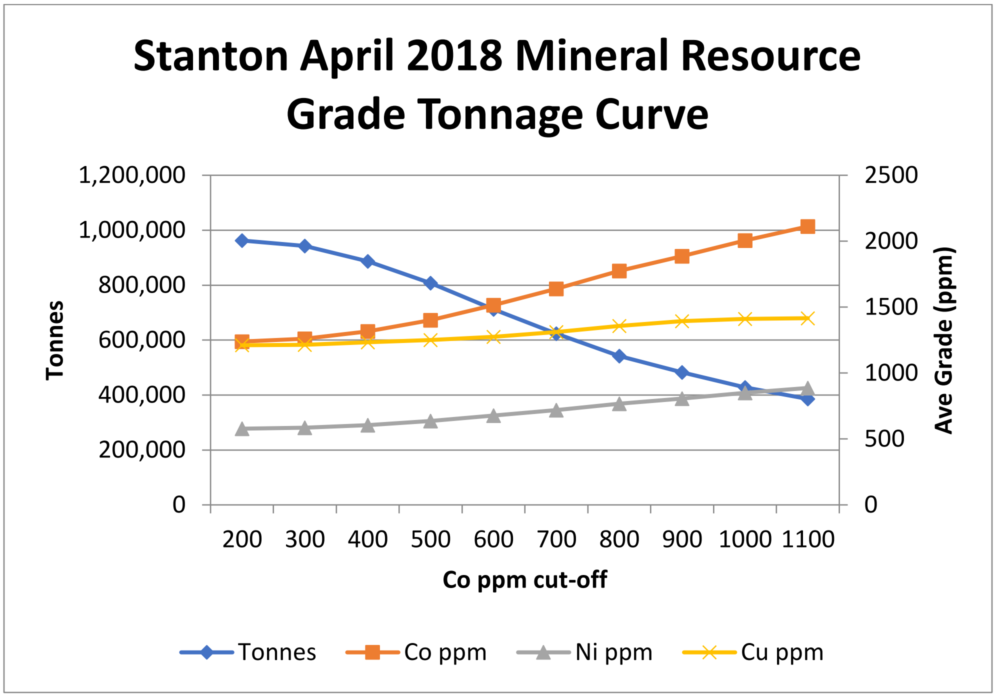


Figure 20 – Grade tonnage (GT) curve for the Stanton Mineral Resource estimate.

8.1 Previous Resource Comparison

Two previous Resource Estimates have been done on the Stanton Deposit. In 2001 a 2D sectional polygonal estimation was used (Goulevitch, 2001). In 2017, a 3D wireframe model and an ordinary kriging grade estimation was used (Reid, 2017). Both of these previous estimates essentially used the same data but with differing interpretations and techniques. The current estimate is based on a combination of the historic data together with a significant amount of new data at a much closer drill spacing. A comparison of the estimates is given in Table 13.

	Tonnes	Co (ppm)	Ni (ppm)	Cu (ppm)	S (ppm)
2001	860,497	1,481	793	1,464	NA
2017	498,217	1,728	864	1,140	NA
2018	942,000	1,260	586	1,215	2,364

Table 13 – Comparison of Stanton Deposit Mineral Resource estimates.

The current estimate compares favourably with the estimate undertaken in 2001. It does however differ significantly from the estimate undertaken in 2017. In 2017, the lower zone of mineralisation was not included as part of the reported Mineral Resource Estimate. This had the effect of reducing the overall tonnages and increasing the average Co grade.

9 RECOMMENDATIONS

It is pleasing to note that NCL have taken on board recommendations from previous Resource Estimates as part of this current period of exploration activity. However, as part of the current review the following recommendations are made that will further enhance the Resource Estimate for the Stanton deposit and future exploration activities in the region.

- Detailed logging and a greater understanding of the weathering profile.
- Metallurgical test work on the relevant mineralogical zones (underway).
- Collect and store sample quality and recovery data for RC drilling samples.
- Investigate and attempt to validate the location and assay techniques associated with the CRA drilling.
- Attempt to sample and analyse the CRA drill core to compare with historical assays and NCL twin holes.
- Assess the impact of the 2018 DD assays by comparing to the RC assays.
- Implement a referential SQL database and data management system (underway).
- Improve sample and assay QAQC by
    - using appropriate field standards with closely matched matrix and target grades to expected mineralisation
    - ensuring more QAQC such as duplicates is undertaken within the zone of mineralisation
    - undertake check assays at an independent umpire laboratory
- With further drilling investigate the possibility of defining a high grade Co domain within the brecciated core region. This may have an impact on the variography and interpolation efficiency.
- Investigate the viability of a Cu only domain as currently there are areas of elevated Cu mineralisation outside of the Co defined mineralisation domain.

10 REFERENCES

Goulevitch, J., 2001.EL8413 “Running Creek 3” 7th Annual Report for year ended 28 December, 2001, Chemmet Pty Limited.

Rawlings, D.J., 2006. Robinson River 1:250,000 Geological Map and Explanatory Notes, NorthernTerritory Geological Survey, Darwin.

Rawlings, D.J., 2002. Sedimentology, volcanology and geodynamics of the Redbank package, northern Australia. PhD thesis, Centre for Ore Deposit and Exploration Studies (CODES), University of Tasmania, Hobart.

Rawlings, D.J., Cooke, D., and Bull, S., 1996. Report on Cu-Co-Ni sulphide mineralisation in the Stanton-Running Creek area. Confidential CODES report to CRA Exploration Pty Ltd.

Reid, D., 2017. Mineral Resource Estimate Report, Stanton Cobalt Nickel Copper Deposit. Ravensgate

APPENDIX 1

List of drill holes used in the Mineral Resource Estimate

Hole ID	Type	East	North	RL	Depth
17RC001	RC	793620	8148511	75.7	100
17RC002	RC	793620	8148490	75.9	99
17RC003	RC	793620	8148470	76.1	100
17RC004	RC	793620	8148450	76.3	100
17RC005	RC	793620	8148430	76.4	100
17RC006	RC	793620	8148410	76.6	100
17RC007	RC	793600	8148390	77.4	91
17RC008	RC	793600	8148410	77.0	96
17RC009	RC	793600	8148430	76.7	100
17RC010	RC	793599	8148450	76.4	100
17RC011	RC	793600	8148470	76.2	100
17RC012	RC	793600	8148490	76.1	100
17RC013	RC	793600	8148510	76.1	100
17RC014	RC	793580	8148470	76.6	100
17RC015	RC	793580	8148450	76.7	100
17RC016	RC	793580	8148430	76.9	100
17RC017	RC	793580	8148410	77.3	100
17RC018	RC	793640	8148410	76.3	100
17RC019	RC	793640	8148430	76.1	100
17RC020	RC	793640	8148450	76.1	100
17RC021	RC	793640	8148470	76.0	100
17RC022	RC	793640	8148490	75.7	100
17RC023	RC	793640	8148510	75.5	100
17RC025	RC	793660	8148530	75.1	100
17RC026	RC	793661	8148510	75.2	100
17RC027	RC	793660	8148490	75.4	100
17RC028	RC	793660	8148470	75.6	100
17RC029	RC	793660	8148450	75.8	100
17RC030	RC	793660	8148430	75.8	100
17RC031	RC	793680	8148430	75.6	100
17RC032	RC	793680	8148450	75.5	100
17RC033	RC	793680	8148470	75.3	100
17RC034	RC	793680	8148490	75.1	100
17RC035	RC	793680	8148510	74.9	100
17RC036	RC	793680	8148530	74.7	100
17RC038	RC	793700	8148560	74.1	100
17RC039	RC	793700	8148510	74.5	100
17RC040	RC	793700	8148470	75.0	100
17RC041	RC	793700	8148450	75.2	100
17RC042	RC	793700	8148430	75.4	100
17RC043	RC	793720	8148430	75.1	100
17RC044	RC	793720	8148470	74.8	100
17RC045	RC	793720	8148490	74.5	100
17RC046	RC	793720	8148510	74.3	100
17RC048	RC	793740	8148510	74.0	100

17RC049	RC	793740	8148490	74.3	100
17RC050	RC	793760	8148470	74.2	100
17RC051	RC	793740	8148470	74.4	100
17RC052	RC	793740	8148450	74.5	100
17RC053	RC	793760	8148410	74.7	100
17RC054	RC	793600	8148360	77.4	100
17RC055	RC	793580	8148390	77.4	100
17RC057	RC	793540	8148510	76.8	100
17RC058	RC	793700	8148490	74.9	25
17RC059	RC	793701	8148491	74.8	100
17RC121	RC	793760	8148429	74.5	48
17RC122	RC	793780	8148410	74.3	48
17RC124	RC	793657	8148394	76.2	60
17RC125	RC	793640	8148382	76.6	60
17RC126	RC	793660	8148413	76.1	78
17RC127	RC	793680	8148407	75.9	60
PD90RC012	RC	793621	8148405	76.8	22
PD90RC013	RC	793620	8148429	76.5	25
PD90RC014	RC	793619	8148457	76.3	18
PD92RC022	RC	793620	8148407	76.7	64
PD92RC023	RC	793617	8148556	75.6	57
DD93RC033	DD	793620	8148485	76.0	149.7
DD94RC038	DD	793620	8148443	76.4	60.3
DD94RC039	DD	793619	8148472	76.1	315.45
DD94RC040	DD	793622	8148540	75.6	149.1
DD94RC044	DD	793720	8148454	74.9	149.75
PD94RC078	RC	793619	8148422	76.6	96
DD94RC100	DD	793659	8148471	75.7	130
DD94RC107	DD	793703	8148470	75.0	130
DD94RC111	DD	793578	8148471	76.7	114.7
DD94RC115	DD	793536	8148471	77.2	137.5
DD94RC118	DD	793579	8148512	76.4	123.6
DD94RC120	DD	793662	8148511	75.3	102.7
DD94RC122	DD	793659	8148429	76.0	146.6
DD94RC123	DD	793577	8148430	77.0	108.7
DD94RC124	DD	793620	8148491	76.1	100.6

APPENDIX 2

QAQCR Summary Report produced 26/02/2018

Date Range used: 16/11/2017 to 29/01/2018

Laboratory Summary

Laboratories	BVM_PTH
No. of Batches	15
No. of DH Samples	4716
No. of QC Samples	488
No. of Standard Samples	642

QC Category Ratios

QC_Category	DH Sample Count	QC Sample Count	Ratio of QC Samples to DH Samples
Field duplicate	4716	61	1:77
Lab Pulp Checks	4716	427	1:11

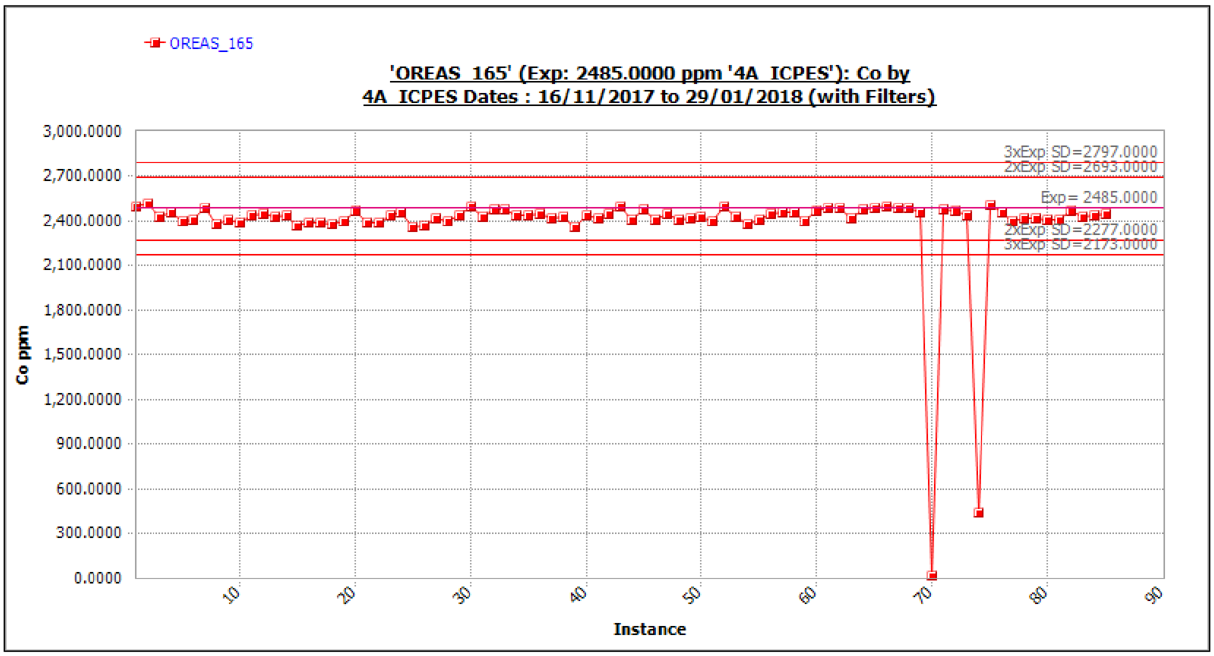
Standard Type Ratios

Standard Type	DH Sample Count	Standard Type Count	Standard Sample Count	Ratio of QC Standard to DH Samples
CLIENT	4716	3	182	1:26
LAB	4716	20	460	1:10

Northern Cobalt Co Standards Submitted with Original Assays

Co Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Co	SD	CV	Mean Bias
OREAS_165	4A_ICPES	4A_ICPES	2485.0000	104.0000	85	2386.0000	340.4809	0.1427	-3.98%
OREAS_181	4A_ICPES	4A_ICPES	451.0000	10.0000	82	447.6220	6.1977	0.0138	-0.75%

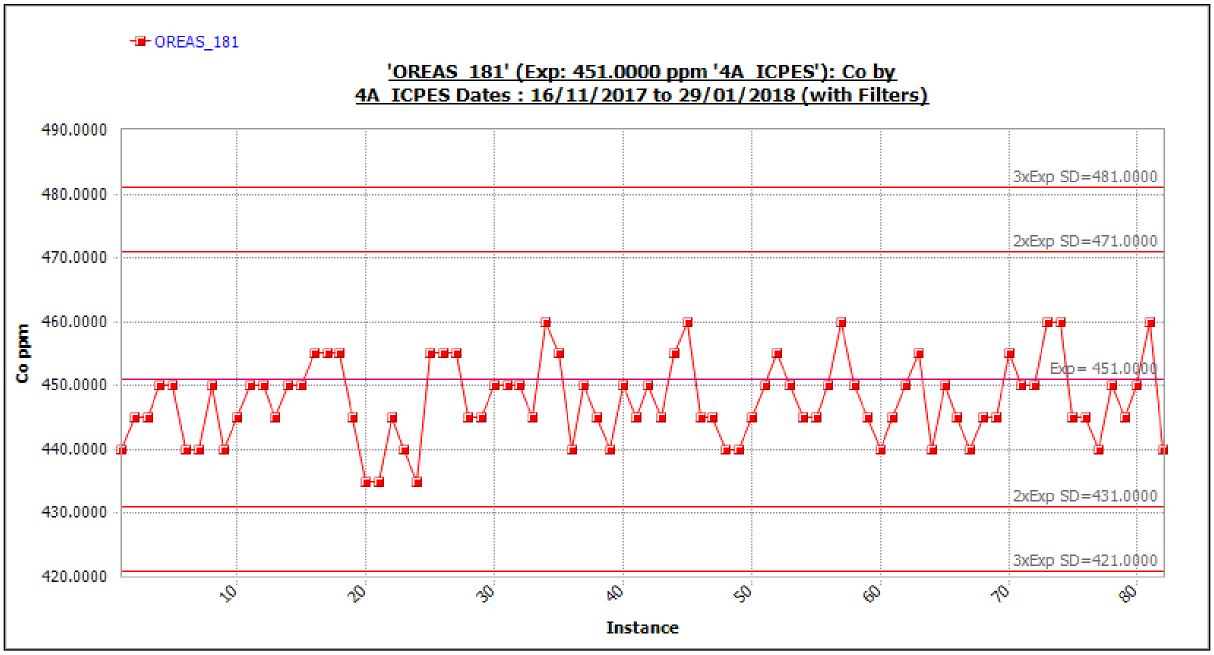
Standard OREAS_165 : Outliers Included



Bad Standards

Point No.	Standard	Lab	Batch	Data Set	Sample Id	Method	Element	Value	Difference
70	OREAS_165	BVM_PTH	u283440	WOLLOGORANG	17881	4A_ICPES	Co	15.0000	-99.40
74	OREAS_165	BVM_PTH	u283440	WOLLOGORANG	18680	4A_ICPES	Co	445.0000	-82.09

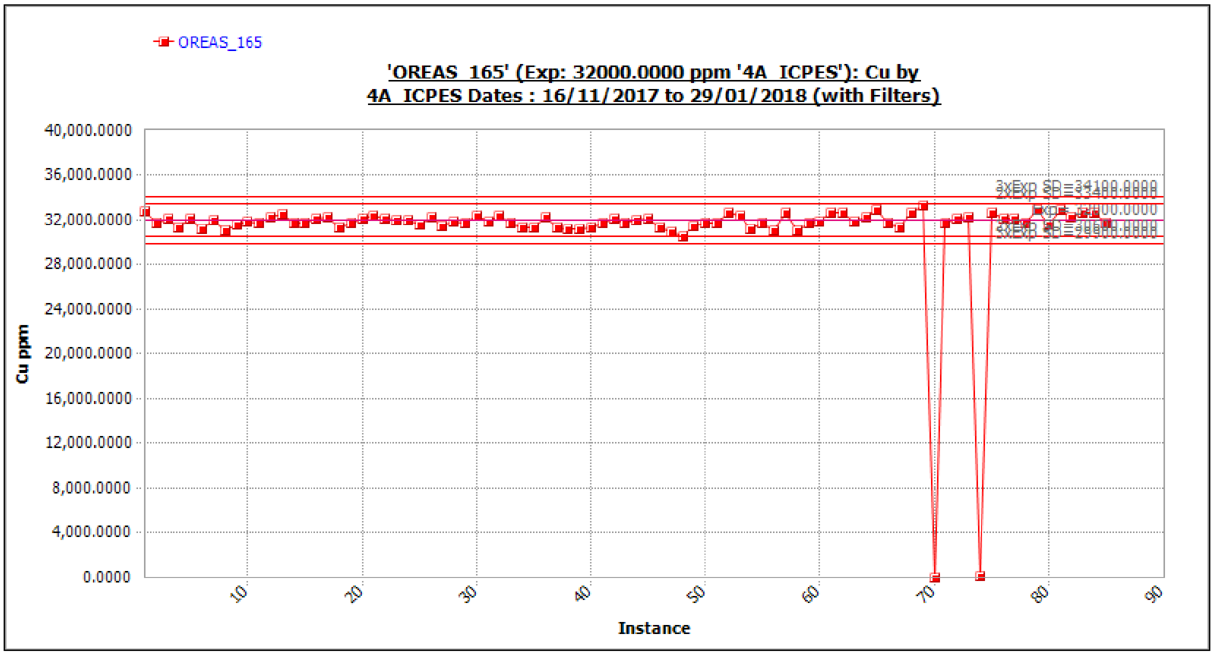
Standard OREAS_181 : Outliers Included



Northern Cobalt Cu Standards Submitted with Original Assays

Cu Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Cu	SD	CV	Mean Bias
OREAS_165	4A_ICPES	4A_ICPES	32000.0000	700.0000	85	31177.8824	4886.6901	0.1567	-2.57%
OREAS_181	4A_ICPES	4A_ICPES	77.0000	4.4000	82	77.9512	1.8047	0.0232	1.24%

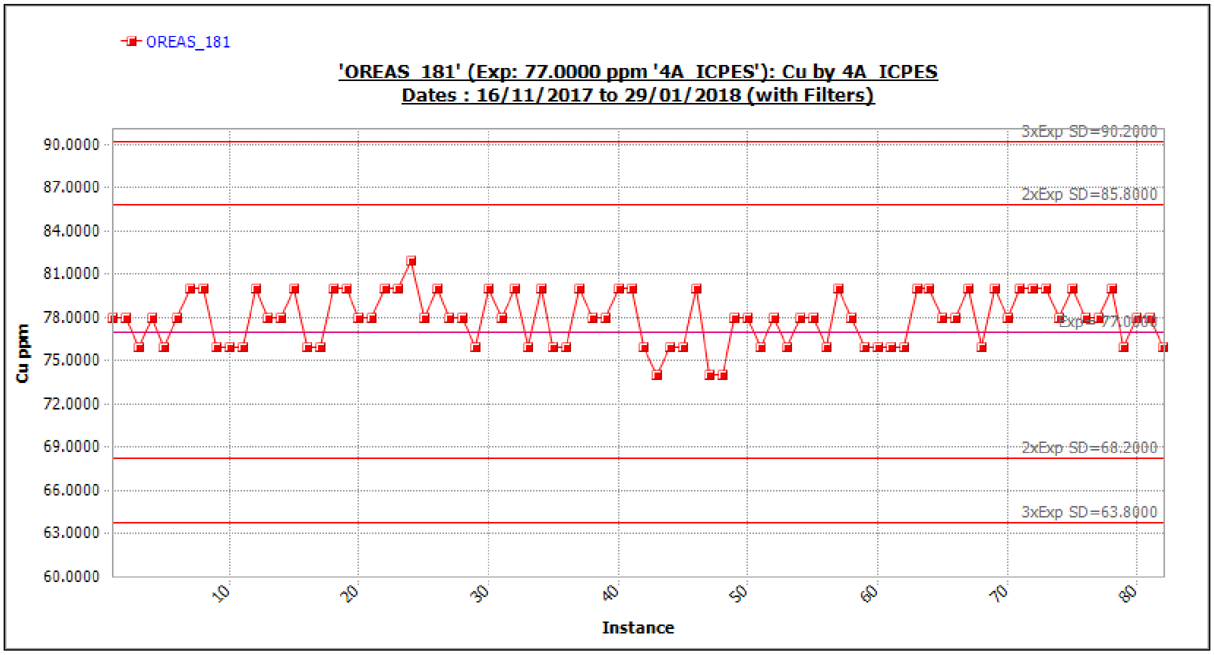
Standard OREAS_165 : Outliers Included



Bad Standards

Point No.	Standard	Lab	Batch	Data Set	Sample Id	Method	Element	Value	Difference
70	OREAS_165	BVM_PTH	u283440	WOLLOGORANG	17881	4A_ICPES	Cu	44.0000	-99.86
74	OREAS_165	BVM_PTH	u283440	WOLLOGORANG	18680	4A_ICPES	Cu	76.0000	-99.76

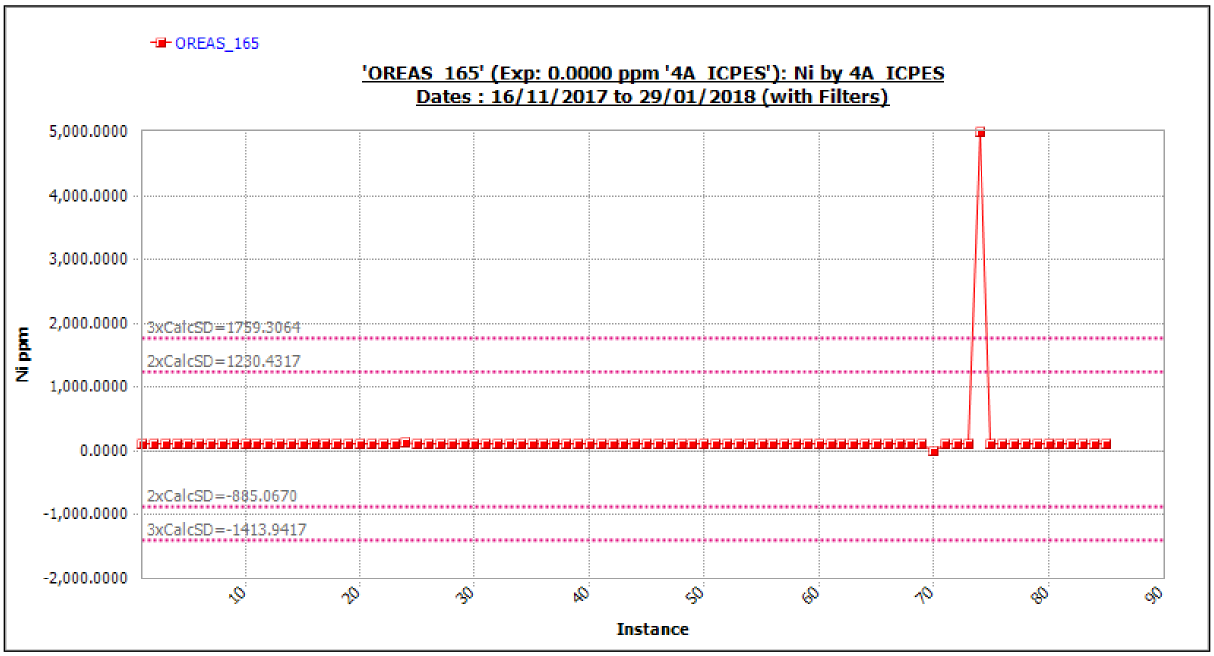
Standard OREAS_181 : Outliers Included



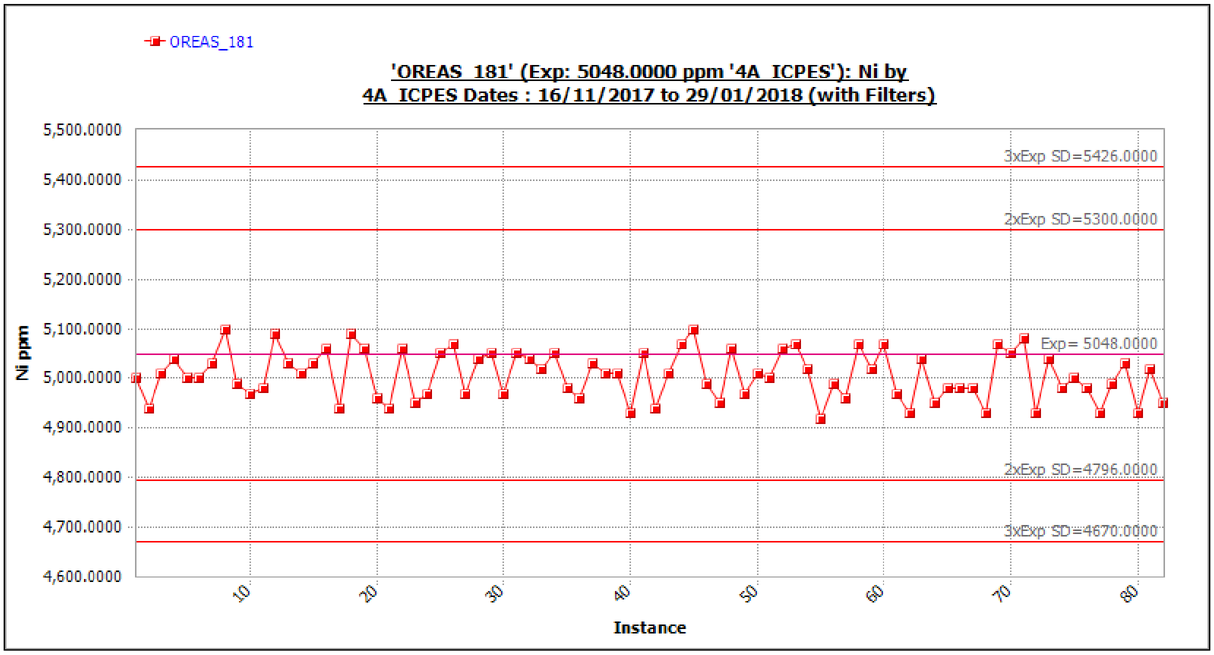
Northern Cobalt Ni Standards Submitted with Original Assays

Ni Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Ni	SD	CV	Mean Bias
OREAS_165	4A_ICPES	4A_ICPES	-	-	85	172.6824	528.8747	3.0627	-
OREAS_181	4A_ICPES	4A_ICPES	5048.0000	126.0000	82	5006.7073	48.3826	0.0097	-0.82%

Standard OREAS_165 : Outliers Included



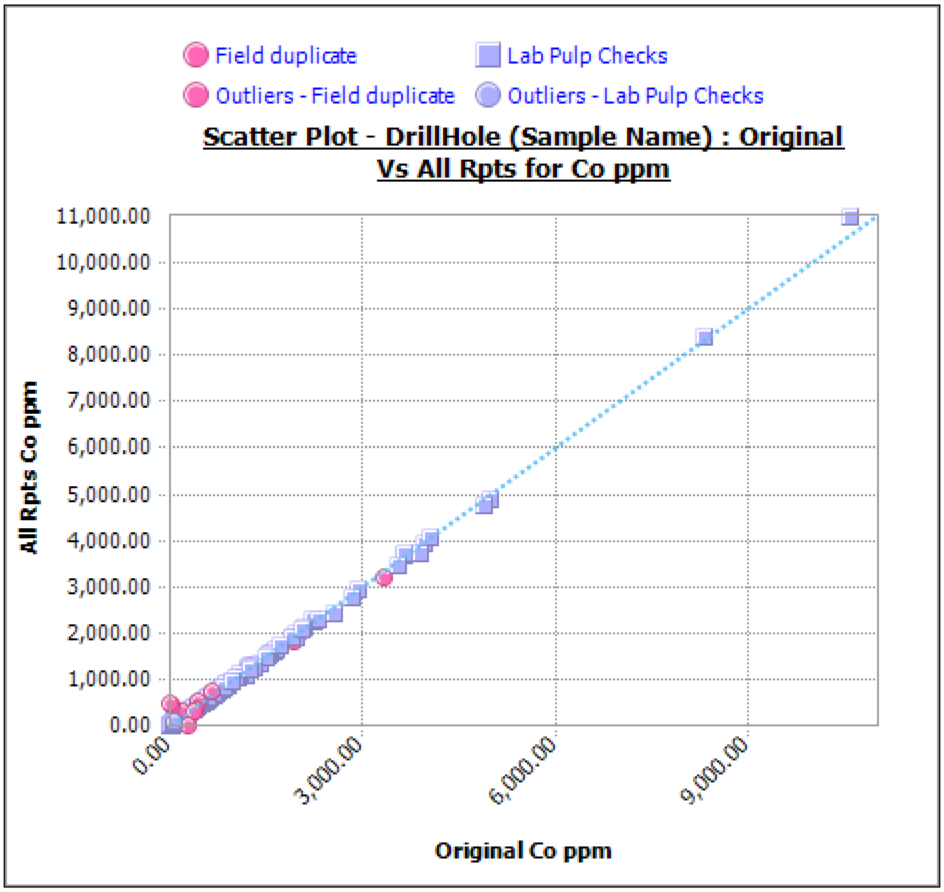
Standard OREAS_181 : Outliers Included



Northern Cobalt: Drill hole Physical Original (Co) v Repeat: All Rpts - Methods: All Methods (Matched Methods)

No. of Samples	mean Co1	mean Co2	SD Co1	SD Co2	CV Co1	CV Co2	sRPHD (mean)
479	368.68	369.81	914.44	920.44	2.48	2.49	-0.07

Scatter Plot - Drill hole (Sample Name) : Original Vs All Rpts for Co ppm



Bad Repeats

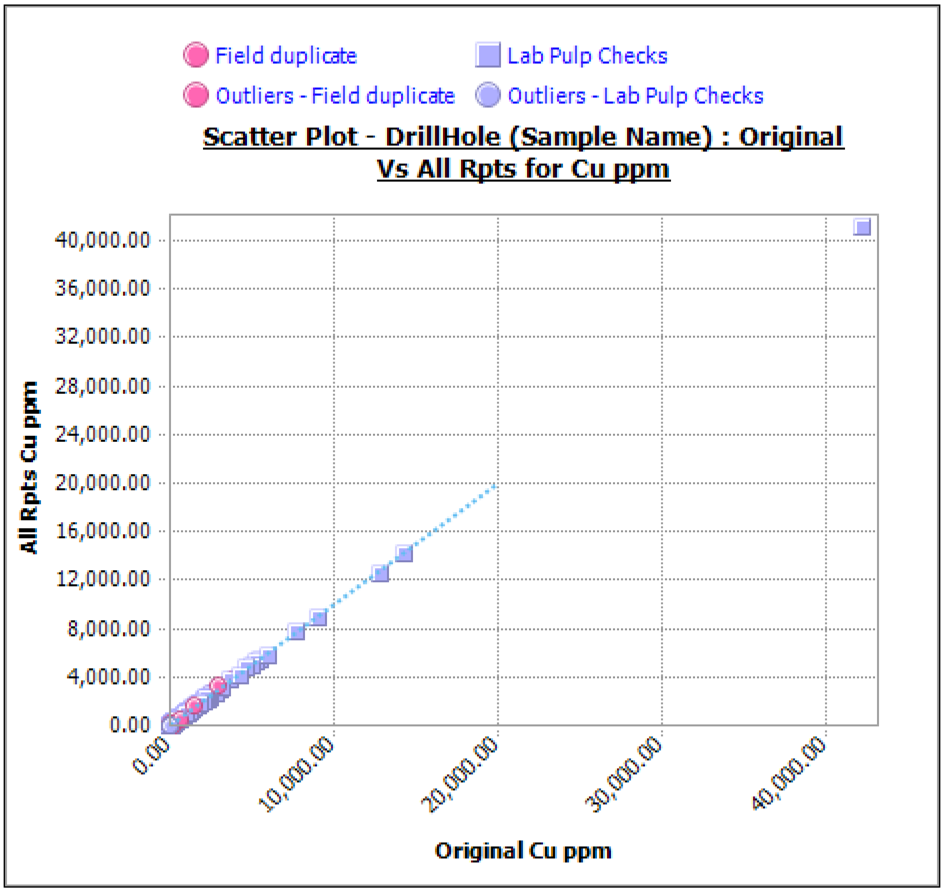
Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u281718	WOLLOGORANG	11319	11320	Field duplicate	4A_ICPES	Co	650.00	730.00	12.31
BVM_PTH	u281980	WOLLOGORANG	11739	11740	Field duplicate	4A_ICPES	Co	440.00	525.00	19.32

Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u281981	WOLLOGORANG	12779	12780	Field duplicate	4A_ICPES	Co	185.00	315.00	70.27
BVM_PTH	u282156	WOLLOGORANG	139891	139891 Rpt	Lab Pulp Checks	4A_ICPES	Co	50.00	55.00	10.00
BVM_PTH	u282154	WOLLOGORANG	14159	14160	Field duplicate	4A_ICPES	Co	410.00	365.00	-10.98
BVM_PTH	u281969	WOLLOGORANG	149139	149140	Field duplicate	4A_ICPES	Co	80.00	90.00	12.50
BVM_PTH	u281969	WOLLOGORANG	149255	149255 Rpt	Lab Pulp Checks	4A_ICPES	Co	50.00	55.00	10.00
BVM_PTH	u281969	WOLLOGORANG	149341	149340	Field duplicate	4A_ICPES	Co	45.00	445.00	888.89
BVM_PTH	u282154	WOLLOGORANG	149439	149440	Field duplicate	4A_ICPES	Co	50.00	60.00	20.00
BVM_PTH	u282156	WOLLOGORANG	15515	15515 Rpt	Lab Pulp Checks	4A_ICPES	Co	50.00	55.00	10.00
BVM_PTH	u282370	WOLLOGORANG	17039	17040	Field duplicate	4A_ICPES	Co	360.00	310.00	-13.89
BVM_PTH	u282941	WOLLOGORANG	17250	17240	Field duplicate	4A_ICPES	Co	270.00	15.00	-94.44
BVM_PTH	u282941	WOLLOGORANG	17297	17297 Rpt	Lab Pulp Checks	4A_ICPES	Co	70.00	80.00	14.29
BVM_PTH	u283439	WOLLOGORANG	17579	17580	Field duplicate	4A_ICPES	Co	10.00	455.00	4450.00
BVM_PTH	u283439	WOLLOGORANG	17759	17760	Field duplicate	4A_ICPES	Co	60.00	50.00	-16.67
BVM_PTH	u283440	WOLLOGORANG	18839	18840	Field duplicate	4A_ICPES	Co	60.00	50.00	-16.67

Northern Cobalt: Drill hole Physical Original (Cu) v Repeat: All Rpts - Methods: All Methods (Matched Methods)

No. of Samples	mean Cu1	mean Cu2	SD Cu1	SD Cu2	CV Cu1	CV Cu2	sRPHD (mean)
475	578.26	577.25	2305.36	2268.46	3.99	3.93	0.18

Scatter Plot - Drill hole (Sample Name) : Original Vs All Rpts for Cu ppm



Bad Repeats

Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u283215	WOLLOGORANG	11187	11187 Rpt	Lab Pulp Checks	4A_ICPES	Cu	20.00	22.00	10.00
BVM_PTH	u281980	WOLLOGORANG	11879	11880	Field duplicate	4A_ICPES	Cu	84.00	110.00	30.95

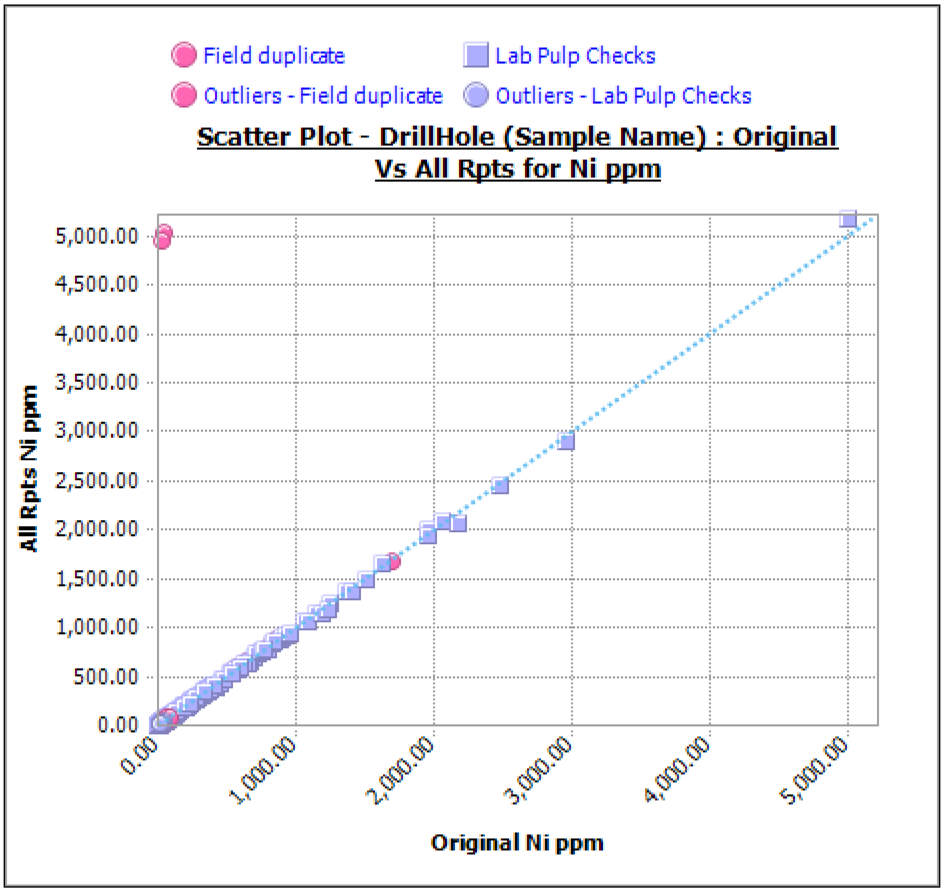
Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u281981	WOLLOGORANG	12934	12934 Rpt	Lab Pulp Checks	4A_ICPES	Cu	26.00	30.00	15.38
BVM_PTH	u281981	WOLLOGORANG	12999	13000	Field duplicate	4A_ICPES	Cu	2960.00	3340.00	12.84
BVM_PTH	u282154	WOLLOGORANG	13639	13640	Field duplicate	4A_ICPES	Cu	1450.00	1630.00	12.41
BVM_PTH	u282156	WOLLOGORANG	139819	139820	Field duplicate	4A_ICPES	Cu	48.00	38.00	-20.83
BVM_PTH	u282156	WOLLOGORANG	139879	139880	Field duplicate	4A_ICPES	Cu	82.00	66.00	-19.51
BVM_PTH	u282369	WOLLOGORANG	139939	139940	Field duplicate	4A_ICPES	Cu	20.00	74.00	270.00
BVM_PTH	u282370	WOLLOGORANG	139999	140000	Field duplicate	4A_ICPES	Cu	58.00	42.00	-27.59
BVM_PTH	u281969	WOLLOGORANG	149199	149200	Field duplicate	4A_ICPES	Cu	46.00	76.00	65.22
BVM_PTH	u281969	WOLLOGORANG	149259	149260	Field duplicate	4A_ICPES	Cu	58.00	64.00	10.34
BVM_PTH	u281969	WOLLOGORANG	149284	149284 Rpt	Lab Pulp Checks	4A_ICPES	Cu	20.00	22.00	10.00
BVM_PTH	u281969	WOLLOGORANG	149341	149340	Field duplicate	4A_ICPES	Cu	22.00	82.00	272.73
BVM_PTH	u282370	WOLLOGORANG	149739	149740	Field duplicate	4A_ICPES	Cu	40.00	30.00	-25.00
BVM_PTH	u282940	WOLLOGORANG	149899	149900	Field duplicate	4A_ICPES	Cu	108.00	78.00	-27.78
BVM_PTH	u282941	WOLLOGORANG	17250	17240	Field duplicate	4A_ICPES	Cu	162.00	2.00	-98.77
BVM_PTH	u282941	WOLLOGORANG	17319	17319 Rpt	Lab Pulp Checks	4A_ICPES	Cu	20.00	22.00	10.00
BVM_PTH	u283215	WOLLOGORANG	17387	17380	Field duplicate	4A_ICPES	Cu	34.00	96.00	182.35

Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u283439	WOLLOGORANG	17579	17580	Field duplicate	4A_ICPES	Cu	4.00	82.00	1950.00
BVM_PTH	u283440	WOLLOGORANG	18839	18840	Field duplicate	4A_ICPES	Cu	660.00	544.00	-17.58

Northern Cobalt: Drill hole Physical Original (Ni) v Repeat: All Rpts - Methods: All Methods (Matched Methods)

No. of Samples	mean Ni1	mean Ni2	SD Ni1	SD Ni2	CV Ni1	CV Ni2	sRPHD (mean)
482	187.57	207.99	422.56	524.57	2.25	2.52	-0.36

Scatter Plot - Drill hole (Sample Name) : Original Vs All Rpts for Ni ppm



Bad Repeats

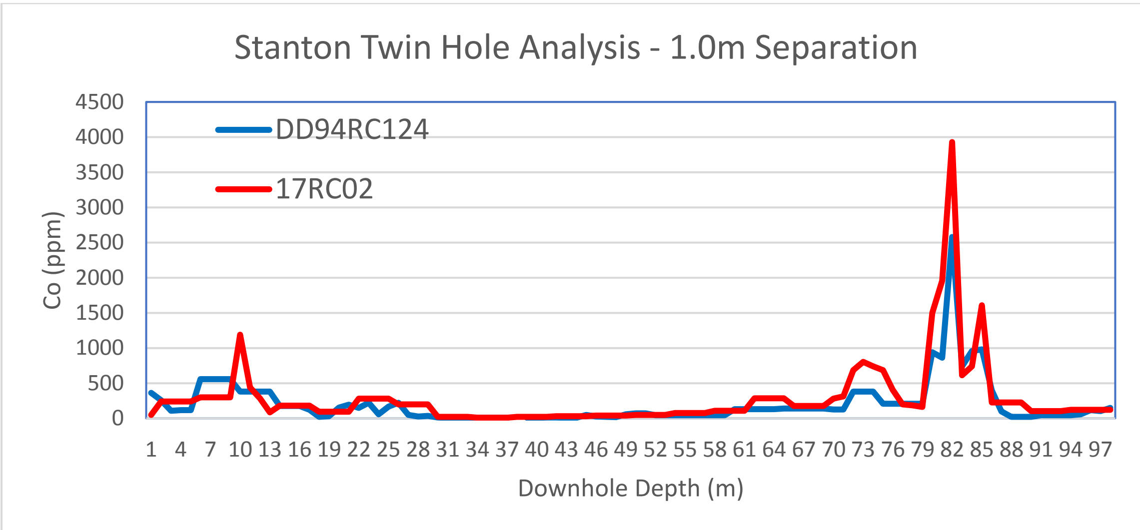
Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u281718	WOLLOGORANG	11375	11375 Rpt	Lab Pulp Checks	4A_ICPES	Ni	38.00	42.00	10.53
BVM_PTH	u281981	WOLLOGORANG	12939	12940	Field duplicate	4A_ICPES	Ni	70.00	58.00	-17.14

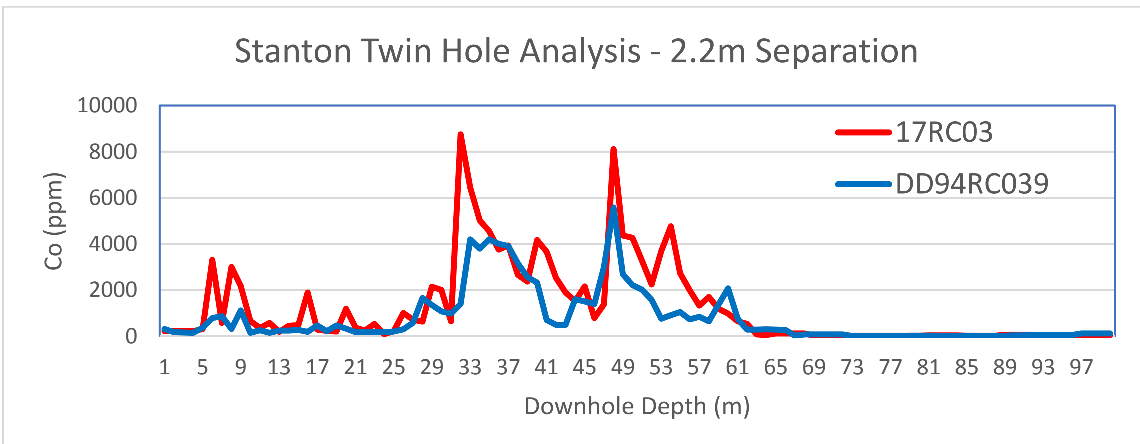
Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u282156	WOLLOGORANG	139849	139849 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u282155	WOLLOGORANG	14439	14440	Field duplicate	4A_ICPES	Ni	32.00	28.00	-12.50
BVM_PTH	u281969	WOLLOGORANG	149139	149140	Field duplicate	4A_ICPES	Ni	66.00	74.00	12.12
BVM_PTH	u281969	WOLLOGORANG	149341	149340	Field duplicate	4A_ICPES	Ni	48.00	5040.00	10400.00
BVM_PTH	u282154	WOLLOGORANG	149399	149400	Field duplicate	4A_ICPES	Ni	60.00	74.00	23.33
BVM_PTH	u282155	WOLLOGORANG	149486	149486 Rpt	Lab Pulp Checks	4A_ICPES	Ni	24.00	20.00	-16.67
BVM_PTH	u282369	WOLLOGORANG	149539	149540	Field duplicate	4A_ICPES	Ni	30.00	34.00	13.33
BVM_PTH	u282369	WOLLOGORANG	149620	149620 Rpt	Lab Pulp Checks	4A_ICPES	Ni	24.00	20.00	-16.67
BVM_PTH	u282370	WOLLOGORANG	149651	149651 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u282370	WOLLOGORANG	149739	149740	Field duplicate	4A_ICPES	Ni	30.00	26.00	-13.33
BVM_PTH	u282940	WOLLOGORANG	149801	149801 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u282940	WOLLOGORANG	149899	149900	Field duplicate	4A_ICPES	Ni	26.00	22.00	-15.38
BVM_PTH	u282941	WOLLOGORANG	17136	17136 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u282941	WOLLOGORANG	17201	17201 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u282941	WOLLOGORANG	17303	17300	Field duplicate	4A_ICPES	Ni	28.00	24.00	-14.29
BVM_PTH	u282941	WOLLOGORANG	17309	17309 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00

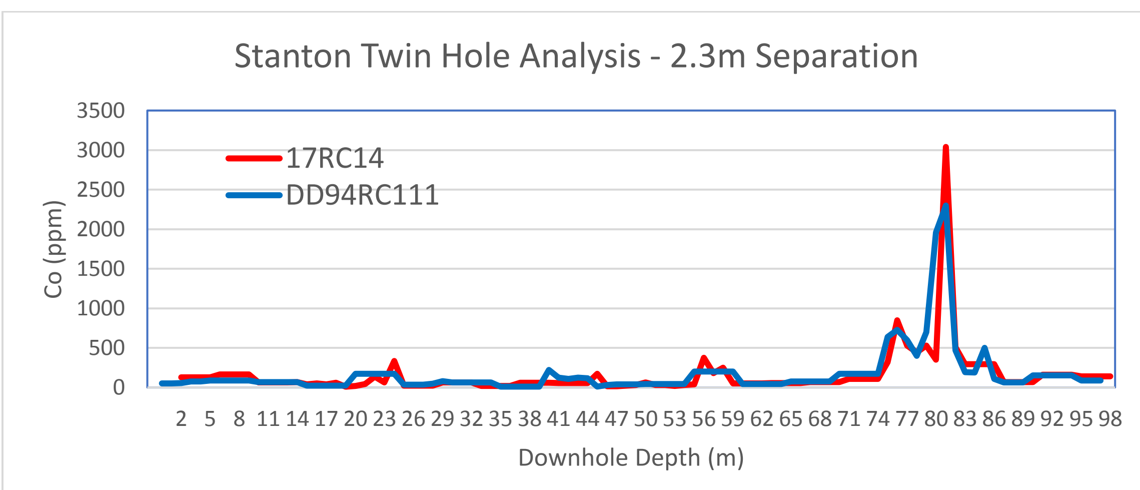
Lab	Batch	Data Set	Sample Id	Repeat Id	Repeat Type	Method	Element	Orig Value	Rpt Value	Diff(%)
BVM_PTH	u283215	WOLLOGORANG	17539	17539 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u283439	WOLLOGORANG	17579	17580	Field duplicate	4A_ICPES	Ni	22.00	4950.00	22400.00
BVM_PTH	u283439	WOLLOGORANG	17729	17729 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u283439	WOLLOGORANG	17836	17836 Rpt	Lab Pulp Checks	4A_ICPES	Ni	20.00	22.00	10.00
BVM_PTH	u283440	WOLLOGORANG	18839	18840	Field duplicate	4A_ICPES	Ni	86.00	72.00	-16.28

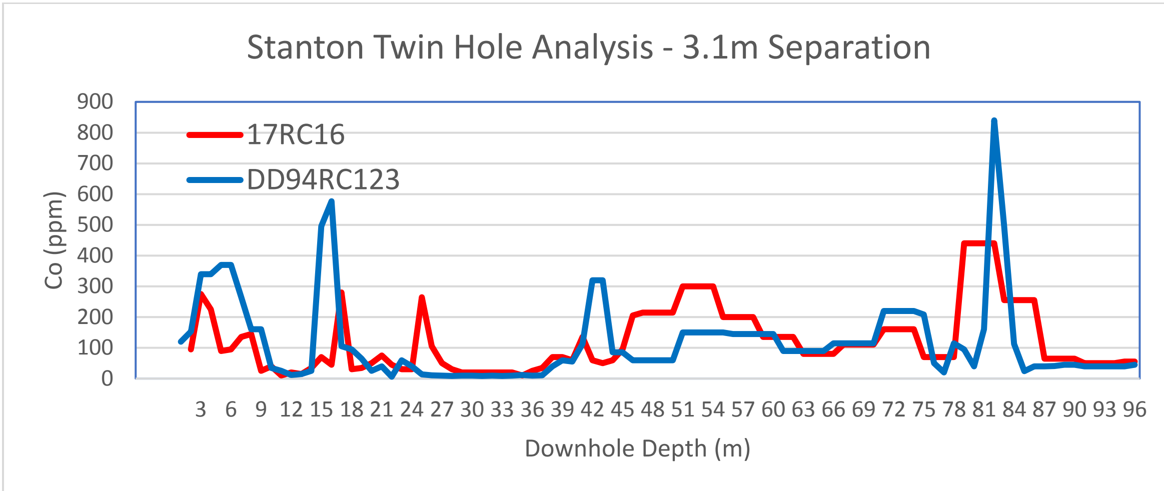
APPENDIX 3

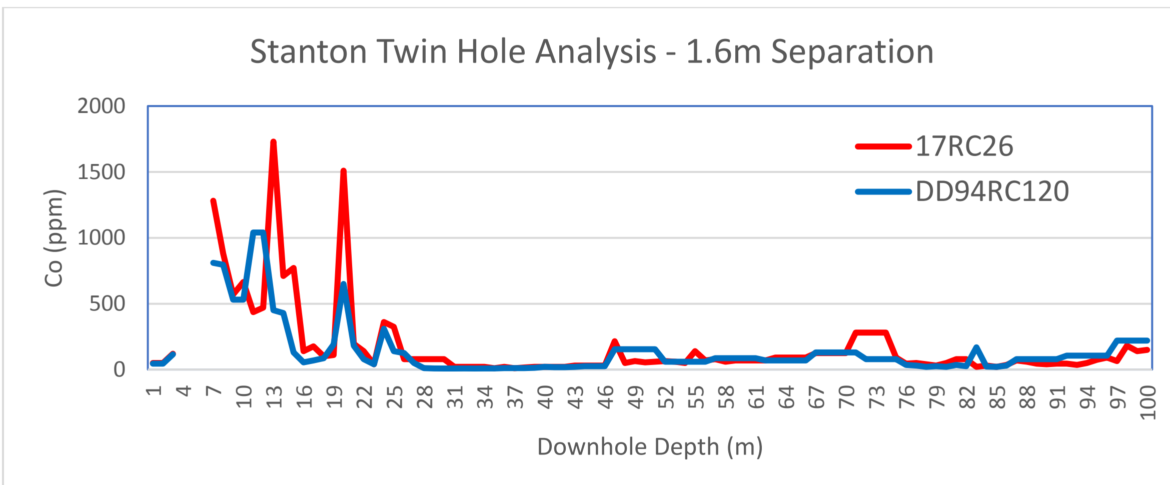
Twin Hole Analysis

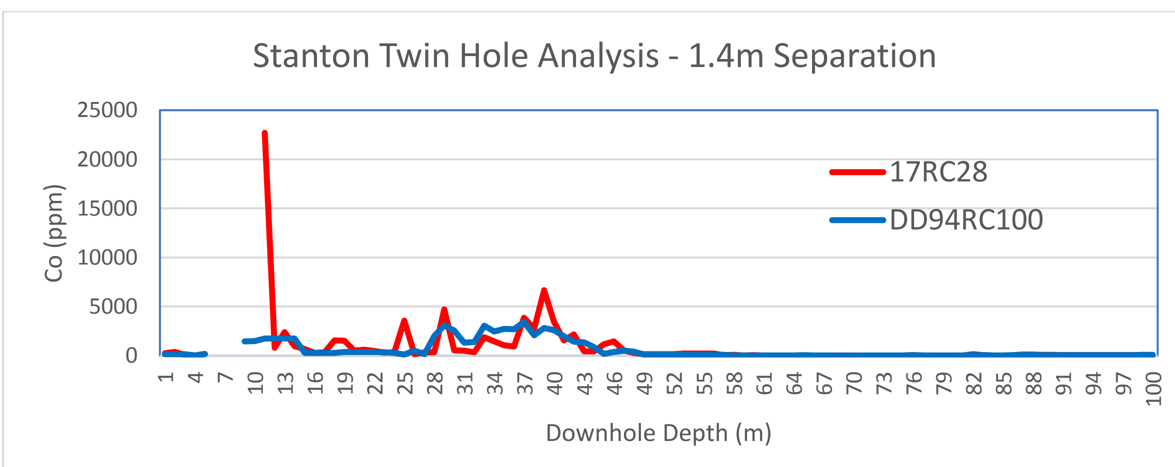


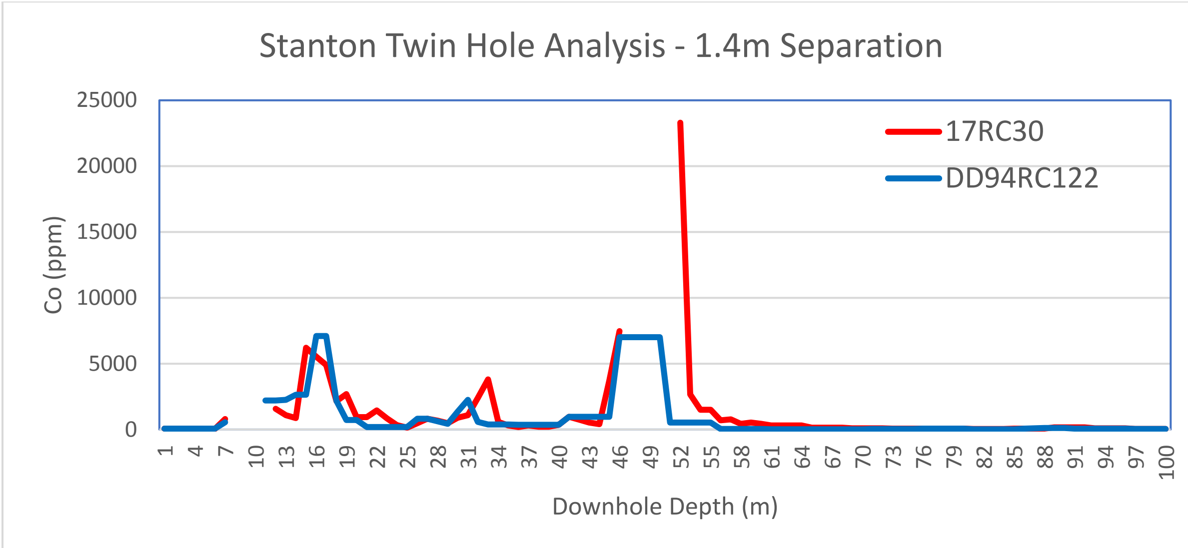


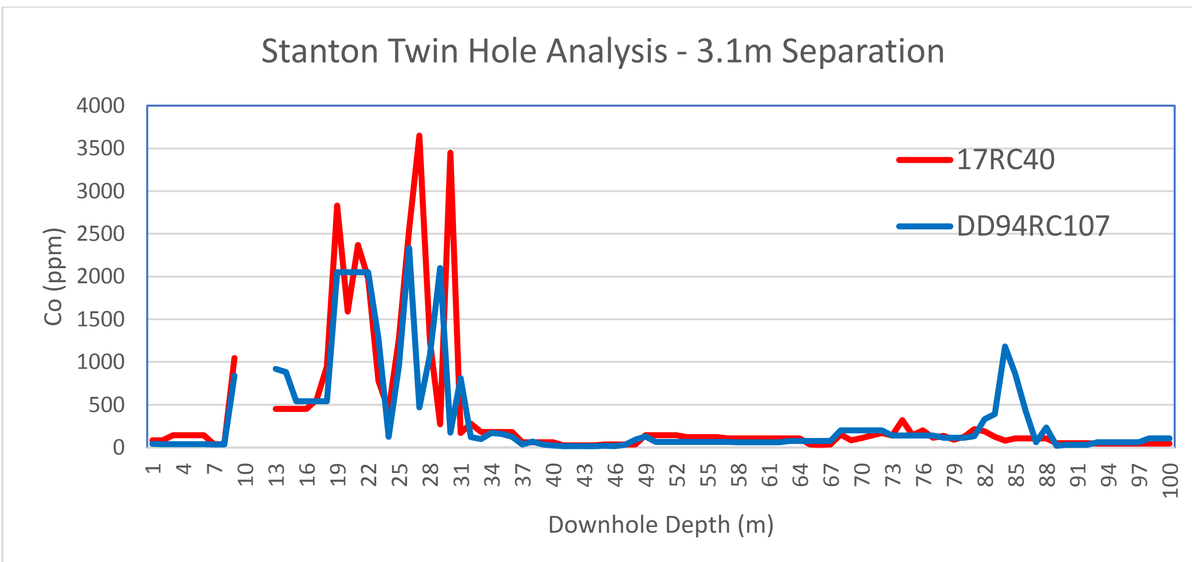


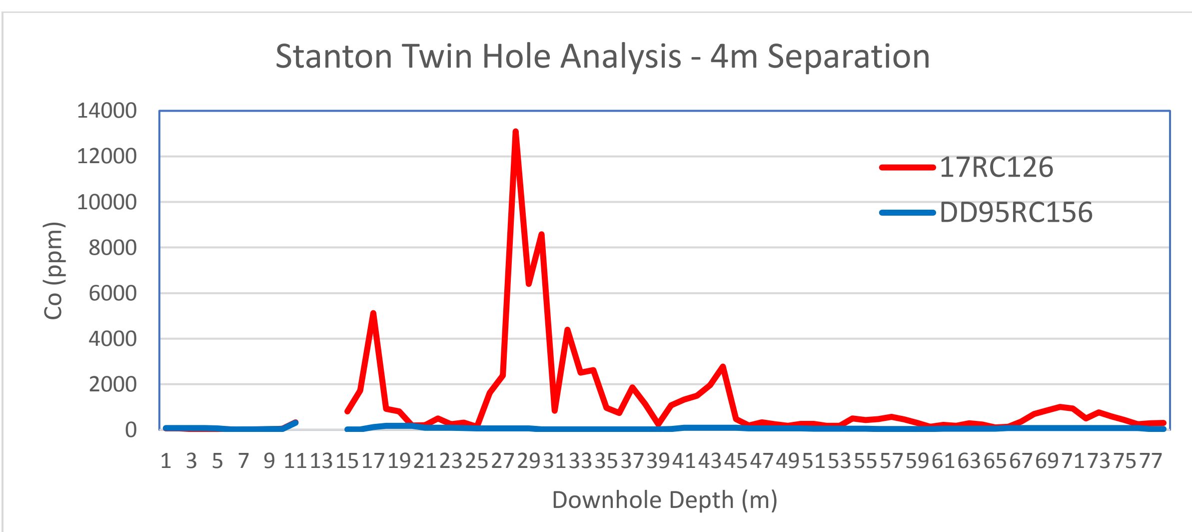

Stanton Twin Hole Analysis - 3.1m Separation
Co (ppm)
900
800
700
600
500
400
300
200
100
0
17RC16
DD94RC123
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96
Downhole Depth (m)


Stanton Twin Hole Analysis - 1.6m Separation
Co (ppm)
2000
1500
1000
500
0
17RC26
DD94RC120
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Downhole Depth (m)


Stanton Twin Hole Analysis - 1.4m Separation
Co (ppm)
25000
20000
15000
10000
5000
0
17RC28
DD94RC100
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Downhole Depth (m)


Stanton Twin Hole Analysis - 1.4m Separation
Co (ppm)
Downhole Depth (m)
17RC30
DD94RC122


Stanton Twin Hole Analysis - 3.1m Separation
Co (ppm)
Downhole Depth (m)
17RC40
DD94RC107


Stanton Twin Hole Analysis - 4m Separation
Co (ppm)
Downhole Depth (m)
17RC126
DD95RC156