NI 43-101 Technical Report: Pahtavaara Project, Finland

Rupert Resources Ltd

Effective Date: 16 April 2018

82 Richmond St East, Suite 203,
Toronto, Ontario M5C 1P1

Document Information Page

Qualified Persons	Brian Wolfe	International Resource Solutions Pty Ltd
Effective Date	16 April 2018	
Versions / Status	Final	

Document Review and Sign Off

Brian R Wolfe

Table of Contents

List of Figures

List of Tables

List of Appendices

1. EXECUTIVE SUMMARY

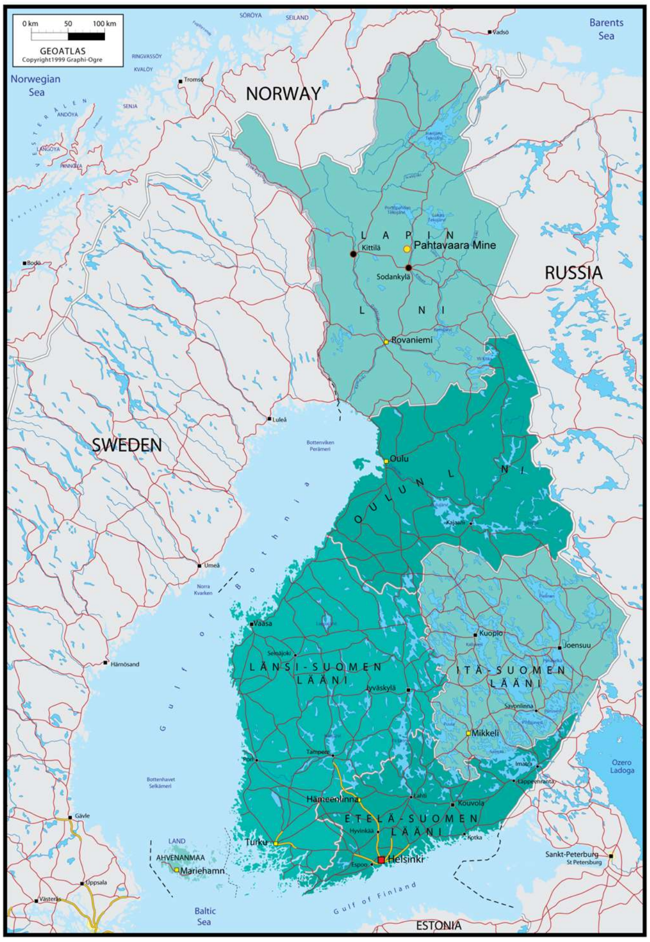
1.1 Introduction

This mineral resource estimation report has been prepared by International Resource Solutions Pty Limited and was commissioned by Rupert Resources Ltd. The report comprises an independent estimation of the mineral resources of the Pahtavaara Project ("Pahtavaara" or "the Project"). Pahtavaara is wholly owned by Rupert Resources Ltd (hereinafter referred to as "Rupert").

1.2 Location

Pahtavaara is located 10km east from Rajala village in the municipality of Sodankylä approximately 25km northwest of Sodankylä in northern Finland (Figure 1.2_1). The deposit lies at the eastern extreme of the Sirkka Line, a tectonic structure that traverses northern Finland, along which some 25 to 30 gold deposits exist. The gold deposit is situated in a fairly dry, sparsely forested area. The landscape is reasonably flat with an elevation of approximately 240m to 250m above sea level. The Pahtavaara hill, located directly to the northeast, has an elevation of approximately 325m above sea level. The overburden cover is generally between 5m to 10m thick. In most parts of the deposit area, the ground water table is typically located a few metres below the ground surface.

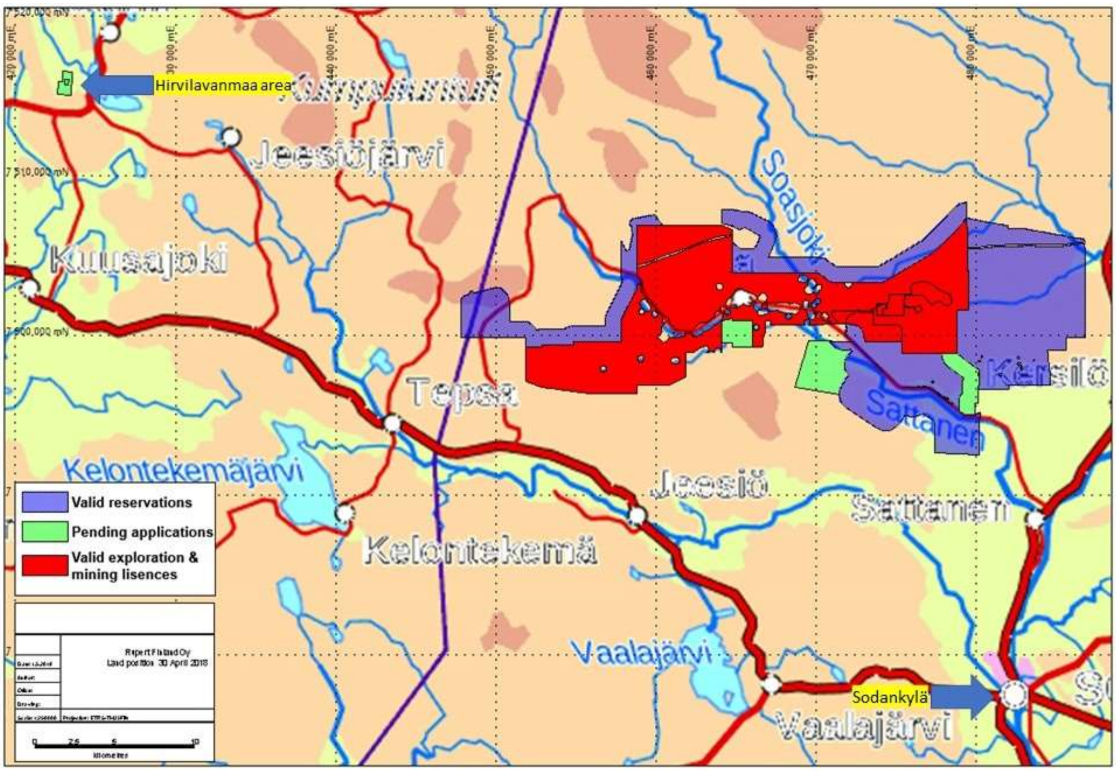
Figure 1.2_1
Location of the Pahtavaara Project, Finland



1.3 Ownership

Pahtavaara is 100% owned by Rupert Finland Oy, a wholly owned subsidiary of Rupert Resources Ltd, a company incorporated in British Columbia, whose office is at 82 Richmond Street East, Suite 203, Toronto, Ontario, Canada, M5C 1P1. The property is subject to a 1.5% royalty on revenue, capped at USD2.0m. The Pahtavaara resource defined in this report is contained on a 4km² mining licence contained within a wider contiguous land position of 291km² (see Figure 1.3)

Figure 1.3_1
Rupert land position in Central Lapland



1.4 Geology

Pahtavaara was discovered by the Geological Survey of Finland in 1986 when high grade gold mineralisation with visible gold was found in outcrop. Prior to the discovery, gold anomalies in till and bedrock had been detected during regional exploration.

Pahtavaara is located within the Central Lapland Greenstone Belt ("CLGB"), part of the Fennoscandian Shield, which hosts 1700 mineralised occurrences in Finland, Sweden, Norway and Russia including around 80 mines. The CLGB has two gold mines of significance. Agnico Eagle's 7Moz Kittila mine which produced around 200koz of gold in 2017 and Pahtavaara.

Pahtavaara lies at the eastern extreme of the Sirkka Line, a broad tectonic structure that traverses northern Finland, along which some 25 to 30 gold deposits have been located.

1.5 Mineralisation

Mineralisation at the Pahtavaara Project is hosted by amphibolitised komatiites. The principal geologic control in the area is considered to be a linear structural corridor that trends between east-west and northeast-southwest, with gold mineralisation identified in both the larger structures parallel to this trend, oblique fractures and steeply plunging zones that represent the intersection of these structures or possibly fold hinges. The mineralised structural corridor identified at the Pahtavaara Project is characterised by hydrothermal alteration and mineralisation within komatiites that have been subjected to several phases of intense, pervasive alteration. The hydrothermal alteration and the Au-bearing structures and veins associated are a result of a prolonged period of ductile deformation and later brittle-ductile deformation related to a belt scale thrusting event. Mineralisation remains open at depth along the entire zone. Gold occurs mostly as free gold with a smaller proportion associated with magnetite.

1.6 Project Status

Pahtavaara operated between 1996 and 2014 but is currently on care and maintenance. Production peaked at 37,000oz in 1997, and existing mill capacity is over 1,400 tonnes of ore a day. Since acquiring the mine in 2016, Rupert has undertaken over 53,000m of diamond drilling and undertaken a geological modelling exercise using the significant amount of historical drill data and 35km of underground tunnelling that exists for the deposit. The resource published in this report is intended to be used as a baseline for future resource work leading to economic assessment of the property.

1.7 Mineral Processing and Metallurgical Testing

The existing mill at Pahtavaara produced around 350koz of gold in concentrate using a combination of gravity and flotation with recoveries ranging from 80 to 90%. The flowsheet was designed by Davy as part of the feasibility work in 1994 but has been adapted to optimise recovery. The mineralisation defined in the reported resource is thought to have identical metallurgical characteristics to previously mined ore.

1.8 Resources

The Mineral Resource estimate for the Pahtavaara Project is reported in accordance with National Instrument 43-101 and has been estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) “Estimation of Mineral Resources and Mineral Reserves best Practice Guidelines”. This mineral resource estimate is classified as Inferred as defined by the CIM. Numbers displayed in Table 1.8_1 are affected by rounding. A cutoff of 1.5g/t Au was selected for the reported estimate based on historical breakeven operating costs, recoveries of 85% and a gold price of EUR950/oz.

Table 1.8._1
Pahtavaara Gold Deposit
Inferred Mineral Resource

Cutoff (g/t Au)	Grade (g/t Au)	Tonnage	Au oz	Au kg
0.5	1.6	14,540,000	756,000	23,500
1.0	2.4	7,980,000	605,000	18,800
1.5	**3.2**	**4,640,000**	**474,000**	**14,700**
2.0	4.0	3,030,000	385,000	12,000
3.0	5.6	1,470,000	264,000	8,200
4.0	7.0	880,000	199,000	6,200
5.0	8.5	560,000	153,000	4,800

1.9 Conclusions

The new Inferred Resource of 4.6Mt grading 3.2g/t Au (474koz) is reported using a 1.5g/t cutoff and is based on an updated geological interpretation of the deposit following a review all available data that has been collected over the past 30 years. The new estimate represents a significant uplift in grade and tonnage from the historically disclosed Measured and Indicated Resource of 1.3Mt grading 2.1g/t in Measured and Indicated categories (85koz) and 1.5Mt grading 1.8g/t in Inferred category (84koz) calculated using a 0.5g/t cutoff prepared in 2014. The new resource includes over 50,000m of drilling completed by Rupert up to the end December 2017 along with drilling by the previous owners since the last resource estimate. The drilling has confirmed that the Pahtavaara deposit is demonstrably open at depth and along strike. The modelling work also estimated that 441koz has been mined from Pahtavaara historically (consistent with production data from 1996 to 2014) indicating a yield of over 2,000oz/vertical meter for the Pahtavaara Project.

1.10 Recommendations

The Pahtavaara gold deposit has been the subject of a number of exploration and resource definition drilling programmes over the past 20 years. From the review of historic work and recent drilling it is apparent that there is an opportunity to extract significantly more information from both the existing drilling and underground development that would contribute to increasing confidence level of the resource.

Further drilling to increase the confidence level of the resource and assess the potential extensions are also being considered. The suggested locations are near to surface in proximity of the open pits, at depth where the drilling density is low and on the western extensions of the Karoliina zone. This work should be considered following completion of the initial sampling programmes and a further data review at that stage.

Other recommended work programmes to enhance future resource modelling include: studies of the structural setting and timing of the mineralisation; gold deportment and characterisation; litho-geochemistry studies to improve understanding of the protolith and alteration types; and metallurgical characterisation studies to assess variability of mineralisation for mineral processing.

2. INTRODUCTION

2.1 Terms of Reference

In December 2017, Rupert Resources commissioned International Resource Solutions Pty Ltd of Perth, Australia to prepare an independent technical report in compliance with the Canadian Securities National Instrument 43-101 Standards of Disclosure for Mineral Properties and Form 43-101F1. The work was undertaken by the Principal and Director of the company, Brian Wolfe, BSc(Hons), MAIG.

The purpose of the Report is to update the existing NI43-101 report (Bartlett, 2013) and to update the NI43-101 compliant resource estimate for the Pahtavaara deposit. This report has an effective date of 16 April 2018.

This report was prepared at the request of Mr James Withall, CEO of Rupert, a TSXV-listed company with symbol RUP.V and incorporated in the Province of Ontario. The Company's offices are located at: 82 Richmond Street East, Suite 203, Toronto, Ontario, M5C 1P1.

2.2 Site Visit

The Independent Qualified Person (Resource Geologist) Brian Wolfe, Principal Consultant at International Resource Solutions Pty Ltd, visited the Pahtavaara Project Site between 5th to 8th February 2018 . This visit included:

- Visits to the underground exposures, exploration sites, outcrop exposures, and observation of surface drilling, review of drill core from several diamond holes that form part of the Project resource estimate;
- Review of the exploration procedures used by Rupert at the Pahtavaara Project;
- Review of the exploration database; and
- Review of geological setting of the deposit and surrounding area

2.3 Sources of Information

Sources of information include internal technical reports, documents and maps provided by Rupert to the author in addition to the publicly available information. A list of reports is provided in Section 27.

2.4 Abbreviations

A full listing of abbreviations used in this report is provided in Table 2.4_1 below.

Table 2.4_1
Pahtavaara Gold Deposit
List of Abbreviations

	Description		Description
$	United States of America dollars	l/hr/m²	litres per hour per square metre
µ	Microns	M	million
2D	two dimensional	m	metres
3D	three dimensional	Ma	Million years
AAS	atomic absorption spectrometer	MIK	Multiple Indicator Kriging
Au	Gold	ml	millilitre
bcm	bank cubic metres	mm	millimetres
CC	correlation coefficient	MMI	mobile metal ion
CLGB	Central Lapland Greenstone Belt	Moz	million ounces
cfm	cubic feet per minute	Mtpa	million tonnes per annum
CIC	carbon in column	Mt	Million tonnes
CIL	carbon-in-leach	N (Y)	northing
cm	Centimetre	NaCN	sodium cyanide
cusum	cumulative sum of the deviations	NATA	National Association of Testing Authorities
CV	coefficient of variation	NPV	net present value
DDH	diamond drillhole	NQ2	size of diamond drill rod/bit/core
DTM	digital terrain model	ºC	degrees centigrade
E (X)	Easting	OK	Ordinary Kriging
EDM	electronic distance measuring	oz	troy ounce
EV	expected value	P80 -75µ	80% passing 75 microns
g	Gram	PAL	pulverise and leach
g/m³	grams per cubic metre	ppb	parts per billion
g/t	grams per tonne	ppm	parts per million
HARD	half the absolute relative difference	psi	pounds per square inch
HDPE	high density poly ethylene	PVC	poly vinyl chloride
HQ2	size of diamond drill rod/bit/core	QC	quality control
hr	Hours	Q-Q	quantile-quantile
HRD	half relative difference	RAB	rotary air blast
ICP-MS	inductivity coupled plasma mass spectroscopy	RC	reverse circulation
ID	Inverse Distance weighting	RL (Z)	reduced level
ID²	Inverse Distance Squared	ROM	run of mine
IPS	integrated pressure stripping	RQD	rock quality designation
IRR	internal rate of return	SD	standard deviation
ISO	International Standards Organisation	SGS	Société Générale de Surveillance
ITS	Inchcape Testing Services	SMU	selective mining unit
kg	Kilogram	t	tonnes
kg/t	kilogram per tonne	t/m³	tonnes per cubic metre
km	Kilometres	Y	year
km²	square kilometres		

3. RELIANCE ON OTHER EXPERTS

While information provided by Rupert relating to the project history, mineral processing and metallurgical testing, mining methods, project infrastructure, market studies and contracts, environmental studies and permitting, capital and operating costs, economic analysis, mineral rights, and surface rights has been reviewed, no opinion is offered in these areas. Specifically, the Qualified Person is not expert in land, legal, permitting, and related matters and therefore has relied upon, and is satisfied, there is a reasonable basis for this reliance on the information provided by the company management regarding mineral rights, surface rights and permitting in Section 4 of this Technical Report.

4. PROPERTY DESCRIPTION AND LOCATION

4.1 Location of Pahtavaara Project

Pahtavaara is located 10km east from Rajala village in the municipality of Sodankylä approximately 25km northwest of Sodankylä in northern Finland (for coordinates see Table 4.1_1).

Table 4.1_1
Pahtavaara Gold Deposit Pahtavaara Project Coordinates

Reference Grid	Easting	Northing
EUREF	475,137.65	7,501,765.03
YKJ	3,475,300	7,504,900

4.2 Right of Tenure

Pahtavaara is comprised of a package of mining licences, exploration licences, claims and reservations for exploration totalling an area of 290.87km² (see Table 4.2_1 for component parts, expiry and annual fees). The resource defined in this report is contained within the existing valid mining licence area of 4.21km². The rights conveyed to the landholder are defined in the Mining Act of Finland (621/2011) and summarised as follows:

4.2.1 Mining Permit

A mining permit is required for the establishment of a mine and the undertaking of mining activity. The mining permit entitles the holder to exploit the mining minerals found in the mining area, the organic and inorganic surface materials, waste rock and tailings generated as by-products of mining activities as well as other materials belonging to the bedrock and soil of the mining area to the extent that their use is necessary for the purposes of mining operations in the mining area. The mining permit also entitles its holder to perform ore prospecting within the mining area.

4.2.2 Exploration Permit

The holder of an exploration permit has the right to explore the structures and composition of geological formations on the permit holder's own land and on land owned by another landowner within the area referred to in the permit (exploration area). The permit holder also has the right to conduct other prospecting in order to prepare for mining activity and other exploration in order to locate a deposit and to investigate its quality, extent and degree of exploitation in accordance with the exploration permit.

The permit holder may build or transfer to the exploration area temporary constructions and equipment necessary for exploration activity in accordance with the exploration permit. An exploration permit does not authorise the exploitation of the deposit. It does, however, provide the holder with a privilege for the mining permit, which in turn provides the right to exploit the deposit. The prerequisites for the granting of the mining permit are to do with the size, ore content and technical characteristics of the deposit concerning its exploitability.

Exploration permits are valid for up to 15 years.

Table 4.2_1
Pahtavaara Gold Deposit
Land Components of the Pahtavaara Project

Type	Code	Status	Name	Area (km²)	Granted	Expires	Fee Eur/ha
Mining licence	3921	Valid	Pahtavaara	3.86	9/14/93	N/A	50
	KL2013:0001-01	Valid	Pahtavaara laajennus KL2013:0001	0.35	9/12/13	Review after 10 years	50
Sub total				*4.21*			
Exploration licence	ML2012:0080-02	Valid	Liikamaa 1-4	1.97	8/11/17	9/12/20	40
	ML2011:0034-01	Valid	Paskahaara 1	17.00	8/11/17	9/12/21	20
	ML2012:0195-01	Valid	Pahtarimpi 2-3	1.66	8/11/17	9/12/20	40
	ML2013:0012-01	Valid	Paskamaa 2b-3b ML2013:0012	0.09	8/11/17	9/12/21	40
	ML2013:0013-01	Valid	Pahtarimpi 10-11 ML2013:0013	5.45	8/11/17	9/12/20	40
	ML2013:0014-01	Valid	Paskamaa 1-5 ML2013:0014	4.88	8/11/17	9/12/20	40
	ML2011:0033-01	Valid	Heinälamminvuoma	84.33	8/11/17	9/12/21	20
Sub total				*115.38*			
Exploration licence	ML2017:0079-01	Application pending	Rajala ML2017:0079	3.01	N/A	N/A	N/A
	ML2017:0080-01	Application pending	Liikavaara ML2017:0080	4.50	N/A	N/A	N/A
	ML2012:0196-01	Application pending	Soretiajärvi 4 (Hirvilavanmaa)	0.95	N/A	N/A	N/A
	ML2011:0008-02	Application pending	Soretiajärvi 3 (Hirvilavanmaa)	0.09	N/A	N/A	N/A
Sub total				*8.55*			
Claim	9052/1	Valid	Rauhiaisenjänkä 1	0.70	4/16/2014	4/16/19	20
	9052/2	Valid	Rauhiaisenjänkä 2	0.29	4/16/2014	4/16/19	20
	9052/3	Valid	Rauhiaisenjänkä 3	0.90	4/16/2014	4/16/19	20
	9052/4	Valid	Rauhiaisenjänkä 4	0.68	4/16/2014	4/16/19	20
	9052/5	Valid	Rauhiaisenjänkä 5	0.99	4/16/2014	4/16/19	20
	9052/6	Valid	Rauhiaisenjänkä 6	0.99	4/16/2014	4/16/19	20
Sub total				*4.55*			
Reservation for expl licence	VA2017:0058-01	Valid	Pahta 1	44.43	N/A	N/A	N/A
Reservation for expl licence	VA2017:0049-01	Valid	Sattasvaara VA2017:0049	12.58	N/A	N/A	N/A
Reservation for expl licence	VA2017:0071-01	Valid	Pahta 2 VA2017:0071	26.58	N/A	N/A	N/A
Sub total				*83.59*	*N/A*	*N/A*	*N/A*
Reservation for expl licence	VA2018:0010-01	Applied	Area 51 VA2018:0010	66.23	N/A	N/A	N/A
Reservation for expl licence	VA2018:0018-01	Applied	Area 52 VA2018:0018	8.36	N/A	N/A	N/A
Sub total				*74.59*			
Total				290.87			

4.2.3 Reservation

For the purpose of preparing an application for an ore prospecting permit, an applicant may reserve an area for themself by submitting a notification to the mining authority about the matter (reservation notification). A privilege based on a reservation notification becomes valid once the reservation notification has been submitted in compliance with the provisions laid down in section 44 of the Mining Act (621/2011) and there is no reason, as specified in the Mining Act, for the rejection of the reservation. The validity of the privilege expires when the decision made by the mining authority on the basis of the reservation notification (reservation decision) expires or is cancelled. The reservation does not entitle the applicant to perform exploration. Instead, the reservation grants a privilege as regards the submission of an ore prospecting application.

4.3 Annual Fees and Royalties

Legislation requires holders of exploration and mining permits to make annual payments to landowners on EUR/ha basis (see Table 4.3_1). A statutory mining royalty of 0.15% of the value of the exploited mineral / metal is also payable to the landowner.

Table 4.3_1
Pahtavaara Gold Deposit
Annual Royalty Payments According to Finland Mining Act 2011

Permit Type	EUR/ha
Exploration (years 1 - 4)	20
Exploration (years 5 - 7)	30
Exploration (years 8 - 10)	40
Exploration (years 11 - 15)	50
Mining	50

As part of its agreement with the vendors of the Pahtavaara Property, Rupert is required to pay a royalty of 1.5% of revenue up to USD2M when production resumes.

4.4 Environmental Bonds

Rupert has funded environmental reclamation bonds of EUR670,000 for the Pahtavaara Property.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Property Access

The airport of Rovaniemi has several scheduled domestic flights daily to and from Helsinki. The distance from Rovaniemi to Sodankylä is 130km by road and takes just under two hours to drive. To reach Pahtavaara from Sodankylä, continue to follow the E75 road north towards Sattanen. At Sattanen take a left turn and follow the road for another 15km until the road sign directs towards the mine site.

Access to the site is possible throughout the year.

5.2 Physiography

The landscape was sculpted by extensive glaciers in the most recent ice age between 110,000 and 10,000 years ago. Following the last glacial period, melting ice sheets resulted in shallow lakes and extensive boggy lowlands. Broad valleys were scoured out in the direction of glacial transport, flanking low-lying hills underlain by resistant rocks. The landscape is dominated by low rolling hills and flat lowlands comprised of bogs and lakes. Hills are mostly covered by glacial moraine and sands and are forested, primarily with birch, pine, and spruce. Bedrock outcrops on the hills and along riverbanks, but is limited to some 2% or less of the project area. The Pahtavaara gold deposit is located in a region of incised undulating terrain of low relief. The terrain in general is approximately 240m to 250m above sea level. This terrain largely drains to the south into the Sattanen River and further into the catchment basin of the Kitinen River, eventually the area drains into the Kemi River.

5.3 Climate

According to Köppen climate classification, northern Finland belongs is classified as Dfc (Continental, without a dry season and a cold summer). The region has cold, wet winters, where the mean temperature of the warmest month is no lower than 10°C and that of the coldest month no higher than -3°C. The rainfall is, on average, moderate in all seasons.

The climate is typical of northern Fennoscandia with temperate summers and cold winters. During the summer months (June to August), temperatures are mostly between 10°C and 20°C, and during the winter months (November to April) between -2°C and -20°C based on 10 year averages from 2005 to 2015 for Sodankyla snow covers the terrain on an average of 183 days in the year with a maximum snow thickness varying from 0.6m to 1.2m in March. Bogs, lakes and rivers are frozen for four to five months of the year. Exploration work can be conducted during the winter by taking advantage of the frozen bogs for access.

Annual rainfall is around 600mm with a monthly range between 30mm (April) to 90mm (July). The wettest period is June to July and the driest period from February to April. The climate of northern Finland is influenced by its arctic location between the 60^{th} and 70^{th} northern parallels located in the Eurasian continental coastal zone. This region has characteristics of both the maritime and continental climate depending on the direction of airflow. When westerly winds prevail, the weather is warm and clear due to the airflows from the Atlantic Gulf Stream. When airflow is from the east, the Asian continental climate prevails resulting in severe cold in winter and extreme heat in summer. The mean temperature in northern Finland is several degrees higher than that of other areas in these latitudes such as Siberia and southern Greenland due to the moderating effect of the Atlantic Ocean and the Baltic Sea.

Weather patterns in the project area and in the general region can change quite rapidly, particularly in winter, because northern Finland is located in a zone of prevailing westerly winds where cooling sub-tropical and polar air masses collide. The weather systems known to have the greatest influence on the climate are the low-pressure systems originating near Iceland and the high-pressure systems drifting in from Siberia and the Azores.

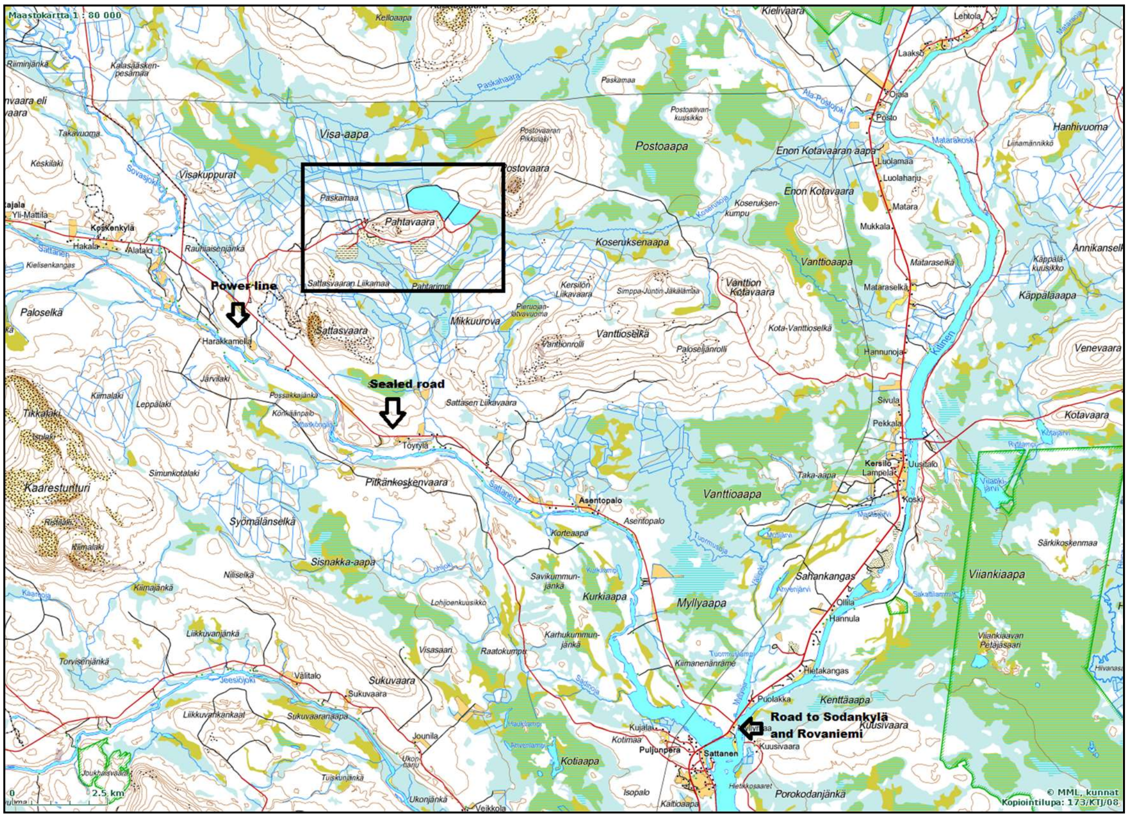
5.4 Local Resources and Regional Infrastructure

The town of Rovaniemi in Finland is located some 150km south-southwest of Pahtavaara. Rovaniemi has a population of approximately 40,000 inhabitants and is the administrative centre of Finnish Lapland. The regional technical centre of the Geological Survey of Finland (GTK) and its analytical laboratory are also located here.

The town of Sodankylä provides most of the support services for the Pahtavaara mine including the use of an accredited sample preparation facility operated by ALS Minerals. ALS Minerals is an internationally accredited lab and are ISO compliant (ISO 9001:2008, ISO/IEC 17025:2005) The regional industrial base is currently dominated by small businesses involved in forestry, agriculture and manufacturing. There are several hotels, shops, and restaurants which accommodate a growing year-round influx of tourists into Lapland. A skilled work force is in place.

Hydroelectric power in the region is relatively inexpensive for commercial use. High voltage electrical power is available from the main line located 5km south of the mine see Figure 5.4_1.

Figure 5.4_1
Regional Infrastructure



Surface infrastructure at Pahtavaara includes a heavy vehicle workshop, administration building, two core sheds and a processing plant.

6. HISTORY

Pahtavaara was discovered by the Geological Survey of Finland in 1984 when high grade gold mineralisation and visible gold were found in outcrop. Prior to the discovery, gold anomalies in till and bedrock had been detected during regional exploration. Swedish company Terra Mining bought the rights to the deposit from the Ministry of Trade in 1991 and Davy International completed a feasibility study in 1994 and production commenced from open pit mining. Two million tonnes of ore was mined from open pit between 1996 and 2000 when Terra Mining filed for bankruptcy due to low gold prices. Pahtavaara was bought and re-opened in 2003 by Scan Mining and in 2004, the company commenced underground mining. In December 2007 Scan Mining went bankrupt due to financial difficulties in the parent company in Sweden and the failed commissioning of the Blaiken mine. In April 2008 Pahtavaara was bought by Lappland Goldminers and underground mining was recommenced in December 2008. Lappland Goldminers operated until 2014 when the parent company in Sweden filed for bankruptcy and the operation was placed in care and maintenance. Rupert purchased the operation from the administrators of Lappland Goldminers in September 2016.

6.1 Previous Mapping and Surface Sampling

During the 1980s, the GTK conducted systematic percussion drilling to take samples from the bedrock surface below the overburden. Outcrop mapping and trenching was also performed. Due to the thickness of the till layer and the lack of exposed outcrops, most of the mapping was completed in trenches. Approximately 50 trenches were dug during the 1990s by Terra Mining. The trenches were sampled by sawing channel samples and percussion drilling. When overburden was removed from what was to become the 'C' open pit, the bedrock was considered to be too weathered to complete mapping. As a result, the only maps available prior to the development of the open pits are compiled from the maps of the trenches.

In 2006, the open pit was mapped by Warren Pratt of Specialised Geological Mapping. The overburden of the Länsi ore bodies was removed in 2006 and a detailed map was produced by Pratt in 2007. Both the open pit and Länsi area were sampled by grab samples. Since the production was moved underground in 2004, all drifts have been systematically mapped and the maps have been digitised.

6.2 Previous Geochemical Surveys

Regional and detailed till geochemistry and stratigraphy were analysed by the GTK in the 1980s. Geochemical surveys were performed in the area around Pahtavaara in the 1990s by Terra Mining. All sampling was conducted through the analysis of both till and the underlying bedrock. In 2003 Scan Mining conducted percussion drilling and took samples from both till and the underlying bedrock.

6.3 Previous Geophysical Surveys

The Geological Survey of Finland has conducted low-altitude, airborne magnetic, electromagnetic and radiometric surveys and systematic ground magnetic and slingram surveys. The Geological Survey has also conducted ground gravity, AEM, IP and VLF-R surveys in the area. Scan Mining analysed the ground geophysics in 2007. Since 2016, Rupert has completed 27 line km of IP geophysics and has re-flown low altitude airborne geophysics on discrete areas of the property.

6.4 Drilling by Previous Explorers

A total of 508,456m of drilling has been completed at Pahtavaara from 12,255 holes (Table 6.4_1). Review of the drillhole assay database has indicated that much of the drilling has been selectively sampled. This relates mostly to the diamond drillholes with approximately 42% of diamond core unsampled and approximately 7% of 'sludge' drillholes unsampled.

Table 6.4_1
Pahtavaara Gold Deposit
Summary of Available Drill Data for Pahtavaara

Company	DH Type	Holes	Metres	% of Total
Rupert (2016 to 2017)	Diamond	364	51,305	10.1%
	Channel	55	309	0.1%
Geological Survey of Finland (pre-1992)	Diamond	44	4,372	0.9%
Lappland Goldminers (2009 to 2014)	Diamond	1,232	154,573	30.4%
	RC	78	1,135	0.2%
	Sludge (UG)	6,675	124,867	24.6%
	Channel	123	89	0.0%
Scan Mining (2004 to 2008)	Diamond	815	94,563	18.6%
	RC	21	1,116	0.2%
	Sludge (UG)	2,268	49,902	9.8%
	Channel	134	213	0.0%
Terra Mining (1992 to 2000)	Diamond	152	14,853	2.9%
	RC	84	9,976	2.0%
	Sludge (UG)	116	117	0.0%
	Unknown	8	300	0.1%
Unknown	Sludge	18	668	0.1%
	Channel	68	107	0.0%
Total		12,255	508,465	100%

6.5 Historical Resource and Reserve Estimates

An estimate prepared by Davy in 1994, as part of a feasibility study of Pahtavaara, resulted in an open pit reserve of 1,051,000t grading 3.05g/t Au with a strip ratio of 4.5:1 and an underground reserve of 512,000t grading 3.73g/t Au.

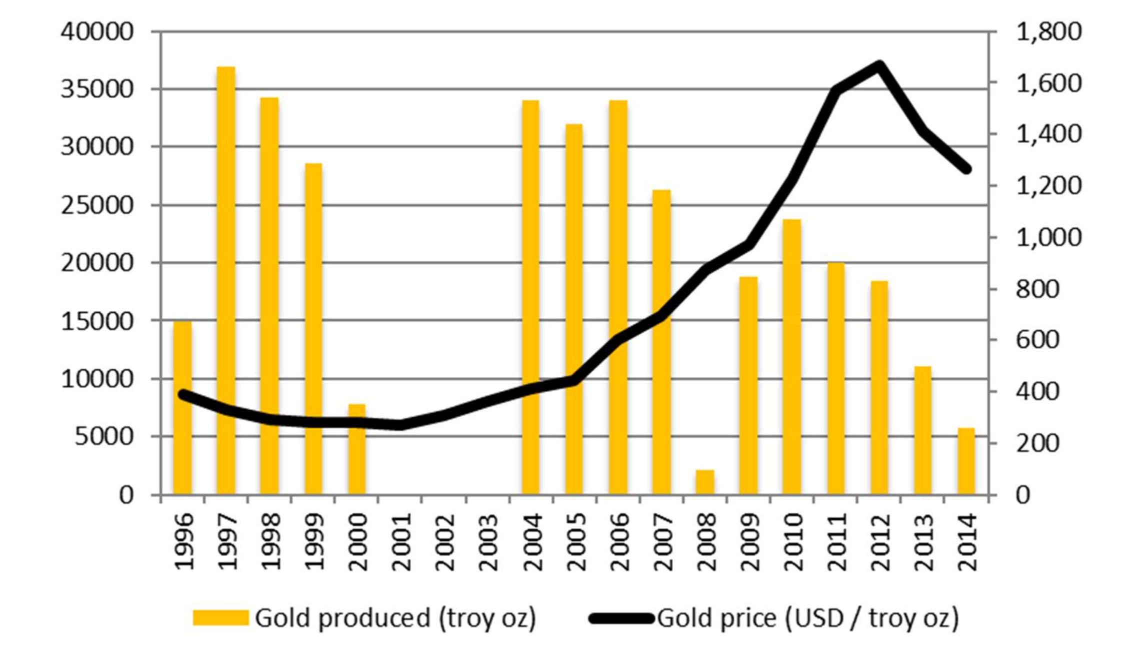
The first resource reported according to NI 43-101, as recorded by the GTK in 2010, was completed by Lappland Goldminers at a 1.5g/t Au cutoff and comprised a Measured and Indicated Resource of 574,000t grading 3.3g/t Au and an Inferred resource of 88,000t grading 7.14g/t Au. Proven and Probable Reserves were stated as 678,000t grading 2.79g/t Au.

Lappland Goldminers published a further NI 43-101 resource and reserve in 2013 using a 0.5g/t Au cutoff. Proven and Probable Reserves were 1,397,000t grading 1.7g/t Au derived from a Measured and Indicated Resource of 1,274,000t grading 2.1g/t Au. Inferred Resources were estimated as 1,482,000t grading 1.77g/t Au.

6.6 Production History

Pahtavaara has produced an estimated 348,996oz of gold from 6,419,226t ore processed over 16 years in three periods of prior ownership between 1996 and 2014 (see Figure 6.6_1). Highest recorded production from open pit was 36,941oz in 1997, primarily as a result of record throughput of 539,658t. Highest recorded production from underground was 33,983oz from mill throughput of 507,002t (GTK).

Figure 6.6_1
Production History of Pahtavaara Mine (GTK)



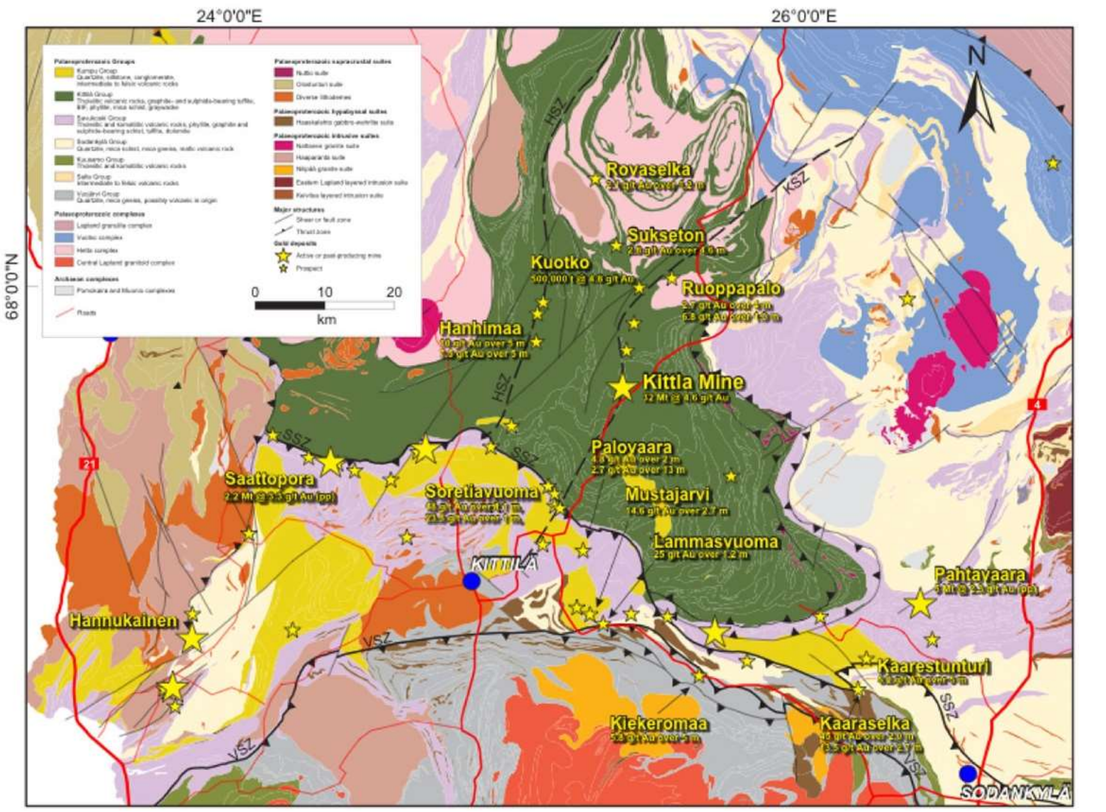
7. GEOLOGICAL SETTING AND MINERALISATION

7.1 Geological Setting

Pahtavaara is located within the CLGB, part of the Fennoscandian shield, which hosts 1700 known incidences of mineralisation in Finland, Sweden, Norway and Russia including around 80 mines. The CLGB has two gold mines of significance. Agnico Eagle's 8Moz Kittila mine which produced around 200koz of gold in 2017 and Pahtavaara.

Pahtavaara lies at the eastern extreme of the Sirkka Line, a tectonic structure that traverses northern Finland, along which some 25 to 30 gold deposits exist.

Figure 7.1_1
Geological Map of Central Lapland Greenstone Belt



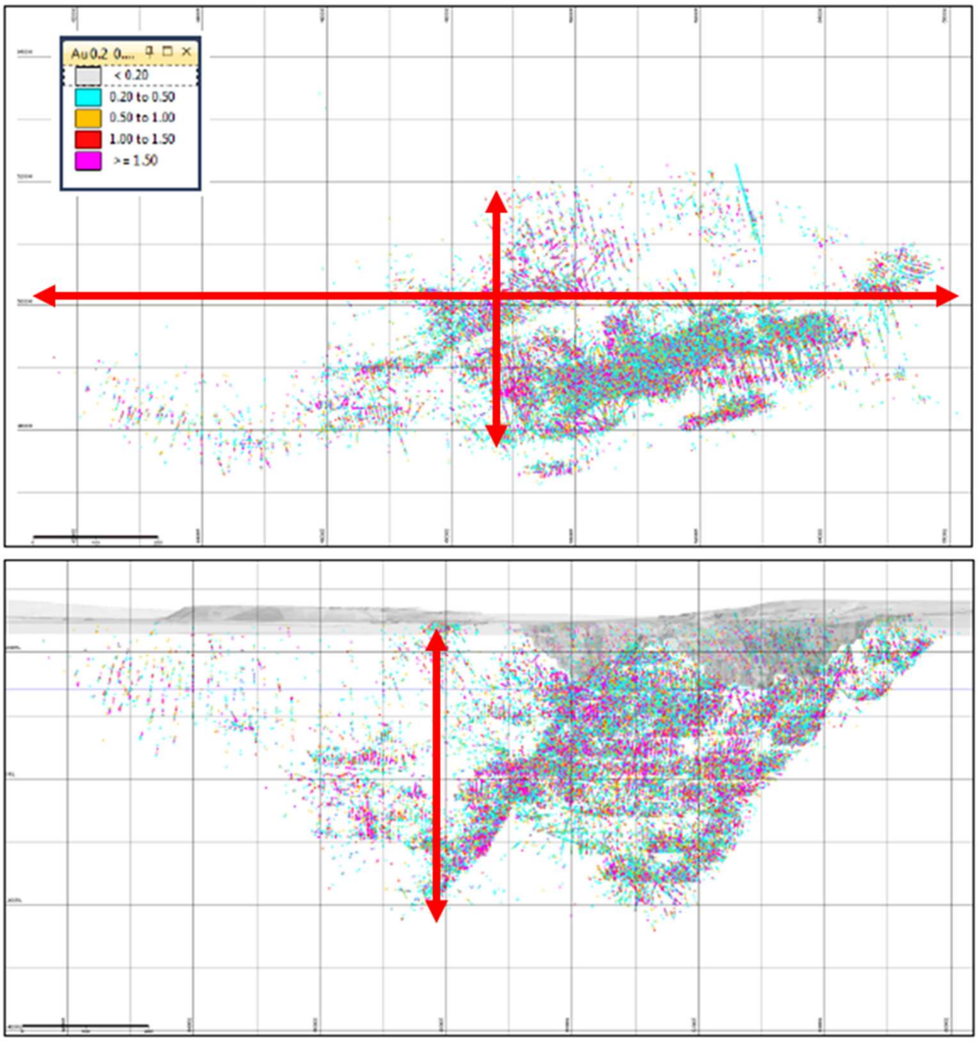
7.2 Mineralisation

Mineralisation at the Pahtavaara Project is hosted by amphibolitised komatiites. The principal geologic control in the area is considered to be a linear structural corridor that trends between east-west and northeast-southwest, with gold mineralisation identified in both the larger structures parallel to this trend, oblique fractures and steeply plunging zones that represent the intersection of these structures or possibly fold hinges. The mineralised structural corridor identified at the Pahtavaara Project is characterised by hydrothermal alteration and mineralisation within komatiites that have been subjected to several phases of intense, pervasive alteration. The hydrothermal alteration and the Au-bearing structures and veins associated are a result of a prolonged period of ductile deformation and later brittle-ductile deformation related to a belt scale thrusting event. Mineralisation remains open at depth along the entire zone. Gold occurs mostly as free gold with a smaller proportion associated with magnetite.

7.3 Project Geology

The Pahtavaara gold deposit can be described as an orogenic, metamorphic, hydrothermal gold deposit. Geological modelling utilising over 500,000m of drilling available for the Pahtavaara deposit has shown the deposit to lie within a mineralised envelope up to 500m wide and up to 1.5km long (see Figure 7.3_1) and that the deposit remains demonstrably open at depth and along strike. In the 1994 Feasibility Study the deposit was described as occurring in a gold-bearing alteration zone covering 100m x 600m, dipping 80° to 85° NNW (Davy, 1994).

Figure 7.3_1
Currently Defined Limits of Pahtavaara Mineralisation



Scale bar: 200m, Grid: 100m

7.4 Structure

Pahtavaara is hosted by ultramafic rocks (komatiites to high magnesian basalts). Gold mineralisation is structurally controlled and associated with low sulphidation, polyphase quartz-carbonate veining, multiple deformation phases varying from brittle to ductile and back to brittle and intense alteration, both prograde and retrograde. This has resulted in a complex vein overprinting history (Figure 7.4_1).

Figure 7.4_1
Free Gold in Drill Core, Polyphase Structures and Veining

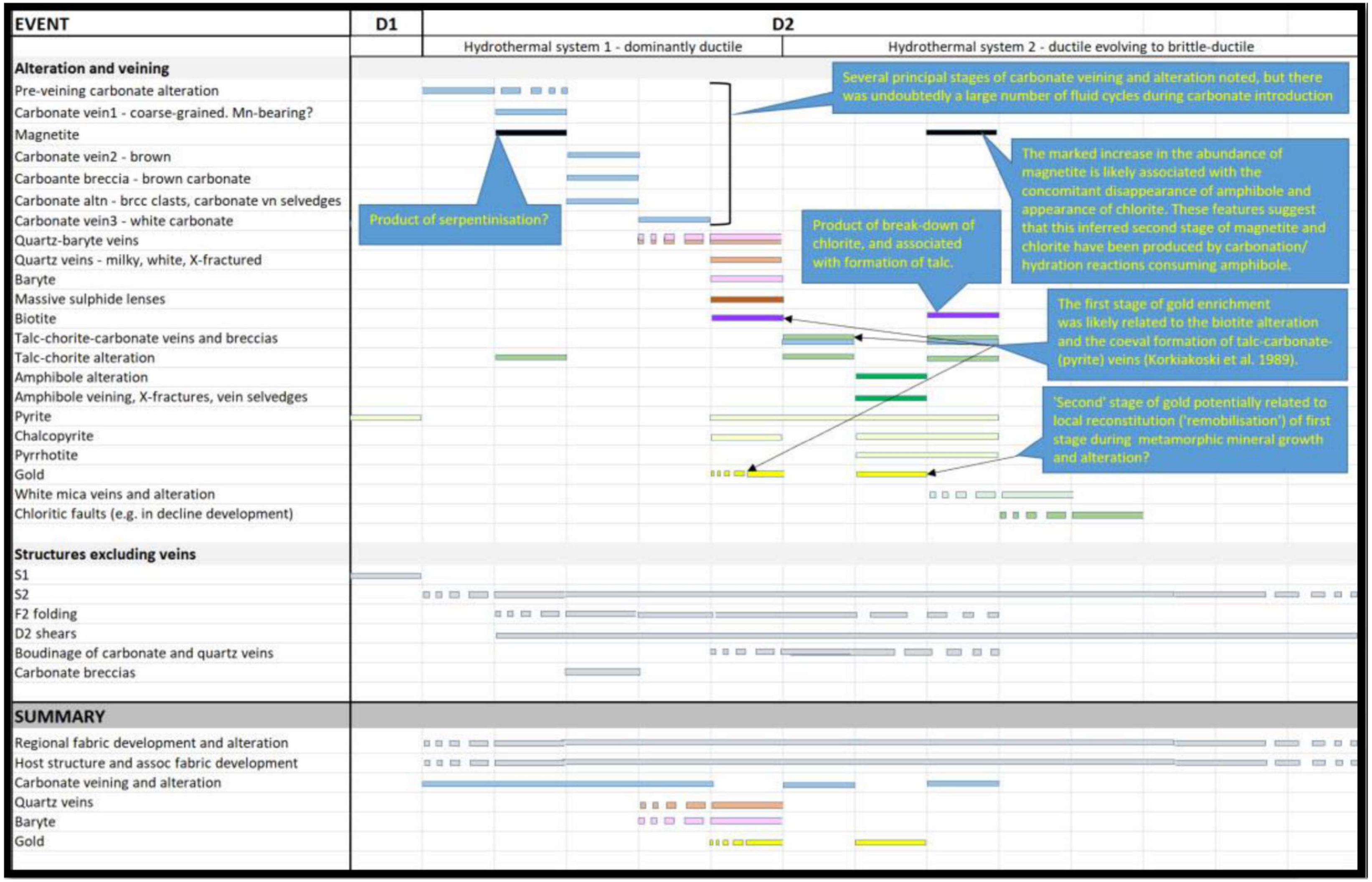
(A) Free Gold in drill core, B and C – Polyphase structures and veining

A complex alteration sequence has been identified, with multiple phases of overprinting, governed by changes in fluid chemistry and their reaction with host rocks of differing mineralogy. Alteration assemblages include initial implied serpentinization, regional intense carbonate, talc-carbonate +/- chlorite +/- pyrite, amphibole-chlorite, amphibole and biotite.

Unusual aspects of the gold mineralisation at Pahtavaara include a Ni-Cu-Co geochemical signature (most probably due to the ultramafic host rocks) and minor massive sulphide lenses formed during prograde metamorphic and ductile conditions.

Two phases of gold mineralisation have been observed; early fine grained and later, more coarse grained (see Figures 7,4_1 and 7.4_2, both from Davis, 2018)). Both are 'free' gold, as the deposit does not exhibit refractory metallurgical characteristics.

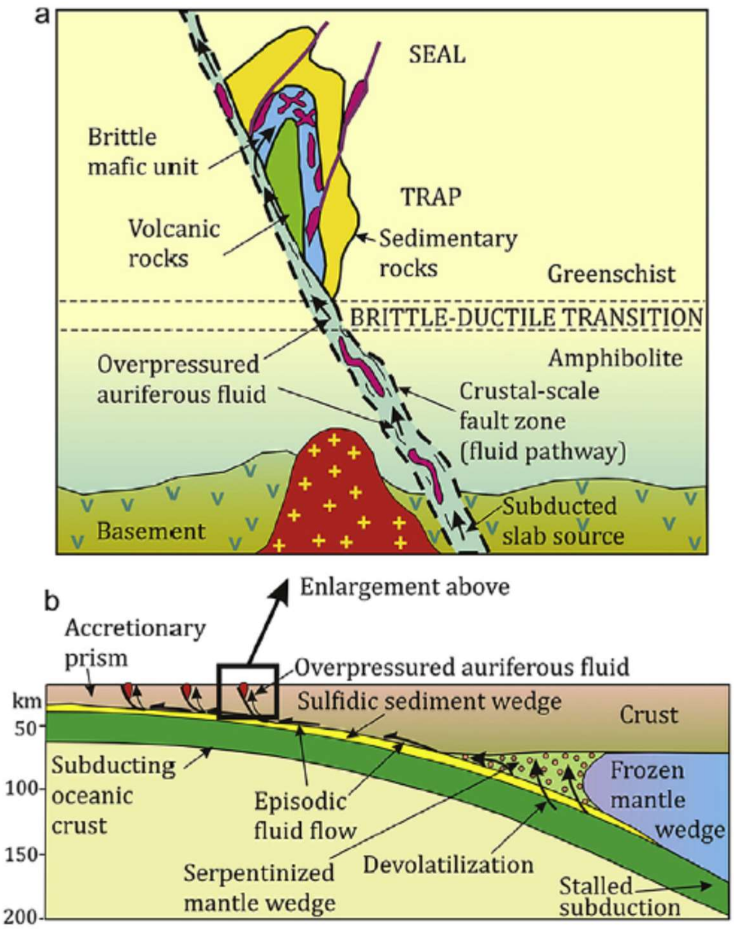
Figure 7.4_2
Geological History of Pahtavaara



8. DEPOSIT TYPES

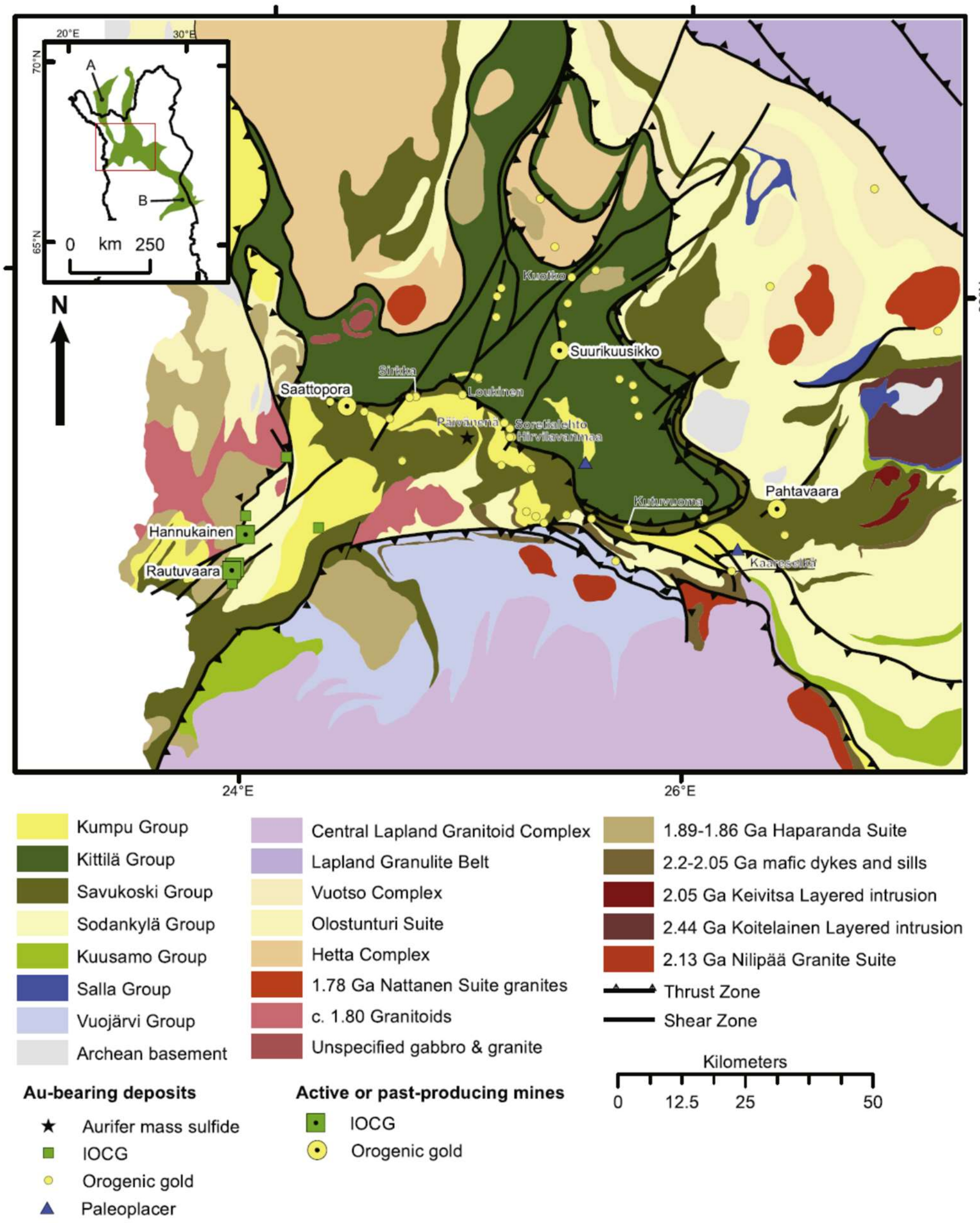
Pahtavaara is considered to be an orogenic gold deposit with gold mineralisation associated with low sulphidation alteration. Genetic models for orogenic gold deposits have been discussed in several studies (e.g., Groves et al., 1998 and Groves and Santosh, 2015). The key aspects of these models are: (1) metals, complexing agent(s) and fluids transporting the metals are released from the source (or sources) at depth, (2) metal-carrying fluids are focused into shear zones, and (3) the auriferous fluids migrate along structures into suitable structural and/or chemical traps where the gold and associated metals are deposited via various physicochemical reactions (Nirranen, T. et al, 2015 pp 733 - 734,), refer to Figure 8_1. A number of orogenic gold deposits are believed to be hosted in the CLGB Belt including Pahtavaara and the Suurikuusikko deposit (Kittila Mine) (see Figure 8_2). Globally examples of other orogenic gold deposits include Kalgoorlie (Australia), Val d'Or (Canada) and Ashanti (Ghana) (Groves et al., 1998).

Figure 8_1
Schematic Representation of a Permissive Scenario for All Orogenic Gold Deposits



(Groves and Santosh, 2015)

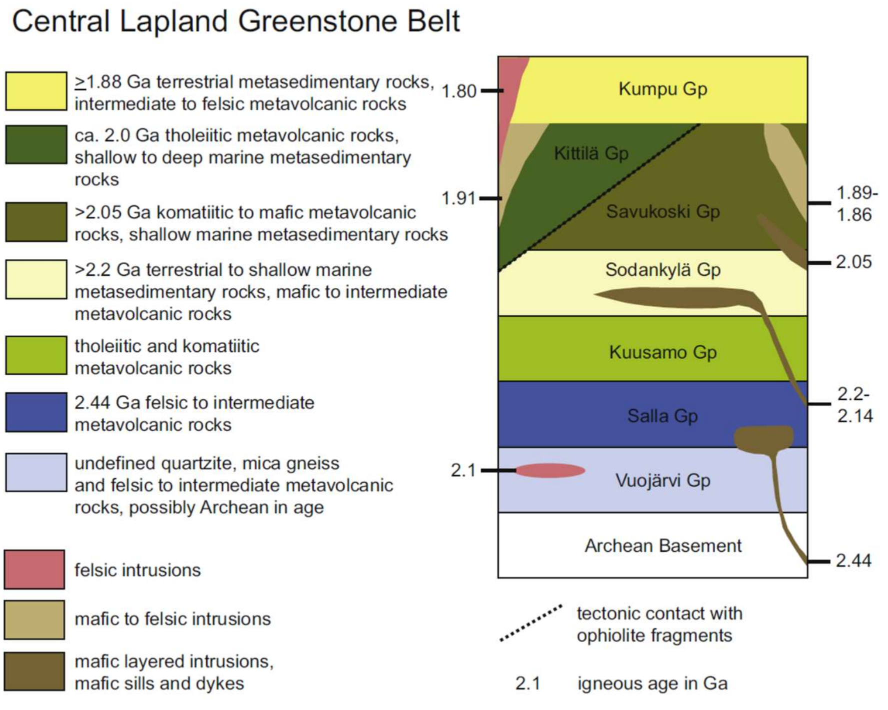
Figure 8_2
Geology and Gold Deposits of the CLGB



(Nirranen et al, 2015)

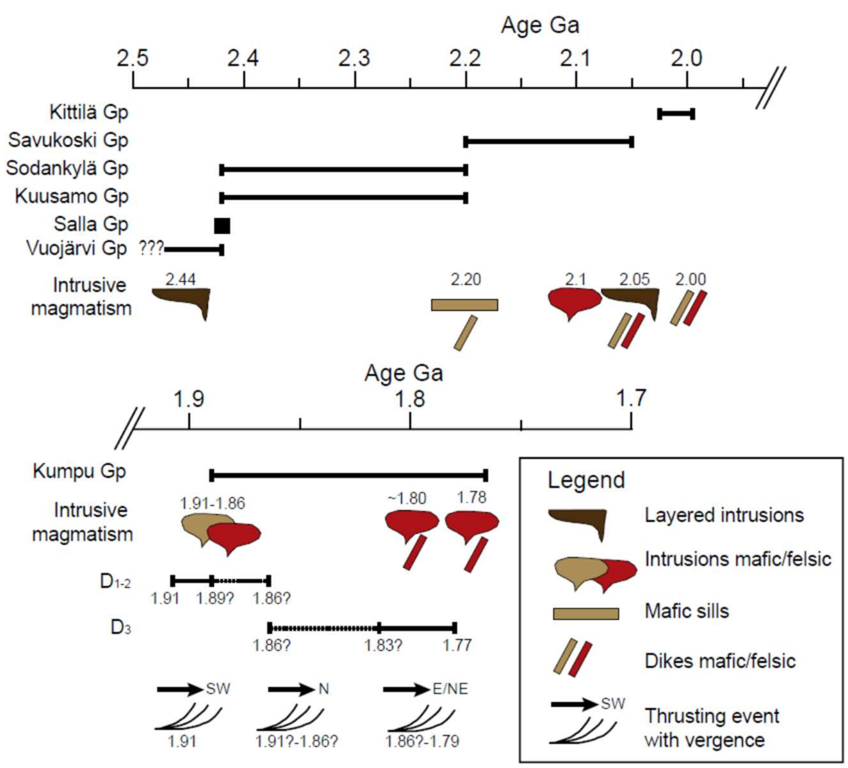
At a camp and district scale, known deposits cluster in proximity to transcrustal or other major deformation zones that are formed synchronously with the thickening of the crust during accretionary or collisional tectonic events. In most prospective districts, the deposits were formed at mid-crustal levels, as suggested by the dominant greenschist facies metamorphic assemblages of the host rocks (Nirranen et al, 2015). Within the Rupert land package, including known gold occurrences at Pahtavaara, Koppelokangas and Hookana, gold mineralisation is located close to a number of structures identified on regional geophysics within rocks of the Savukoski Group, and in the westernmost areas of Rupert's licence, hosted within the Kittila Group and the thrusted margin between the Kittila and Savukoski Groups (see Figure 8_3). Timing relationships are displayed in Figure 8_4.

Figure 8_3
Stratigraphy and Main Igneous Events of the CLGB



(Nirranen et al, 2015)

Figure 8_4
A Schematic Sequence of the Lithostratigraphic Groups, Intrusive Stages, and Deformation for the CLGB



(Wyche et al, 2015)

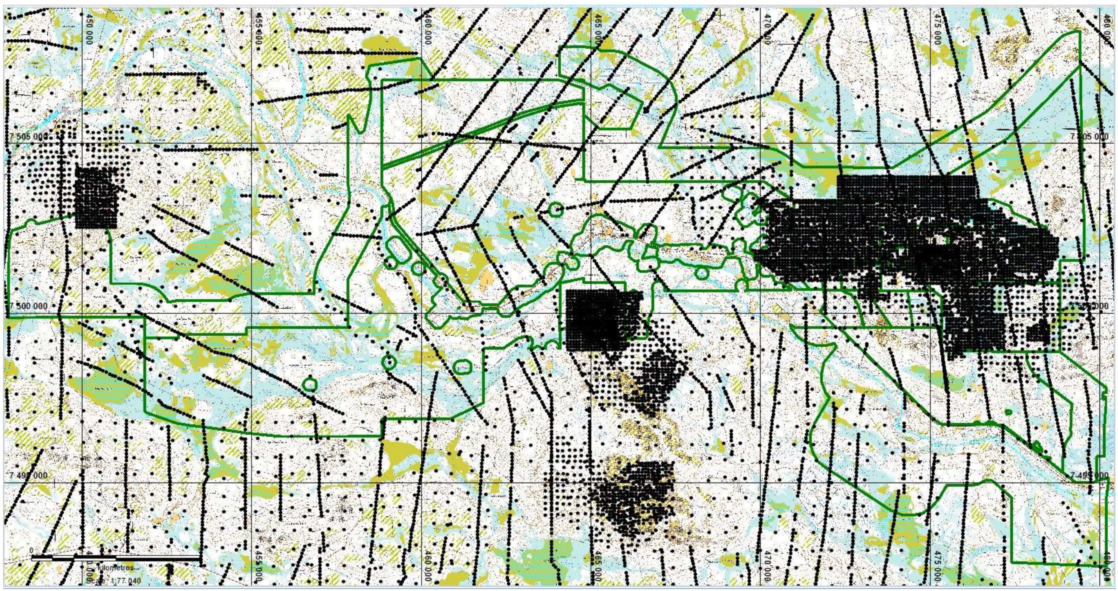
9. EXPLORATION

9.1 Previous Exploration

In the 1970s, the Geochemical Department carried out regional geochemical mapping along lines in the CLGB Belt. The concentration of Si, Al, Fe, Mg, Ca, Na, K, Ti, V, Cr, Mn, Co, Ni, Cu, Zn, Pb, and Ag were analysed. The area of the Sattasvaara komatiite complex was characterised by elevated contents of Mg, Cr, Ni, and Co, and several local Cu anomalies appeared in the monotonous komatiitic environment indicating sulphide mineralisation. Additional geochemical till sampling was carried out using a grid of 50 × 100m in the winter of 1984 to 1985 to check the Cu anomalies and Au was also analysed. A distinct Au anomaly was found in Pahtavaara and follow-up studies in 1985 including sampling of the bedrock surface by percussion drilling and excavated trenches, defined an altered zone containing visible gold between komatiitic lavas and tuffites (Pulkkinen et al.,1986; Korkiakoski, 1992).

Historical till sampling comprises 426,737 samples compiled in regional programs conducted by GTK and previous operators at Pahtavaara (see Figure 9.1_1). Some 38,298 samples were assayed for gold by a variety of analytical techniques and interpretation of the data is being undertaken.

Figure 9.1_1
Historical Base of Till Sampling



Grid: 5km

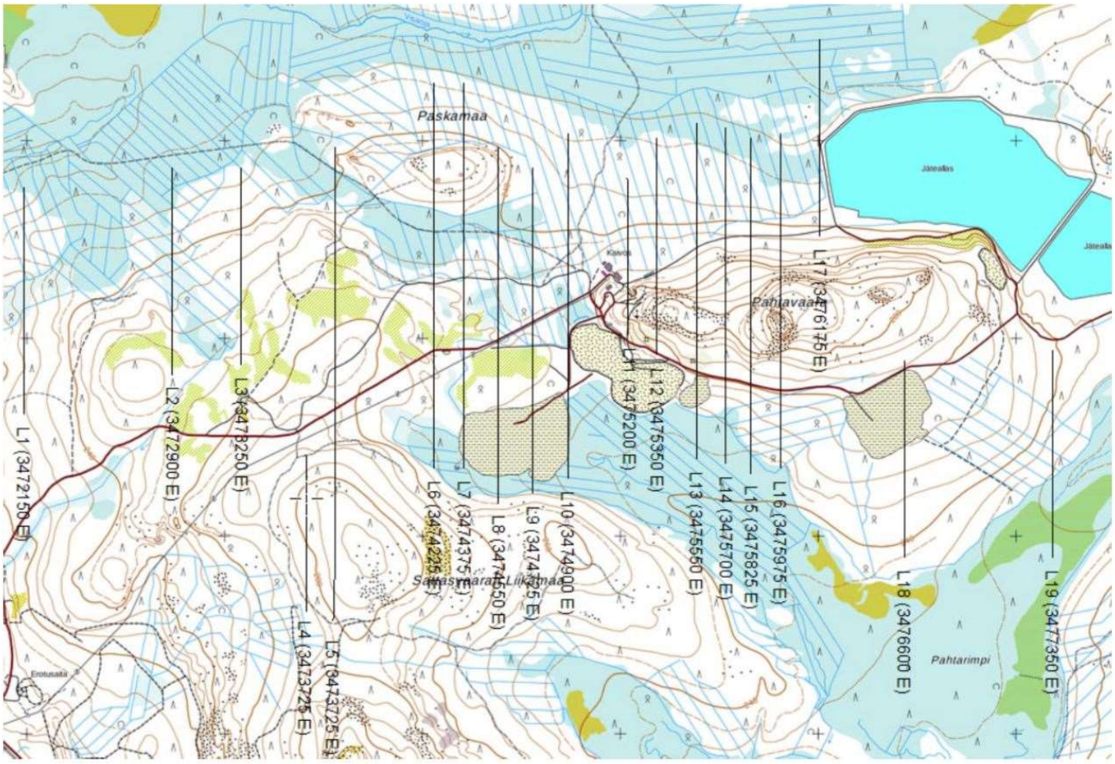
9.2 Geophysical Surveys by Previous Operators

The GTK flew airborne geophysics in the area in the 1970s and 1980s. The survey was originally flown with a low level DC-3 system between 1973 and 1979 and was resurveyed in the 1980s using the Twin Otter system. The surveys were flown at a height of 30m with some blocks flown on N-S lines and others E-W, depending on the geological strike. These surveys included aeromagnetic surveys, EM surveys and radiometric surveys. More detailed survey methods conducted by GTK included slingram and ground magnetic surveys. In addition to these surveys, previous operators have undertaken local IP and magnetic surveys on several targets, including Lappland Goldminers' electromagnetic (VTEM) survey in 2010 on near-mine targets and SkyTEM electromagnetic and magnetic surveys in 2011.

9.3 Exploration Undertaken by Rupert Resources

In 2016 an IP survey was conducted covering the mine site and the near-mine area totalling 27 line kilometres with 50m line spacing (see Figure 9.3_1). As of May 2018, Rupert Resources has an on-going program of low-altitude magnetic surveying using remote-controlled drones.

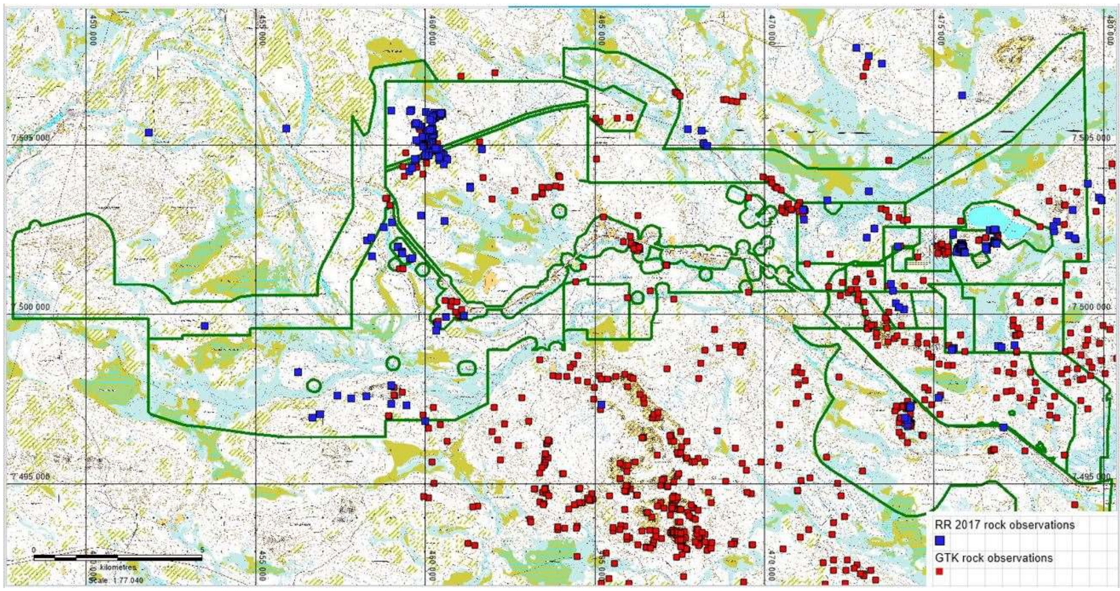
Figure 9.3_1
2016 IP Survey



Additionally, Rupert has completed a soil sampling programme during the 2017 field season. Soil samples include 950 ionic leach samples and 169 geochemical soil samples with multi-element assays, and 140 heavy mineral (till) samples, which were micro-panned using a Knelson concentrator and gold grains counted and classified according to grain morphology.

The bedrock mapping and boulder-hunting database contains 260 rock samples collected by Rupert, as well as additional 57 field observations (Figure 9.3_2). There are 2,920 additional observations in the database from GTK boulder and outcrop mapping.

Figure 9.3_2
Boulder and Outcrop Observations at Pahtavaara



Grid: 5km

10. DRILLING

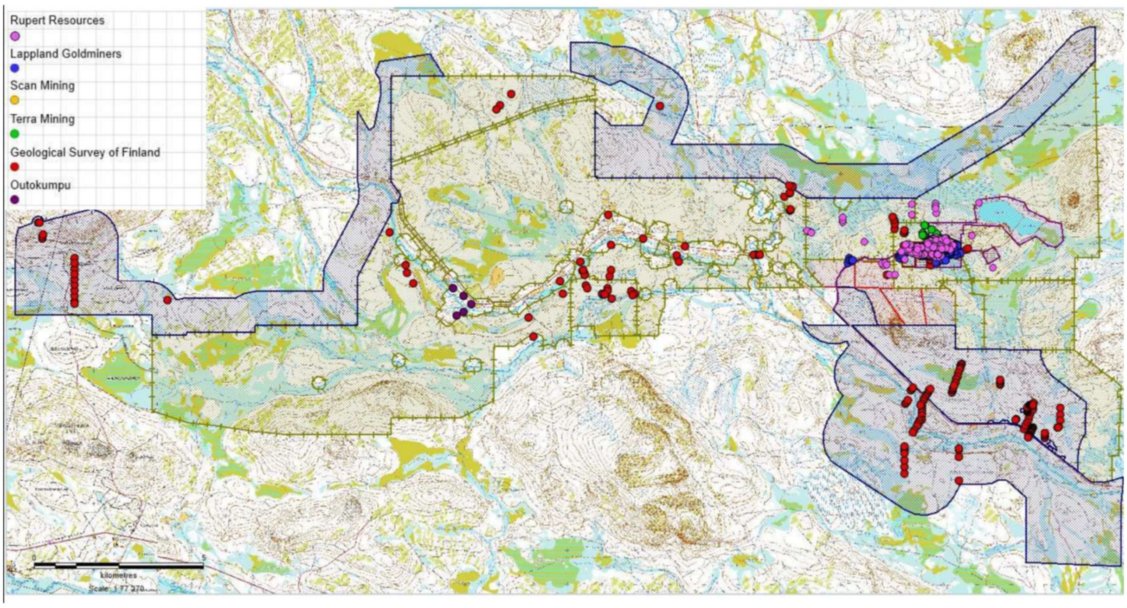
10.1 Drilling by Previous Operators

Between 1986 and 1987, GTK drilled 114 diamond drillholes totalling 3,639m. In 1989 GTK drilled a further 44 diamond drillholes totalling 10,800m.

During 1992 to 2000, Terra Mining drilled 160 diamond drillholes totalling 16,800m. Infill drilling was conducted using RC drilling and a total of 608 RC holes were drilled for 40,400m.

Between 2003 to 2007, Scan Mining drilled 807 diamond drillholes (a total of 92,700m) and 20 RC holes (a total of 1,100m). Lappland Goldminers conducted an exploration programme from 2009 to 2014. Lappland Goldminers drilled 1,233 diamond drillholes (154,573 meters). The exploration programme consisted of diamond drilling, geophysical surveys and till sampling in areas surrounding the mine. Figure 10.1_1 shows the location of diamond drillholes within the Pahtavaara Project licence area, subdivided by operator.

Figure 10.1_1
Diamond Drilling on the Pahtavaara Project Licence Area



10.2 Drilling by Rupert Resources

Rupert Resources began an exploration programme in June 2016 at the Pahtavaara deposit after acquiring the option on the property in March 2016. As of May 2018, Rupert Resources has drilled 377 diamond drillholes, totalling 52,937m, and completed 1010m of channel and chip sampling underground. Drilling from 2016 to 2018 was undertaken by contractor MK Core Drilling. The core diameter for underground drilling was 40.7mm (BQTK) and on surface 57.5mm (WL76). The average drillhole length of the Rupert Resources drilling is 140m. Downhole deviation surveys during 2016 were completed by the drilling contractor using a Deviflex downhole survey tool. Since mid 2017all drilled holes were oriented using Reflex Act III core orientation tool. All collar locations were surveyed by Rupert surveyor using total station.

Hole Planning and Set-up

After drillholes are planned the Rupert staff surveyors get collar coordinates and also coordinates for the planned end of the hole, along with the dip and azimuth.

For drillholes collared at the ground surface, the surveyor uses DGPS to locate the collar location, orients the hole direction from the azimuth determined from the DGPS (according to direction between start and end coordinates).

The collar location is marked by wooden marker (which has the planned hole number, the coordinates, azimuth and initial dip written on it). The planned azimuth of the hole is also is marked with another survey post oriented front in the planned drilling direction, An additional 'marker' peg is located in order to assist with the drill rig orientation. On orientation 'pegs' are annotated to indicate which is the 'front peg' (with the – HoleID) and which is the 'back peg' (also with the HoleID).

For surface holes, the drillers use the two orientation guide pegs to set up and orient the drill rig correctly.

For underground holes the starting point is marked on the tunnel wall and, as an orientation guide, an additional line is marked on the 'back' wall 180 degrees from the starting point.

Both the surface and underground drillholes are set up using the local grid system.

Surveying and Orientations

For surface drillholes the actual collar position is picked up using DGPS total survey equipment. The underground collar location is determined after drilling is completed using a tachimeter and a DGPS total station survey tool.

For dip and azimuth the surveyor takes two direction points, and using prisms to get the dip and dip direction.

The drilling contractor does downhole surveys after the drillhole has been completed. The current survey tools is a DeviFlex downhole survey instrument. The Deviflex instrument measures dip and azimuth every three meters, starting from the bottom of the hole and proceeding upwards to the drillhole collar. The survey data is delivered to the supervising geologist via email as csv- and ds-format using the DeviSoft instrument software.

10.3 Dry Bulk Density Collection

10.3.1 Historical Bulk Density Measurements

Minor density testwork was done by Scan Mining in 2005 at the Labtium laboratory in Sodankylä. The results are summarised in Table 10.3.1_1.

10.3.2 Lappland Goldminers' Bulk Density Measurements

Lappland Goldminers recognised that the densities at Pahtavaara varied between approximately 2.75 and 3.0t per cubic metre, depending on lithology. However, no geological model detailed enough to permit the use of a variable density model had been developed by Lappland Goldminers. In the absence of this an average density of 2.9t per cubic metre was used.

Table 10.3.1_1
Pahtavaara Gold Deposit
Density Testwork Completed by Scan Mining in 2005

Sample ID	Grade (Au/t)	Rock Type	Mass (g)	Volume (cm^3)	Density ($kg.m^3$)
05A4185	0.41	Bt-trem	7416	2477	2994
05A4186	5.51	Bt-trem	6925	2328	2975
05A4187	4.9	Dol vein	7547	2077	3635
05A4188	0.325	tlc-bt with dol	7538	2165	3482
05A4189	1.66	tlc-bt with dol	6131	2021	3034
05A4213	0.3	tlc-bt+ minor qz	7139	2451	2912
05A4214	0.8	tlc-bt schist	7275	2366	3075
05A4215	0.94	tlc-bt schist	7445	2432	3062
05A4216	0.97	qz vein rock	7379	2508	2942
05A4217	0.9	qz vein rock	7061	2409	2931

10.3.3 Rupert Resources Bulk Density Measurements

The Pahtavaara bulk density database contains 2,919 measurements, of which 2,166 have been recorded by Rupert Resources since 2016.

Since late 2017, all diamond drillholes have been routinely measured for density. A 10cm to 15cm piece of core from every second meter is weighed first in air, and then in water. These values are recorded in the AcQuire database, which calculates the density using formula density = ρsubstance / ρH2O , [dry weight/(dry weight-weight in water)].

The logging geologist marks additional measurement points to core boxes in cases of special rock types, for example massive sulphides or barite veins.

The bulk density of the lithologies at Pahtavaara between 2 to 4gm/cm^3 with an average value of 2.94.

10.4 Drill Database

The current database contains 2905 diamond drillholes (338,513m), 9,137 sludge holes (186,829m), and 12,373m of other drilling, including RC drilling and historical sludge drilling (see Table 6.4_1 and Figure 10.3_1 and 10.3_2). Channel sampling has also been included in the drillhole database.

The drilling database contains 317,700 Au assays and 32,609 multi-element assays. The database contains 105,103 surveys and 2,918 density measurements.

Figure 10.3_1
Long Section Looking North Showing All Drilling in the Pahtavaara Deposit

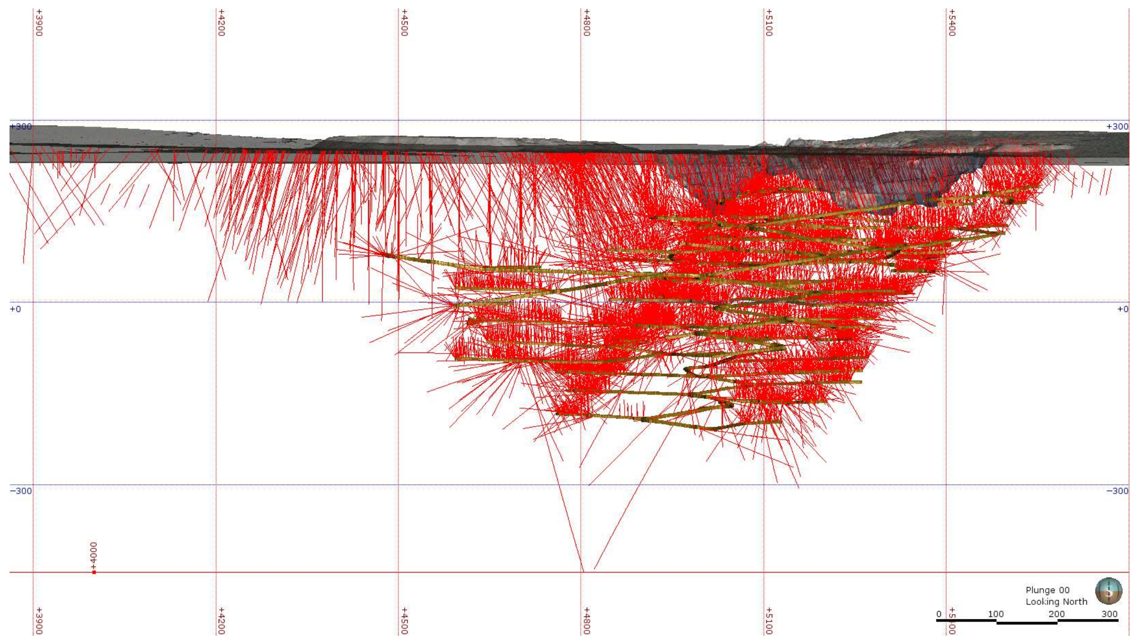
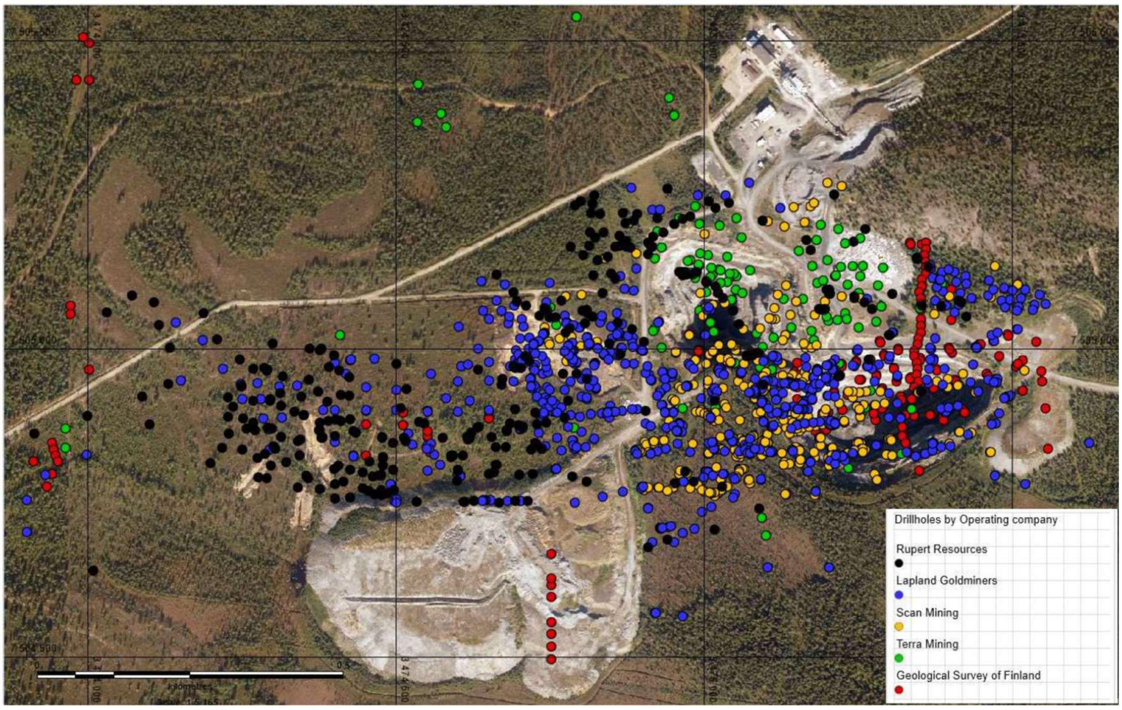


Figure 10.3_2
Plan View of Pahtavaara Showing Near Mine Drilling by Operator



Grid: 500m

Figure 10.3_3
Long Section of Gold Intersections at Pahtavaara (looking North)

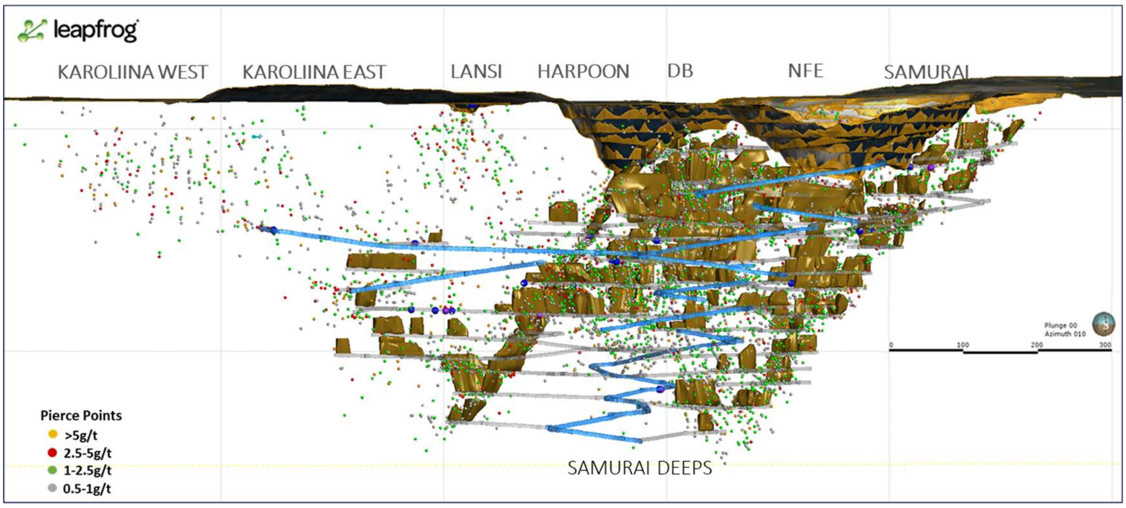
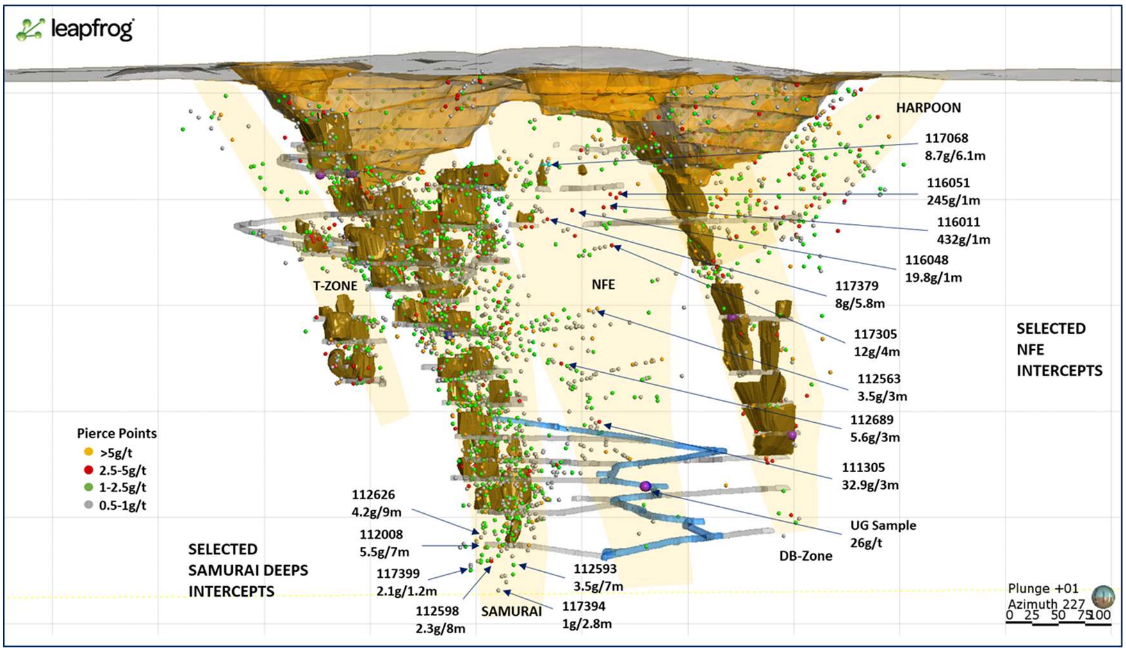


Figure 10.3_4
Cross Section Looking West Showing Main Zones



11. SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sample Method and Approach

11.1.1 Historical Sampling Methods

Samples were typically collected for 1m intervals and the sample intervals were marked by the company geologist, based on selective sampling of visually interpreted gold-mineralised intervals. Only the areas that were believed to be mineralised were analysed. A 3m buffer zone was used before and after the interpreted mineralised zones for additional sampling. Three quarters of the core was sent for analysis.

The underground drill chip (sludge) holes were sampled over the entire length of the drillhole with a sample of 2kg to 3kg for an average sample interval of 1.8m being collected.

11.1.2 Lappland Goldminers Sampling Methods

Samples were typically collected from 1m intervals and the samples were marked by the company geologist. Only the areas that were considered to be mineralised were sampled. A 3m buffer zone was used before and after the interpreted mineralised areas. Three quarters of the core was sent for analysis. Blanks, standards and duplicate samples were systematically added by the geologist into the sample sequence. In exploration diamond drillholes, every 40th sample was a control sample. In production diamond drillholes every 20th sample was a control sample.

The drill chip holes were analysed over the entire length of the drillhole. A sample of 2kg to 3kg was analysed.

The drill core was sawed on site in the logging facilities by company personnel. Three quarters of the drill core was sent to the lab for analysis, the rest was stored in core boxes. Fire assay with a 50gm sub sample was used until June 2007. After June 2007 the core samples were analysed for gold by a 500g subsample with the cyanide “Leachwell method” with an AAS finish to determine the cyanide extractable gold content.

The drill chip samples were split by an automatic splitter when drilling. Split samples (approximately 3kg) of the drill chips were put into numbered bags and sent for analysis. Up to February 2007, fire assay with a 50gm sub sample was used. From March 2007, the drill chips were analysed for gold by a 500g sub-sample with the cyanide “Leachwell method” and an AAS finish.

11.1.3 Historical Chain of Custody, Sample Preparation and Analyses

The drill core was delivered by the drilling contractor to the core logging facilities. The drill core was measured and logged by a company geologist. The assay sections were marked on the core boxes as well as on the core. Drill core was sawn by company personnel and put into metal boxes or plastic bags with an identical tag as on the core box. The drill chips were sampled underground by company personnel at the drill rig and the chip samples were delivered in wooden boxes to the logging facilities.

Drill chip samples and core samples were taken to the ALS preparation facility in Sodankylä by company personnel or shipped to Piteå (Sweden) by company personnel or a courier. Fire assay with a 50g sub sample was used until February 2007. From March 2007 the drill chips were analysed for gold by a 500g subsample using a cyanide leach method “Leachwell” method with an AAS finish. Drill core was analysed using Fire Assay with a 50g sub sample up until June 2007. The Cyanide “Leachwell” method was used for drill core analysis from June 2007.

11.1.4 Lappland Goldminers' Chain of Custody, Sample Preparation, and Analyses

All drill core, as well as chips, from percussion drilling were recovered by Goldminers' technicians or geologists as soon as it is produced.

Drill cores were laid out on the logging tables at the core logging facility and controlled by the company geologist ensuring that the core was in right order in the boxes. Geological logging was conducted by the company geologist. Sample positions, usually of 1m length as standard, were marked on the core boxes according to specific criteria depending on the project.

Every sample interval was labelled on the core boxes by a yellow sample identification digit badge and a line was drawn on the core along which the core was cut.

The core boxes were photographed and the photos stored on the company server. Drill core was geologically logged and RQD parameters were recorded continuously along the core. Density was determined by Archimedes (immersion) method every 10th metre as a standard along the core and magnetic susceptibility measured every metre along the hole and recorded.

All core logs were printed out in paper format and stored by the company geologist in binders at the office and all recorded, geological and other data were transferred into an Access database on the company server.

The core was cut with a diamond saw by Lappland Goldminers personnel. Core was cut along the line drawn by the company personnel and three quarters of the core placed in a plastic sample bag and the other quarter placed back into the core box. Every sample bag was labelled with an identical red sample identification digit badge as the sample interval on the core box.

The Labtium laboratory in Sodankylä, Finland was used for assaying gold in the core samples. Samples were transported to the laboratory by Lappland Goldminers personnel. The preparation and assay method for core samples was as follows. The sample preparation methods were Labtium code 14, 31 and 35. Gold was assayed by PAL 1000 cyanidation leach method and values were read by Flame-AAS method (Labtium code 236A). ALS Chemex was used for assaying the underground samples considered to have importance for surface exploration.

Samples analysed for ICP elements were transported by courier to ALS Chemex preparation laboratory in Piteå, Sweden. Gold was assayed at ALS Chemex laboratory at Rosia Montana in Romania. Base metals and silver were analysed at ALS Chemex laboratory in Vancouver in Canada. The preparation and assay methods for core samples are as follows. The sample preparation methods are ALS Chemex code PREP-31B and SPL-33. Gold was assayed by Fire Assay and AAS analysis, ALS Chemex code Au-AA26. Base metals and silver for 35 elements were assayed by aqua regia acid digestion and ICP-AES, ALS Chemex code ME-ICP41. Each method had its lower and upper calibration range and sample results falling above the upper calibration range for elements Au, Ag, As, Pb, Zn, Mo and Cu were re-assayed by methods with higher calibration ranges. The over limit samples were automatically re-assayed from Au-AA26 by Fire Assay with gravimetric finish, ALS Chemex code Au-GRA22, and from ME-ICP41 by aqua-regia digestion and AAS, ALS Chemex code (+)-AA46.

Blank samples, commercial standard samples and duplicate samples were inserted into the sample stream according to standard intervals set by Lappland Goldminers.

11.1.5 Rupert Resources Chain of Custody, Sample Preparation, and Analyses

The drilling contractor brings the core to Rupert logging facility each time they have 10 filled core boxes.

The sample handling team then checks that core samples are in right order, move the core inside the trays against its left border and assembles any broken segments if possible.

After organizing the core boxes and core samples, a "bottom line" is drawn on the core. Reflex ACT III orientation tool is used to get oriented core. The core is measured and meters intervals are marked on core boxes and on core.

Core logging is done by using Geobank Mobile logging software. Log sheets to be filled include lithology, structural data, magnetic susceptibility and core recovery (RQD) sheets and a sample data sheet.

The geotechnical logging includes the magnetic susceptibility and core recovery data. Once the meters are measured and marked correctly onto the core, the magnetic susceptibility of the core is measured. This is done meter by meter, at each meter mark by using a Terraplus KT-10 handheld magnetic susceptibility and conductivity meter. KT-10 has also a scanner mode, which automatically calculates the average susceptibility for each scanned interval.

RQD values are measured each meter interval and marked on the left side of each meter line in the core box with pencil. Geobank mobile calculates RQD percentage automatically from given recovery and RQD centimetres.

The geology logging includes the geology, "geozone" code, structure and sample data including company check samples.

After all the logging and sampling has been undertaken, all the core boxes are photographed. Two photographs are taken: the first of dry core and second of wet core.

The Geobank Mobile sampling table creates automatically 1 meter long sampling intervals. It also inserts a QC sample as every fourth sample. QC samples include commercial standards, blanks, and core, crush and pulp duplicates. Unique sample numbers are assigned to the QC samples based on sample books.

Sampling intervals are marked on the core box (below a certain interval) with a red marker. Places where the sampling intervals begin and end are marked with red arrows (on the core box and on the core) and the sampling number is written with the first 6 numbers at the top right edge of the core box and the last 3 numbers under each sample interval on the core box below the core at the beginning of the interval. The QC samples are marked on the core boxes. All sampling documents for a batch of samples, along with sachets containing standards and blanks and sample tickets are placed in a sealed bag for dispatch along with the batch of samples.

Drillcore is sawn in the Rupert core logging and sampling facility by a Rupert technician. After the core has been sawn, the samples (half core samples, QC samples, blanks, core duplicates and standards) are packed in plastic bags tagged with sample tag from the sample book. Samples are packed onto EUR-pallet to be shipped to laboratory. During packing each sample is weighted and the information is added to the database.

Geologists are responsible for creating new sample batches, and sending the sample submittal form and assay order form to the laboratory. Sample shipment is requested and followed up by the Rupert technician, who handles the contacts with the courier company.

The main assay laboratory used by Rupert between June 2016 and December 2016 was CRS/Actlabs Finland at Takatie 6, 90440 Kempele Finland. CRS have ISO9001 accreditation. The assay method was PAL1000, crush , cyanide leach and AAS finish.

From November 2016, ALS Minerals at Sodankyla, Finland (prep lab) and Pitea, Sweden (sample assay) have been phased in as the main assay provider. ALS Minerals is an internationally accredited lab and are ISO compliant (ISO 9001:2008, ISO/IEC 17025:2005). The assay method utilised is Leachwell with an AAS finish.

All core is under custody from the drill site to the core processing facility. The Company's QA/QC program includes the regular insertion of blanks and standards into the sample shipments, as well as duplicate sampling. Standards, blanks and duplicates are inserted at appropriate intervals. Approximately five percent (5%) of the pulps and rejects are sent for check assaying at a second lab with the results averaged and intersections updated when received. Core recovery in the mineralised zones has averaged 99%.

11.2 Assay Quality Control

Analysis of internationally accredited assay standards or certified reference material ("CRM") has been carried out. For information relating to drilling and sampling undertaken prior to 2016, the sections are quoted from the 2013 Micon International Co. Ltd ("Micon") independent NI 43-101 report (Micon, 2013). The relevant sections are replicated here and are identifiable as being in italics.

For drilling carried out since re-initiation of exploration (from 2016 until the present) the following sets of data have been reviewed and statistically assessed:

- CRM submitted by Rupert Resources (Rupert) to the independent assay laboratories.
- CRM inserted internally by the assay laboratories.
- Sample pairs, including channel samples, drill core duplicates, crushed core duplicates, pulp duplicates and pulp replicates.
- Barren samples ("blanks") submitted by both Rupert and the two assay laboratories (ALS and CRS).

11.3 Pre-2016 Data

Micon carried out a review and statistical analysis of spreadsheet data relating to the analysis of standards, duplicates and blanks completed by the main assay laboratory during 2012.

The following text summarises the approach taken by Micon (which is taken from their 2013 report):

> *The standards (certified reference materials) used by Pahtavaara were prepared, certified and supplied by: Ore Research & Exploration Pty Ltd (OREAS), 6-8 Gatwick Road, Bayswater North Victoria 3153, Australia.*
>
> *The Pahtavaara data includes assay results for 1,262 standard, blank and duplicate samples. These data were checked and categorised. Obvious errors were corrected as appropriate.*

Table 11.3_1 (note the table numbering has been adapted to match the current report) shows the certified assay values and expected Performance Gates (A Performance Gate is a control value specified as a Standard Deviation of the Certified Value) of the gold standards used at Pahtavaara.

Table 11.3_1
Pahtavaara Gold Deposit
Gold Ore Reference Material
Performance Gates (Standard Deviations)

Absolute Standard Deviations							
Standard	Constituent	Certified Value	1SD	2SD		3SD	
				Low	High	Low	High
OREAS 15d - (SH)	Au (ppm)	1.559	0.042	1.475	1.643	1.433	1.685
OREAS 15g - (SF)	Au (ppm)	0.527	0.023	0.481	0.573	0.458	0.596
OREAS 15h - (SK)	Au (ppm)	1.019	0.025	0.970	1.068	0.945	1.093
OREAS 19a - (SJ)	Au (ppm)	5.490	0.100	5.290	5.690	5.190	5.790
OREAS 12a - (SI)	Au (ppm)	11.790	0.240	11.310	12.270	11.070	12.510
OREAS 60b - (SD)	Au (ppm)	2.570	0.110	2.350	2.780	2.250	2.890
OREAS 61d - (SE)	Au (ppm)	4.760	0.140	4.470	5.040	4.330	5.190
OREAS 18c - (SM)	Au (ppm)	3.520	0.110	3.310	3.730	3.200	3.840
OREAS 10c - (SO)	Au (ppm)	6.60	0.16	6.27	6.92	6.61	7.08
OREAS 16a - (SN)	Au (ppm)	1.81	0.06	1.68	1.93	1.62	1.99
OREAS 62c - (SR)	Au (ppm)	8.79	0.21	8.36	9.21	8.15	9.42

Performance Gates (Absolute Values)									
Standard	Constituent	Certified Value	1SD		2SD		3SD	
			Low	High	Low	High	Low	High
OREAS 2Pd - (SA)	Au (ppm)	0.885	0.855	0.914	0.826	0.943	0.797	0.973
OREAS 6Pc - (SG)	Au (ppm)	1.520	1.460	1.590	1.390	1.660	1.320	1.720
OREAS 15Pb - (SB)	Au (ppm)	1.060	1.030	1.090	1.000	1.120	0.970	1.140
OREAS 53Pb - (SC)	Au (ppm)	0.623	0.602	0.644	0.581	0.666	0.559	0.687

The Performance Gates for each standard are as follows:

- *Value for the Upper Control Limit (UCL) and Lower Control Limit (LCL) are provided by the manufacturer;*
- *UCL and LCL are 3 standard deviations above and below the Certified Value of each standard;*
- *Values for the Upper Warning Limit (UWL) and Lower Warning Limit (LWL) are provided by the manufacturer; and*
- *UWL and LWL are 2 standard deviations above and below the Certified Value of each standard.*

None of the standard sample assay results should fall outside the UCL or LCL.

Not more than 5% (i.e. 1 in 20) of the assay values should fall outside the UWL and LWL.

The assay values for standard samples returned by the Main Laboratory were compared with the OREAS certified assay values by plotting the assay values against the Certified Value of the material and its Performance Gates. A summary of the analysis of the standard samples is shown in Table 11.3_2.

Table 11.3_2
Pahtavaara Gold Deposit
Summary of Standard Assay Results

Standard Label	Mean Grade of Standard (Au g/t)	Number of Data Points	Points Outside UCL and LCL	Percentage of Points Outside UCL and LCL (%)	Comments
SA	0.89	5	5	Not Plotted	-
SB	1.06	1	0	Not Plotted	-
SC	0.62	0	0	No Points	-
SD	2.57	0	0	No Points	-
SE	4.76	1	1	Not Plotted	-
SF	0.53	6	3	Not Plotted	-
SG	1.52	12	9	75	Total loss of laboratory control
SH	1.56	29	26	89	Total loss of laboratory control
SI	11.79	54	51	94	Total loss of laboratory control
SJ	5.49	72	63	87	Total loss of laboratory control
SK	1.02	9	9	100	Total loss of laboratory control
SM	3.52	35	25	71	Total loss of laboratory control
SN	1.81	17	13	76	Total loss of laboratory control
SO	6.60	27	25	92	Total loss of laboratory control
SR	8.79	5	3	60	Total loss of laboratory control

Micon commented as follows:

If more than 2 successive points in a plot lie outside the UCL and LCL this indicates a significant loss of control by the assay laboratory. More than 4 points on one side or the other of the mean (the mean being the Certified Value for a Standard) signifies a drift in the assaying process used by the laboratory or a significant bias in the results.

The assay results have been plotted in time order. Progressive changes about the mean or cyclic variations of assay values suggest a time dependent variation and loss of control and precision in the assaying procedures of the laboratory.

The assay values for standards SA, SB, SC, SD, SE and SF were not analysed. Data points were too few to provide a meaningful analysis.

The control plots produced by Micon for the time-ordered assays of the CRM show that the assay laboratory was routinely 'undercalling' the expected assay grade, for all CRM investigated. Micon concluded that:

The analysis of the quality control data shows that the results provided to Pahtavaara by the assay laboratory are of poor quality. The laboratory appears to be reporting consistently lower values for the standards. This conclusion is reinforced by the analysis of the duplicate samples.

The mine should investigate the reasons for the variations in standard assay values and should carefully consider the impact of this investigation on the reliability and use of the assay results provided during this period.

It appears that the assay method used to routinely analyse samples from Pahtavaara is the 'Leachwell' method, which is a cyanide –extractable gold assay method with an AAS finish. The assay method is designed to be carried out on samples larger than 500 grammes and will only determine the cyanide-extractable component of in-situ gold, not the total gold content. It is evident that the main problem with the under-calling is that the OREAS reference standards are based on multiple fire assay/AAS analyses at a larger number of independent laboratories and is intended to quantify the total gold content of the standard in question, not the cyanide extractable component. It appears that all the standards have a proportion of gold that cannot be extracted by the Leachwell method. This point will be discussed further below.

Micon also undertook a review of some 511 blank samples. Micon commented as follows:

> *Of the 511 blank samples that were analysed only 4 were shown to have a value above the nominal zero detection limit of 0.010 Au g/t. This is less than 0.01% of the total number of samples. The material being used for blank samples is therefore regarded as satisfactory.*

Micon reviewed the data for 75 duplicate samples. It is not specified in the Micon report what sort of duplicate sample was being reviewed. Micon noted that the largest 'errors' are associated with the low grade samples (quoted as being less than 1.0g/t). Micon concluded as follows:

> *The greatest errors are attributed to the lowest grade samples. This conclusion is not unexpected given the difficulty the assaying laboratories have in achieving satisfactory repeatability for the standard control samples.*

Review of the figures in the Micon report suggests that the great majority of the duplicate pairs return a mean grade of between 0.1g/t and 1.0g/t, with the relative error between ± 10% and ±100%.

11.4 Post 2016 Data

11.4.1 Introduction

QAQC data from sampling and analyses carried out from 2016 to the present have been compiled in the new Pahtavaara AcQuire relational database. The relevant information has been downloaded for statistical review and analysis and includes the following datasets:

- Blanks:
  - Submitted by Rupert
  - Internal; ALS blanks
  - Internal CRS blanks
- CRM (Standards):
  - Submitted by Rupert:
    - To ALS
    - To CRS
  - ALS internal CRM
  - CRS internal CRM

- Data Pairs:
  - Submitted to ALS and CRS:
    - Channel samples (ALS only).
    - Core duplicates (quarter core pairs).
    - Crush duplicates (duplicates taken after the jaw crush stage).
    - Lab duplicate (duplicate samples taken after size reduction to a p80 of 745 microns).
    - Pulp duplicates (duplicates samples taken from within one pulp sachet).

11.4.2 Blanks

Analyses on blanks have been carried out on blank samples submitted by Rupert and on inserted blanks inserted by ALS and CRS, as part of the laboratory QAQC procedures.

Table 11.4.2_1 summarises the results of assaying blank samples. For the great majority of analyses, the blanks returned less than detection limit results. The only exception is for 4 samples submitted by Rupert, which appear to have been mislabelled because they returned 34.4, 6.09, 1.03 and 1.01g/t respectively.

Table 11.4.2_1
Pahtavaara Gold Deposit
Blanks

Standard	Assay Method	Laboratory	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
Blanks Submitted by Rupert								
BLK-CO01*	Au-AA15-ppm	ALS	823	0.01	0.06	497.1	2039.6	99
BLK-CO01	Au-ICP24-ppm	ALS	121	0.001	0.001	-47.9	19.1	100
BLK-CO01	Au-PAL1000-ppm	CRS	197	0.05	0.025	-49.7	7.1	100
Internal ALS blanks								
BLK-ALS	Au-AA15-ppm	ALS	1491	0.01	0.006	-41.3	34.4	83
BLK-ALS	Au-AA26-ppm	ALS	14	0.01	0.005	-50.0	0.0	100
BLK-ALS	Au-ICP24-ppm	ALS	170	0.001	0.001	-13.8	71.2	100
Internal CRS blanks								
BLK-CRS	Au-PAL1000-ppm	CRS	193	0.050	0.025	-50.0	0.0	0

* Note: Includes obvious mis-labelled samples returning 34.4, 6.09, 1.03 and 1.01g/t

In summary both laboratories produced acceptable assaying of blank samples.

11.4.3 CRM Submitted by Rupert

Rupert routinely submitted accredited CRM to both ALS and CRS. Table 11.4.3_1 summarises the results of assaying of CRM that had been submitted to ALS, while Table 11.4.3_2 summarises the results of CRM sent to CRS.

Both ALS and CRS routinely returned lower than expected values for all the CRM, with the exception of OREAS-214 and OREAS-216. These two CRM will be discussed further below. Figure 11.4.3_1 shows the control graph for CRM CDN-CM4 which has been submitted 110 times as part of the sample stream, while Figure 11.5.3_2 shows the control graph for CRM OREAS-214. As shown in Figure 11.4.3_1 the assay technique used (Leachwell) has result in an overall 'under-call' of the expected gold content of the CRM. In the example of CRM OREAS_214, the great majority of analyses are within tolerance (two standard deviations), however some periodic drift is clearly evident.

Table 11.4.3_1

Pahtavaara Gold Deposit
Standards Submitted to ALS by Rupert Resources

Standard	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
BLK-CO01	711	0.01	0.007	-31.6	62.3	27
CDN-CGS-20	8	7.75	7.07	-8.8	4.7	25
CDN-CM-17	23	1.37	1.25	-8.4	4.9	57
CDN-CM4	110	1.18	1.05	-10.9	6.4	45
OREAS-10C	5	6.60	5.53	-16.2	7.9	0
OREAS-15D	6	1.559	1.233	-20.9	4.7	0
OREAS-16A	6	1.810	1.462	-19.2	5.8	0
OREAS-18C	6	3.520	2.773	-21.2	6.3	0
OREAS-19A	11	5.490	4.542	-17.2	5.9	0
OREAS-203	4	0.871	0.735	-15.6	7.6	0
OREAS-204	4	1.040	0.895	-13.9	7.6	25
OREAS-208	2	9.250	8.185	-11.5	2.0	0
OREAS-214	205	2.920	2.892	-1.0	3.5	92
OREAS-216	289	6.530	6.481	-0.7	3.8	91
OREAS-62C	3	8.790	7.393	-15.9	1.3	0
OREAS-62D	5	10.500	9.558	-9.0	3.4	20

Table 11.4.3_2

Pahtavaara Gold Deposit
Standards Submitted to CRS by Rupert Resources

Standard	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
BLK-CO01	192	0.01	0.03	151.3	7.2	0
CDN-CM4	2	1.18	1.14	-3.4	1.8	100
OREAS-10C	4	6.60	5.90	-10.6	1.4	0
OREAS-15D	9	1.559	1.429	-8.3	8.7	22
OREAS-16A	3	1.810	1.613	-10.9	6.4	33
OREAS-18C	6	3.520	3.052	-13.3	2.9	0
OREAS-19A*	8	5.490	7.393	34.6	86.5	0
OREAS-203	6	0.871	0.952	9.3	8.4	33
OREAS-204	9	1.040	1.086	4.4	6.5	44
OREAS-208	2	9.250	8.880	-4.0	2.8	100
OREAS-214	37	2.920	2.945	0.9	2.3	100
OREAS-216	43	6.530	6.419	-1.7	1.9	100
OREAS-62D	4	10.500	10.225	-2.6	1.1	100

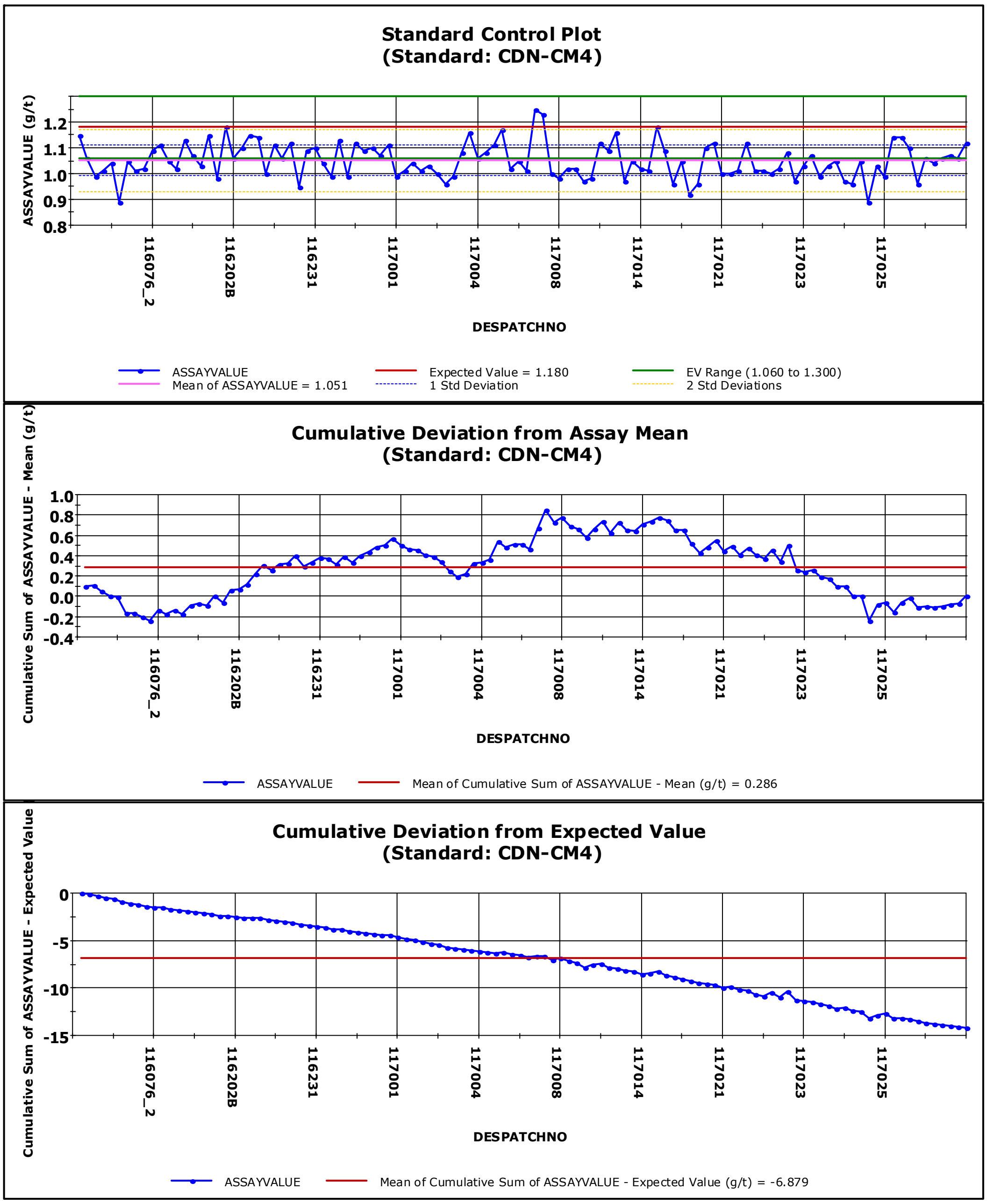
NOTE: One sample returned 24.3g/t (most likely substitution error)

As discussed in Section 11, the principal assay method for gold being used since 2007 at Pahtavaara incorporates the Leachwell technique, which uses a cyanide-extractable approach. Unfortunately all the CRM that have been submitted by both Rupert and ALS and CRS are based on gold values determined by multiple fire assay/AAS analyses, which have been completed to represent the total gold content of the CRM rather than the cyanide-extractable component. As a result, it appears that both laboratories have 'under-called' the CRM expected values, most likely due to the choice of assay method, not the actual performance of the laboratories per se.

Figure 11.4.3_1
Control Graph CDN-CM4

Summary
(Standard: CDN-CM4)

Standard:	CDN-CM4	No of Analyses:	110
Element:	ASSAYVALUE	Minimum:	0.890
Units:		Maximum:	1.250
Detection Limit:		Mean:	1.051
Expected Value (EV):	1.180	Std Deviation:	0.068
E.V. Range:	1.060 to 1.300	% in Tolerance	44.545 %
		% Bias	-10.940 %
		% RSD	6.437 %

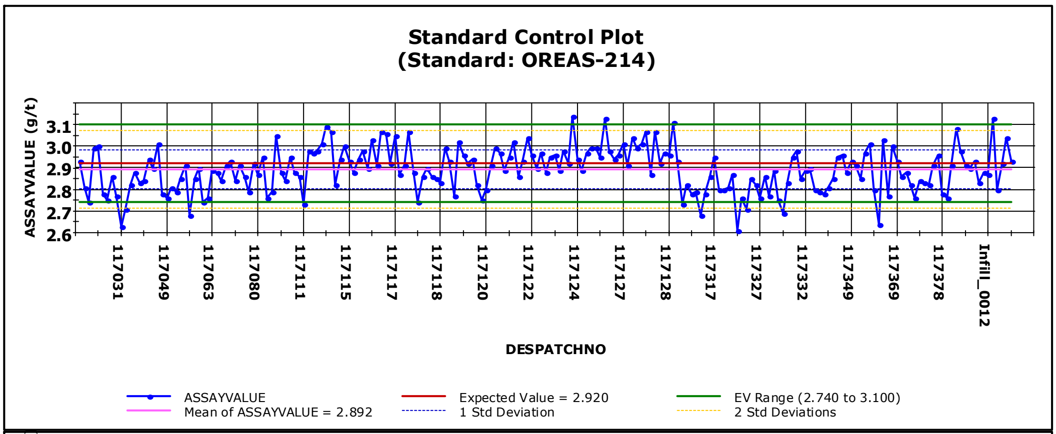


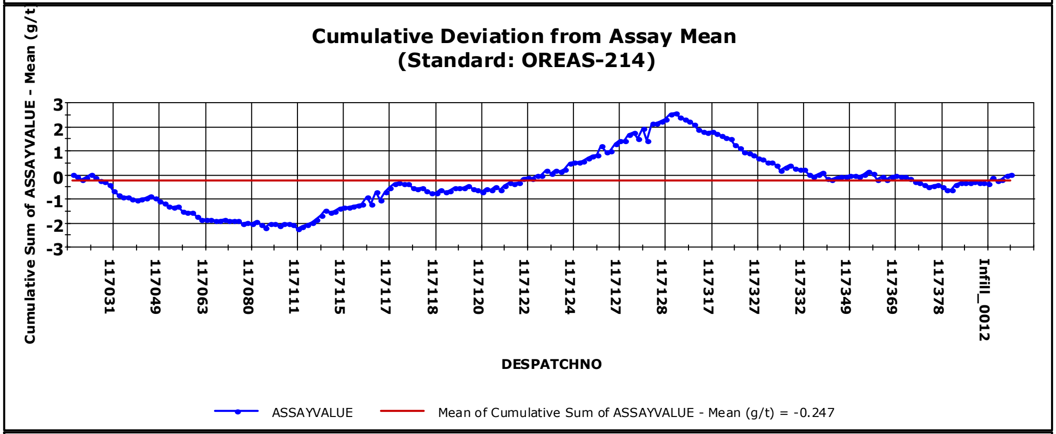
Printed: 08-May-2018 18:40:38 Data Imported: 08-May-2018 18:33:47 Page 1

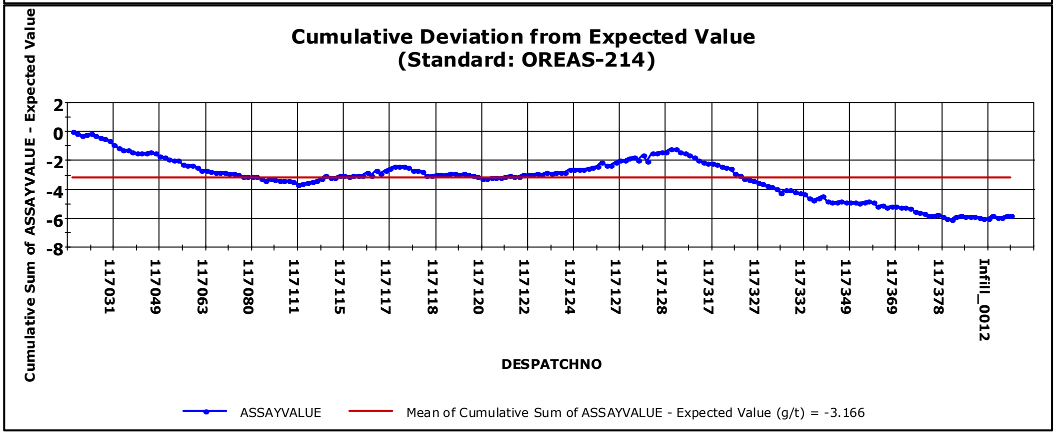
Figure 11.4.3_2
Control Graph OREAS-214

Summary
(Standard: OREAS-214)

Standard:	OREAS-214		No of Analyses:	205
Element:	ASSAYVALUE		Minimum:	2.610
Units:			Maximum:	3.140
Detection Limit:			Mean:	2.892
Expected Value (EV):	2.920		Std Deviation:	0.101
E.V. Range:	2.740 to 3.100		% in Tolerance	91.707 %
			% Bias	-0.971 %
			% RSD	3.493 %







Printed: 08-May-2018 18:49:25 Data Imported: 08-May-2018 18:33:47 Page 1

Appendix 1 contains figures of the control graphs for CRM submitted by Rupert to ALS, while Appendix 2 contains control graphs for standards submitted by Rupert to CRS.

11.4.4 Internal CRM analysed by ALS

ALS, as part of their standard QAQC procedures routinely analyse CRM prepared by independent suppliers. Rupert has obtained all the available internal ALS CRM analytical results and statistical analysis has been carried out on the gold data.

Table 11.4.4_1 summarises the results of the analytical performance by ALS on these internally submitted CRM. The assay method used for the different CRM is also noted in Table 11.4.4_1. Analysis of many of the CRM has resulted in an ;under-call' compared to the expected value, and it is considered that this is due to the choice of analytical method, resulting in a partial gold extraction.

Table 11.4.4_1
Pahtavaara Gold Deposit
ALS Internal Standards

Standard	Assay Method	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
BLK_ALS	AA15	1491	0.01	0.006	-41.3	34.4	83
BLK_ALS	ICP24	170	0.001	0.001	-13.8	71.2	100
BLK_ALS	AA26	14	0.01	0.005	-50.0	0.0	100
G910-3	AA15	17	4.03	3.90	-3.3	3.5	82
G912-1	AA26	5	7.290	7.190	-1.4	1.1	100
G912-5	AA26	7	0.380	0.364	-4.1	2.5	100
GLG304-1	AA26	7	0.154	0.153	-0.7	3.0	100
GLG904-1	AA15	21	0.204	0.201	-1.5	9.5	100
GLG908-4	AA15	2	0.066	0.060	-8.9	16.7	50
OREAS-12A	AA15	3	11.790	10.217	-10.8	3.9	0
OREAS-12A	AA26	2	11.790	11.850	0.5	1.7	100
OREAS-200	AA26	5	0.340	0.336	-1.2	2.4	100
OREAS-204	AA15	251	1.007	0.958	-4.9	3.3	98
OREAS-250	AA15	505	0.309	0.303	-2.1	5.1	86
OREAS-253	AA15	175	1.22	1.176	-3.6	3.3	91
OREAS-256	AA15	324	7.510	7.545	0.5	3.3	99
OREAS-214*	AA15	257	3.03	2.930	-3.3	13.7	66
OREAS-216*	AA15	344	6.530	6.413	-1.8	8.8	89
OxA89	AA15	11	0.084	0.081	-3.2	37.8	0
OxP116	AA15	21	14.920	14.780	-1.0	2.3	76
ST14/9501	AA15	73	0.430	0.398	-7.5	3.7	100
ST-463	AA15	58	9.370	9.370	0.0	2.3	100
OXL118	AA26	11	5.828	5.812	-0.3	1.0	82
OxT126	AA26	3	0.806	0.780	-3.2	0.0	0
CDN-CM17	ICP24	9	1.370	1.427	4.1	3.8	89
LEA-16	ICP24	37	0.501	0.497	-0.9	2.3	97
OREAS-221	ICP24	6	1.060	1.060	-0.2	1.7	100
OREAS-214	ICP24	50	3.030	3.030	-0.2	2.7	96
OREAS-216	ICP24	43	6.530	6.690	2.4	3.2	84
OXL118	ICP24	35	5.830	5.860	0.5	1.3	71

NOTE: Maximum value 7.1g/t (most likely substitution/miss-labelling error)

Appendix 3 contains control graph figures for the ALS internal standards and blanks.

11.4.5 Internal CRM analysed by CRS

CRS have also routinely undertaken internal analyses of CRM as part of their standard QAQC procedures. Table 11.4.5_1 summarises the analytical data for the three CRM routinely used by CRS. All three standards have returned a slight 'under-call' with the effect being more pronounced for OREAS-12, although only 4 assays are available for review.

Table 11.4.5_1
Pahtavaara Gold Deposit
CRS Internal Standards

Standard	Assay Method	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
GR313-10	PAL1000	114	45.86	45.32	-1.2	2	100
G915-10	PAL1000	81	48.920	47.350	-3.2	2.0	100
OREAS-12	PAL1000	4	11.790	10.770	-8.7	1.0	0

Appendix 4 contains the control graphs for the CRS internal CRM.

11.4.6 Comparison of common CRM

A number of CRM have been routinely analysed both as submission with the sample stream by Rupert and as internal standards as part of the laboratories' QAQC procedures. Table 11.4.6_1 summarises these common CRM. Standards OREAS-214 and OREAS-216, in particular, have been assayed multiple times. It is clearly evident that similar levels of 'under-call' (albeit low) have been returned from both laboratories; either as their own internally submitted standards or as part of the Rupert sample stream. It is evident that these standards performed as expected, which suggest that, compared to the other CRM, the gold content in these two CRM is almost completely cyanide soluble. This observation tends to suggest that it is the cyanide solubility of the standards rather than lab practices that has caused the routine 'under-calling' of the expected values (which are based on multiple fire assay/AAS results).

Table 11.4.6_1
Pahtavaara Gold Deposit
Comparison of Commonly Submitted Standards

Standard	Submitted By	Laboratory	Assay Method	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
OREAS-204	Rupert	ALS	AA15	4	1.040	0.895	-13.9	7.6	25
OREAS-204	Rupert	CRS	PAL100	9	1.040	1.086	4.4	6.5	44
OREAS-204	ALS	ALS	AA15	251	1.007	0.958	-4.9	3.3	98
OREAS-208	Rupert	ALS	AA15	2	9.250	8.185	-11.5	2.0	0
OREAS-208	Rupert	CRS	PAL100	2	9.250	8.880	-4.0	2.8	100
OREAS-214	Rupert	ALS	AA15	205	2.920	2.892	-1.0	3.5	92
OREAS-214	Rupert	CRS	PAL100	37	2.920	2.945	0.9	2.3	100
OREAS-214*	ALS	ALS	AA15	257	3.030	2.930	-3.3	13.7	66
OREAS-214	ALS	ALS	ICP24	50	3.030	3.030	-0.2	2.7	96
OREAS-216	Rupert	ALS	AA15	289	6.530	6.481	-0.7	3.8	91
OREAS-216	Rupert	CRS	PAL100	43	6.530	6.419	-1.7	1.9	100
OREAS-216*	ALS	ALS	AA15	344	6.530	6.413	-1.8	8.8	89
OREAS-216	ALS	ALS	ICP24	43	6.530	6.690	2.4	3.2	84

NOTE: Maximum value 7.1g/t (most likely substitution/miss-labelling error)

11.5 Data Pairs

11.5.1 Introduction

Available data pairs have been reviewed, subdivided by the assay laboratory. The different types of data pairs comprise the following:

- Channel samples (ALS only).
- Core duplicates (quarter core pairs).
- Crush duplicates (duplicates taken after the jaw crush stage).
- Lab duplicate (duplicate samples taken after size reduction to a p80 of 745 microns).
- Pulp duplicates (duplicates samples taken from within one pulp sachet).

The paired assay data has been assessed using the following techniques and plots:

- Thompson and Howarth Plot (T & H).
- Ranked percentage Half Absolute Relative Difference plot (Rank % HARD).
- Mean versus % HARD plot.
- Mean versus percentage Half Real Difference plot (% HRD).
- Correlation Plot.
- Quantile-Quantile Plot.

In order to remove the potential distorting effect of sample pairs returning very low gold grades, the statistical analysis has been undertaken on sample pairs returning great or equal to 0.1g/t as well as routine review of all available samples.

11.5.2 Samples Submitted to ALS

Samples submitted to ALS for data pair analysis have included the following sample types:

- Channel Samples:
  - Field duplicates (samples taken from two parallel channels).
  - Lab Duplicates (produced by taking two sub-samples from the size-reduced channel sample at a notional particle size of p80 passing 75 microns).
- Core Samples:
  - Core duplicates (two separate quarter core samples from the same sample interval.
  - Crush duplicates (two samples taken after jaw crushing to a nominal 2 to 3mm.
  - Lab Duplicates (two samples taken after size reducing the material to a notional p80 75 microns).
  - Pulp duplicates (two sub-samples taken from the same pulp sachet).

In addition, the data has also been assessed in terms of the two assay methods used by ALS (AA15 and ICP24).

Table 11.5.2_1 summarises the results of the statistical analysis of the various data pairs submitted to ALS. In general the typical pattern of reduced variability (precision) as the particle size of the sample is reduced is seen, for example, in drill core sample pairs analysed by the AA15 method, the percentage HARD value reduces from 26% for the core duplicates to 7.4% for the pulp duplicates. The same example shows low levels of bias (% HRD) between the sample pairs. Figure 11.5.2_1 illustrates the resulting graphs for the lab duplicate stage of this example. The full set of graphs for sample pairs submitted to ALS are contained in Appendix 5.

Table 11.5.2_1
Pahtavaara Gold Deposit
Duplicate Sample Review: Samples Submitted to ALS

Sample Type	Duplicate Type	Assay Method	Min.	Number	Au1 Mean (g/t)	Au2 Mean (g/t)	Correlation		HARD (%)	HRD (%)
							Pearson	Spearman		
Channel	Field Duplicate	AA15	0.001	20	0.29	0.17	0.93	0.98	18.4	16
Channel	Field Duplicate	AA15	0.1	6	0.79	0.52	0.97	0.99	20.0	14.0
Channel	Lab Duplicate	AA15	0.001	54	0.24	0.04	0.03	0.6	59.9	57.2
Channel	Lab Duplicate	AA15	0.1	6	0.26	0.26	1.0	1.0	1.7	2
Drill Core	Core duplicate	AA15	0.001	414	0.04	0.05	0.84	0.94	14.1	-0.6
Drill Core	Crush Duplicate	AA15	0.001	640	0.13	0.13	0.99	0.93	10.5	0.4
Drill Core	Lab Duplicate	AA15	0.001	252	0.23	0.23	1.00	0.88	8.7	1.1
Drill Core	Pulp Duplicate	AA15	0.001	255	0.03	0.03	1.00	0.92	7.4	-0.3
Drill Core	Core duplicate	AA15	0.1	19	0.60	0.88	0.80	0.62	26.0	-7.4
Drill Core	Crush Duplicate	AA15	0.1	49	1.56	1.52	1.00	0.92	15.9	0.2
Drill Core	Lab Duplicate	AA15	0.1	26	2.12	2.16	1.00	1.00	1.3	0.0
Drill Core	Pulp Duplicate	AA15	0.1	9	0.55	0.48	1.00	1.00	9.0	5.8
Drill Core	Core duplicate	ICP24	0.001	27	0.006	0.041	0.88	0.90	27.4	10.6
Drill Core	Crush Duplicate	ICP24	0.001	25	0.004	0.003	0.41	0.57	29.4	8.8
Drill Core	Lab Duplicate	ICP24	0.001	27	0.783	0.785	1.00	0.82	19.4	2.0
Drill Core	Pulp Duplicate	ICP24	0.001	32	0.010	0.010	1.00	0.86	20.2	8.2
Drill Core	Core duplicate	ICP24	0.1	0						
Drill Core	Crush Duplicate	ICP24	0.1	0						
Drill Core	Lab Duplicate	ICP24	0.1	4	5.270	5.28	1.00	1.00	1.2	-0.4
Drill Core	Pulp Duplicate	ICP24	0.1	1						

11.5.3 Samples Submitted to CRS

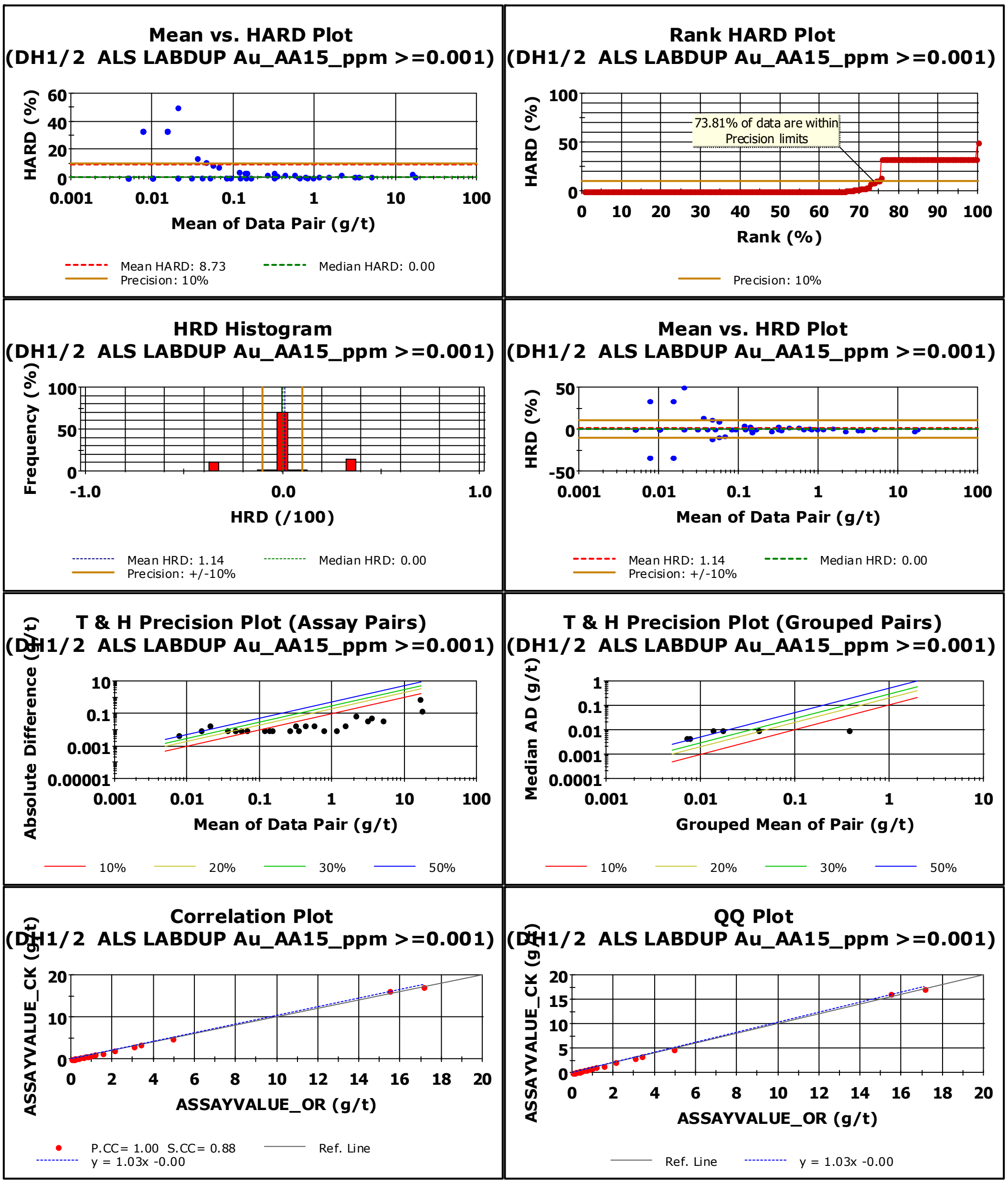
Sample pairs submitted to CRS include the following:

- Core Duplicates.
- Crush duplicates.
- Lab Duplicates (LAB1 and LAB2 a two sets of sub samples from the main sample after size reduction to a notional particles size of p80 passing 75 microns).

Figure 11.5.2_1
Sample Pair Statistical Analysis: Samples Submitted to ALS: Drill Core Lab Duplicates

Summary
(DH1/2 ALS LABDUP Au_AA15_ppm >=0.001)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	252	252			Pearson CC:	1.00
Minimum:	0.01	0.01	g/t		Spearman CC:	0.88
Maximum:	17.10	17.25	g/t		Mean HARD:	8.73
Mean:	0.23	0.23	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	1.51	1.55	g/t		Mean HRD:	1.14
Coefficient of Variation:	6.62	6.68			Median HRD	0.00



Printed: 11-May-2018 16:03:39 Data Edited: 09-May-2018 19:47:34 Page 1

Table 11.5.3_1 summarises the results for both all available samples and sample pairs returning greater than 0.1g/t. It is evident that low levels of variability occur within the various sample pairs for samples submitted to CRS, along with low levels of bias. The typical reduction in variability as the particle size of the sample is reduced is also seen, for example going from 9.3% for all available core duplicates down to 2 to 3% for the lab duplicates. Figure 11.5.3_1 shows the various sets of statistical data and graphs for the core duplicates submitted to CRS.

Table 11.5.3_1

Pahtavaara Gold Deposit

Duplicate Sample Review: Samples Submitted to CRS

Sample Type	Duplicate Type	Assay Method	Min.	Number	Au1 Mean (g/t)	Au2 Mean (g/t)	Correlation		HARD (%)	HRD (%)
							Pearson	Spearman		
Drill Core	Core duplicate	PAL1000	0.001	39	0.44	0.16	0.56	0.47	9.3	-5.3
	Crush Duplicate	PAL1000	0.001	165	0.07	0.14	0.27	0.41	3.8	-2.3
	Lab Duplicate 1	PAL1000	0.001	340	0.21	0.22	1.00	0.43	2.3	-0.7
	Lab Duplicate 2	PAL1000	0.001	335	0.20	0.20	1.00	0.44	3.0	-0.1
Drill Core	Core duplicate	PAL1000	0.1	2						
	Crush Duplicate	PAL1000	0.1	11	0.65	0.71	1.00	0.99	11.2	-6.3
	Lab Duplicate 1	PAL1000	0.1	33	1.95	2.01	1.00	0.99	10.8	-5.6
	Lab Duplicate 2	PAL1000	0.1	27	2.14	2.09	1.00	0.99	10.4	8.3

All the available sets of data for sample pairs submitted to CRS are shown graphically in Appendix 6.

11.6 Discussion

The review of the CRM submitted by Rupert and the internal standards submitted by ALS and CRS have shown that the use of CRM which have an expected value based on multiple fire assay/AAS analyses with an assay technique that only determines the cyanide extractable gold content of the material has generally resulted in an apparent 'under-call'. It is considered that this is not an issue of lab performance or sample preparation, but rather is due to the fact that the assay technique is only able to determine the cyanide-soluble portion of the CRM . Neither is it a sample size issue as the CRM material is as fine as 20 microns.

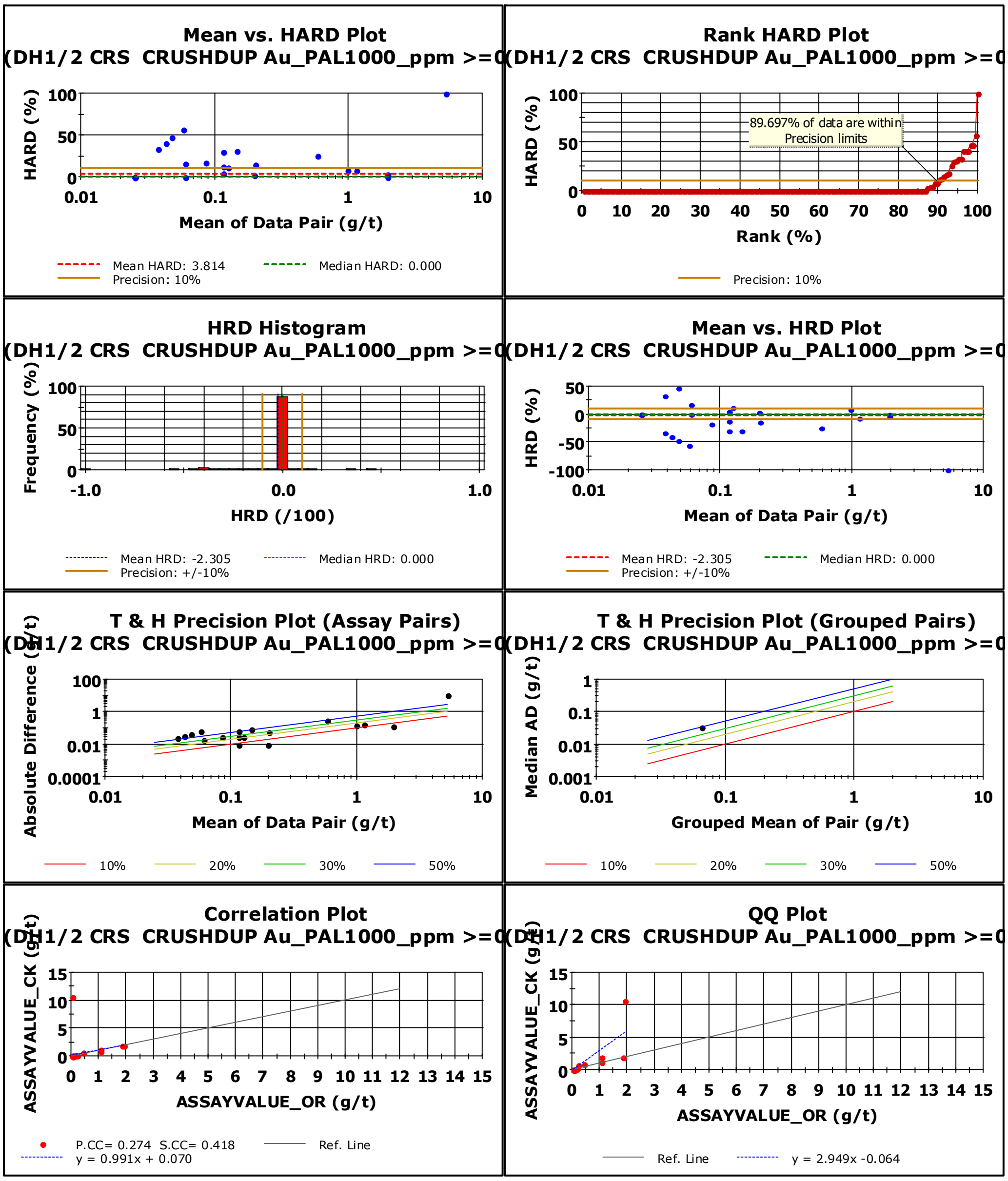
When the sample pair data are reviewed the typical p[pattern of a reduction in the level of variability as the particle size of the source material is reduced is noted from quarter core samples to pulp sachet samples. The levels of variability for much of the datasets are typical for gold deposits.

As such, it appears that the key areas of focus in terms improving the quality of sampling and assaying at Pahtavaara are the sample preparation flowsheet and the assay method (for example using a standard 50gm fire assay/AAS analytical approach, with check screen fire assays for high grade samples etc.

Figure 11.5.3_1
Sample Pair Statistical Analysis: Samples Submitted to CRS: Drill Core Crush Duplicates

Summary
(DH1/2 CRS CRUSHDUP Au_PAL1000_ppm >=0.001)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	165	165			Pearson CC:	0.274
Minimum:	0.025	0.025	g/t		Spearman CC:	0.418
Maximum:	1.930	10.600	g/t		Mean HARD:	3.814
Mean:	0.068	0.137	g/t		Median HARD:	0.000
Median	0.025	0.025	g/t			
Std. Deviation:	0.234	0.853	g/t		Mean HRD:	-2.305
Coefficient of Variation:	3.436	6.209			Median HRD	0.000



Printed: 11-May-2018 16:43:02 Data Edited: 09-May-2018 19:47:34 Page 1

11.7 Conclusions

These methods of data verification are considered at or above industry standard. The results of the QAQC data analyses discussed in the preceding sections demonstrate that the quality of the data is acceptable for use in mineral resource estimation.

Where known, all sample preparation and analyses were carried out at independent laboratories in Finland or Sweden. No aspect of laboratory sample preparation or analysis was conducted by an employee, officer, director or associate of either Rupert or it's predecessors.

Rupert and predecessors have used a combination of duplicates, checks, blanks and standards to ensure suitable quality control of sampling methods and assay testing. The procedures and QA/QC management are consistent with good industry practice and are deemed fit for purpose. Results of recent sampling have not identified any issues which materially affect the accuracy, reliability or representativeness of the results.

12. DATA VERIFICATION

12.1 Independent Qualified Person Review and Verification

Mr Brian Wolfe visited the Pahtavaara Gold Project in February 2018. Steps undertaken to verify the integrity of data used in this report include:

- Field visits to the areas outlined in this report including underground while channel sampling and mapping was under way.
- Inspection of diamond drill core.
- Inspection of diamond drilling activities, sampling and logging procedures.
- Review of data collection, database management and data validation procedures.
- Review of the previous technical documentation for the Pahtavaara Gold Project.

The Qualified Person has reviewed and cross-checked sections of this Report prepared by Rupert geologists.

The Qualified Person completed the updated resource estimate for the Pahtavaara Gold Deposit. Additional data verification steps undertaken during this estimate process included the following:

- Validation of drilling, geology and assay database (including checks overlapping intervals, samples beyond hole depth and other data irregularities.
- Review of Rupert QAQC data and charts for standards, blanks and duplicates.
- Visual and statistical analysis of resource estimate model outputs versus primary data.
- Random cross checks of assay reports against the database.

Based on this review work, the Qualified Person is of the opinion that the dataset provided by WAF is of an appropriate standard to use for resource estimation work.

12.2 QAQC Data Analysis

The quality control data has been statistically evaluated, and summary plots have been produced for interpretation as described in the previous sections.

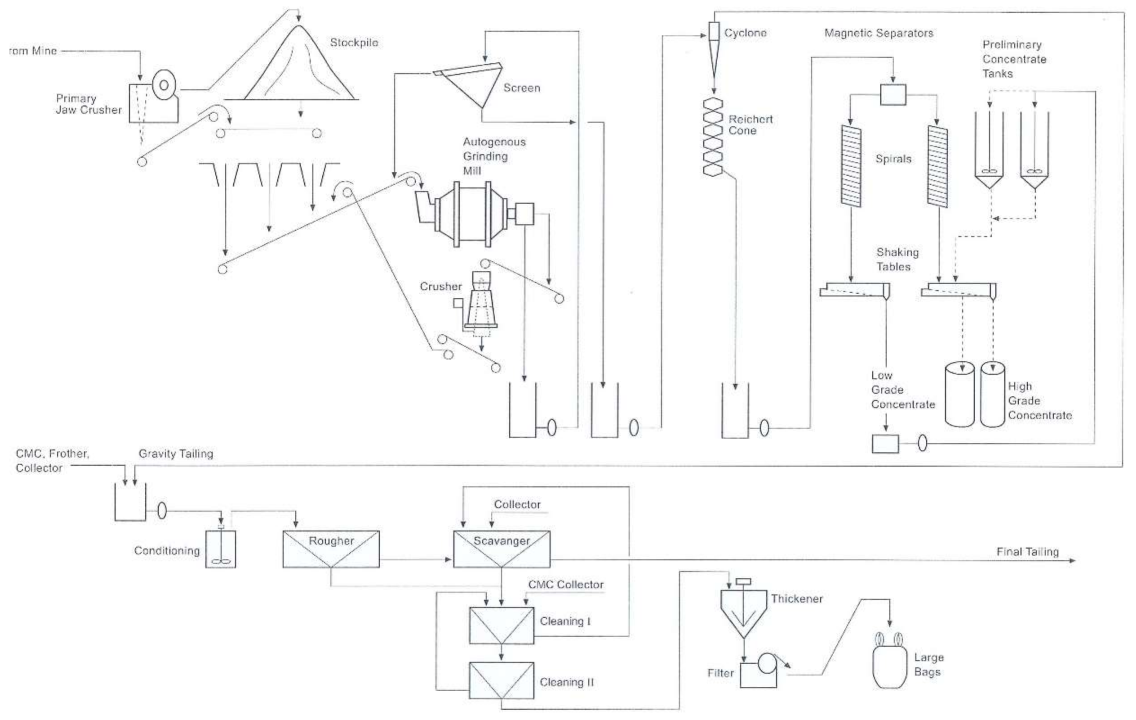
12.3 Conclusions

These methods of data verification are considered at or above industry standard. The results of the QAQC data analyses discussed in the preceding sections demonstrate that the quality of the data is acceptable for use in mineral resource estimation.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

The existing mill at Pahtavaara produced around 350koz of gold in concentrate (from an estimated 450koz Au of gold contained in ore mined) using a combination of gravity and flotation, with recoveries ranging from 80 to 90%. The current flowsheet (refer to Figure 13_1) is essentially the same as that designed by Davy as part of the feasibility work in 1994 but with a number of adaptations made by previous owners over Pahtavaara's 16 year operating history to optimise recovery. The mineralisation defined in the reported resource is thought to have identical metallurgical characteristics to previously mined ore. Further metallurgical testwork is planned as part of an ongoing development plan for the Pahtavaara Project.

Figure 13_1
Pahtavaara Process Flowsheet



14. MINERAL RESOURCE ESTIMATES

14.1 Introduction

This Mineral Resource for the Pahtavaara Gold Deposit has been estimated as at the effective date of the 16th April 2018. Gold grade estimation was completed using Multiple Indicator Kriging (MIK) for the main mineralised domains with the secondary low-grade domains estimated by ordinary kriging (OK). MIK grade estimates have been localised to an SMU dimension using an analogous methodology to Localised Uniform Conditioning. This estimation approach was considered appropriate based on review of a number of factors, including the quantity and spacing of available data, the interpreted controls on mineralisation, and the style, geometry and tenor of mineralisation. The estimation was constrained with geological and mineralisation interpretations.

14.2 Database Validation

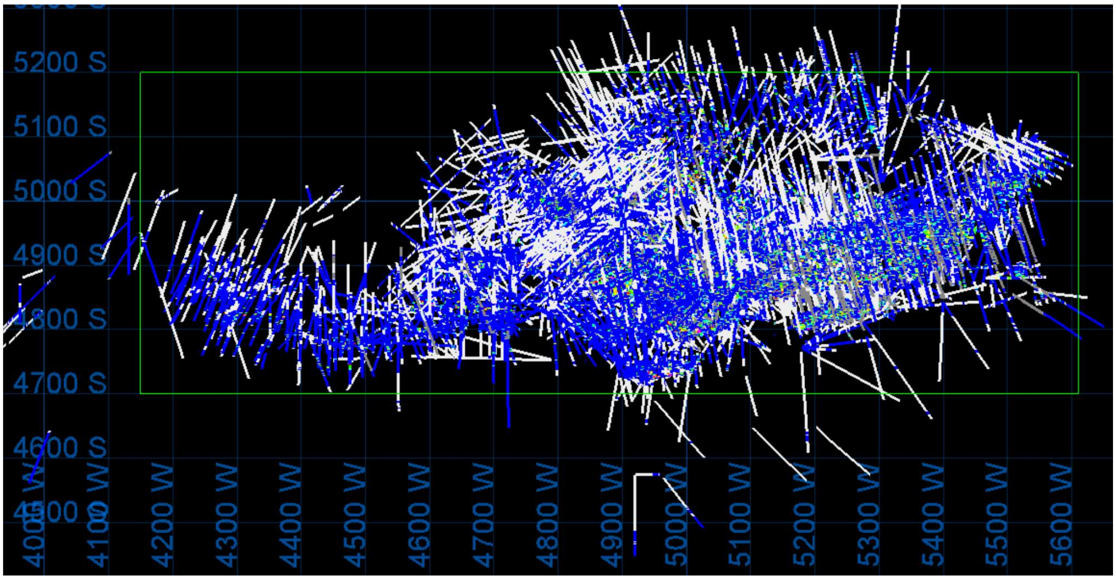
The resource estimation was based on the available exploration drillhole database which was compiled in-house by Rupert. The database has been reviewed and validated prior to commencing the resource estimation study.

The database consists of surface and underground diamond drilling together with underground sludge sampling, some RC drilling and channel sampling. Database statistics are provided below as Table 14.2_1 and it can be seen the vast bulk of the data originates from diamond drilling and sludge sampling. A plan view of all drilling is presented in Figure 14.2_1.

Table 14.2_1
Summary of the Available Drillhole Database

Company	DH Type	Holes	Metres	% of Total
Rupert	Diamond	364	51,305	10.1%
	Channel	55	309	0.1%
Geological Survey of Finland	Diamond	44	4,372	0.9%
Lappland Goldminers	Diamond	1,232	154,573	30.4%
	RC	78	1,135	0.2%
	Sludge (UG)	6,675	124,867	24.6%
	Channel	123	89	0.0%
Scan Mining	Diamond	815	94,563	18.6%
	RC	21	1,116	0.2%
	Sludge (UG)	2,268	49,902	9.8%
	Channel	134	213	0.0%
Terra Mining	Diamond	152	14,853	2.9%
	RC	84	9,976	2.0%
	Sludge (UG)	116	117	0.0%
	Unknown	8	300	0.1%
Unknown	Sludge	18	668	0.1%
	Channel	68	107	0.0%
Total		12,255	508,465	100%

Figure 14.2_1
Pahtavaara Gold Deposit
Plan View of all Drilling



Upon examination of the drillhole assay tables it is evident that much of the drilling has been selectively sampled. This relates mostly to the diamond drillholes with ~42% of diamond core unsampled and ~7% of sludge drillholes unsampled. For the purposes of the current resource estimate it has been assumed that the unsampled portions of the drillcore are essentially unmineralised and therefore those absent intervals in the database have been set to 0.001ppm Au. In the case of all other unsampled data (sludge etc) the unsampled intervals have been ignored as it is less certain why the intervals remained unsampled. Therefore, all following data analysis is on the basis of the described data substitution.

The resultant database was validated, and the checks made to the database prior to use included:

- Check for overlapping intervals.
- Downhole surveys at 0m depth.
- Consistency of depths between different data tables.
- Check gaps in the data.
- Replacing less than detection samples with half detection.
- Replacing intervals with no sample with -999.
- Replacing intervals with assays not received with -999.

14.3 Interpretation and Modelling

14.3.1 Mineralisation Interpretation

Mineralisation at the Pahtavaara Project is hosted by amphibolitised komatiites. The principal geological control in the area is considered to be a linear structural corridor that trends between east-west and northeast-southwest, with gold mineralisation identified in both the larger structures parallel to this trend and oblique fractures and steeply plunging zones that represent the intersection of these structures or possibly fold hinges. The mineralised structural corridor identified at the Pahtavaara Project is characterised by hydrothermal alteration and mineralisation within komatiiites that have been subjected to several phases of intense, pervasive alteration. The hydrothermal alteration and the Au-bearing structures and veins associated are a result of a prolonged period of ductile deformation and later brittle-ductile deformation related to a belt scale thrusting event. Mineralisation occurs over at least 1.4km of strike length and has been interpreted to extend to more than 500m below the surface. Mineralisation remains open at depth along the entire zone. Gold occurs mostly as free gold with a smaller proportion associated with magnetite.

Typically for many deposits of this type, the mineralisation often presents as generally somewhat discontinuous and irregularly distributed on the scale of approximately 10m to 50m. Figure 14.3.1_1 presents a north south sectional view 5,080mE demonstrating variability in grade, thickness and orientation of gold mineralisation. This commonly makes the traditional approach of wireframing on a sectional and plan basis extremely difficult with multiple plausible geometrical solutions often existing.

To establish appropriate grade continuity, the mineralisation models were therefore based upon a nominal 0.3ppm Au indicator mineralisation shell estimated using 3m unconstrained downhole composites. This interpretation is designed to capture the broad mineralisation halo that encompasses the geological vein system and is not intended to constrain individual veins or vein clusters. As the main grade estimation technique is MIK with change of support technique, this type of mineralisation constraint is deemed appropriate.

The mineralisation grade shells were generated by grade estimation via indicator kriging at a single cutoff, 0.3g/t Au. Grade estimation was into block models with cell dimensions of 5mE × 5mN × 5mRL. Grade shell triangulations were then generated by constraining the block model at a 20% and 35% probability cutoff (Figure 14.3.1_1). The purpose of selecting two probability cutoffs is to generate a nested series of mineralisation constraints. The lower grade shell is in effect forming a lower-grade halo to the main mineralisation. The lower grade shell also serves the function of collecting higher grade data that may have not been included in the main mineralisation shell due to issues with drilling orientation and geometry. The probability cutoffs may be considered somewhat subjective and may seem arbitrary, however were selected based on extensive review of a range of probability cutoff. The selected probability shells are considered optimal to capture the observed continuity and tenor of mineralisation while excluding obvious low-grade material. Grade shells were reviewed in multiple orientations and in plan and section views prior to being accepted for grade estimation and block modelling purposes.

Mineralisation estimation domains were thus defined with further sub-division being differentiated on the basis of orientation, flexures in the shear and tenor of gold grade. A total of 14 main estimation domains (Table 14.3.1_1 and Figure 14.3.1_2 to 14.3.1_4) have been defined. The main mineralisation shells generated at the 35% cutoff are designated with the prefix 35 and are numbered 3510 to 35140. The nested 20% probability cutoff shells that constitute the lower grade envelope to the main mineralisation are designated with the prefix of 20 and are numbered 2010 to 20140.

Figure 14.3.1_1
Pahtavaara Gold Deposit
Section 5,080mN

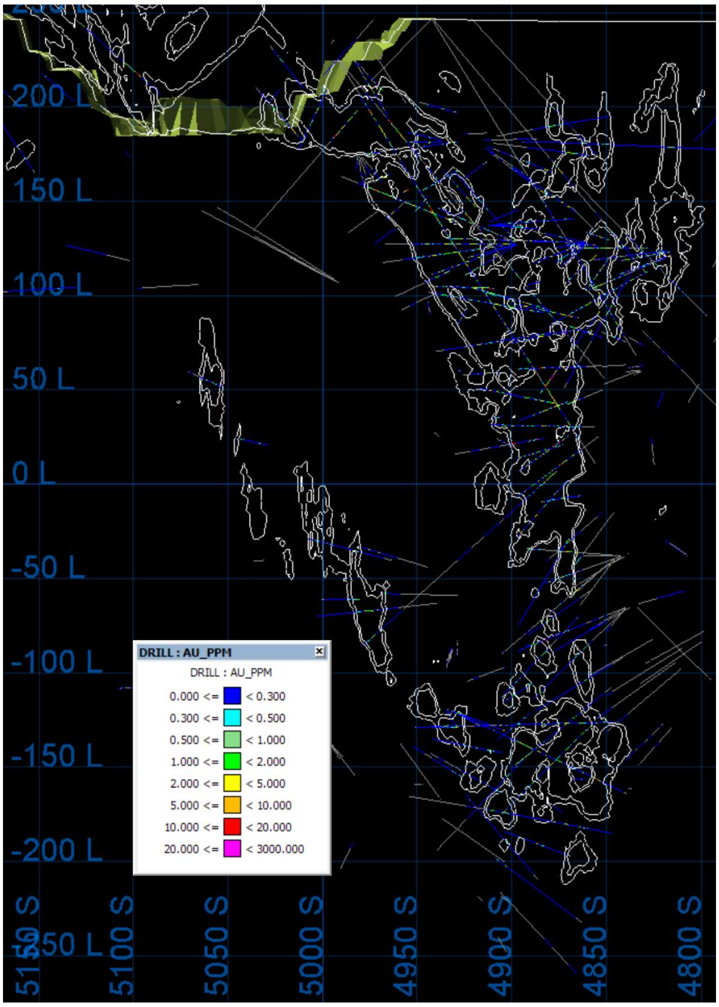


Table 14.3.1_1
Pahtavaara Gold Deposit
Estimation Domain Description

Domain	Description	Area
3510	Steeply dipping to sub-vertical to the north on central portion of deposit.	Samurai/NFE
3520	Steeply dip NNW and between 4,490mE and 4,815mE.	Karoliina East
3530	Steeply dip NNE and west of 4,490mE.	Karoliina West
3540	Sub vertical on S flank of the deposit.	T-Zone
3550	Sub vertical on S flank of the deposit, north of 3540.	Samurai
3560	Sub vertical on S flank of the deposit, north of 3540.	Samurai
3570	Sub-vertical with a westerly plunge on SE side.	T-Zone
3580	Steeply dipping with a westerly plunge on E side.	NFE
3590	Steeply dipping with a westerly plunge on lower-central location.	NFE
35100	Steep westerly plunging shoot in central part.	DB/NFE
35110	Steep westerly plunging shoot in central part.	DB
35120	Crescent shape with a westerly plunge at NW side.	DB/Harpoon
35130	Southerly dipping on the NE flank of deposit.	NFE/Samurai
35140	North of 4,800mN and west of 5,130mE. Westerly plunging shoots.	Lansi

Figure 14.3.1_2
Pahtavaara Gold Deposit
Estimation Domains Plan View

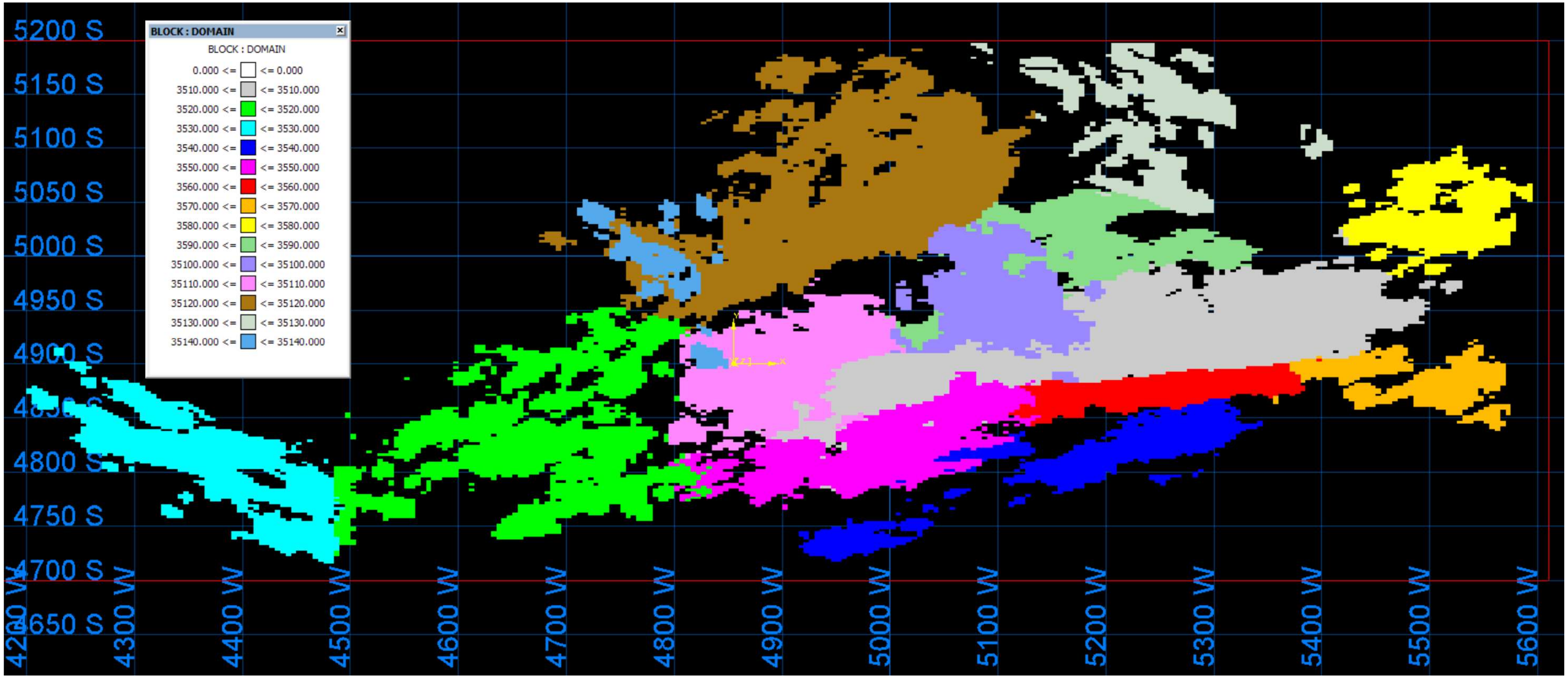


Figure 14.3.1_3
Pahtavaara Gold Deposit
Estimation Domains Isometric SW View

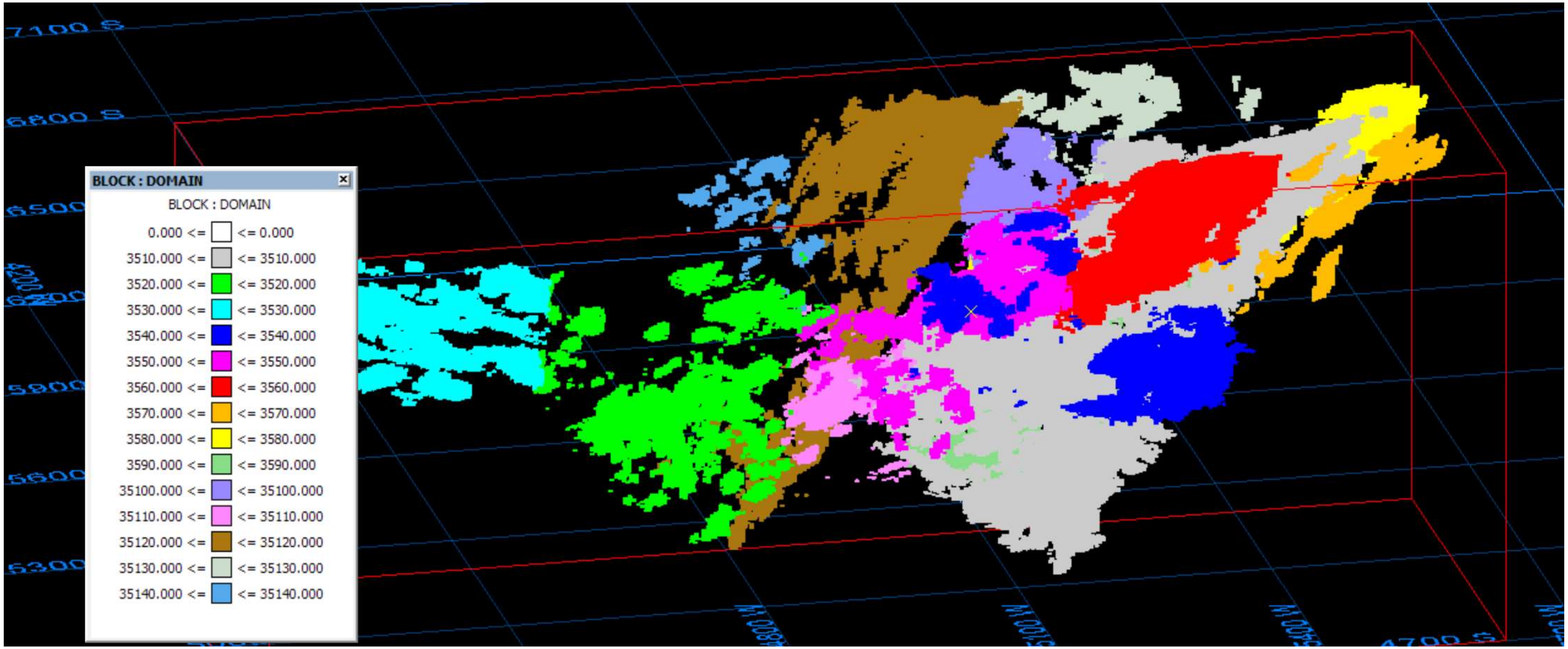
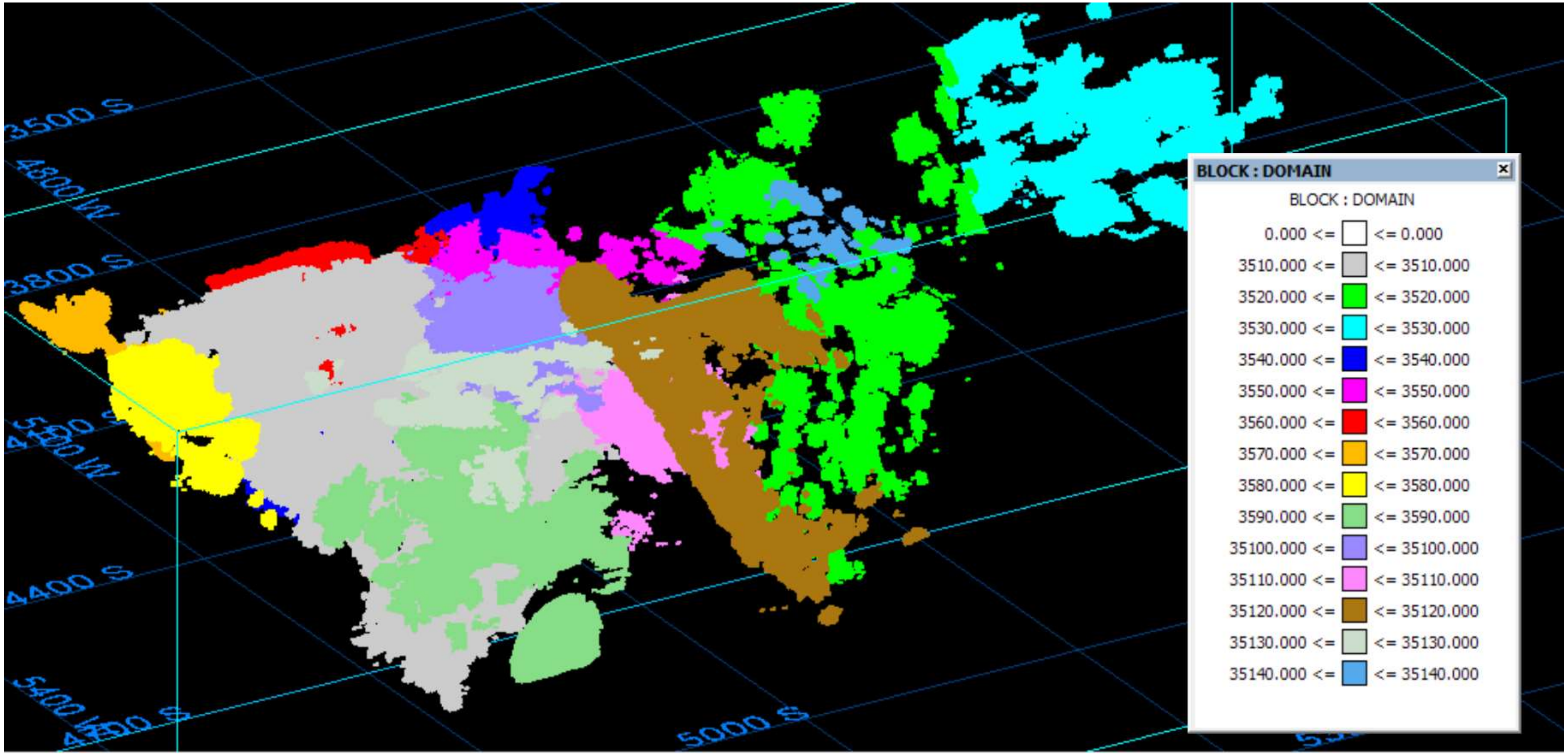


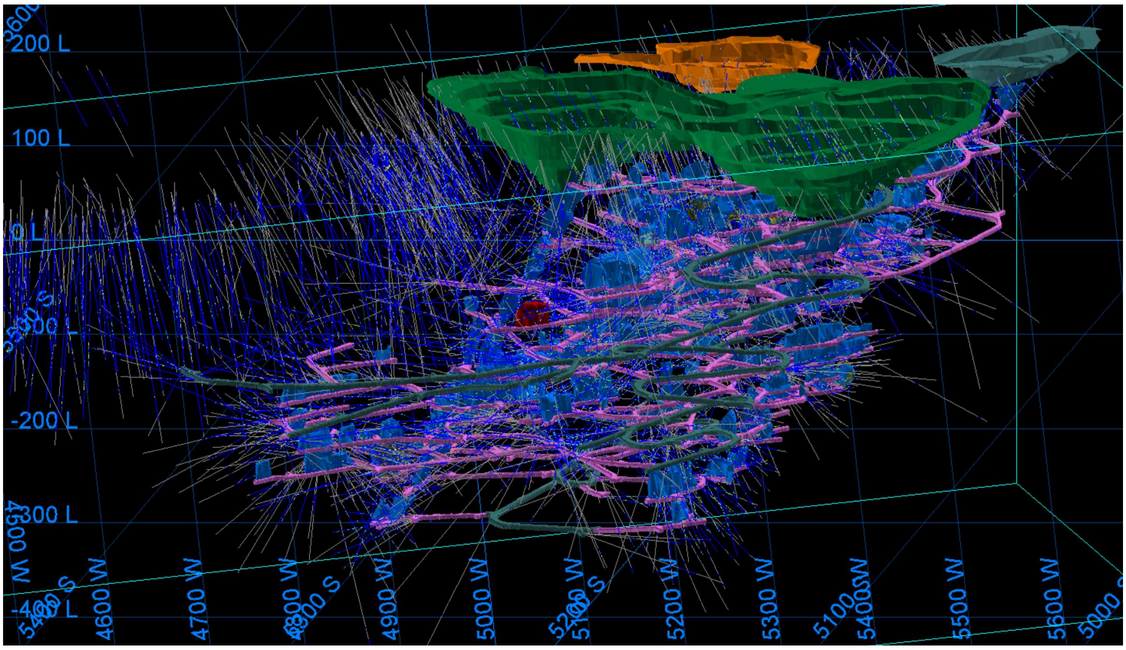
Figure 14.3.1_4
Pahtavaara Gold Deposit
Estimation Domains Isometric NE View



14.3.2 Mine Infrastructure

Pahtavaara has been mined since 1996 from a series of open cuts and underground. As such, a series of extensive underground infrastructure including declines, drives and open stopes exist in conjunction with the open pits. The relationship between the open pits and underground infrastructure is presented in Figure 14.3.2_1 below.

Figure 14.3.2_1
Pahtavaara Gold Deposit
Open Pits and Underground Infrastructure - Isometric SW View



14.4 Data Flagging and Compositing

Drillhole samples were flagged with the relevant indicator grade shells, topographical surfaces and both the underground and open pit wireframes described in previous sections. Coding was undertaken on the basis that if the individual sample centroid fell within the grade shell boundary it was coded as within the grade shell. Each sub-domain has been assigned a unique numerical code to allow the application of hard boundary domaining if required during grade estimation.

The drillhole database coded within each grade shell or mineralisation wireframe was then composited as a means of achieving a uniform sample support. It should be noted, however, that equalising sample length is not the only criteria for standardising sample support. Factors such as angle of intersection of the sampling to mineralisation, sample type and diameters, drilling conditions, recovery, sampling/sub-sampling practices and laboratory practices all affect the ‘support’ of a sample. Exploration/mining databases which contain multiple sample types and/or sources of data provide challenges in generating composite data with equalised sample support, and uniform support is frequently difficult to achieve.

After consideration of relevant factors relating to geological setting and mining, including likely mining selectivity and bench/flitch height, a regular 2m run length (downhole) composite was selected as the most appropriate composite interval to equalise the sample support at Pahtavaara Gold Deposit. Compositing was broken when the routine encountered a change in flagging (grade shell boundary) and composites with residual intervals of less than 2m were retained in the composite file.

14.5 Statistical Analysis

14.5.1 Summary Statistics

The composites flagged as described in the previous section were used for subsequent statistical, geostatistical and grade estimation investigations.

Summary descriptive statistics were generated for all domains (Tables 14.5.1_1 and 14.5.1_2). The grade distributions are typical for gold deposits of this style and show a positive skew or near lognormal behaviour (Figure 14.5.1_1). The coefficient of variation (CV - calculated by dividing the standard deviation by the mean grade) is moderately high, consistent with the presence of high outlier grades that potentially require cutting (capping) for grade estimation.

Table 14.5.1_1

Pahtavaara Gold Deposit
Summary Statistics Low Grade Domains for 2m Composites of Uncut Gold Grade (g/t)

Domain	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
2010	12,072	0.001	50.507	0.220	0.864	0.747	3.927
2020	1,885	0.001	20.7	0.275	1.016	1.032	3.695
2030	454	0.001	25.484	0.381	1.602	2.566	4.205
2040	1,179	0.001	20.655	0.227	0.891	0.793	3.925
2050	1,812	0.001	15.67	0.214	0.598	0.357	2.794
2060	794	0.001	8.89	0.208	0.534	0.285	2.567
2070	412	0.001	29.495	0.490	2.068	4.276	4.220
2080	922	0.001	15.8	0.239	0.738	0.545	3.088
2090	711	0.001	6.832	0.209	0.467	0.218	2.234
20100	1,481	0.001	10.475	0.199	0.505	0.255	2.538
20110	1,567	0.001	7.6	0.206	0.508	0.258	2.466
20120	2,925	0.001	132.85	0.279	2.593	6.725	9.294
20130	361	0.001	216.105	1.456	13.285	176.5	9.124
20140	482	0.001	24.2	0.457	1.825	3.33	3.993

Table 14.5.1_2

Pahtavaara Gold Deposit
Summary Statistics High Grade Domains for 2m Composites of Uncut Gold Grade (g/t)

Domain	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
3510	34,479	0.001	250.000	1.525	4.847	23.495	3.178
3520	2,686	0.001	138.000	1.913	5.822	33.895	3.043
3530	460	0.005	48.316	1.911	4.739	22.462	2.480
3540	3,584	0.001	452.000	2.785	13.164	173.303	4.727
3550	3,800	0.001	387.455	2.275	9.085	82.544	3.993
3560	2,209	0.001	65.664	2.206	4.957	24.573	2.247
3570	428	0.001	100.950	3.492	11.215	125.787	3.212
3580	1,624	0.001	2,110.000	2.714	52.397	2745.409	19.306
3590	1,227	0.01	115.000	0.874	3.736	13.959	4.275
35100	3,447	0.001	2,368.914	2.411	40.685	1655.289	16.875
35110	4,764	0.001	201.000	2.595	8.287	68.678	3.193
35120	6,175	0.001	715.768	2.607	11.301	127.718	4.335
35130	238	0.005	295.000	3.181	19.488	379.791	6.126
35140	340	0.001	44.130	1.922	4.344	18.871	2.260

Figure 14.5.1_1
Log Histograms of Uncut Gold Grade by Domain

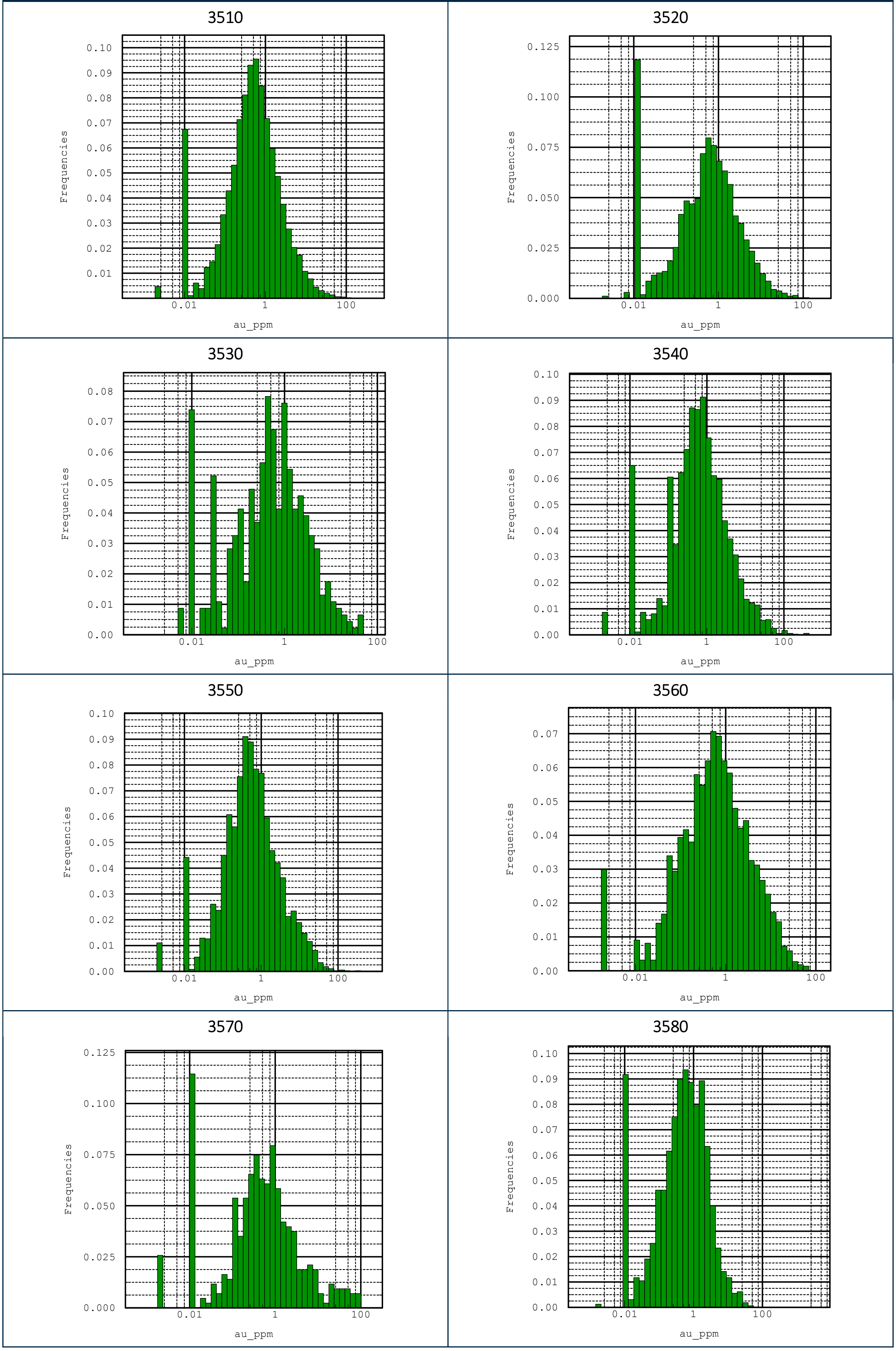
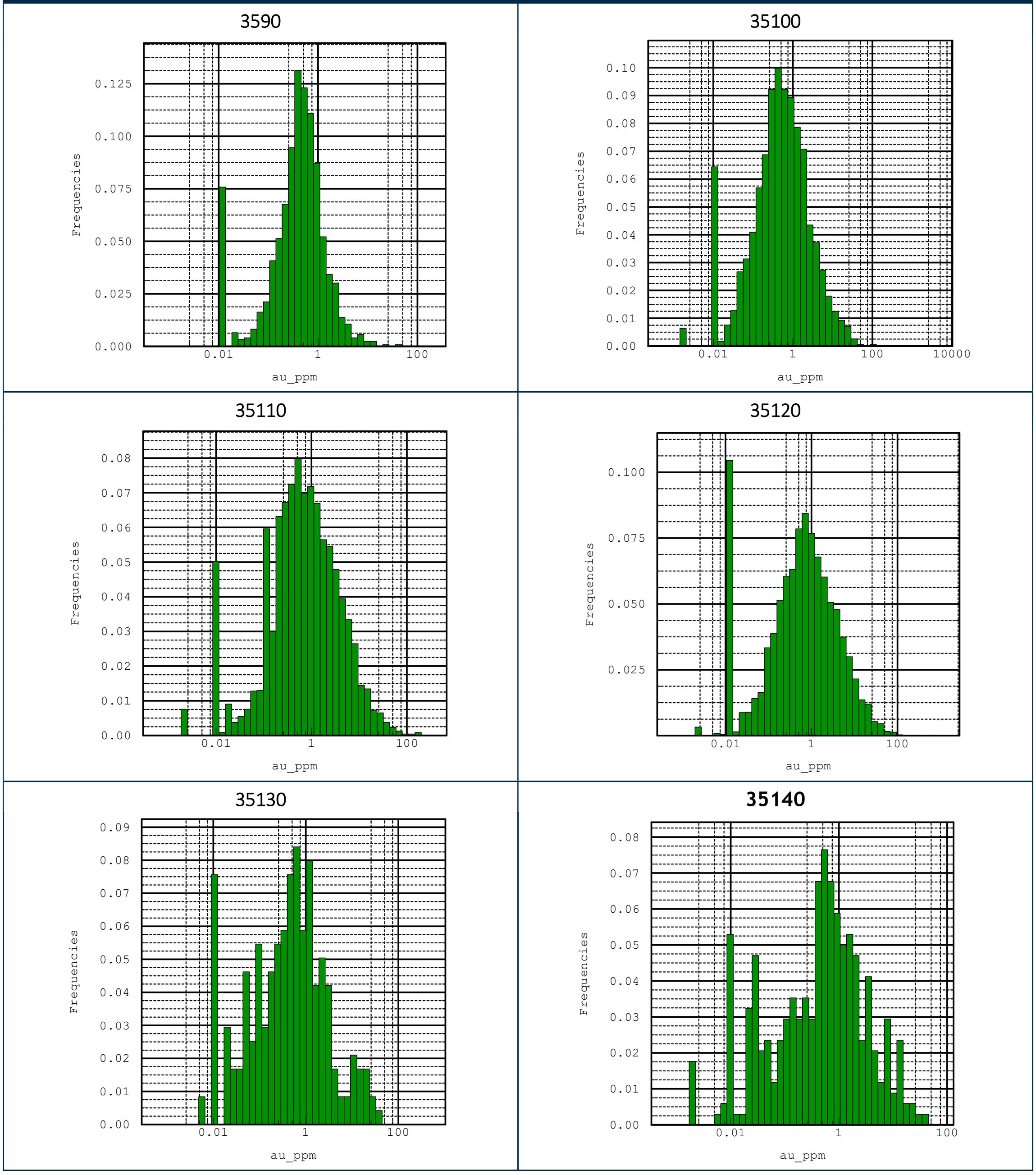


Figure 14.5.1_1 - Log Histograms of Uncut Gold Grade by Domain (continued)



14.5.2 High Grade Outlier Analysis

MIK has been selected as the main method to estimate the gold grades for the Pahtavaara Gold deposit. However, the grade datasets for the various estimation domains are characterised by moderately high CV values, indicating that high-grade values may contribute significantly to the mean grades reported for the various datasets.

It should be noted that while gold grades are not cut or capped for the purposes of MIK estimation the use of cut grades is often employed for variography and the change of support process. As MIK estimates are essentially a series of OK estimates applied to the binary transformation of a series of indicator cutoffs, high grade cutting will have no effect on the resultant MIK estimate unless the high-grade cut is lower than the chosen upper indicator cutoff and this scenario would be considered highly sub-optimal in the context of MIK estimation. A full description of the MIK estimation method with change of support is provided in Section 14.9.

The effects of the highest-grade composites on the mean grade and standard deviation of the gold dataset for each of the estimation domains have been investigated by compiling and reviewing statistical plots (histograms and probability plots). The resultant plots were reviewed together with probability plots of the sample populations and an upper cut for each dataset was chosen coinciding with a pronounced inflection or increase in the variance of the data. A list of the determined upper cuts applied and their impact on the mean grades of the datasets is provided in Table 14.5.2_1.

Table 14.5.2_1
Pahtavaara Gold Deposit
Summary Statistics High Grade Domains for 2m Composites of Top-Cut Gold Grade (g/t)

Domain	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
3510	34,479	0.001	30	**1.418**	3.21	10.302	2.264
3520	2,686	0.001	30	**1.742**	3.796	14.408	2.179
3530	460	0.005	30	**1.824**	4.046	16.373	2.218
3540	3,584	0.001	35	**2.259**	5.215	27.198	2.309
3550	3,800	0.001	55	**2.099**	5.282	27.895	2.516
3560	2,209	0.001	55	**2.199**	4.871	23.724	2.215
3570	428	0.001	55	**3.201**	9.308	86.632	2.908
3580	1,624	0.001	35	**1.431**	3.095	9.577	2.163
3590	1,227	0.01	30	**0.793**	1.788	3.197	2.255
35100	3,447	0.001	30	**1.612**	3.577	12.792	2.219
35110	4,764	0.001	30	**2.265**	4.578	20.954	2.021
35120	6,175	0.001	55	**2.422**	5.648	31.899	2.332
35130	238	0.005	35	**2.088**	5.004	25.043	2.397
35140	340	0.001	44.13	**1.922**	4.344	18.871	2.260

Composite data was viewed in 3D to determine the clustering or otherwise of these highest grades observed in each domain to assess the appropriateness of the high-grade cut. Clustering of the highest grades in one or more areas may indicate that the grades do not require cutting.

14.5.3 Cell Declustering Analysis

Visual inspection of the available datasets for each of the estimation domains indicated some clustering of the data within higher grade regions of the deposit. Data clustering often occurs when drilling campaigns selectively target higher grade regions of the deposit, resulting in an artificially high mean grade in many cases. Declustering was therefore completed to remove any effects of preferential sampling of high grade areas that may have occurred.

Cell declustering was completed with weights determined as 1/n, with "n" representing the number of data in each cell. Declustered composite statistics are presented in Table 14.5.3_1. As expected, the declustered mean grades tend to be less than the composite mean grades due to the data configuration issues discussed above, however in some instances the mean grade increases over a wide range of cell declustering sizes.

Table 14.5.3_1
Pahtavaara Gold Deposit
Summary Statistics Low Grade Domains for 2m Composites of Declustered Gold Grade (g/t)

Domain	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
2010	12072	0.001	50.507	0.220	0.765	0.586	3.483
2020	1,885	0.001	20.7	0.352	1.474	2.171	4.187
2030	454	0.001	25.484	0.269	1.278	1.633	4.758
2040	1,179	0.001	20.655	0.239	0.769	0.591	3.211
2050	1,812	0.001	15.67	0.205	0.758	0.574	3.706
2060	794	0.001	8.89	0.184	0.461	0.213	2.503
2070	412	0.001	29.495	0.289	1.110	1.232	3.835
2080	922	0.001	15.8	0.216	0.548	0.301	2.541
2090	711	0.001	6.832	0.181	0.371	0.137	2.049
20100	1,481	0.001	10.475	0.185	0.476	0.226	2.564
20110	1,567	0.001	7.6	0.204	0.475	0.226	2.327
20120	2,925	0.001	132.850	0.229	2.087	4.356	9.121
20130	361	0.001	216.105	0.718	7.057	49.797	9.822
20140	482	0.001	24.2	0.449	2.016	4.066	4.496

Table 14.5.3_2
Pahtavaara Gold Deposit
Summary Statistics High Grade Domains for 2m Composites of Top-Cut Declustered Gold Grade (g/t)

Domain	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
3510	34,479	0.001	30	1.285	2.908	8.457	2.263
3520	2,686	0.001	30	1.736	3.866	14.945	2.227
3530	460	0.005	30	1.56	3.618	13.092	2.319
3540	3,584	0.001	35	2.201	5.411	29.284	2.458
3550	3,800	0.001	55	1.911	4.897	23.98	2.563
3560	2,209	0.001	55	2.228	4.82	23.235	2.163
3570	428	0.001	55	2.471	8.04	64.646	3.254
3580	1,624	0.001	35	1.265	2.95	8.7	2.332
3590	1,227	0.01	30	1.229	3.754	14.093	3.055
35100	3,447	0.001	30	1.569	3.743	14.008	2.386
35110	4,764	0.001	30	2.003	4.21	17.728	2.102
35120	6,175	0.001	55	2.239	5.419	29.369	2.420
35130	238	0.005	35	2.397	6.158	37.918	2.569
35140	340	0.001	44.13	1.712	3.835	14.71	2.240

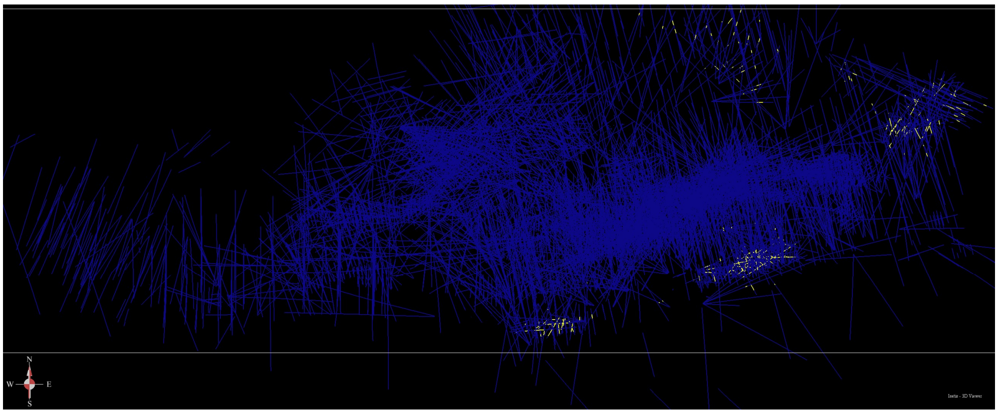
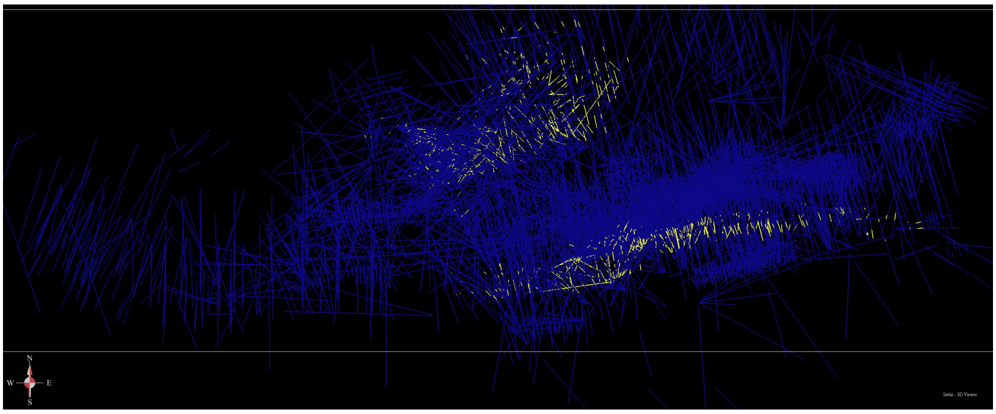
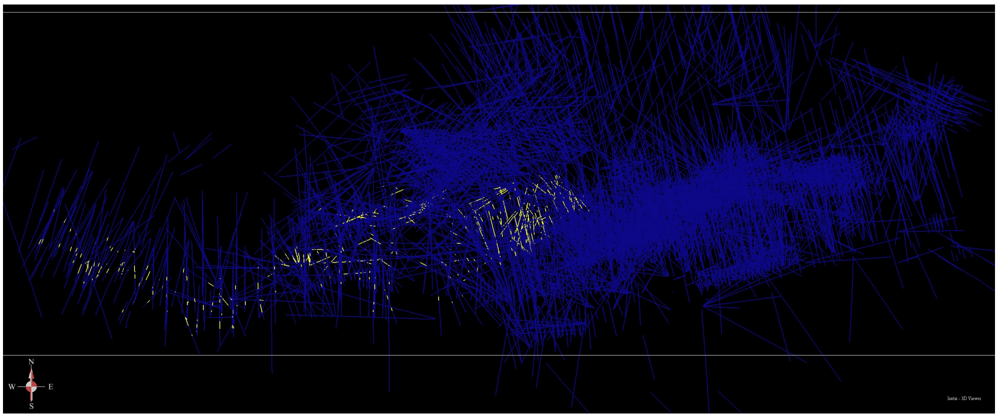
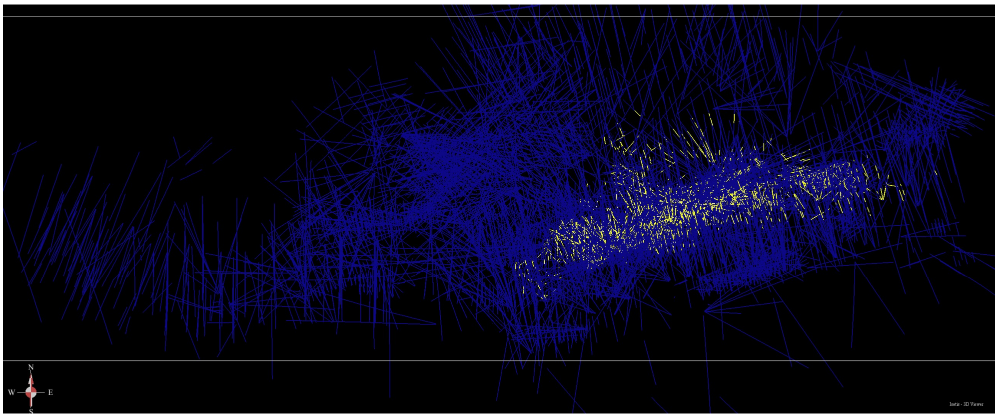
14.5.4 Domain Grouping

The fourteen estimation domains have been grouped for the purposes of MIK estimation. The grouping was on the basis of domain statistics, with consideration also given to location within the deposit and overall domain geometry and orientation. The grouping is outlined in Table 14.5.4_1 and Figure 14.5.4_1 below.

Table 14.5.4_1
Pahtavaara Gold Deposit
Domain Grouping

Domain Group	Domains
High Grade	3540, 3580,35130
Medium Grade	3550, 3560, 3570, 35120, 35140
Medium Low Grade	3520, 3530, 35110
Low Grade	3510, 3590, 35100

Figure 14.5.4_1
Domain Grouping

High Grade	
Medium Grade	
Medium / Low Grade	
Low Grade	

14.5.5 Multiple Indicator Kriging Cutoffs and Indicator Class Statistics

Indicator Kriging cutoffs or indicator bins were selected for each Domain Group to be estimated by MIK. Cutoffs were based upon population distributions and metal proportions above and below the mean composite value of the proposed cutoff bins. Conditional statistics for data within each domain grouping to be estimated by Multiple Indicator Kriging are listed in Table 14.5.5_1. A total of 17 cutoffs were applied to each Domain Group for estimation via MIK. Top cuts have not been applied for the purposes of conditional statistics calculation.

Table 14.5.5_1
Pahtavaara Gold Deposit
Indicator Class Statistics

Domain Group					
High Grade Group			Medium Grade Group		
Grade Threshold (Au g/t)	Probability Threshold	Class Mean (Au g/t)	Grade Threshold (Au g/t)	Probability Threshold	Class Mean (Au g/t)
0.15	0.392	0.0384	0.15	0.281	0.0496
0.3	0.493	0.216	0.3	0.393	0.2153
0.5	0.586	0.3919	0.45	0.495	0.3808
0.75	0.656	0.6116	0.6	0.579	0.5198
1.0	0.726	0.8725	0.8	0.655	0.6864
1.3	0.774	1.1332	1.05	0.710	0.9095
1.85	0.801	1.5499	1.4	0.755	1.208
2.25	0.839	1.9893	1.9	0.793	1.6362
2.9	0.861	2.5631	2.7	0.823	2.3147
3.5	0.887	3.1591	3.7	0.850	3.1442
4.8	0.901	4.3946	4.9	0.873	4.3094
5.9	0.914	5.408	6.8	0.894	5.7741
8.7	0.931	7.881	8.8	0.915	7.6602
12	0.940	10.689	13	0.942	10.6025
18	0.955	14.0065	18	0.960	15.7377
24	0.965	19.7269	26	0.972	21.7454
35	0.980	29.8008	44	0.987	33.9858
Max	Max	326.4957	Max	Max	59.7185
Medium – Low Group			Low Grade Group		
Grade Threshold (Au g/t)	Probability Threshold	Class Mean (Au g/t)	Grade Threshold (Au g/t)	Probability Threshold	Class Mean (Au g/t)
0.15	0.296	0.0385	0.15	0.336	0.0542
0.3	0.416	0.2160	0.3	0.473	0.2164
0.5	0.525	0.4037	0.5	0.600	0.3927
0.7	0.612	0.5947	0.7	0.695	0.5952
0.95	0.694	0.8178	0.95	0.771	0.8157
1.25	0.750	1.0913	1.25	0.824	1.0897
1.6	0.803	1.3873	1.65	0.861	1.4396
2.15	0.836	1.8179	2.1	0.894	1.8705
2.8	0.860	2.483	2.75	0.914	2.3976
3.6	0.884	3.1368	3.55	0.930	3.1634
4.5	0.906	3.9458	4.5	0.943	3.9944
5.7	0.919	5.000	5.7	0.954	5.0697
7	0.939	6.3287	7.2	0.967	6.4170
8.5	0.956	7.6888	8.9	0.980	7.9232
11	0.972	9.9503	13	0.987	10.5738
14	0.982	11.9125	17	0.993	14.5612
23	0.991	18.4329	27	0.997	20.9489
Max	Max	39.7019	Max	Max	41.5152

14.5.6 Data Type Comparisons

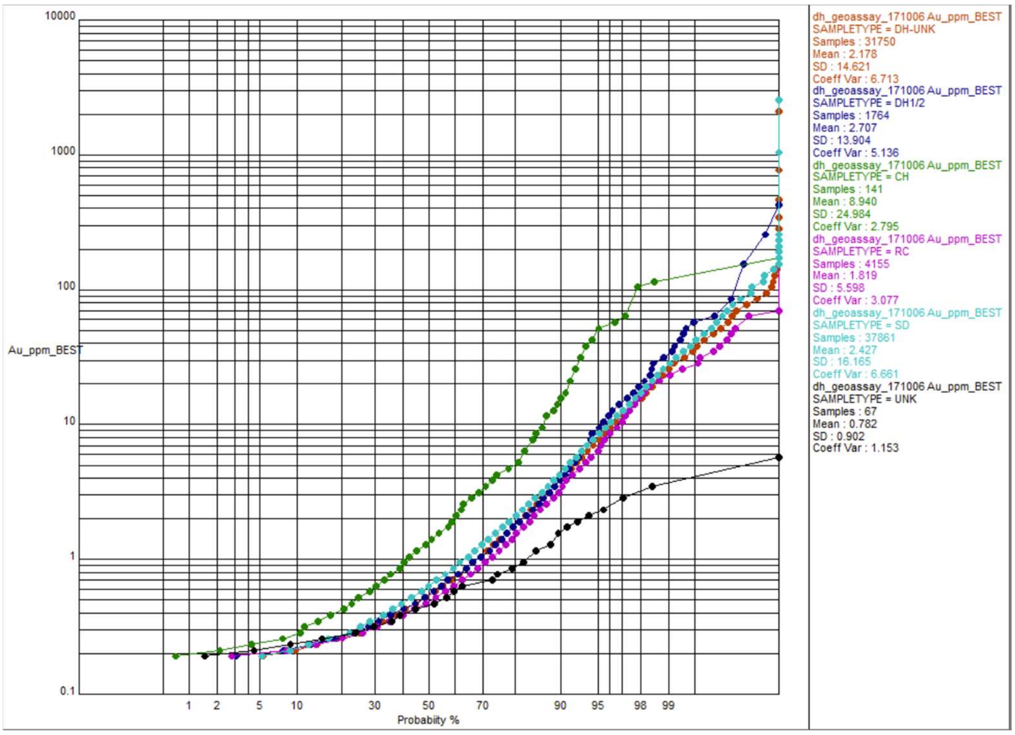
The drillhole database contains different data types (Table 4.6_1) and the issue of concern is that bias may exist between the data types. The combination of various data types may therefore be unsuitable for the purposes of resource estimation. The main data types are diamond drilling and sludge sampling. Raw sample type statistics are presented in Table 14.5.6_1 below.

Table 14.5.6_1
Pahtavaara Gold Deposit
Summary Statistics Sample Gold Grades

Sample Type	All Data			>0.2g/t Au		
	Number	Mean	%	Number	Mean	%
Channel	321	3.95	0	141	8.94	0
Dia unknown	152,302	0.48	53	31,750	2.18	42
Dia ½ core	24,927	0.22	9	1,764	2.71	2
RC	16,606	0.5	6	4,155	1.82	5
Sludge	95,171	0.99	33	37,681	2.43	50
Unknown	201	0.3	0	67	0.78	0
Total	**289,527**	**0.63**	**100**	**75,738**	**2.31**	**100**

It is evident the main dataset is composed of diamond and sludge drilling. Above 0.2g/t Au 50% of the data is sludge drilling. Both RC and channel sampling form relatively insignificant proportions of the total dataset. While the sludge may appear to be biased high on the basis of the total dataset, equivalency can be demonstrated on the basis of the subset of data greater than 0.2g/t Au. A log probability plot of the different data types is presented in Figure 14.5.6_1. Virtually identical distributions can be observed for sludge (light blue), diamond (red and dark blue) and additionally RC samples (pink).

Figure 14.5.6_1
Pahtavaara Gold Deposit
Log Probability Plot Different Sampling Types



As the above demonstrates equivalency of global data distribution only, additional tests have been carried out to determine if different sample types co-located within discrete 3D volumes demonstrate equivalency of gold grades. These tests have been undertaken in Isatis geostatistical software. The generalised approach is as follows:

- Create a grid of blocks with dimensions of 5mE x 5mN x 5mRL (125m^3) and 10mE x 10mN x 10mRL (1,000m^3).
- Record statistics for each data type enclosed within each individual block to that block i.e. number, minimum, maximum, mean, etc.
- In this way the different type of samples contained within each block may be compared. Filters may be applied so that any given block enclosing too few samples of any type will be excluded from the overall comparison.

Statistics for both grid dimensions have been calculated and results compared. Only blocks where both types of samples are co-located have been considered. Results are presented in Table 14.5.6_2 below. Results indicate equivalency of diamond and sludge sample gold grades when both occur in close proximity. It can be concluded that both types of data can be combined for the purposes of resource estimation.

Table 14.5.6_2
Pahtavaara Gold Deposit
Summary Statistics Sample Gold Grade Spatial Correlation

Sample Type	5mE x 5mN x 5mRL (125m^3)			10mE x 10mN x 10mRL (1,000m^3)		
	Number Blocks	Average Grade	Total Samples	Number Blocks	Average Grade	Total Samples
Diamond	804	2.9	1,327	949	2.08	4,043
Sludge	804	3.1	1,769	949	2.20	8,987

14.6 Variography

14.6.1 Introduction

Variography is used to describe the spatial variability or correlation of an attribute (gold, silver etc.). The spatial variability is traditionally measured by means of a variogram, which is generated by determining the averaged squared difference of data points at a nominated distance (h), or lag (Srivastava and Isaacs, 1989). The averaged squared difference (variogram or $\gamma(h)$) for each lag distance is plotted on a bivariate plot, where the X-axis is the lag distance and the Y-axis represents the average squared differences ($\gamma(h)$) for the nominated lag distance.

Several types of variogram calculations are employed to determine the directions of the continuity of the mineralisation:

Traditional variograms are calculated from the raw assay values:

- Log-transformed variography involves a logarithmic transformation of the assay data.
- Gaussian variograms are based on the results after declustering and a transformation to a Normal distribution.
- Pairwise-relative variograms attempt to 'normalise' the variogram by dividing the variogram value for each pair by their squared mean value.
- Correlograms are 'standardised' by the variance calculated from the sample values that contribute to each lag.

Fan variography involves the graphical representation of spatial trends by calculating a range of variograms in a selected plane and contouring the variogram values. The result is a contour map of the grade continuity within the domain.

The variography was calculated and modelled in the geostatistical software, Isatis. The rotations are tabulated as dip and dip direction of major, semi-major and minor axes of continuity. Modelled variograms were generally shown to have moderate to good structure and were used throughout the MIK estimation and the change of support process.

14.6.2 Pahtavaara Variography

Grade and indicator variography was generated to enable grade estimation via MIK and change of support analysis to be completed. In addition, Gaussian variograms were also examined as part of the change of support process. Indicator thresholds for Domain groups to be estimated via MIK had variograms modelled with every third variogram typically modelled. Variograms not modelled have had their parameters interpolated based on the bounding modelled variograms.

Interpreted anisotropy directions correspond well with the modelled geology and overall geometry of the interpreted domains. All grade variography has been based on the back-transformed Gaussian variograms. A common feature of all the grade variography is the relatively short ranges, especially for the first modelled structure, and the dominance of the overall variance by the nugget and the first sill. This outcome can be expected in cases like Pahtavaara where much of the data is dominated by close spaced drilling.

Grade variography as modelled for OK grade estimation and change of support analysis is presented in Table 14.6.2_1 and indicator variography for the various MIK estimation domains in Tables 14.6.2_2 to Table 14.6.2_5. Modelled grade variograms are presented in Figures 14.6.2_1 to 14.6.2_4.

Table 14.6.2_1
Pahtavaara Gold Deposit
Grade Variogram Models Au g/t

Domain Group	Nugget (C0)	Rotation (dip→dip dir)			Structure 1				**Structure 2**			
		Major	Semi Major	Minor	Relative Sill 1 (C1)	Range (m)			Relative Sill 2 (C2)	Range (m)		
						Major	Semi Major	Minor		Major	Semi Major	Minor
High Grade	11.1	10→260	80→80	0→170	8.1	20	12	4	5.3	57	43	15
Medium Grade	11.6	50→270	0→180	40→90	11.2	10	8	2	4.1	31	20	8
Medium Low Grade	7.0	33→257	11→174	55→60	6.6	9	7	3	2.9	36	23	9
Low Grade	5.0	90→90	0→80	0→170	3.5	9	7	3	1.2	43	27	7

Note: All grade variograms derived from back transformed Gaussian Variogram

Table 14.6.2_2
Pahtavaara Gold Deposit
Domain Group High Grade
Indicator Variogram Models Au g/t

Grade Variable or Indicator Threshold	Nugget (C0)	Rotation (dip→dip dir)			Structure 1				Structure 2			
		Major	Semi Major	Minor	Relative Sill 1 (C1)	Range (m)			Relative Sill 2 (C2)	Range (m)		
						Major	Semi Major	Minor		Major	Semi Major	Minor
0.15(1)	0.0483	10→260	80→80	0→170	0.0788	25	17	5	0.0830	65	55	17
0.30(1)	0.0554	10→260	80→80	0→170	0.0904	25	17	5	0.0952	65	55	17
0.50	0.0570	10→260	80→80	0→170	0.0930	25	17	5	0.0980	65	55	17
0.75(2)	0.0574	10→260	80→80	0→170	0.0882	25	17	5	0.0934	63	53	17
1.00(2)	0.0552	10→260	80→80	0→170	0.0798	25	17	5	0.0850	62	52	16
1.30	0.0520	10→260	80→80	0→170	0.0710	25	17	5	0.0760	60	50	16
1.85(3)	0.0494	10→260	80→80	0→170	0.0634	24	17	5	0.0682	58	48	16
2.25(3)	0.0461	10→260	80→80	0→170	0.0558	23	17	5	0.0602	57	47	16
2.90	0.0420	10→260	80→80	0→170	0.0480	22	17	5	0.0520	55	45	16
3.50(4)	0.0395	10→260	80→80	0→170	0.0415	22	17	5	0.0449	55	45	16
4.80(4)	0.0335	10→260	80→80	0→170	0.0324	22	17	5	0.0351	55	45	16
5.90	0.0280	10→260	80→80	0→170	0.0250	22	17	5	0.0270	55	45	16
8.70(5)	0.0224	10→260	80→80	0→170	0.0191	18	15	5	0.0205	47	40	15
12.0(5)	0.0186	10→260	80→80	0→170	0.0153	14	12	5	0.0161	38	35	13
18.0	0.0140	10→260	80→80	0→170	0.0110	10	10	5	0.0115	30	30	12
24.0(6)	0.0088	10→260	80→80	0→170	0.0069	10	10	5	0.0072	30	30	12
35.0(6)	0.0046	10→260	80→80	0→170	0.0036	10	10	5	0.0038	30	30	12

Note:
1) Assumed model based on 0.50 Au g/t variogram model
2) Assumed model based on 0.50 Au g/t and 1.3 Au g/t variogram models
3) Assumed model based on 1.3 Au g/t and 2.9 Au g/t variogram models
4) Assumed model based on 2.9 Au g/t and 5.9 Au g/t variogram model
5) Assumed model based on 5.9 Au g/t and 18 Au g/t variogram model
6) Assumed model based on 18 Au g/t variogram model

Table 14.6.2_3
Pahtavaara Gold Deposit
Domain Group Medium Grade
Indicator Variogram Models Au g/t

Grade Variable or Indicator Threshold	Nugget (C0)	Rotation (dip→dip dir)			Structure 1				Structure 2			
		Major	Semi Major	Minor	Relative Sill 1 (C1)	Range (m)			Relative Sill 2 (C2)	Range (m)		
						Major	Semi Major	Minor		Major	Semi Major	Minor
0.15(1)	0.0388	50→270	0→180	40→90	0.1085	12	6	5	0.0457	40	25	8
0.30(1)	0.0469	50→270	0→180	40→90	0.1314	12	6	5	0.0554	40	25	8
0.45	0.0500	50→270	0→180	40→90	0.1400	12	6	5	0.0590	40	25	8
0.60(2)	0.0511	50→270	0→180	40→90	0.1396	12	6	4	0.0589	40	25	8
0.80(2)	0.0508	50→270	0→180	40→90	0.1353	12	6	4	0.0572	40	25	7
1.05	0.0500	50→270	0→180	40→90	0.1300	12	6	3	0.0550	40	25	7
1.40(3)	0.0470	50→270	0→180	40→90	0.1148	12	6	3	0.0492	38	25	7
1.90(3)	0.0439	50→270	0→180	40→90	0.1009	12	6	3	0.0438	37	25	6
2.70	0.0420	50→270	0→180	40→90	0.0910	12	6	3	0.0400	35	25	6
3.70(4)	0.0357	50→270	0→180	40→90	0.0700	10	5	3	0.0318	32	25	6
4.90(4)	0.0287	50→270	0→180	40→90	0.0511	9	5	3	0.0240	28	25	5
6.80	0.0240	50→270	0→180	40→90	0.0390	7	4	3	0.0190	25	25	5
8.80(5)	0.0191	50→270	0→180	40→90	0.0295	6	4	3	0.0135	22	21	4
13.0(5)	0.0129	50→270	0→180	40→90	0.0188	6	4	2	0.0081	18	17	4
18.0	0.0090	50→270	0→180	40→90	0.0125	5	4	2	0.0050	15	13	3
26.0(6)	0.0038	50→270	0→180	40→90	0.0053	5	4	2	0.0021	15	13	3
44.0(6)	0.0014	50→270	0→180	40→90	0.0019	5	4	2	0.0008	15	13	3

Note:
1) Assumed model based on 0.45 Au g/t variogram model
2) Assumed model based on 0.45 Au g/t and 1.05 Au g/t variogram models
3) Assumed model based on 1.05 Au g/t and 2.7 Au g/t variogram models
4) Assumed model based on 2.7 Au g/t and 6.8 Au g/t variogram model
5) Assumed model based on 6.8 Au g/t and 18 Au g/t variogram model
6) Assumed model based on 18 Au g/t variogram model

Table 14.6.2_4
Pahtavaara Gold Deposit
Domain Group Medium/Low Grade
Indicator Variogram Models Au g/t

Grade Variable or Indicator Threshold	Nugget (C0)	Rotation (dip→dip dir)			Structure 1				Structure 2			
					Relative Sill 1 (C1)	Range (m)			Relative Sill 2 (C2)	Range (m)		
		Major	Semi Major	Minor		Major	Semi Major	Minor		Major	Semi Major	Minor
0.15[1]	0.0500	33→257	33→257	33→257	0.0837	10	6	3	0.0743	35	30	6
0.30[1]	0.0582	33→257	33→257	33→257	0.0973	10	6	3	0.0864	35	30	6
0.50	0.0640	33→257	33→257	33→257	0.1070	10	6	3	0.0950	35	30	6
0.70[2]	0.0585	33→257	33→257	33→257	0.0960	10	6	3	0.0855	35	28	6
0.95[2]	0.0543	33→257	33→257	33→257	0.0875	10	6	3	0.0782	35	27	6
1.25	0.0550	33→257	33→257	33→257	0.0870	10	6	3	0.0780	35	25	6
1.60[3]	0.0437	33→257	33→257	33→257	0.0667	10	6	3	0.0586	35	23	6
2.15[3]	0.0388	33→257	33→257	33→257	0.0571	10	6	3	0.0491	35	22	6
2.80	0.0400	33→257	33→257	33→257	0.0570	10	6	3	0.0480	35	20	6
3.60[4]	0.0299	33→257	33→257	33→257	0.0397	10	6	3	0.0324	32	18	6
4.50[4]	0.0265	33→257	33→257	33→257	0.0328	10	6	3	0.0258	28	17	5
5.70	0.0250	33→257	33→257	33→257	0.0290	10	6	3	0.0220	25	15	5
7.00[5]	0.0182	33→257	33→257	33→257	0.0194	10	6	3	0.0153	25	15	5
8.50[5]	0.0158	33→257	33→257	33→257	0.0155	10	6	3	0.0127	25	15	5
11.0	0.0150	33→257	33→257	33→257	0.0135	10	6	3	0.0115	25	15	5
14.0[6]	0.0075	33→257	33→257	33→257	0.0068	10	6	3	0.0058	25	15	5
23.0[6]	0.0041	33→257	33→257	33→257	0.0037	10	6	3	0.0032	25	15	5

Note:
1) Assumed model based on 0.50 Au g/t variogram model
2) Assumed model based on 0.50 Au g/t and 1.25 Au g/t variogram models
3) Assumed model based on 1.25 Au g/t and 2.8 Au g/t variogram models
4) Assumed model based on 2.8 Au g/t and 5.7 Au g/t variogram model
5) Assumed model based on 5.7 Au g/t and 11 Au g/t variogram model
6) Assumed model based on 11 Au g/t variogram model

Table 14.6.2_5
Pahtavaara Gold Deposit
Domain Group Low Grade
Indicator Variogram Models Au g/t

Grade Variable or Indicator Threshold	Nugget (C0)	Rotation (dip→dip dir)			Structure 1				Structure 2			
		Major	Semi Major	Minor	Relative Sill 1 (C1)	Range (m)			Relative Sill 2 (C2)	Range (m)		
						Major	Semi Major	Minor		Major	Semi Major	Minor
0.15(1)	0.0520	90→90	0→80	0→170	0.1066	10	6	3	0.0494	40	30	10
0.30(1)	0.0615	90→90	0→80	0→170	0.1260	10	6	3	0.0585	40	30	10
0.50	0.0610	90→90	0→80	0→170	0.1250	10	6	3	0.0580	40	30	10
0.70(2)	0.0594	90→90	0→80	0→170	0.1106	10	6	3	0.0530	40	30	10
0.95(2)	0.0557	90→90	0→80	0→170	0.0945	10	6	3	0.0468	40	30	10
1.25	0.0490	90→90	0→80	0→170	0.0760	10	6	3	0.0390	40	30	10
1.65(3)	0.0444	90→90	0→80	0→170	0.0628	10	6	3	0.0327	37	28	9
2.10(3)	0.0380	90→90	0→80	0→170	0.0490	10	6	3	0.0260	33	27	7
2.75	0.0330	90→90	0→80	0→170	0.0390	10	6	3	0.0210	30	25	6
3.55(4)	0.0270	90→90	0→80	0→170	0.0302	10	6	3	0.0167	28	22	6
4.50(4)	0.0214	90→90	0→80	0→170	0.0226	10	6	3	0.0129	27	18	6
5.70	0.0170	90→90	0→80	0→170	0.0170	10	6	3	0.0100	25	15	6
7.20(5)	0.0121	90→90	0→80	0→170	0.0115	10	6	3	0.0064	23	15	6
8.90(5)	0.0093	90→90	0→80	0→170	0.0084	10	6	3	0.0043	22	15	5
13.0	0.0060	90→90	0→80	0→170	0.0052	10	6	3	0.0025	20	15	5
17.0(6)	0.0031	90→90	0→80	0→170	0.0027	10	6	3	0.0013	20	15	5
27.0(6)	0.0013	90→90	0→80	0→170	0.0011	10	6	3	0.0005	20	15	5

Note:
1) Assumed model based on 0.50 Au g/t variogram model
2) Assumed model based on 0.50 Au g/t and 1.25 Au g/t variogram models
3) Assumed model based on 1.25 Au g/t and 2.75 Au g/t variogram models
4) Assumed model based on 2.75 Au g/t and 5.7 Au g/t variogram model
5) Assumed model based on 5.7 Au g/t and 13 Au g/t variogram model
6) Assumed model based on 13 Au g/t variogram model

Figure 14.6.2_1
Pahtavaara Gold Deposit
Domain Group High Grade – Grade Variogram

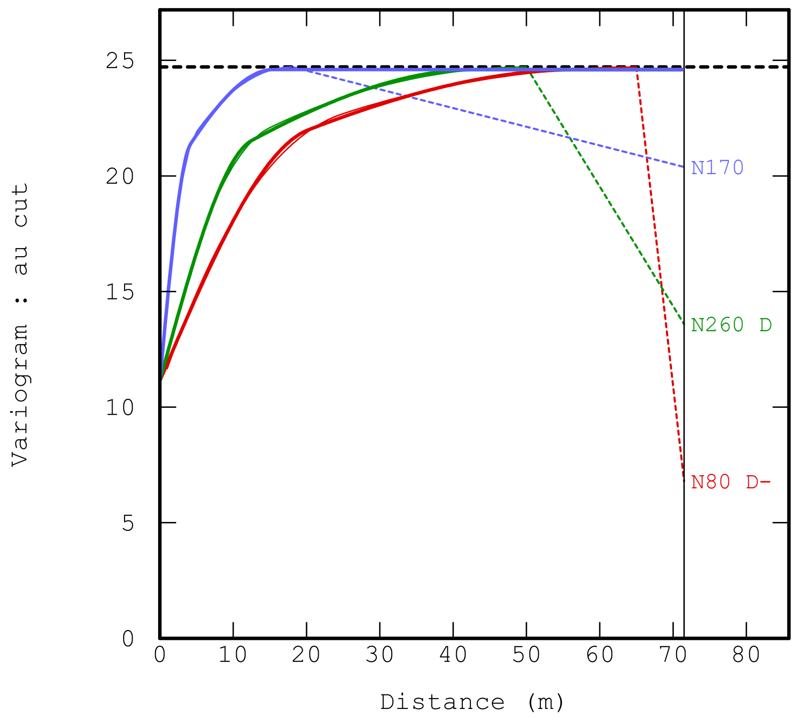


Figure 14.6.2_2
Pahtavaara Gold Deposit
Domain Group Medium Grade – Grade Variogram

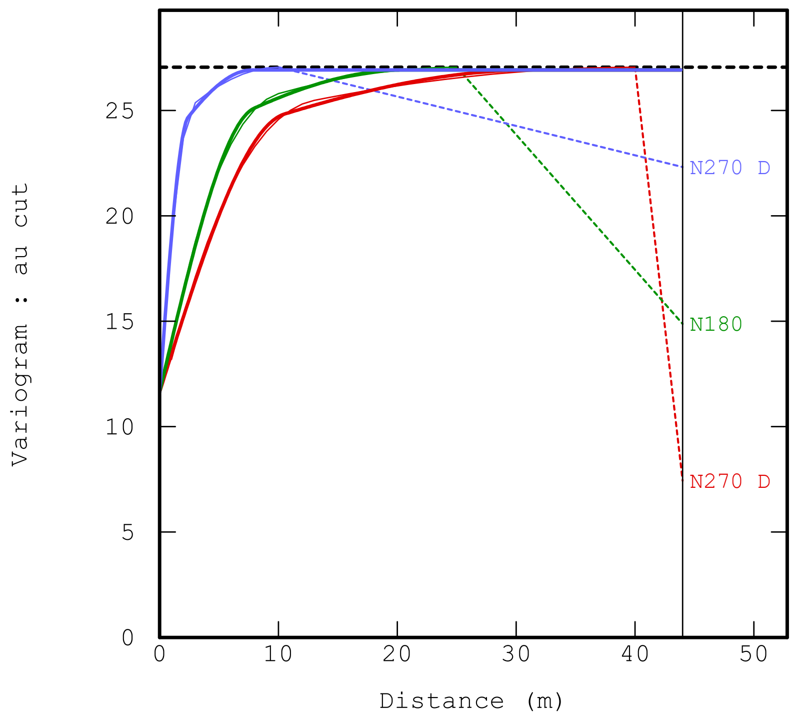


Figure 14.6.2_3
Pahtavaara Gold Deposit
Domain Group Medium/Low Grade – Grade Variogram

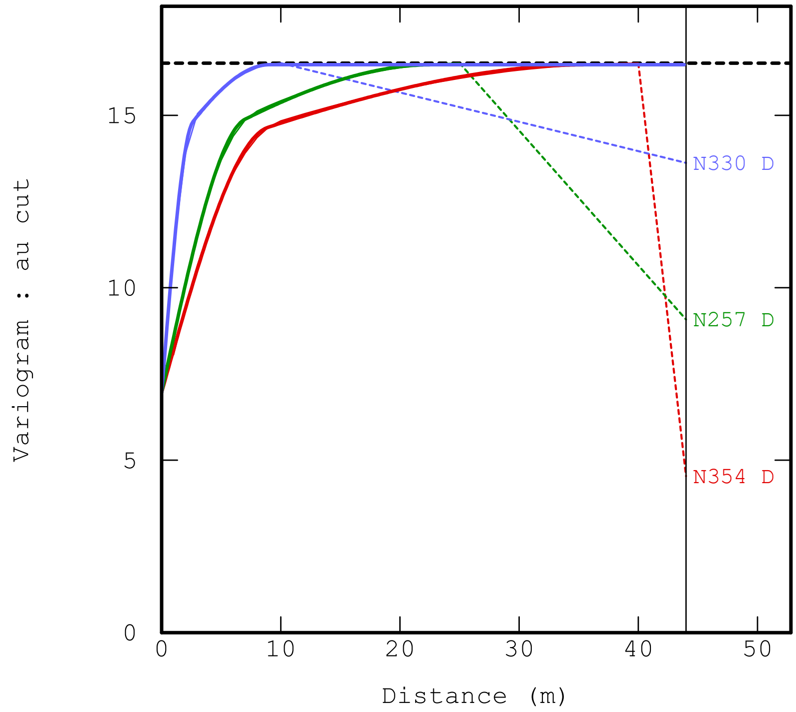
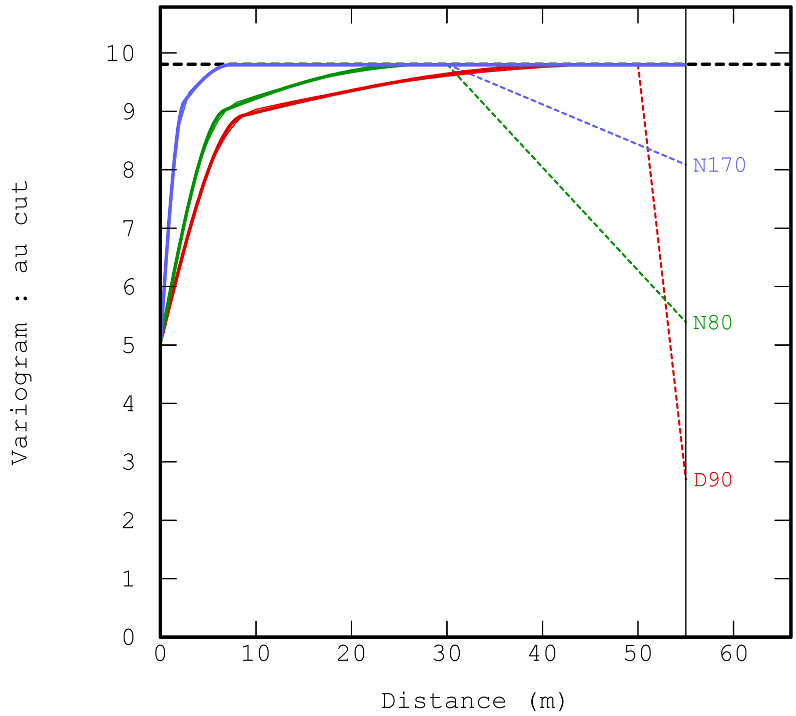


Figure 14.6.2_4
Pahtavaara Gold Deposit
Domain Group Low Grade – Grade Variogram



14.7 Block Modelling

A 3-D block model was created in the local mine grid using Vulcan mining software. The parent block size was selected on the basis of the average drill spacing together with consideration of potential mining parameters. A parent cell size of 20mE by 10mN by 10mRL which was sub-blocked down to 5mE by 2.5mN by 2.5mRL (to ensure adequate volume representation). The models covered all the interpreted mineralisation zones and included suitable additional waste material to allow later mining engineering studies. Block coding was completed on the basis of the block centroid, wherein a centroid falling within any wireframe was coded with the wireframe solid attribute. The block model is unrotated.

The main block model parameters are summarised below in Tables 14.7_1. Variables were coded into the block models to enable multiple indicator kriging and ordinary kriging estimation and subsequent MIK change of support and grade tonnage reporting. A visual review of the wireframe solids and the block model indicated correct flagging of the block model. Additionally, a check was made of coded volume versus wireframe volume which confirmed the above.

Table 14.7_1
Pahtavaara Gold Deposit
Block Model Parameters

	Northing (Y)	Easting (X)	RL (Z)
Min. Coordinates	4,700	4,150	-300
Max Coordinates	5,200	5,610	270
Block size (m)	20.0	10.0	10.0
Sub Block size (m)	5.0	2.5	2.5
Rotation (° around axis)	0°	0°	0°

14.8 Bulk Density Data

A dry bulk density database has been supplied containing a total of 2,617 data. The database can be subdivided based on work carried out by Lappland Goldminers in 2009 and 2010 and subsequent work by Rupert. Review of the two sets of data indicate no material difference Table 14.8_1.

Table 14.8_1
Pahtavaara Gold Deposit
Density Statistics

Company	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
Lappland Goldminers	752	2.05	4.12	2.921	0.142	0.020	0.049
Rupert	1,865	2.07	4.25	2.936	0.107	0.011	0.036

Rupert have calculated dry bulk densities on the basis of the weight in water method. Density readings have been taken on whole drillcore and are distributed across all areas of the deposit. It is recognised that across the deposit, different lithologies are likely to have different densities, however a sufficiently coherent geological model does not yet exist to allow for differentiation between the lithologies present. A bulk density of 2.9t/m^3 has therefore been applied as a tonnage factor to allow for appropriate grade tonnage reporting.

14.9 Grade Estimation

14.9.1 Introduction

Multiple Indicator Kriging (MIK) was applied to grade estimation at the Pahtavaara Gold Project within the defined indicator mineralisation shells. The minor domains forming a low grade halo to the main mineralised domains were estimated via ordinary kriging (OK). Estimation was completed in the mining package Vulcan using the GSLib geostatistical software while geostatistical change of support parameters were developed in Isatis geostatistical software. MIK is considered a robust estimation methodology for grade estimates for gold deposits such as Pahtavaara where high levels of short scale variability are present. MIK grade estimation with change of support has been applied to produce 'recoverable' gold estimates targeting a selective mining unit (SMU) of 5mE x 2.5mN x 2.5mRL.

14.9.2 The Multiple Indicator Kriging Method

The MIK technique is implemented by completing a series of Ordinary Kriging ("OK") estimates of binary transformed data. A composite sample, which is equal to or above a nominated cutoff or threshold, is assigned a value of 1, with those below the nominated indicator threshold being assigned a value of 0. The indicator estimates, with a range between 0 and 1, represent the probability the point will exceed the indicator cutoff grade. The probability of the points exceeding a cutoff can also be considered broadly equivalent to the proportion of a nominated block that will exceed the nominated cutoff grade.

The estimation of a complete series of indicator cutoffs allows the reconstitution of the local histogram or conditional cumulative distribution function ("ccdf") for the estimated point. Based on the ccdf, local or block properties, such as the block mean and proportion (tonnes) above or below a nominated cutoff grade can be investigated.

Post MIK Processing - E-Type Estimates

The E-type estimate provides an estimate for the grade of the total block or bulk-mining scenario. This is achieved by discretising the calculated ccdf for each block into a nominated number of intervals and interpolating between the given points with a selected function (e.g. the linear, power or hyperbolic model) or by applying intra-class mean grades. The sum of all these weighted interpolated points or mean grades enables an average whole block grade to be determined.

The following example shows the determination of an E-type estimate for a block containing three indicator cutoffs.

The indicator cutoffs and associated probabilities calculated are shown in Table 14.9.2_1.

Table 14.9.2_1
Pahtavaara Gold Deposit
Indicator Cutoff and Probability

Indicator	Cutoff Grade Au g/t	Indicator Probability (cumulative)
minimum grade *	0	0.00 **
indicator 1	1	0.40
indicator 2	2	0.65
indicator 3	3	0.85
maximum grade *	4	1.00 **

Note: * Cutoff grades determined by the user.
** Indicator probability is assumed at the minimum and maximum cutoff.

The whole block grade can now be determined in this block with the following parameters used for the purposes of the interpolation:

- Number of discretisation intervals: 4.
- Linear extrapolation between all points (median grade between nominated cutoffs).

The worked example is then calculated with the following steps:

- Interval 1 (0-1g/t Au) median grade x probability/proportion attributed to the interval (0.5g/t Au x 0.40 = 0.200).
- Interval 2 (1 - 2g/t Au) median grade x proportion (1.5g/t Au x 0.25 = 0.375).
- Interval 3 (2 - 3g/t Au) median grade x proportion (2.5g/t Au x 0.20 = 0.500).
- Interval 4 (3 - 4g/t Au) median grade x proportion (3.5g/t Au x 0.15 = 0.525).
- Calculate total grade average all calculated intervals ((0.2+0.375+0.500+0.525)/1) = 1.60g/t Au.

It is also possible from this example to calculate the proportion and grade above a nominated cutoff (e.g. 2g/t - at sample support or complete selectivity). The following steps would be undertaken to calculate the tonnes and grade at sample selectivity using a 2g/t cutoff:

- Interval 3 (2 - 3g/t Au) median grade x proportion (2.5g/t Au x 0.20 = 0.500).
- Interval 4 (3 - 4g/t Au) median grade x proportion (3.5g/t Au x 0.15 = 0.525).
- Calculate total grade average all calculated intervals ((0.500+0.525)/0.35) = 2.93g/t Au with 0.35% of the block above the cutoff.

The effect of using a non-linear model to interpolate between cutoffs is to shift the grade weighting associated with that cutoff away from the median. The intra-class means based on the cut composite data have been used to reconstitute the ccdf and produce block statistics.

It is noted, however, that the calculation of the E-type estimate and complete selectivity often does not allow mine planning to the level of selectivity which is proposed for production. To achieve an estimate which reflects the levels of mining selectivity envisaged, a selective mining unit ("SMU") correction is often applied to the calculated ccdf.

Support Correction (Selective Mining Unit Estimation)

A range of techniques are known to produce a support correction and therefore allow for selective mining unit emulation. The common features of the support correction are:

- Maintenance of the mean grade of the histogram (E-type mean).
- Adjustment of the histogram variance by a variance adjustment factor (the 'f' factor).

The variance adjustment factor, used to reduce the histogram or ccdf variance, can be calculated using the variogram model. The variance adjustment factor is often modified to account for the likely grade control approach or 'information effect'.

In simplest terms, the variance adjustment factor takes into account the known relationship derived from the dispersion variance.

Total variance = variance of samples within blocks + variance between blocks.

The variance adjustment factor is calculated as the ratio of the variance between the blocks and the variance of the samples within the blocks, with a small ratio (e.g. 0.10) indicating a large adjustment of the ccdf variance and large ratio (e.g. 0.80) representing a small shift in the ccdf.

Two simple support corrections that are available include the Affine and Indirect Lognormal correction, which are both based on the permanence of distribution. The discrete Gaussian model is often applied to global change of support studies and has been generated on the composite dataset as a comparison. The indirect lognormal correction was applied to the MIK grade estimates.

Indirect Lognormal Correction

The indirect lognormal correction can be implemented by adjusting the quantiles (indicator cutoffs) of the ccdf with the variance adjustment factor so that the adjusted ccdf represents the statistical characteristics of the block volume of interest.

This is implemented with the following formula:

$$q' = a \times q^b$$

q = quantile of distribution.

q' = quantile of the variance-reduced distribution.

where the coefficients a and b, are given by the following formula:

$$a = \sqrt{\frac{m}{f \cdot CV^2 + 1}} \left[\sqrt{\frac{CV^2 + 1}{M}} \right]$$

$$b = \sqrt{\frac{\ln(f \cdot CV^2 + 1)}{\ln(CV^2 + 1)}}$$

m = mean of distribution.

f = variance adjustment factor .

CV = coefficient of variation.

At the completion of the quantile adjustments, grades and tonnages (probabilities are then considered a pseudo-tonnage proportion of the blocks) at a nominated cutoff grade can be calculated using the methodology described above (E-type). The indirect lognormal correction, as applied to Pahtavaara, is the best suited of the common adjustments applied to MIK to produce selective mining estimates for positively skewed distributions.

14.9.3 Multiple Indicator Kriging Parameters

MIK estimates were completed using the indicator variogram models (Section 14.6), and a set of ancillary parameters controlling the source and selection of composite data. The sample search parameters were defined based on the variography and the data spacing, and a series of sample search tests performed in Isatis geostatistical software. A total of 17 indicator thresholds were estimated for all estimation domains (see Table 14.5.5_1).

OK estimates were completed on the minor estimation domains forming a halo to the main domains using the grade variogram models (Section 14.6), and a set of ancillary parameters controlling the source and selection of composite data. The sample search parameters were defined based on the variography and the data spacing, and a series of sample search tests performed in Isatis geostatistical software.

The sample search parameters for the MIK estimations are provided in Table 14.9.3_1. A combination of soft domain boundaries was used for the estimation throughout to reflect continuity between domains or otherwise. A three-pass estimation strategy (where required) was applied to each domain, applying a progressively expanded and less restrictive sample search to the successive estimation pass, and only considering blocks not previously assigned an estimate. Parent cell estimations (20mE by 10mN by 10mRL) were applied throughout and discretisation was applied on the basis of 3X by 3Y by 2RL for 18 discretisation points per block.

Table 14.9.3_1
Pahtavaara Gold Deposit
MIK Sample Search Criteria

Domain	Pass	Sample Search Orientation (dip/dip direction˚)			Sample Search Distance (m)			Numbers of 2m Composites			% Blocks Estimated
		Major	Semi Major	Minor	Major	Semi Major	Minor	Min.	Max.	Max Per Drillhole	
3510	Pass 1	0→75	80→165	10→345	40	40	20	24	72	16	98
	Pass 2	0→75	80→165	10→345	80	80	40	18	72	-	99
	Pass 3	0→75	80→165	10→345	80	80	40	12	72	-	100
3520	Pass 1	0→80	60→170	30→350	40	40	20	24	72	16	78
	Pass 2	0→80	60→170	30→350	80	80	40	18	72	-	95
	Pass 3	0→80	60→170	30→350	160	160	50	12	72	-	100
3530	Pass 1	0→110	15→200	15→20	40	40	20	24	72	16	85
	Pass 2	0→110	15→200	15→20	100	100	30	24	72	-	100
	Pass 3									-	
3540	Pass 1	0→260	65→170	25→350	40	40	20	24	72	16	83
	Pass 2	0→260	65→170	25→350	120	120	60	18	72	-	94
	Pass 3	0→260	65→170	25→350	240	240	120	12	72	-	100
3550	Pass 1	-30→260	60→260	0→350	40	40	20	24	72	16	93
	Pass 2	-30→260	60→260	0→350	80	80	40	18	72	-	98
	Pass 3	-30→260	60→260	0→350	80	80	40	12	72	-	100
3560	Pass 1	-40→265	49→250	8→349	40	40	20	24	72	16	96
	Pass 2	-40→265	49→250	8→349	80	80	40	18	72	-	99
	Pass 3	-40→265	49→250	8→349	120	120	60	12	72	-	100
3570	Pass 1	-40→260	42→218	23→330	40	40	20	24	72	16	80
	Pass 2	-40→260	42→218	23→330	120	120	60	18	72	-	99
	Pass 3	-40→260	42→218	23→330	120	120	60	12	72	-	100
3580	Pass 1	0→260	65→170	25→350	40	40	20	24	72	16	91
	Pass 2	0→260	65→170	25→350	80	80	40	18	72	-	100
	Pass 3									-	
3590	Pass 1	-75→185	0→95	15→185	40	40	20	24	72	16	79
	Pass 2	-75→185	0→95	15→185	120	120	60	18	72	-	94
	Pass 3	-75→185	0→95	15→185	160	160	80	12	72	-	100
35100	Pass 1	-50→250	19→316	34→213	40	40	20	24	72	16	93
	Pass 2	-50→250	19→316	34→213	80	80	40	18	72	-	99
	Pass 3	-50→250	19→316	34→213	120	120	60	12	72	-	100
35110	Pass 1	-30→295	17→215	54→331	40	40	20	24	72	16	91
	Pass 2	-30→295	17→215	54→331	80	80	40	18	72	-	98
	Pass 3	-30→295	17→215	54→331	160	160	80	12	72		100
35120 North	Pass 1	-60→205	0→115	30→205	40	40	20	24	72	16	84
	Pass 2	-60→205	0→115	30→205	80	80	40	18	72	-	97
	Pass 3	-60→205	0→115	30→205	120	120	60	12	72	-	100
35120 South	Pass 1	-60→295	0→205	30→295	40	40	20	24	72	16	96
	Pass 2	-60→295	0→205	30→295	80	80	40	18	72	-	100
	Pass 3									-	
35130	Pass 1	-42→159	28→97	35→209	80	80	40	24	72	16	85
	Pass 2	-42→159	28→97	35→209	160	160	80	18	72	-	100
	Pass 3									-	
35140	Pass 1	-30→250	0→160	60→250	40	40	20	24	72	16	73
	Pass 2	-30→250	0→160	60→250	120	120	60	18	72	-	99
	Pass 3	-30→250	0→160	60→250	120	120	60	12	72	-	100

The sample search parameters for the OK estimations are provided in Table 14.9.3_2. A combination of soft and hard domain boundaries was used for the estimation throughout to reflect continuity between domains or otherwise. Only one estimation pass was considered with a search neighbourhood of sufficient parameters to enable estimation of all required blocks. Estimations were on the basis of SMU block dimensions (5mE by 2.5mN by 2.5mRL) and discretisation was applied on the basis of 2X by 2Y by 2RL for 8 discretisation points per block.

Table 14.9.3_2
Pahtavaara Gold Deposit
OK Sample Search Criteria

Domain	Sample Search Orientation (dip/dip direction°)			Sample Search Distance (m)			Numbers of 2m Composites		
	Major	Semi Major	Minor	Major	Semi Major	Minor	Min.	Max.	% Estimated
2010	0→75	80→165	10→345	80	80	40	6	8	100
2020	0→80	60→170	30→350	120	120	60	4	8	100
2030	0→110	15→200	15→20	120	120	60	4	8	100
2040	0→260	65→170	25→350	160	160	80	4	6	99.7
2050	-30→260	60→260	0→350	60	60	30	4	8	100
2060	-40→265	49→250	8→349	80	80	40	4	8	98.3
2070	-40→260	42→218	23→330	60	60	40	4	8	100
2080	0→260	65→170	25→350	60	60	30	4	6	100
2090	-75→185	0→95	15→185	160	160	80	4	6	100
20100	-50→250	19→316	34→213	80	80	40	4	8	100
20110	-30→295	17→215	54→331	120	120	60	4	8	100
20120 North	-60→205	0→115	30→205	80	80	40	6	8	99.9
20120 South	-60→295	0→205	30→295	60	60	30	6	8	99.6
20130	-42→159	28→97	35→209	80	80	40	4	6	100
20140	-30→250	0→160	60→250	80	80	40	4	8	99.7

14.9.4 Change of Support

Applying the modelled variography, variance adjustment factors were calculated for to emulate a 5mE x 2.5mN x 2.5mRL selective mining unit ("SMU") via the indirect lognormal change of support. The intra-class composite mean grades were used in calculating the whole block and SMU grades. The change of support study also included the calculation of the theoretical global change of support via the discrete Gaussian change of support model.

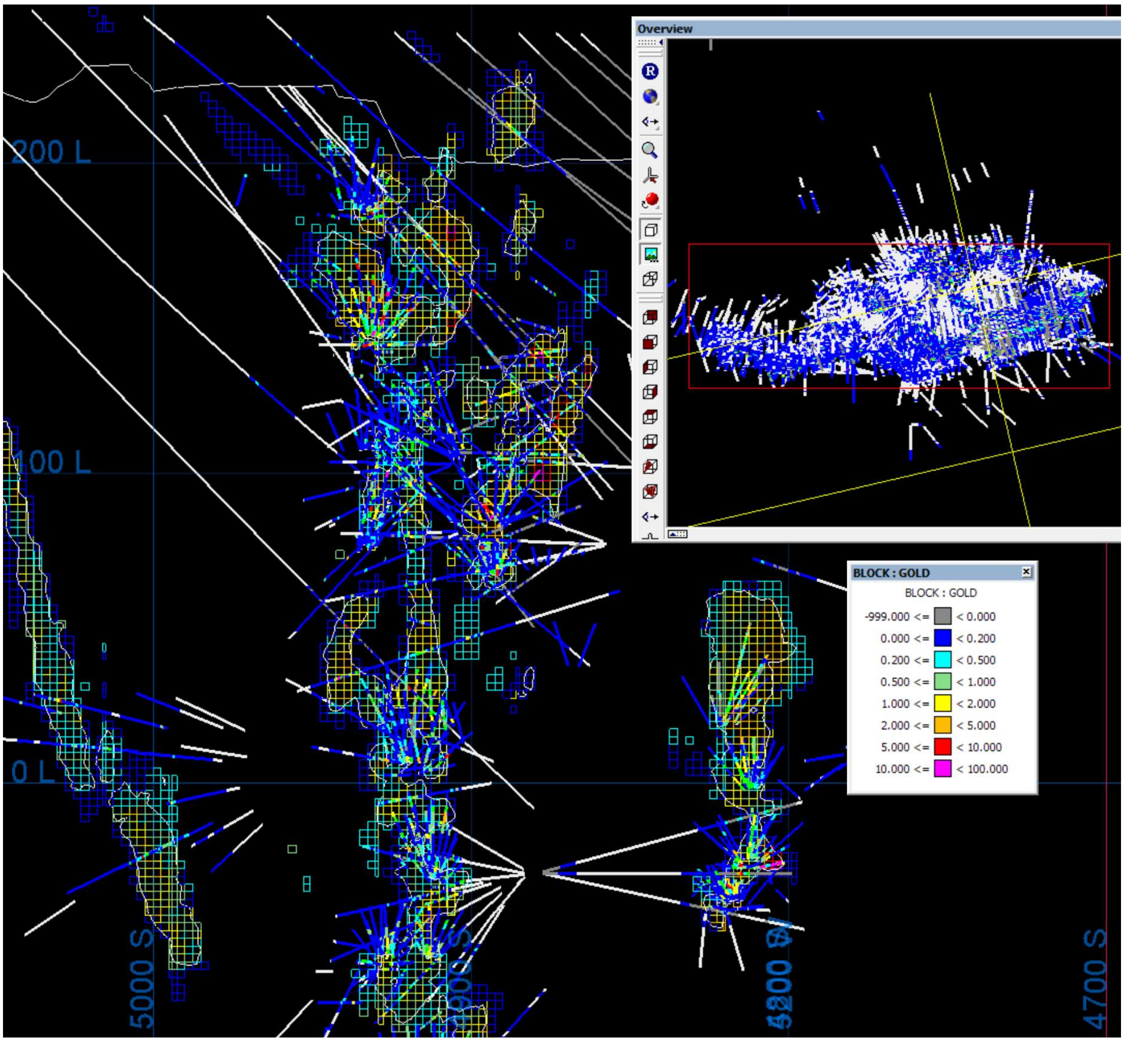
An 'information effect' factor is commonly applied to the originally derived panel-to-block variance ratios to determine the final variance adjustment ratio. The goal of incorporating information effect is to calculate results taking into account that mining takes place based on grade control information. There will still be a quantifiable error associated with this data and it is this error we want to incorporate. This is achieved in practice by running a test kriging estimation of an SMU using grade control data (the results required to incorporate this option in the change of support do not depend on the assay data so the grade control data can be hypothetical). The incorporation of the information effect is commonly found to be negligible, however can have a significant effect in some cases. In this case, the information effect factor was found to have a minor effect and has been incorporated in the calculation.

The variance adjustment ratios as applied to all mineralised domains was 0.1.

14.9.5 Grade Localisation

MIK grade estimates are generated in large blocks or panels (in the case of Pahtavaara, 20mE x 10mN x 10mRL) and are inherently not intuitive to review. Post processing of these MIK estimates aims to simplify the presentation by producing a single SMU dimension block grade where the distribution of the grades in the panel matches that of the distribution in the SMU's. The MIK panel grades have been localised to SMU dimension blocks in Isatis software. The SMU dimension was 5mE x 2.5mN x 2.5mRL. Validation of the results indicates a near identical distribution and the resultant model has been accepted. A typical section is presented below (Figure 14.9.5_1).

Figure 14.9.5_1
Typical Sectional View Displaying Localised Au Grades



14.9.6 Estimate Validation

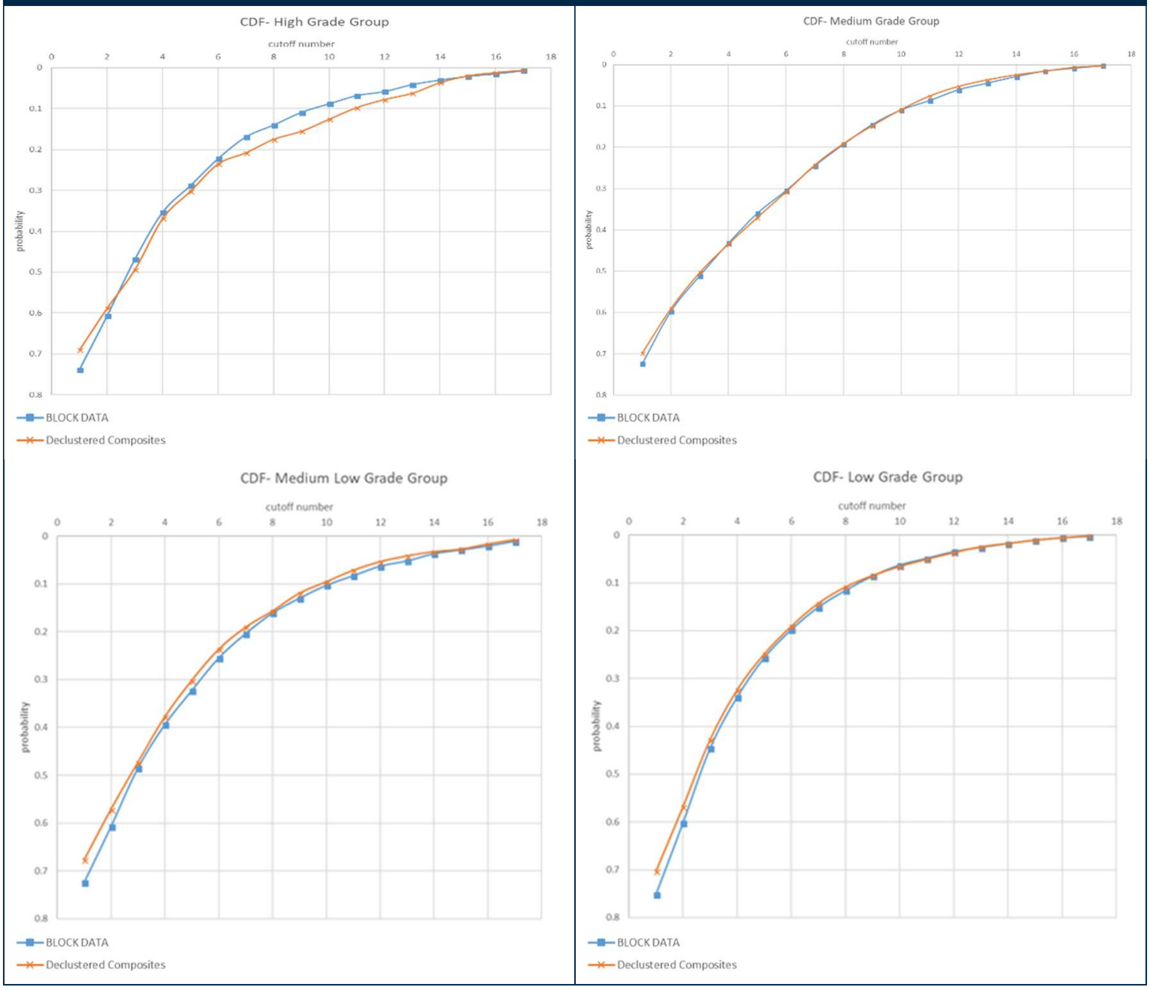
All relevant statistical information was recorded to enable validation and review of the MIK estimates. The recorded information included:

- Number of samples used per block estimate.
- Number of drillholes from which samples selected.
- Average distance to samples per block estimate and distance to nearest sample.
- Estimation flag to determine in which estimation pass a block was estimated.
- Number of drillholes from which composite data were used to complete the block estimate.

The estimates were reviewed visually and statistically prior to being accepted. The review included the following activities:

- Comparison of the E-type estimate versus the mean of the composite dataset, including weighting where appropriate to account for data clustering.
- Comparison of the reconstituted cumulative conditional distribution functions of the estimated blocks (indicator kriging) versus the input composite data (Figure 14.9.6_1).
- Visual checks of cross sections, long sections, and plans.

Figure 14.9.6_1
CCDF Validation



Alternative estimates were also completed to test the sensitivity of the reported model to the selected MIK interpolation parameters. An insignificant amount of variation in overall grade was noted in the alternate estimations.

Validation of localised block Au grades has been undertaken on a per domain basis by comparing the block mean grades with the relevant composite mean grades (Table 14.9.6_1).

Table 14.9.6_1
Pahtavaara Gold Deposit
Comparison of Block Grades with Composite Mean Grades – All Data Used

	Zone	All Composites, (declustered, capped)	All Composites, (non-decl, capped)	Block Model Grades	% Diff Block Model versus Decl Mean
OK Domains (uncapped)	2010	0.220	0.22	0.215	-2.3%
	2020	0.352	0.275	0.325	-7.7%
	2030	0.269	0.381	0.267	-0.7%
	2040	0.239	0.227	0.248	3.8%
	2050	0.205	0.214	0.207	1.0%
	2060	0.184	0.208	0.187	1.6%
	2070	0.289	0.49	0.216	-25.3%
	2080	0.216	0.239	0.192	-11.1%
	2090	0.181	0.209	0.177	-2.2%
	20100	0.185	0.199	0.185	0.0%
	20110	0.204	0.206	0.198	-2.9%
	20120	0.229	0.279	0.215	-6.1%
	20130	0.718	1.456	0.5	-30.4%
	20140	0.449	0.457	0.446	-0.7%
MIK Domains	3510	1.285	1.418	1.322	2.9%
	3520	1.736	1.742	1.652	-4.8%
	3530	1.56	1.824	1.927	23.5%
	3540	2.201	2.259	2.348	6.7%
	3550	1.911	2.099	1.921	0.5%
	3560	2.228	2.199	2.392	7.4%
	3570	2.471	3.201	1.499	-39.3%
	3580	1.265	1.431	1.40	10.7%
	3590	1.229	0.793	1.084	-11.8%
	35100	1.569	1.612	1.58	0.7%
	35110	2.003	2.265	2.144	7.0%
	35120	2.239	2.422	2.124	-5.1%
	35130	2.397	2.088	2.272	-5.2%
	35140	1.712	1.922	1.563	-8.7%

For the MIK grade domains, a reasonable correlation can be drawn with most domains falling within the range of approximately ±10%. In the case of Domain 3570 where a larger discrepancy is noted, the domain is volumetrically insignificant compared to the total. In the case of Domain 3530 where the block mean grade are significantly higher than the declustered mean grade it is noted that the non declustered mean composite grade is closer to the block grade and the grade estimates are therefore considered acceptable. The low grade OK grade domains demonstrate greater variability in comparison to the input composites, however the difference is overwhelmingly negative. As these domains are intended as a dilution skin to the main mineralised MIK grade domains, the OK grade estimates are considered acceptable for this purpose.

14.9.7 Depletion for Mining Activity

Depletion to account for mining activity has been applied to the model. Depletion has been applied as at the effective date via the use of surveyed topographic surfaces, underground stopes, declines and other associated infrastructure. Depletion has been applied by block model flag to identify the mined and in-situ portions of the models.

14.9.8 Resource Classification

The resource categorisation was based on the robustness of the various data sources available, including:

- Geological knowledge and interpretation.
- Variogram models and the ranges of the first structure in multi-structure models.
- Drilling density and orientation.
- Estimation quality statistics.

The resource estimates for the Pahtavaara Gold Deposit have been classified as Inferred Mineral Resources based on the confidence levels of the key criteria as presented in Table 14.9.8_1.

Table 14.9.8_1_
Pahtavaara Gold Deposit
Confidence Levels by Key Criteria

Items	Discussion	Confidence
Drilling Techniques	Diamond/percussion sludge - Industry Standard approach.	High for diamond, Moderate/Low for sludge
Logging	Standard nomenclature has been adopted but not used in entire database.	Moderate
Drill Sample Recovery	Recoveries are not recorded in entire database but diamond core recoveries assumed acceptable. Unknown recoveries for sludge.	Moderate
Sub-sampling Techniques and Sample Preparation	Diamond and RC sampling conducted by industry standard techniques.	Moderate/High
Quality of Assay Data	Appropriate quality control procedures only available for work completed by Rupert. They were reviewed on site and considered to be of industry standard.	Moderate/High
Verification of Sampling and Assaying	Sampling and assaying procedures have been assessed and are considered of appropriate industry standards.	Moderate
Location of Sampling Points	Survey of all collars conducted with accurate survey equipment. Investigation of downhole survey indicates appropriate behaviours.	Moderate/High
Data Density and Distribution	Majority of regions defined on a notional 25mE x 25mN drill spacing. Grade control spaced drilling available.	Moderate/high
Audits or Reviews	Data collection assessed during site review.	N/A
Database Integrity	Data base is largely legacy with numerous campaigns and U/G grade control. Industry standard approach applied by Rupert.	Moderate
Geological Interpretation	Mineralisation controls are moderately well understood. The mineralisation constraints are robust but relatively broad and therefore of moderate confidence.	Moderate
Estimation and Modelling Techniques	Multiple Indicator Kriging is considered to be appropriate given the geological setting and grade distribution. Minor domains are estimated by OK.	High
Cutoff Grades	MIK is independent of cutoff grade although the mineralisation constraints were based on a notional 0.3g/t Au lower cutoff grade. A 1.5g/t lower cutoff grade is considered appropriate for reporting.	Moderate/High
Mining Factors or Assumptions	A 5mE x 2.5mN x 2.5mRL SMU emulated for gold. Underground mining assumed. Change of support for Inferred component has higher degree of uncertainty.	Moderate
Metallurgical Factors or Assumptions	Not applied or available.	N/A
Tonnage Factors (In-situ Bulk Densities)	Sufficient data exists to enable high confidence in the applied density values.	High

14.10 Resource Reporting

The summary total resource for the Pahtavaara Gold Project is provided in Table 14.10_1 below. The preferred lower cutoff grade for reporting is 1.5g/t Au. In view of the nature and style of the mineralisation and potential mining approach and method, this is considered an appropriate cutoff grade. It should be noted that mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 14.10_1
Pahtavaara Gold Deposit
Mineral Resource Report - Summary Grade Tonnage Report

	Lower Cutoff Grade (g/t Au)	Tonnes	Average Grade (g/t Au)	Gold Metal (kozs)	Gold Metal (Kg)
Inferred Resource	0.5	14,540,000	1.6	756	23,500
	1.0	7,980,000	2.4	605	18,800
	1.5	**4,640,000**	**3.2**	**474**	**14,700**
	2.0	3,030,000	4.0	385	12,000
	3.0	1,470,000	5.6	264	8,200
	4.0	880,000	7.0	199	6,200
	5.0	560,000	8.5	153	4,800

Note: Appropriate rounding has been applied.

The effective date of this Mineral Resource is 16 April 2018. It is not anticipated that this Mineral Resource estimate will be materially affected, to any extent, by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors.

The preferred reporting cutoff grade is 1.5g/t Au, which was selected based on historical breakeven operating costs, recoveries of 85% and a gold price of EUR950/oz. The Mineral Resource estimate has also been reported at a range of additional cutoff grades to demonstrate grade tonnage relationships at higher and lower cutoff grades.

15. MINERAL RESERVE ESTIMATES

The mineral resources stated in this report are classified as Inferred and cannot therefore be used to derive a mineral reserve.

16. MINING METHODS

The resource estimated in this report is classified as Inferred and future mining methods have yet to be defined. Mining has previously been undertaken by open pit and underground methods with a total of 5.8Mt of ore extracted over a 16 year operating history.

Mining of the Pahtavaara Deposit was undertaken by open pit between 1996 and 2000. A total of 1.7Mt of ore was mined over this period with a strip ratio of 4.0. Underground mining commenced using contractors in 2004 and continued under two periods of ownership until 2014 with 4.1Mt mined over this period. Access was by ramp with 5m x 5m mine development with mining by long hole open stoping. Ground conditions are considered excellent.

Mining studies are ongoing.

17. RECOVERY METHODS

The resource estimated in this report is classified as Inferred and future recovery methods have yet to be defined.

Metallurgical sampling and testwork is planned.

18. PROJECT INFRASTRUCTURE

The resource estimated in this report is classified as Inferred and future project infrastructure demands have yet to be defined. Current surface infrastructure at Pahtavaara includes a heavy vehicle workshop, administration building, two core sheds and a processing plant (see Figure 18_1).

Figure 18_1
Existing Pahtavaara Infrastructure

19. MARKET STUDIES AND CONTRACTS

The resource estimated in this report is classified as Inferred and future concentrate or doré types have yet to be defined. The Project has no contractual or offtake sales agreements in place.

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Environmental Studies Done and Relevant Environmental Issues

The Pahtavaara mine area nature baseline studies were done by Ahma Ympäristö Ltd. (2005, 2006, 2013). There are no protected areas inside the mining area or in the area affected by the mine. A baseline study was completed by Eurofins Ltd for the wider Pahtavaara exploration area in March 2018.

Before any potential return to production, Rupert will restructure water management and recycling to minimise emissions. The environmental permit will be updated to meet current legislation and to account for any changes to the scope of a restarted mining operation.

An Environmental Impact Assessment (EIA) is not been required for current activities at Pahtavaara mine site or to restart the mine at nominal capacity. Possible triggers in future to launch the EIA procedure in the future could include:

- > 550Mt/a mining
- Using cyanide leach
- High sulphide ore
- Ore from satellite mines
- Open pit expansion
- New tailings area

20.2 Waste Management

20.2.1 Introduction

Due to its geological composition, specifically the absence of significant sulphide material in historically mined areas, Pahtavaara ore has very high neutralisation potential and therefore a negligible impact on the surrounding environment. Discharged water from tailings area (Dam 3) has a pH between 7 to 8, and very low metal contents.

20.2.2 Tailings Area

In future production, the tailings area (68 ha) may need a new operation plan, possibly new sectioning, piping, spigots and a dam raise. The current environmental permit allows dams to be raised up to +248m (N60). The current dam level is 232 meters.

The last dam inspection with the supervising authority was completed in 2016. Prior to any potential restart the tailings dam authority is required to be notified two months before the start of production and processing. In addition, the water amount measurement system requires renovation before the restart of production.

20.2.4 Waste Rock Areas

Past production mine waste rock storage areas are located in three waste rock areas. The mine waste management plan was last updated in 2012 by Lapin Vesitutkimus Ltd, and will be updated during 2018 in order to meet current legislation. Current environmental monitoring is undertaken by Eurofins Ltd. The planned future monitoring program will be updated together as part of a new overall environmental plan for submission to the relevant authorities prior to restarting mining and processing.

20.3 Sediment Control

The Pahtavaara mill and tailings area does not require any specific water treatment. Underground waters from the mine are pumped by the newly renovated pumping system to the surface and are sent to the tailings storage facility. In future production, water from the underground mine can be used for processing in order to reduce uptake from the Soasjoki river. Underground water sediment is settled in underground settling ponds and is regularly pumped to the waste rock areas. The office building has biological water treatment for sewage and sludge waste is collected and treated in the public treatment plant.

20.4 Post-Closure Management

A closure plan and cost estimate was completed in 2006 as part of the environmental permit application, including tailings area and waste rock areas. All mine waste areas are required to be covered with a 30cm layer of moraine material. After updating the waste management plan (required by the end of 2018), Rupert will update the environmental permit to meet any future production plans.

20.5 Site Monitoring

The current monitoring plan includes water quality analyses from waste rock areas and the tailings area four times per year. Samples are collected and are sent for analysis by Eurofins Ltd. The results of the analyses are delivered regularly to the supervising authority (the Centre for Economic Development, Transport and Environment of Lapland). After production restarts, samples will be taken monthly for routine submission to the supervising authority.

20.6 Permit Requirements, Status of Permit Applications and Bond Requirements

The current environmental permit was granted by PSAVI in 2006 and several new permits and court orders have been granted subsequently to supplement it. The permit is currently in force and enables Rupert to start production when required, with same production specification as earlier. The relevant authorities have indicated that a permit update is necessary when the new production plan is available, and the environmental bond will also be updated in this phase of permitting. The key changes to the permit will be related to the revised water balance and closing plan.

20.7 Care and Maintenance

The Pahtavaara mine has been on care and maintenance since May 2014. Rupert interacts with both local and national authorities and undertakes a number of activities to mitigate the impact from both previous operations and current activities to maintain the conditions of its licences.

20.8 Applicable Codes

20.8.1 Mining Code

Mining and exploration projects in Finland are subject to the Finland Mining Act (621/2011). The General Provisions of this act are described as follows:

The objective of this Act is to promote mining and organise the use of areas required for it, and exploration, in a socially, economically, and ecologically sustainable manner. In order to fulfil the purpose of the Act, the securing of public and private interests is required, with particular attention to:

1) *the preconditions for engaging in mining activity;*
2) *the legal status of landowners and private parties sustaining damage; and*
3) *the impacts of activities on the environment and land use, and the economic use of natural resources.*

A further objective of the Act is to ensure the municipalities' opportunities to influence decision-making, and the opportunities of individuals to influence decision-making involving them and their living environment. Furthermore, an objective of the Act is to promote the safety of mines and to prevent, decrease, and avert any inconvenience and damage incurred in the activities referred to in this Act, and to ensure liability for damages for the party causing the inconvenience or damage.

20.8.2 Environmental Code

The Mining Act (621/2011) also refers to other legislation for "*decisions on permit issues or other matters hereunder and other activities in accordance with this Act shall comply with, inter alia, the provisions of the Nature Conservation Act (1096/1996), the Environmental Protection Act (86/2000), the Act on the Protection of Wilderness Reserves (62/1991), the Land Use and Building Act (132/1999), the Water Act (264/1961), the Reindeer Husbandry Act (848/1990), the Radiation Act (592/1991), the Nuclear Energy Act (990/1987), the Antiquities Act (295/1963), the Off-Road Traffic Act (1710/1995) and the Dam Safety Act (494/2009)*"

20.8.3 Regulations

Regulations are specified for exploration (Section 51) and mining (Section 52) permits in the Mining Act (621/2011).

Section 51 - Regulations to be included in an exploration permit.

The exploration permit shall specify provisions for the location and borders of the exploration area. The exploration permit shall include the necessary provisions for securing public and private interests concerning the following:

1) *the times and methods of exploration surveys and the equipment and constructions related to exploration;*
2) *measures to diminish harm caused to reindeer herding in a special reindeer herding area;*
3) *wording to ensure that activity under the permit will not endanger the status of the Sami as an indigenous people in the Sami Homeland, or the rights of the Skolts in accordance with the Skolt Act in the Skolt area;*
4) *obligation to report about exploration activities and results;*

5) *post-mining measures and the final deadline for submission of notification concerning these measures;*
6) *the waste management plan for extractive waste and compliance therewith;*
7) *the obligation to report on the exploration work to the appropriate authority overseeing public interests within its line of duty;*
8) *the schedule for decreasing the size of the exploration area;*
9) *collateral in accordance with Chapter 10;*
10) *other terms concerning exploration and use of the exploration area in order to ensure that the activity does not result in any consequence prohibited by this Act 16; AND*
11) *other specifications that are necessary in view of public and private interests and pertaining to the implementation of the conditions of the permit.*

Section 52 - Regulations to be included in a mining permit.

A mining permit shall give provisions for the location and borders of the mining area to be formed and the auxiliary area to the mine, taking the provisions laid down in sections 19 and 47, and the content of the rights of use and other special rights pertaining to the auxiliary area to the mine, into consideration. However, the permit authority may implement such changes in the location and borders of the mining area or auxiliary area to a mine presented in the application as are necessary in consideration of the provisions laid down in this Act. The mining permit shall specify a term within which the mining permit holder shall engage in mining activity or other such preparatory activity that indicates that the permit holder is seriously aiming to initiate actual mining operations. The time limit may be, at maximum, 10 years after the permit becomes legally valid. The mining permit shall include the necessary provisions for securing public and private interests concerning the following:

1) *avoidance or limiting of detrimental impacts of mining activity and addressing of elements necessary to ensure people's health and public safety;*
2) *measures for ensuring that mining activities do not entail obvious wasting of mining minerals or endanger or hamper potential future use of the mine and excavation work there;*
3) *the obligation to report on the extent of exploitation of the deposit and results;*
4) *measures to diminish harm caused to reindeer herding in a special reindeer herding area;*
5) *ensuring that activity under the permit will not endanger the status of the Sami as an indigenous people in the Sami Homeland, or the rights of the Skolts in accordance with the Skolt Act in the Skolt area;*
6) *collateral, in accordance with Chapter 10, associated with mine-closure alongside other obligations related to termination of mining activities and those after termination;*
7) *the deadline to be set for submission of any further specifications related to verifying the permit regulations;*
8) *material on other aspects of activity under the mining permit in order to ensure that the activity does not result in any consequence prohibited by this Act; and*
9) *other specifications that are necessary in view of public and private interests and pertaining to the implementation of the conditions of the permit.*

20.8.4 Environmental Protection Policies and Strategies

Rupert has a corporate social policy, environmental policy, community policy and health and safety policy that have been designed provide a risk management framework for the Project. These documents are available on the Company website. There are no Natura areas or national protected areas on Rupert's current land package.

20.8.5 Rural and Land Development Policies and Strategies

The mining area is part of the Northern Lapland provincial plan, which was ratified by the Government on December 27, 2007. Pahtavaara lies within a designated area for mining.

20.8.6 International Agreements, Protocols and Conventions

Rupert's activities are currently confined to Finland where local legislation is considered to meet or exceed international best practice.

20.9 Social and Community Related Requirements

North Finland is the traditional area of the indigenous Sámi people. There are no Sámi people, areas or interests in the vicinity of Pahtavaara mine vicinity.

Reindeer herding is a common source of livelihood in Lapland. The nearest reindeer farm is located 3km from the mine area, and animals are pasturing near and even inside mine area. Rupert Finland is in regular contact with local reindeer herders and collaborates with them in terms of shared potable water sources.

20.10 Mine Closure

Under the current mine closure plan, the mill building will be retained whilst other buildings can be removed. Underground mine devices (transformers, electric centers, cables etc.) will be removed. Access to the underground mine will be closed.

All mine waste areas must be covered with 30cm layer of moraine and slopes shaped to assure safety.

An environmental bond of €670,000 is in place to ensure that the closure plan is implemented.

Rupert is reviewing the closure plan as part of its evaluation of the production potential at Pahtavaara. This will define the amount of a new environmental bond.

21. CAPITAL AND OPERATING COSTS

The resource estimated in this report is classified as Inferred and future capital or operating costs have yet to be defined.

22. ECONOMIC ANALYSIS

The resource estimated in this report is classified as Inferred and no economic analysis is available for public disclosure.

23. ADJACENT PROPERTIES

23.1 Introduction

Pahtavaara was the first mine to be developed in the CLGB belt in 1996. Since then, a number of significant mineral discoveries have been made, namely Suurikuusikko (gold), Kevitsa and Sakatti (both polymetallic base metals deposits). Since 2015, a number of major mining groups have made strategic investments in the region and promising early stage discoveries have been made at Aamurusko and Kutuvuoma (both gold) (See Figure 23.1_1). Table 23.1_1 summarises the various deposits.

Figure 23.1_1
Recent Activity in Central Lapland

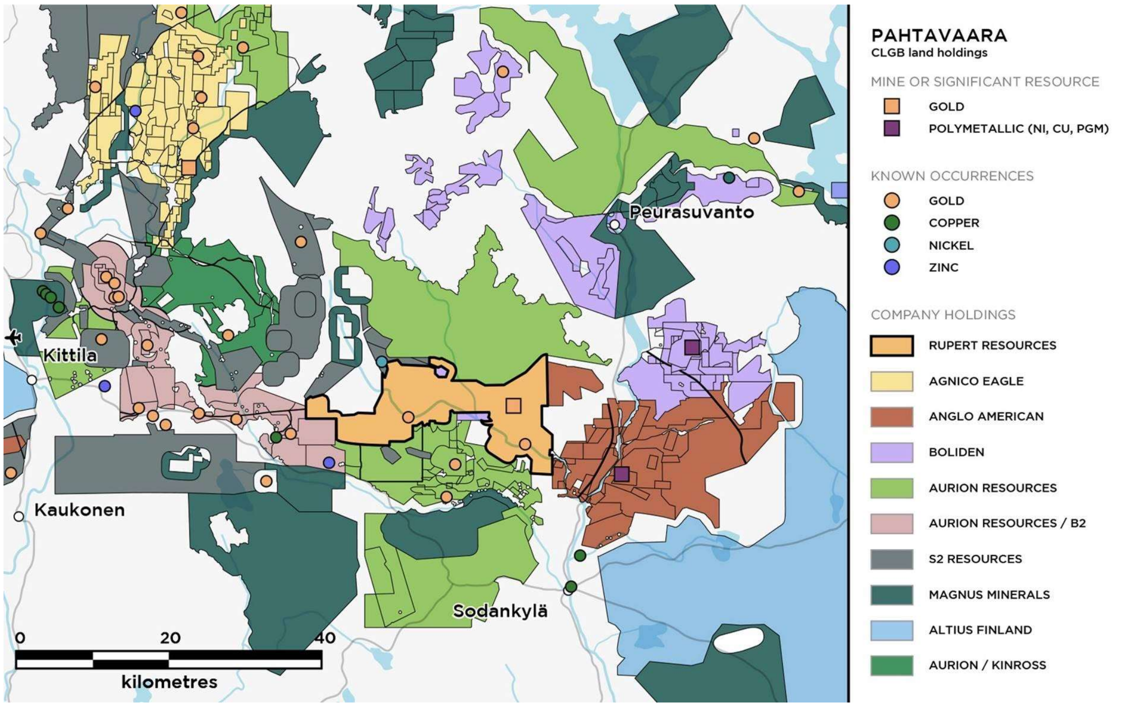


Table 23.1_1
Mineral Reserves and Resources in Central Lapland Greenstone Belt
(December 2017)

Deposit	Type	Mt	Au (g/t)	Cu (%)	Ni (%)	Co (%)	Pt (%)	Pd (%)
Reserves								
Kevitsa (Boliden)	Proven	79	0.10	0.34	0.21	0.01	0.19	0.12
	Probable	62	0.10	0.34	0.24	0.01	0.21	0.14
Kittila (Agnico Eagle)	Proven	1	4.26					
	Probable	26	4.75					
Resources								
Kevitsa (Boliden)	Measured	18	0.08	0.33	0.21	0.01	0.16	0.11
	Indicated	94	0.07	0.36	0.23	0.01	0.13	0.08
	Inferred	54	0.06	0.32	0.20	0.01	0.12	0.07
Kittila (Agnico Eagle)	Measured	2	2.59					
	Indicated	19	3.13					
	Inferred	9	4.18					
Sakatti (Anglo American)	Indicated	3	0.33	3.45	2.47	0.11	0.98	1.18
	Inferred	41	0.33	1.77	0.83	0.04	0.61	0.43

23.2 Suurikuusikko / Kittila Mine (Agnico Eagle)

The Kittila mine is located in the Lapland region of northern Finland, approximately 900km north of Helsinki and 150km north of the Arctic Circle. With a mine life estimated through 2035,its proven and probable mineral reserves contain 4.1 million ounces gold (27 million tonnes at 4.74g/t gold) as of December 31, 2017. Ore has been mined from underground since 2010. The operation is expected to produce about 190,000 ounces of gold in 2018 and in 2019. Kittila is expected to produce between 205,000 and 225,000 ounces of gold in 2020, as a result of the expansion project (described below) that is beginning in 2018.

The Kittila property covers 215 square km, stretching 25km along the Suurikuusikko Trend, a major gold-bearing shear zone. The mine area includes a group of six gold deposits along a 4.5km segment of the trend. The largest of the deposits are the Suuri, Roura and Rimpi zones that contain most of the current reserves and resources at Kittila. The other deposits are the Etela and Ketola zones and the new Sisar Zone. In February 2018, the Company approved a EUR160 million expansion project that will include the construction of a 1,044 metre deep shaft, a processing plant expansion that will increase throughput by 25% to 2.0 million tonnes per year, as well as other infrastructure and service upgrades. There will be phased expenditures from 2018 through 2021. This increased mining rate will be supported by the development of the Rimpi and Sisar zones (source; Agnico Eagle website).

23.3 Kevitsa Mine (Boliden)

The Kevitsa nickel mine commenced production in 2009 and was purchased by Boliden from First Quantum in June 2016 for USD720 million. In February 2018, Boliden announced plans to invest EUR 80m to increase mill capacity Kevitsa from 7.5 to 9.5Mtpa from 2021.

23.4 Sakatti Project (Anglo American)

The Sakatti Project is a copper – nickel – PGE deposit that was discovered by Anglo American in 2009. Anglo American recommenced drilling of the project in the winter of 2016 and announced a maiden resource for the project in 2017. Anglo American commenced a prefeasibility study for the project in early 2017 and are targeting completion by the end of 2018.

23.5 Aamurusko Project (Aurion Resources)

In February 2017 Aurion Resources reported the discovery of new, bonanza grade gold mineralisation on its 100% owned Risti Project in Northern Finland. The property is also known as the Aamurusko Project. The initial discovery was a 1150m long by 700m wide area of gold mineralisation with an apparent NE-SW trend that was discovered in late 2016. Here, 133 rock grab samples collected from predominantly large and angular sub-cropping quartz-tourmaline blocks assayed from nil to 1563.5g/t Au, including 36 samples which assayed greater than 31g/t Au (1 ounce per tonne). The average grade of all 133 samples was 74.3g/t Au. Many of these samples contained abundant coarse visible gold. Aurion commenced drilling of Aamurusko in late 2017 and in January announced that it had completed a maiden 4380m (21 drillholes) diamond drill program including several intersections of narrow gold bearing mineralisation. Subsequent to the discovery of Aamurusko, Kinross Gold Corporation invested CAD15.9 million for 9.98% of the issued capital of Aurion Resources.

23.6 Outa Project (Aurion Resources and Kinross)

In February 2018, Aurion Resources reported that it had signed a non-binding letter of intent Kinross Gold Corporation giving Kinross the right to earn up to 70% of the Outa Project which comprises approximately 15,000ha to the west of Pahtavaara.

23.7 Kutuvuoma Project (B2 / Aurion Resources)

Kutuvuoma adjoins Rupert's Pahtavaara Project on its westmost boundary and operated as a satellite pit for the Pahtavaara mill in the late 1990s.

In August 2015 Aurion entered into a JV agreement whereby B2Gold could earn 75% of the Kutuvuoma Project by spending CAD15million and completing a feasibility study for the Project. In December 2016 Aurion reported the results of the maiden drill program. The drill program comprised 5 HQ sized diamond drillholes with total meterage of 535m. Two holes were drilled west of the Kutuvuoma deposit, one into the deposit and two east of the deposit over an aggregate distance of approximately 1km. The program was designed to test for lateral continuity of the Kutuvuoma main mineralised zone east and west of the Kutuvuoma deposit.

The best hole of the program was drillhole KU16003 which was drilled into the known deposit. It intersected two mineralised zones, the first zone assayed 8.59g/t Au over 2.15m starting at 21.4m downhole. The second zone assayed 11.37g/t Au over 13.3m starting at 71.85m downhole. The upper zone intersection occurs in the structural hanging wall, and represents a promising zone to follow up. Previous hanging wall intercepts include 96.5g/t Au over 1.2m from Outokumpu ddh KUV-47, drilled in 1993. The second zone was a twin of Outokumpu ddh KUV-36 which assayed 7.2g/t Au over 19.4m, also drilled in 1993.

The information in this section that relates to adjacent properties is derived from public domain information and the QP has not been able to verify this information.

24. OTHER RELEVANT DATA AND INFORMATION

24.1 Mineral Resource History

An estimate prepared by Davy as part of a feasibility study for Pahtavaara calculated an open pit reserve of 1,051,000t grading 3.05g/t Au with a strip ratio of 4.5 and an underground reserve of 512,000 grading 3.73g/t Au.

The first resource reported according to NI 43-101 as recorded by the GTK was completed by Lappland Goldminers at a 1.5g/t Au cutoff and comprised a Measured and Indicated Resource of 574,000t grading 3.3g/t Au and an Inferred Resource of 88,000t.14g/t Au. Proven and Probable Reserves were stated as 678,000t grading 2.79g/t Au.

Lappland Goldminers published a further NI 43-101 resource and reserve in 2013 using a 0.5g/t Au cutoff. Proven and Probable Reserves were 1,397,000t grading 1.7g/t Au and were derived from a Measured and Indicated Resource of 1,274,000t grading 2.1g/t. Inferred Resources were estimated as 1,482,000t grading 1.77g/t Au.

25. INTERPRETATION AND CONCLUSIONS

The new Inferred Resource of 4.6Mt grading 3.2g/t Au (474koz) is reported using a 1.5g/t cutoff and is based on an updated geological interpretation of the deposit following a review of all available data that has been collected over the past 30 years. The new estimate represents a significant uplift in grade and tonnage from the historically disclosed Measured and Indicated Resource of 1.3Mt grading 2.1g/t in Measured and Indicated categories (85koz) and 1.5Mt grading 1.8g/t in Inferred category (84koz) calculated using a 0.5g/t cutoff prepared in 2014. The new resource includes over 50,000m of drilling completed by Rupert up to the end December 2017 along with drilling by the previous owners since the last resource estimate. The drilling has confirmed that the Pahtavaara deposit is demonstrably open at depth and along strike. The modelling work also estimated that 441koz has been mined from Pahtavaara historically (consistent with production data from 1996 to 2014) indicating a yield of over 2,000oz/vertical meter for the Pahtavaara Project.

26. RECOMMENDATIONS

The Pahtavaara gold deposit has been the subject of a number of exploration and resource definition drilling programmes over the past 20 years. From the review of historic work and recent drilling it is apparent that there is an opportunity to extract significantly more information from both the existing drilling and underground development that would contribute to increasing confidence level of the resource.

Two initial sampling programmes are recommended to increase the available sampling data within all domains used in the resource:

1. Infill sampling gaps in diamond drilling. In excess of 100km of diamond drilling has not been sampled, where these sampling gaps intersect the grade shells and block model they should, if still available from core storage areas, be sampled and assayed. It is estimated that up to 5000m of the drilling by Rupert Resources since 2016 should be sampled and up to a further 5000m sampled from drilling by prior operators. The core drilled by previous operators should be reviewed by the geological team to check consistency in historic drill logging with the up to date codes being used and, during sampling, density measurements should be undertaken to further improve the database for specific gravity.
2. Underground structural mapping & channel sampling. The >30km of existing underground development allows excellent access to improve geological understanding of the deposit through a combination of underground structural mapping, and channel sampling where the infrastructure intersects the grade shells and the block model. The sampling should be supervised by the geological team and a QAQC procedure put in place for channel sampling such that the results could be included in future resource modelling. It is estimated that up to 5000m of underground sampling could be undertaken from within the current workings.

Further drilling to increase the confidence level of the resource and assess the potential extensions should also being considered. The suggested locations are near to surface in proximity of the open pits, at depth where the drilling density is low and on the western extensions of the Karoliina zone. This work should be considered following completion of the initial sampling programmes and a further data review at that stage.

Other recommended work programmes to enhance future resource modelling include: studies of the structural setting and timing of the mineralisation; gold deportment and characterisation; litho-geochemistry studies to improve understanding of the protolith and alteration types; and metallurgical characterisation studies to assess variability of mineralisation for mineral processing.

27. REFERENCES

Agnico Eagle. 2018. https://www.agnicoeagle.com/English/operations-and-development-projects/operations/kittila/default.aspx.

Andrews-Speed, CP, Sliwa, A, Unug. 1984. Gold occurrences in Zambia and their geological controls. In Foster, RF (ed) Gold '82: The geology, geochemistry and genesis of gold deposits. Special Publication, AA Balkema, Rotterdam, 753pp.

Anglo American. 2017. Sakatti – 2017, presentation to Fennoscandian Exploration and Mining Conference 2017 http://fem.lappi.fi/c/document_library/get_file?folderId=3913831&name=DLFE-32482.pdf

Anglo American. 2018. Ore Reserves and Mineral Resources Report 2017 pp20.

Aurion Resources. 2015 to 2018. Various press releases. https://www.aurionresources.com/news/2018/

Bartlett, S.C. 2013. Mineral Resources and Reserves of the Pahtavaara Gold Deposit, Finland.

Boliden. 2018. Annual Report 2017

Davy. 1994. Feasibility Study for the Pahtavaara Gold Project.

GTK. Pahtavaara production history and historical resources. http://tupa.gtk.fi/karttasovellus/mdae/raportti/376_Pahtavaara.pdf

Korkiakoski, E.A., 1992. Geology and geochemistry of the metakomatiite-hosted Pahtavaara gold deposit in Sodankylä, Northern Finland, with emphasis on hydrothermal alteration. Geological Survey of Finland, Bulletin 360, 96.

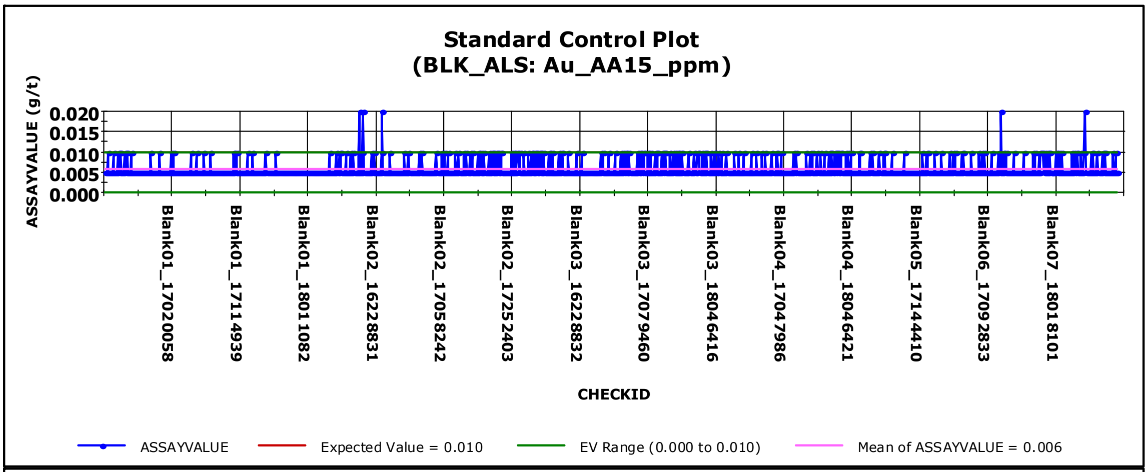
Pulkkinen, E., Ollila, J., Manner, R., Koljonen, T., 1986. Geochemical exploration for gold in the Sattasvaara komatiite complex, Finnish Lapland. In: Prospecting in Areas of Glaciated Terrain. Institution of Mining and Metallurgy, London, pp. 129–137.

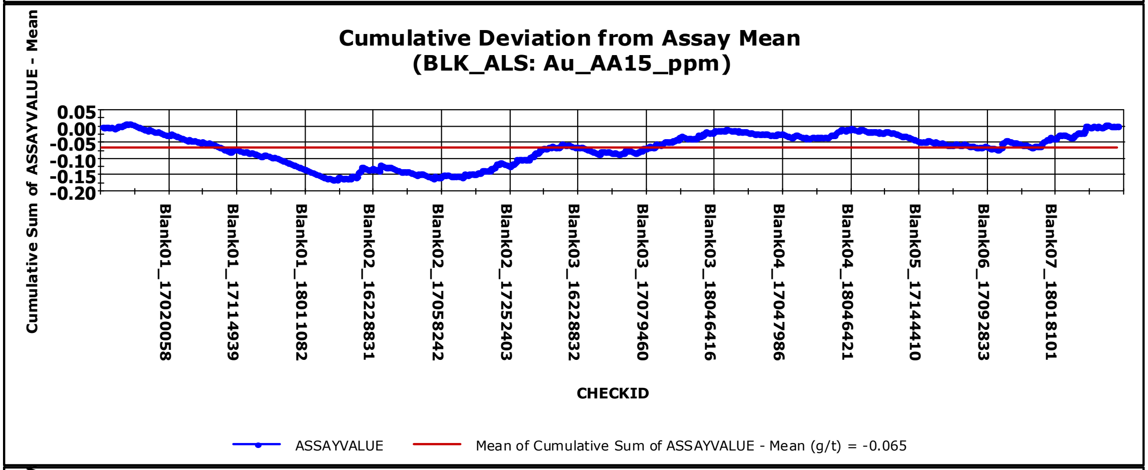
Appendix 1

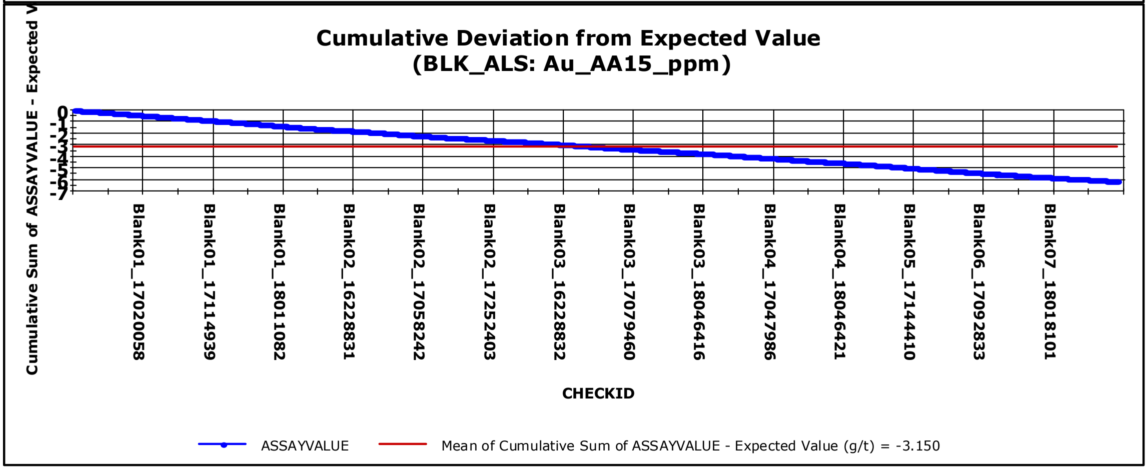
CRM Control Graphs for CRM submitted by Rupert to ALS

Summary
(BLK_ALS: Au_AA15_ppm)

Standard:	BLK_ALS	No of Analyses:	1491
Element:	ASSAYVALUE	Minimum:	0.005
Units:		Maximum:	0.020
Detection Limit:	-	Mean:	0.006
Expected Value (EV):	0.010	Std Deviation:	0.002
E.V. Range:	0.000 to 0.010	% in Tolerance	83.367 %
		% Bias	-41.348 %
		% RSD	34.441 %



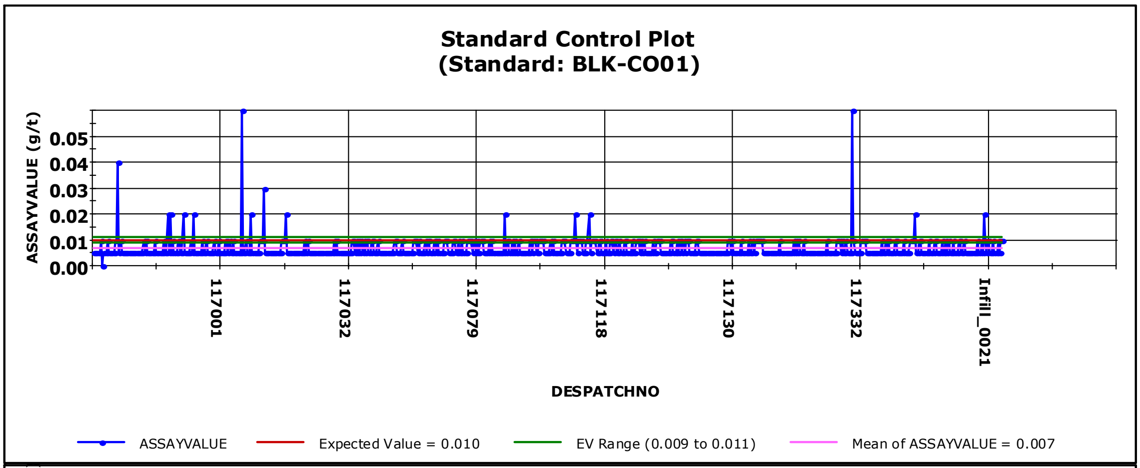


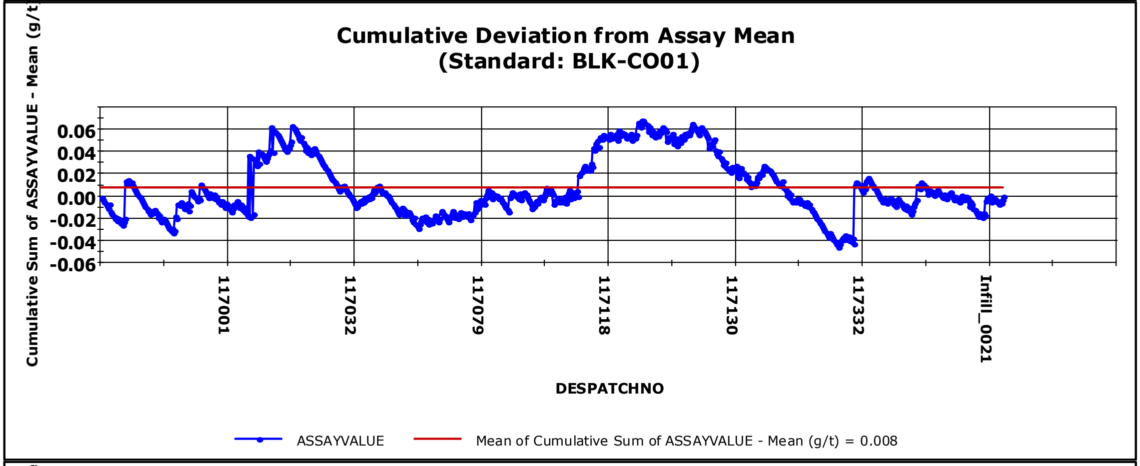


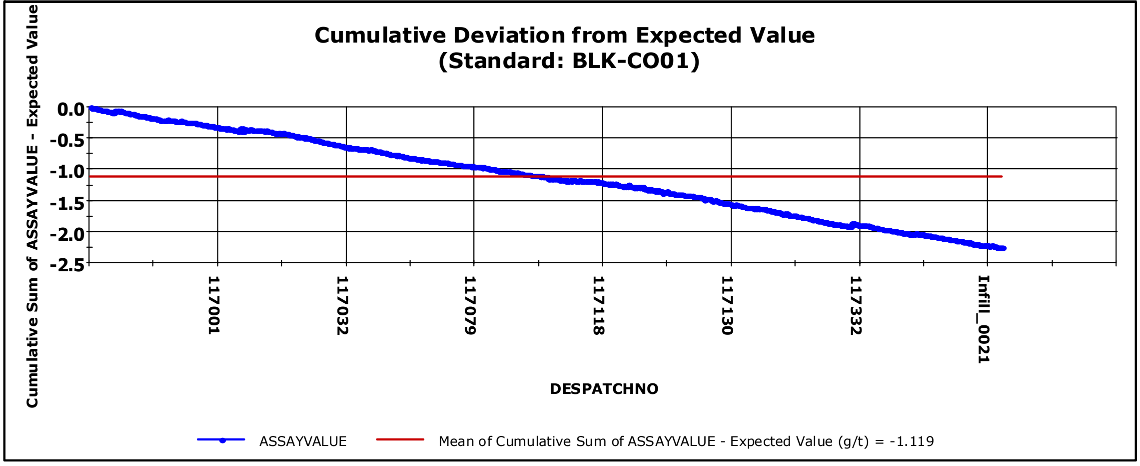
Printed: 10-May-2018 15:55:08 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(Standard: BLK-CO01)

Standard:	BLK-CO01	No of Analyses:	711
Element:	ASSAYVALUE	Minimum:	0.000
Units:		Maximum:	0.060
Detection Limit:		Mean:	0.007
Expected Value (EV):	0.010	Std Deviation:	0.004
E.V. Range:	0.009 to 0.011	% in Tolerance	27.426 %
		% Bias	-31.646 %
		% RSD	62.266 %



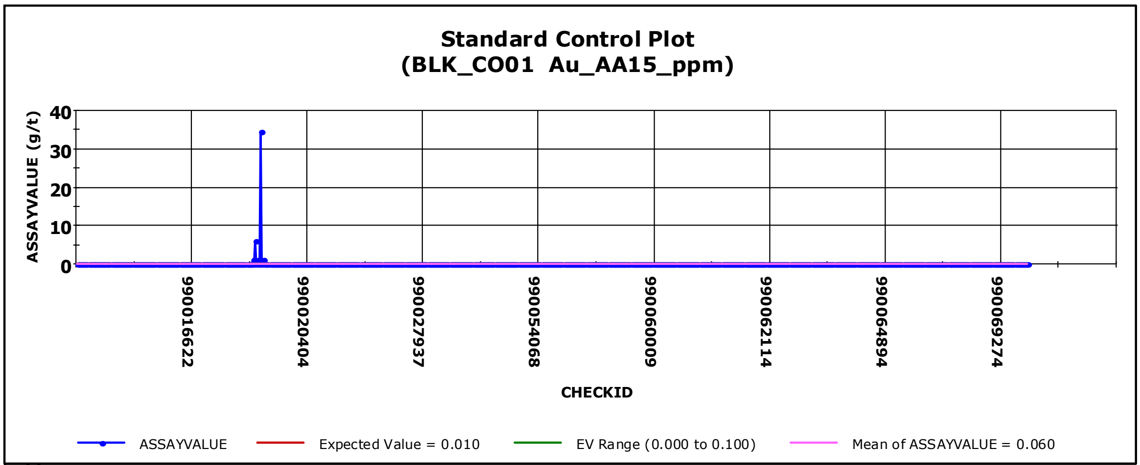


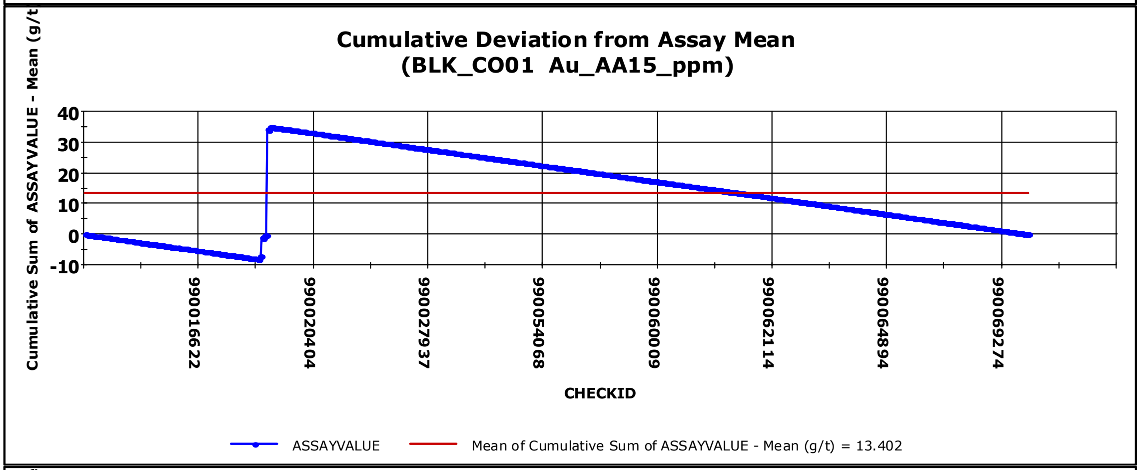


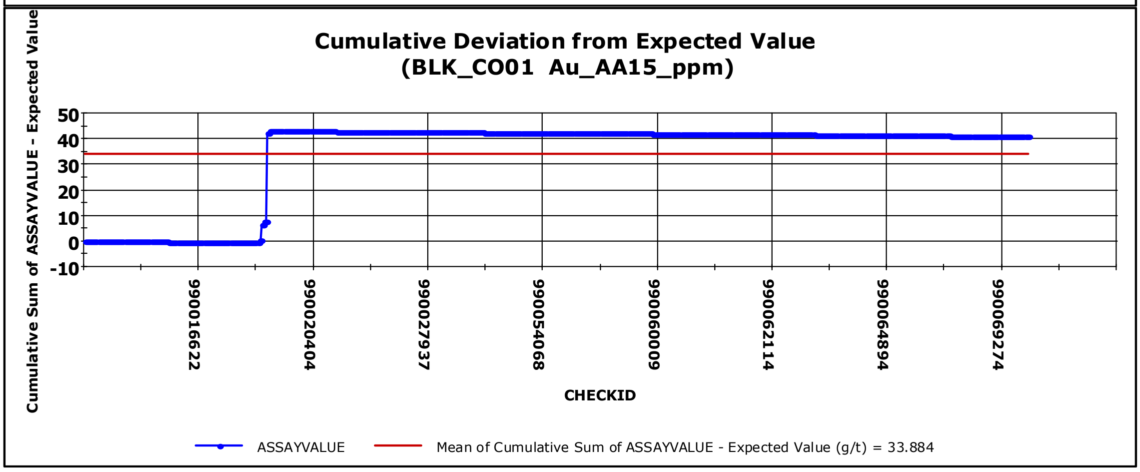
Printed: 08-May-2018 18:34:29 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(BLK_CO01 Au_AA15_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK-CO01 ASSAYVALUE - 0.010 0.000 to 0.100		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	823 0.000 34.400 0.060 1.218 99.392 % 497.145 % 2,039.618 %



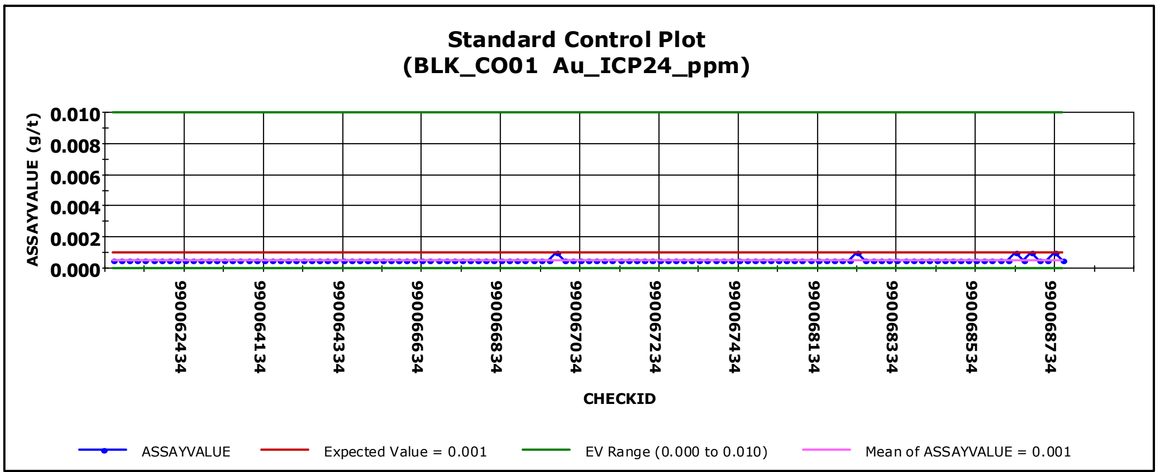


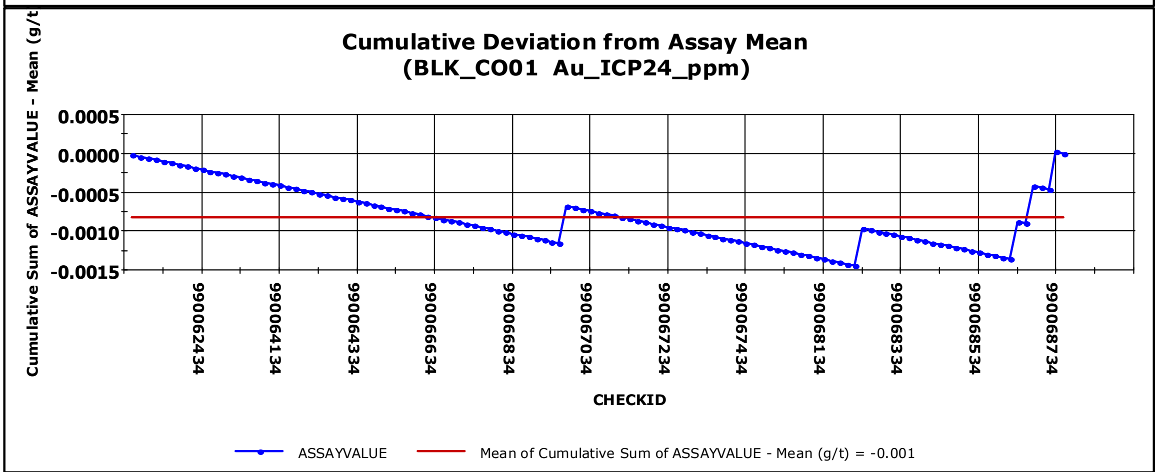


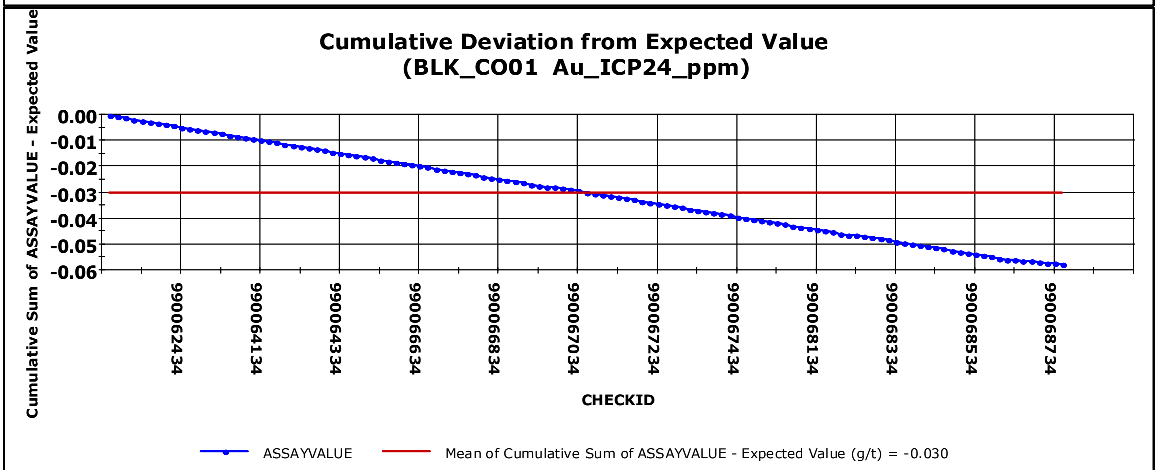
Printed: 10-May-2018 16:21:28 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(BLK_CO01 Au_ICP24_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK-CO01 ASSAYVALUE - 0.001 0.000 to 0.010		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	121 0.001 0.001 0.001 0.000 100.000 % -47.934 % 19.114 %



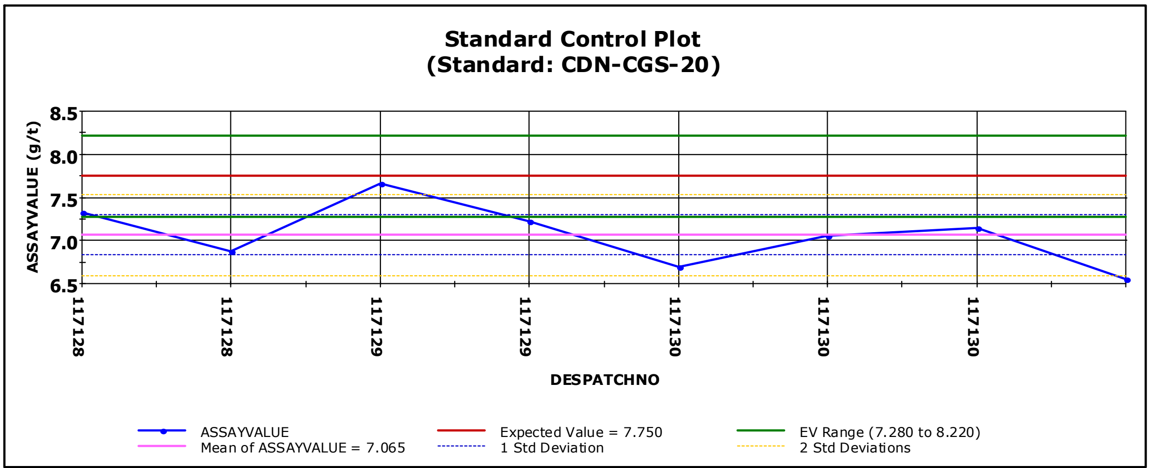


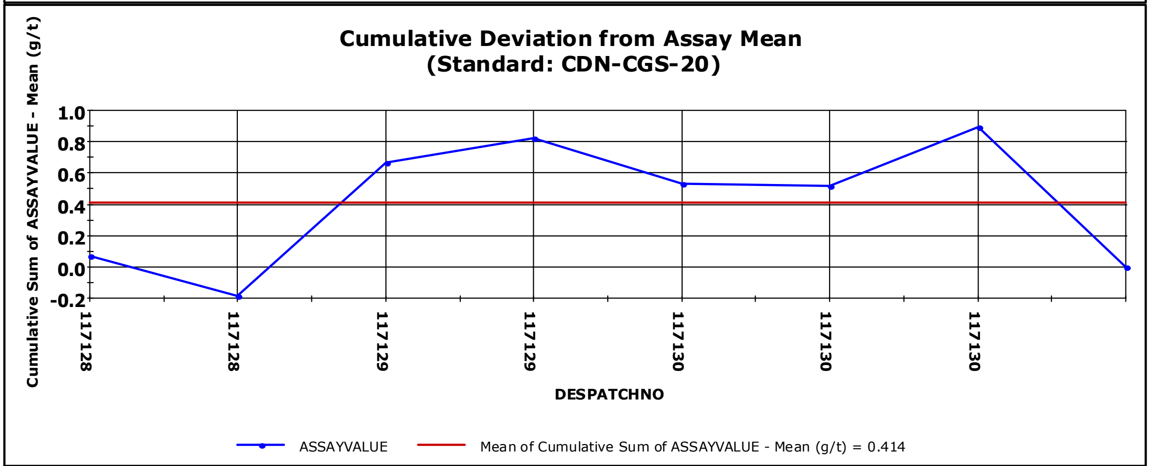


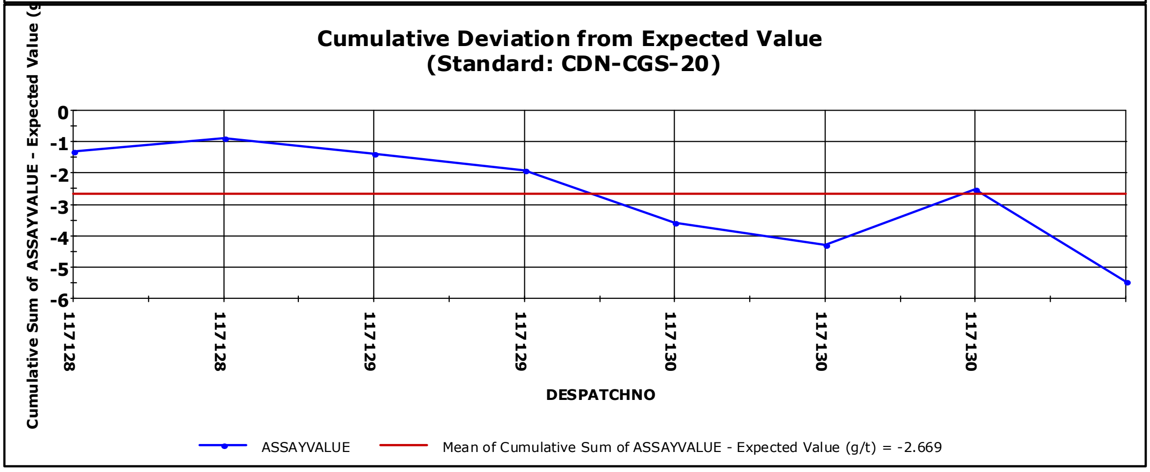
Printed: 10-May-2018 16:25:03 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(Standard: CDN-CGS-20)

Standard:	CDN-CGS-20	No of Analyses:	8
Element:	ASSAYVALUE	Minimum:	6.550
Units:		Maximum:	7.660
Detection Limit:		Mean:	7.065
Expected Value (EV):	7.750	Std Deviation:	0.332
E.V. Range:	7.280 to 8.220	% in Tolerance	25.000 %
		% Bias	-8.839 %
		% RSD	4.699 %



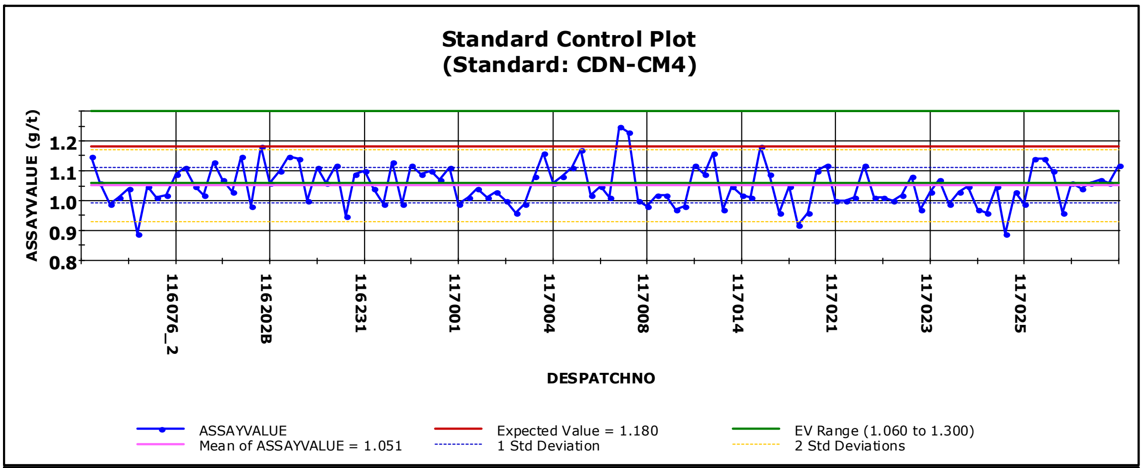


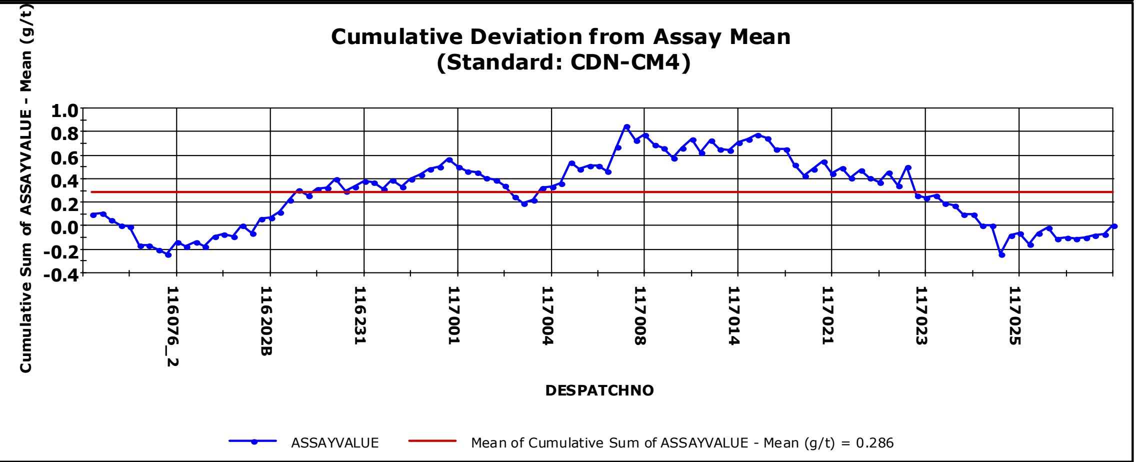


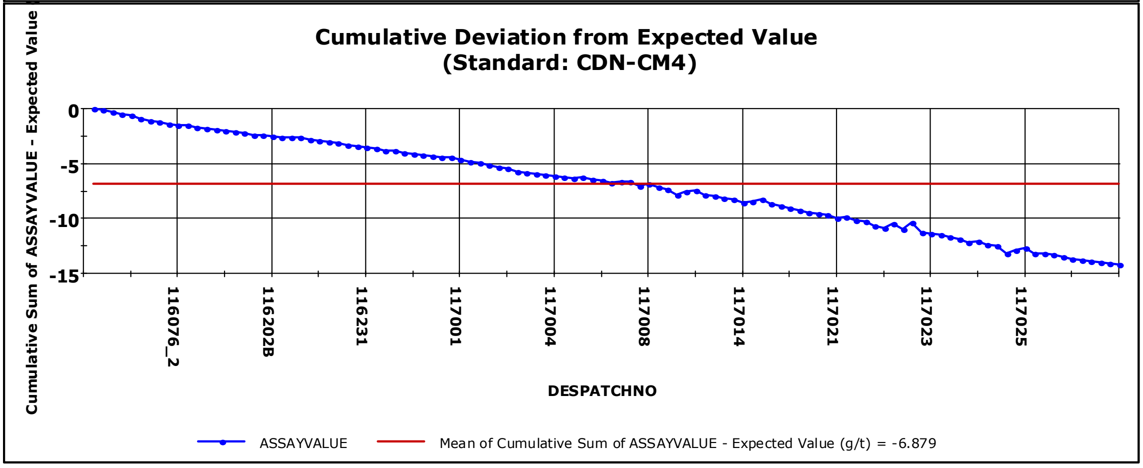
Printed: 08-May-2018 18:38:21 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: CDN-CM4)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	CDN-CM4 ASSAYVALUE 1.180 1.060 to 1.300		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	110 0.890 1.250 1.051 0.068 44.545 % -10.940 % 6.437 %



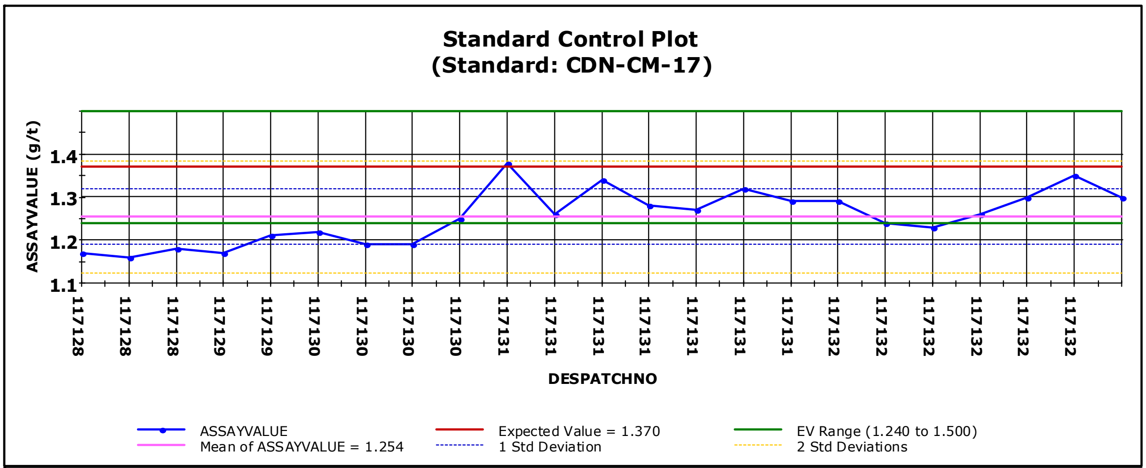


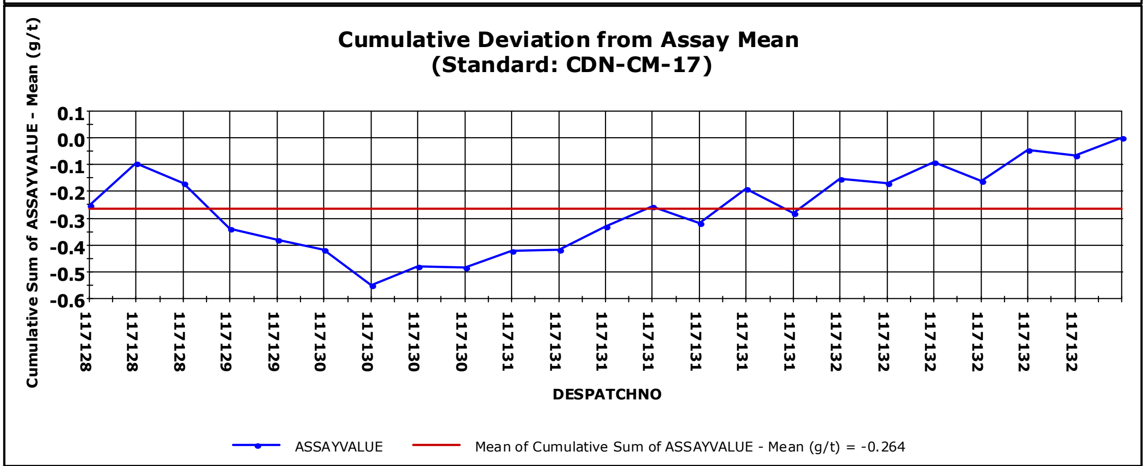


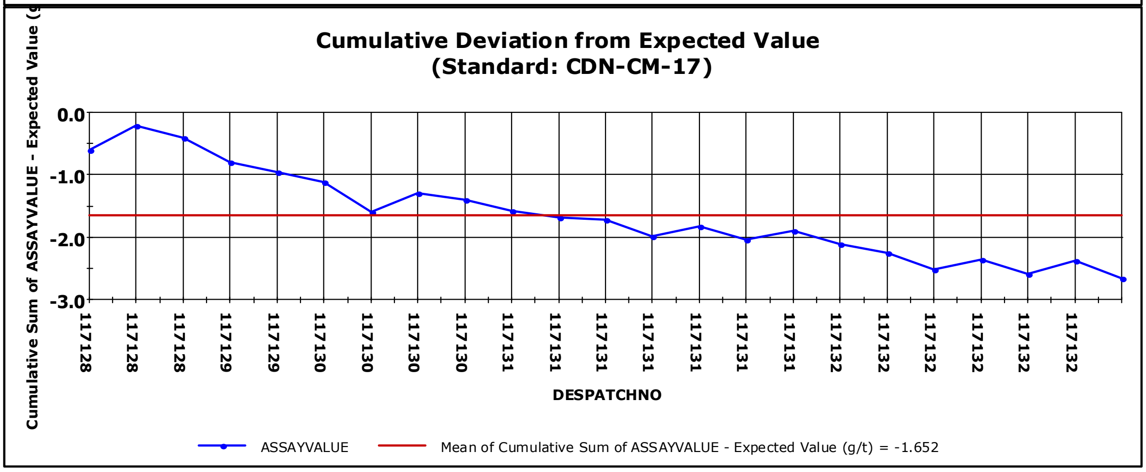
Printed: 08-May-2018 18:40:38 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: CDN-CM-17)

Standard:	CDN-CM-17	No of Analyses:	23
Element:	ASSAYVALUE	Minimum:	1.160
Units:		Maximum:	1.380
Detection Limit:		Mean:	1.254
Expected Value (EV):	1.370	Std Deviation:	0.061
E.V. Range:	1.240 to 1.500	% in Tolerance	56.522 %
		% Bias	-8.442 %
		% RSD	4.851 %



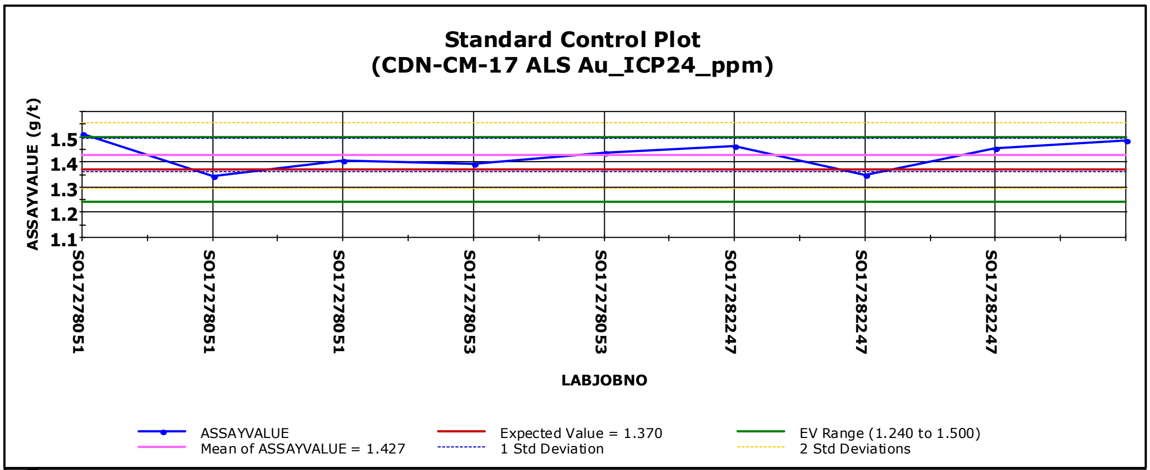


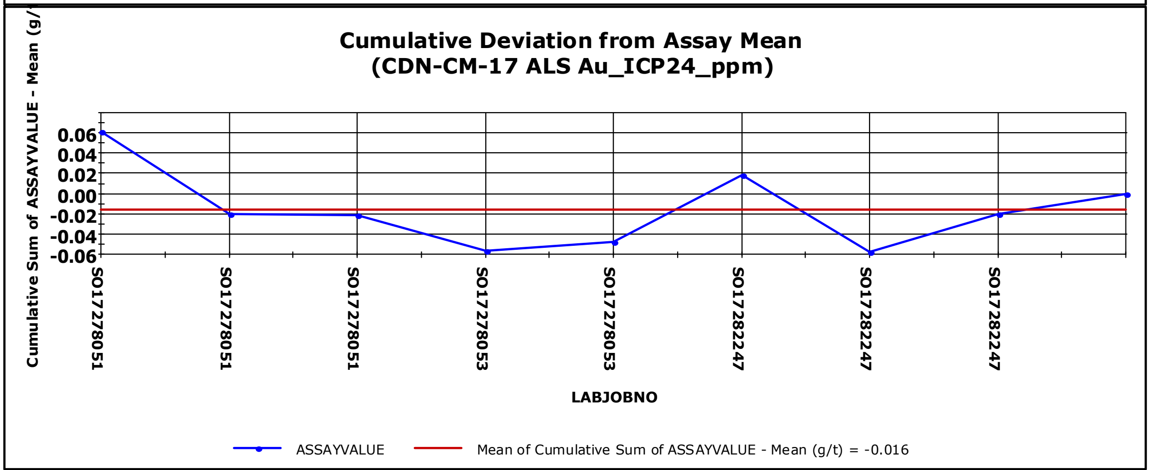


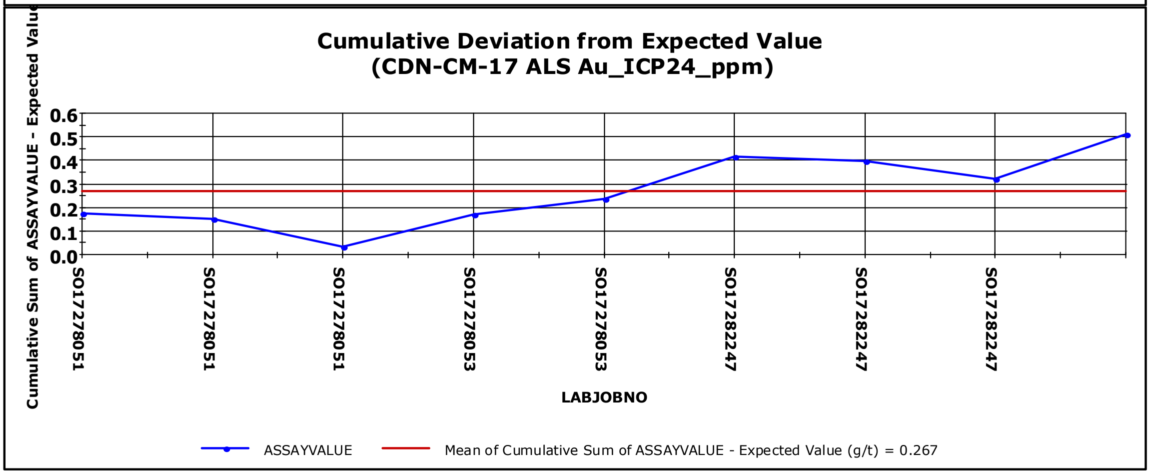
Printed: 08-May-2018 18:39:36 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(CDN-CM-17 ALS Au_ICP24_ppm)

Standard:	CDN-CM-17	No of Analyses:	9
Element:	ASSAYVALUE	Minimum:	1.345
Units:		Maximum:	1.510
Detection Limit:		Mean:	1.427
Expected Value (EV):	1.370	Std Deviation:	0.055
E.V. Range:	1.240 to 1.500	% in Tolerance	88.889 %
		% Bias	4.136 %
		% RSD	3.843 %



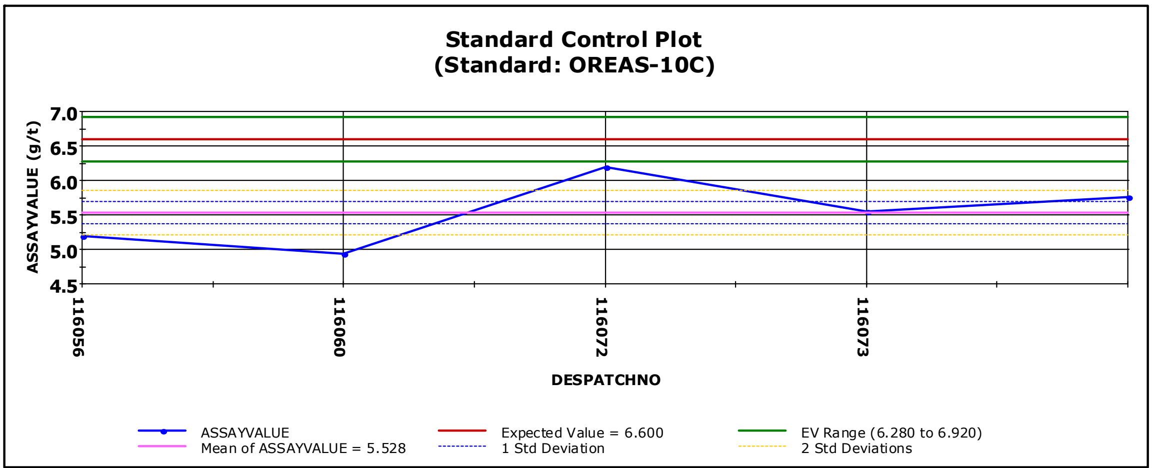


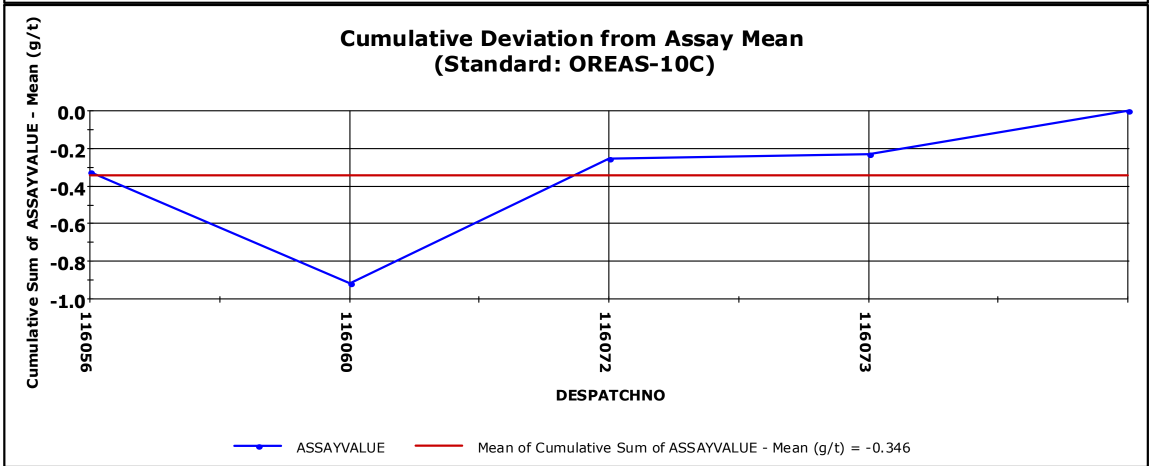


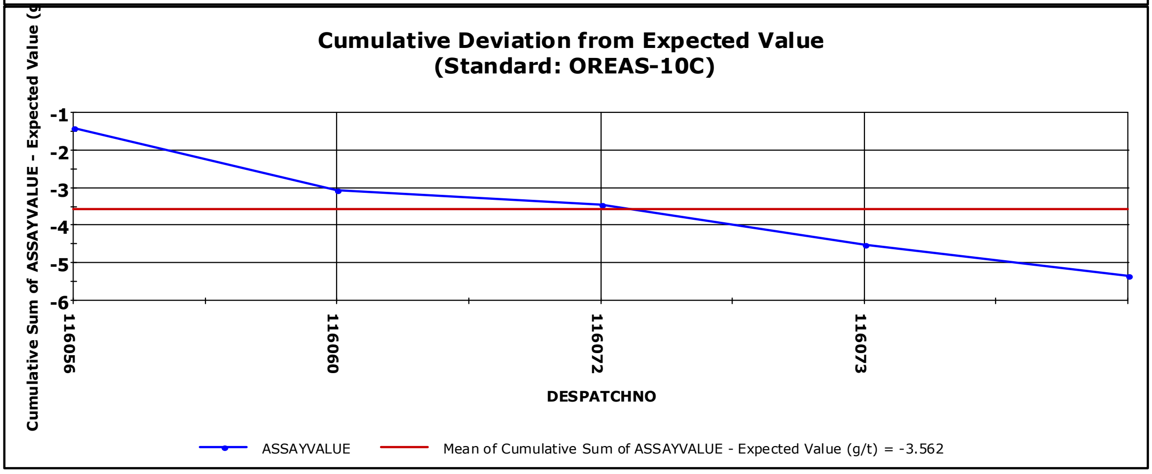
Printed: 10-May-2018 19:18:12 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(Standard: OREAS-10C)

Standard:	OREAS-10C		No of Analyses:	5
Element:	ASSAYVALUE		Minimum:	4.940
Units:			Maximum:	6.190
Detection Limit:			Mean:	5.528
Expected Value (EV):	6.600		Std Deviation:	0.435
E.V. Range:	6.280 to 6.920		% in Tolerance	0.000 %
			% Bias	-16.242 %
			% RSD	7.868 %



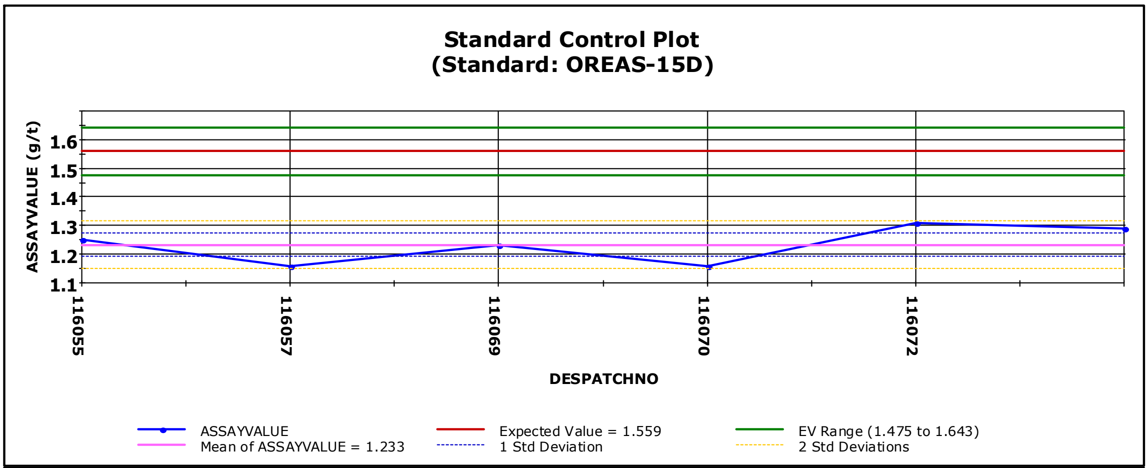


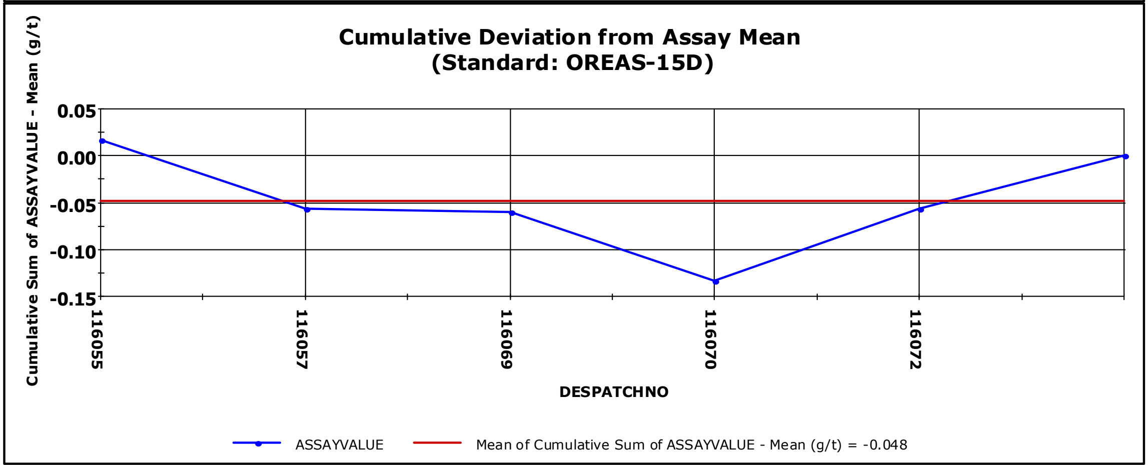


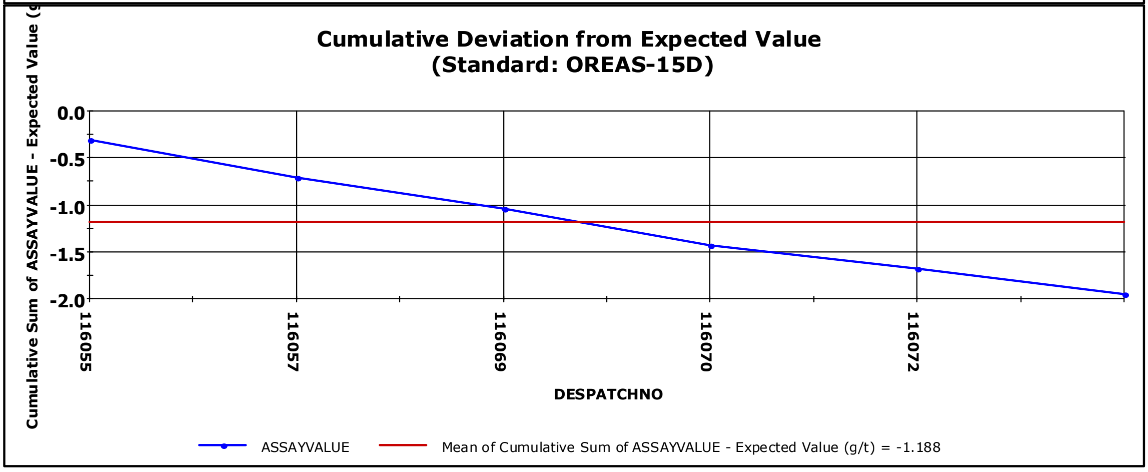
Printed: 08-May-2018 18:41:41 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-15D)

Standard:	OREAS-15D	No of Analyses:	6
Element:	ASSAYVALUE	Minimum:	1.160
Units:		Maximum:	1.310
Detection Limit:		Mean:	1.233
Expected Value (EV):	1.559	Std Deviation:	0.058
E.V. Range:	1.475 to 1.643	% in Tolerance	0.000 %
		% Bias	-20.889 %
		% RSD	4.697 %



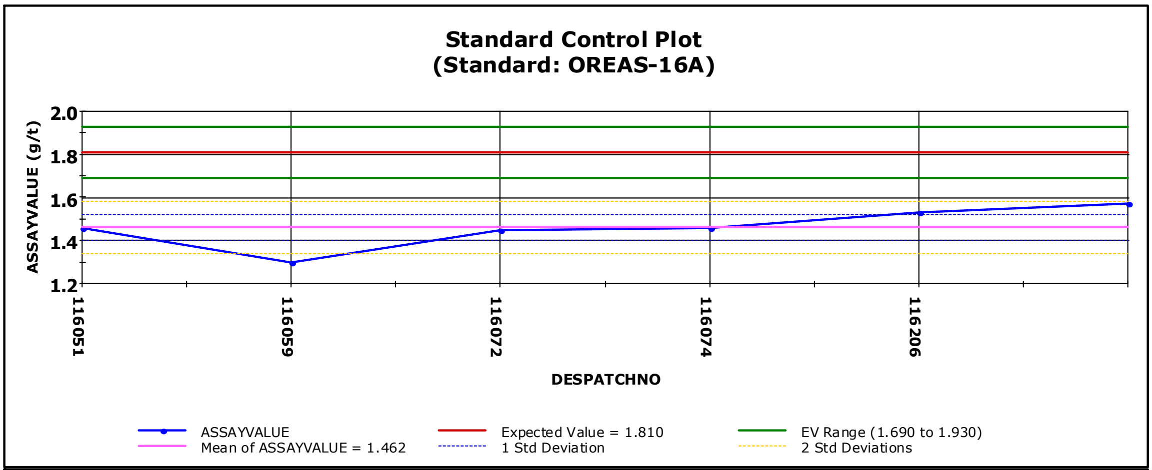


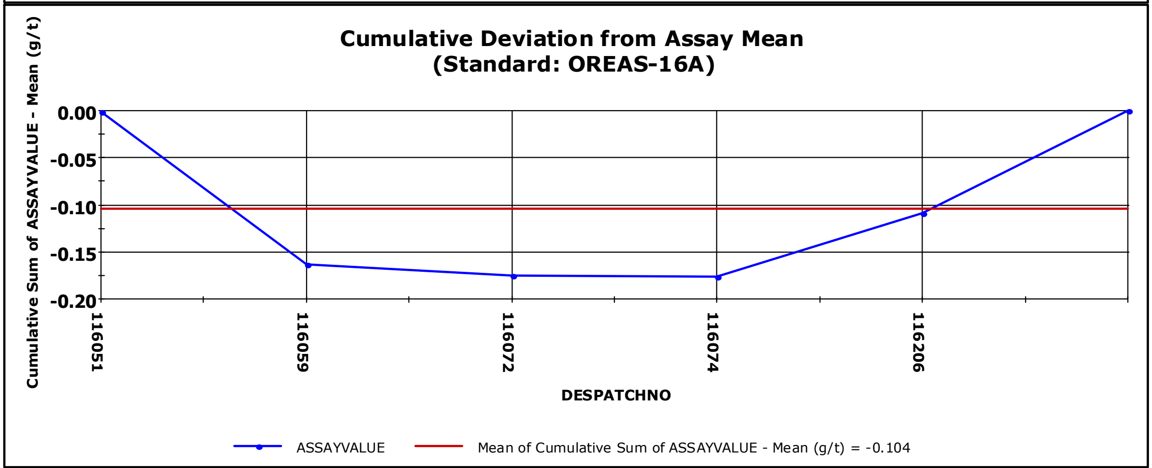


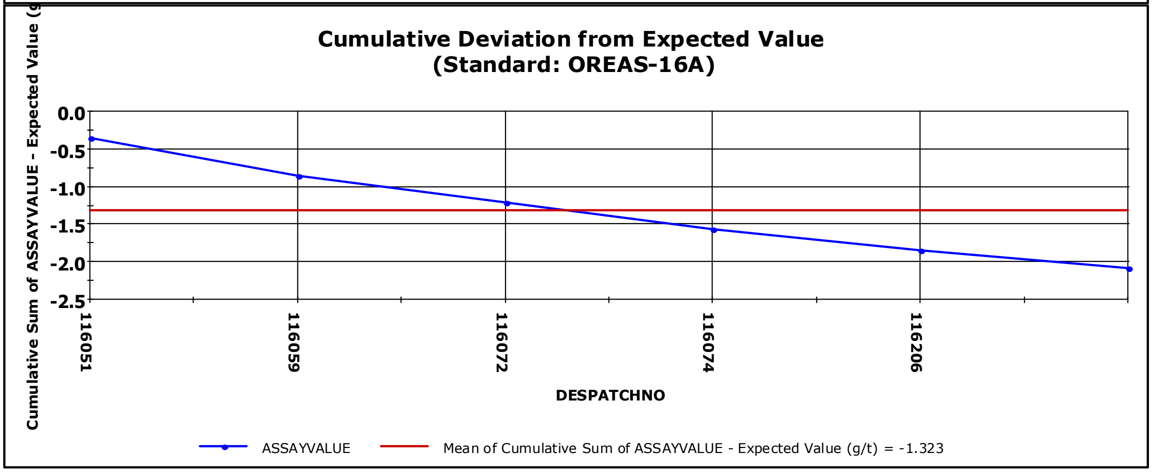
Printed: 08-May-2018 18:42:39 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-16A)

Standard:	OREAS-16A	No of Analyses:	6
Element:	ASSAYVALUE	Minimum:	1.300
Units:		Maximum:	1.570
Detection Limit:		Mean:	1.462
Expected Value (EV):	1.810	Std Deviation:	0.084
E.V. Range:	1.690 to 1.930	% in Tolerance	0.000 %
		% Bias	-19.245 %
		% RSD	5.770 %



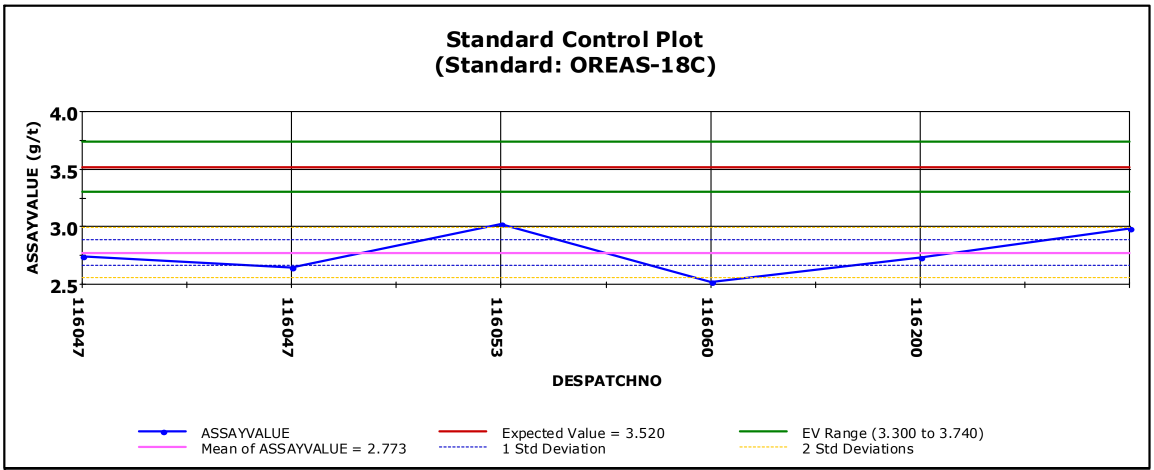


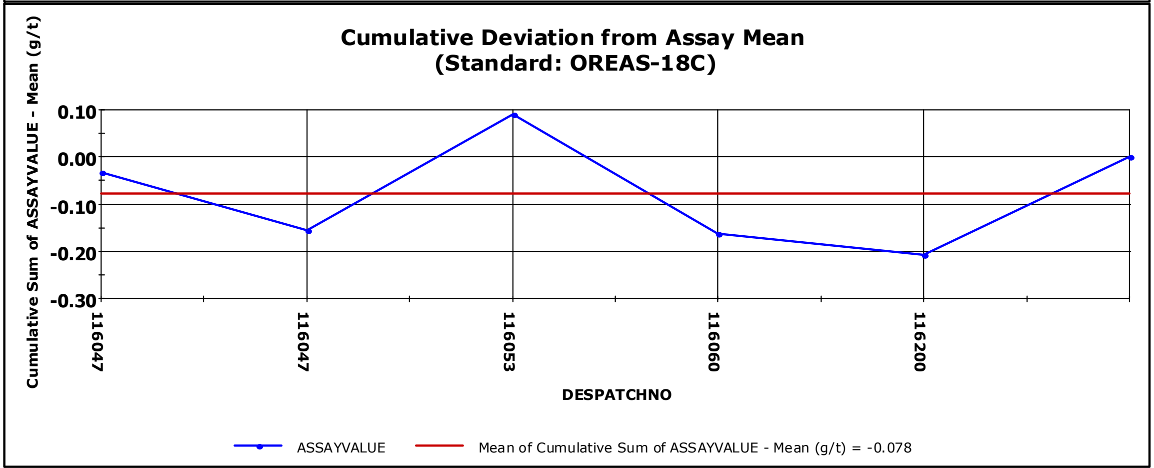


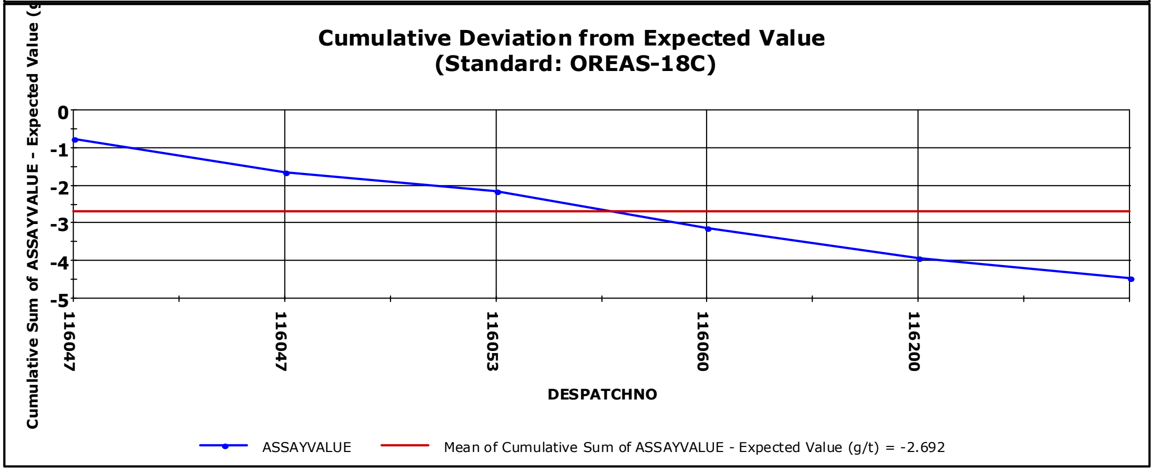
Printed: 08-May-2018 18:43:41 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-18C)

Standard:	OREAS-18C		No of Analyses:	6
Element:	ASSAYVALUE		Minimum:	2.520
Units:			Maximum:	3.020
Detection Limit:			Mean:	2.773
Expected Value (EV):	3.520		Std Deviation:	0.176
E.V. Range:	3.300 to 3.740		% in Tolerance	0.000 %
			% Bias	-21.212 %
			% RSD	6.347 %



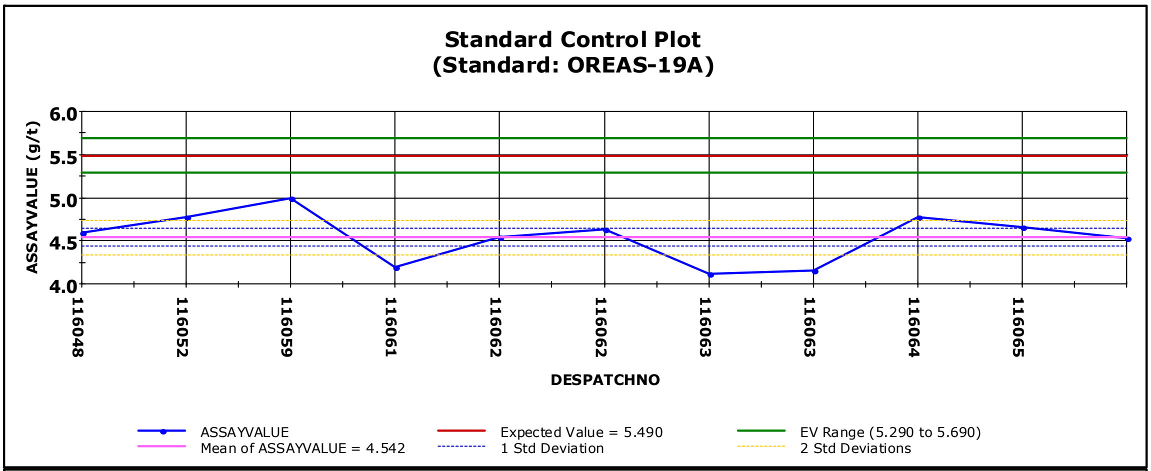


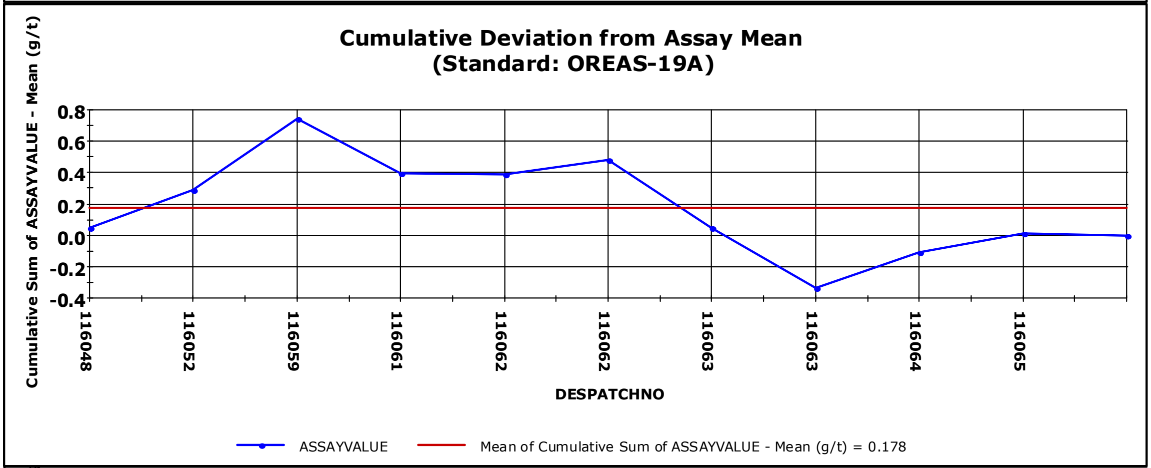


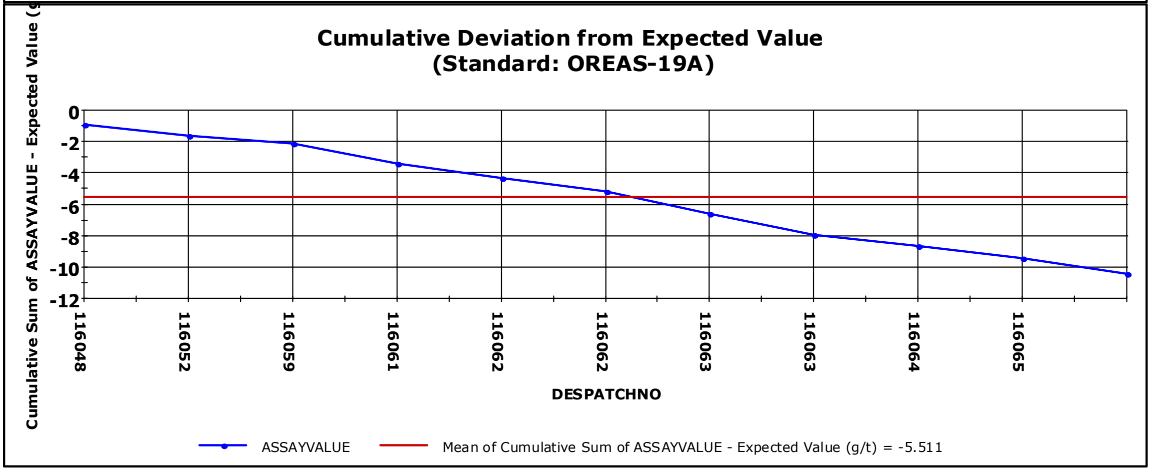
Printed: 08-May-2018 18:45:02 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-19A)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OREAS-19A ASSAYVALUE 5.490 5.290 to 5.690	No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	11 4.110 5.000 4.542 0.270 0.000 % -17.271 % 5.934 %



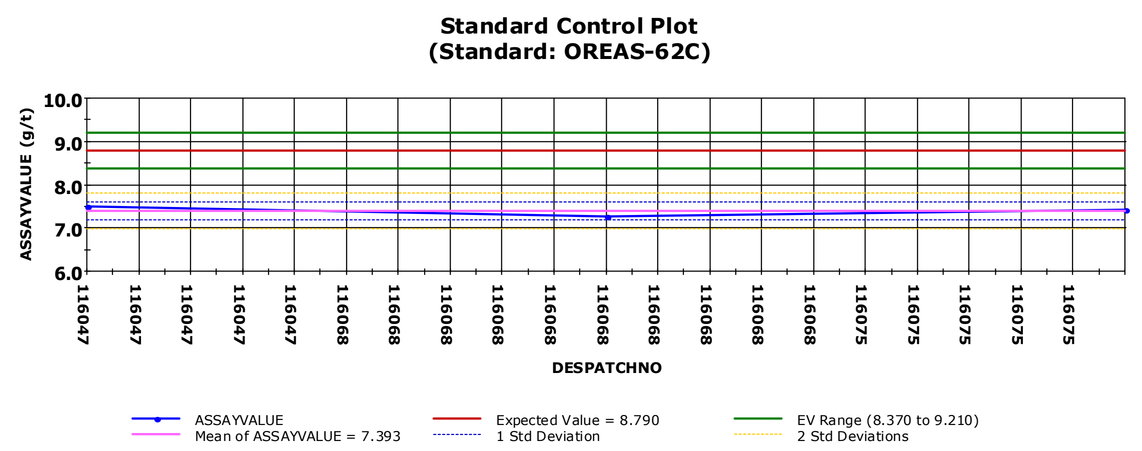


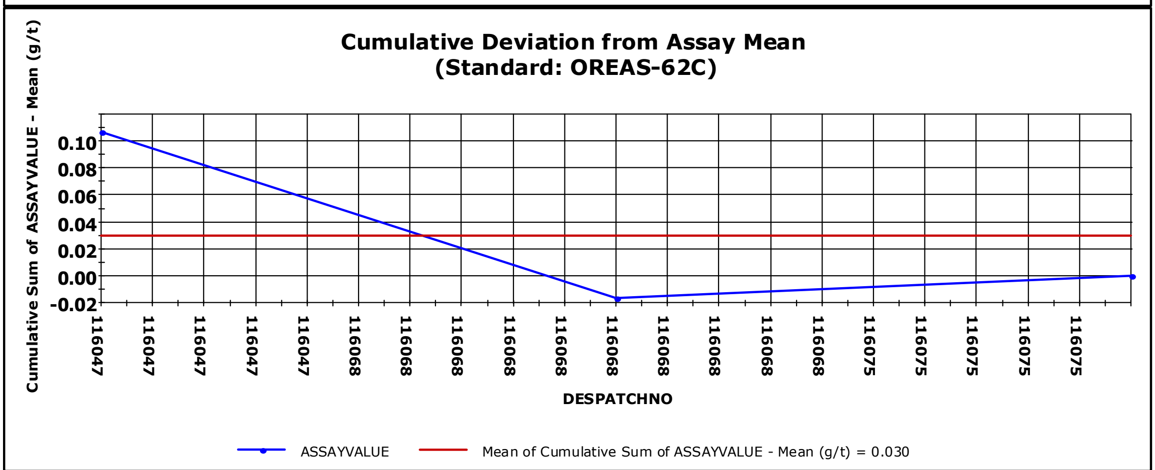


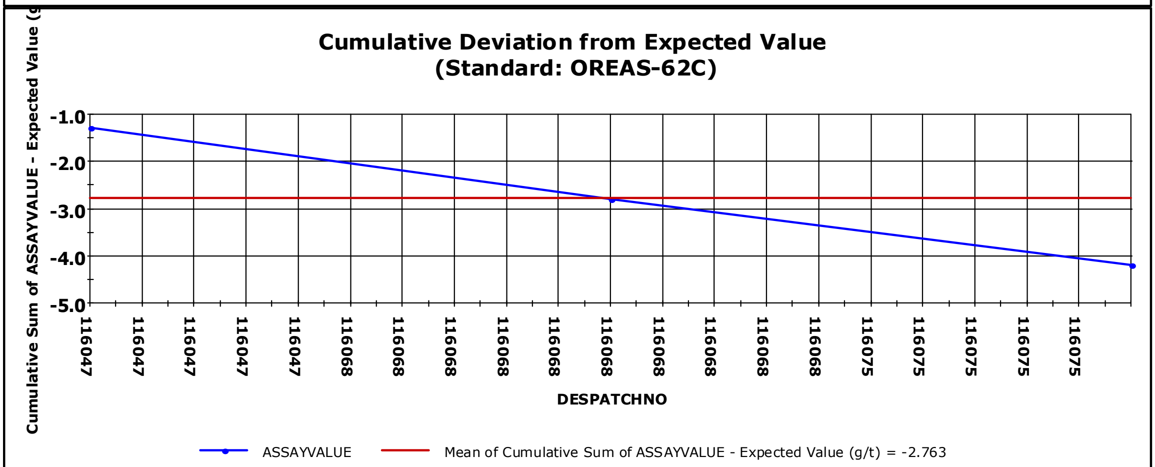
Printed: 08-May-2018 18:45:59 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-62C)

Standard:	OREAS-62C	No of Analyses:	3
Element:	ASSAYVALUE	Minimum:	7.270
Units:		Maximum:	7.500
Detection Limit:		Mean:	7.393
Expected Value (EV):	8.790	Std Deviation:	0.095
E.V. Range:	8.370 to 9.210	% in Tolerance	0.000 %
		% Bias	-15.889 %
		% RSD	1.280 %



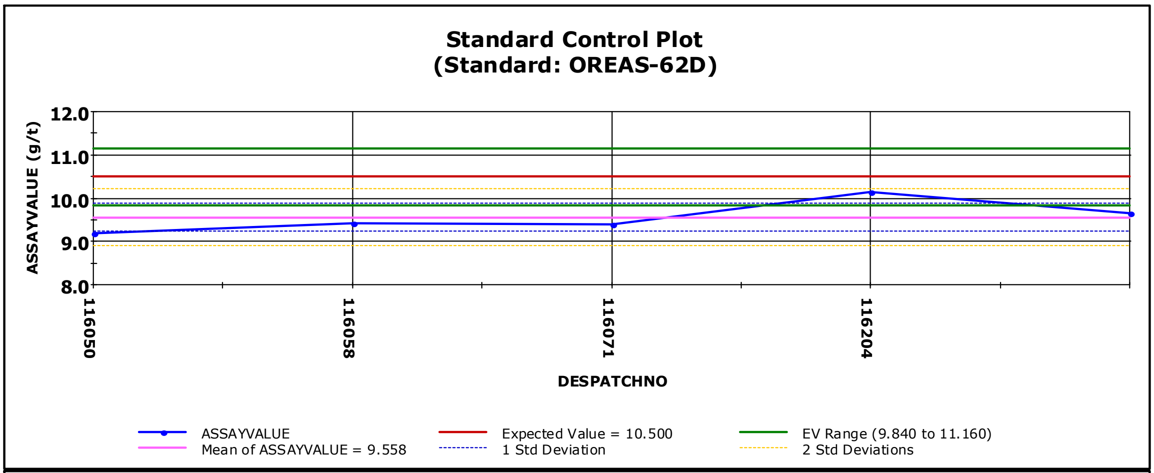


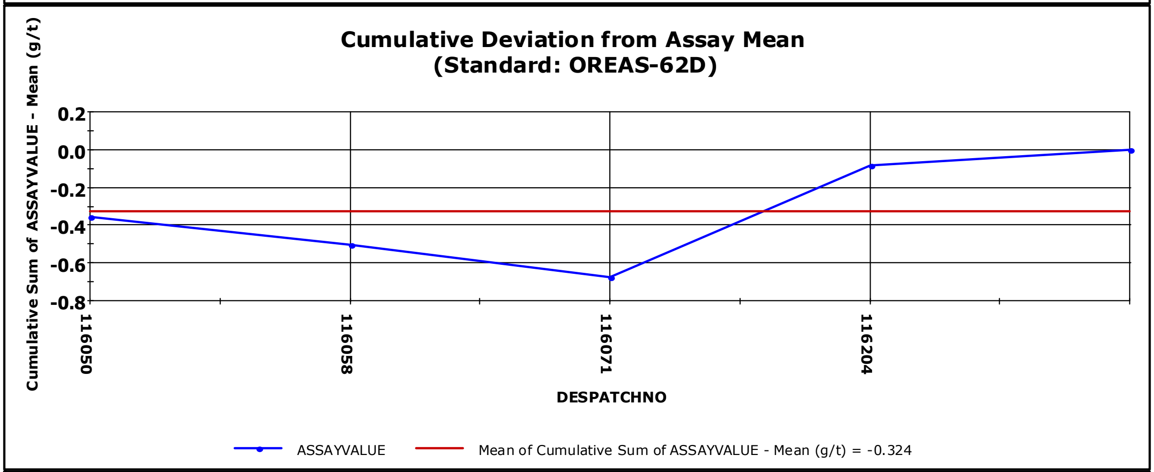


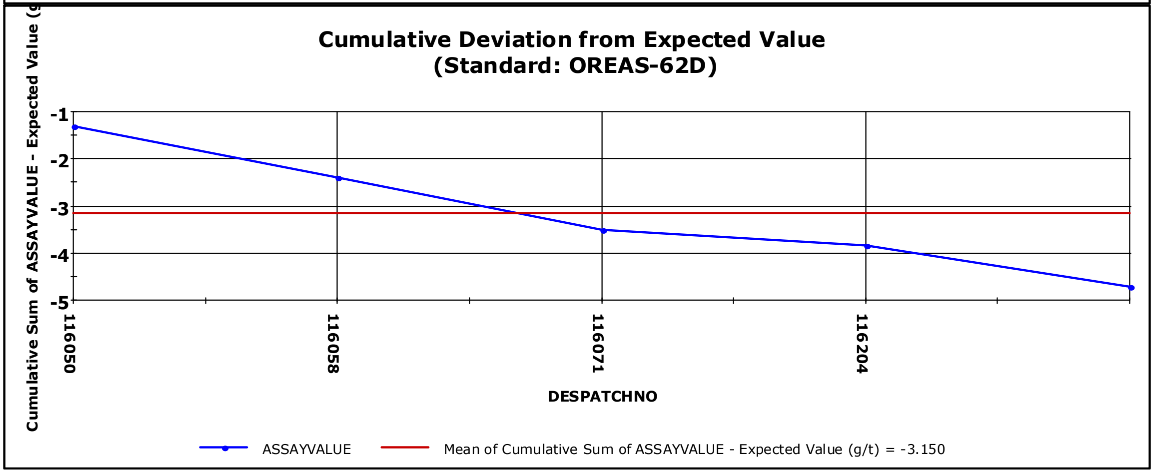
Printed: 08-May-2018 18:51:46 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-62D)

Standard:	OREAS-62D	No of Analyses:	5
Element:	ASSAYVALUE	Minimum:	9.200
Units:		Maximum:	10.150
Detection Limit:		Mean:	9.558
Expected Value (EV):	10.500	Std Deviation:	0.327
E.V. Range:	9.840 to 11.160	% in Tolerance	20.000 %
		% Bias	-8.971 %
		% RSD	3.424 %



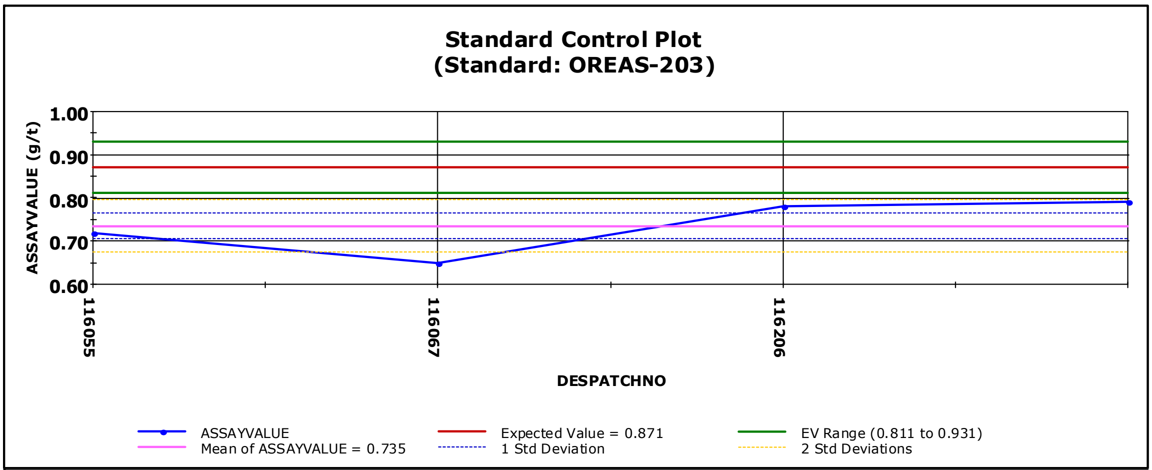


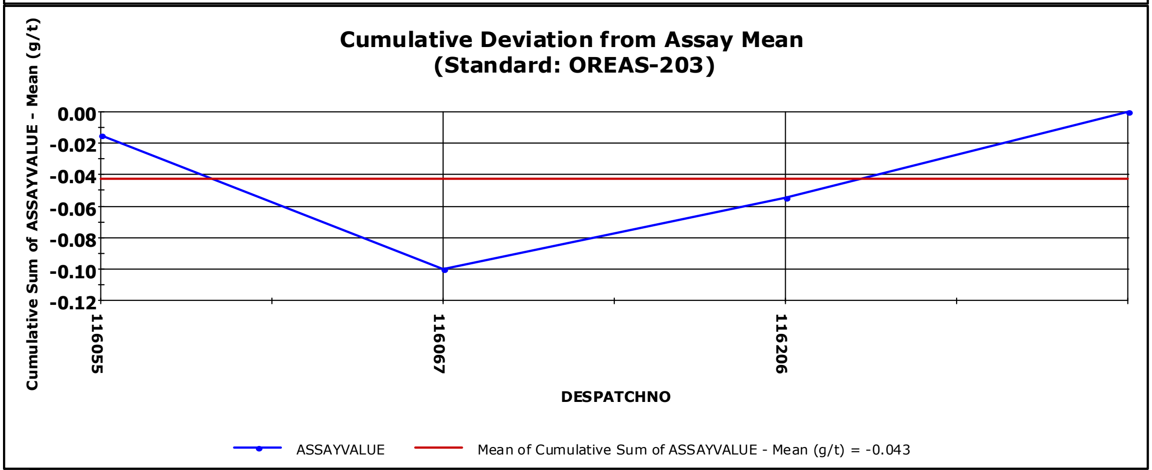


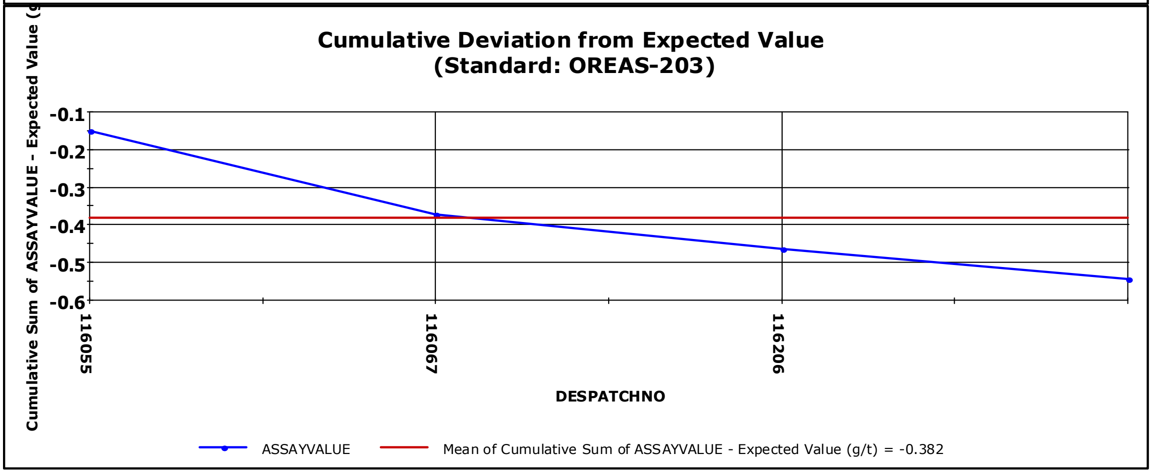
Printed: 08-May-2018 18:53:00 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-203)

Standard:	OREAS-203		No of Analyses:	4
Element:	ASSAYVALUE		Minimum:	0.650
Units:			Maximum:	0.790
Detection Limit:			Mean:	0.735
Expected Value (EV):	0.871		Std Deviation:	0.056
E.V. Range:	0.811 to 0.931		% in Tolerance	0.000 %
			% Bias	-15.614 %
			% RSD	7.606 %



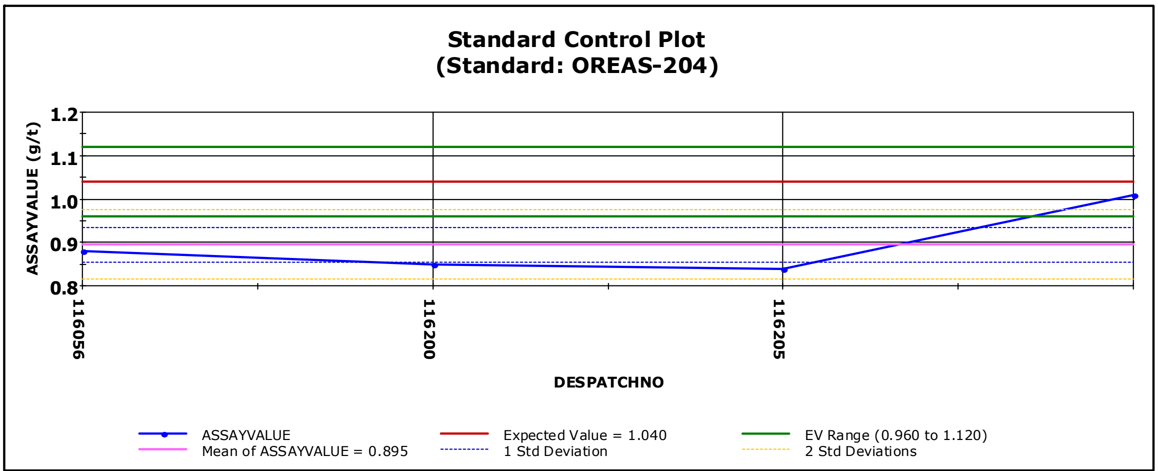


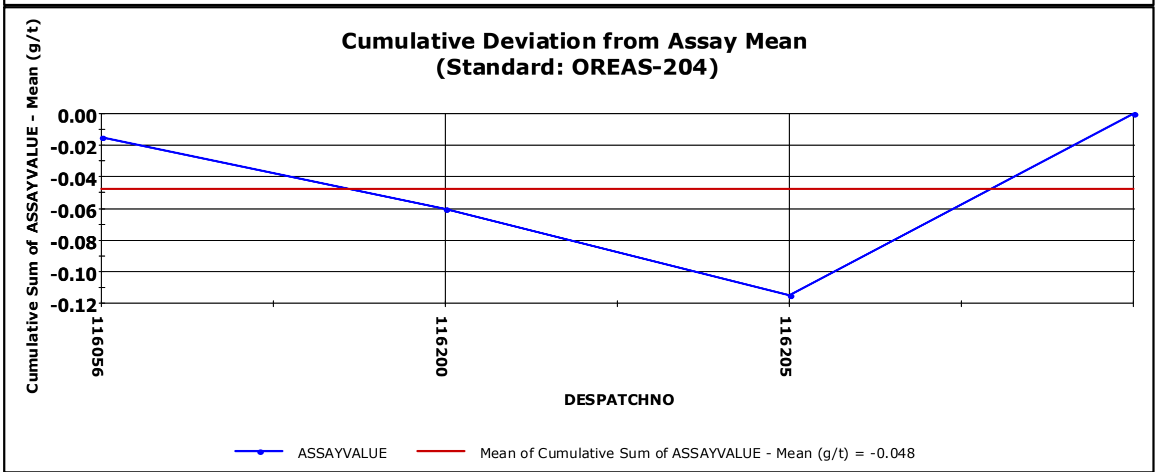


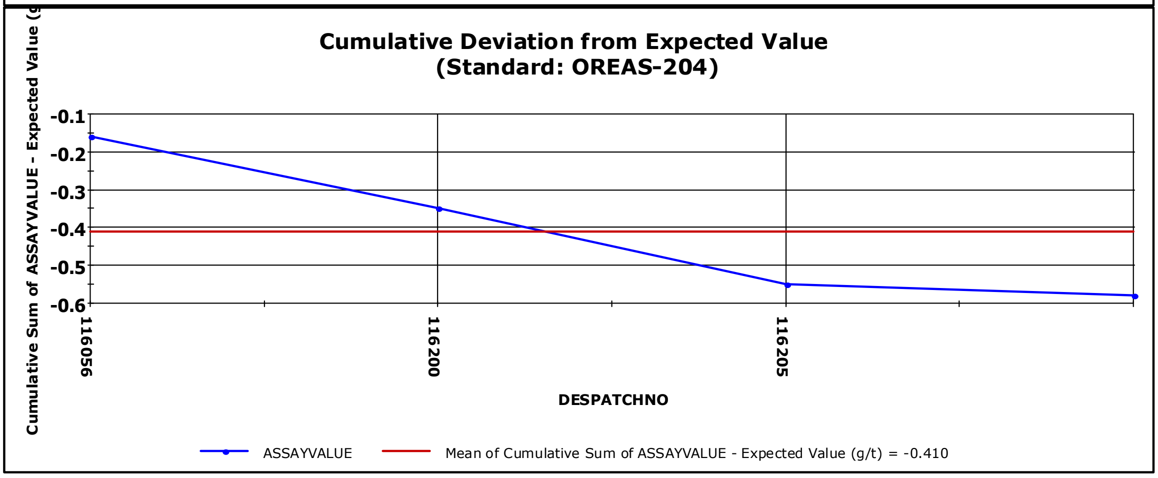
Printed: 08-May-2018 18:46:57 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-204)

Standard:	OREAS-204	No of Analyses:	4
Element:	ASSAYVALUE	Minimum:	0.840
Units:		Maximum:	1.010
Detection Limit:		Mean:	0.895
Expected Value (EV):	1.040	Std Deviation:	0.068
E.V. Range:	0.960 to 1.120	% in Tolerance	25.000 %
		% Bias	-13.942 %
		% RSD	7.599 %



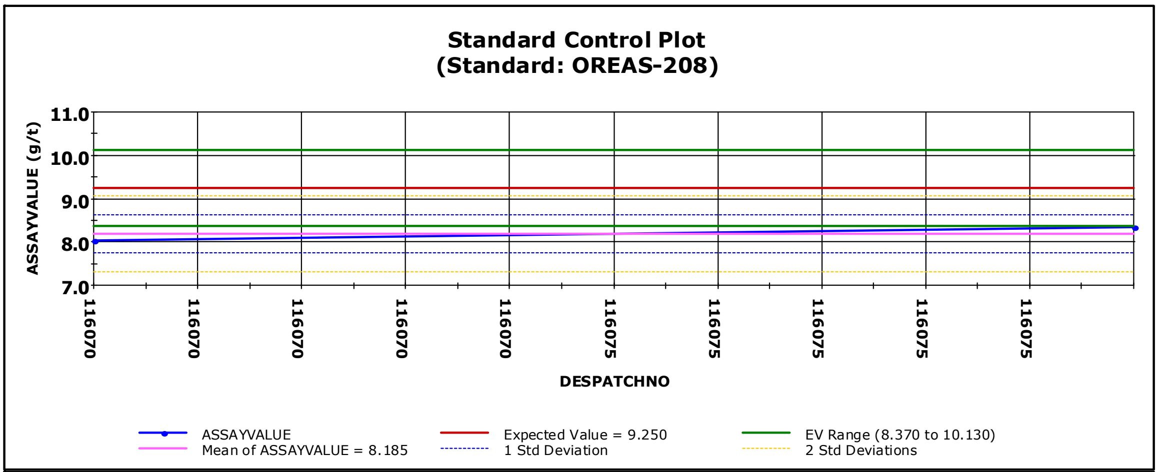


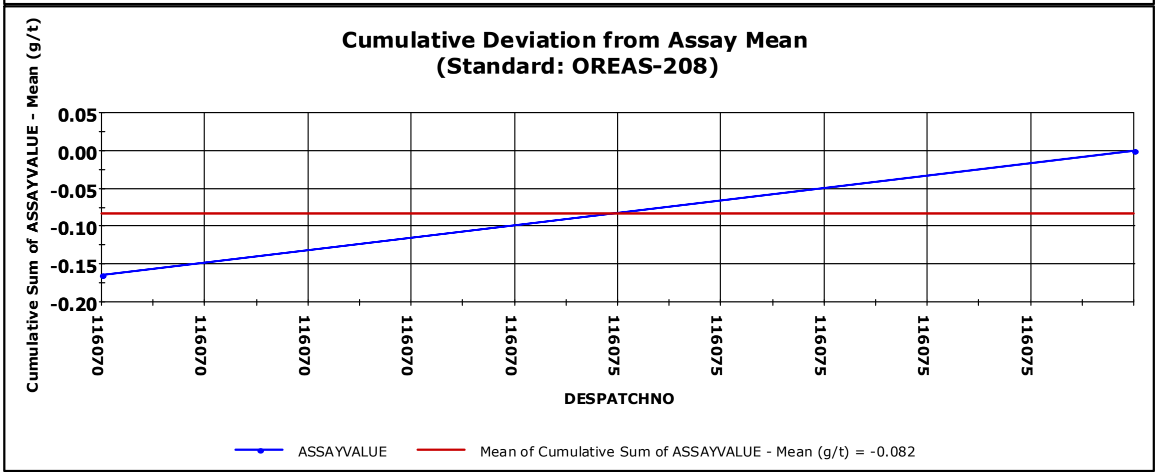


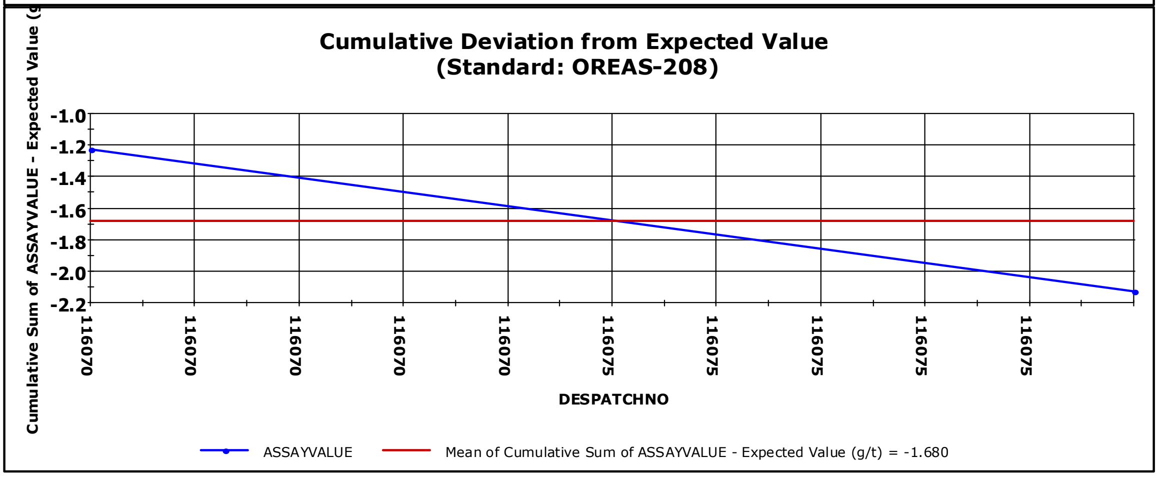
Printed: 08-May-2018 18:47:45 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-208)

Standard:	OREAS-208		No of Analyses:	2
Element:	ASSAYVALUE		Minimum:	8.020
Units:			Maximum:	8.350
Detection Limit:			Mean:	8.185
Expected Value (EV):	9.250		Std Deviation:	0.165
E.V. Range:	8.370 to 10.130		% in Tolerance	0.000 %
			% Bias	-11.514 %
			% RSD	2.016 %



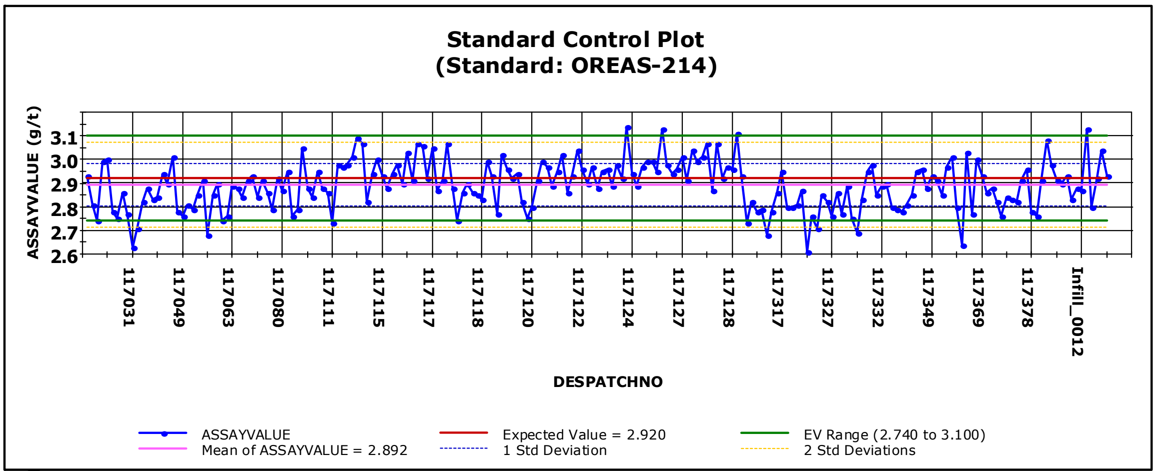


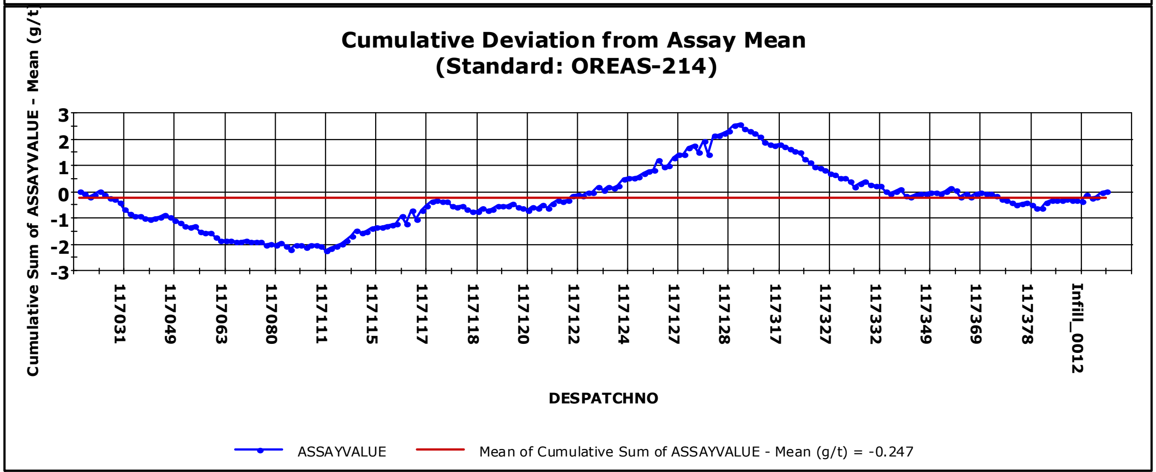


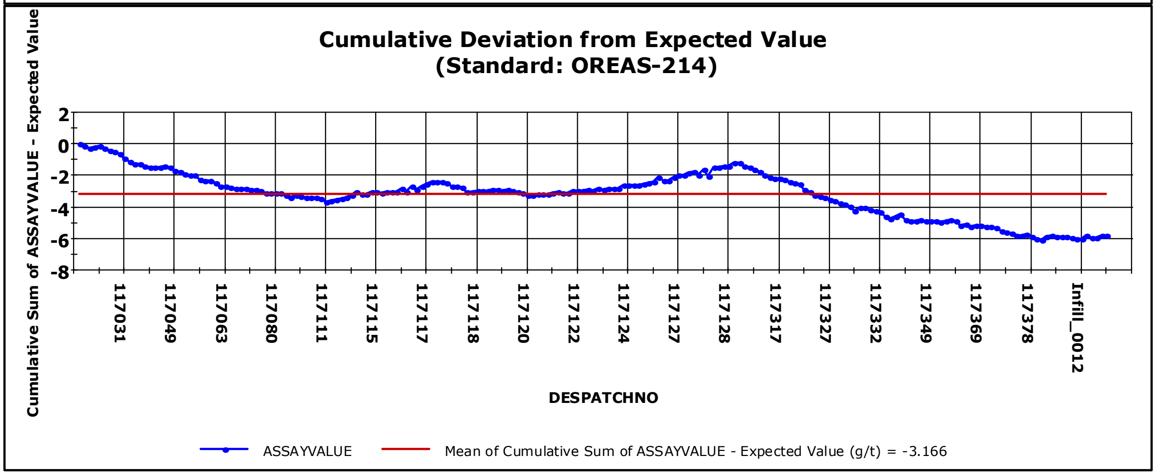
Printed: 08-May-2018 18:48:37 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-214)

Standard:	OREAS-214	No of Analyses:	205
Element:	ASSAYVALUE	Minimum:	2.610
Units:		Maximum:	3.140
Detection Limit:		Mean:	2.892
Expected Value (EV):	2.920	Std Deviation:	0.101
E.V. Range:	2.740 to 3.100	% in Tolerance	91.707 %
		% Bias	-0.971 %
		% RSD	3.493 %



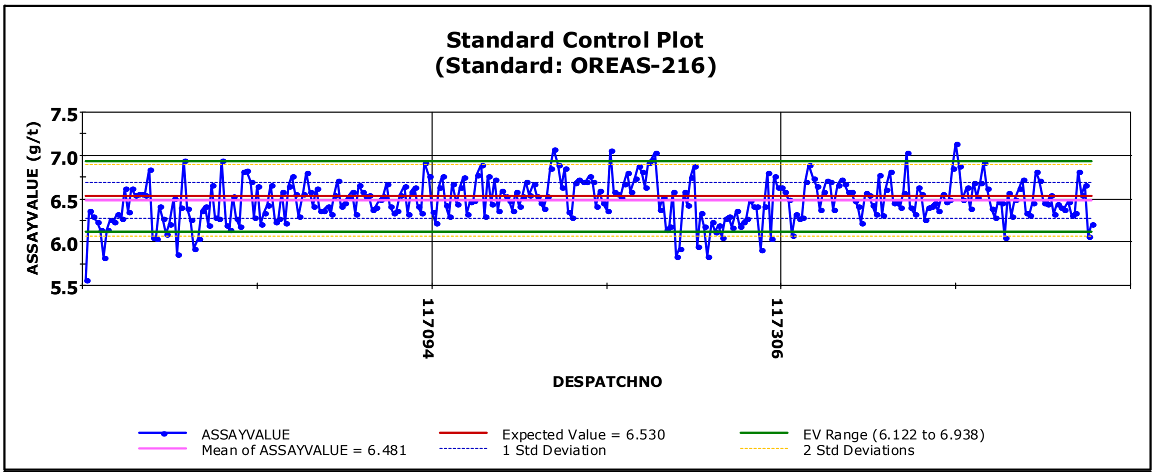


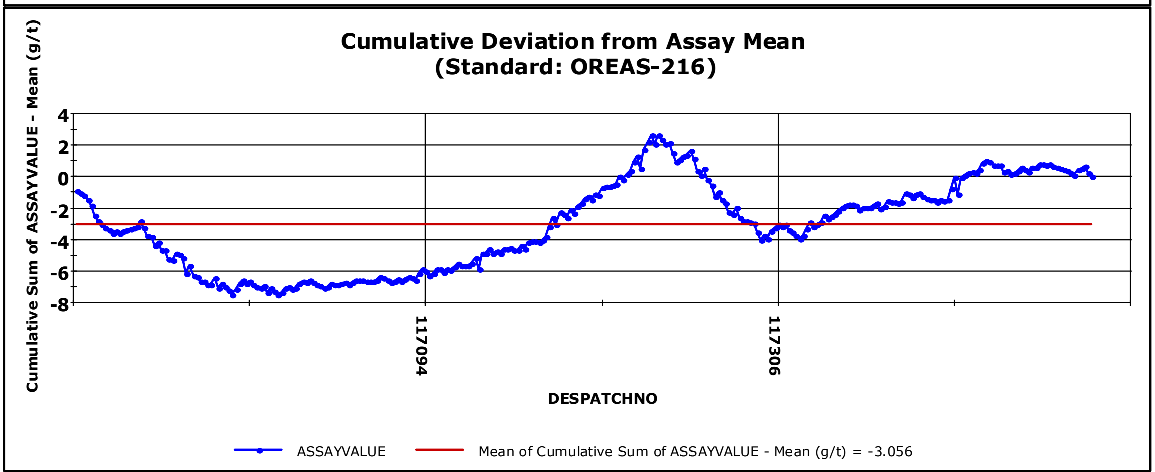


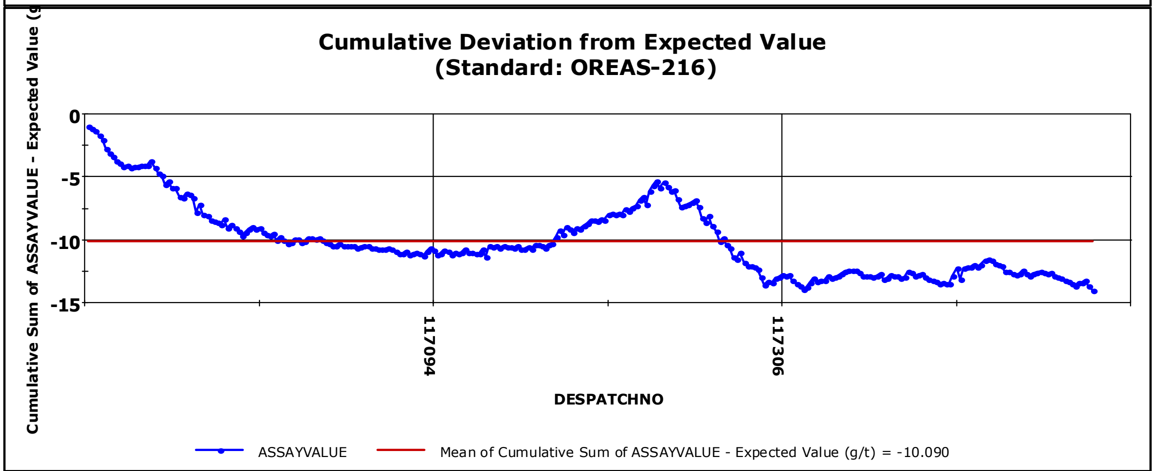
Printed: 08-May-2018 18:49:25 Data Imported: 08-May-2018 18:33:47 Page 1

Summary
(Standard: OREAS-216)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OREAS-216 ASSAYVALUE 6.530 6.122 to 6.938		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	289 5.570 7.140 6.481 0.245 90.657 % -0.743 % 3.784 %







Printed: 08-May-2018 18:50:23 Data Imported: 08-May-2018 18:33:47 Page 1

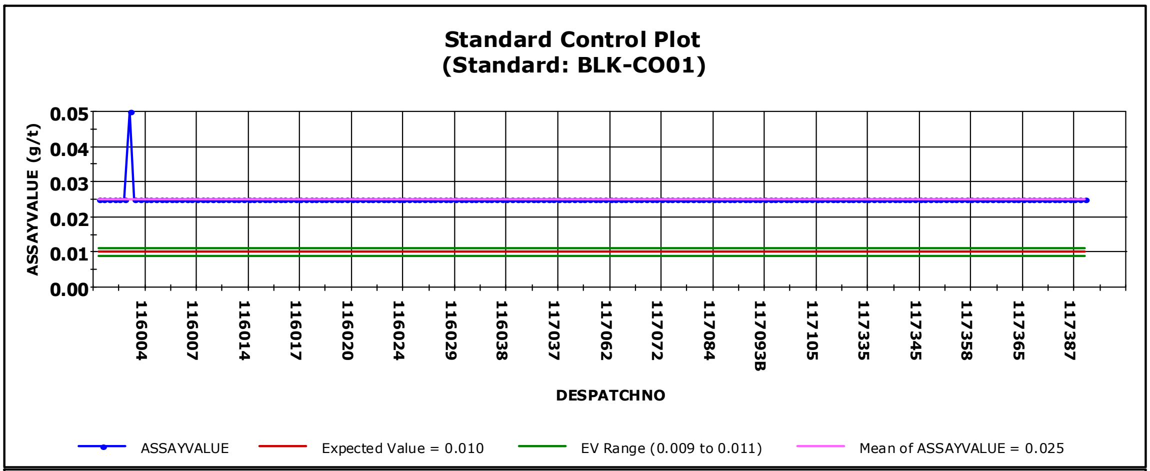
RUPERT RESOURCES

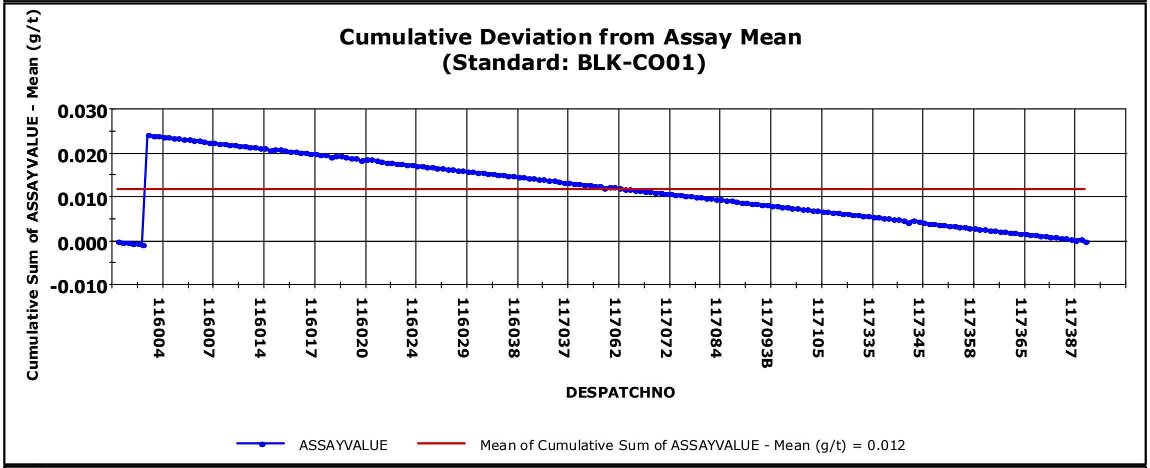
Appendix 2

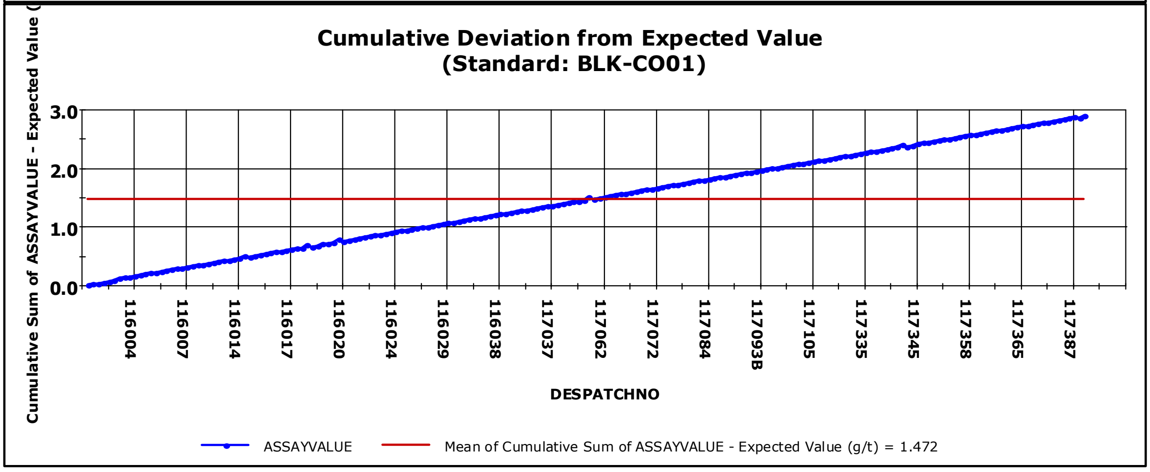
Control Graphs for Standards submitted by Rupert to CRS

Summary
(Standard: BLK-CO01)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK-CO01 ASSAYVALUE 0.010 0.009 to 0.011		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	192 0.025 0.050 0.025 0.002 0.000 % 151.302 % 7.161 %



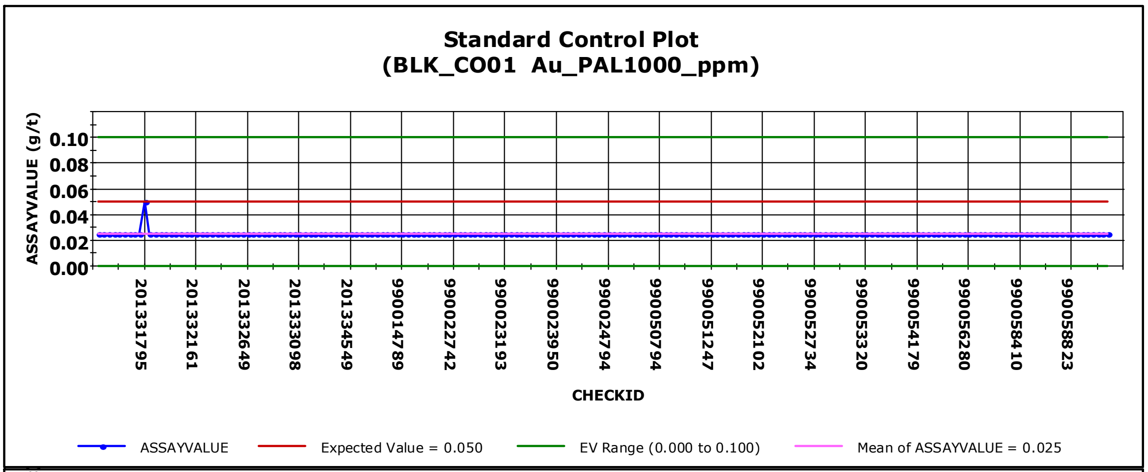


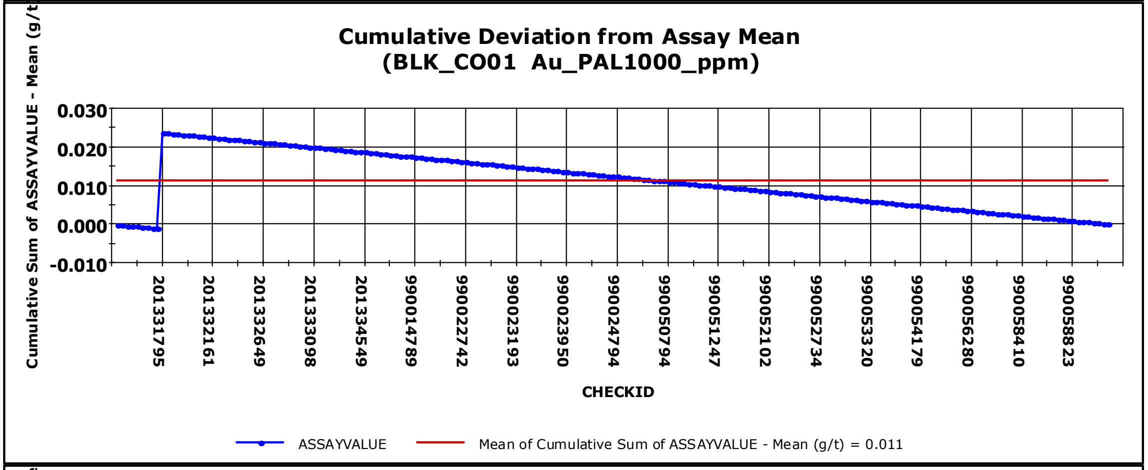


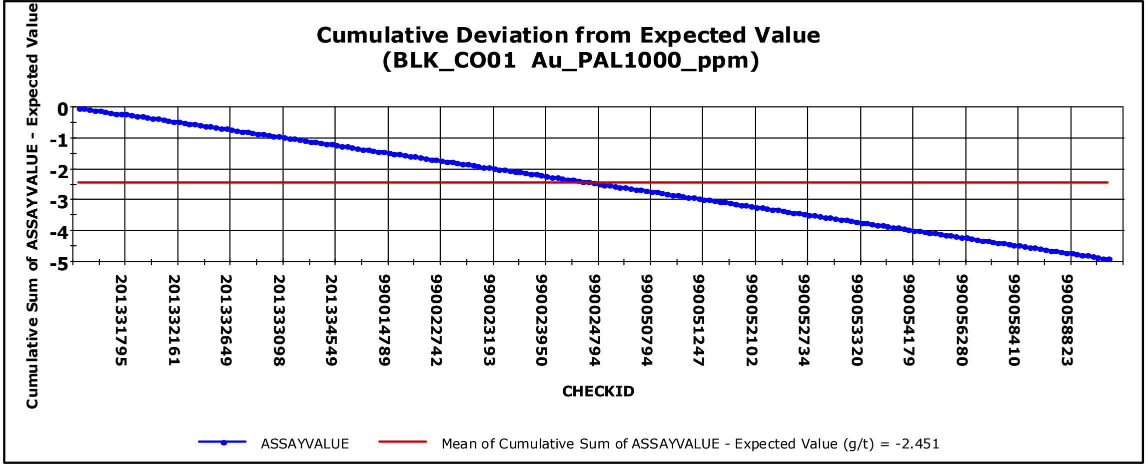
Printed: 08-May-2018 18:58:09 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(BLK_CO01 Au_PAL1000_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK-CO01 ASSAYVALUE - 0.050 0.000 to 0.100		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	197 0.025 0.050 0.025 0.002 100.000 % -49.746 % 7.071 %



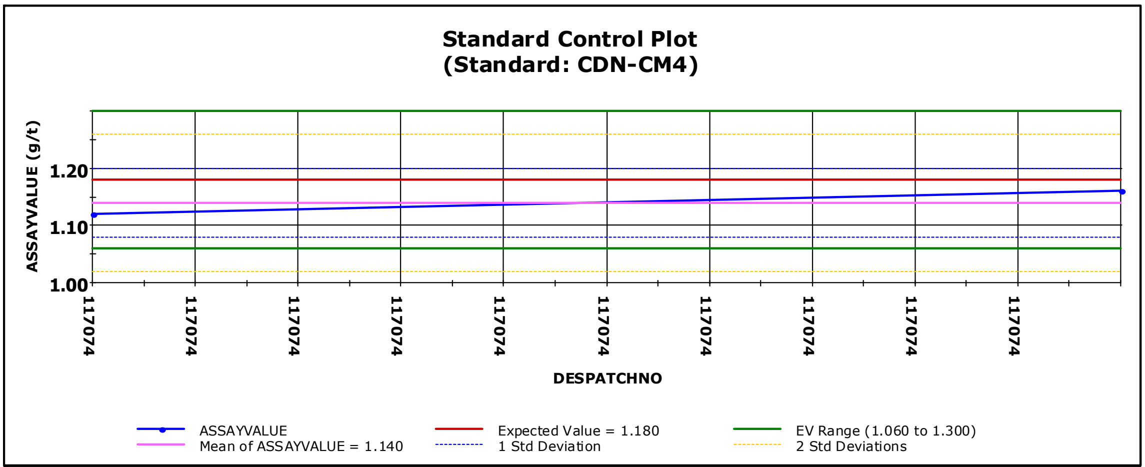


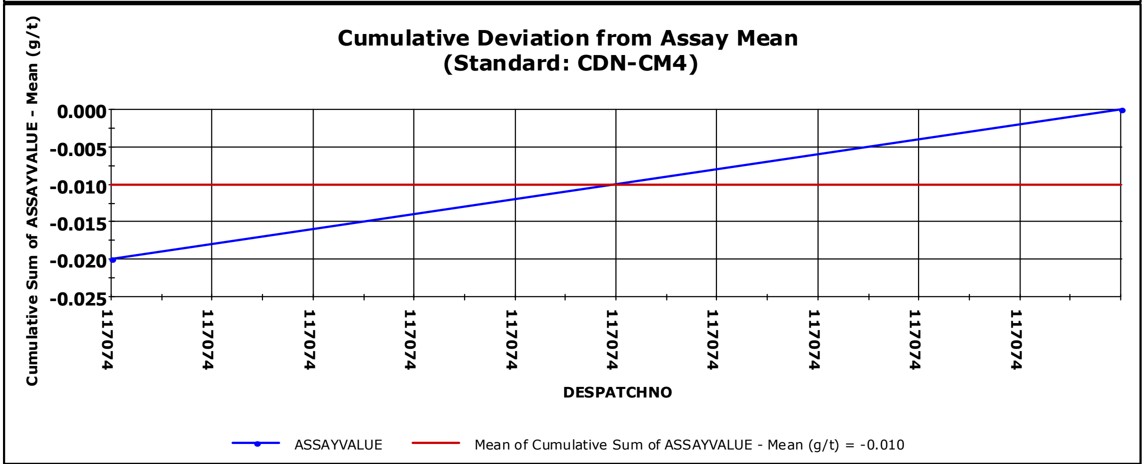


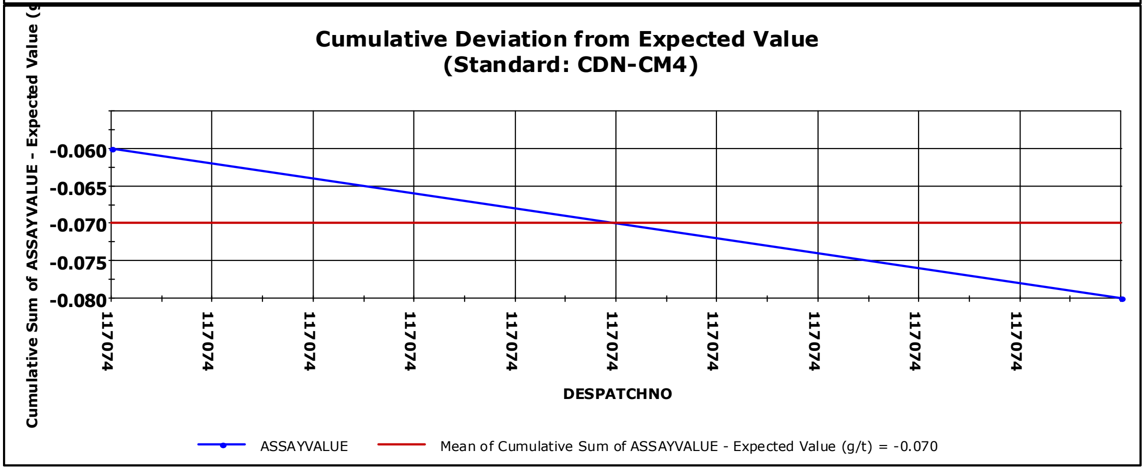
Printed: 10-May-2018 16:27:39 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(Standard: CDN-CM4)

Standard:	CDN-CM4	No of Analyses:	2
Element:	ASSAYVALUE	Minimum:	1.120
Units:		Maximum:	1.160
Detection Limit:		Mean:	1.140
Expected Value (EV):	1.180	Std Deviation:	0.020
E.V. Range:	1.060 to 1.300	% in Tolerance	100.000 %
		% Bias	-3.390 %
		% RSD	1.754 %



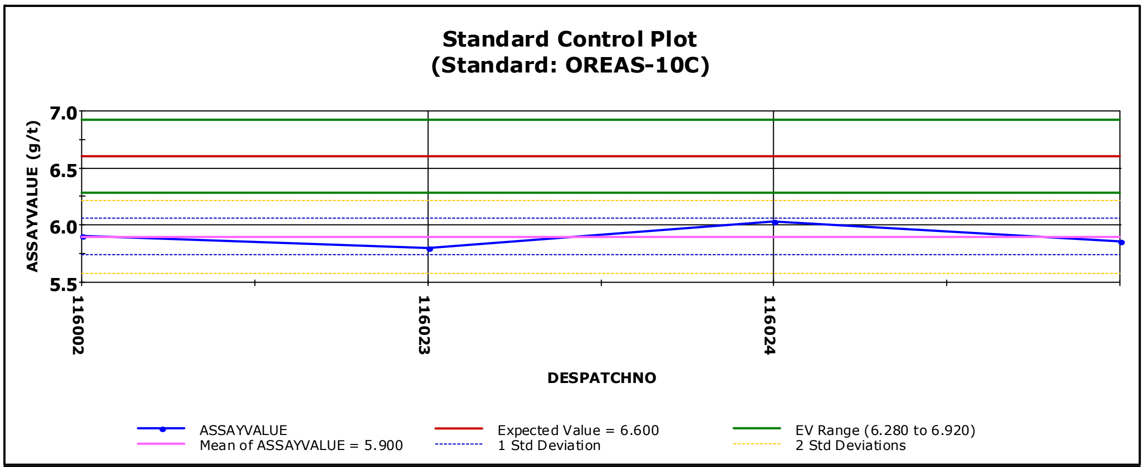


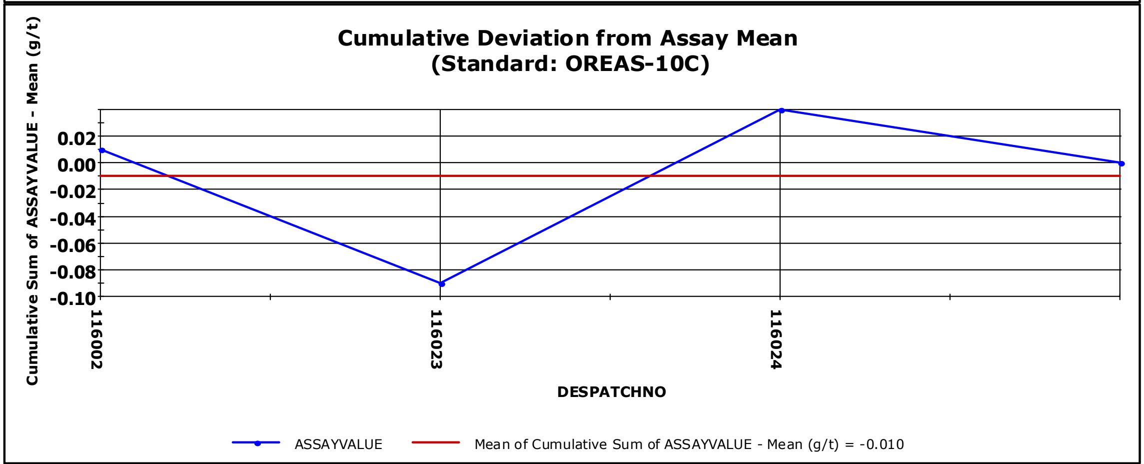


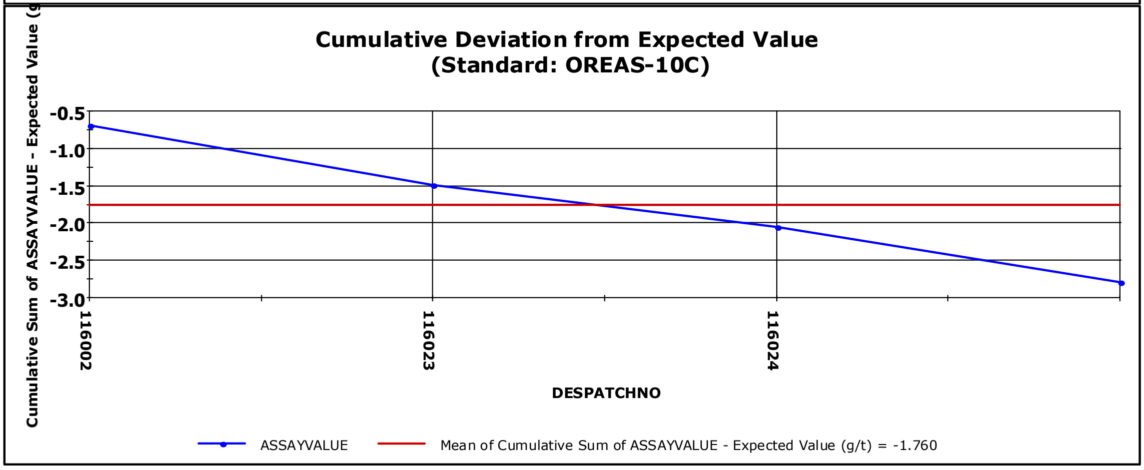
Printed: 08-May-2018 19:02:05 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-10C)

Standard:	OREAS-10C		No of Analyses:	4
Element:	ASSAYVALUE		Minimum:	5.800
Units:			Maximum:	6.030
Detection Limit:			Mean:	5.900
Expected Value (EV):	6.600		Std Deviation:	0.085
E.V. Range:	6.280 to 6.920		% in Tolerance	0.000 %
			% Bias	-10.606 %
			% RSD	1.433 %



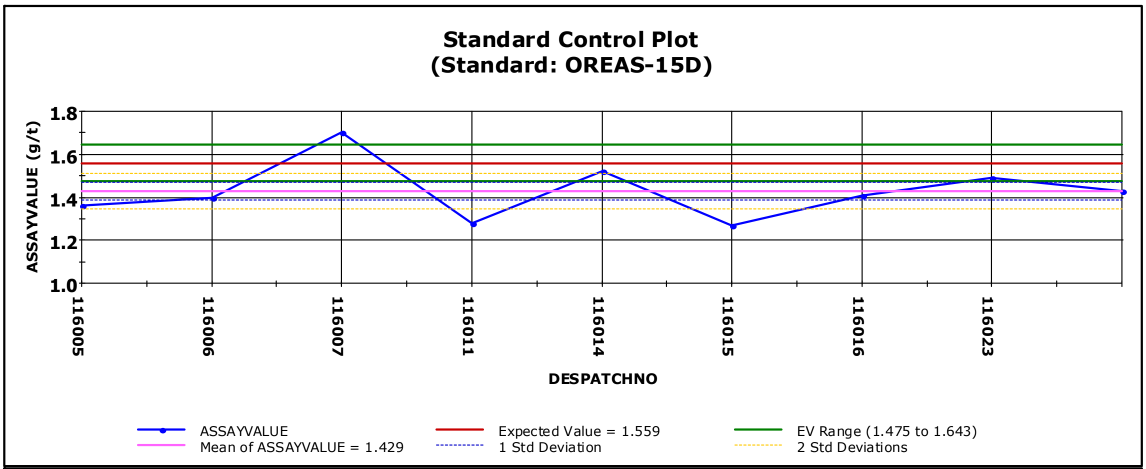


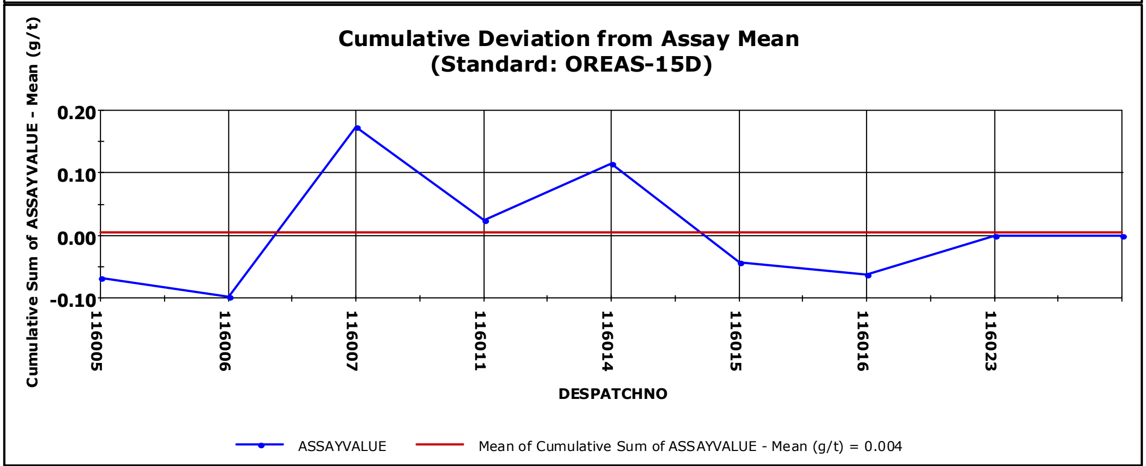


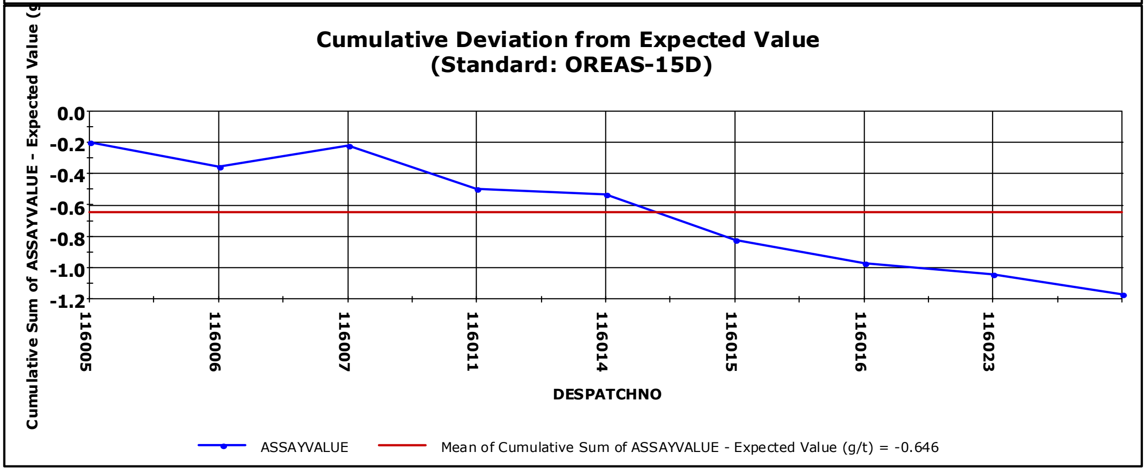
Printed: 08-May-2018 19:03:18 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-15D)

Standard:	OREAS-15D	No of Analyses:	9
Element:	ASSAYVALUE	Minimum:	1.270
Units:		Maximum:	1.700
Detection Limit:		Mean:	1.429
Expected Value (EV):	1.559	Std Deviation:	0.124
E.V. Range:	1.475 to 1.643	% in Tolerance	22.222 %
		% Bias	-8.346 %
		% RSD	8.694 %



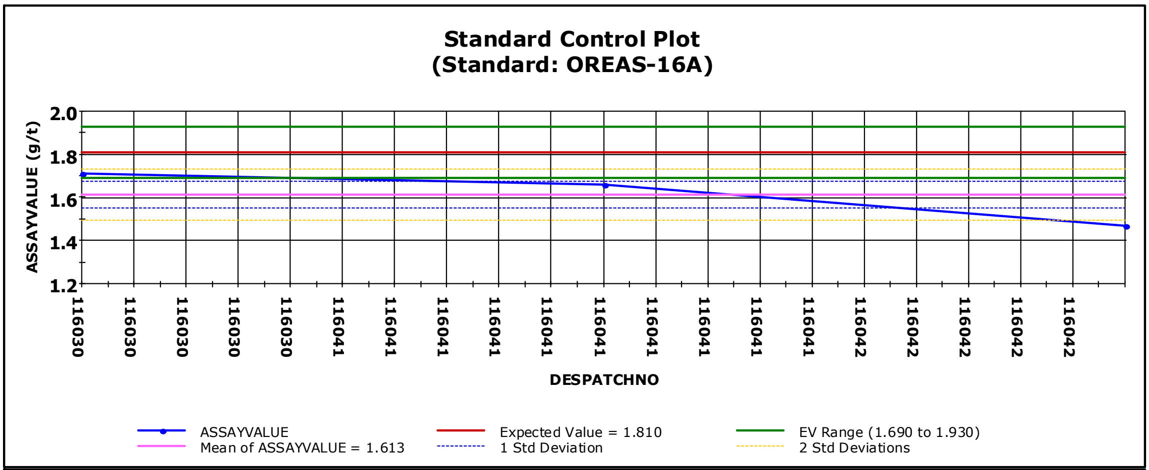


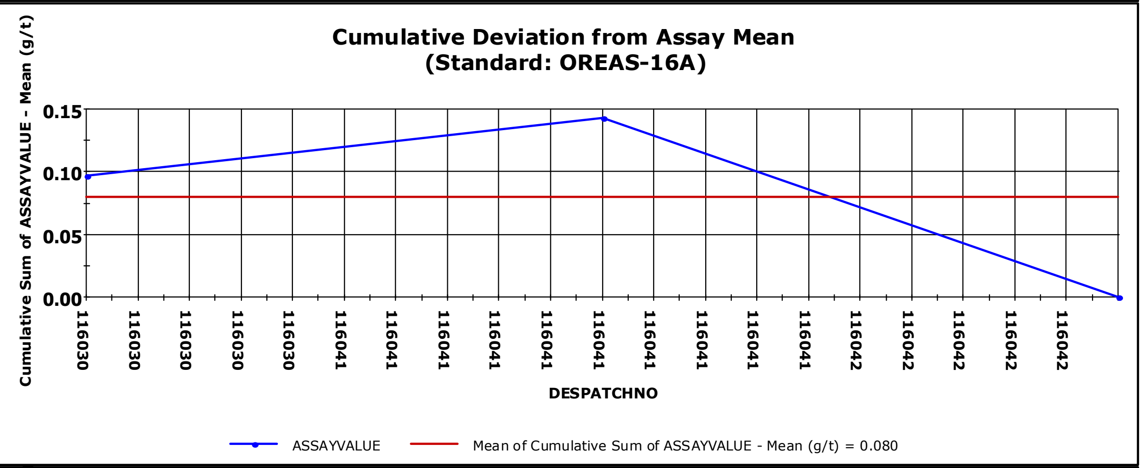


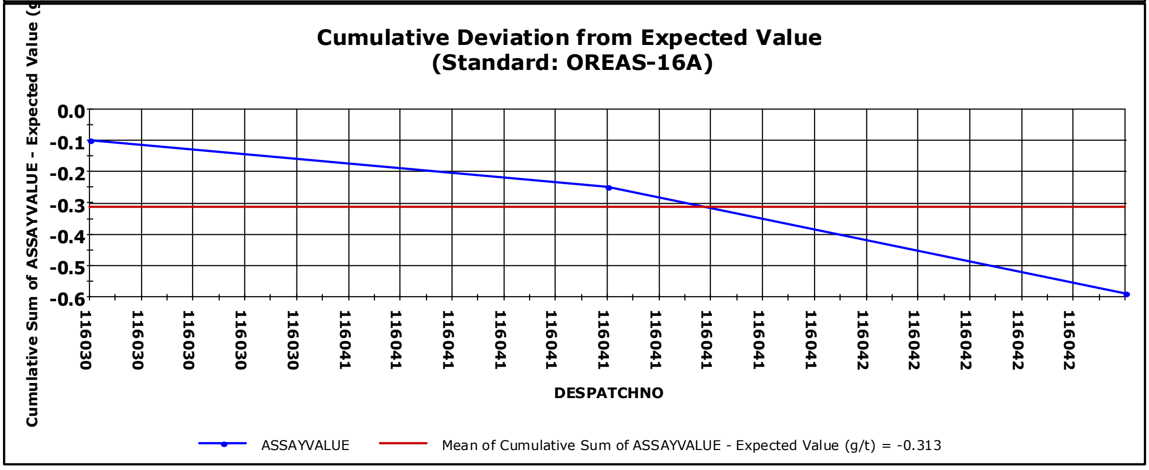
Printed: 08-May-2018 19:04:08 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-16A)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OREAS-16A ASSAYVALUE 1.810 1.690 to 1.930		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	3 1.470 1.710 1.613 0.103 33.333 % -10.866 % 6.408 %



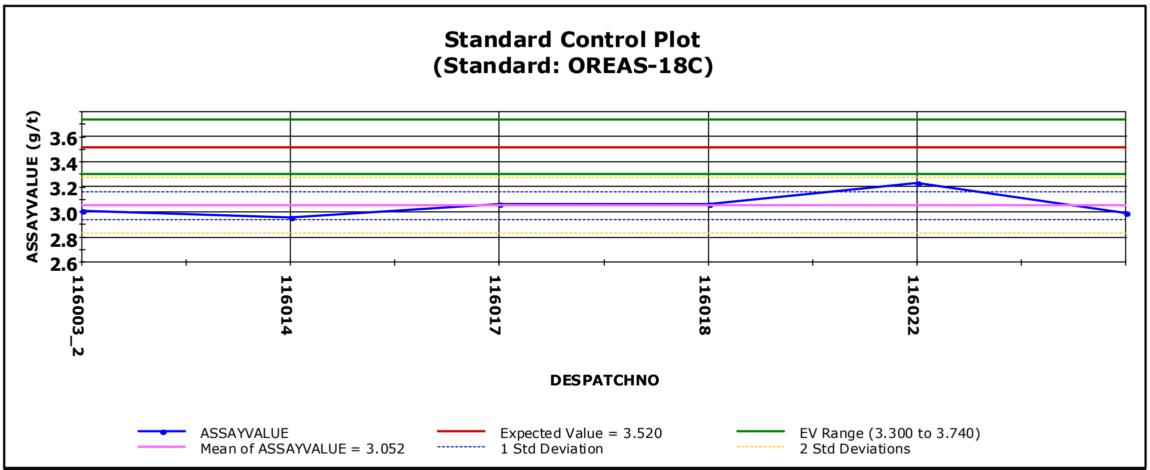


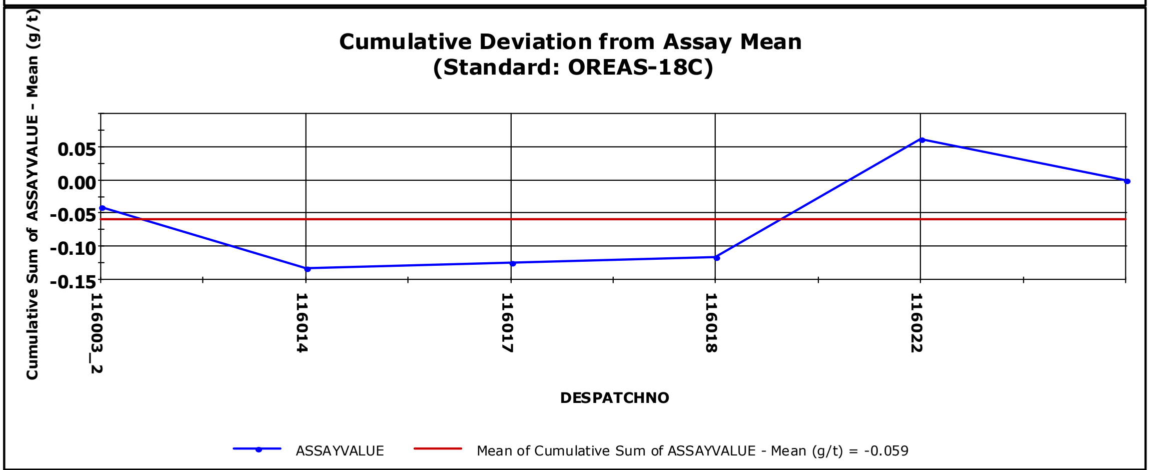


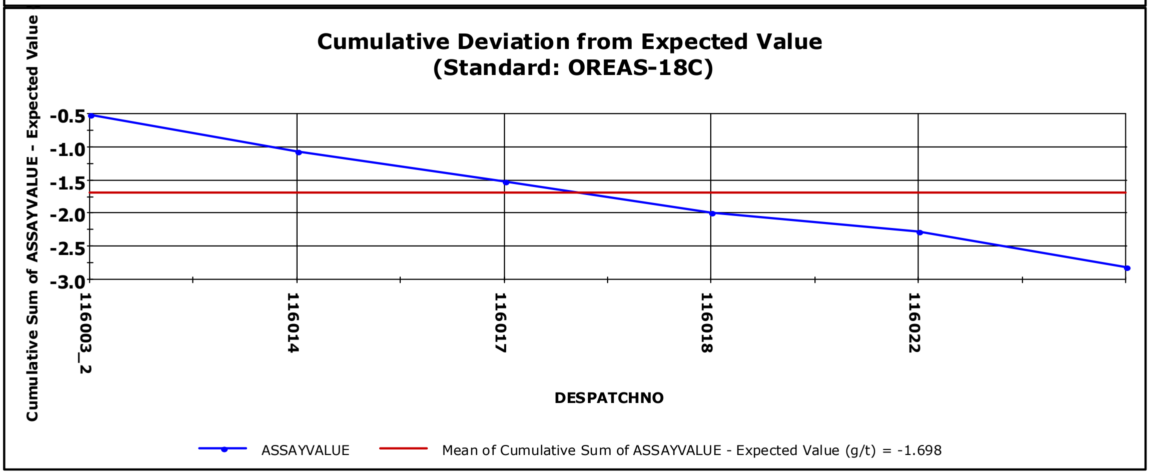
Printed: 08-May-2018 19:04:57 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-18C)

Standard:	OREAS-18C	No of Analyses:	6
Element:	ASSAYVALUE	Minimum:	2.960
Units:		Maximum:	3.230
Detection Limit:		Mean:	3.052
Expected Value (EV):	3.520	Std Deviation:	0.087
E.V. Range:	3.300 to 3.740	% in Tolerance	0.000 %
		% Bias	-13.305 %
		% RSD	2.866 %



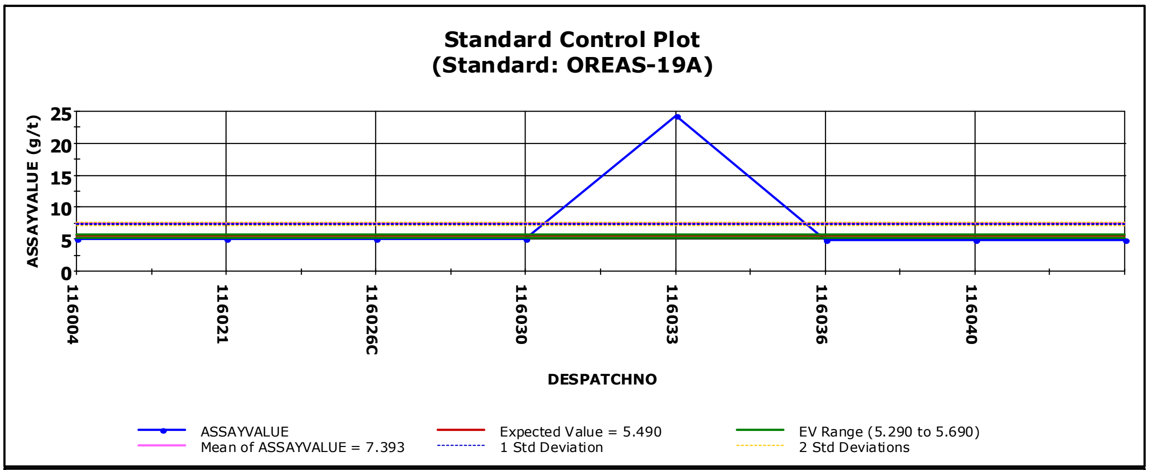


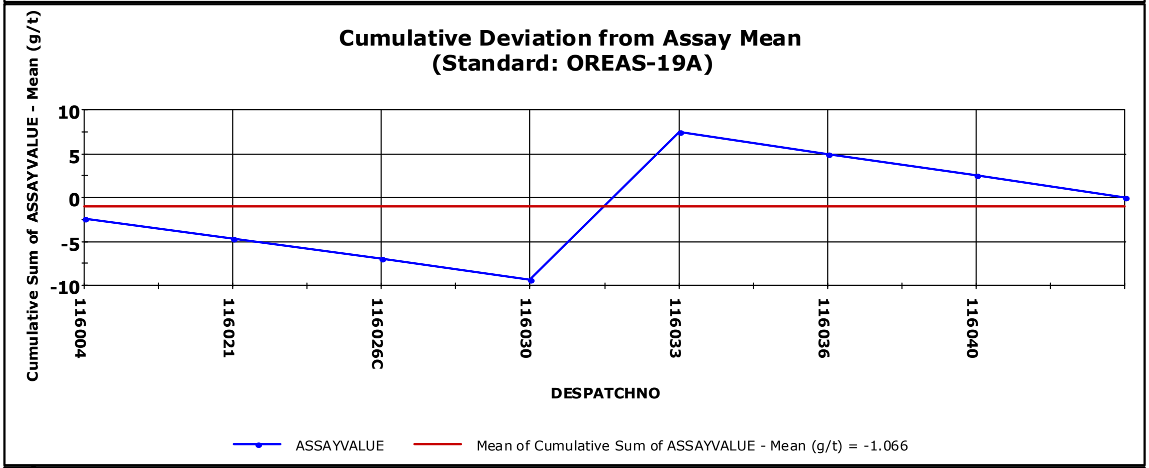


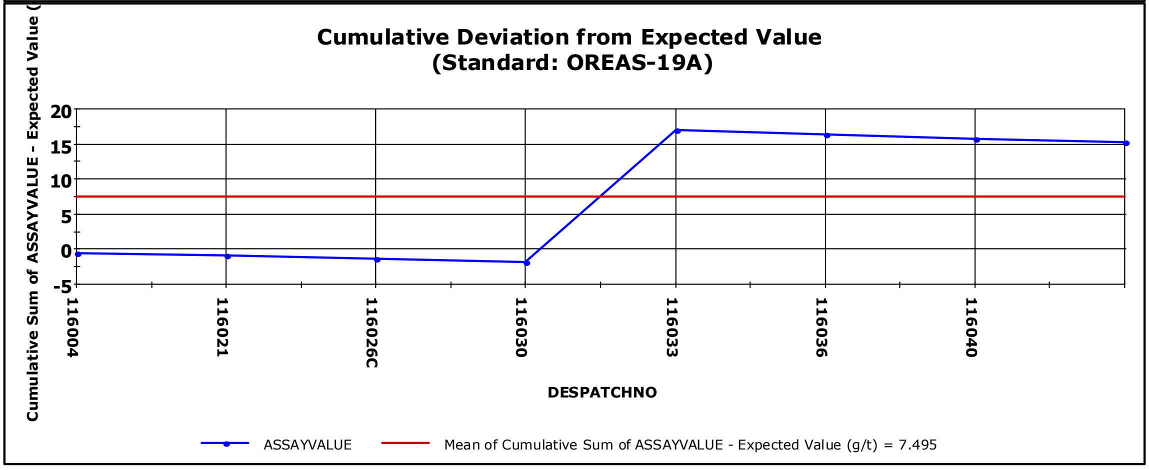
Printed: 08-May-2018 19:05:48 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-19A)

Standard:	OREAS-19A	No of Analyses:	8
Element:	ASSAYVALUE	Minimum:	4.840
Units:		Maximum:	24.300
Detection Limit:		Mean:	7.393
Expected Value (EV):	5.490	Std Deviation:	6.391
E.V. Range:	5.290 to 5.690	% in Tolerance	0.000 %
		% Bias	34.654 %
		% RSD	86.453 %



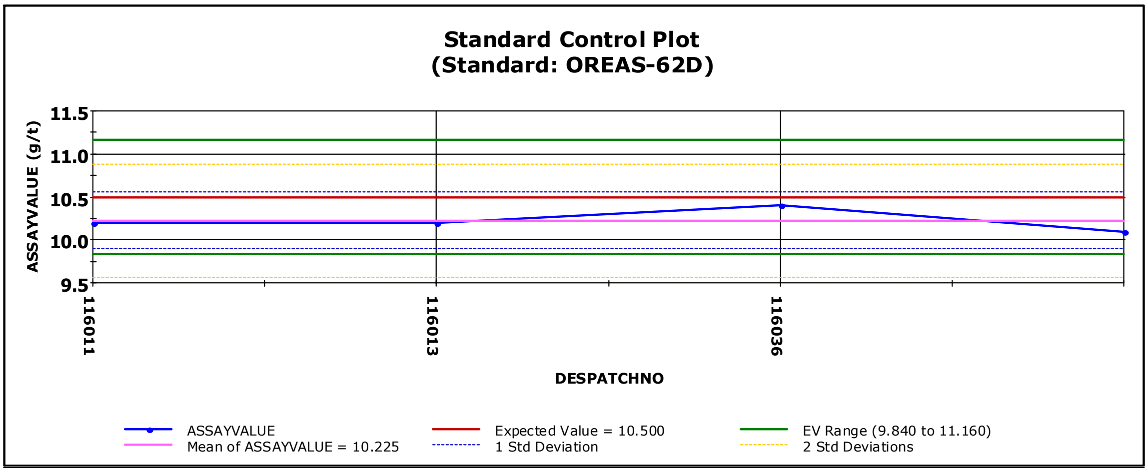


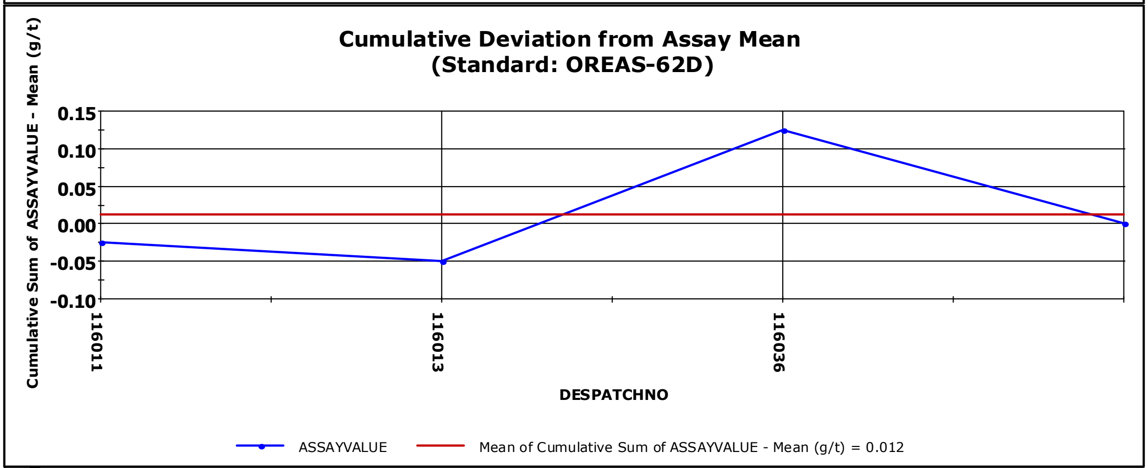


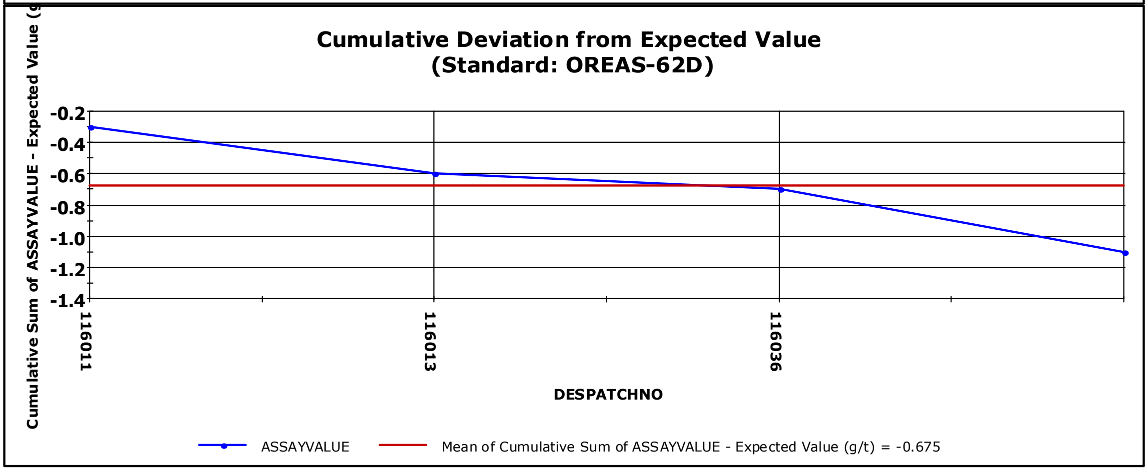
Printed: 08-May-2018 19:06:38 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-62D)

Standard:	OREAS-62D	No of Analyses:	4
Element:	ASSAYVALUE	Minimum:	10.100
Units:		Maximum:	10.400
Detection Limit:		Mean:	10.225
Expected Value (EV):	10.500	Std Deviation:	0.109
E.V. Range:	9.840 to 11.160	% in Tolerance	100.000 %
		% Bias	-2.619 %
		% RSD	1.066 %



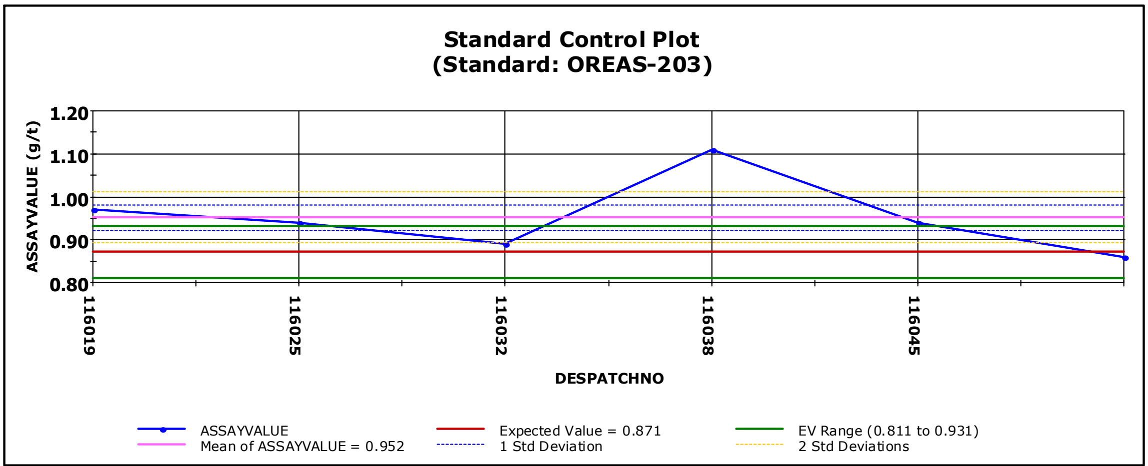


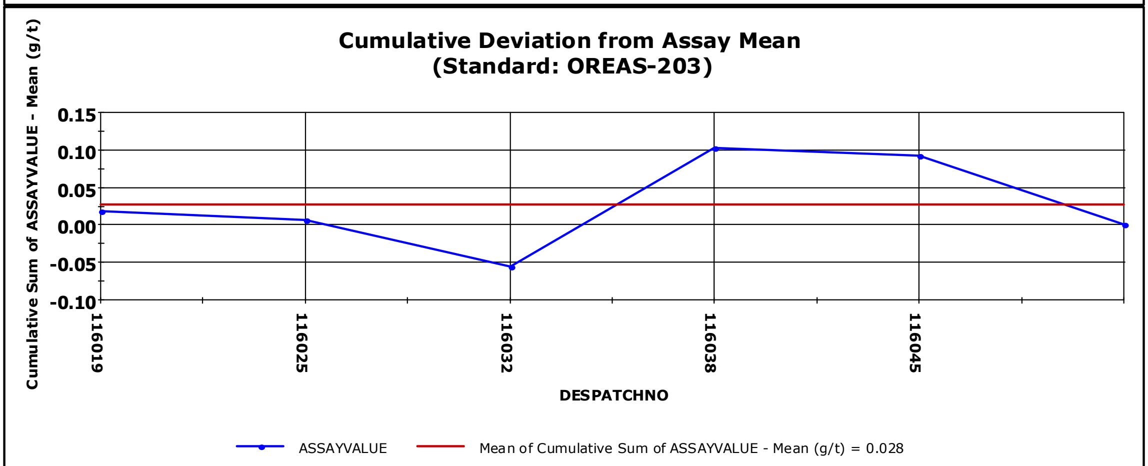


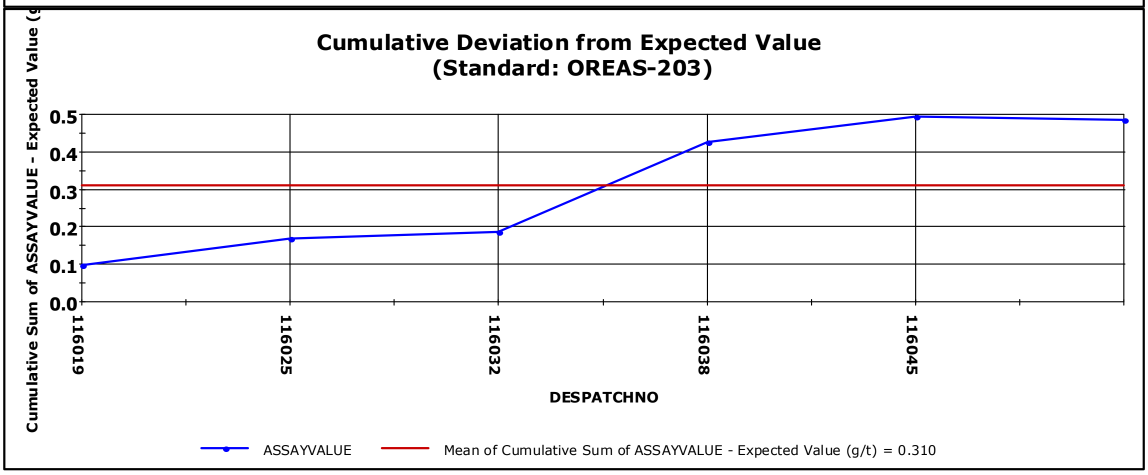
Printed: 08-May-2018 19:30:15 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-203)

Standard:	OREAS-203	No of Analyses:	6
Element:	ASSAYVALUE	Minimum:	0.860
Units:		Maximum:	1.110
Detection Limit:		Mean:	0.952
Expected Value (EV):	0.871	Std Deviation:	0.079
E.V. Range:	0.811 to 0.931	% in Tolerance	33.333 %
		% Bias	9.261 %
		% RSD	8.350 %



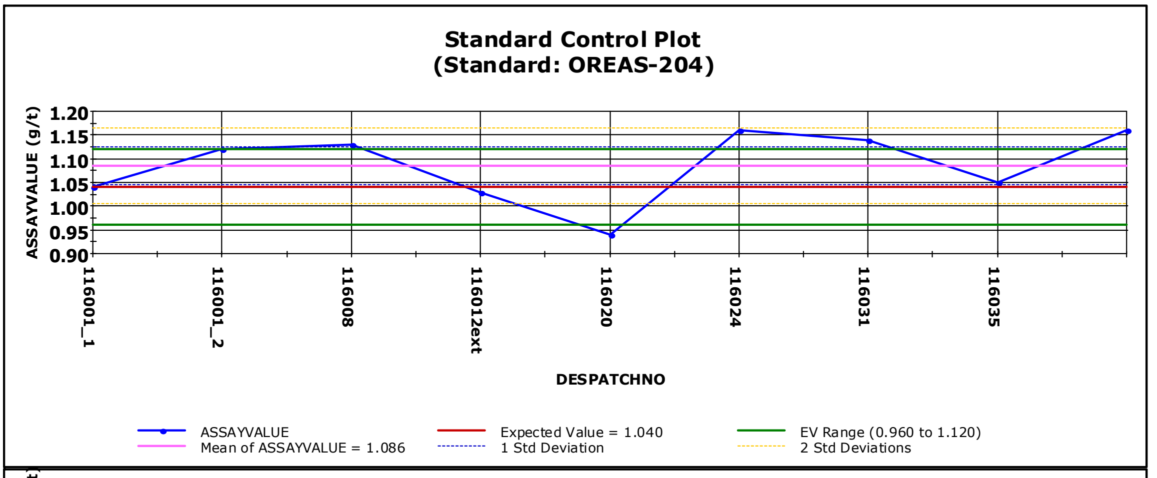


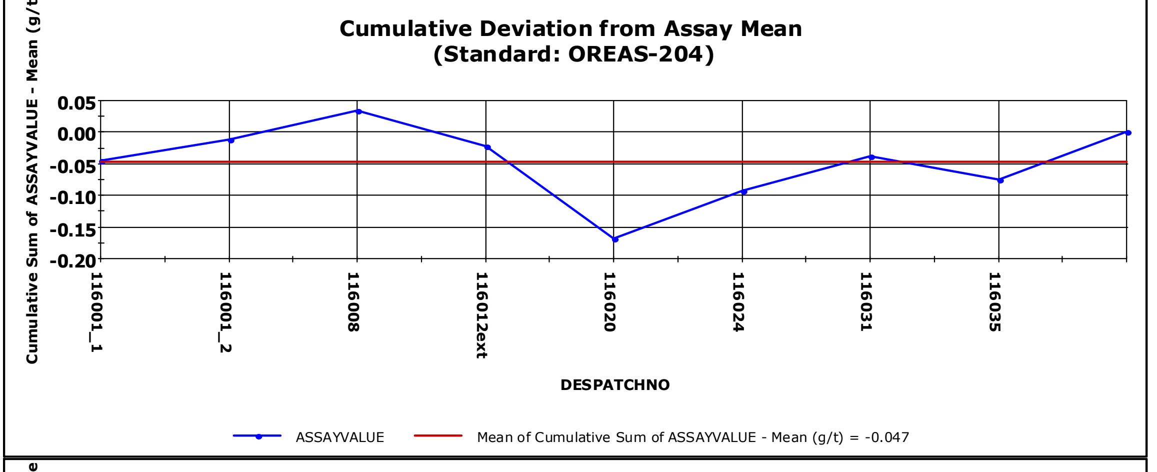


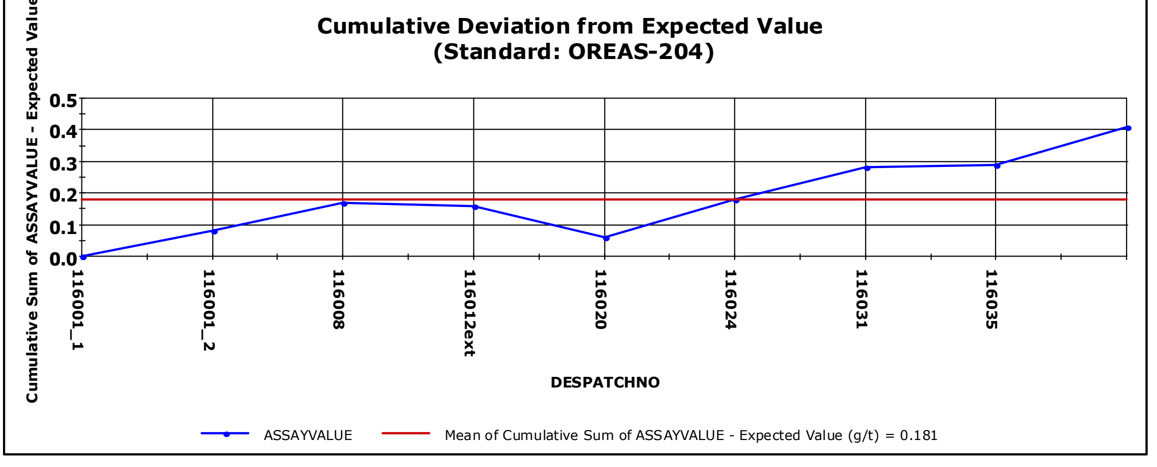
Printed: 08-May-2018 19:26:19 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-204)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OREAS-204 ASSAYVALUE 1.040 0.960 to 1.120		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	9 0.940 1.160 1.086 0.071 44.444 % 4.380 % 6.501 %



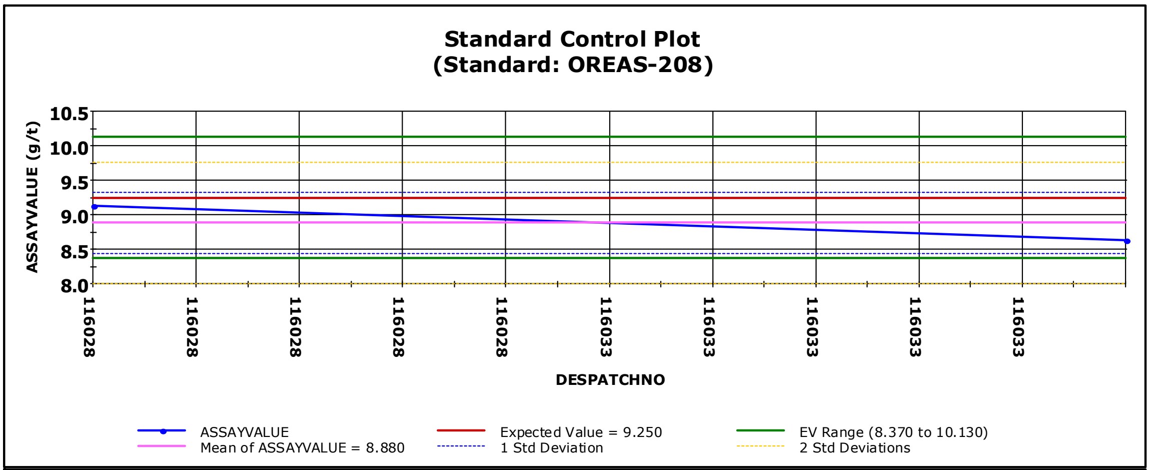


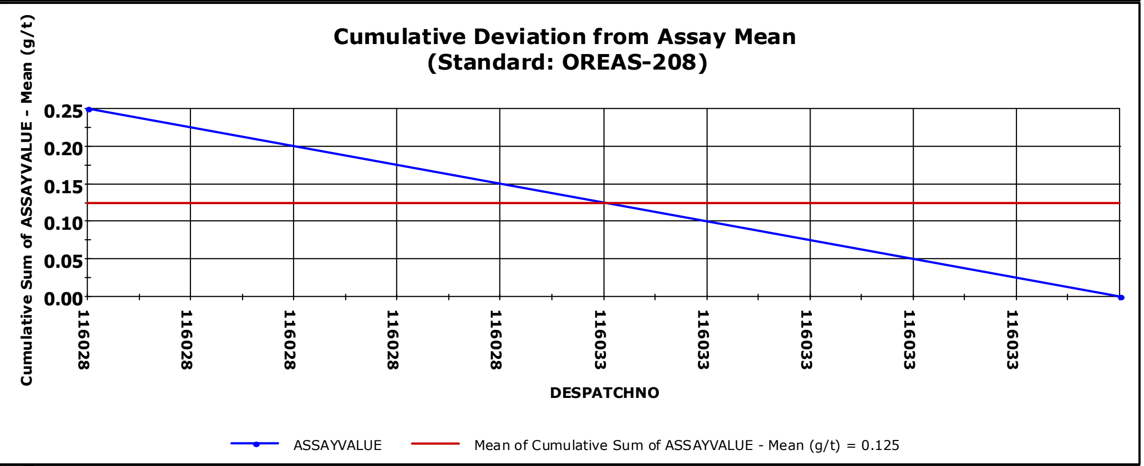


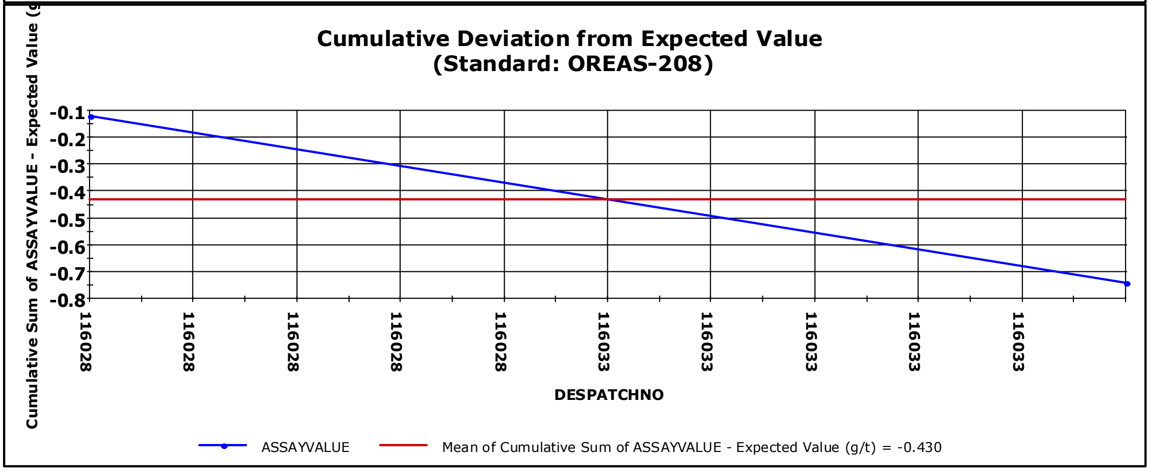
Printed: 08-May-2018 19:27:12 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-208)

Standard:	OREAS-208		No of Analyses:	2
Element:	ASSAYVALUE		Minimum:	8.630
Units:			Maximum:	9.130
Detection Limit:			Mean:	8.880
Expected Value (EV):	9.250		Std Deviation:	0.250
E.V. Range:	8.370 to 10.130		% in Tolerance	100.000 %
			% Bias	-4.000 %
			% RSD	2.815 %



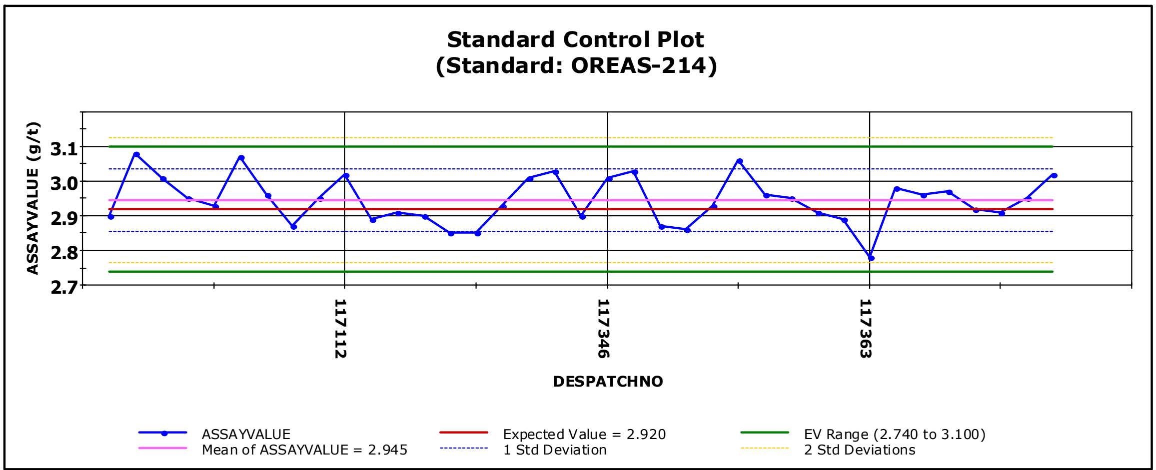


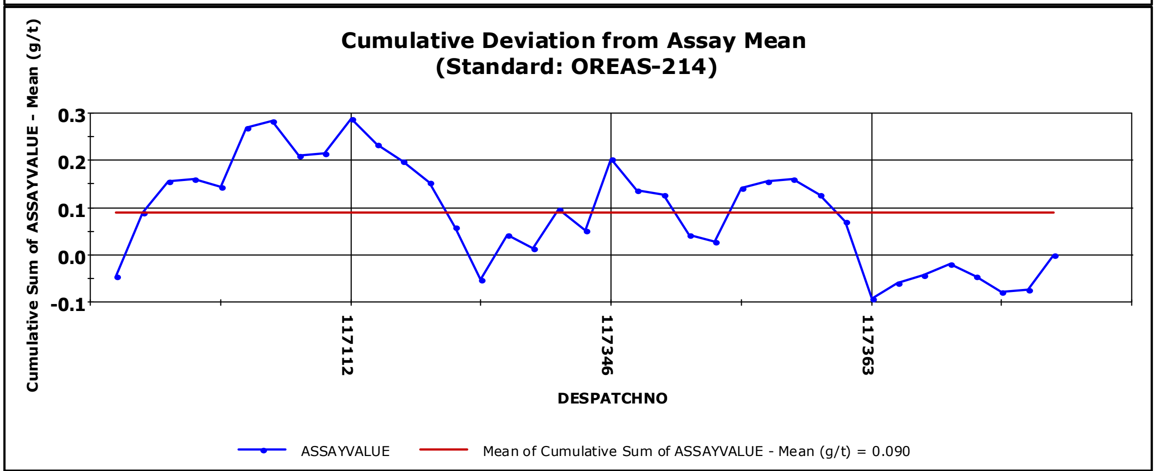


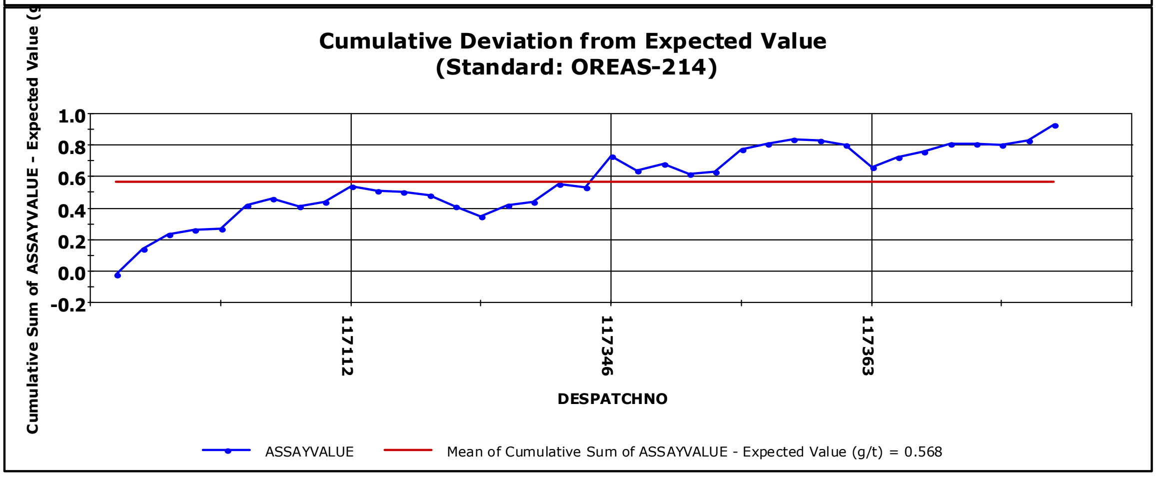
Printed: 08-May-2018 19:27:52 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-214)

Standard:	OREAS-214		No of Analyses:	37
Element:	ASSAYVALUE		Minimum:	2.780
Units:			Maximum:	3.080
Detection Limit:			Mean:	2.945
Expected Value (EV):	2.920		Std Deviation:	0.068
E.V. Range:	2.740 to 3.100		% in Tolerance	100.000 %
			% Bias	0.861 %
			% RSD	2.294 %



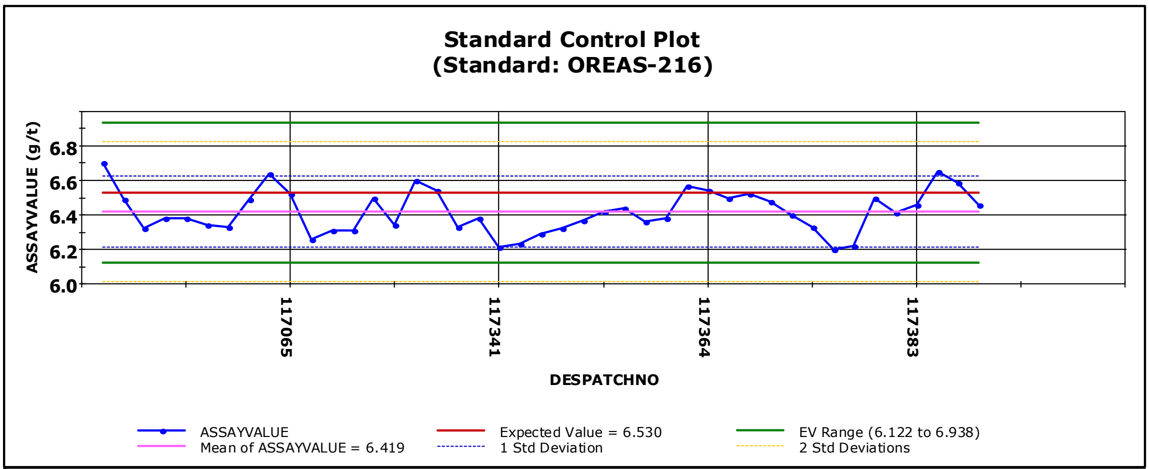


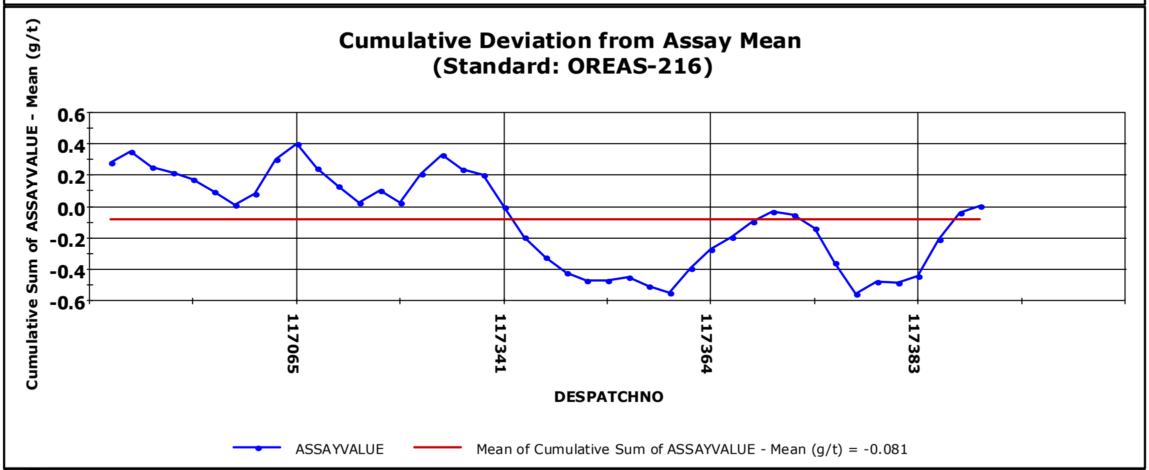


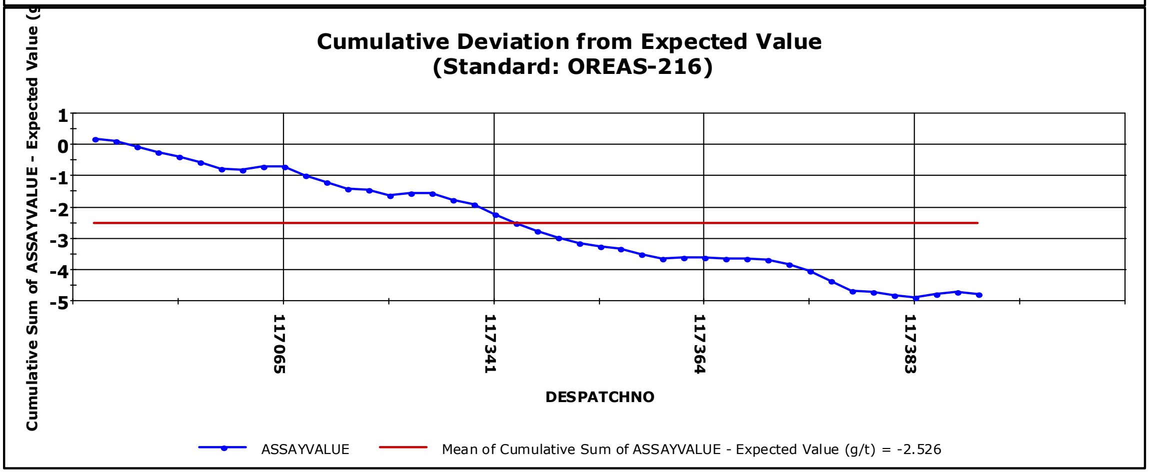
Printed: 08-May-2018 19:28:35 Data Imported: 08-May-2018 18:55:49 Page 1

Summary
(Standard: OREAS-216)

Standard:	OREAS-216	No of Analyses:	43
Element:	ASSAYVALUE	Minimum:	6.200
Units:		Maximum:	6.700
Detection Limit:		Mean:	6.419
Expected Value (EV):	6.530	Std Deviation:	0.123
E.V. Range:	6.122 to 6.938	% in Tolerance	100.000 %
		% Bias	-1.702 %
		% RSD	1.921 %







Printed: 08-May-2018 19:29:25 Data Imported: 08-May-2018 18:55:49 Page 1

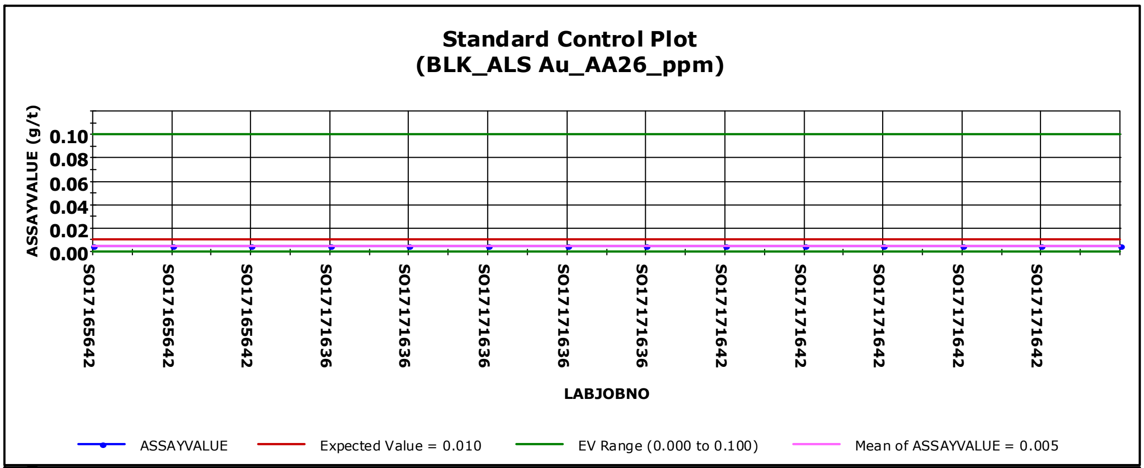
RUPERT RESOURCES

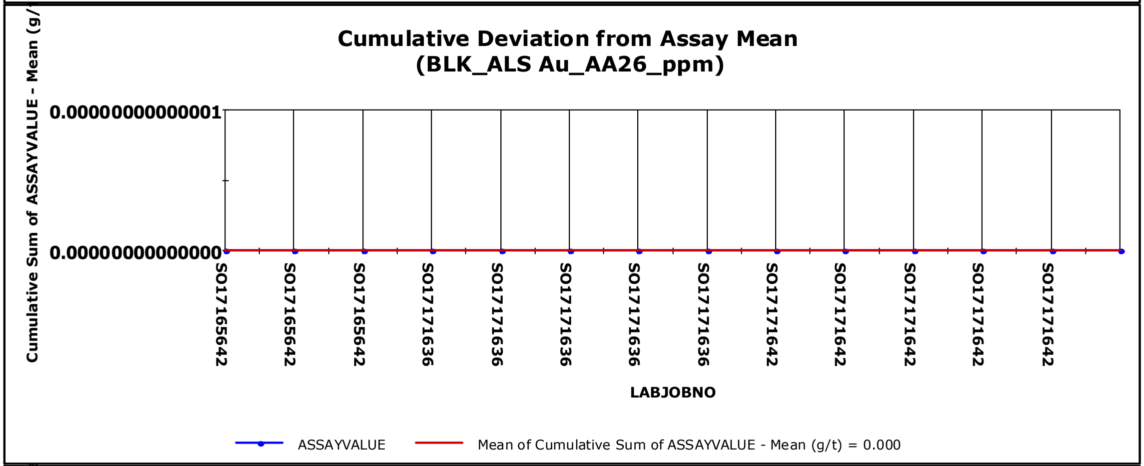
Appendix 3

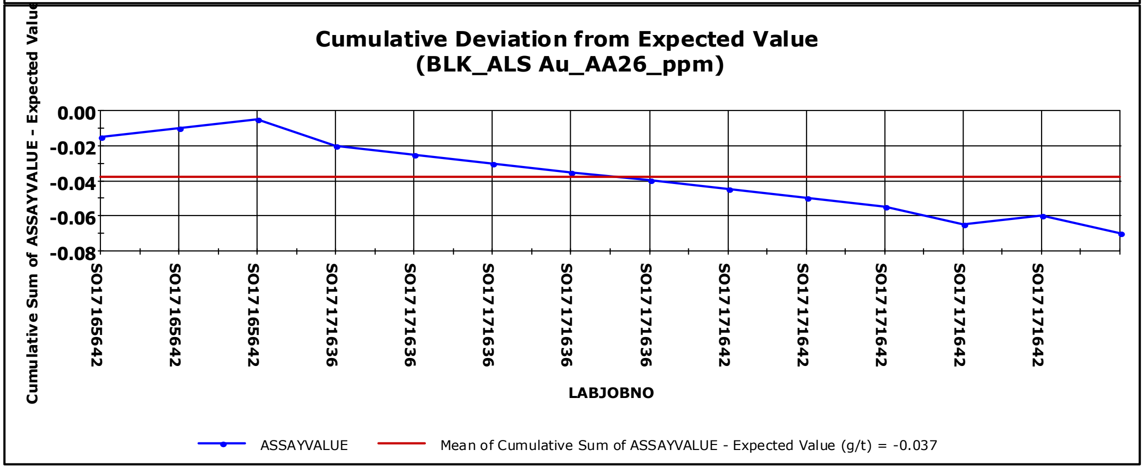
ALS Internal Standards and Blanks

Summary
(BLK_ALS Au_AA26_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK_ALS ASSAYVALUE - 0.010 0.000 to 0.100		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	14 0.005 0.005 0.005 0.000 100.000 % -50.000 % 0.000 %



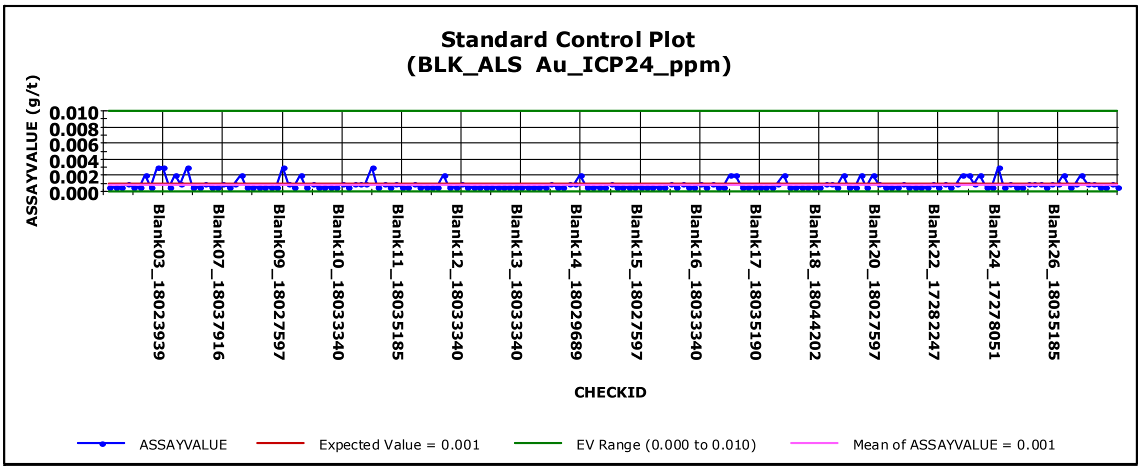


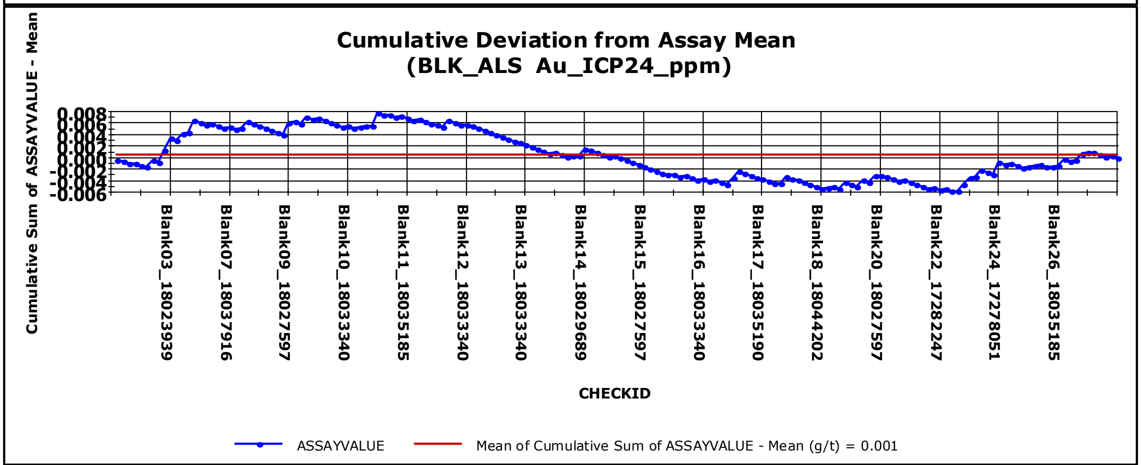


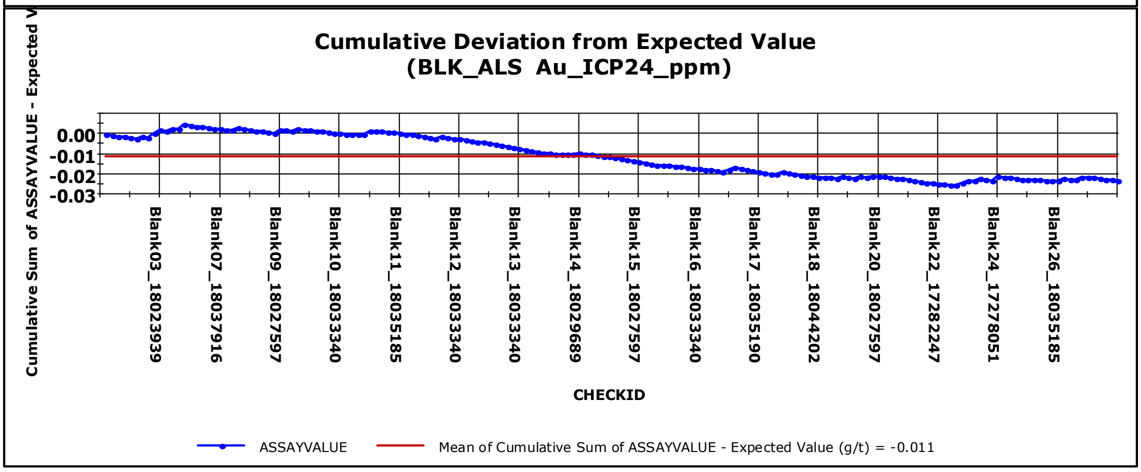
Printed: 10-May-2018 19:10:55 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(BLK_ALS Au_ICP24_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK_ALS ASSAYVALUE - 0.001 0.000 to 0.010		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	170 0.001 0.003 0.001 0.001 100.000 % -13.824 % 71.200 %



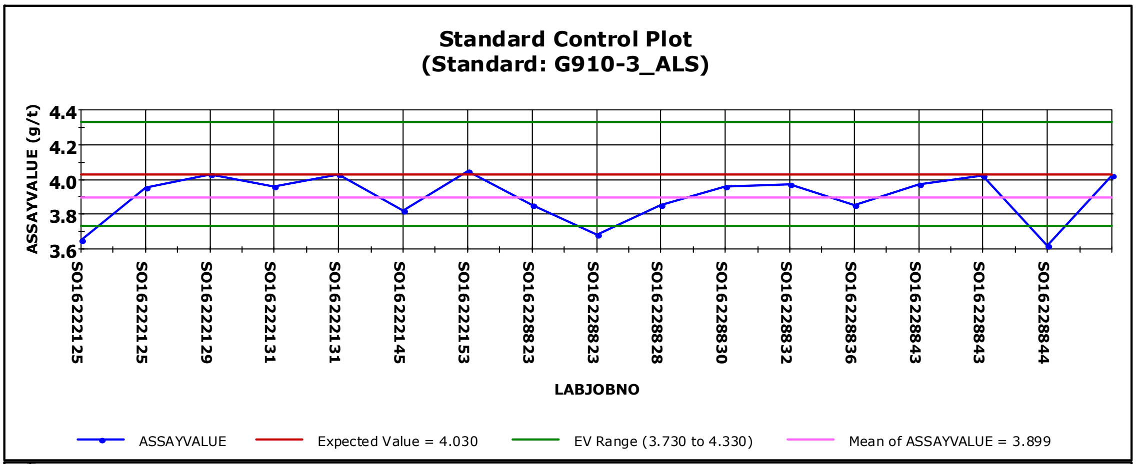


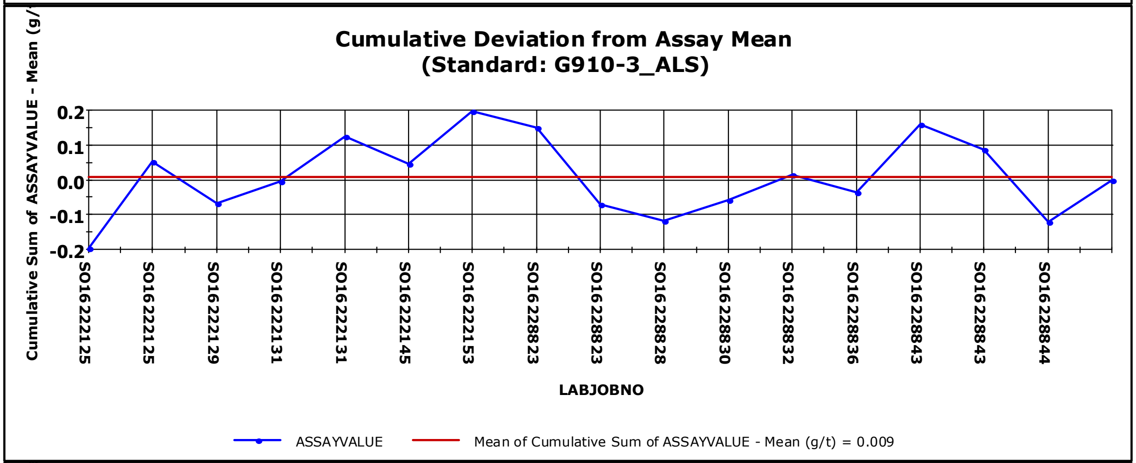


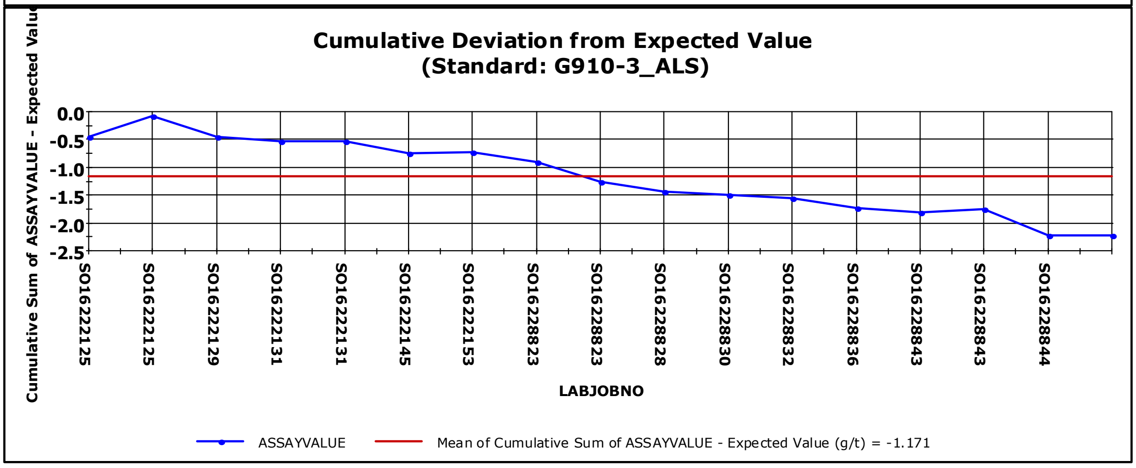
Printed: 10-May-2018 16:02:46 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(Standard: G910-3_ALS)

Standard:	G910-3_ALS	No of Analyses:	17
Element:	ASSAYVALUE	Minimum:	3.620
Units:		Maximum:	4.050
Detection Limit:	-	Mean:	3.899
Expected Value (EV):	4.030	Std Deviation:	0.135
E.V. Range:	3.730 to 4.330	% in Tolerance	82.353 %
		% Bias	-3.255 %
		% RSD	3.451 %



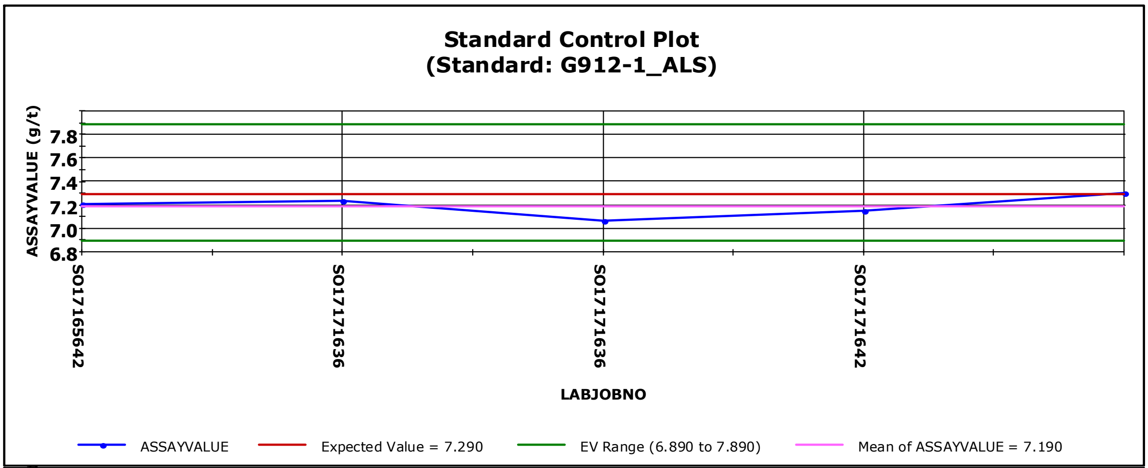


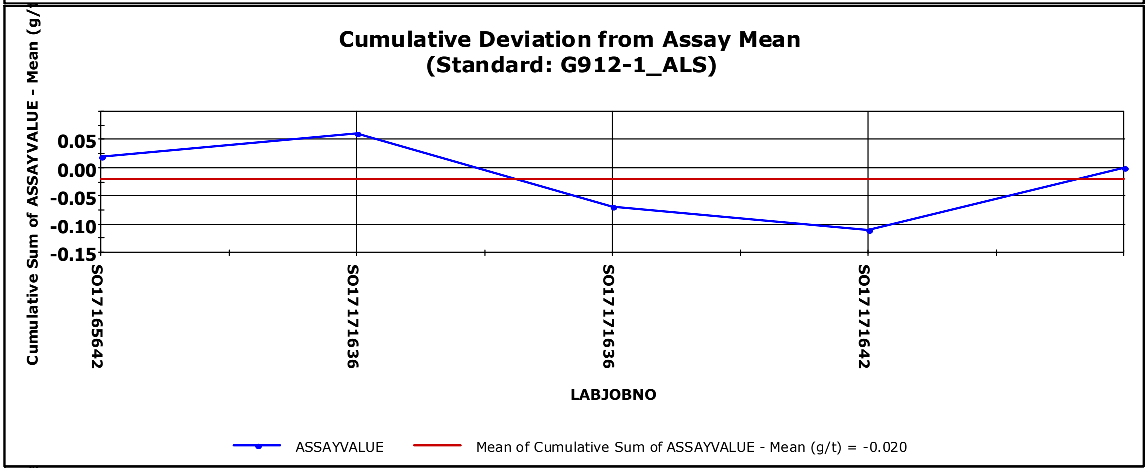


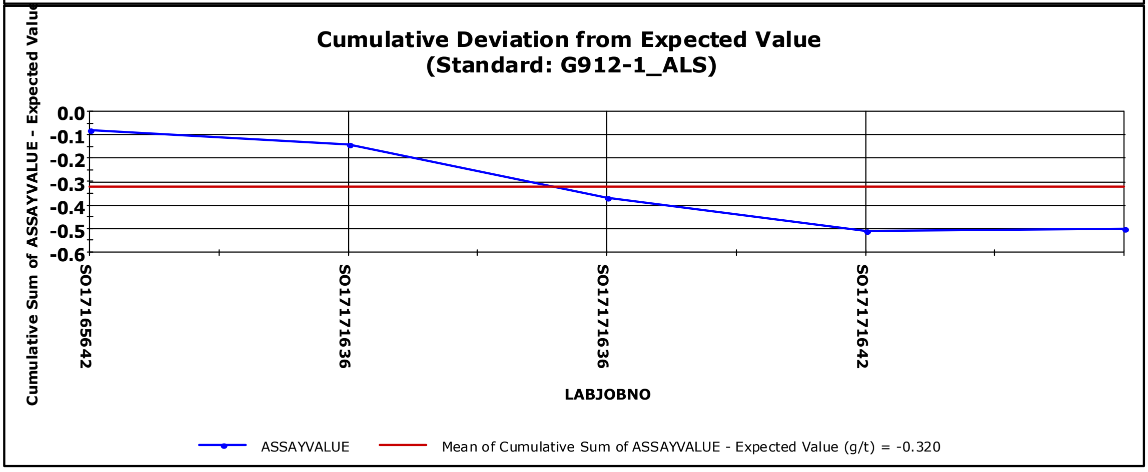
Printed: 10-May-2018 17:50:46 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(Standard: G912-1_ALS)

Standard:	G912-1_ALS	No of Analyses:	5
Element:	ASSAYVALUE	Minimum:	7.060
Units:		Maximum:	7.300
Detection Limit:	-	Mean:	7.190
Expected Value (EV):	7.290	Std Deviation:	0.081
E.V. Range:	6.890 to 7.890	% in Tolerance	100.000 %
		% Bias	-1.372 %
		% RSD	1.123 %



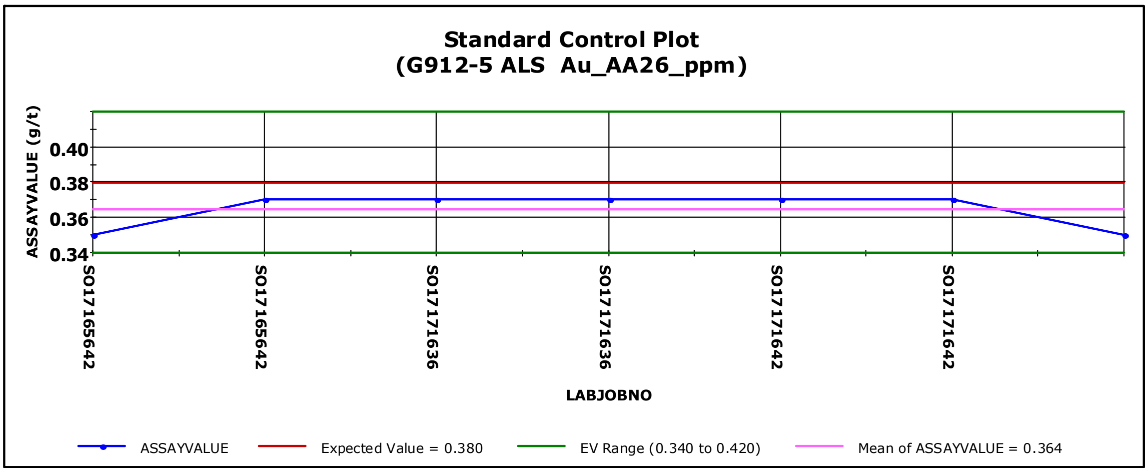


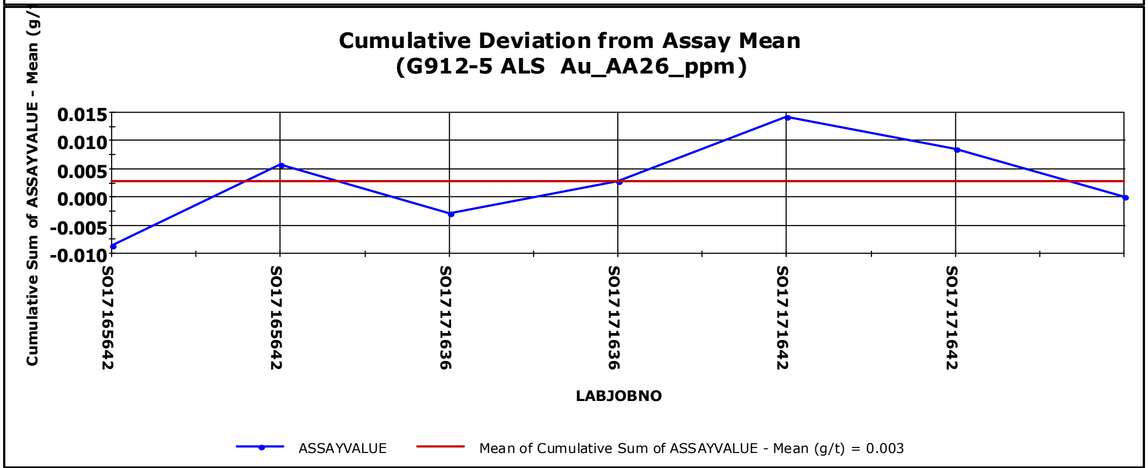


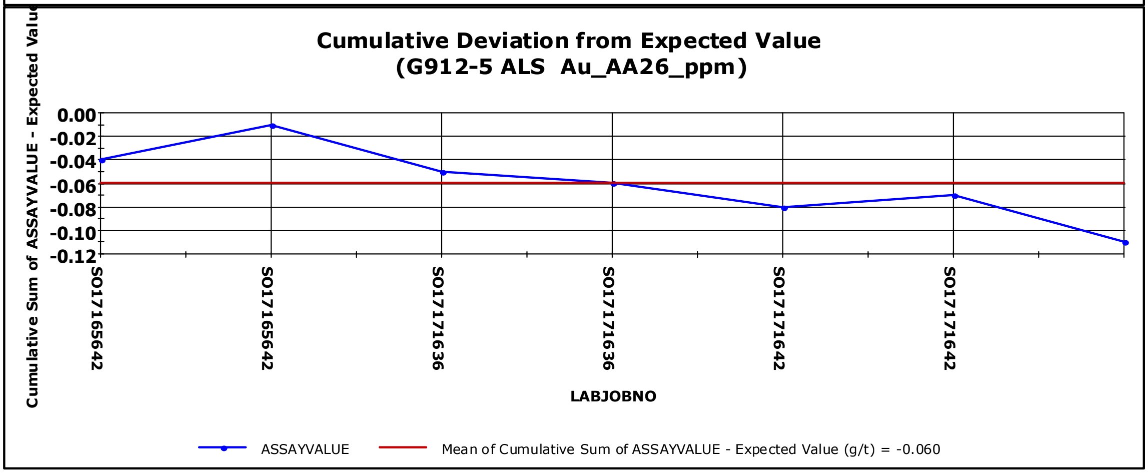
Printed: 10-May-2018 18:03:11 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(G912-5 ALS Au_AA26_ppm)

Standard:	G912-5_ALS		No of Analyses:	7
Element:	ASSAYVALUE		Minimum:	0.350
Units:			Maximum:	0.370
Detection Limit:	-		Mean:	0.364
Expected Value (EV):	0.380		Std Deviation:	0.009
E.V. Range:	0.340 to 0.420		% in Tolerance	100.000 %
			% Bias	-4.135 %
			% RSD	2.480 %



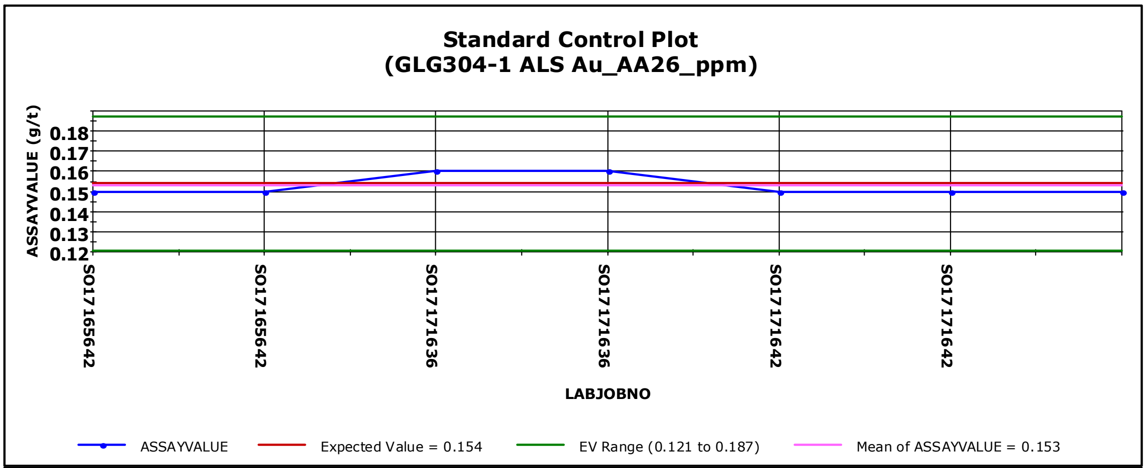


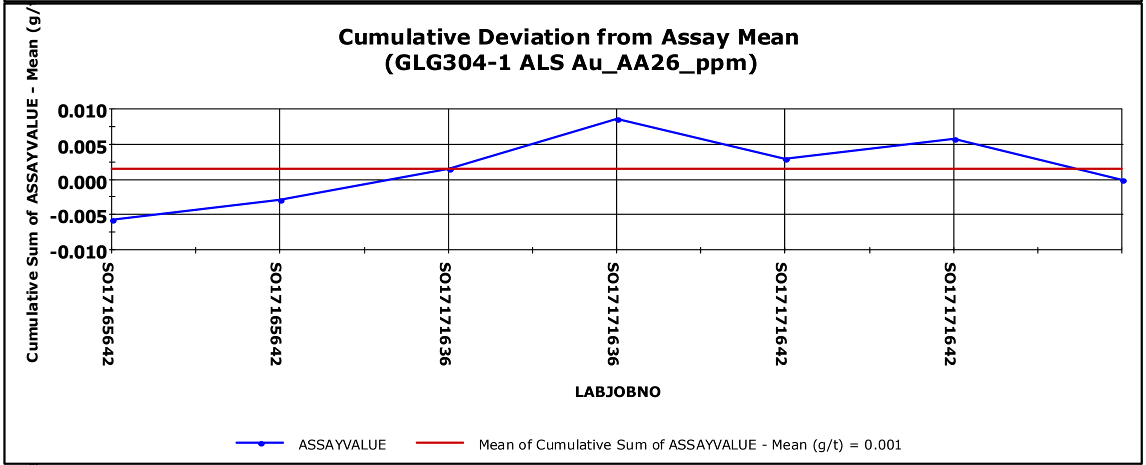


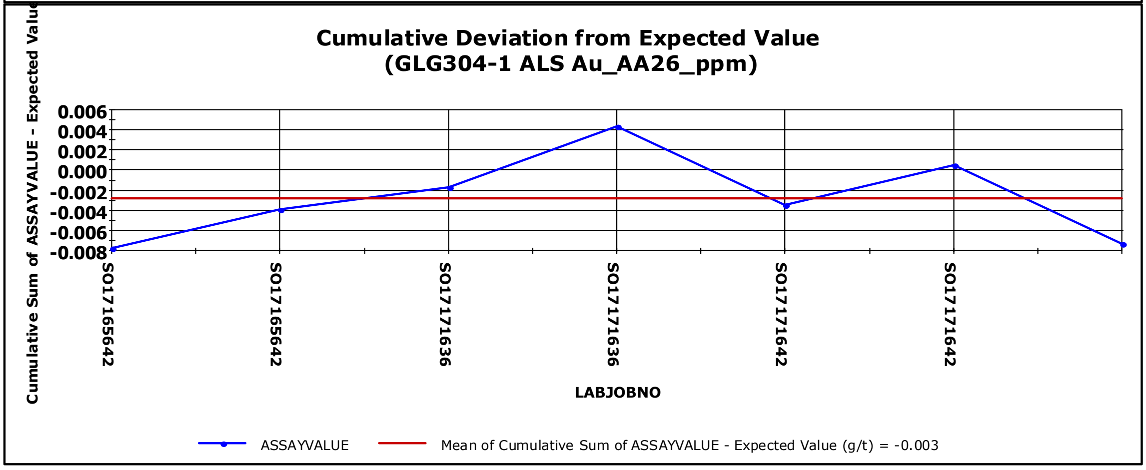
Printed: 10-May-2018 18:05:57 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(GLG304-1 ALS Au_AA26_ppm)

Standard:	GLG304-1_ALS		No of Analyses:	7
Element:	ASSAYVALUE		Minimum:	0.150
Units:			Maximum:	0.160
Detection Limit:	-		Mean:	0.153
Expected Value (EV):	0.154		Std Deviation:	0.005
E.V. Range:	0.121 to 0.187		% in Tolerance	100.000 %
			% Bias	-0.684 %
			% RSD	2.955 %



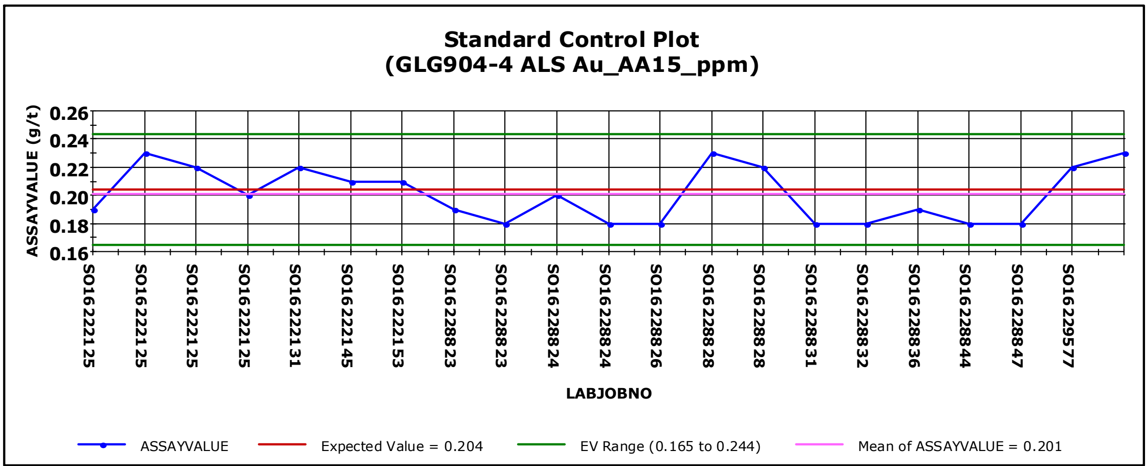


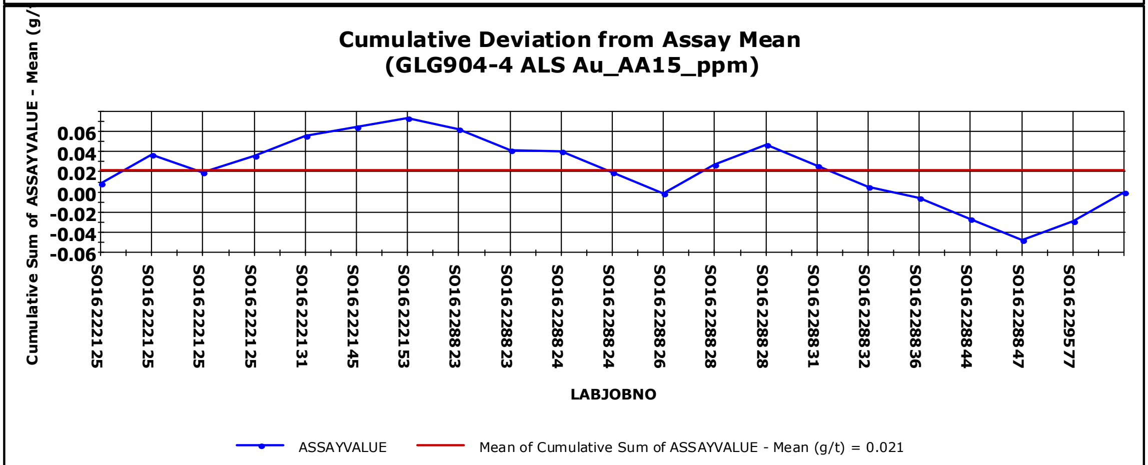


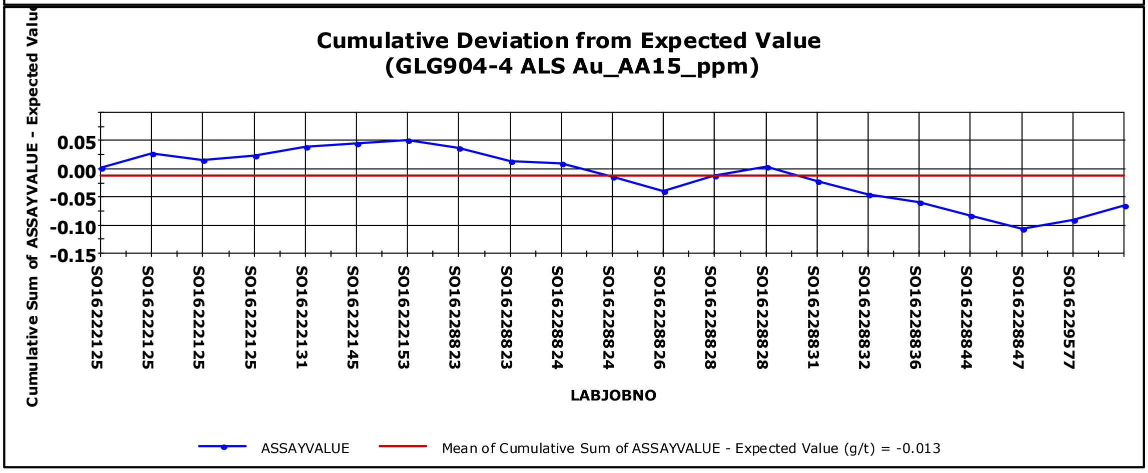
Printed: 10-May-2018 18:10:18 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(GLG904-4 ALS Au_AA15_ppm)

Standard:	GLG904-4_ALS		No of Analyses:	21
Element:	ASSAYVALUE		Minimum:	0.180
Units:			Maximum:	0.230
Detection Limit:	-		Mean:	0.201
Expected Value (EV):	0.204		Std Deviation:	0.019
E.V. Range:	0.165 to 0.244		% in Tolerance	100.000 %
			% Bias	-1.533 %
			% RSD	9.455 %



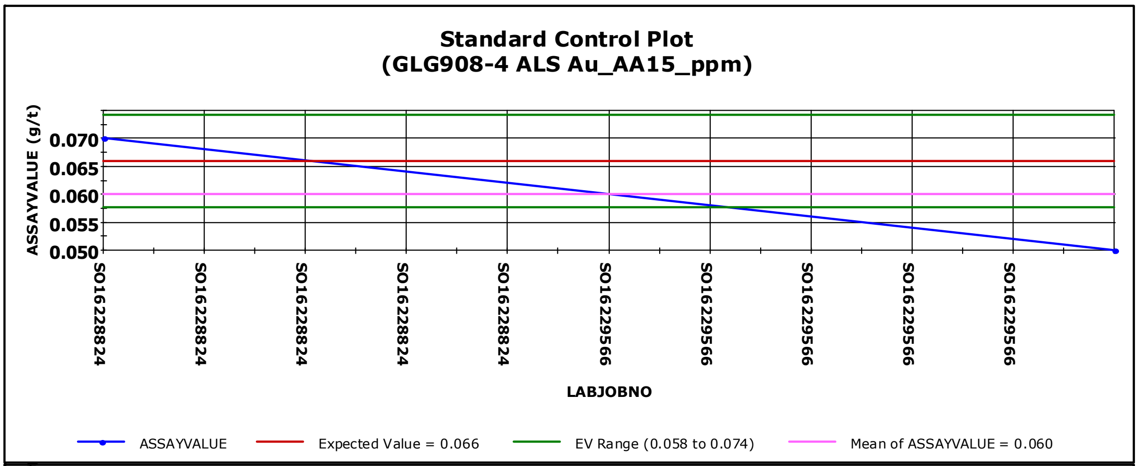


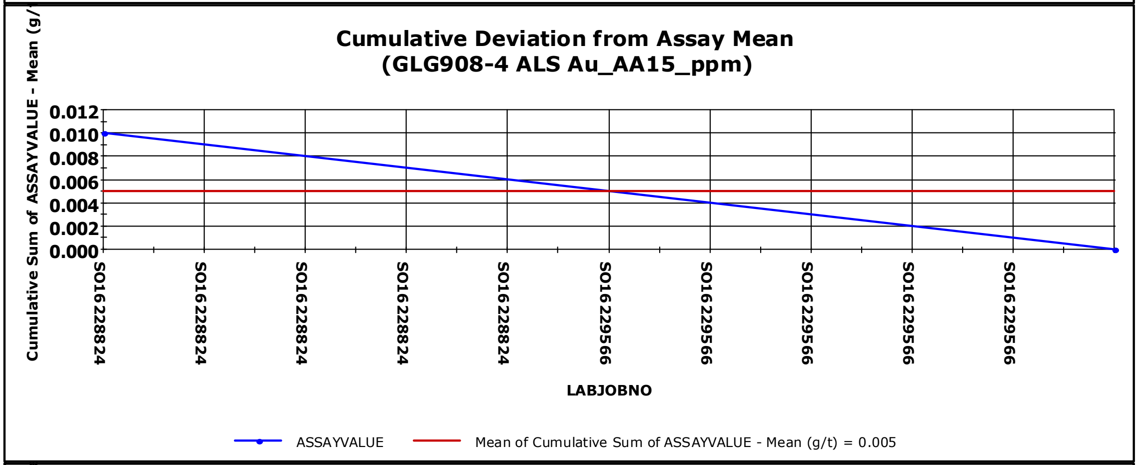


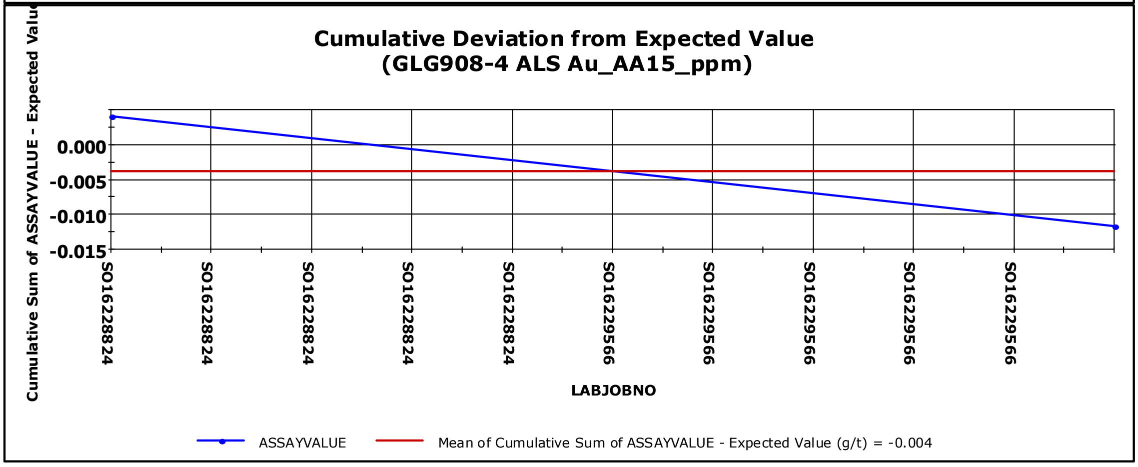
Printed: 10-May-2018 18:13:06 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(GLG908-4 ALS Au_AA15_ppm)

Standard:	GLG908-4_ALS		No of Analyses:	2
Element:	ASSAYVALUE		Minimum:	0.050
Units:			Maximum:	0.070
Detection Limit:	-		Mean:	0.060
Expected Value (EV):	0.066		Std Deviation:	0.010
E.V. Range:	0.058 to 0.074		% in Tolerance	50.000 %
			% Bias	-8.925 %
			% RSD	16.667 %



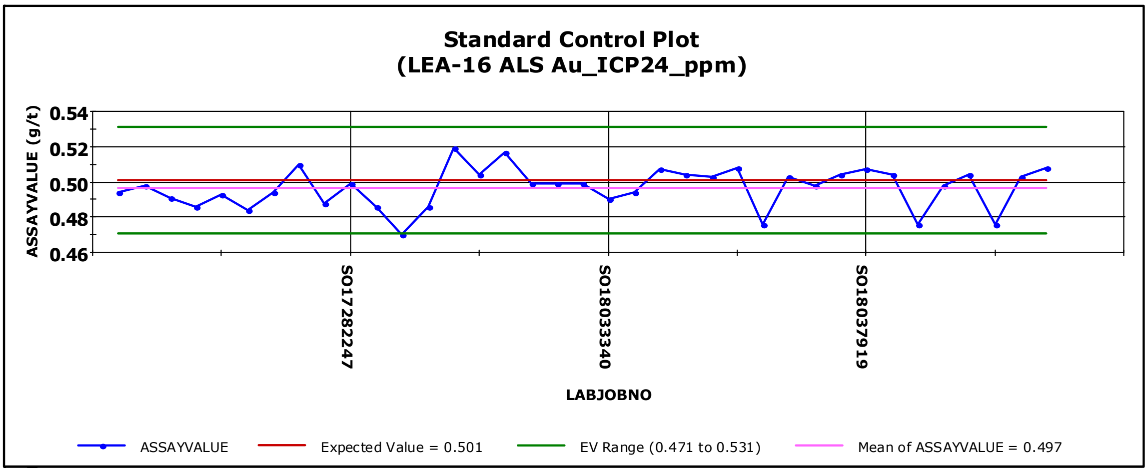


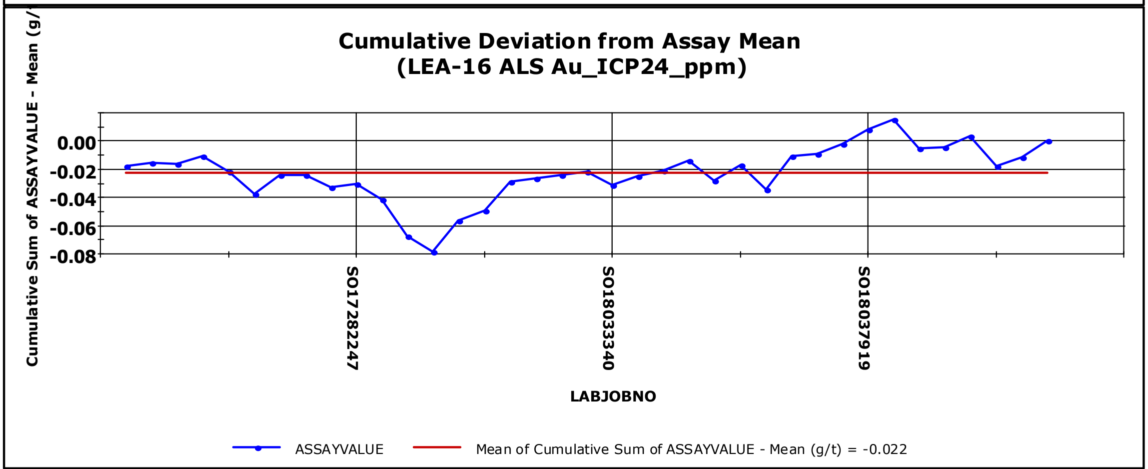


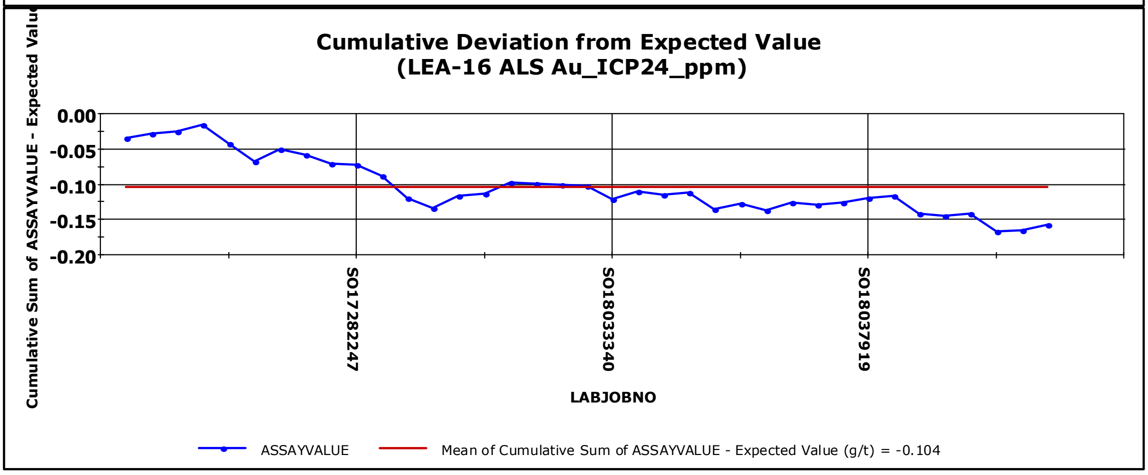
Printed: 10-May-2018 18:16:25 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(LEA-16 ALS Au_ICP24_ppm)

Standard:	LEA-16_ALS	No of Analyses:	37
Element:	ASSAYVALUE	Minimum:	0.470
Units:		Maximum:	0.519
Detection Limit:	-	Mean:	0.497
Expected Value (EV):	0.501	Std Deviation:	0.011
E.V. Range:	0.471 to 0.531	% in Tolerance	97.297 %
		% Bias	-0.852 %
		% RSD	2.259 %



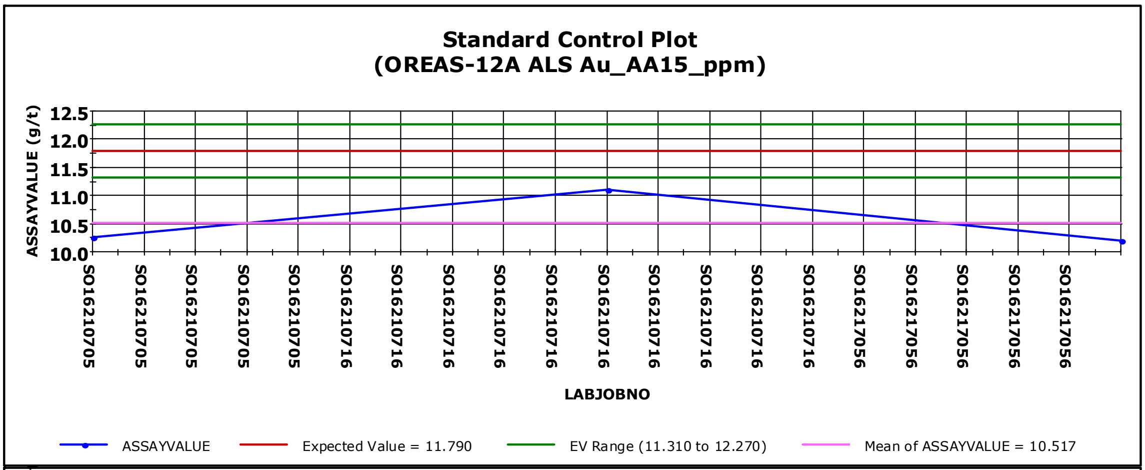


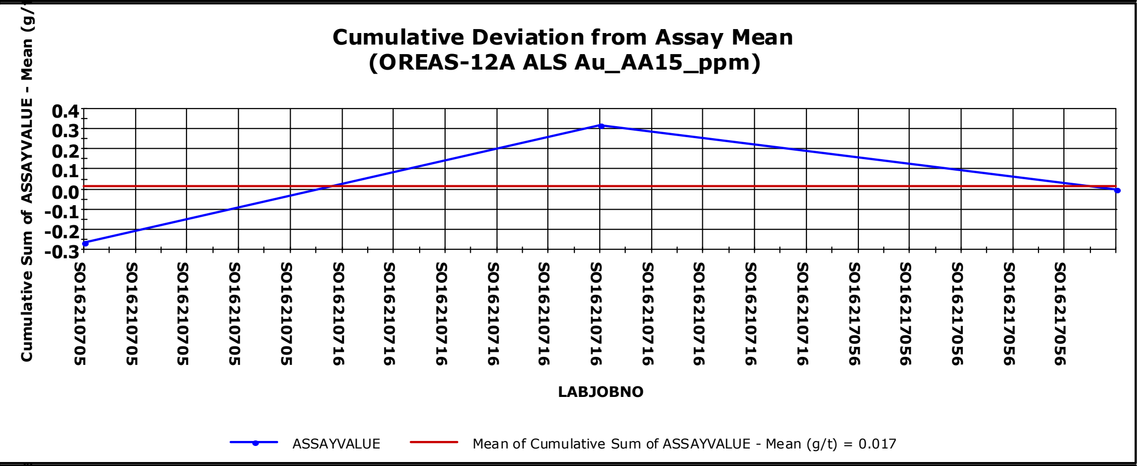


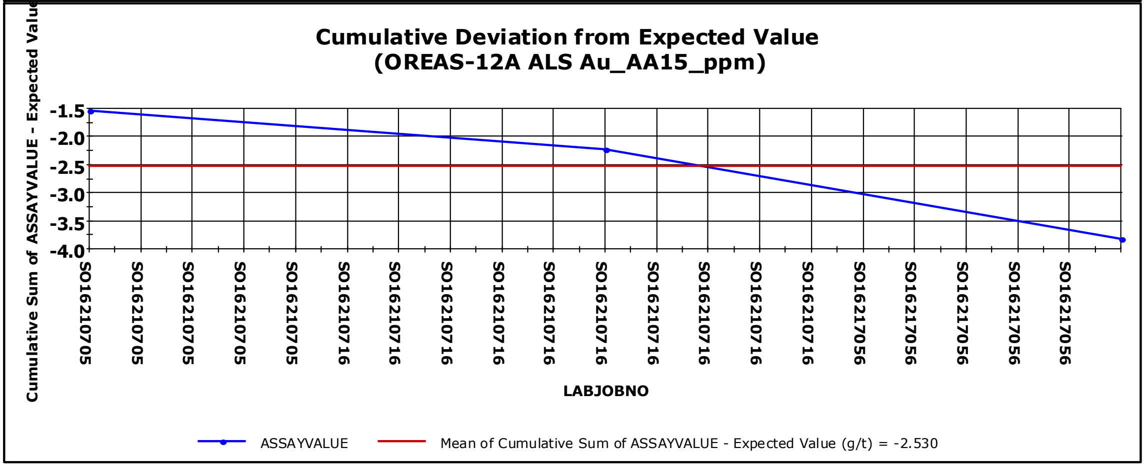
Printed: 10-May-2018 19:22:21 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-12A ALS Au_AA15_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OREAS-12A ASSAYVALUE - 11.790 11.310 to 12.270	No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	3 10.200 11.100 10.517 0.413 0.000 % -10.800 % 3.927 %



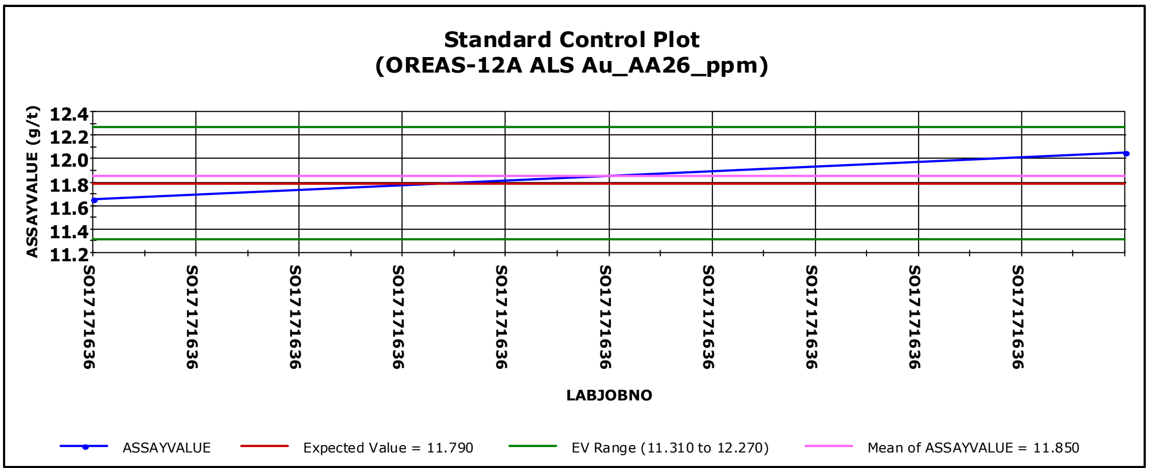


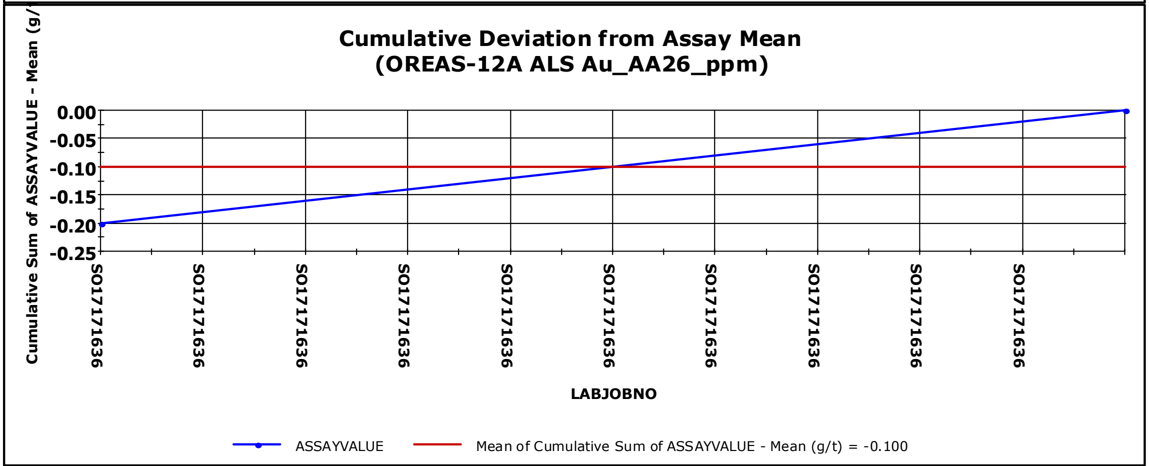


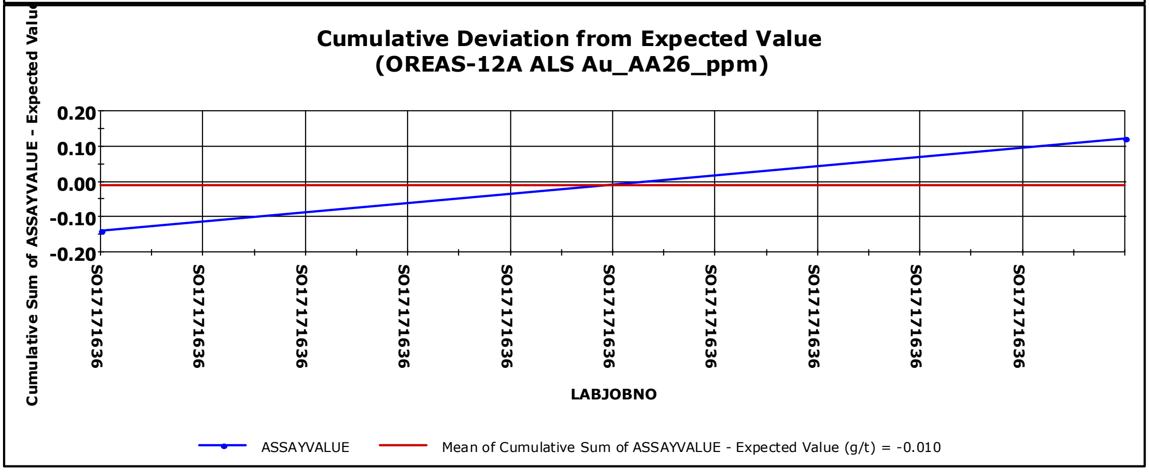
Printed: 10-May-2018 18:36:06 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-12A ALS Au_AA26_ppm)

Standard:	OREAS 12a_ALS		No of Analyses:	2
Element:	ASSAYVALUE		Minimum:	11.650
Units:			Maximum:	12.050
Detection Limit:	-		Mean:	11.850
Expected Value (EV):	11.790		Std Deviation:	0.200
E.V. Range:	11.310 to 12.270		% in Tolerance	100.000 %
			% Bias	0.509 %
			% RSD	1.688 %



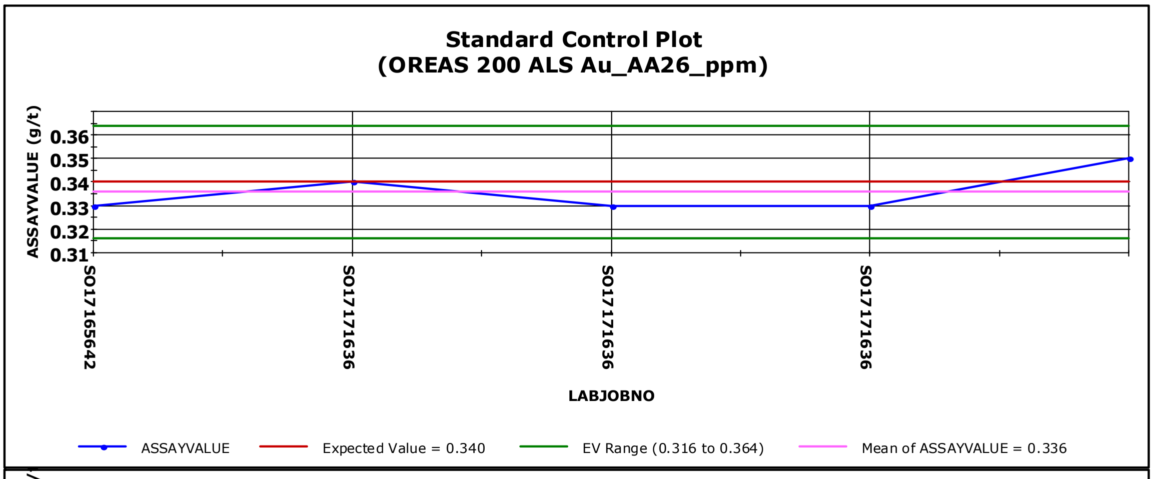


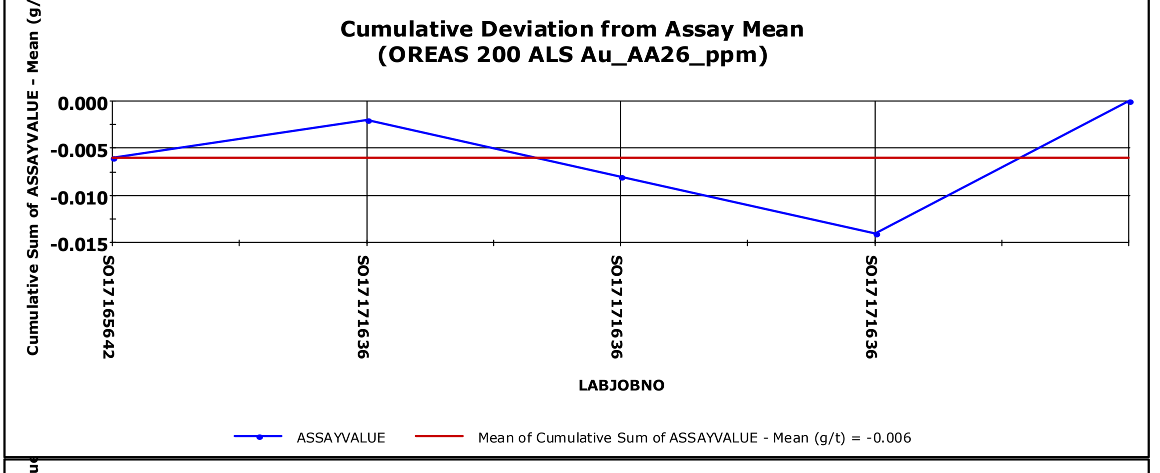


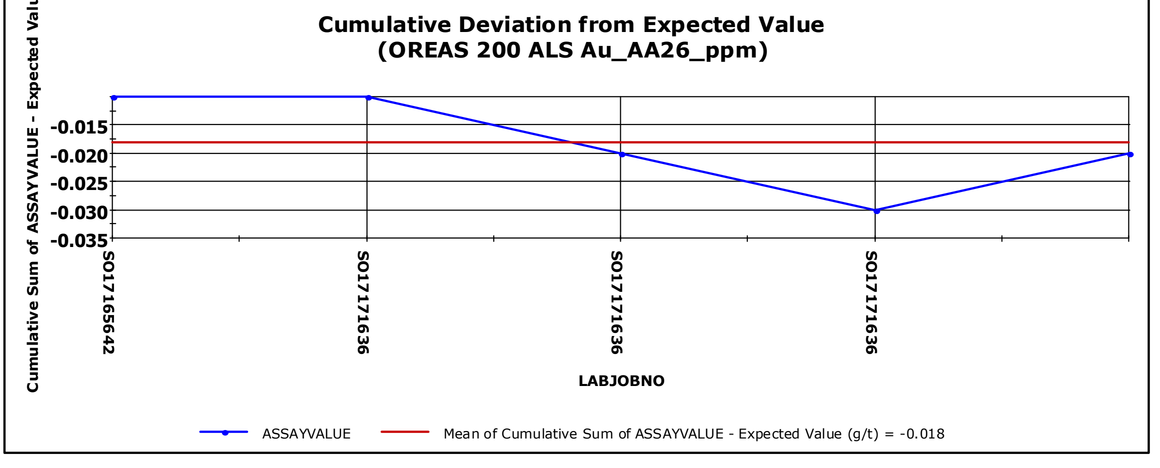
Printed: 10-May-2018 18:18:57 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS 200 ALS Au_AA26_ppm)

Standard:	OREAS 200_ALS	No of Analyses:	5
Element:	ASSAYVALUE	Minimum:	0.330
Units:		Maximum:	0.350
Detection Limit:	-	Mean:	0.336
Expected Value (EV):	0.340	Std Deviation:	0.008
E.V. Range:	0.316 to 0.364	% in Tolerance	100.000 %
		% Bias	-1.176 %
		% RSD	2.381 %



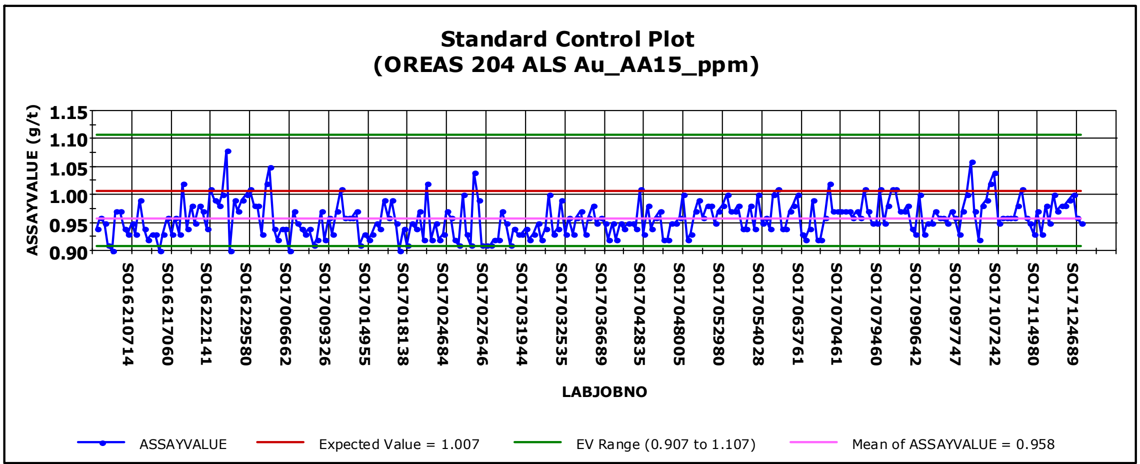


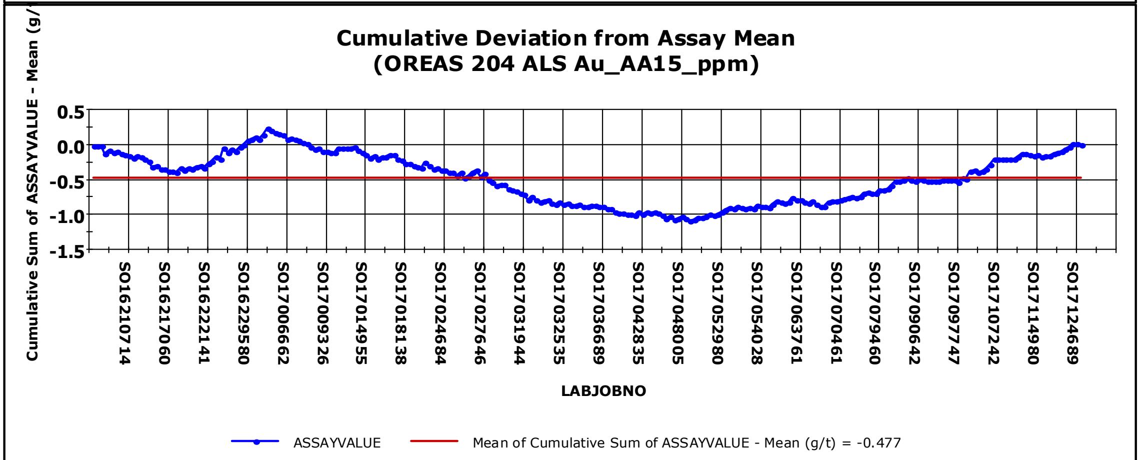


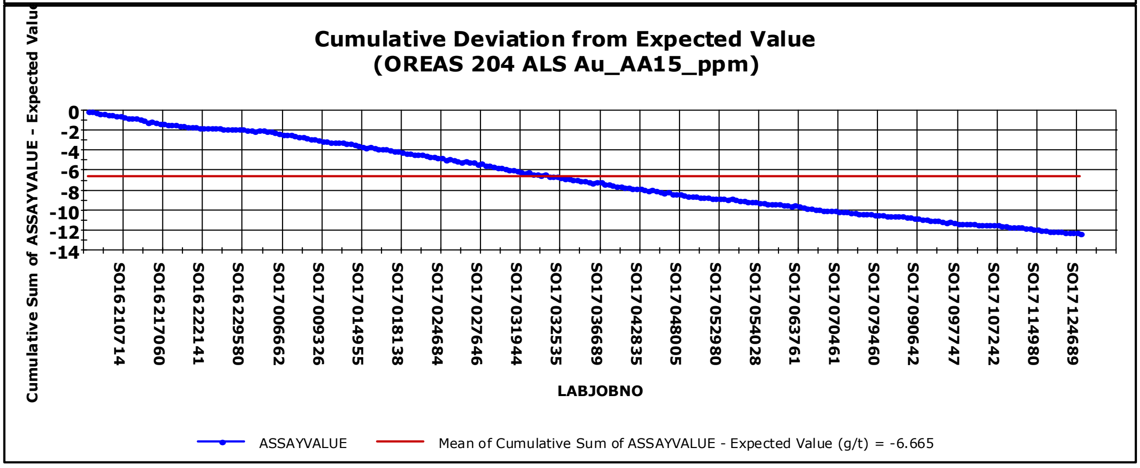
Printed: 10-May-2018 18:22:09 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS 204 ALS Au_AA15_ppm)

Standard:	OREAS 204_ALS	No of Analyses:	251
Element:	ASSAYVALUE	Minimum:	0.900
Units:		Maximum:	1.080
Detection Limit:	-	Mean:	0.958
Expected Value (EV):	1.007	Std Deviation:	0.031
E.V. Range:	0.907 to 1.107	% in Tolerance	98.008 %
		% Bias	-4.877 %
		% RSD	3.285 %



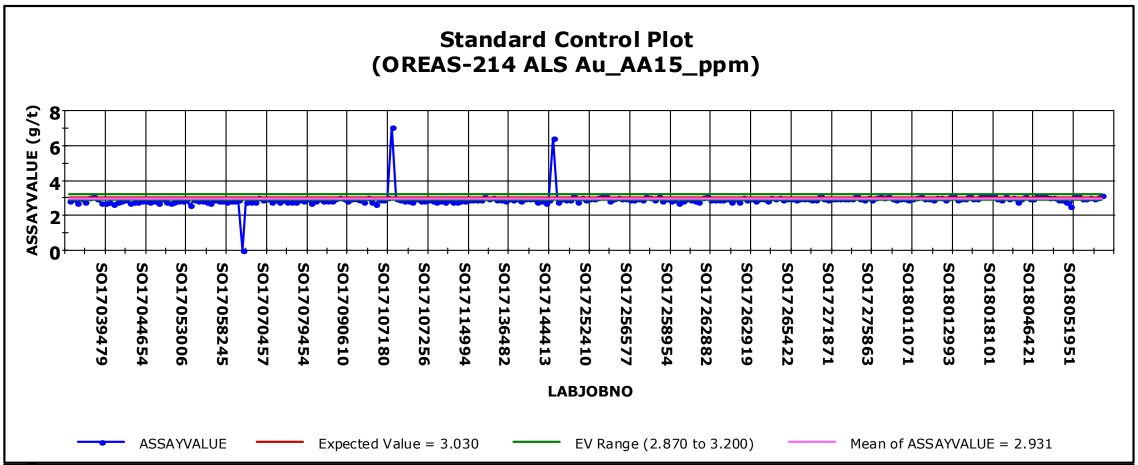


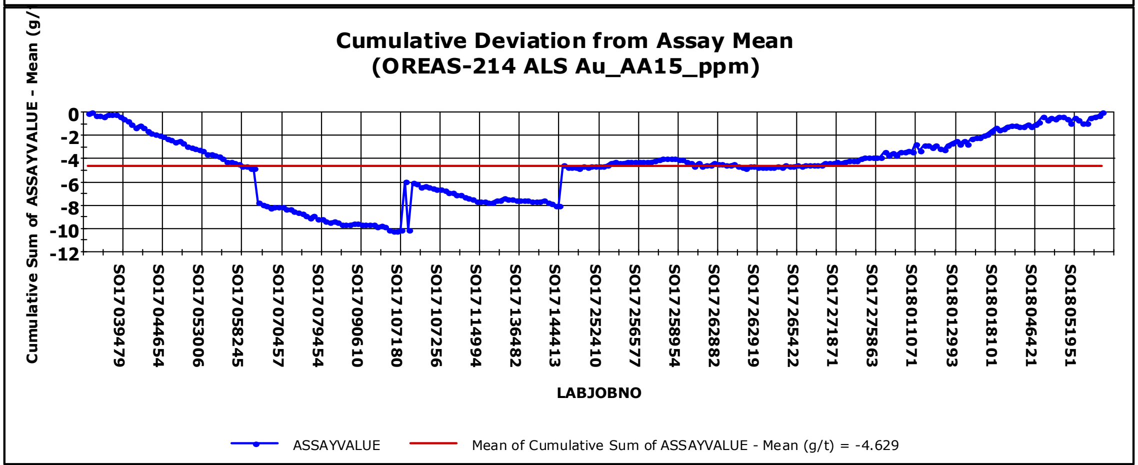


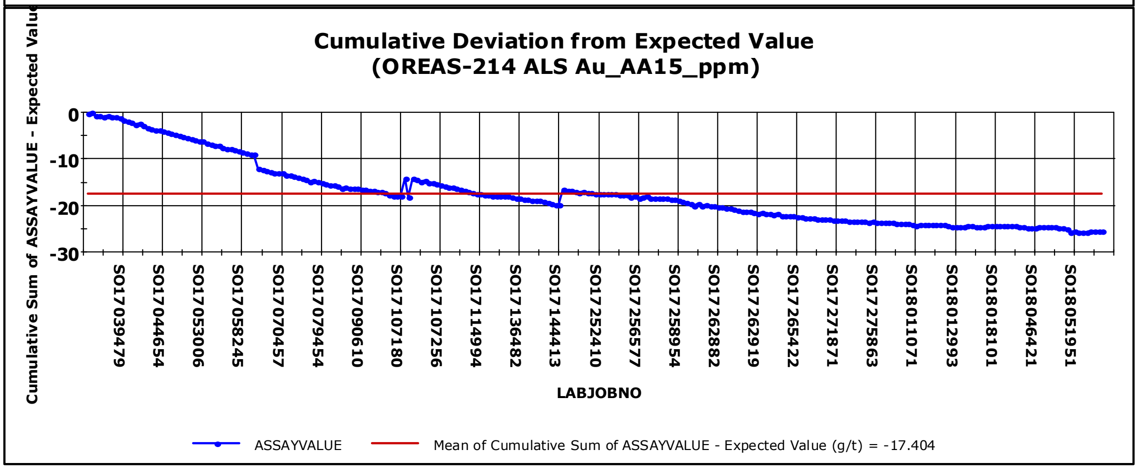
Printed: 10-May-2018 18:24:29 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-214 ALS Au_AA15_ppm)

Standard:	OREAS-214		No of Analyses:	257
Element:	ASSAYVALUE		Minimum:	0.010
Units:			Maximum:	7.070
Detection Limit:	-		Mean:	2.931
Expected Value (EV):	3.030		Std Deviation:	0.401
E.V. Range:	2.870 to 3.200		% in Tolerance	66.148 %
			% Bias	-3.268 %
			% RSD	13.673 %



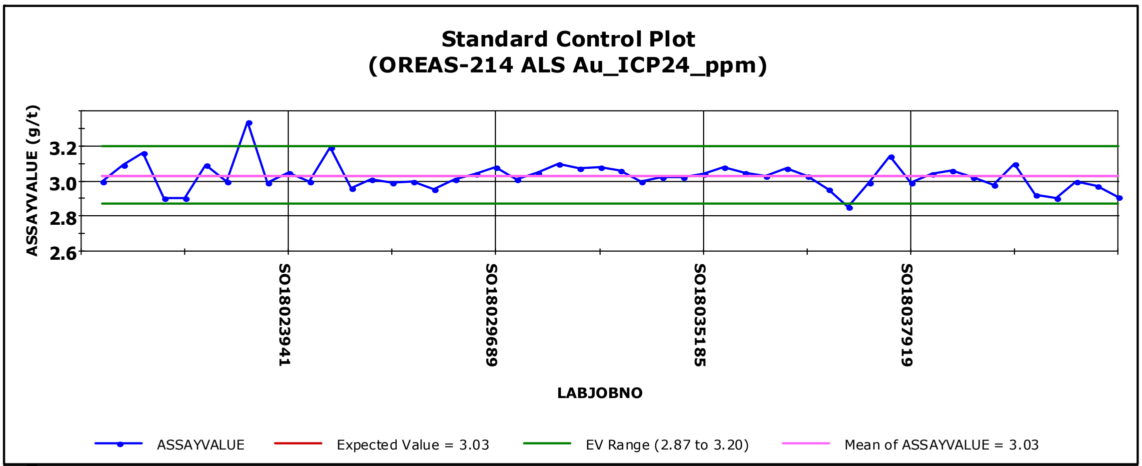


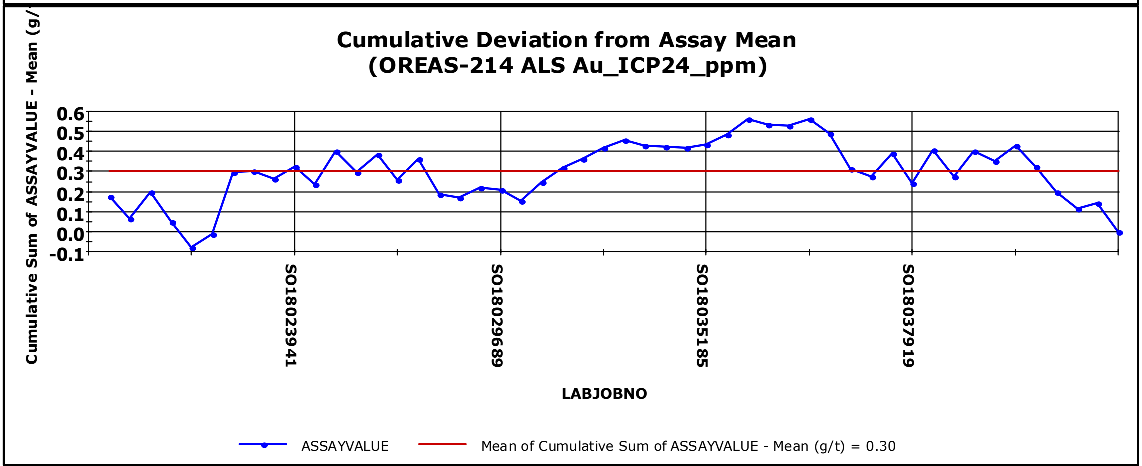


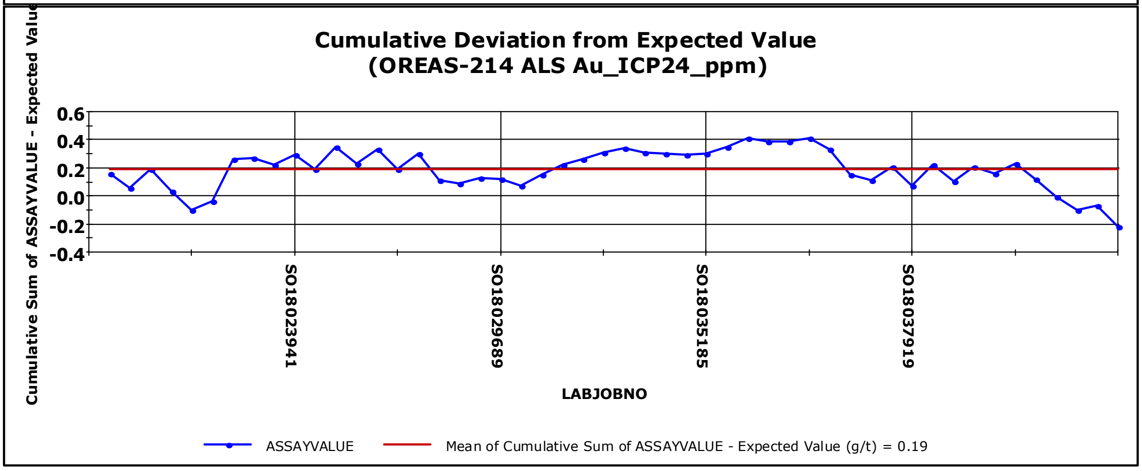
Printed: 10-May-2018 18:42:31 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-214 ALS Au_ICP24_ppm)

Standard:	OREAS-214		No of Analyses:	50
Element:	ASSAYVALUE		Minimum:	2.85
Units:			Maximum:	3.34
Detection Limit:	-		Mean:	3.03
Expected Value (EV):	3.03		Std Deviation:	0.08
E.V. Range:	2.87 to 3.20		% in Tolerance	96.00 %
			% Bias	-0.15 %
			% RSD	2.67 %



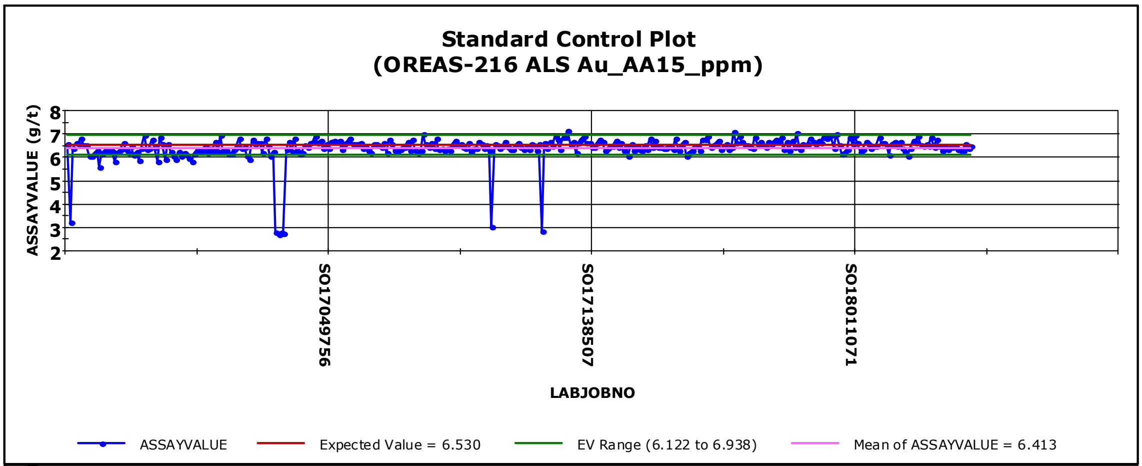


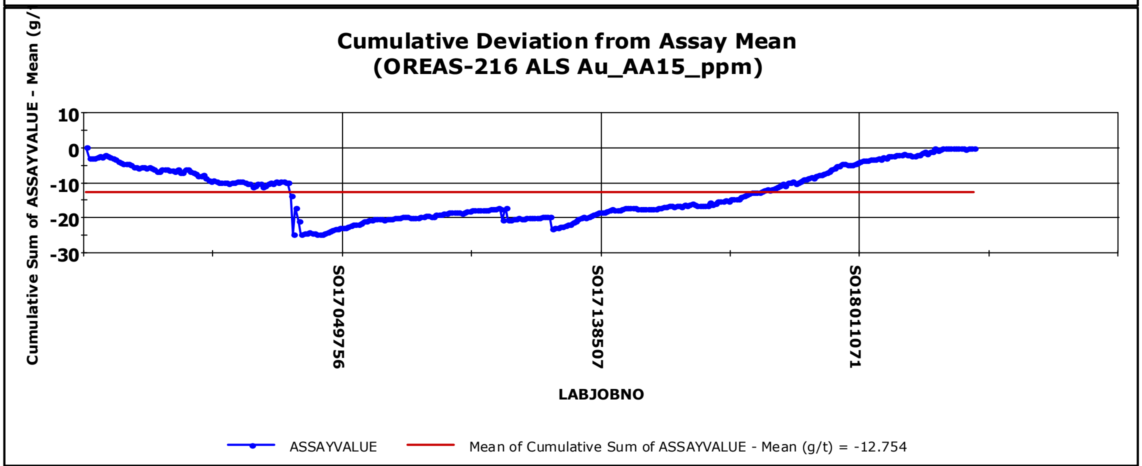


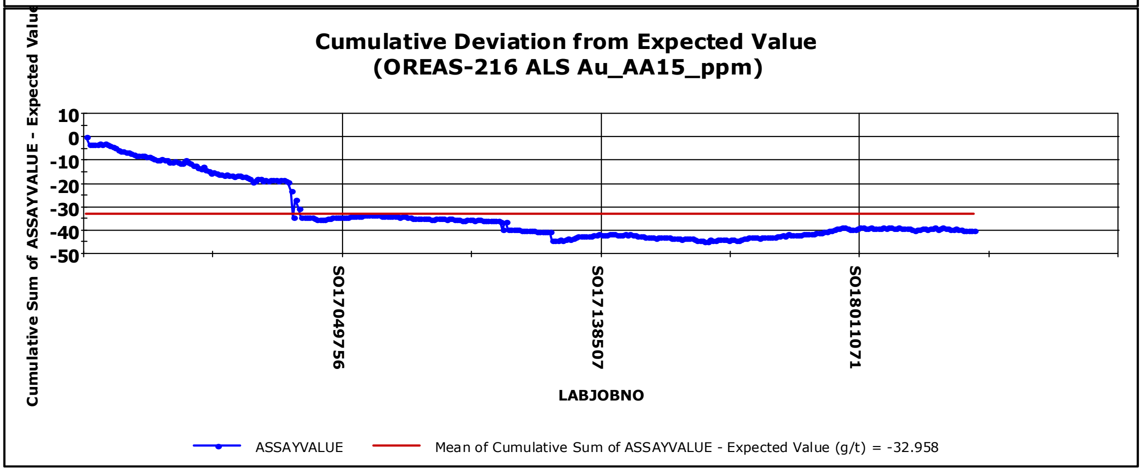
Printed: 10-May-2018 19:35:02 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-216 ALS Au_AA15_ppm)

Standard:	OREAS-216		No of Analyses:	344
Element:	ASSAYVALUE		Minimum:	2.700
Units:			Maximum:	7.140
Detection Limit:	-		Mean:	6.413
Expected Value (EV):	6.530		Std Deviation:	0.562
E.V. Range:	6.122 to 6.938		% in Tolerance	89.244 %
			% Bias	-1.794 %
			% RSD	8.765 %



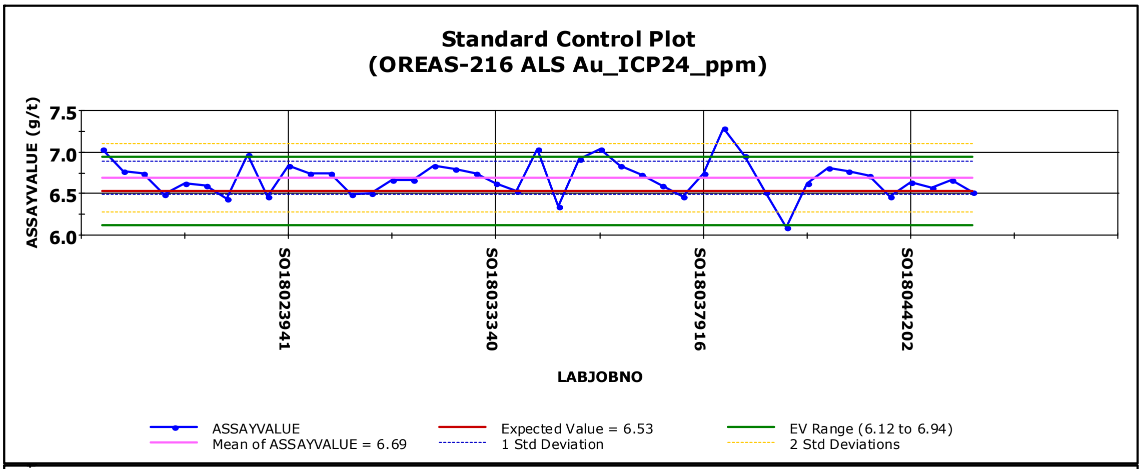


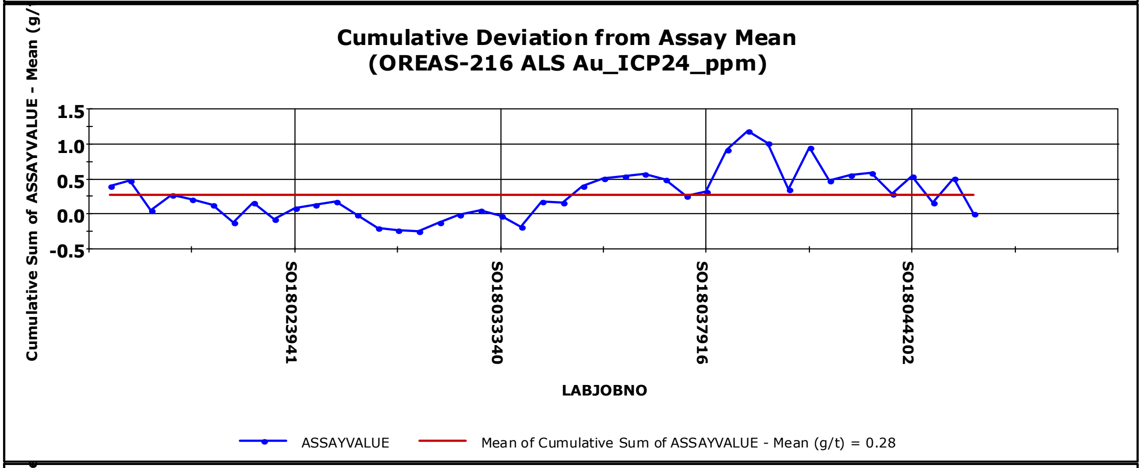


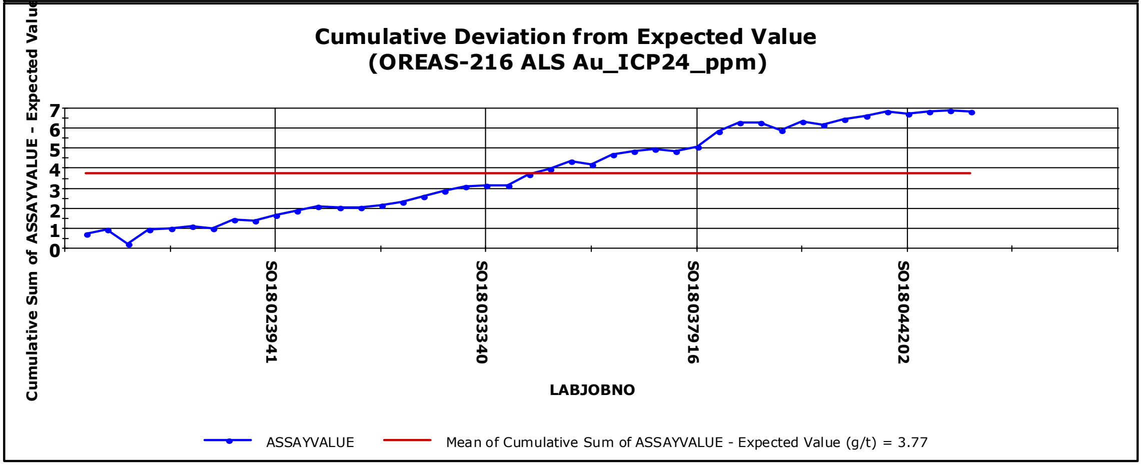
Printed: 10-May-2018 18:45:53 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-216 ALS Au_ICP24_ppm)

Standard:	OREAS-216		No of Analyses:	43
Element:	ASSAYVALUE		Minimum:	6.09
Units:			Maximum:	7.29
Detection Limit:			Mean:	6.69
Expected Value (EV):	6.53		Std Deviation:	0.21
E.V. Range:	6.12 to 6.94		% in Tolerance	83.72 %
			% Bias	2.44 %
			% RSD	3.20 %



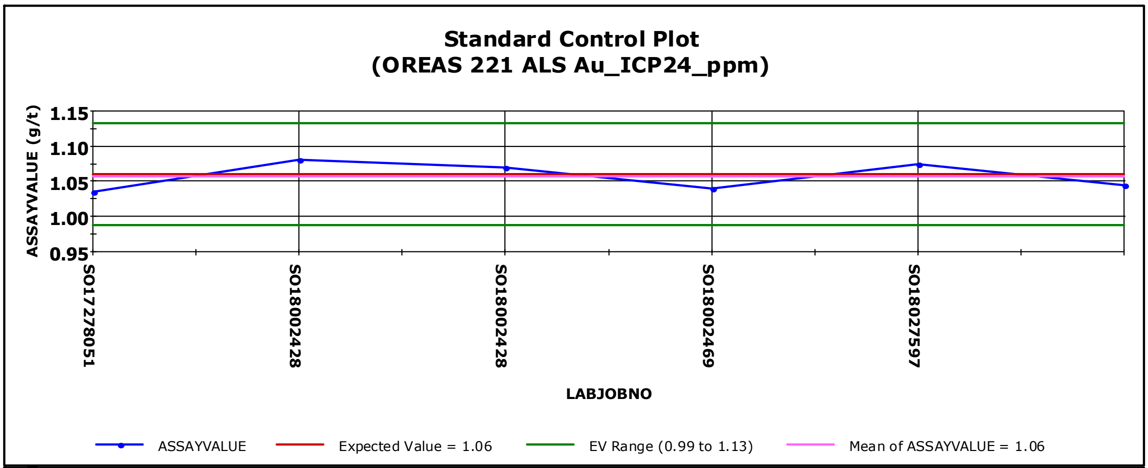


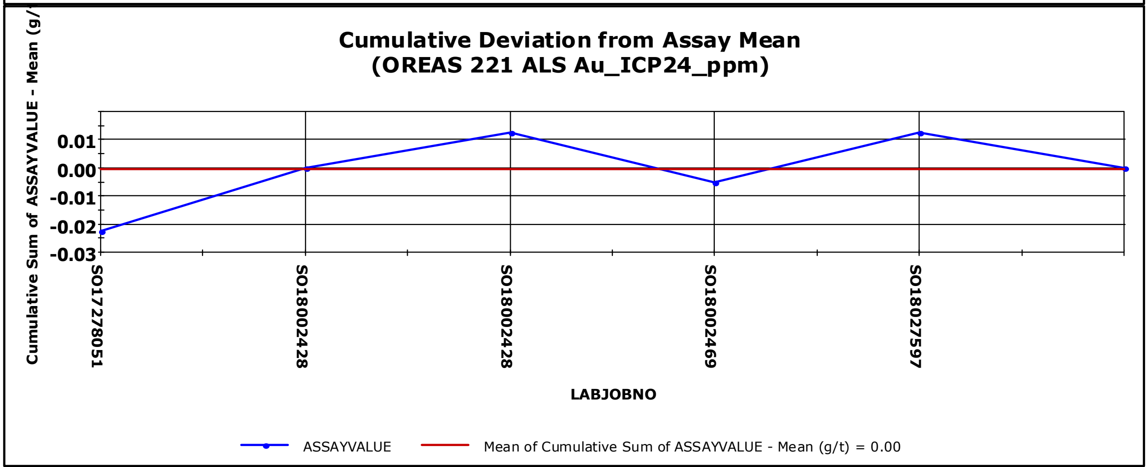


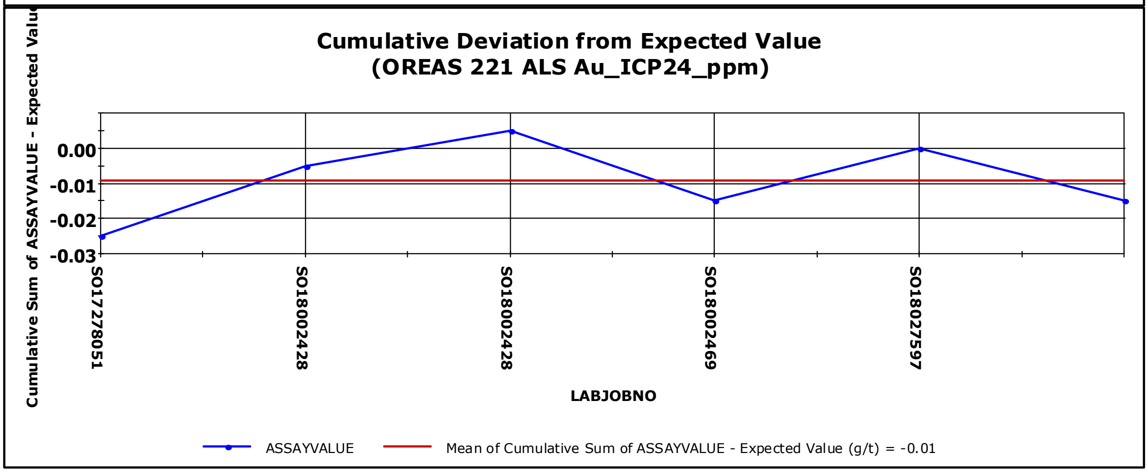
Printed: 10-May-2018 19:38:34 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS 221 ALS Au_ICP24_ppm)

Standard:	OREAS 221_ALS	No of Analyses:	6
Element:	ASSAYVALUE	Minimum:	1.04
Units:		Maximum:	1.08
Detection Limit:	-	Mean:	1.06
Expected Value (EV):	1.06	Std Deviation:	0.02
E.V. Range:	0.99 to 1.13	% in Tolerance	100.00 %
		% Bias	-0.24 %
		% RSD	1.70 %



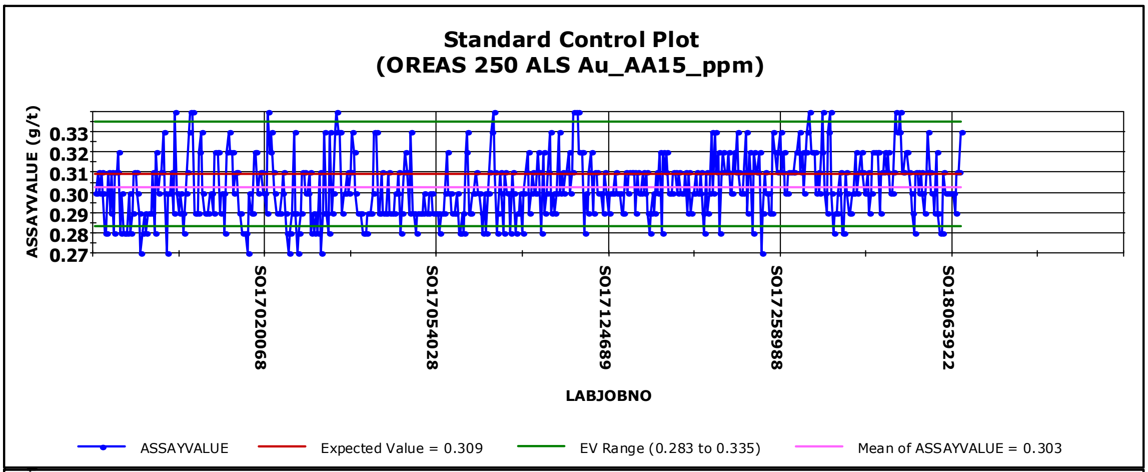


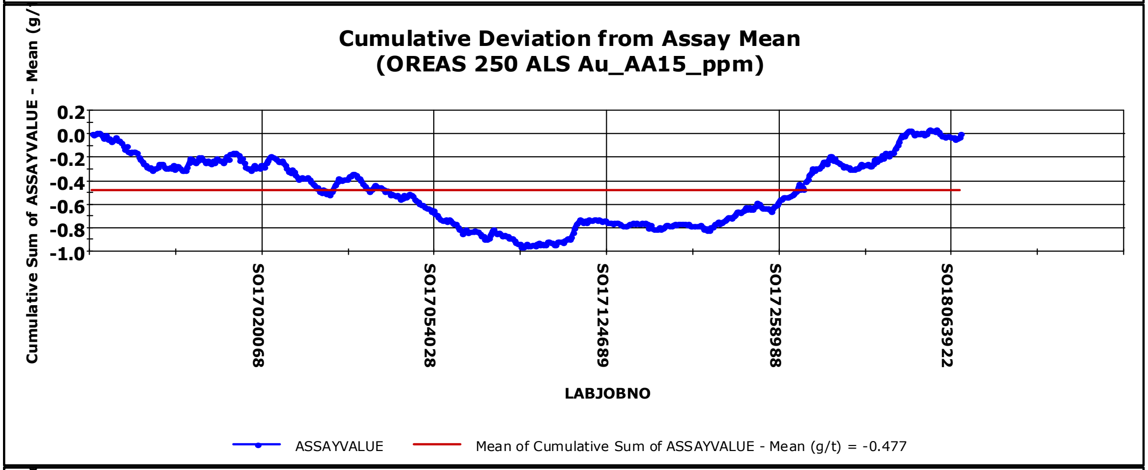


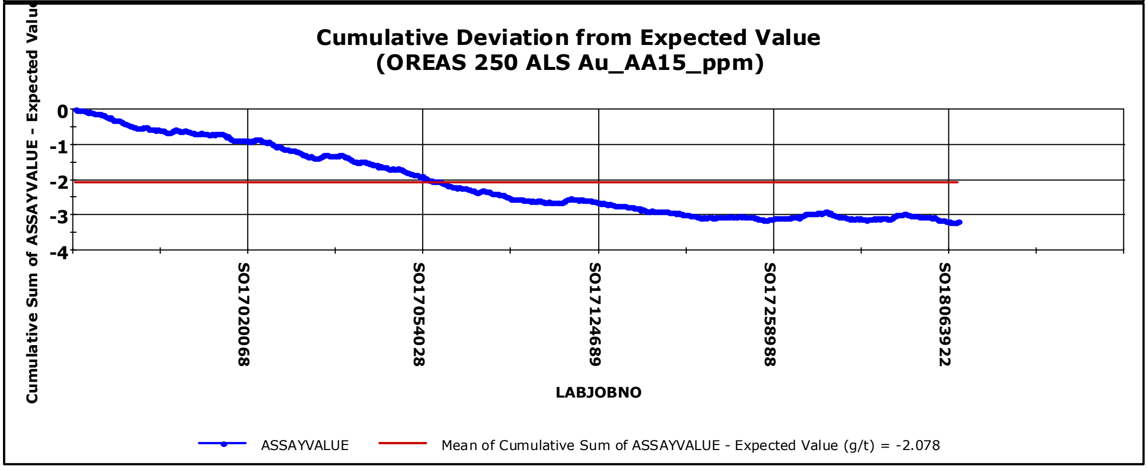
Printed: 10-May-2018 19:30:55 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS 250 ALS Au_AA15_ppm)

Standard:	OREAS 250_ALS	No of Analyses:	505
Element:	ASSAYVALUE	Minimum:	0.270
Units:		Maximum:	0.340
Detection Limit:	-	Mean:	0.303
Expected Value (EV):	0.309	Std Deviation:	0.015
E.V. Range:	0.283 to 0.335	% in Tolerance	85.545 %
		% Bias	-2.047 %
		% RSD	5.065 %



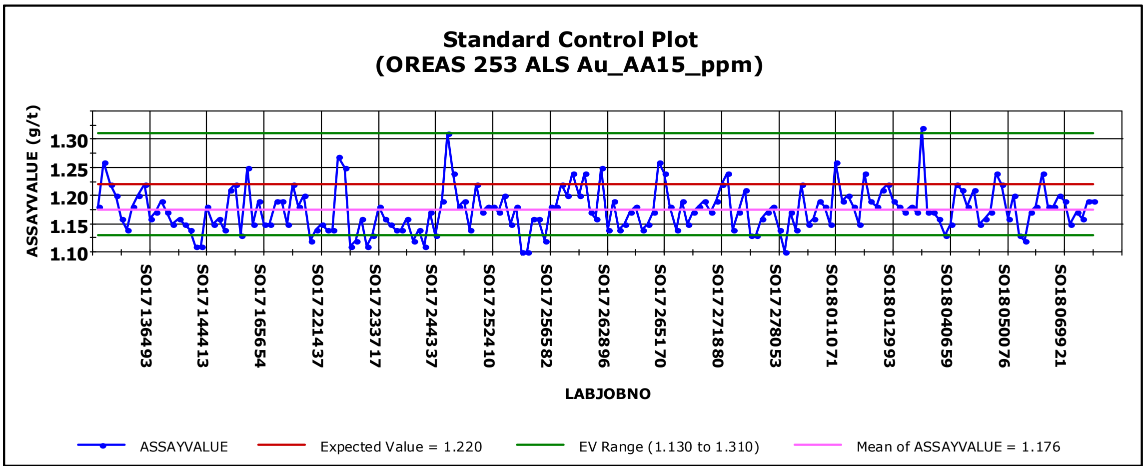


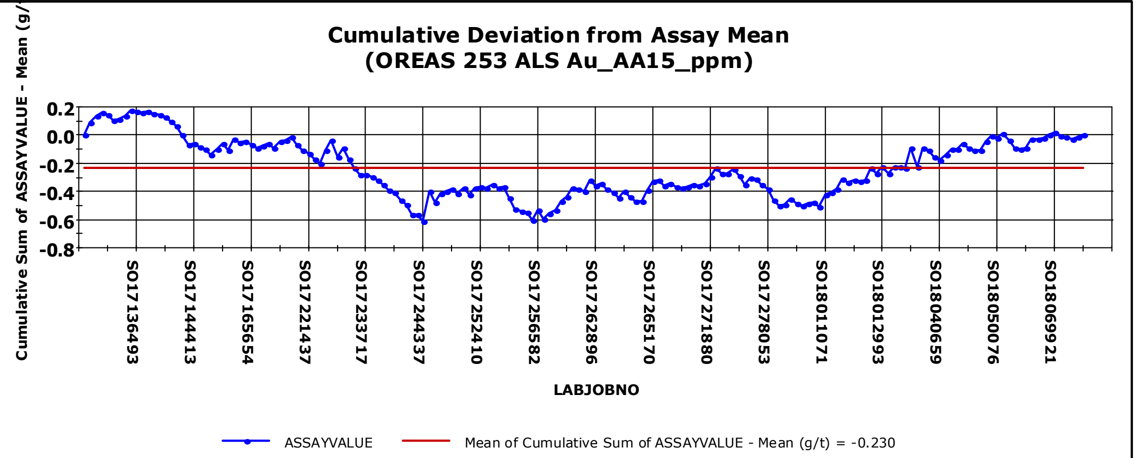


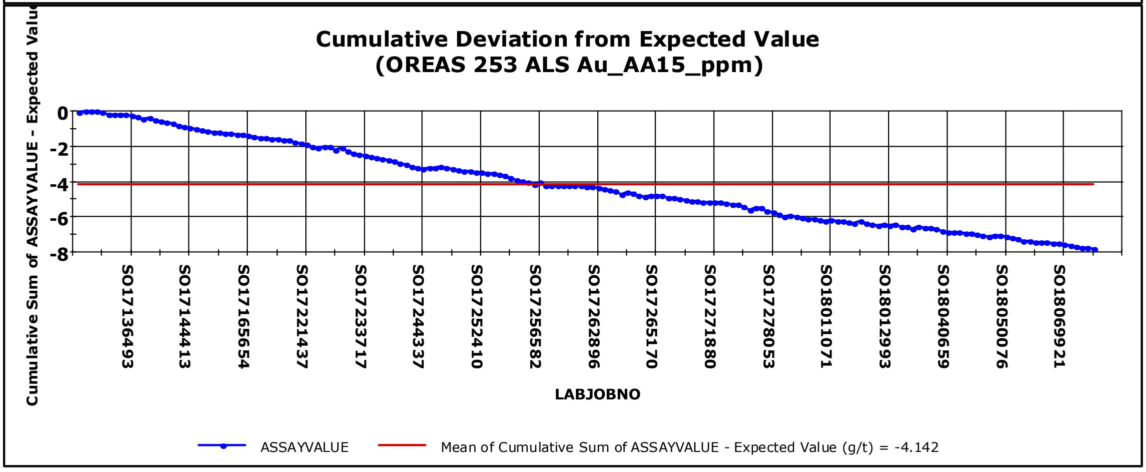
Printed: 10-May-2018 18:27:48 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS 253 ALS Au_AA15_ppm)

Standard:	OREAS 253_ALS		No of Analyses:	175
Element:	ASSAYVALUE		Minimum:	1.100
Units:			Maximum:	1.320
Detection Limit:	-		Mean:	1.176
Expected Value (EV):	1.220		Std Deviation:	0.039
E.V. Range:	1.130 to 1.310		% in Tolerance	91.429 %
			% Bias	-3.644 %
			% RSD	3.299 %





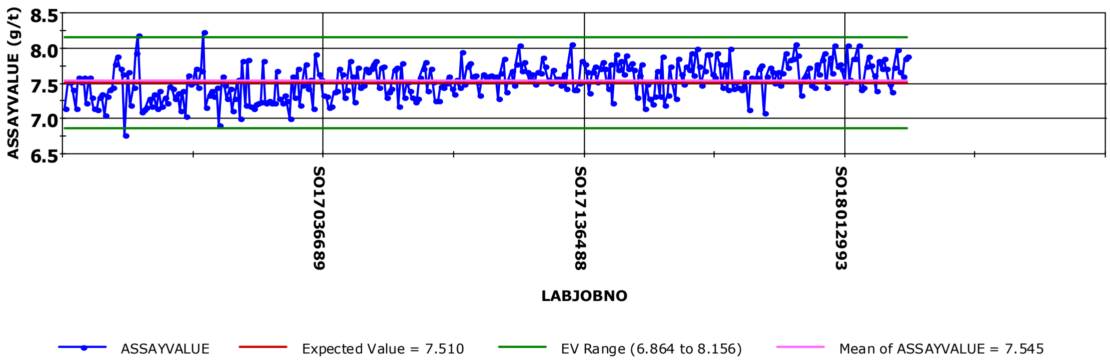


Printed: 10-May-2018 18:30:21 Data Imported: 10-May-2018 14:36:58 Page 1

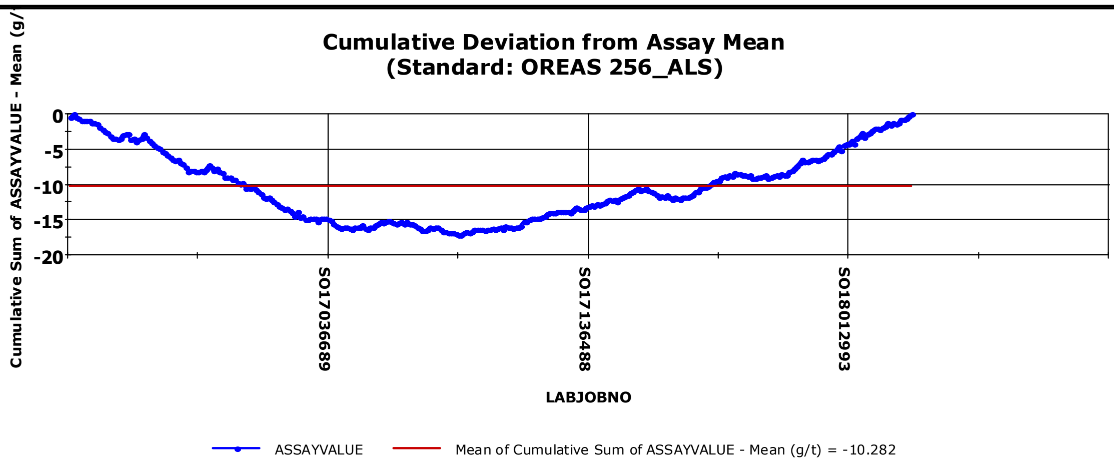
Summary
(Standard: OREAS 256_ALS)

Standard:	OREAS 256_ALS	No of Analyses:	324
Element:	ASSAYVALUE	Minimum:	6.770
Units:		Maximum:	8.240
Detection Limit:	-	Mean:	7.545
Expected Value (EV):	7.510	Std Deviation:	0.248
E.V. Range:	6.864 to 8.156	% in Tolerance	99.074 %
		% Bias	0.469 %
		% RSD	3.281 %

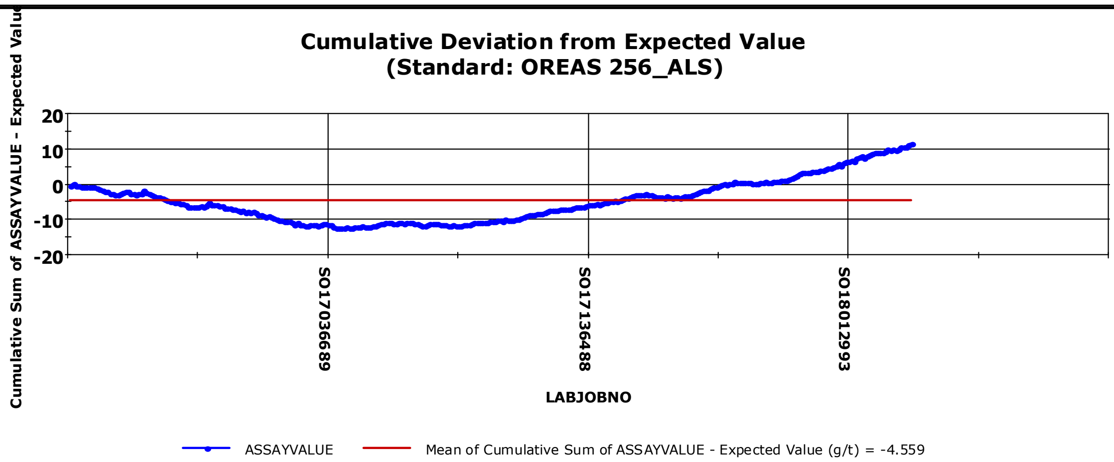
Standard Control Plot
(Standard: OREAS 256_ALS)



Cumulative Deviation from Assay Mean
(Standard: OREAS 256_ALS)



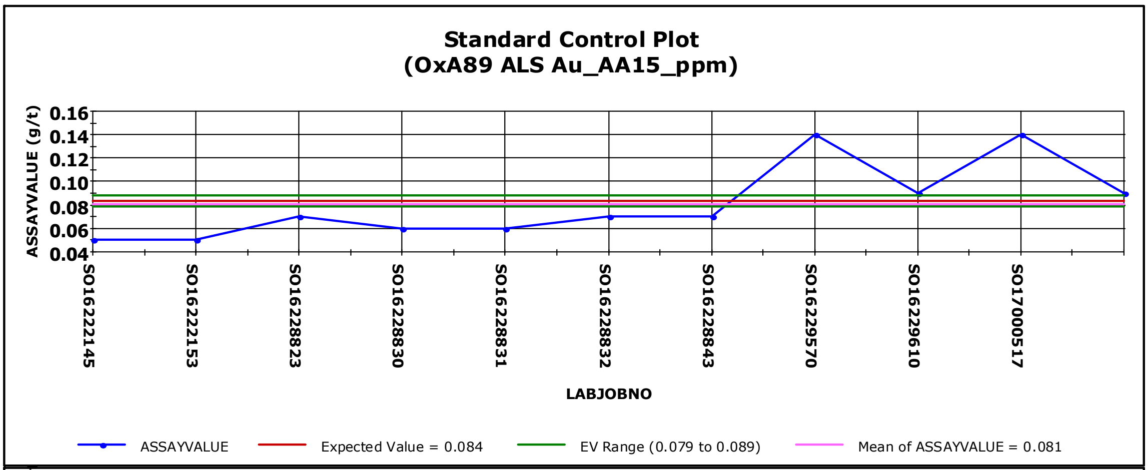
Cumulative Deviation from Expected Value
(Standard: OREAS 256_ALS)

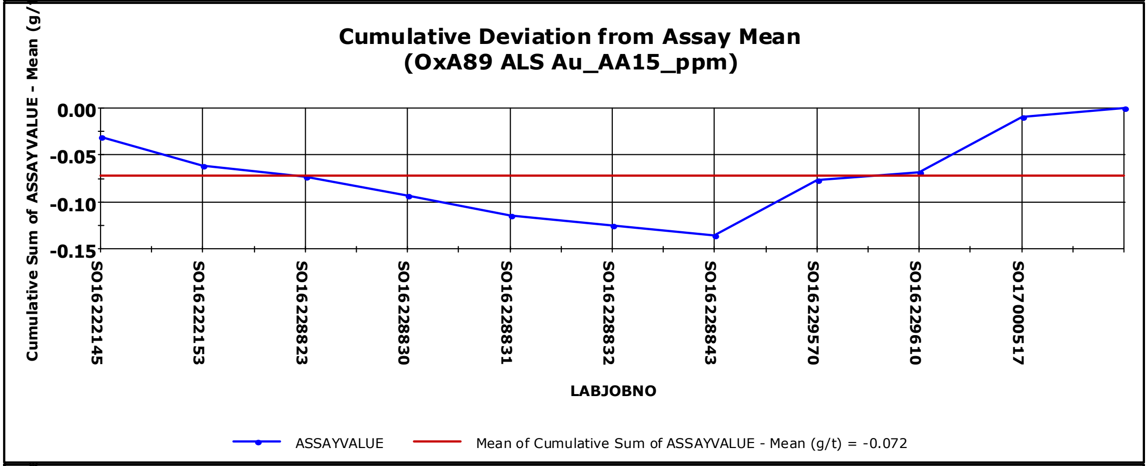


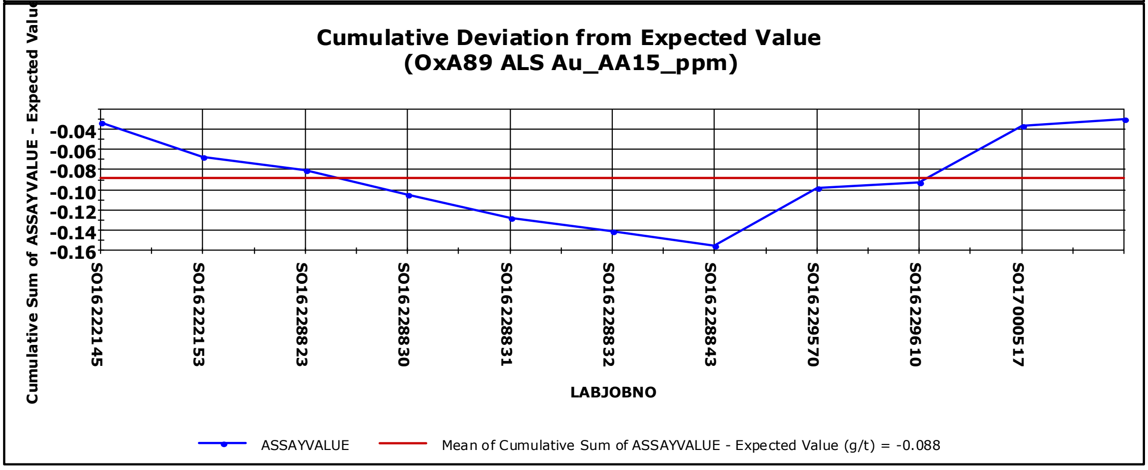
Printed: 10-May-2018 18:32:13 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OxA89 ALS Au_AA15_ppm)

Standard:	OxA89_ALS	No of Analyses:	11
Element:	ASSAYVALUE	Minimum:	0.050
Units:		Maximum:	0.140
Detection Limit:	-	Mean:	0.081
Expected Value (EV):	0.084	Std Deviation:	0.031
E.V. Range:	0.079 to 0.089	% in Tolerance	0.000 %
		% Bias	-3.219 %
		% RSD	37.804 %



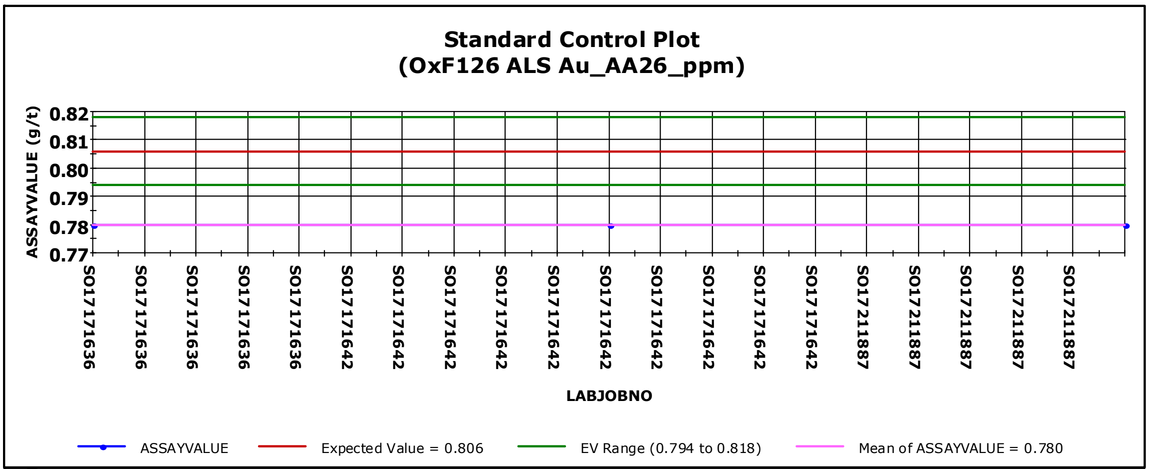


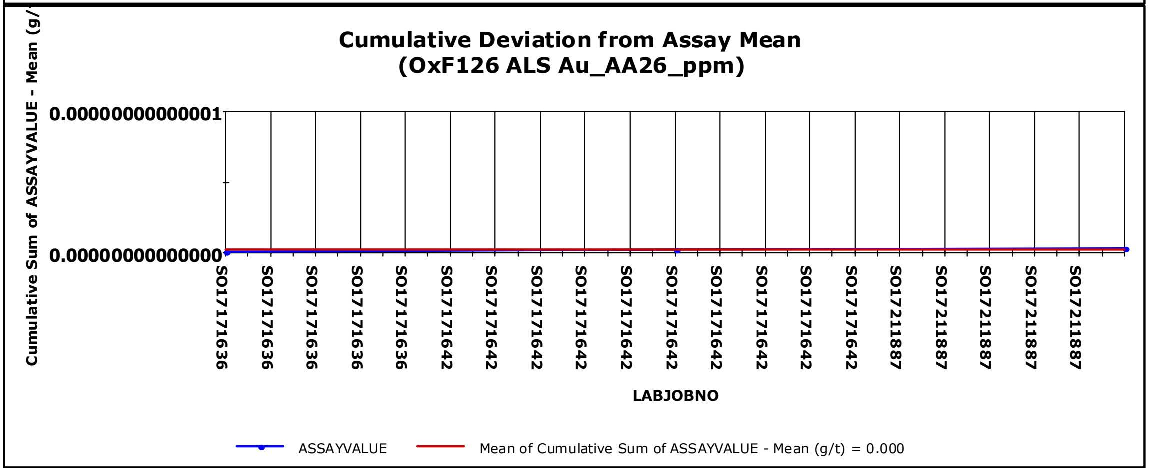


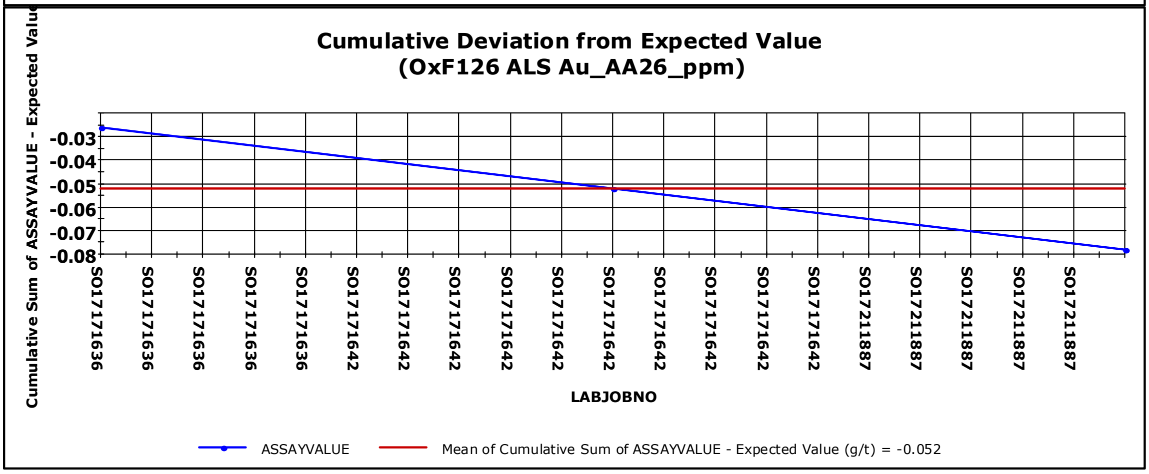
Printed: 10-May-2018 18:49:44 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OxF126 ALS Au_AA26_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OxF125_ALS ASSAYVALUE - 0.806 0.794 to 0.818		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	3 0.780 0.780 0.780 0.000 0.000 % -3.226 % 0.000 %



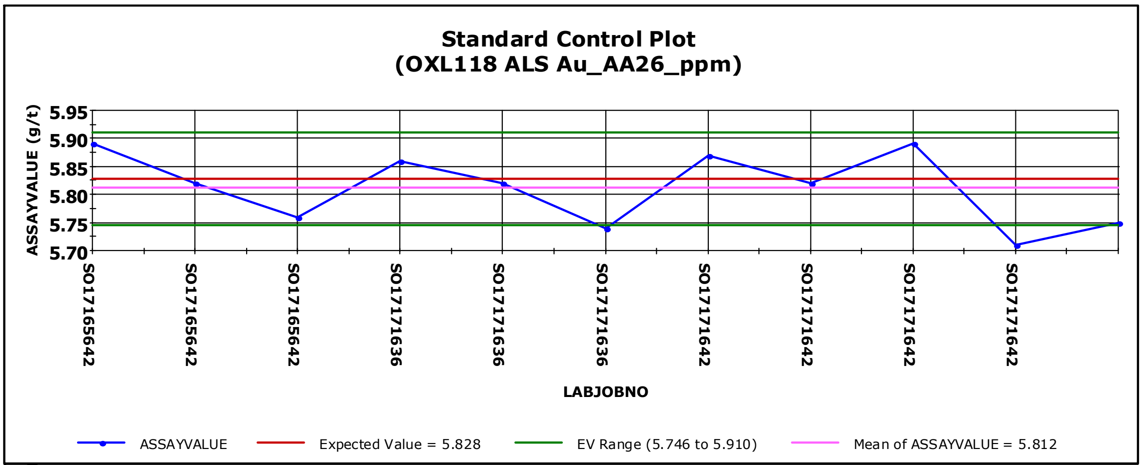


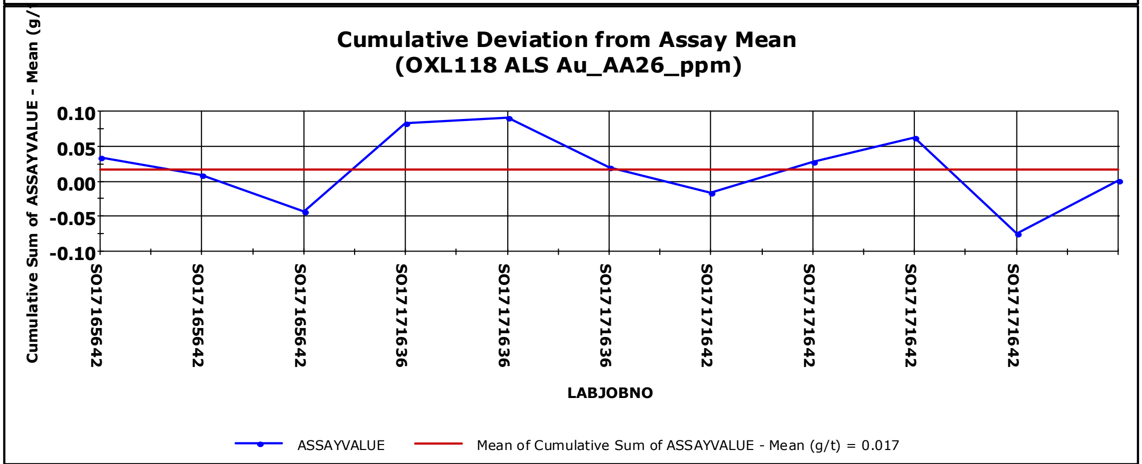


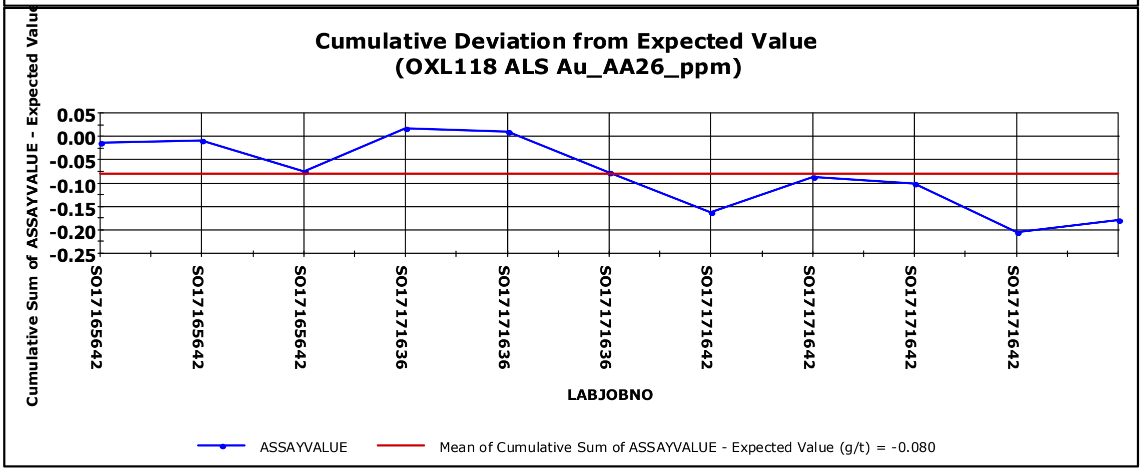
Printed: 10-May-2018 19:07:43 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OXL118 ALS Au_AA26_ppm)

Standard:	OXL118_ALS	No of Analyses:	11
Element:	ASSAYVALUE	Minimum:	5.710
Units:		Maximum:	5.890
Detection Limit:	-	Mean:	5.812
Expected Value (EV):	5.828	Std Deviation:	0.060
E.V. Range:	5.746 to 5.910	% in Tolerance	81.818 %
		% Bias	-0.278 %
		% RSD	1.040 %



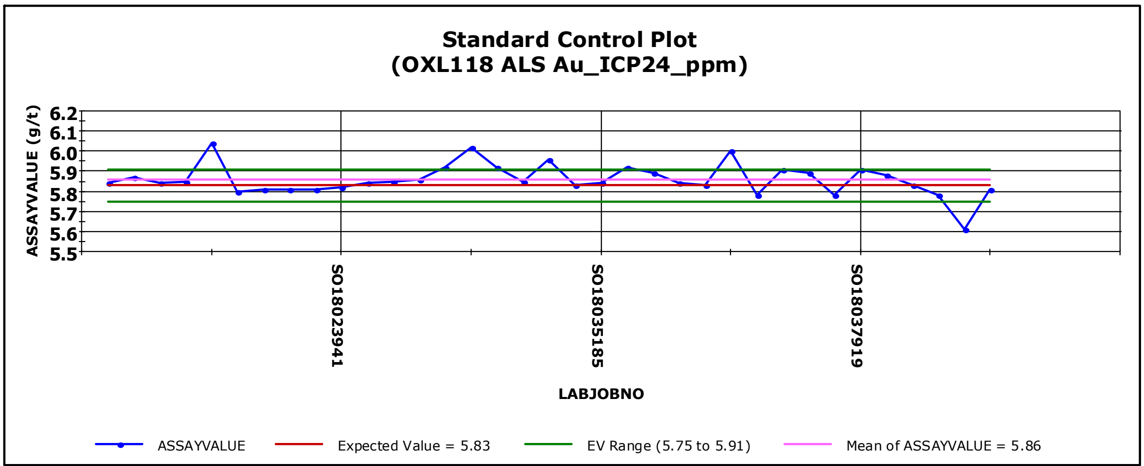


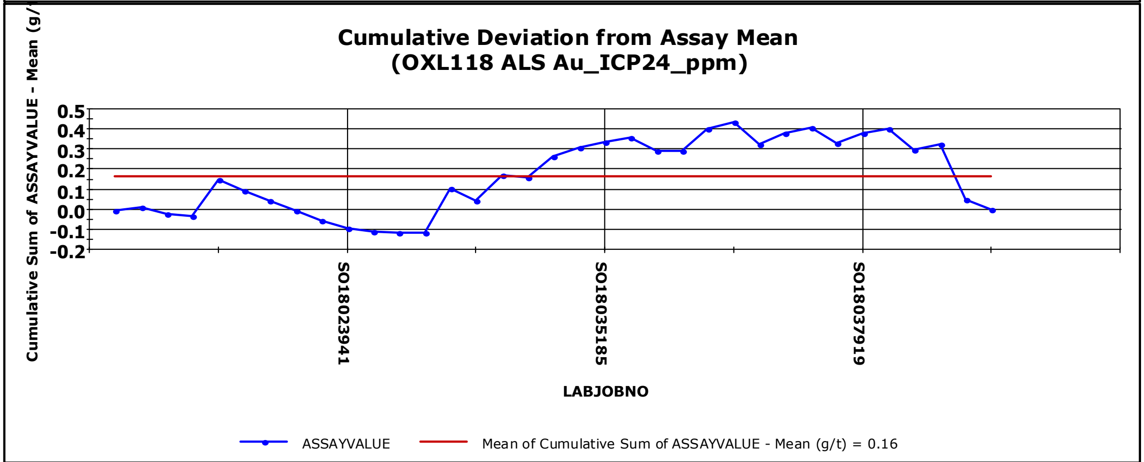


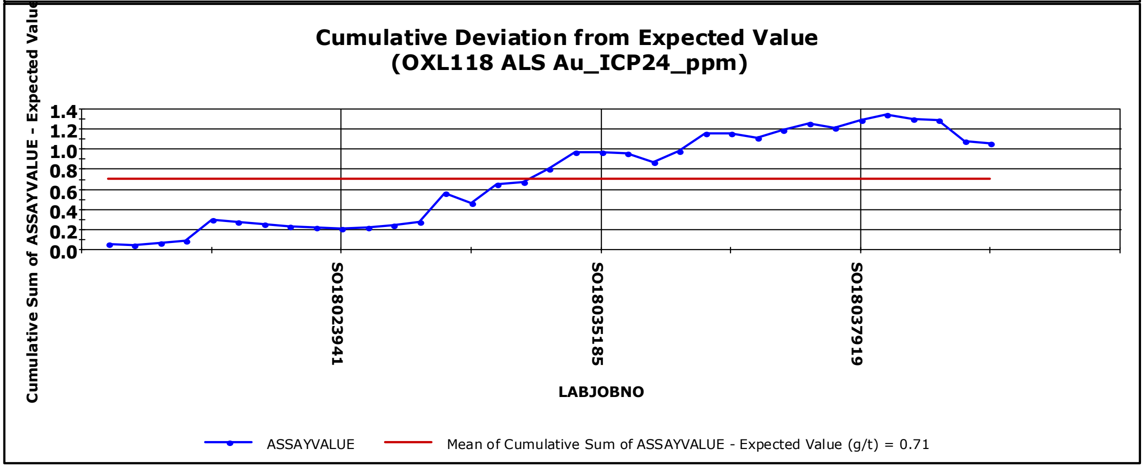
Printed: 10-May-2018 19:04:08 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OXL118 ALS Au_ICP24_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	OXL118_ALS ASSAYVALUE - 5.83 5.75 to 5.91		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	35 5.61 6.04 5.86 0.08 71.43 % 0.52 % 1.31 %



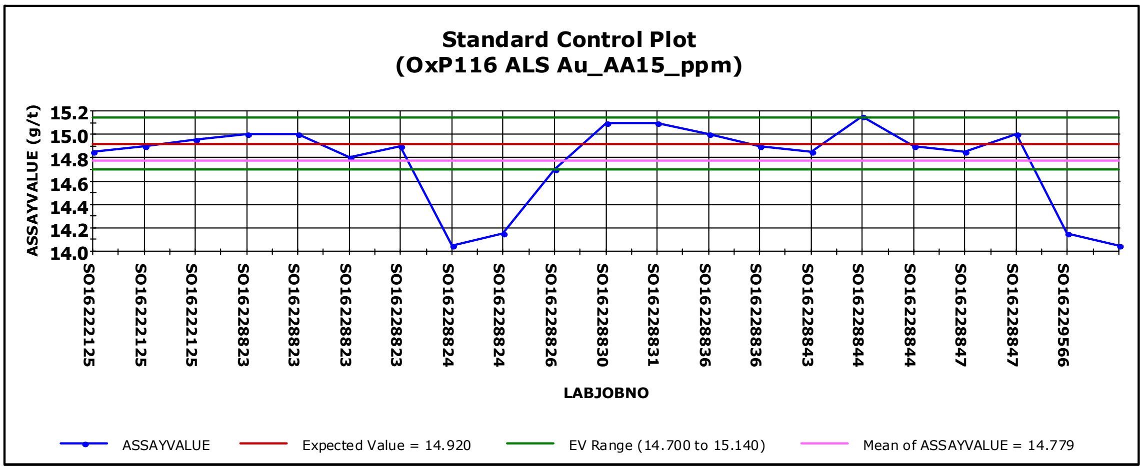


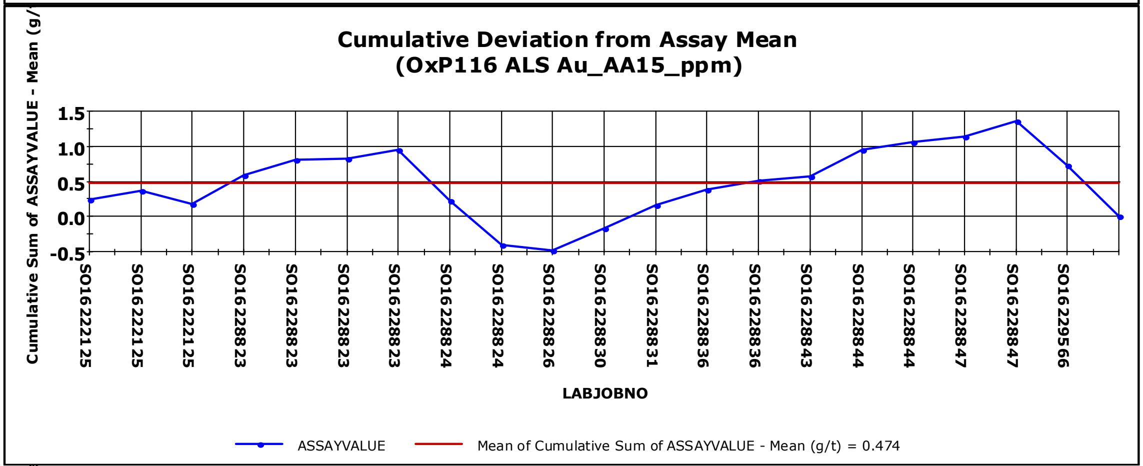


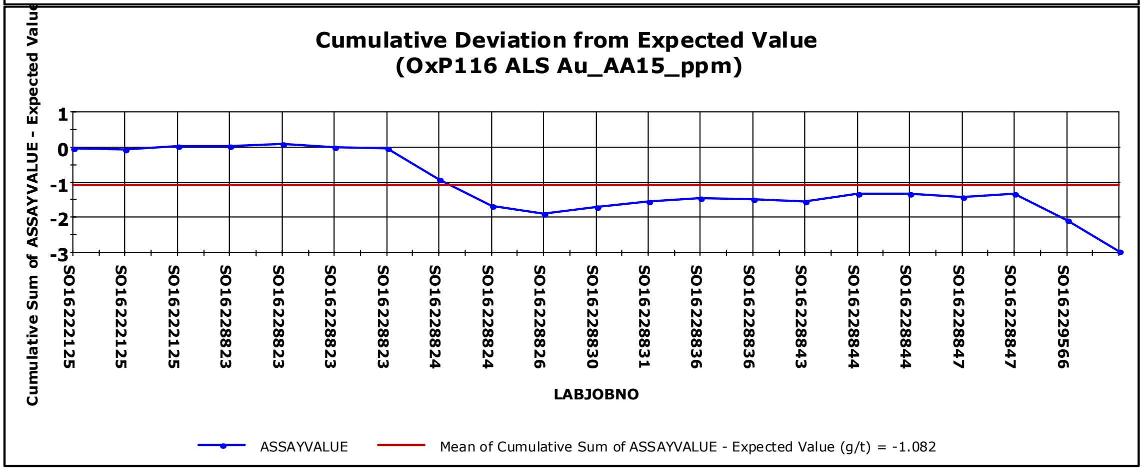
Printed: 10-May-2018 19:41:21 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OxP116 ALS Au_AA15_ppm)

Standard:	OxP116_ALS	No of Analyses:	21
Element:	ASSAYVALUE	Minimum:	14.050
Units:		Maximum:	15.150
Detection Limit:	-	Mean:	14.779
Expected Value (EV):	14.920	Std Deviation:	0.345
E.V. Range:	14.700 to 15.140	% in Tolerance	76.190 %
		% Bias	-0.948 %
		% RSD	2.336 %



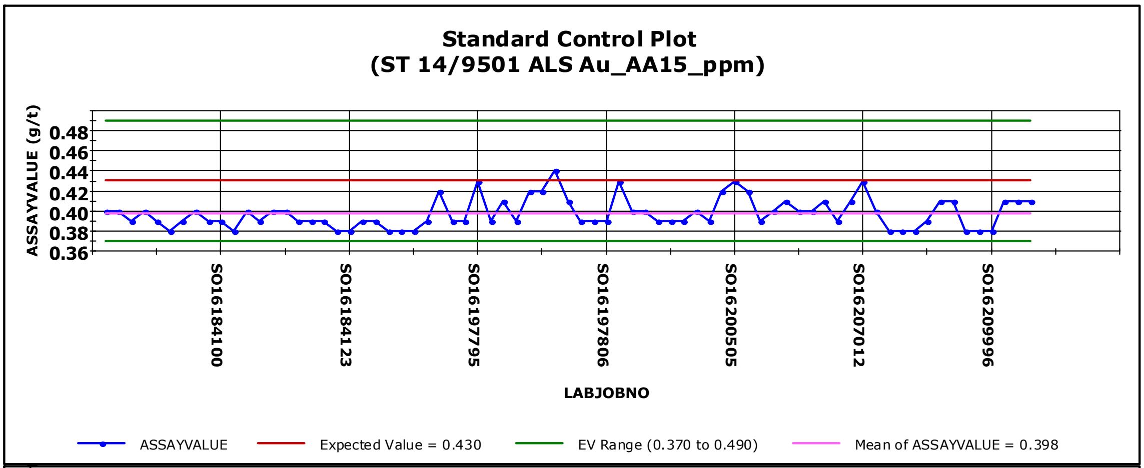


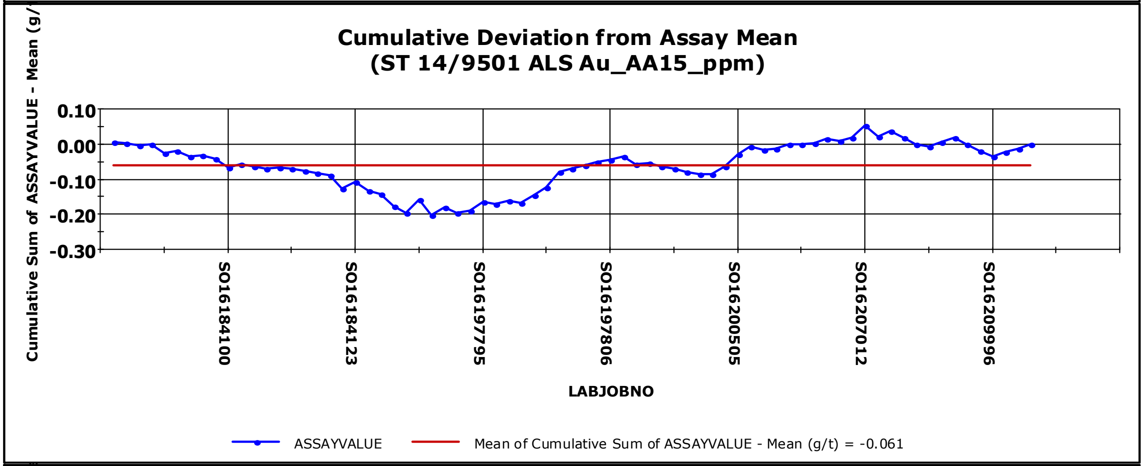


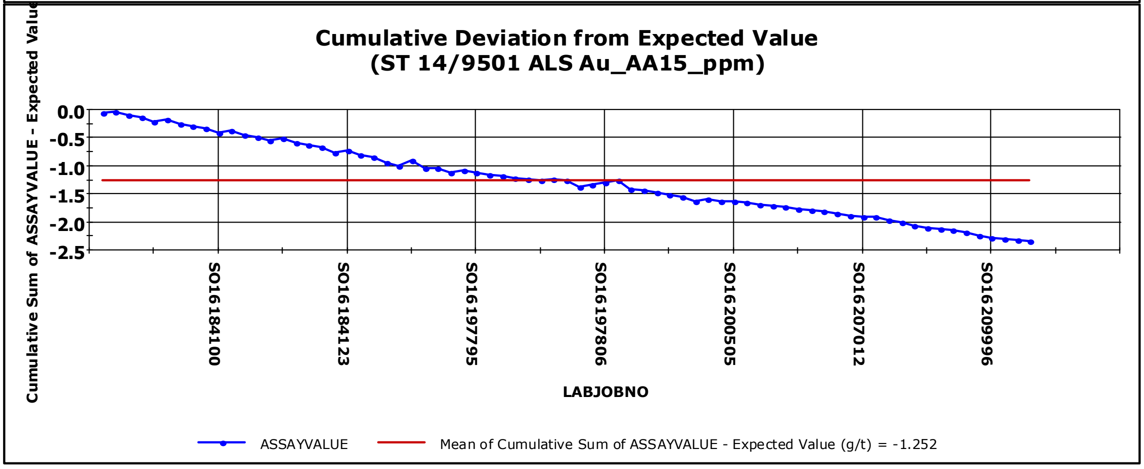
Printed: 10-May-2018 18:53:16 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(ST 14/9501 ALS Au_AA15_ppm)

Standard:	ST 14/9501_ALS	No of Analyses:	73
Element:	ASSAYVALUE	Minimum:	0.380
Units:		Maximum:	0.440
Detection Limit:	-	Mean:	0.398
Expected Value (EV):	0.430	Std Deviation:	0.015
E.V. Range:	0.370 to 0.490	% in Tolerance	100.000 %
		% Bias	-7.486 %
		% RSD	3.681 %



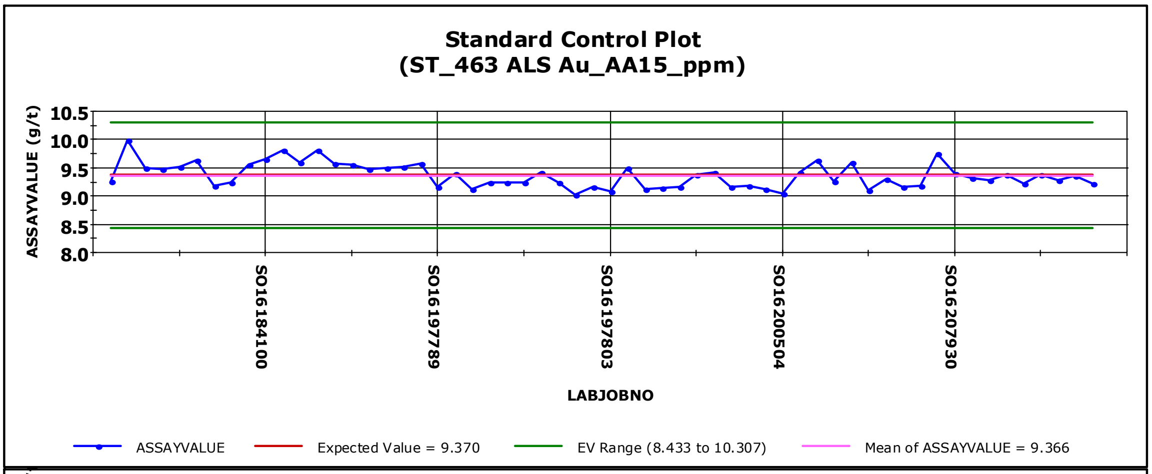


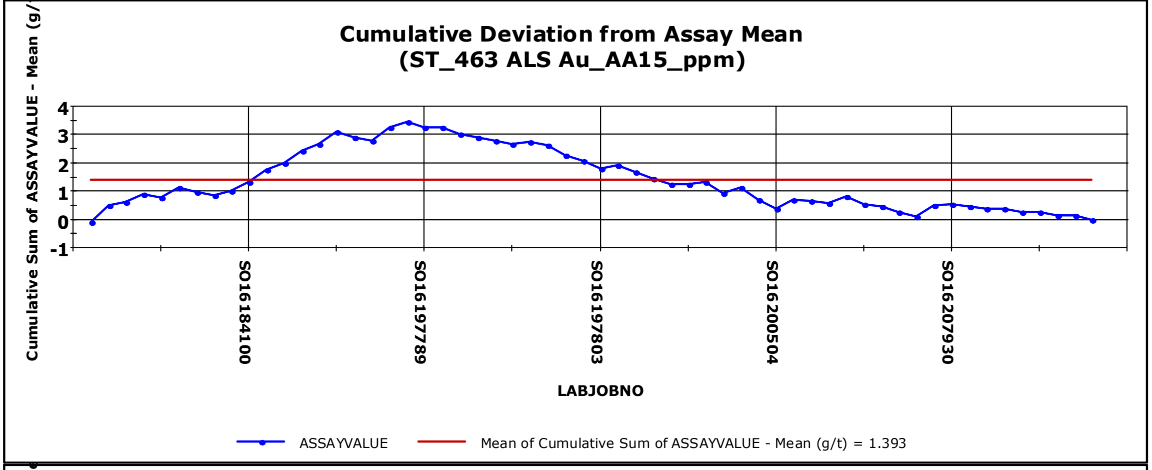


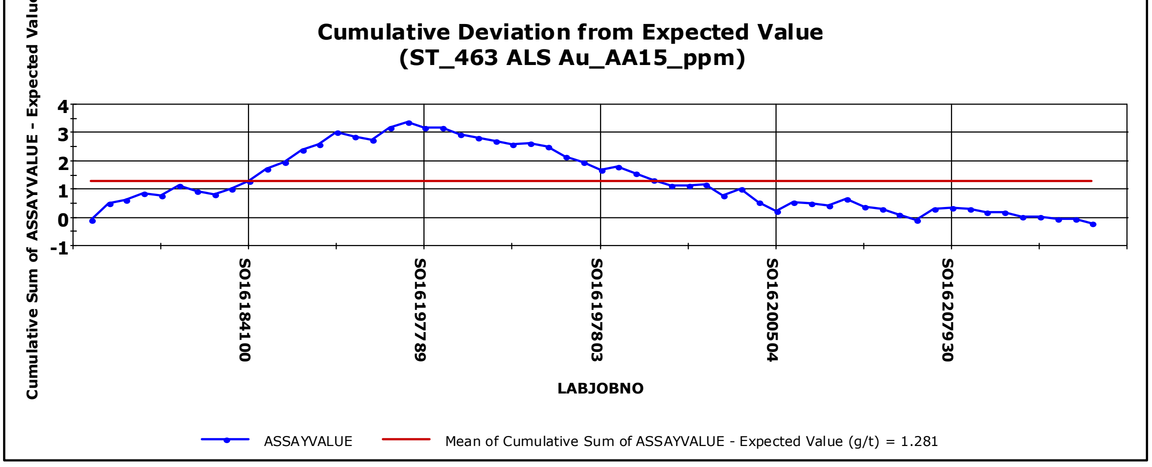
Printed: 10-May-2018 18:56:17 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(ST_463 ALS Au_AA15_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	ST 463_ALS ASSAYVALUE - 9.370 8.433 to 10.307		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	58 9.020 9.980 9.366 0.212 100.000 % -0.040 % 2.260 %







Printed: 10-May-2018 18:59:56   Data Imported: 10-May-2018 14:36:58   Page 1

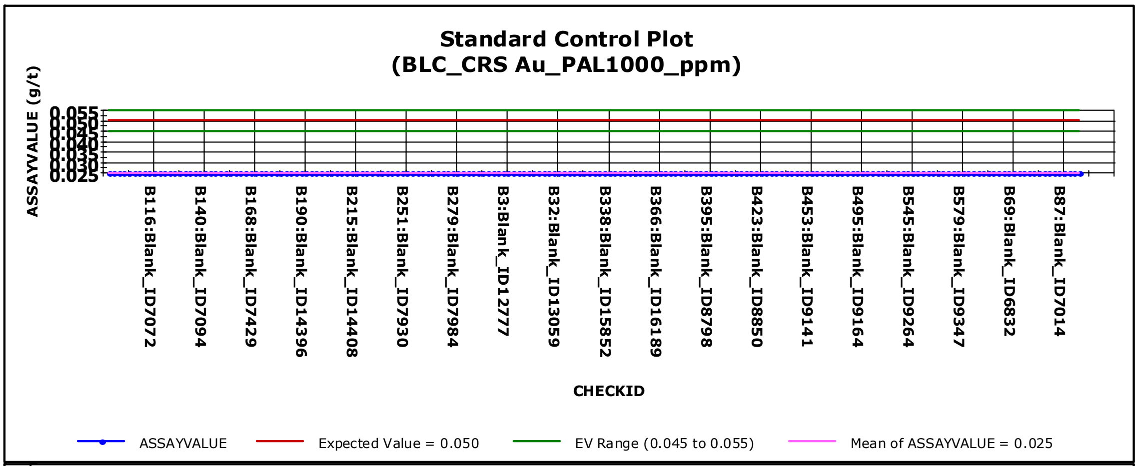
RUPERT RESOURCES

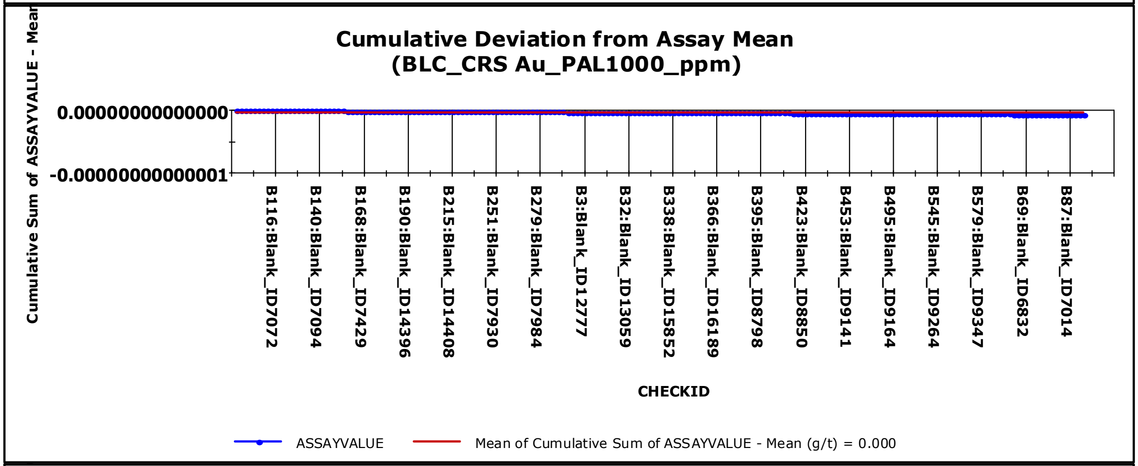
Appendix 4

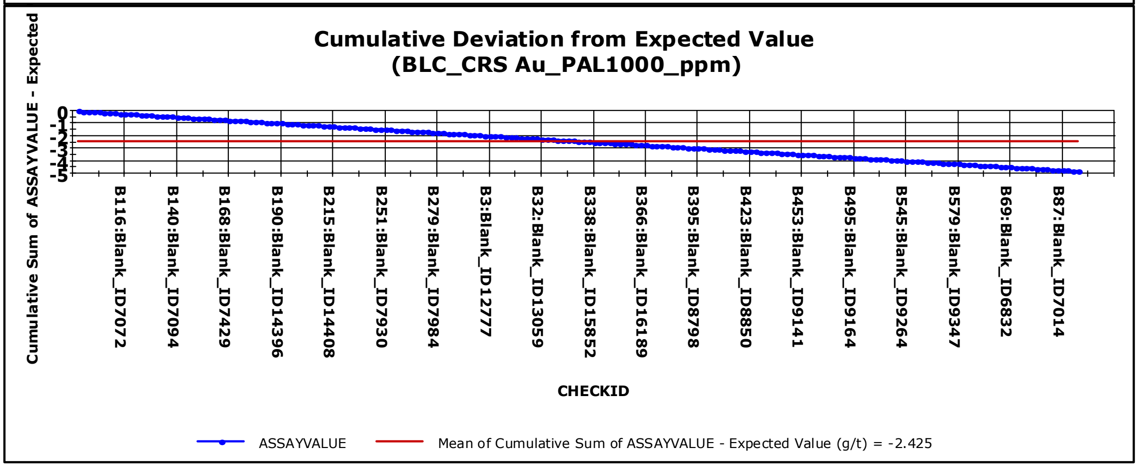
Control Graphs for the CRS internal CRM

Summary
(BLC_CRS Au_PAL1000_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	BLK_CRS ASSAYVALUE - 0.050 0.045 to 0.055		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	193 0.025 0.025 0.025 0.000 0.000 % -50.000 % 0.000 %



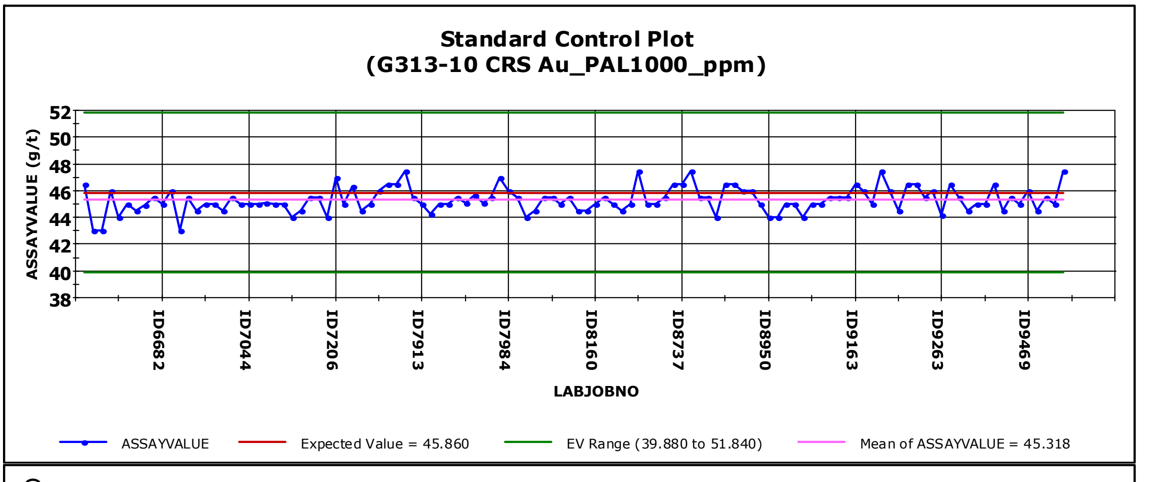


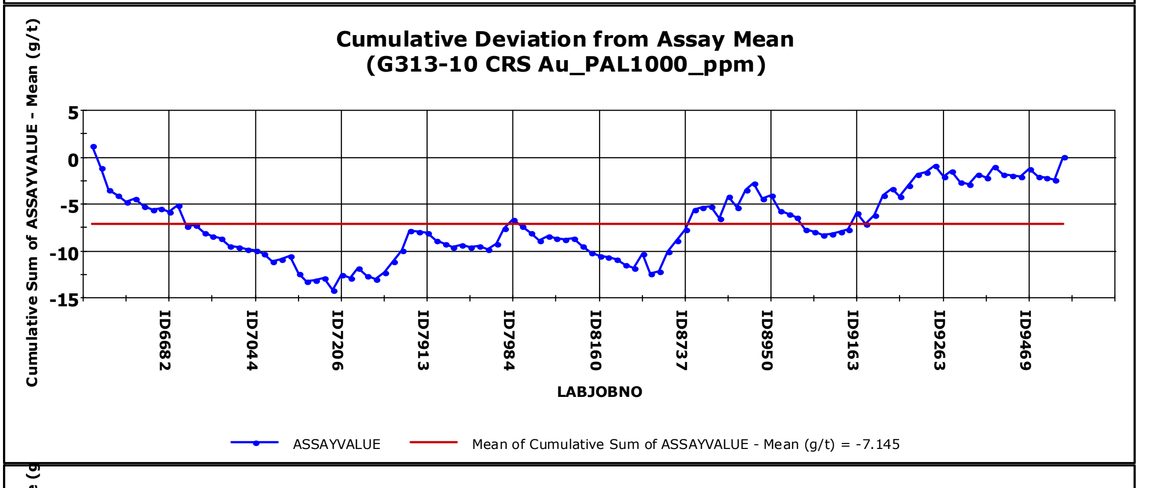


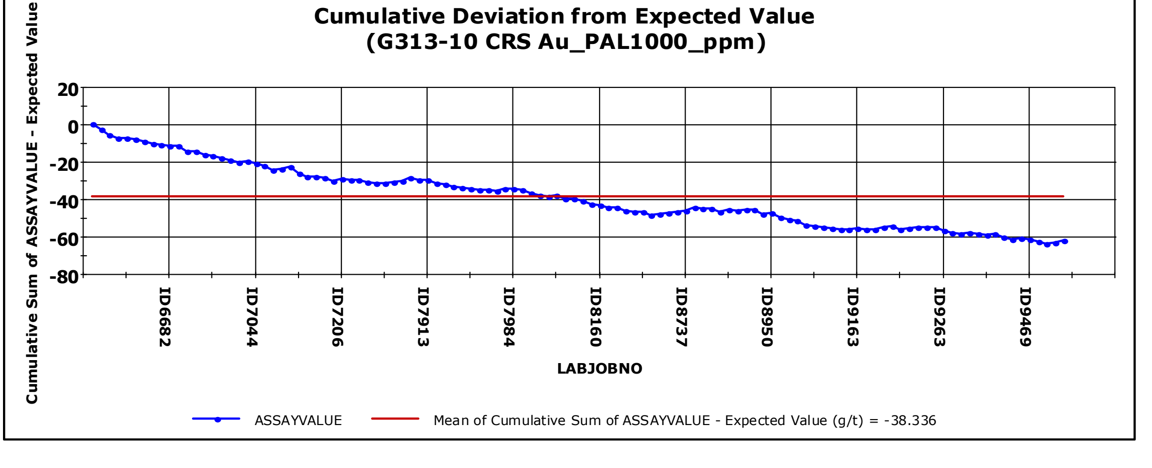
Printed: 10-May-2018 16:07:45 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(G313-10 CRS Au_PAL1000_ppm)

Standard:	G313-10_CRS	No of Analyses:	114
Element:	ASSAYVALUE	Minimum:	43.000
Units:		Maximum:	47.500
Detection Limit:	-	Mean:	45.318
Expected Value (EV):	45.860	Std Deviation:	0.923
E.V. Range:	39.880 to 51.840	% in Tolerance	100.000 %
		% Bias	-1.183 %
		% RSD	2.037 %



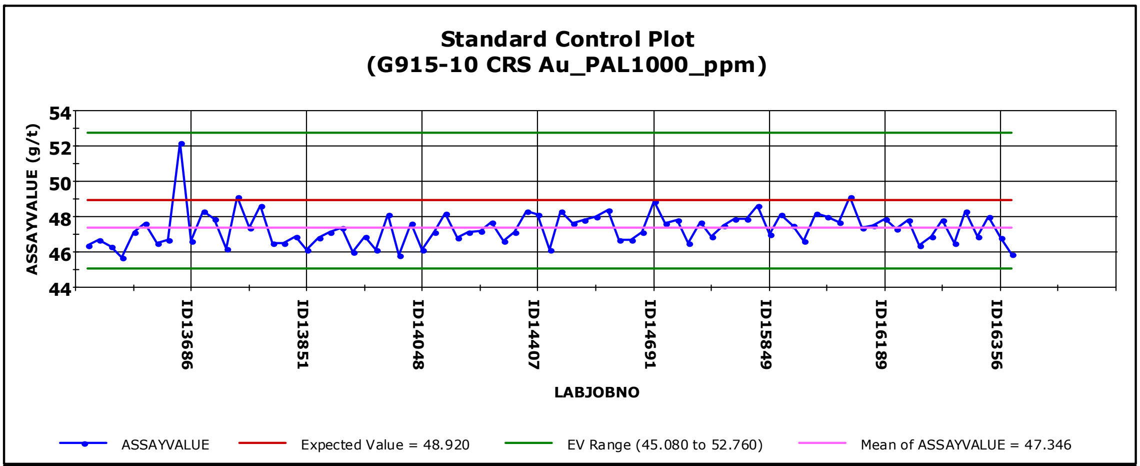


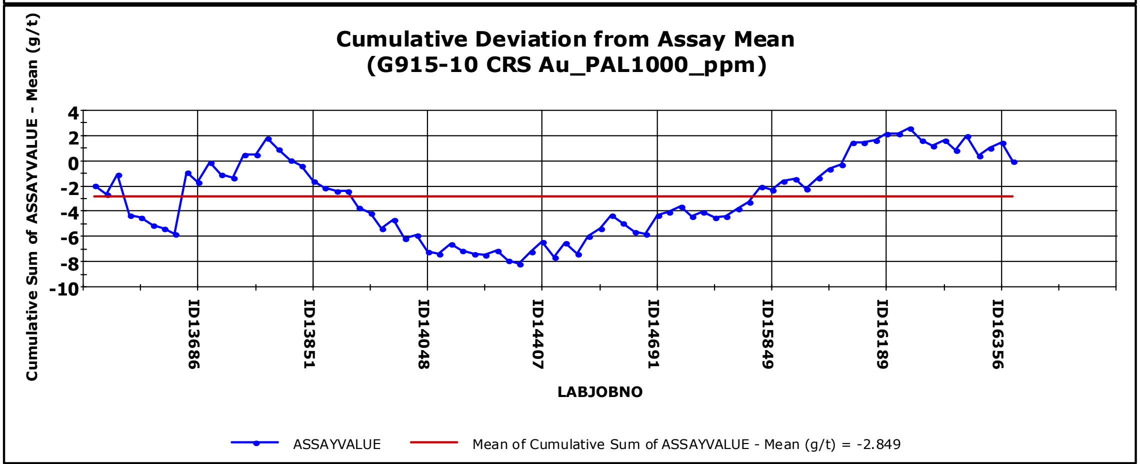


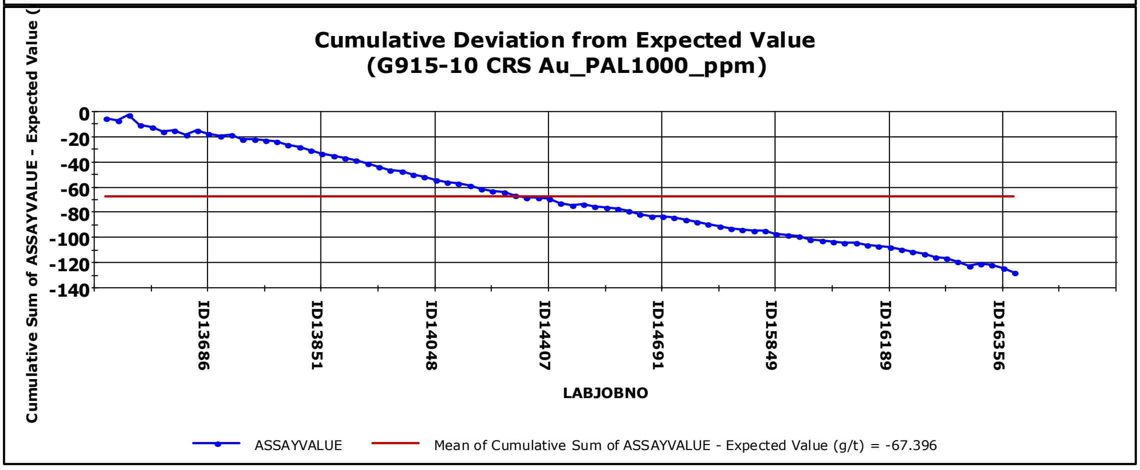
Printed: 10-May-2018 19:48:57 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(G915-10 CRS Au_PAL1000_ppm)

Standard: Element: Units: Detection Limit: Expected Value (EV): E.V. Range:	G915-10_CRS ASSAYVALUE - 48.920 45.080 to 52.760		No of Analyses: Minimum: Maximum: Mean: Std Deviation: % in Tolerance % Bias % RSD	81 45.700 52.200 47.346 0.968 100.000 % -3.218 % 2.045 %



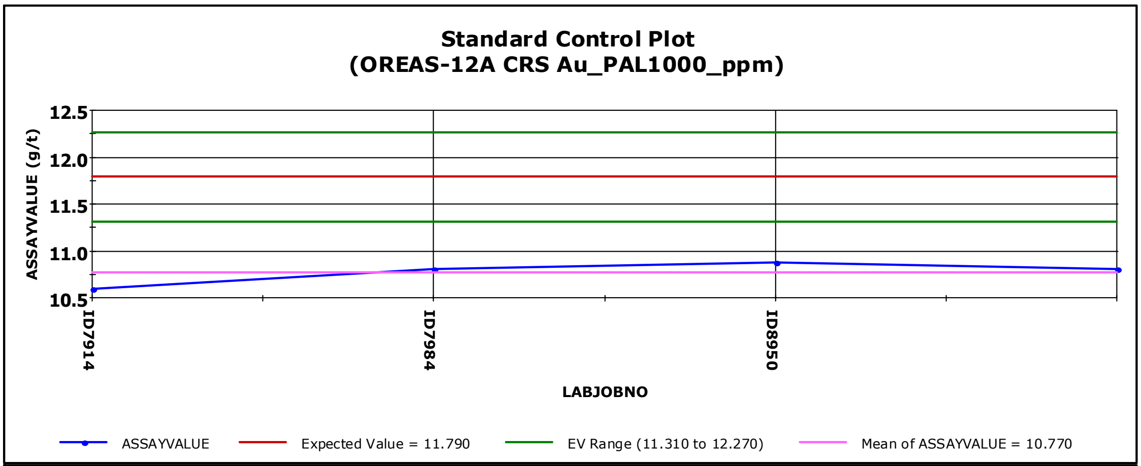


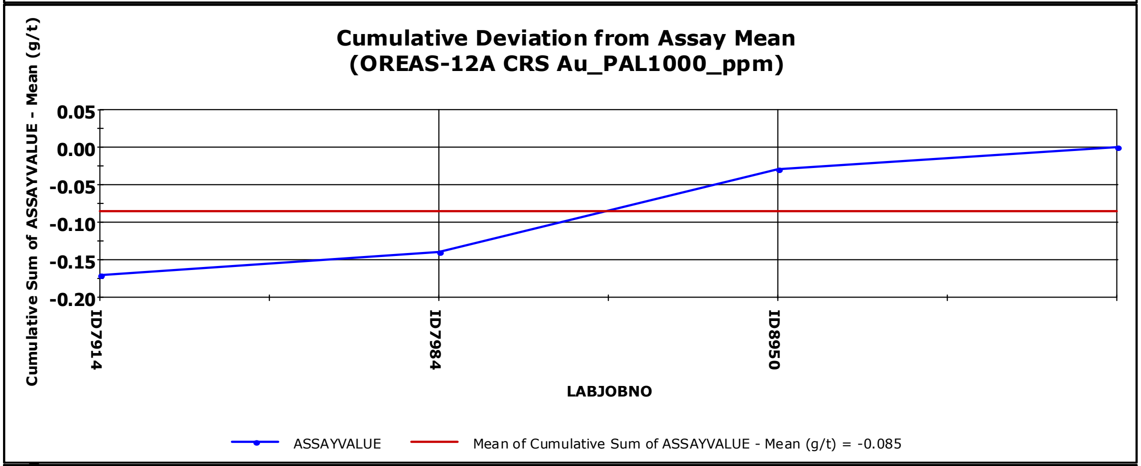


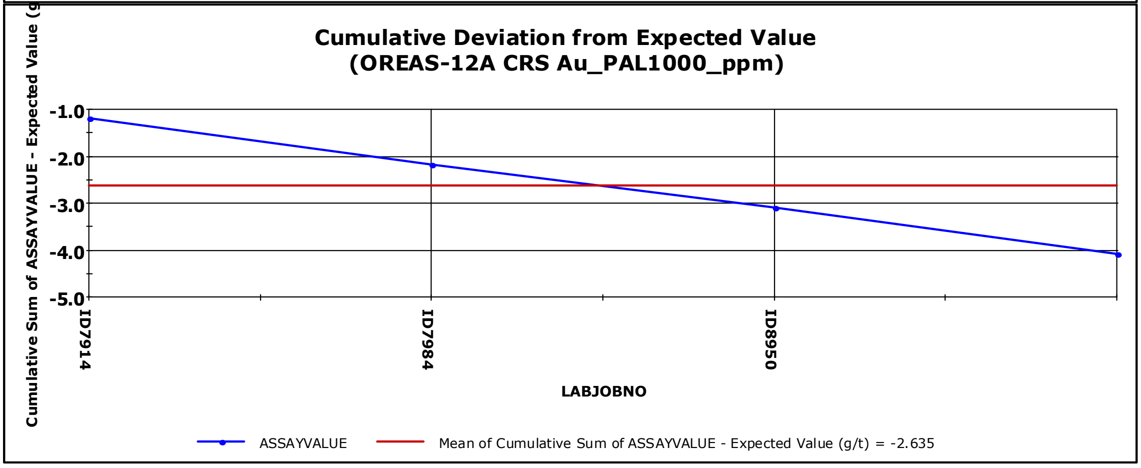
Printed: 10-May-2018 19:51:54 Data Imported: 10-May-2018 14:36:58 Page 1

Summary
(OREAS-12A CRS Au_PAL1000_ppm)

Standard:	OREAS-12A	No of Analyses:	4
Element:	ASSAYVALUE	Minimum:	10.600
Units:		Maximum:	10.880
Detection Limit:	-	Mean:	10.770
Expected Value (EV):	11.790	Std Deviation:	0.103
E.V. Range:	11.310 to 12.270	% in Tolerance	0.000 %
		% Bias	-8.651 %
		% RSD	0.960 %







Printed: 10-May-2018 19:59:40 Data Imported: 10-May-2018 14:36:58 Page 1

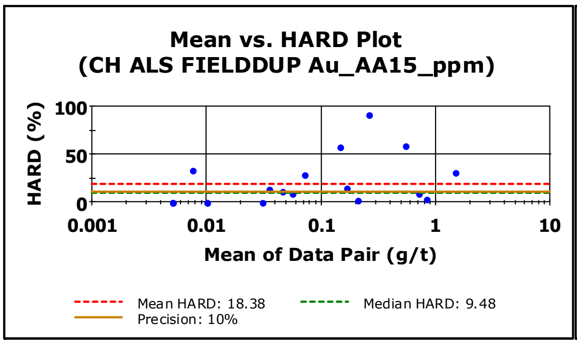
RUPERT RESOURCES

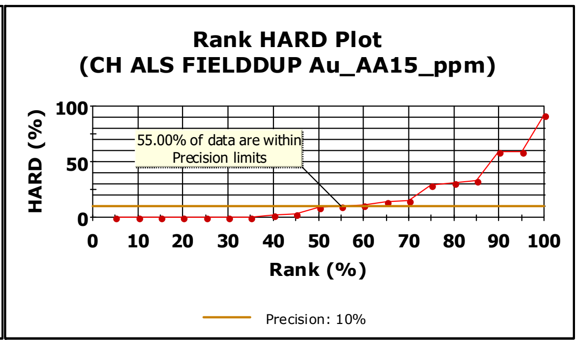
Appendix 5

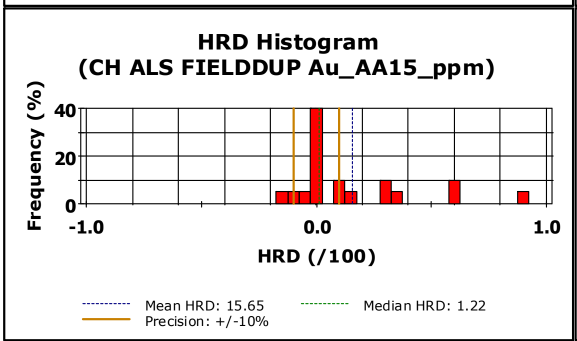
Sample Pairs submitted to ALS

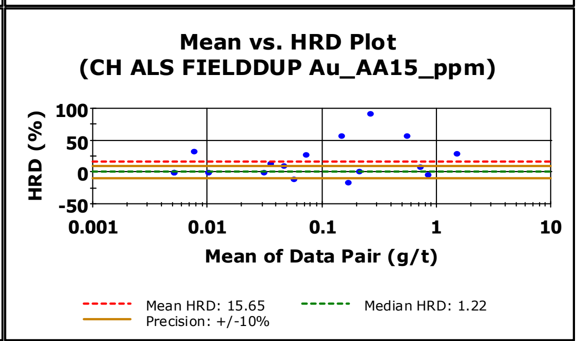
Summary
(CH ALS FIELDDUP Au_AA15_ppm)

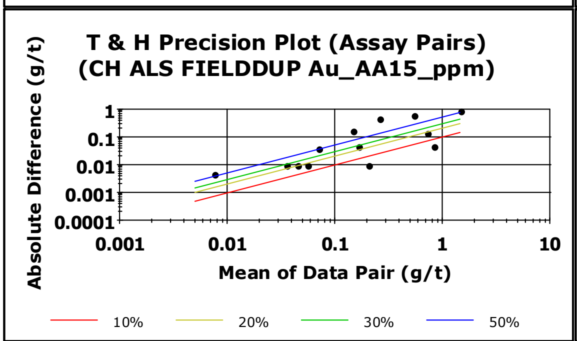
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	20	20			Pearson CC:	0.93
Minimum:	0.01	0.01	g/t		Spearman CC:	0.98
Maximum:	1.93	1.02	g/t		Mean HARD:	18.38
Mean:	0.29	0.17	g/t		Median HARD:	9.48
Median	0.05	0.04	g/t			
Std. Deviation:	0.47	0.29	g/t		Mean HRD:	15.65
Coefficient of Variation:	1.64	1.69			Median HRD	1.22

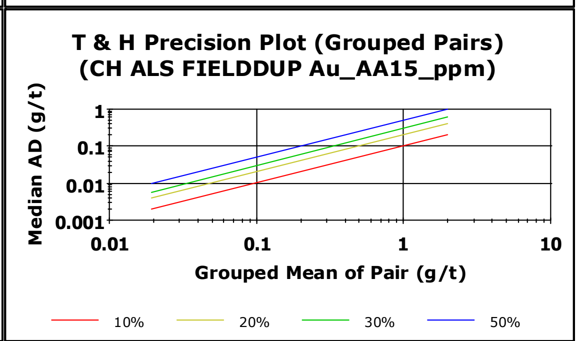


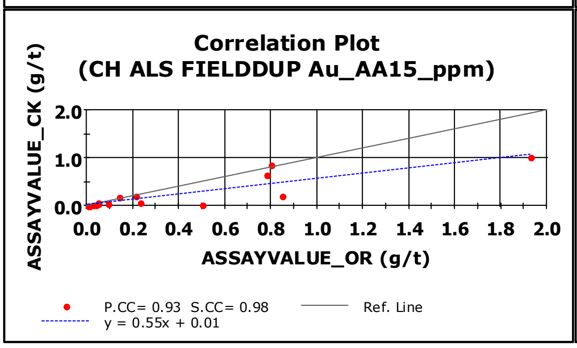


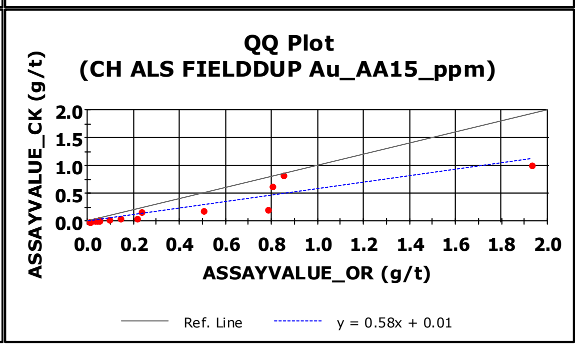










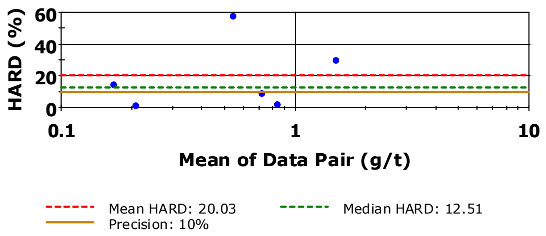


Printed: 11-May-2018 15:14:54 Data Edited: 09-May-2018 19:47:34 Page 1

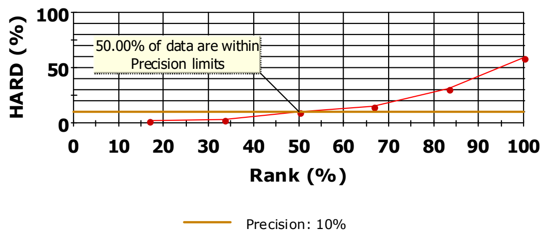
Summary
(CH ALS FIELDDUP Au_AA15_ppm)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	6	6			Pearson CC:	0.97
Minimum:	0.14	0.19	g/t		Spearman CC:	0.99
Maximum:	1.93	1.02	g/t		Mean HARD:	20.03
Mean:	0.79	0.52	g/t		Median HARD:	12.51
Median	0.79	0.43	g/t			
Std. Deviation:	0.59	0.34	g/t		Mean HRD:	13.97
Coefficient of Variation:	0.75	0.64			Median HRD	6.15

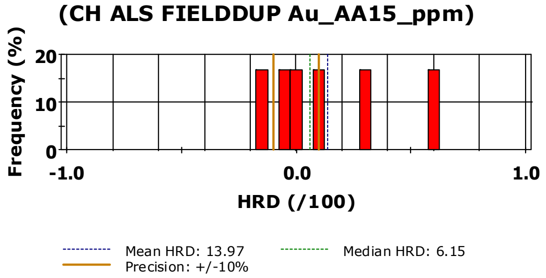
Mean vs. HARD Plot
(CH ALS FIELDDUP Au_AA15_ppm)



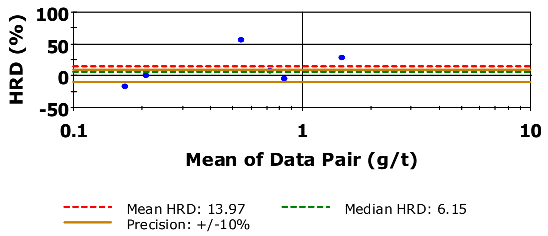
Rank HARD Plot
(CH ALS FIELDDUP Au_AA15_ppm)



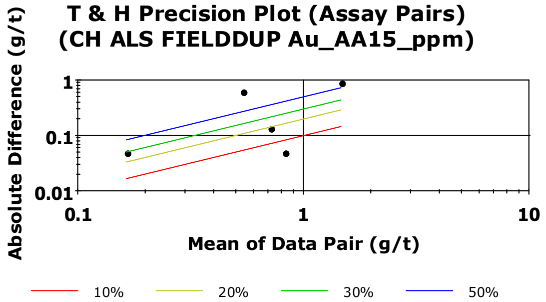
HRD Histogram
(CH ALS FIELDDUP Au_AA15_ppm)



Mean vs. HRD Plot
(CH ALS FIELDDUP Au_AA15_ppm)



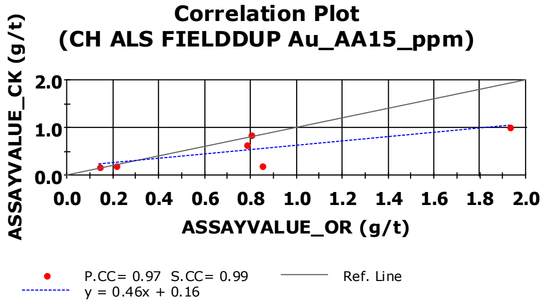
T & H Precision Plot (Assay Pairs)
(CH ALS FIELDDUP Au_AA15_ppm)



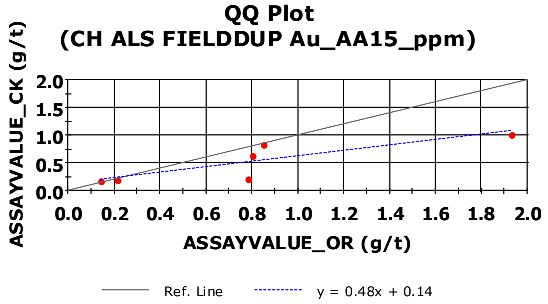
T & H Precision Plot (Grouped Pairs)
(CH ALS FIELDDUP Au_AA15_ppm)

There is not enough data to generate this plot.

Correlation Plot
(CH ALS FIELDDUP Au_AA15_ppm)



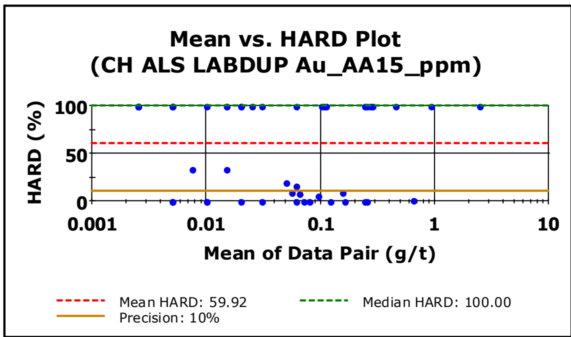
QQ Plot
(CH ALS FIELDDUP Au_AA15_ppm)

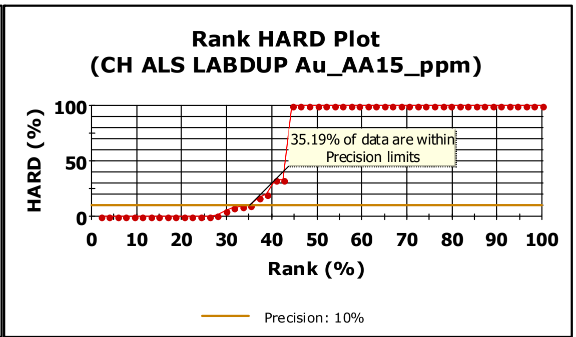


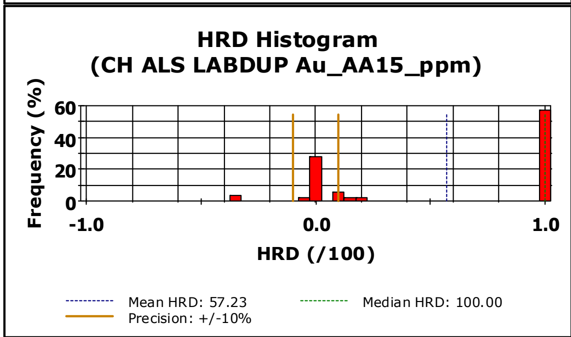
Printed: 11-May-2018 15:18:47 Data Edited: 09-May-2018 19:47:34 Page 1

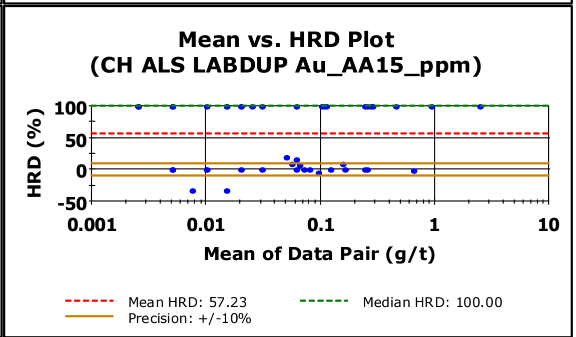
Summary
(CH ALS LABDUP Au_AA15_ppm)

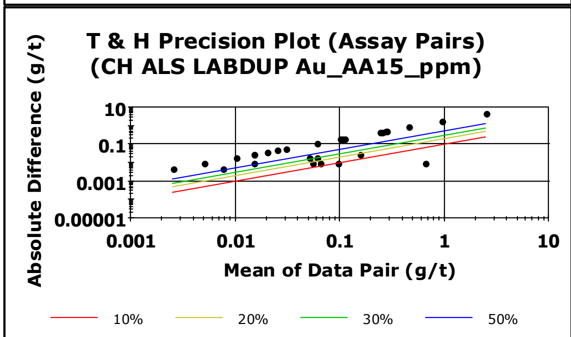
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	54	54			Pearson CC:	0.03
Minimum:	0.01	0.00	g/t		Spearman CC:	0.60
Maximum:	4.94	0.65	g/t		Mean HARD:	59.92
Mean:	0.24	0.04	g/t		Median HARD:	100.00
Median	0.05	0.00	g/t			
Std. Deviation:	0.71	0.10	g/t		Mean HRD:	57.23
Coefficient of Variation:	2.92	2.50			Median HRD	100.00

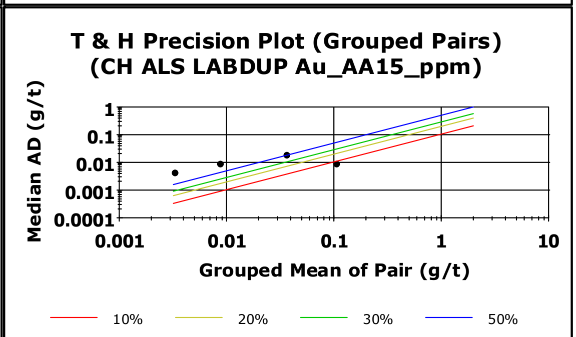


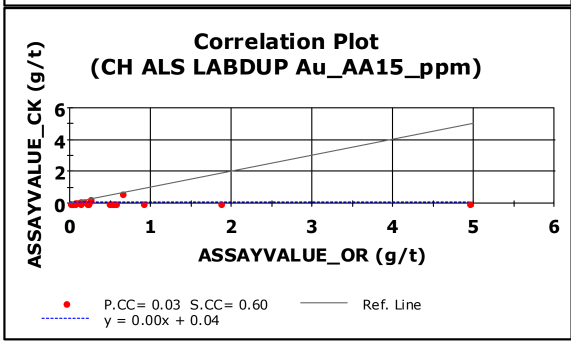


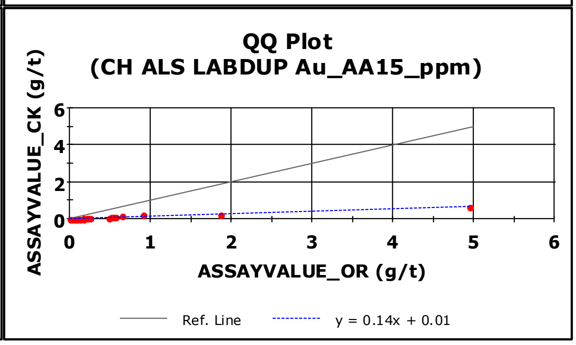








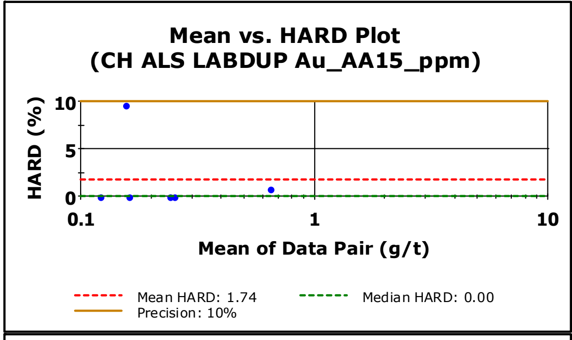


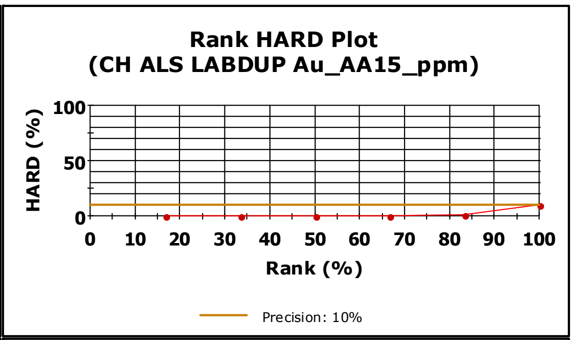


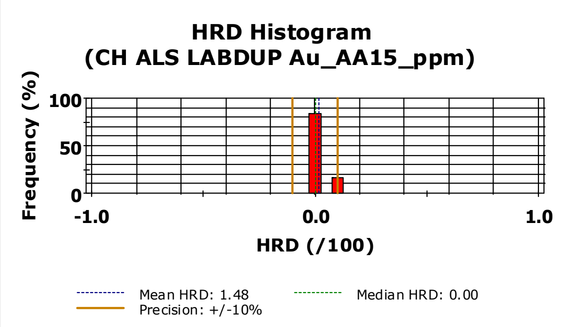
Printed: 11-May-2018 15:32:41 Data Edited: 09-May-2018 19:47:34 Page 1

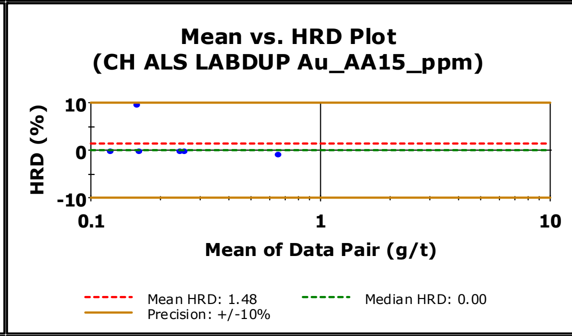
Summary
(CH ALS LABDUP Au_AA15_ppm)

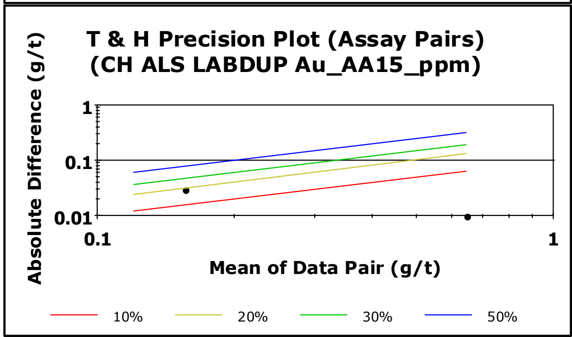
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	6	6			Pearson CC:	1.20
Minimum:	0.12	0.12	g/t		Spearman CC:	1.13
Maximum:	0.64	0.65	g/t		Mean HARD:	1.74
Mean:	0.26	0.26	g/t		Median HARD:	0.00
Median	0.21	0.20	g/t			
Std. Deviation:	0.17	0.18	g/t		Mean HRD:	1.48
Coefficient of Variation:	0.66	0.70			Median HRD	0.00





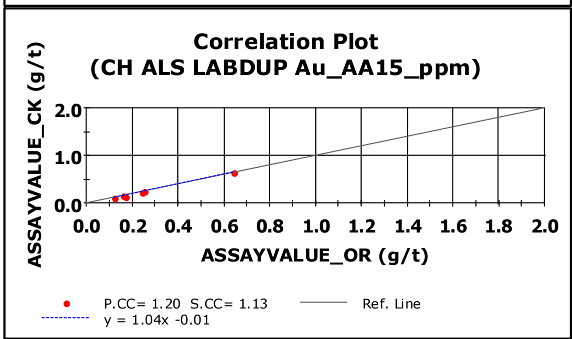


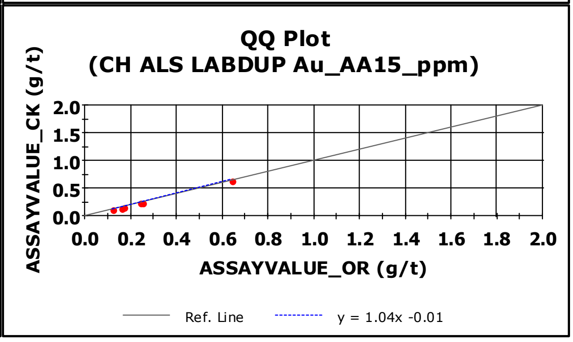




T & H Precision Plot (Grouped Pairs)
(CH ALS LABDUP Au_AA15_ppm)

There is not enough data to generate this plot.

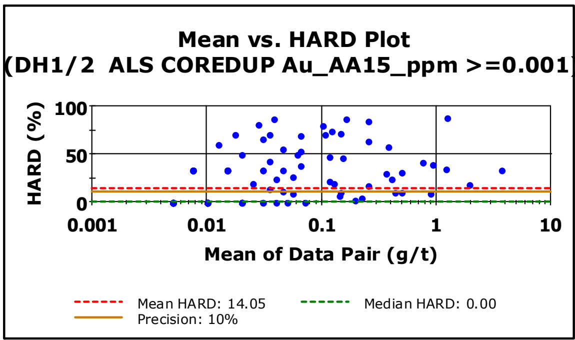


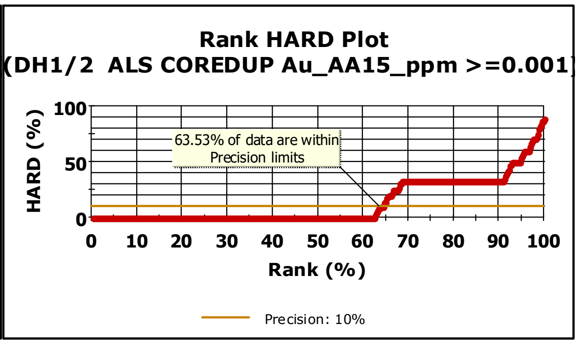


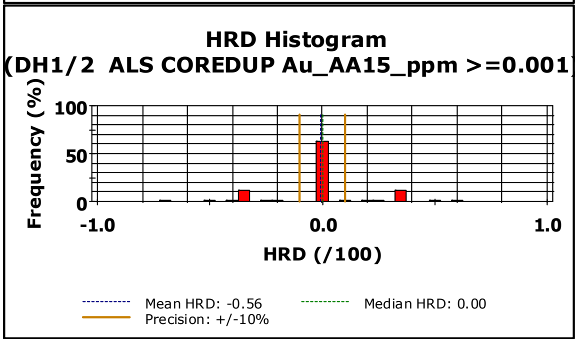
Printed: 11-May-2018 15:28:02 Data Edited: 09-May-2018 19:47:34 Page 1

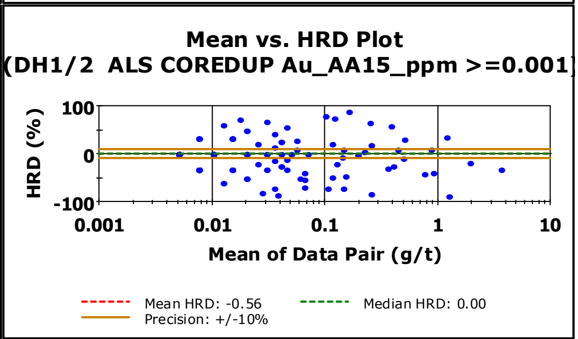
Summary
(DH1/2 ALS COREDUP Au_AA15_ppm >=0.001)

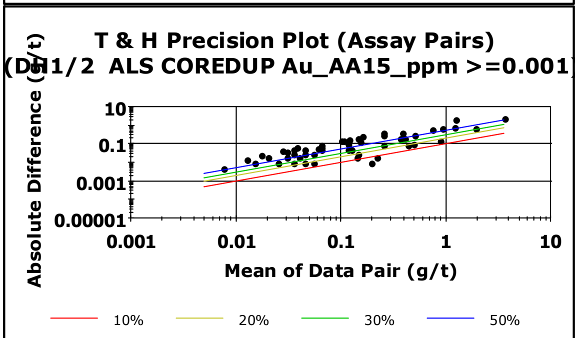
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	414	414			Pearson CC:	0.84
Minimum:	0.01	0.01	g/t		Spearman CC:	0.94
Maximum:	2.43	4.84	g/t		Mean HARD:	14.05
Mean:	0.04	0.05	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	0.18	0.30	g/t		Mean HRD:	-0.56
Coefficient of Variation:	4.40	5.57			Median HRD	0.00

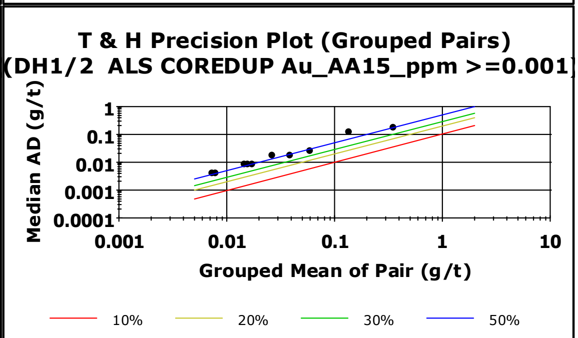


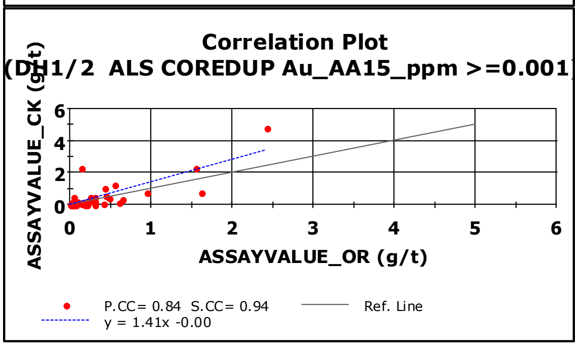


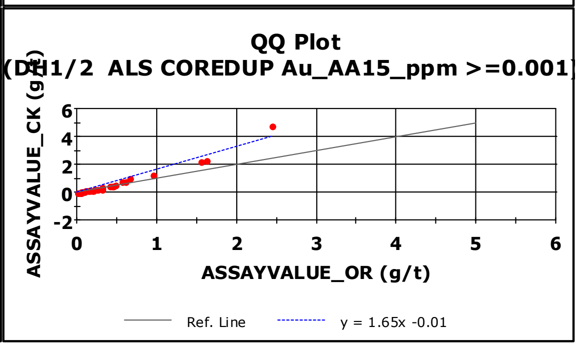










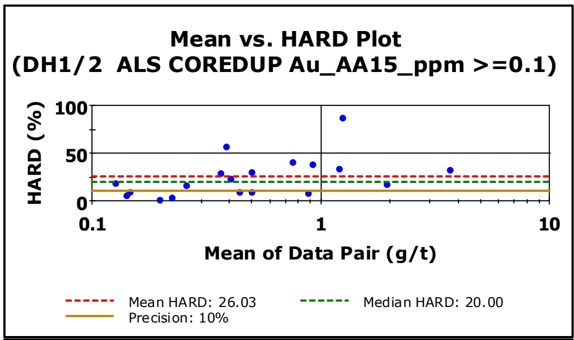


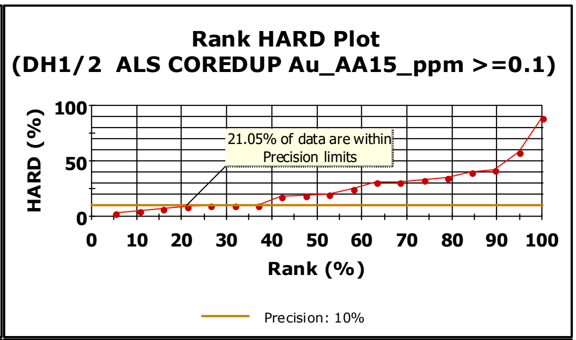
Printed: 11-May-2018 15:56:11 Data Edited: 09-May-2018 19:47:34 Page 1

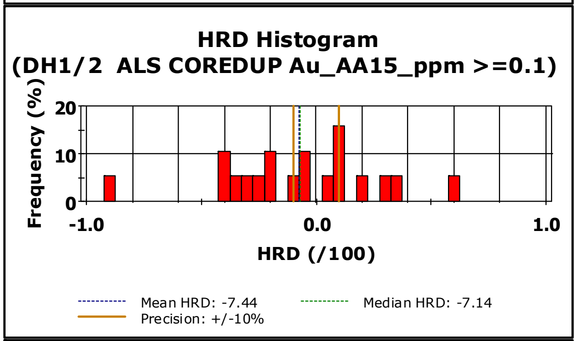
RUPERT RESOURCES

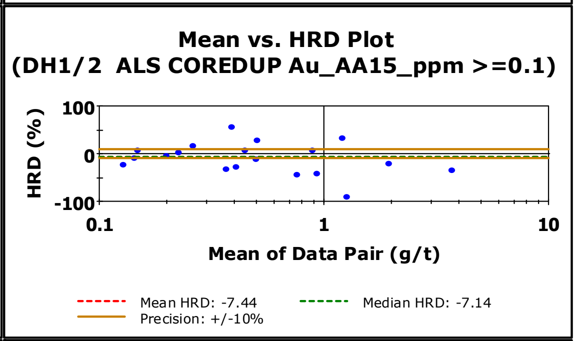
Summary
(DH1/2 ALS COREDUP Au_AA15_ppm >=0.1)

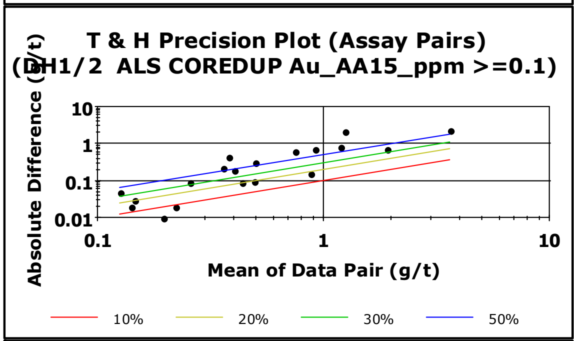
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	19	19			Pearson CC:	0.80
Minimum:	0.10	0.13	g/t		Spearman CC:	0.62
Maximum:	2.43	4.84	g/t		Mean HARD:	26.03
Mean:	0.60	0.88	g/t		Median HARD:	20.00
Median	0.43	0.47	g/t			
Std. Deviation:	0.60	1.13	g/t		Mean HRD:	-7.44
Coefficient of Variation:	1.00	1.28			Median HRD	-7.14

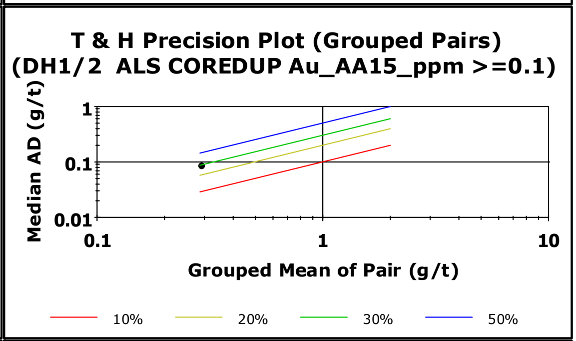


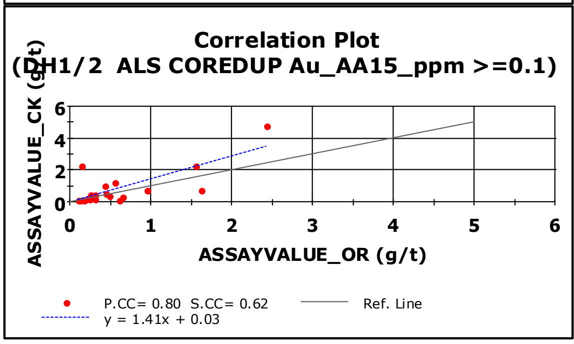


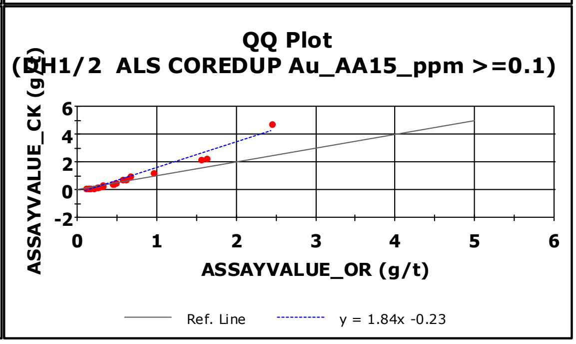








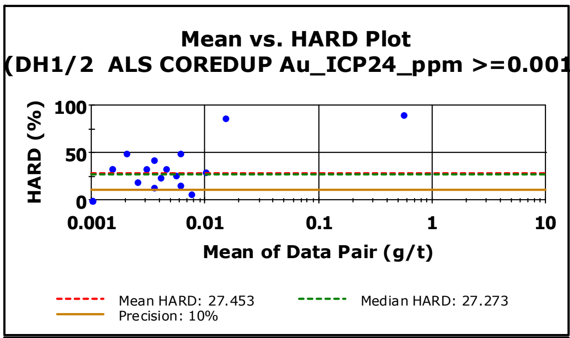


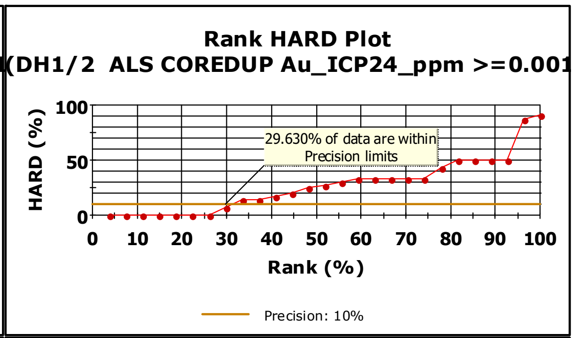


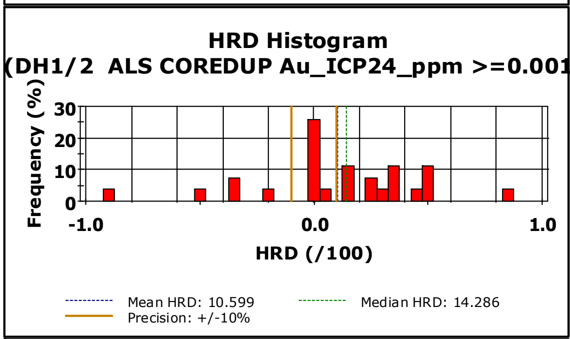
Printed: 11-May-2018 16:06:15 Data Edited: 09-May-2018 19:47:34 Page 1

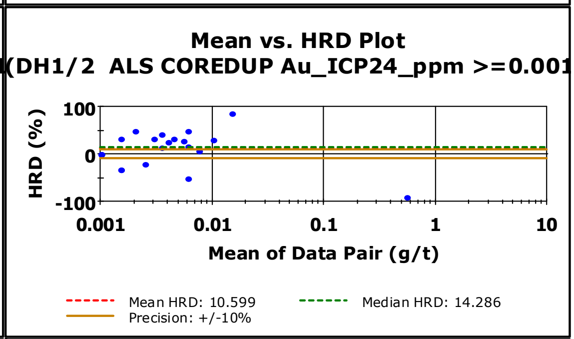
Summary
(DH1/2 ALS COREDUP Au_ICP24_ppm >=0.001)

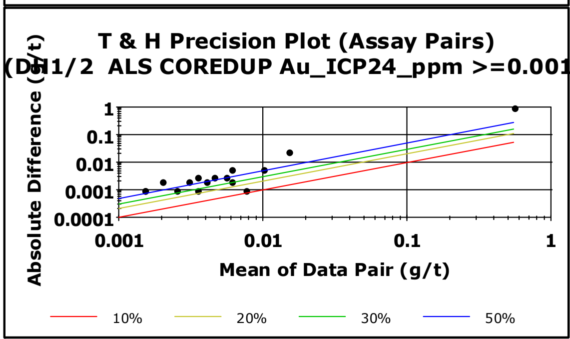
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	27	27			Pearson CC:	0.878
Minimum:	0.001	0.001	g/t		Spearman CC:	0.904
Maximum:	0.050	1.045	g/t		Mean HARD:	27.453
Mean:	0.006	0.041	g/t		Median HARD:	27.273
Median	0.003	0.002	g/t			
Std. Deviation:	0.010	0.197	g/t		Mean HRD:	10.599
Coefficient of Variation:	1.592	4.767			Median HRD	14.286

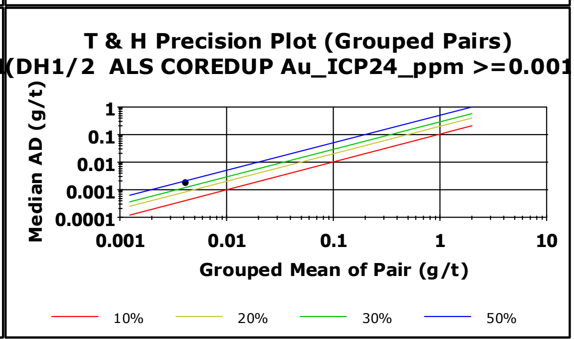


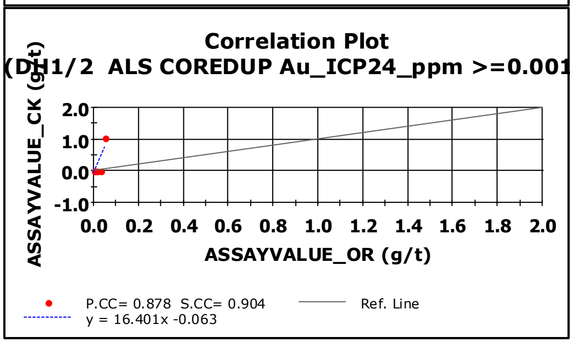


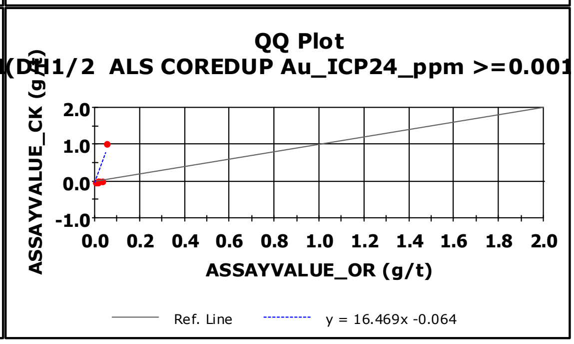








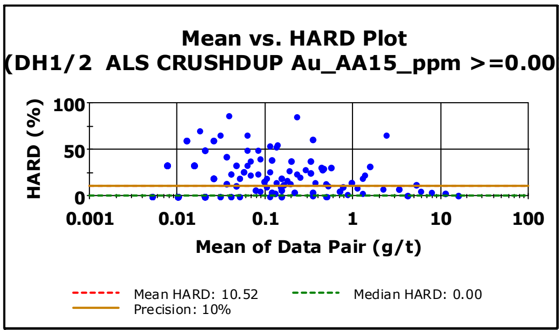


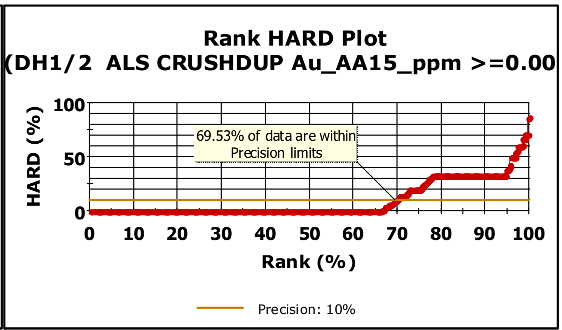


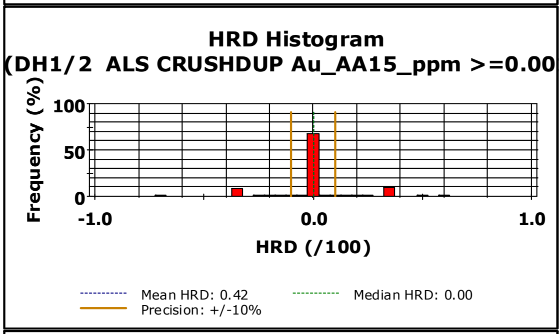
Printed: 11-May-2018 16:19:01 Data Edited: 09-May-2018 19:47:34 Page 1

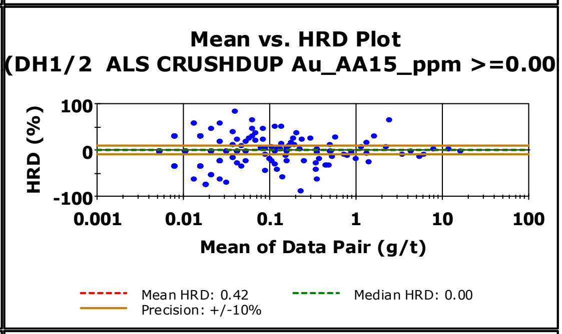
Summary
(DH1/2 ALS CRUSHDUP Au_AA15_ppm >=0.001)

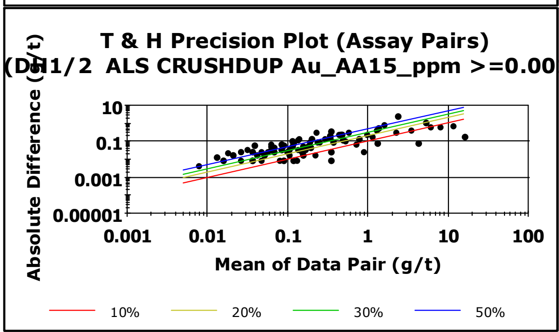
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	640	640			Pearson CC:	0.99
Minimum:	0.01	0.01	g/t		Spearman CC:	0.93
Maximum:	15.50	15.70	g/t		Mean HARD:	10.52
Mean:	0.13	0.13	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	0.92	0.90	g/t		Mean HRD:	0.42
Coefficient of Variation:	6.98	7.03			Median HRD	0.00

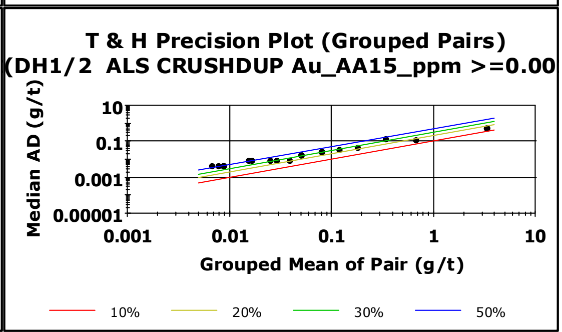


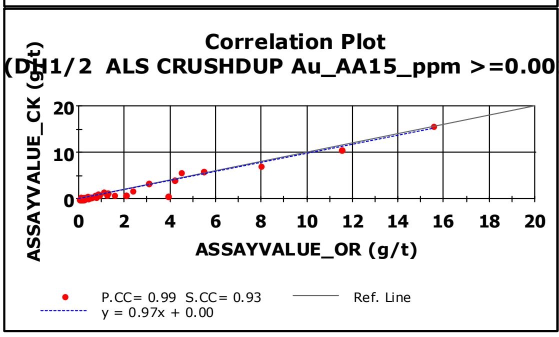


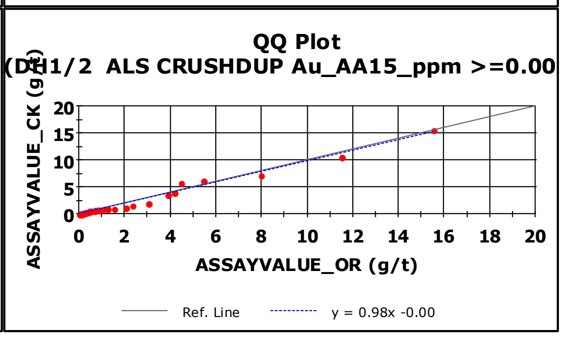








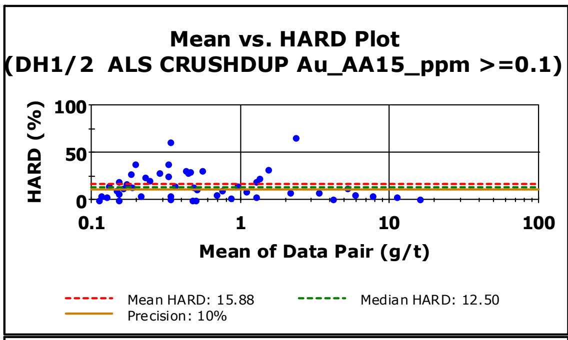


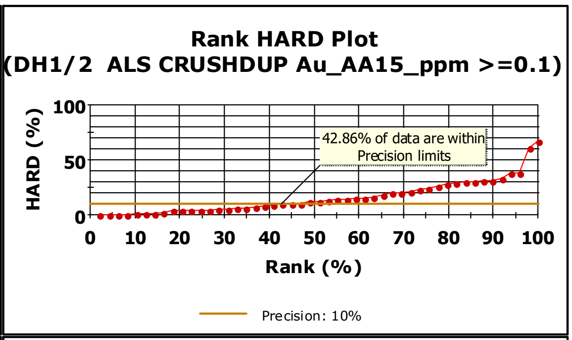


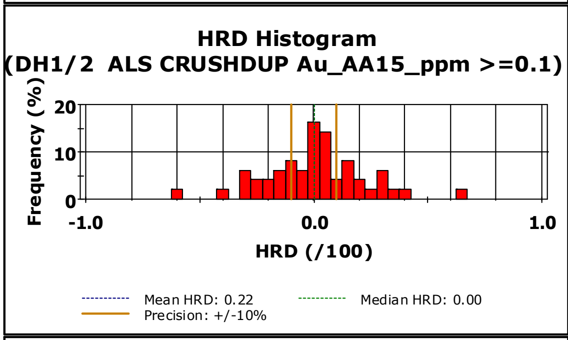
Printed: 11-May-2018 15:57:14 Data Edited: 09-May-2018 19:47:34 Page 1

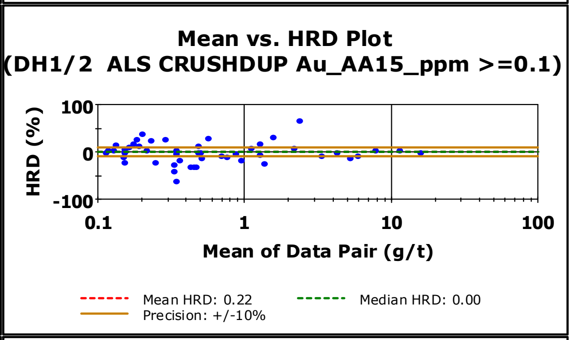
Summary
(DH1/2 ALS CRUSHDUP Au_AA15_ppm >=0.1)

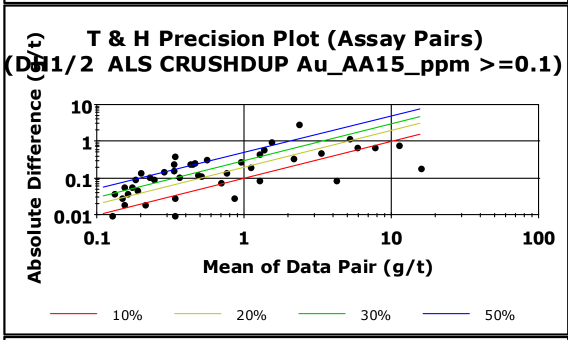
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	49	49			Pearson CC:	1.00
Minimum:	0.11	0.11	g/t		Spearman CC:	0.92
Maximum:	15.50	15.70	g/t		Mean HARD:	15.88
Mean:	1.56	1.52	g/t		Median HARD:	12.50
Median	0.35	0.47	g/t			
Std. Deviation:	2.96	2.92	g/t		Mean HRD:	0.22
Coefficient of Variation:	1.90	1.92			Median HRD	0.00

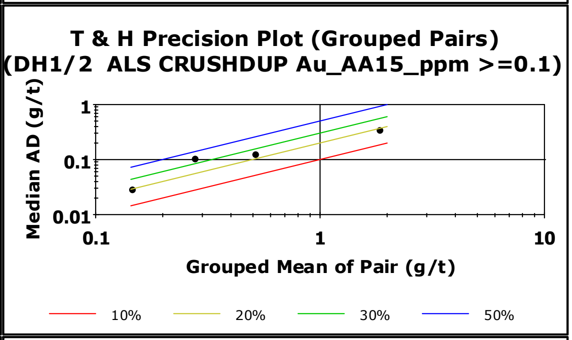


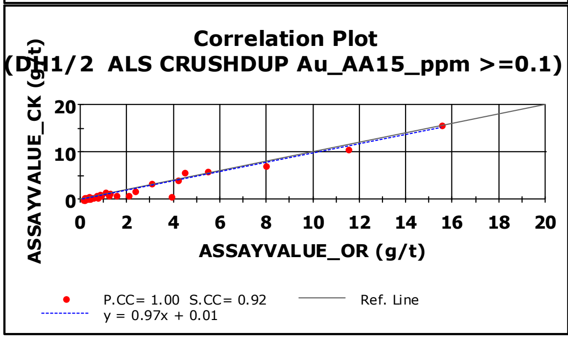


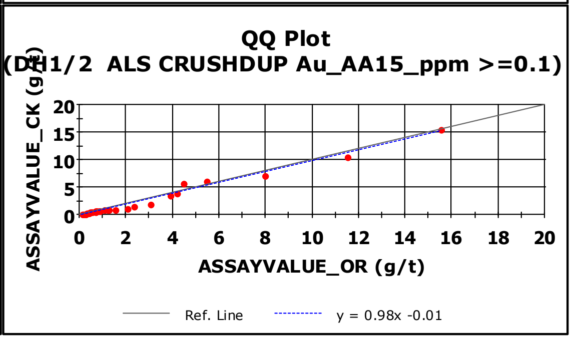








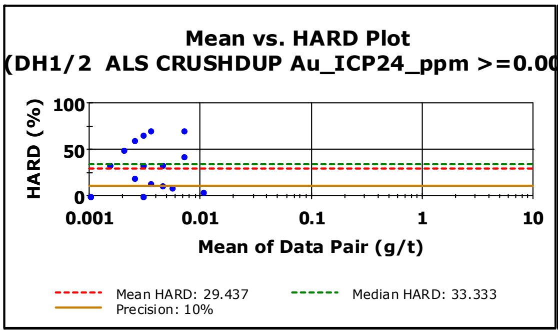


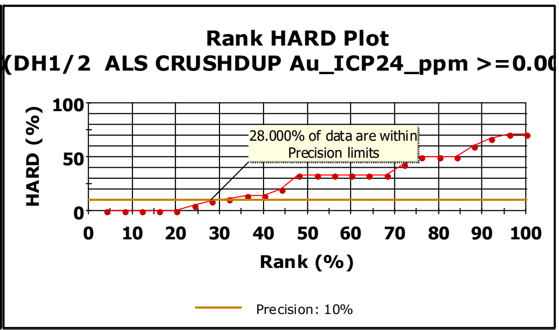


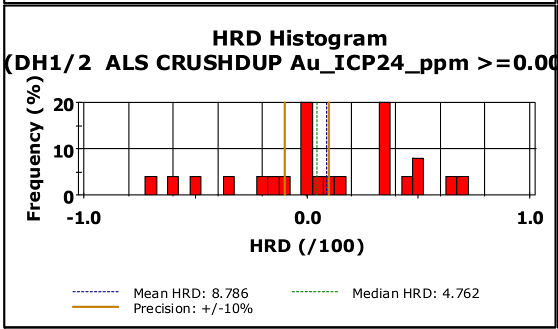
Printed: 11-May-2018 16:07:09 Data Edited: 09-May-2018 19:47:34 Page 1

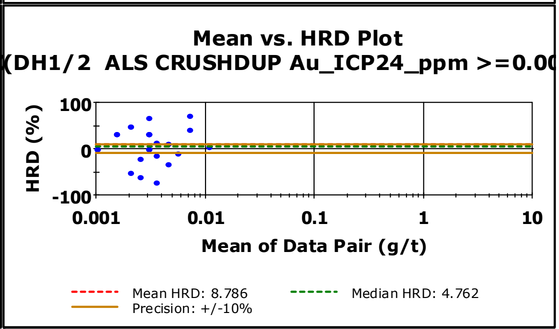
Summary
(DH1/2 ALS CRUSHDUP Au_ICP24_ppm >=0.001)

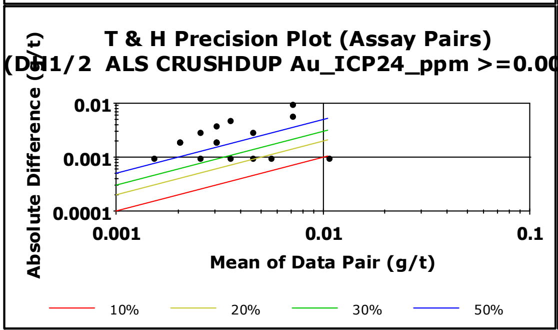
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	25	25			Pearson CC:	0.408
Minimum:	0.001	0.001	g/t		Spearman CC:	0.572
Maximum:	0.012	0.010	g/t		Mean HARD:	29.437
Mean:	0.004	0.003	g/t		Median HARD:	33.333
Median	0.003	0.003	g/t			
Std. Deviation:	0.003	0.002	g/t		Mean HRD:	8.786
Coefficient of Variation:	0.794	0.718			Median HRD	4.762

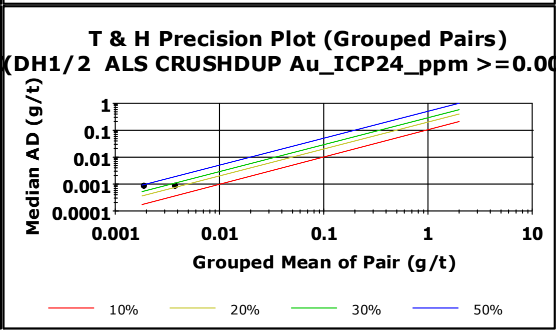


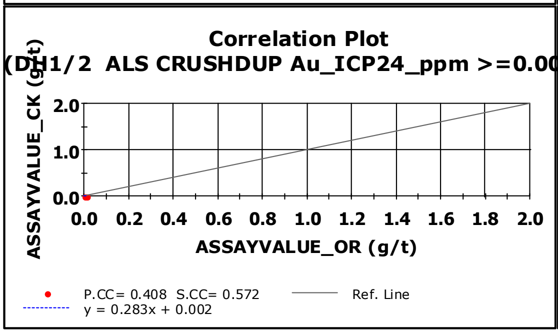


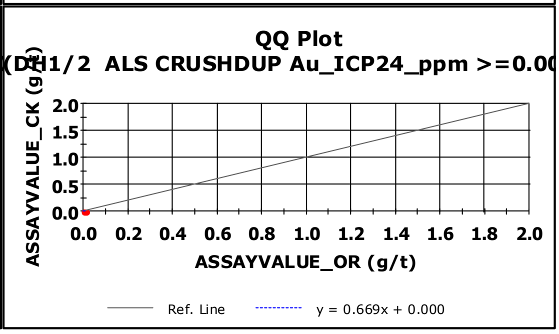








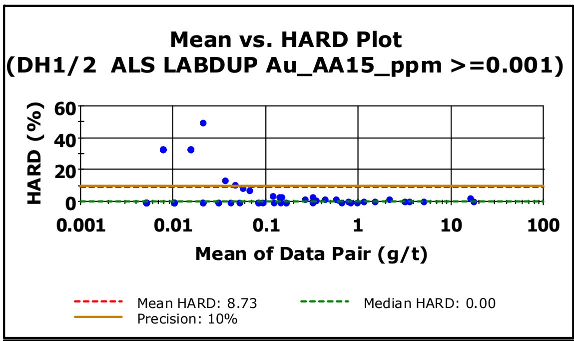


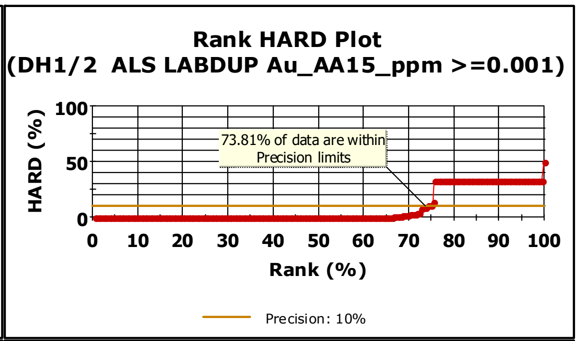


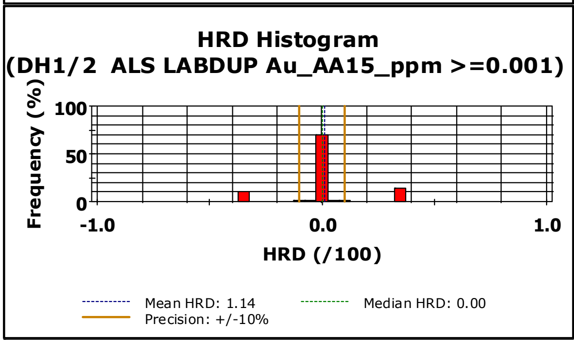
Printed: 11-May-2018 16:21:16 Data Edited: 09-May-2018 19:47:34 Page 1

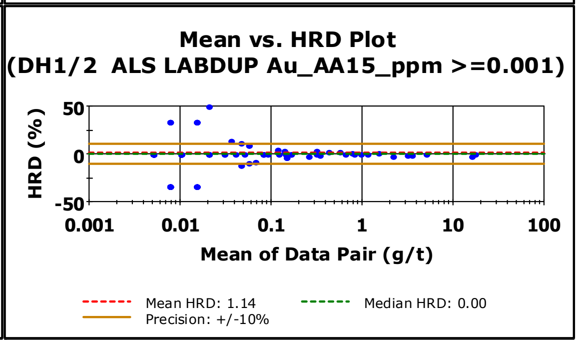
Summary
(DH1/2 ALS LABDUP Au_AA15_ppm >=0.001)

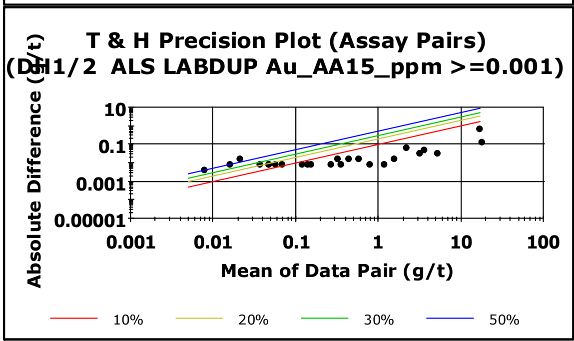
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	252	252			Pearson CC:	1.00
Minimum:	0.01	0.01	g/t		Spearman CC:	0.88
Maximum:	17.10	17.25	g/t		Mean HARD:	8.73
Mean:	0.23	0.23	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	1.51	1.55	g/t		Mean HRD:	1.14
Coefficient of Variation:	6.62	6.68			Median HRD	0.00

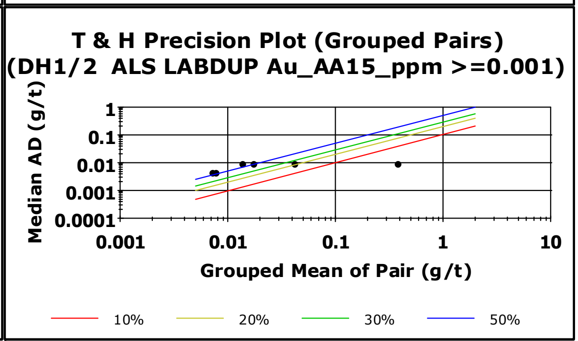


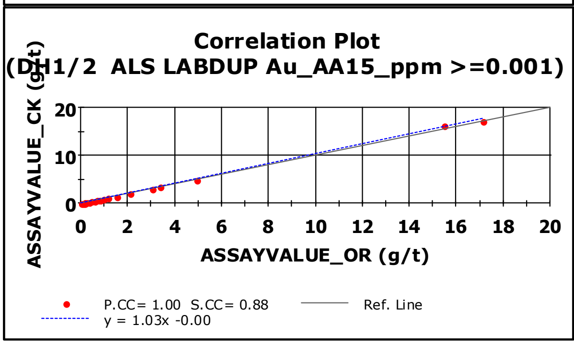


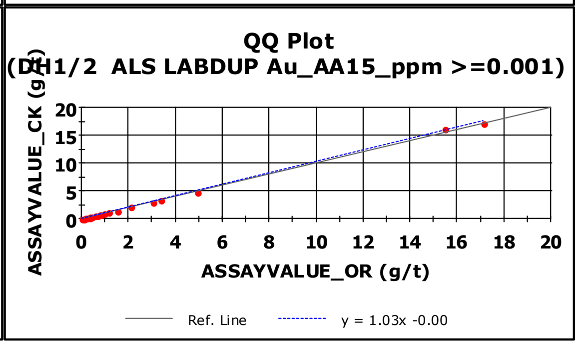








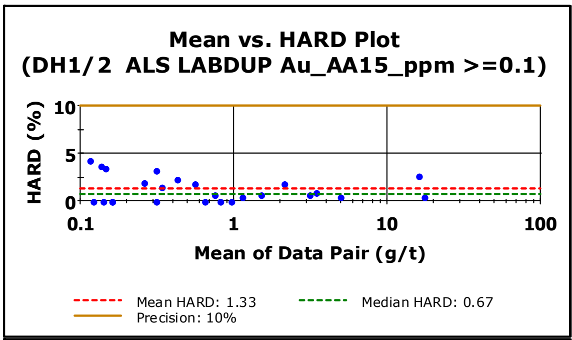


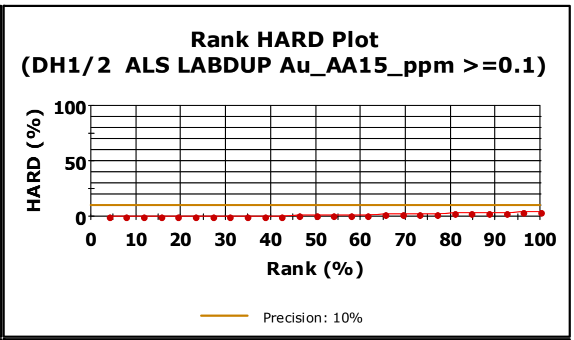


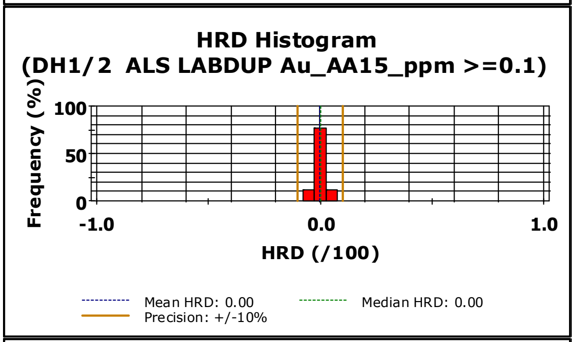
Printed: 11-May-2018 16:03:39 Data Edited: 09-May-2018 19:47:34 Page 1

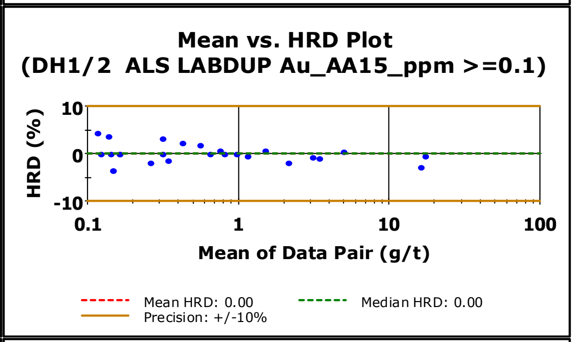
Summary
(DH1/2 ALS LABDUP Au_AA15_ppm >=0.1)

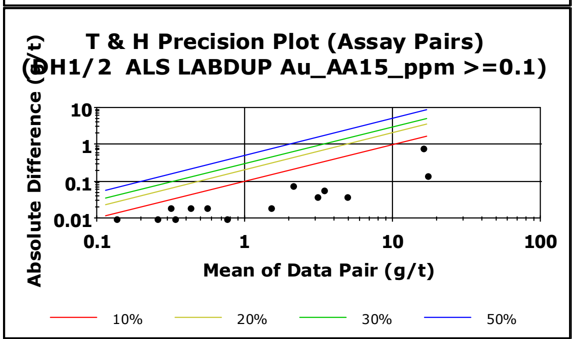
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	26	26			Pearson CC:	1.04
Minimum:	0.12	0.11	g/t		Spearman CC:	1.04
Maximum:	17.10	17.25	g/t		Mean HARD:	1.33
Mean:	2.12	2.16	g/t		Median HARD:	0.67
Median	0.50	0.48	g/t			
Std. Deviation:	4.26	4.38	g/t		Mean HRD:	0.00
Coefficient of Variation:	2.01	2.03			Median HRD	0.00

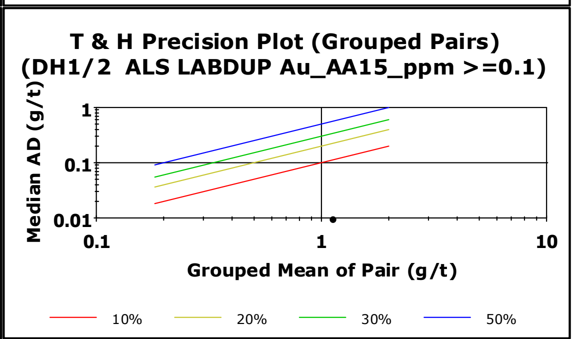


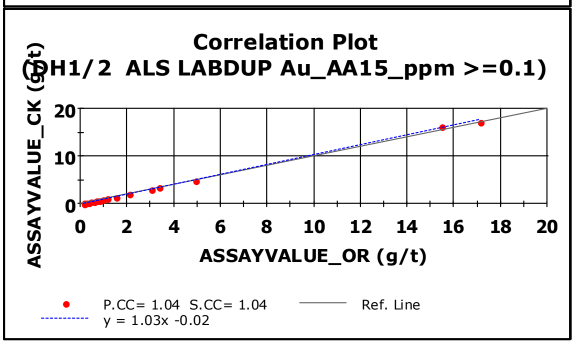


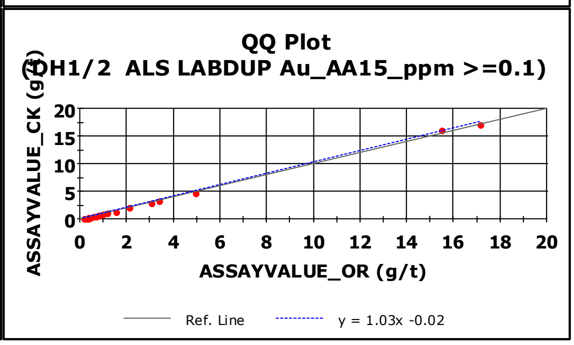












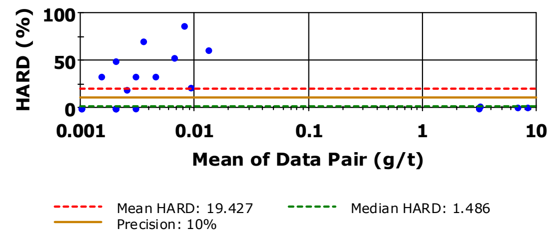
Printed: 11-May-2018 16:08:20 Data Edited: 09-May-2018 19:47:34 Page 1

RUPERT RESOURCES

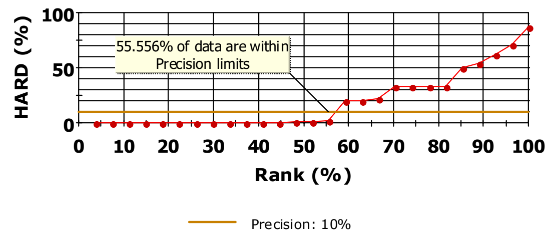
Summary
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	27	27			Pearson CC:	1.038
Minimum:	0.001	0.001	g/t		Spearman CC:	0.818
Maximum:	8.090	8.190	g/t		Mean HARD:	19.427
Mean:	0.783	0.785	g/t		Median HARD:	1.486
Median	0.002	0.002	g/t			
Std. Deviation:	2.059	2.057	g/t		Mean HRD:	2.041
Coefficient of Variation:	2.628	2.620			Median HRD	0.000

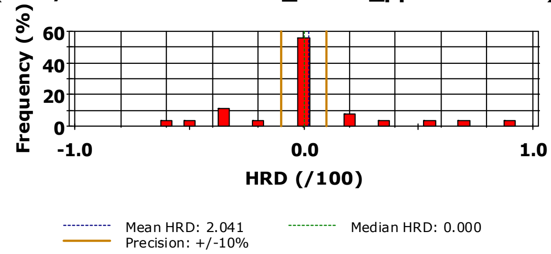
Mean vs. HARD Plot
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



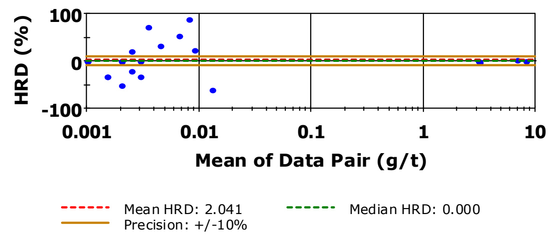
Rank HARD Plot
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



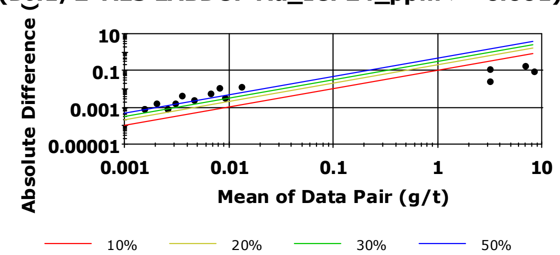
HRD Histogram
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



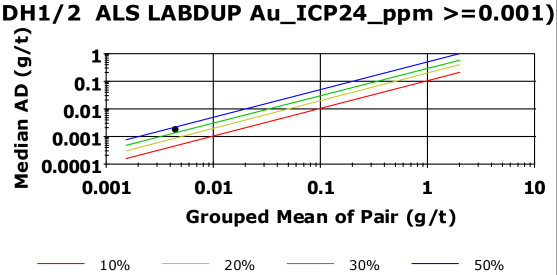
Mean vs. HRD Plot
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



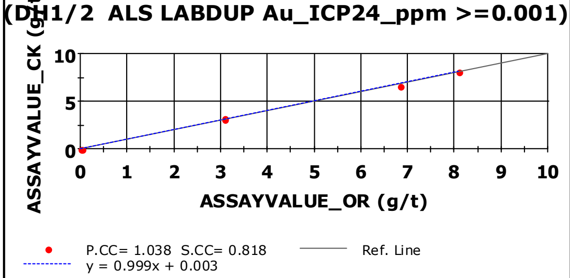
T & H Precision Plot (Assay Pairs)
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



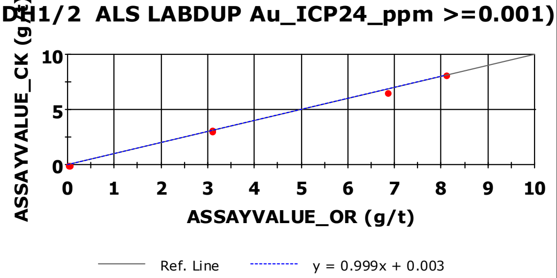
T & H Precision Plot (Grouped Pairs)
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



Correlation Plot
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)



QQ Plot
(DH1/2 ALS LABDUP Au_ICP24_ppm >=0.001)

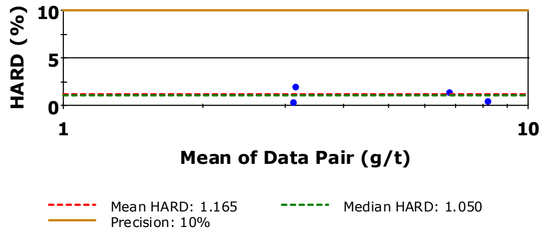


Printed: 11-May-2018 16:22:39 Data Edited: 09-May-2018 19:47:34 Page 1

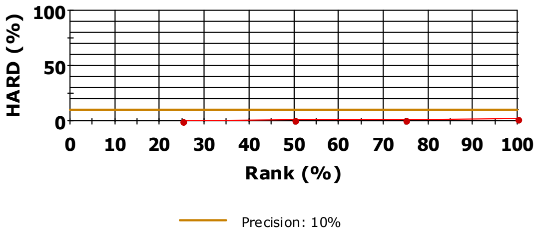
Summary
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	4	4			Pearson CC:	1.331
Minimum:	3.070	3.110	g/t		Spearman CC:	1.067
Maximum:	8.090	8.190	g/t		Mean HARD:	1.165
Mean:	5.268	5.283	g/t		Median HARD:	1.050
Median	4.955	4.915	g/t			
Std. Deviation:	2.237	2.198	g/t		Mean HRD:	-0.422
Coefficient of Variation:	0.425	0.416			Median HRD	-0.549

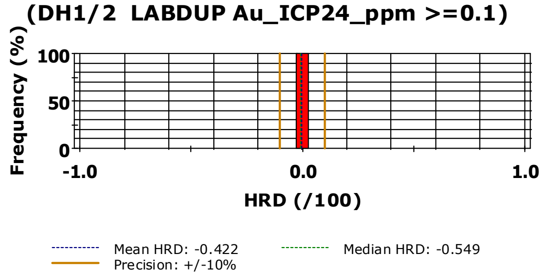
Mean vs. HARD Plot
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)



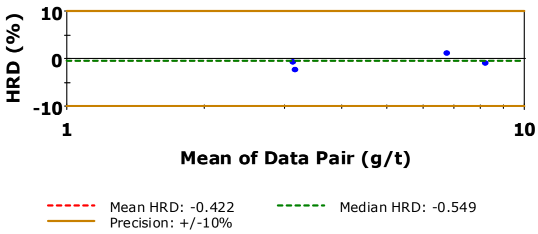
Rank HARD Plot
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)



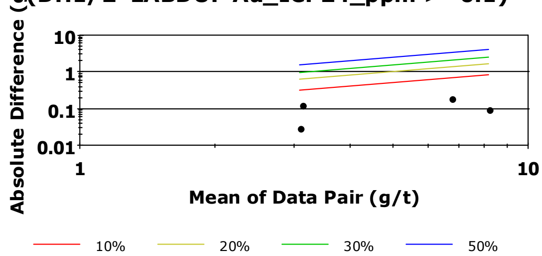
HRD Histogram
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)



Mean vs. HRD Plot
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)



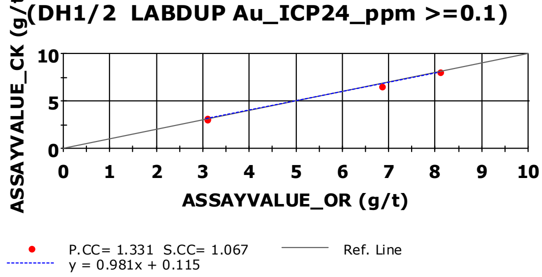
T & H Precision Plot (Assay Pairs)
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)



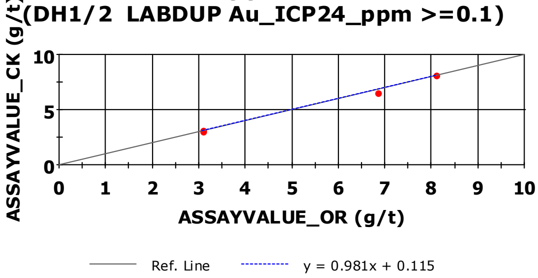
T & H Precision Plot (Grouped Pairs)
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)

There is not enough data to generate this plot.

Correlation Plot
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)



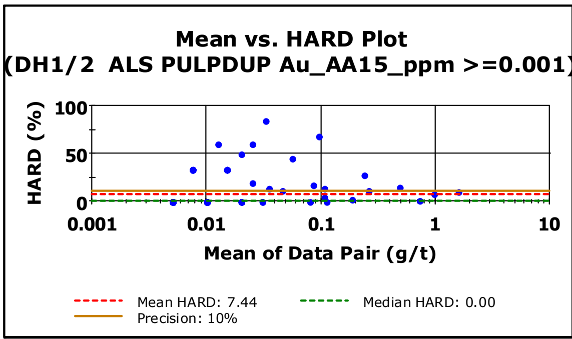
QQ Plot
(DH1/2 LABDUP Au_ICP24_ppm >=0.1)

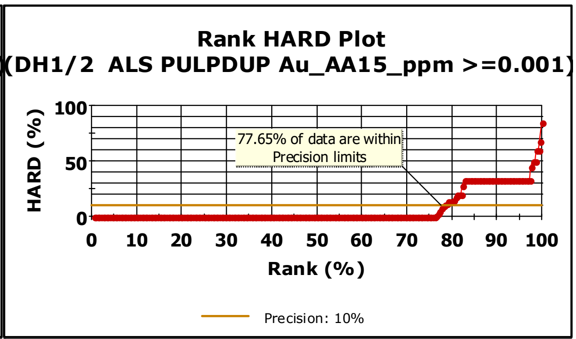


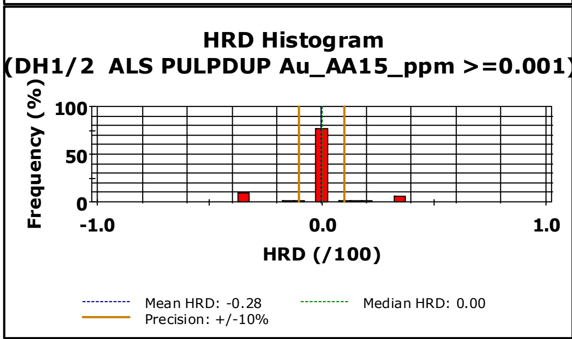
Printed: 11-May-2018 16:32:15 Data Edited: 09-May-2018 19:47:34 Page 1

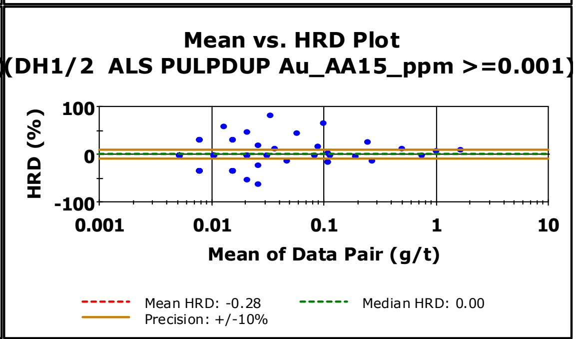
Summary
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.001)

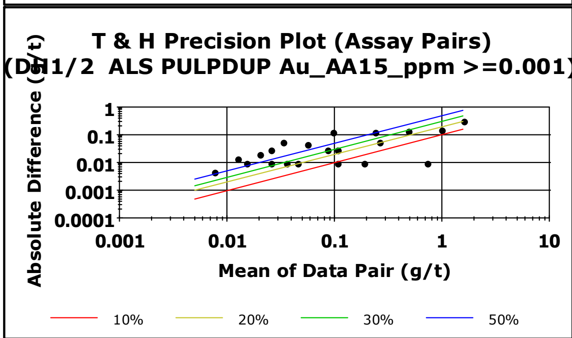
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	255	255			Pearson CC:	1.00
Minimum:	0.01	0.01	g/t		Spearman CC:	0.92
Maximum:	1.74	1.41	g/t		Mean HARD:	7.44
Mean:	0.03	0.03	g/t		Median HARD:	0.00
Median	0.01	0.01	g/t			
Std. Deviation:	0.14	0.12	g/t		Mean HRD:	-0.28
Coefficient of Variation:	4.59	4.30			Median HRD	0.00

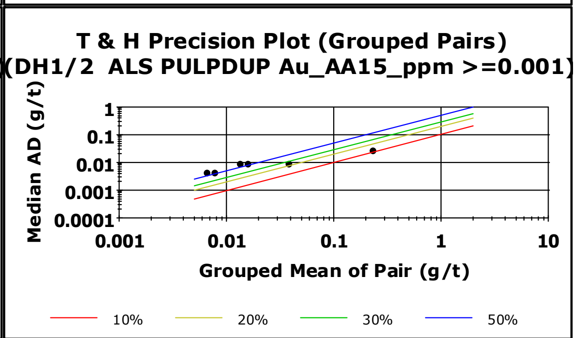


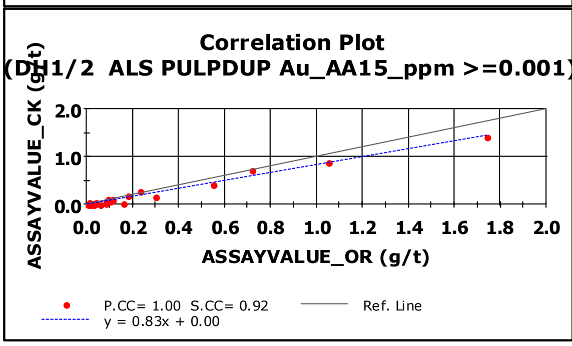


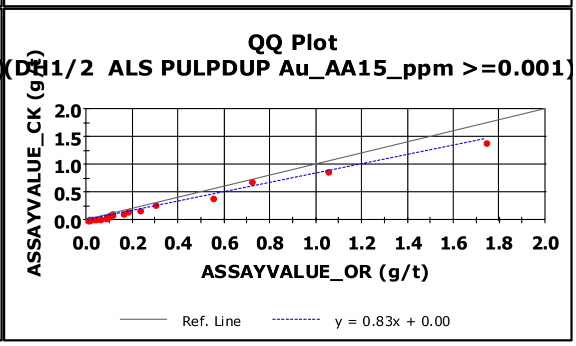












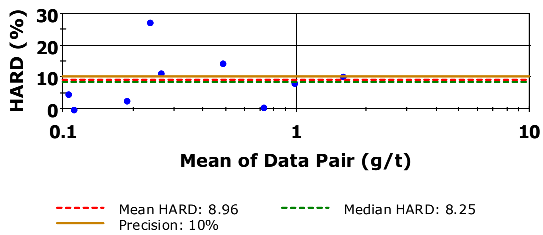
Printed: 11-May-2018 16:04:39 Data Edited: 09-May-2018 19:47:34 Page 1

RUPERT RESOURCES

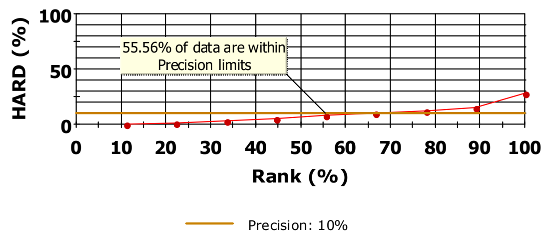
Summary
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	9	9			Pearson CC:	1.11
Minimum:	0.11	0.10	g/t		Spearman CC:	1.07
Maximum:	1.74	1.41	g/t		Mean HARD:	8.96
Mean:	0.55	0.48	g/t		Median HARD:	8.25
Median	0.30	0.29	g/t			
Std. Deviation:	0.51	0.42	g/t		Mean HRD:	5.80
Coefficient of Variation:	0.93	0.88			Median HRD	4.76

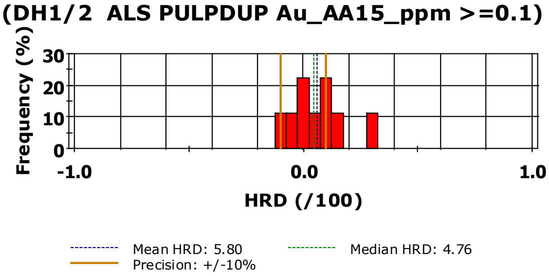
Mean vs. HARD Plot
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)



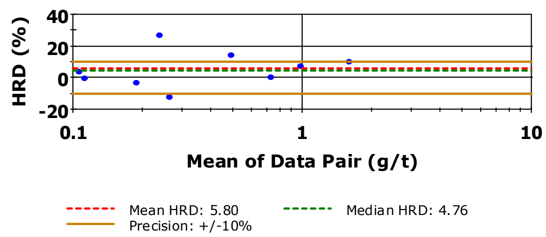
Rank HARD Plot
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)



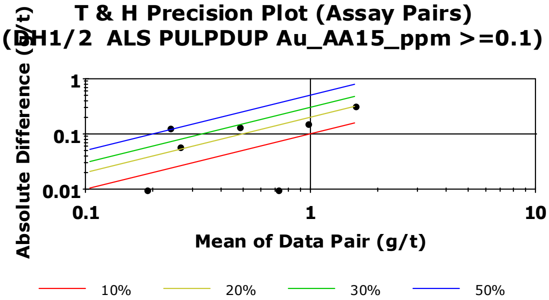
HRD Histogram
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)



Mean vs. HRD Plot
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)



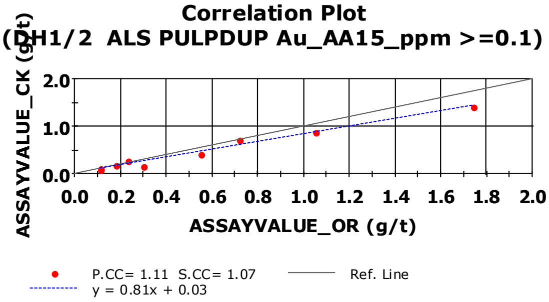
T & H Precision Plot (Assay Pairs)
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)



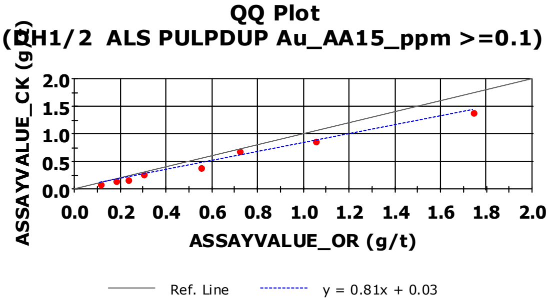
T & H Precision Plot (Grouped Pairs)
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)

There is not enough data to generate this plot.

Correlation Plot
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)



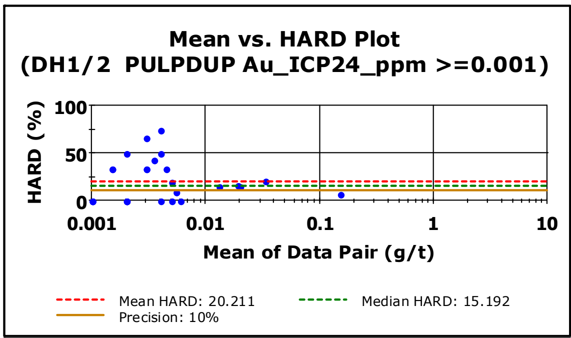
QQ Plot
(DH1/2 ALS PULPDUP Au_AA15_ppm >=0.1)

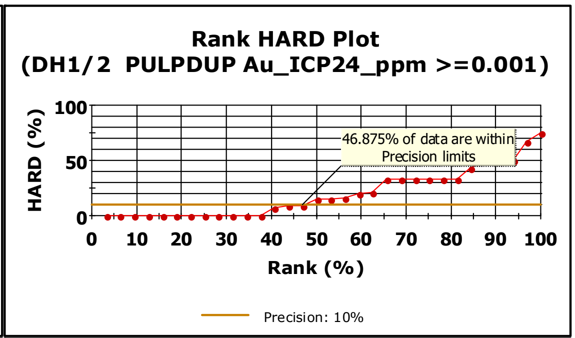


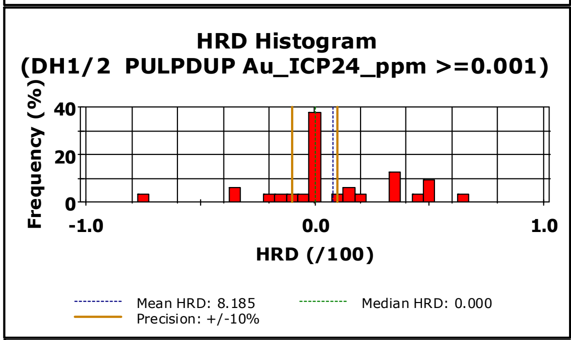
Printed: 11-May-2018 16:09:44 Data Edited: 09-May-2018 19:47:34 Page 1

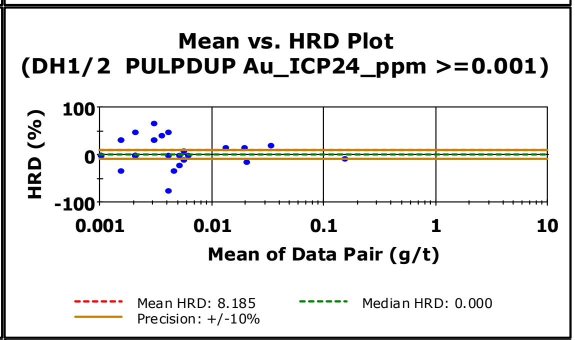
Summary
(DH1/2 PULPDUP Au_ICP24_ppm >=0.001)

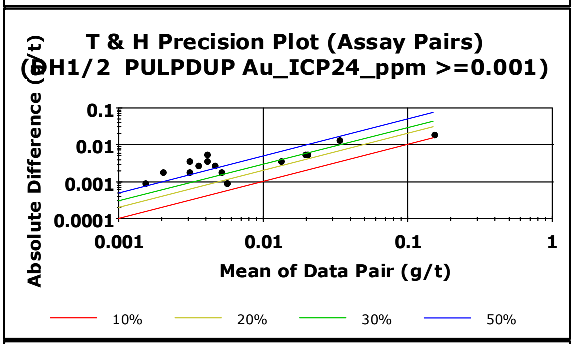
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	32	32			Pearson CC:	1.020
Minimum:	0.001	0.001	g/t		Spearman CC:	0.864
Maximum:	0.140	0.160	g/t		Mean HARD:	20.211
Mean:	0.010	0.010	g/t		Median HARD:	15.192
Median	0.004	0.002	g/t			
Std. Deviation:	0.025	0.028	g/t		Mean HRD:	8.185
Coefficient of Variation:	2.460	2.845			Median HRD	0.000

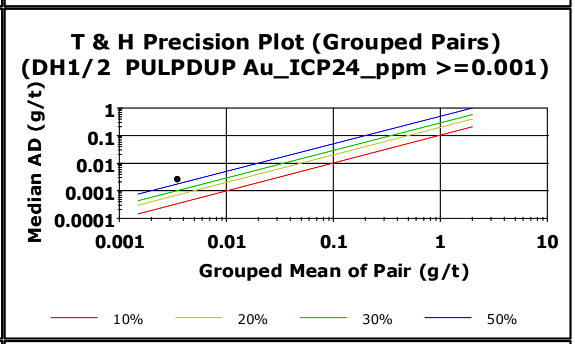


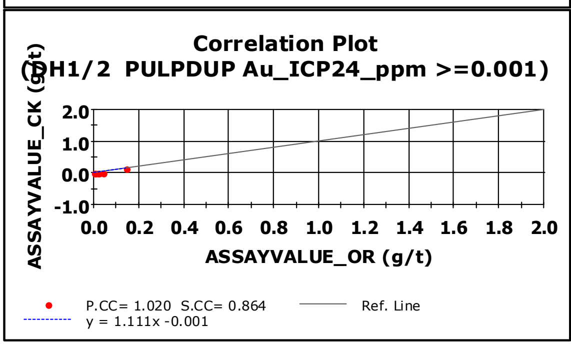


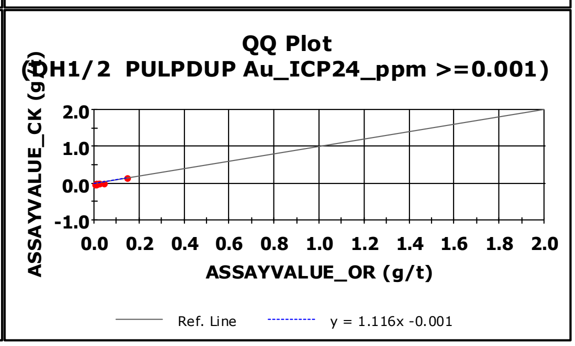












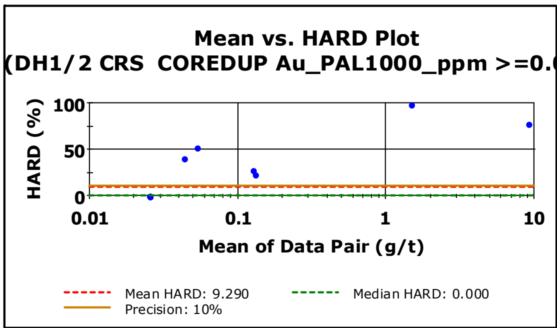
Printed: 11-May-2018 16:24:08 Data Edited: 09-May-2018 19:47:34 Page 1

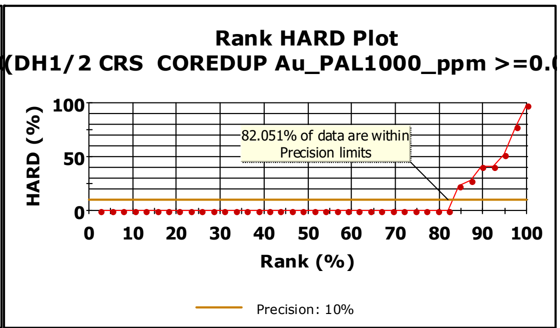
Appendix 6

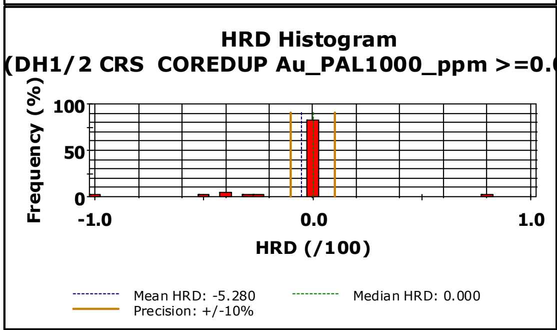
Sample Pairs submitted to CRS

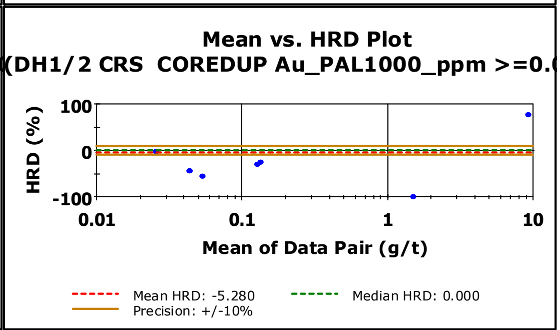
Summary
(DH1/2 CRS COREDUP Au_PAL1000_ppm >=0.001)

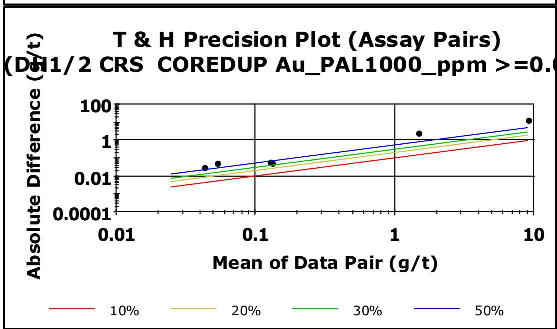
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	39	39			Pearson CC:	0.557
Minimum:	0.025	0.025	g/t		Spearman CC:	0.470
Maximum:	16.100	2.910	g/t		Mean HARD:	9.290
Mean:	0.441	0.159	g/t		Median HARD:	0.000
Median	0.025	0.025	g/t			
Std. Deviation:	2.540	0.542	g/t		Mean HRD:	-5.280
Coefficient of Variation:	5.763	3.408			Median HRD	0.000

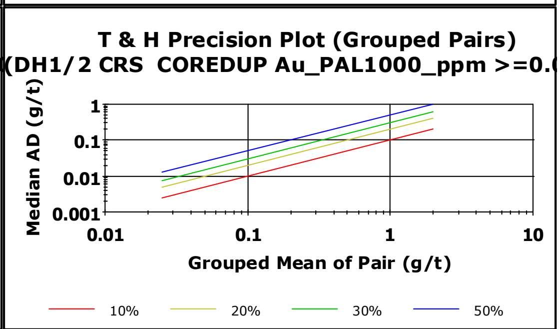


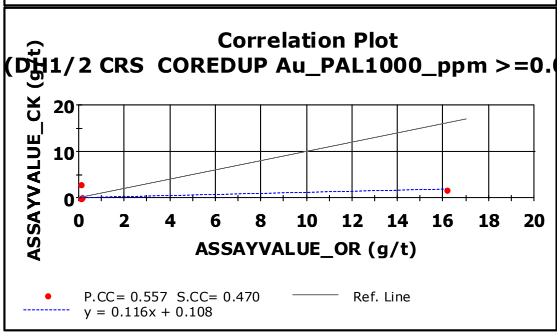


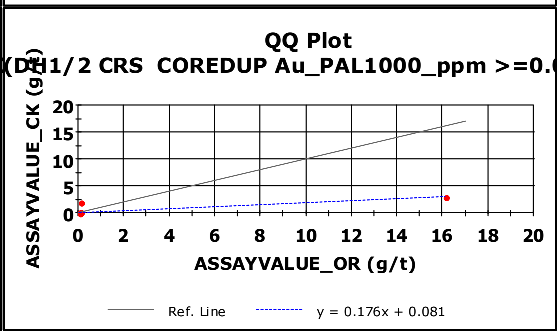








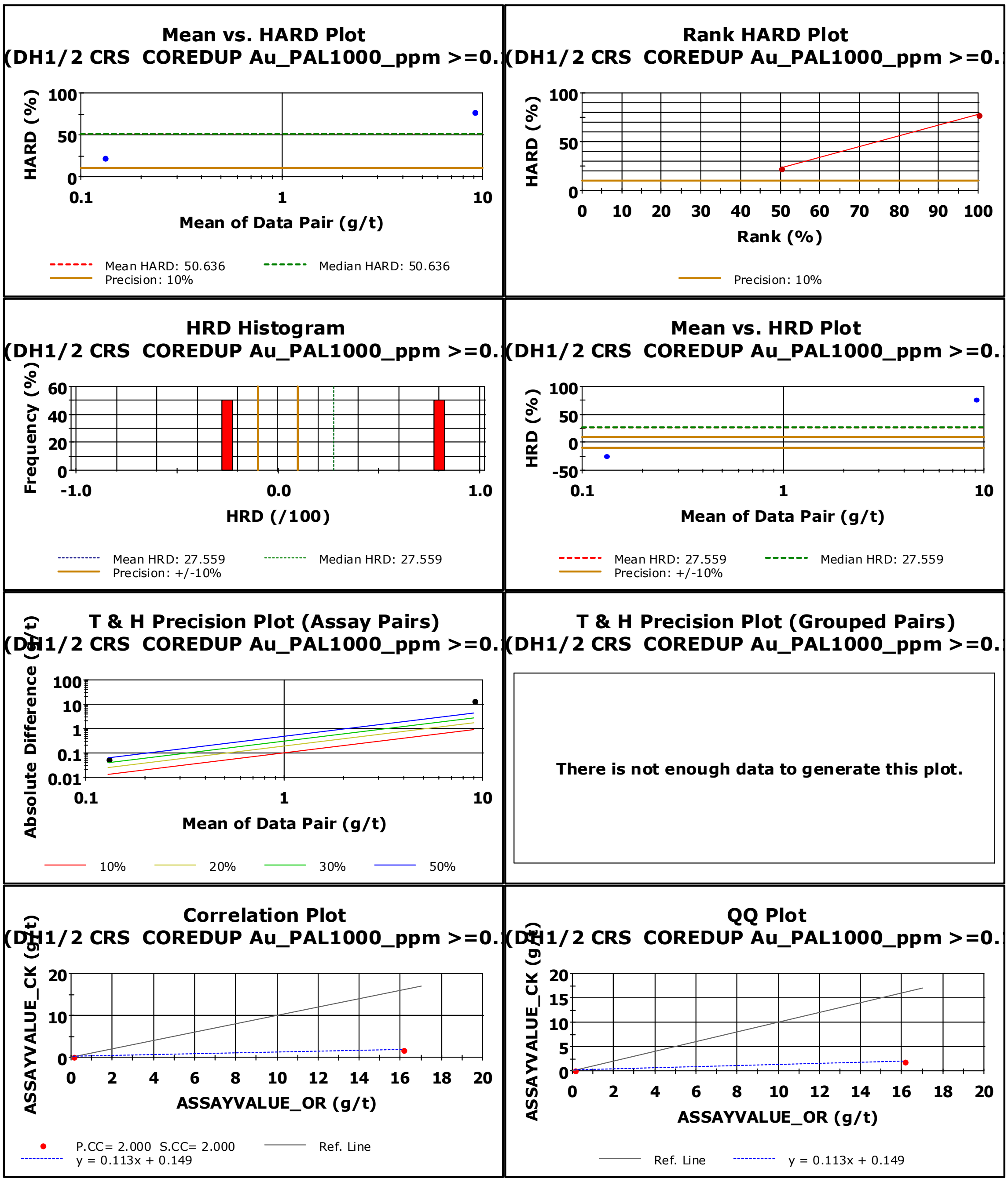




Printed: 11-May-2018 16:40:06   Data Edited: 09-May-2018 19:47:34   Page 1

Summary
(DH1/2 CRS COREDUP Au_PAL1000_ppm >=0.1)

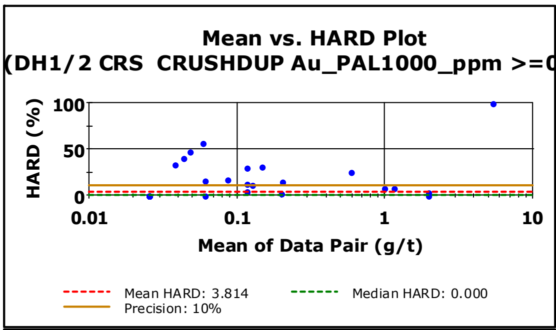
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	2	2			Pearson CC:	2.000
Minimum:	0.100	0.160	g/t		Spearman CC:	2.000
Maximum:	16.100	1.970	g/t		Mean HARD:	50.636
Mean:	8.100	1.065	g/t		Median HARD:	50.636
Median	8.100	1.065	g/t			
Std. Deviation:	8.000	0.905	g/t		Mean HRD:	27.559
Coefficient of Variation:	0.988	0.850			Median HRD	27.559

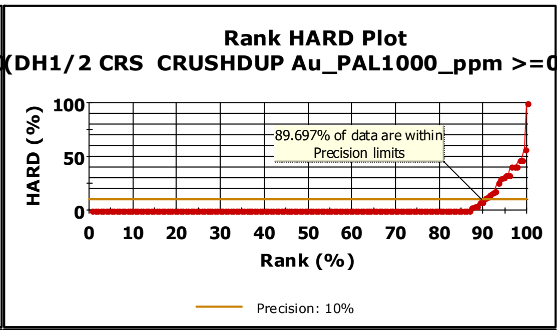


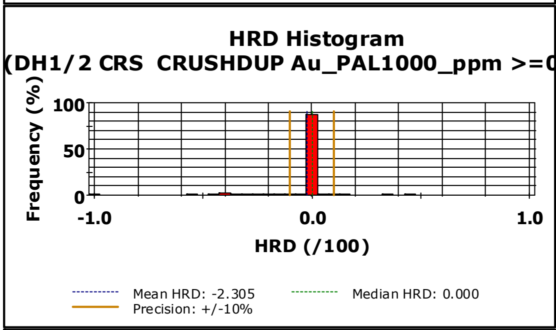
Printed: 11-May-2018 16:48:03   Data Edited: 09-May-2018 19:47:34   Page 1

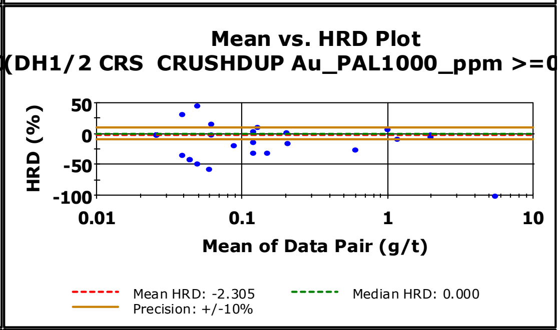
Summary
(DH1/2 CRS CRUSHDUP Au_PAL1000_ppm >=0.001)

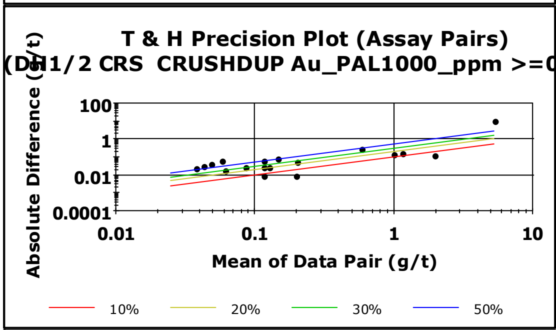
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	165	165			Pearson CC:	0.274
Minimum:	0.025	0.025	g/t		Spearman CC:	0.418
Maximum:	1.930	10.600	g/t		Mean HARD:	3.814
Mean:	0.068	0.137	g/t		Median HARD:	0.000
Median	0.025	0.025	g/t			
Std. Deviation:	0.234	0.853	g/t		Mean HRD:	-2.305
Coefficient of Variation:	3.436	6.209			Median HRD	0.000

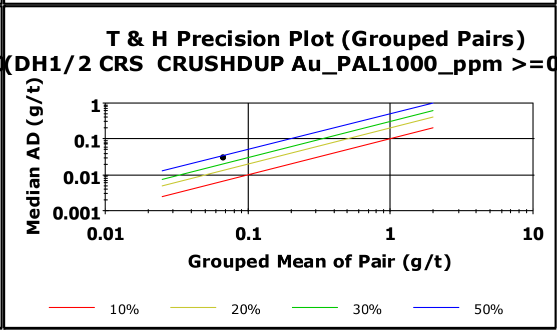


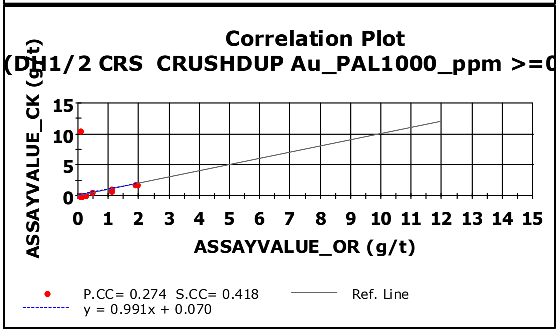


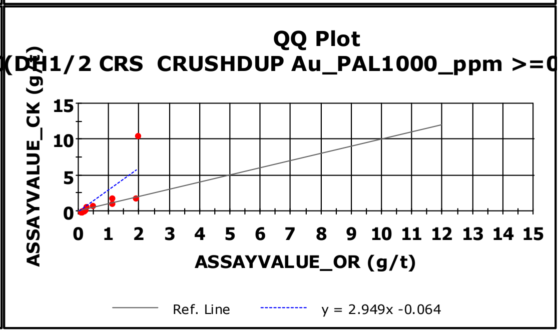








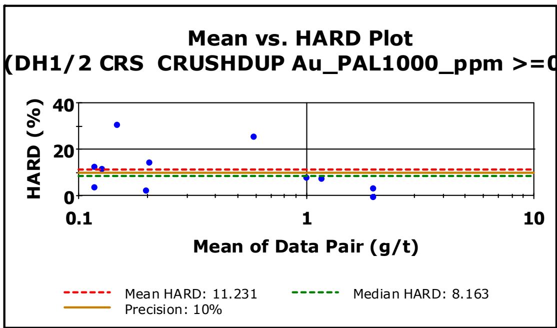


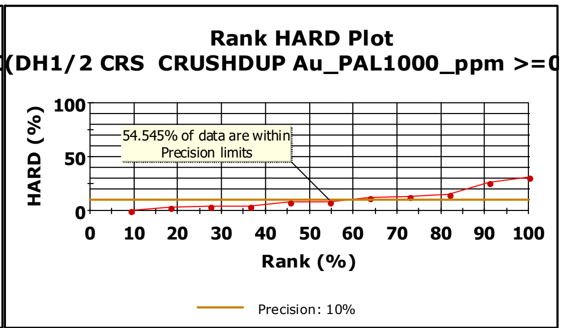


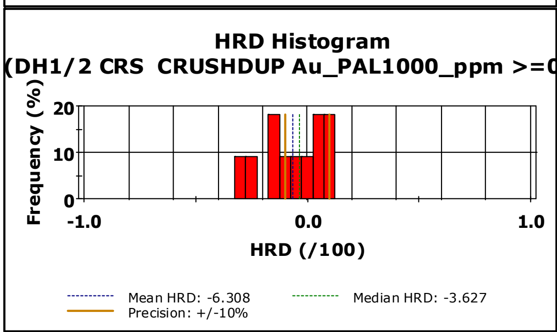
Printed: 11-May-2018 16:43:02   Data Edited: 09-May-2018 19:47:34   Page 1

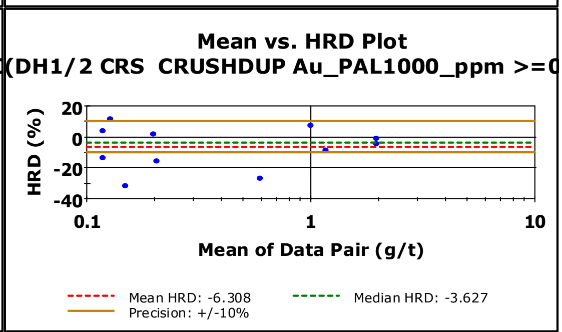
Summary
(DH1/2 CRS CRUSHDUP Au_PAL1000_ppm >=0.1)

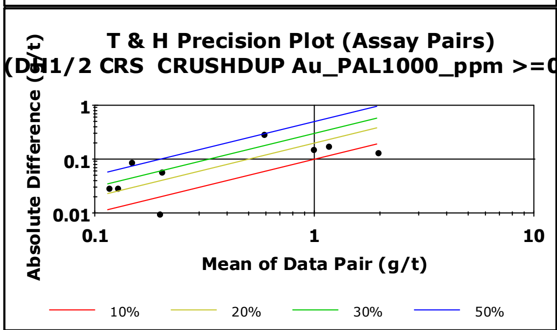
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	11	11			Pearson CC:	1.084
Minimum:	0.100	0.110	g/t		Spearman CC:	0.990
Maximum:	1.930	2.000	g/t		Mean HARD:	11.231
Mean:	0.651	0.705	g/t		Median HARD:	8.163
Median	0.200	0.230	g/t			
Std. Deviation:	0.678	0.693	g/t		Mean HRD:	-6.308
Coefficient of Variation:	1.042	0.984			Median HRD	-3.627





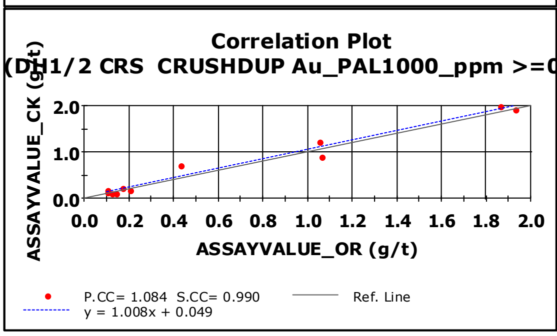


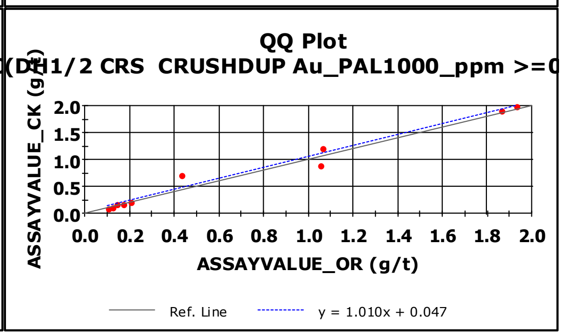




T & H Precision Plot (Grouped Pairs)
(DH1/2 CRS CRUSHDUP Au_PAL1000_ppm >=0

There is not enough data to generate this plot.

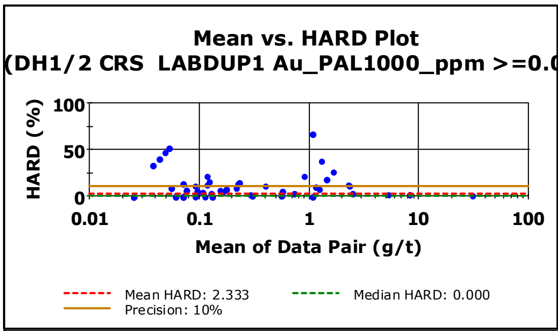


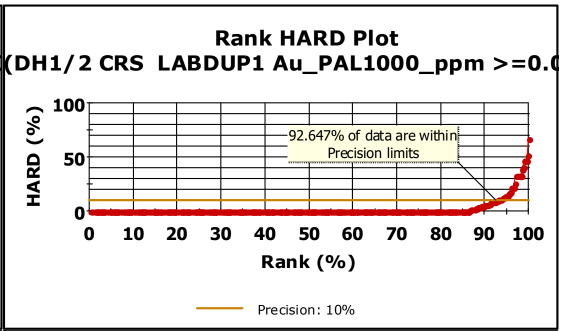


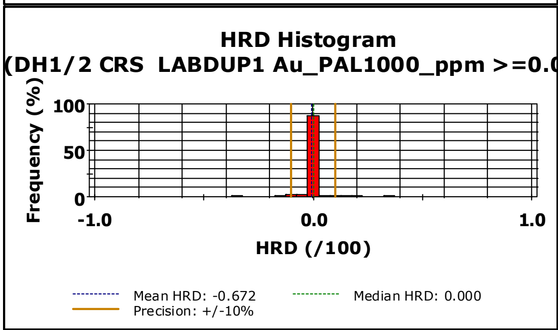
Printed: 11-May-2018 16:48:53   Data Edited: 09-May-2018 19:47:34   Page 1

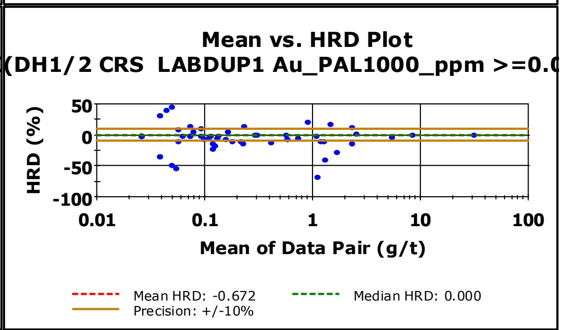
Summary
(DH1/2 CRS LABDUP1 Au_PAL1000_ppm >=0.001)

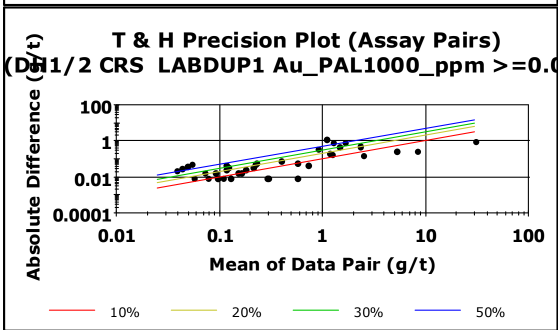
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	340	340			Pearson CC:	1.000
Minimum:	0.025	0.025	g/t		Spearman CC:	0.434
Maximum:	30.600	29.570	g/t		Mean HARD:	2.333
Mean:	0.214	0.220	g/t		Median HARD:	0.000
Median	0.025	0.025	g/t			
Std. Deviation:	1.753	1.703	g/t		Mean HRD:	-0.672
Coefficient of Variation:	8.181	7.736			Median HRD	0.000

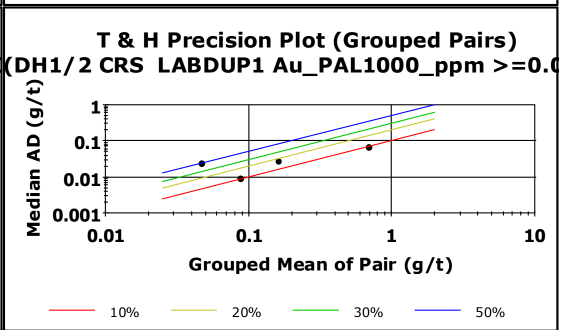


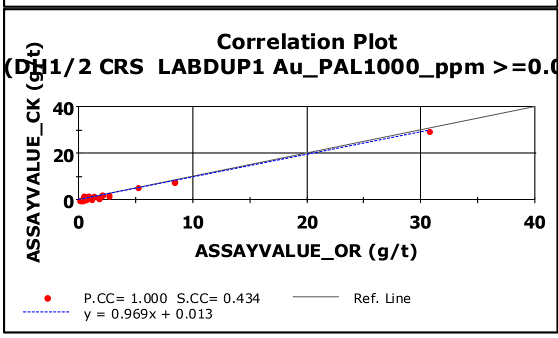


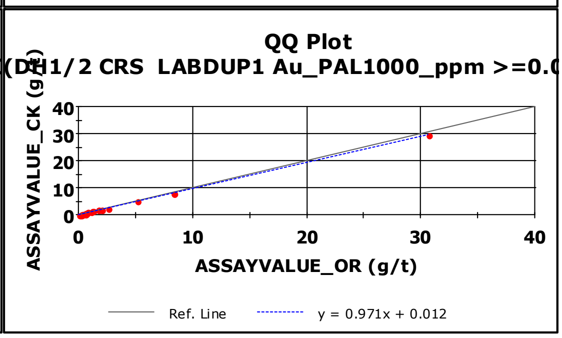








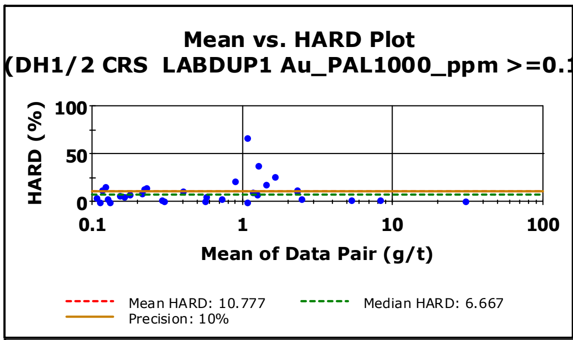


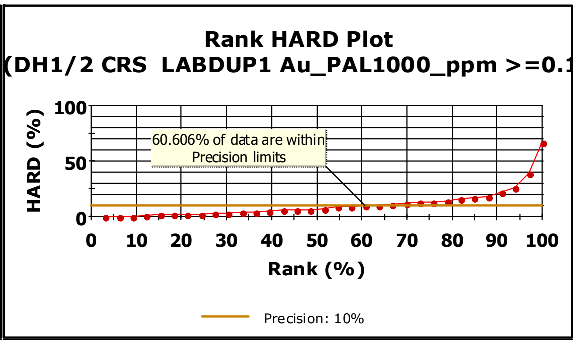


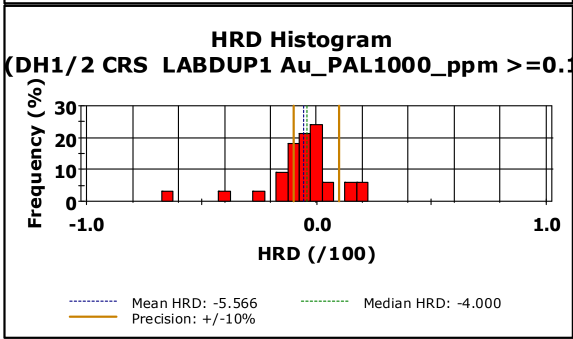
Printed: 11-May-2018 16:44:32   Data Edited: 09-May-2018 19:47:34   Page 1

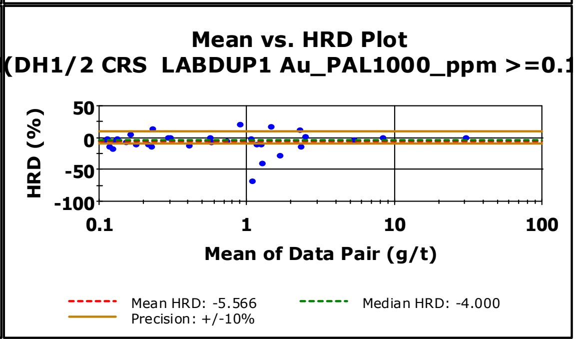
Summary
(DH1/2 CRS LABDUP1 Au_PAL1000_ppm >=0.1)

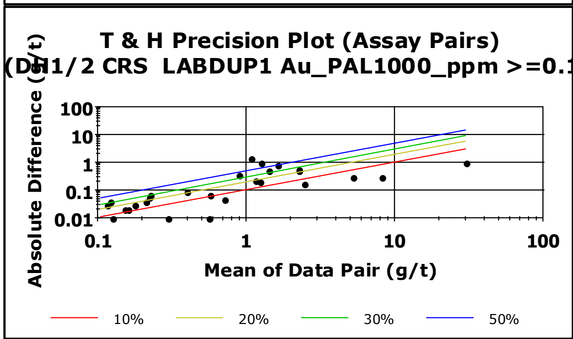
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	33	33			Pearson CC:	1.028
Minimum:	0.100	0.110	g/t		Spearman CC:	0.993
Maximum:	30.600	29.570	g/t		Mean HARD:	10.777
Mean:	1.950	2.009	g/t		Median HARD:	6.667
Median	0.530	0.600	g/t			
Std. Deviation:	5.321	5.132	g/t		Mean HRD:	-5.566
Coefficient of Variation:	2.728	2.554			Median HRD	-4.000

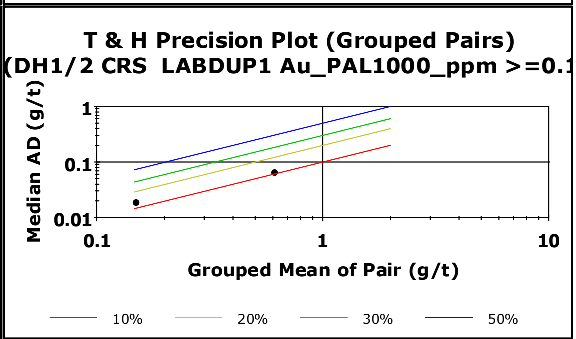


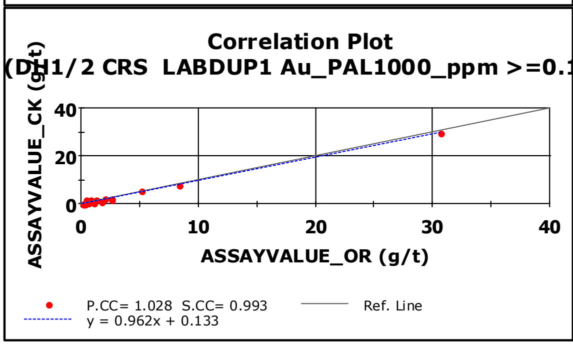


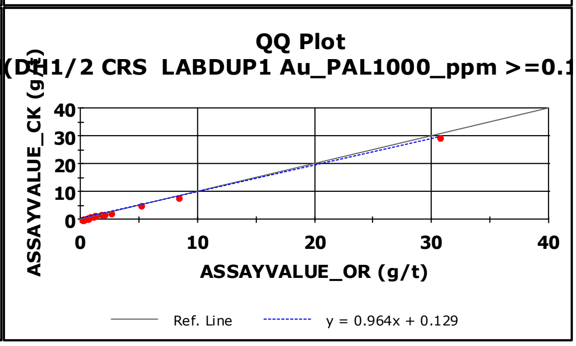








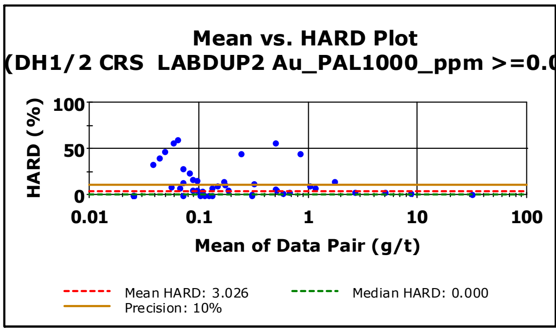


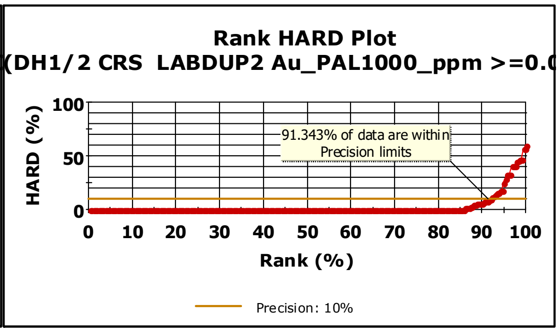


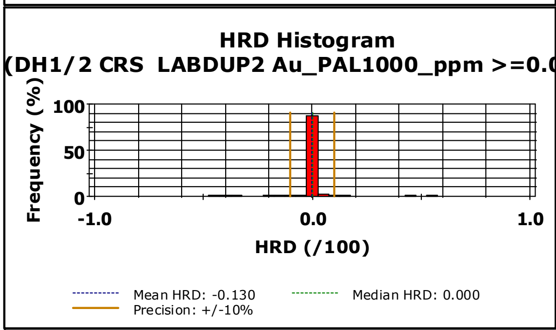
Printed: 11-May-2018 16:50:11   Data Edited: 09-May-2018 19:47:34   Page 1

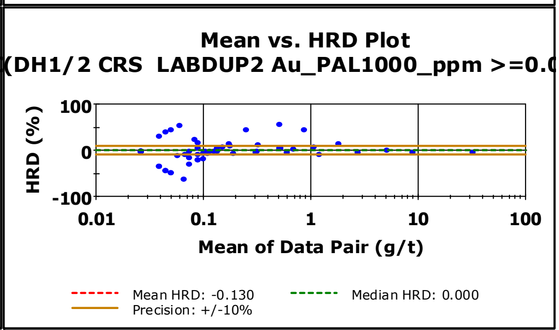
Summary
(DH1/2 CRS LABDUP2 Au_PAL1000_ppm >=0.001)

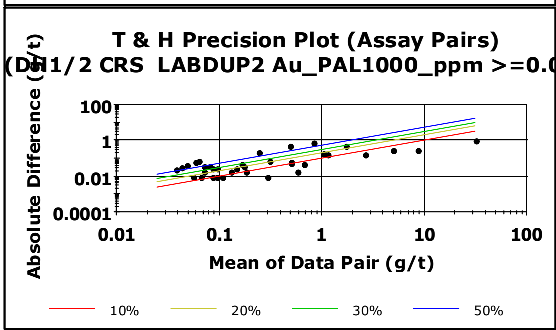
	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	335	335			Pearson CC:	1.002
Minimum:	0.025	0.025	g/t		Spearman CC:	0.435
Maximum:	30.600	31.620	g/t		Mean HARD:	3.026
Mean:	0.198	0.195	g/t		Median HARD:	0.000
Median	0.025	0.025	g/t			
Std. Deviation:	1.758	1.811	g/t		Mean HRD:	-0.130
Coefficient of Variation:	8.888	9.290			Median HRD	0.000

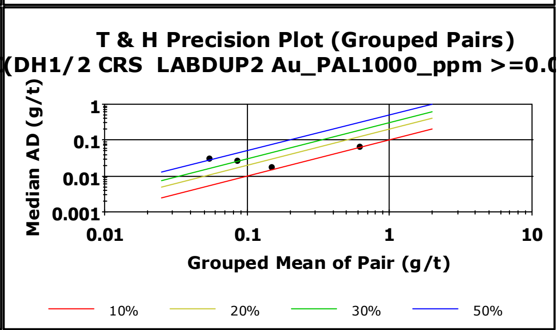


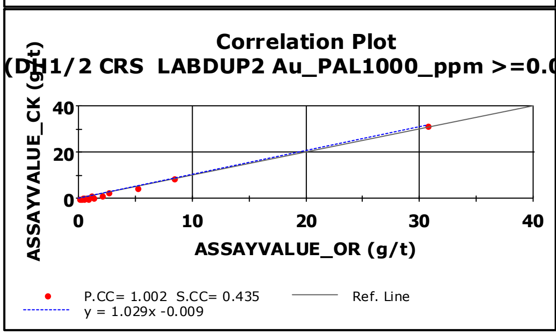


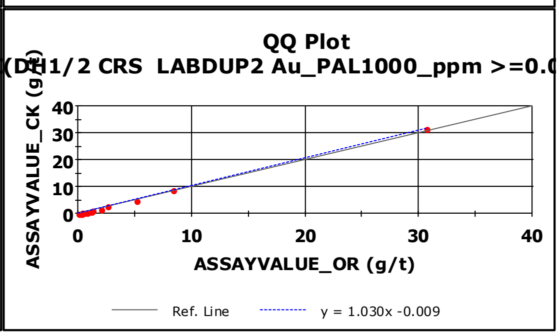








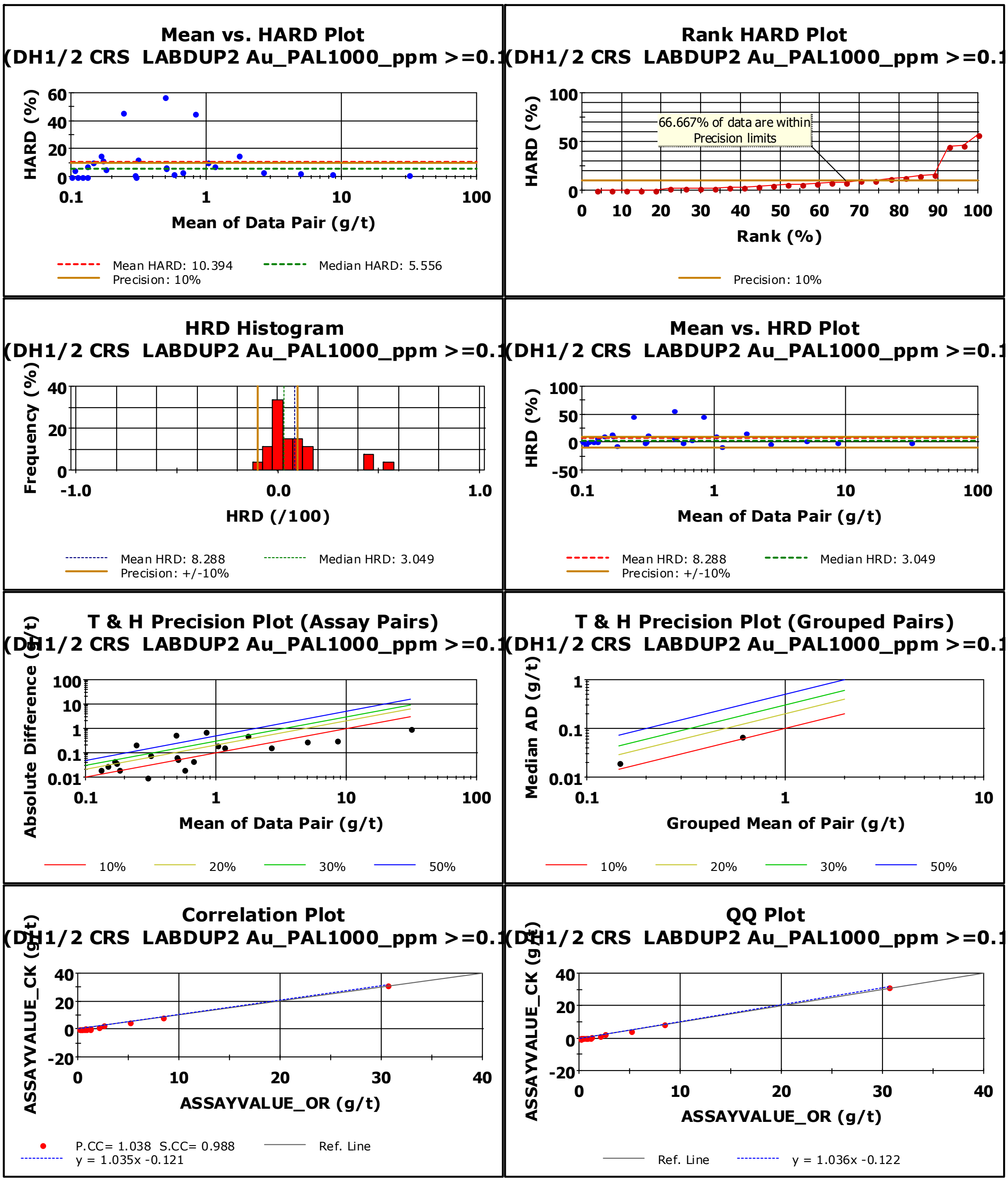




Printed: 11-May-2018 16:45:39   Data Edited: 09-May-2018 19:47:34   Page 1

Summary
(DH1/2 CRS LABDUP2 Au_PAL1000_ppm >=0.1)

	ASSAYVALUE_OR	ASSAYVALUE_CK	Units			Result
No. Pairs:	27	27			Pearson CC:	1.038
Minimum:	0.100	0.100	g/t		Spearman CC:	0.988
Maximum:	30.600	31.620	g/t		Mean HARD:	10.394
Mean:	2.136	2.091	g/t		Median HARD:	5.556
Median	0.350	0.300	g/t			
Std. Deviation:	5.853	6.065	g/t		Mean HRD:	8.288
Coefficient of Variation:	2.740	2.901			Median HRD	3.049



Printed: 11-May-2018 16:51:23 Data Edited: 09-May-2018 19:47:34 Page 1