



BC Geological Survey  
Assessment Report  
38526



Ministry of Energy, Mines & Petroleum Resources  
Mining & Minerals Division  
BC Geological Survey

Assessment Report  
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Drilling

TOTAL COST: 321,432.06

AUTHOR(S): Jillian Christmann

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): MX6-3

YEAR OF WORK: 2019

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5748529, 5758933

PROPERTY NAME: Bull River

CLAIM NAME(S) (on which the work was done): 1048938

COMMODITIES SOUGHT: Cu, Ag, Au

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: MINFILE 082GSW015

MINING DIVISION: Fort Steele

NTS/BCGS: 082G/06; 082G/11

LATITUDE: 49 ° 30 'N " LONGITUDE: 115 ° 23 'W " (at centre of work)

OWNER(S):

1) Braveheart Resources Inc 2)

MAILING ADDRESS:

2520-16 St NW

Calgary, Alberta T2M 3RZ

OPERATOR(S) [who paid for the work]:

1) Braveheart Resources Inc 2)

MAILING ADDRESS:

2520-16 St NW

Calgary, Alberta T2M 3RZ

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Dalton Mine, Aldridge, Proterozoic, Purcell Supergroup, Empire Strathcona, Siderite, Quartz, Chalcopyrite, Pyrite, Pyrrhotite

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 11681, 10570, 7086, 37983

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping	_____		
Photo interpretation	_____		
<b>GEOPHYSICAL (line-kilometres)</b>			
<b>Ground</b>			
Magnetic	_____		
Electromagnetic	_____		
Induced Polarization	_____		
Radiometric	_____		
Seismic	_____		
Other	_____		
<b>Airborne</b>	_____		
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil	_____		
Silt	_____		
Rock	_____		
Other	_____		
<b>DRILLING (total metres; number of holes, size)</b>			
Core	1388.61m; 14; NQ2	1048938	321,432.06
Non-core	_____		
<b>RELATED TECHNICAL</b>			
Sampling/assaying	_____		
Petrographic	_____		
Mineralographic	_____		
Metallurgic	_____		
<b>PROSPECTING (scale, area)</b>			
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)	_____		
Topographic/Photogrammetric (scale, area)	_____		
Legal surveys (scale, area)	_____		
Road, local access (kilometres)/trail	_____		
Trench (metres)	_____		
Underground dev. (metres)	_____		
Other	_____		
		<b>TOTAL COST:</b>	<b>321,432.06</b>

# Technical Report for the Bull River Mine Property

## Empire Strathcona Claims Report

Latitude 49° 22'N, Longitude 115° 11'W

Mapsheets 82G/11 and 82G/06

Ft. Steele Mining Division

Prepared on behalf of:

Braveheart Resources Inc.

2520 – 16 St. NW

Calgary, Alberta, Canada

T2M 3R2

Prepared by:

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Box 845

Cranbrook, British Columbia, Canada

V1C 4J6

October 15, 2019

## Summary

Braveheart Resources Inc., (“Braveheart”) holds 100% ownership of the Bull River Mine Property (the “Property”). The Property is located approximately 30.0 km east of the city of Cranbrook and 30.0 km north of the town of Elko along the eastern flank of the Rocky Mountain Trench at the base of the Hughes and Lizard Ranges in southeastern British Columbia. The Ft. Steele-Wardner road, Bull River road, along with subsidiary gravel roads and Forest Service Roads (FSR) provide access to a large portion of the Property including the mill site, the past producing mine, the Deposit, and numerous other prospective mineral occurrences.

Ross Stanfield purchased the assets of the Dalton Mine from Placid on March 5th, 1976 and transferred the assets to Bull River under incorporation on March 17th, 1976. In January 2019, all of the mining properties were transferred and are now owned 100% by Braveheart Resources Inc (<http://www.braveheartresourcesinc.com/>)

The Property currently includes 25 contiguous MTO Mineral Claims with a total area of 10,374 ha in the Ft. Steele Mining Division.

The Property is located within the Belt-Purcell Basin, a Meso-Proterozoic intracontinental rift filled by marine and fluvial sediments that comprise the Belt-Purcell Supergroup. Approximately 10% of the exposed area of Belt-Purcell Basin can be found in Canada, where it is referred to as the Purcell Basin and Purcell Supergroup (Lydon, 2007). The Belt-Purcell Basin is flanked by Upper Proterozoic Windermere Group or Paleozoic sedimentary rocks (Höy et al., 2000). The Aldridge Formation defines the base of the Purcell Supergroup. Within an approximate 30.0 km radius of Cranbrook, British Columbia, the Aldridge Formation also hosts the world class Sullivan deposit as well as the Estella, Kootenay King, and St. Eugene mineral deposits (Allen, 1989).

The Property, and more specifically the past producing mine and many of the numerous mineral occurrences, are underlain by the Purcell Supergroup, a thick sequence of terrigenous clastic, carbonate and minor volcanic rocks of Middle Proterozoic age (Höy, 1993). The Aldridge Formation is characterized by thick successions of graded sandy turbidites and interbedded laminated siltstones and argillites. The turbidites are intruded by the dioritic to gabbroic Moyie sills and dykes. To the east, the Upper Aldridge

rocks, composed of argillites and siltites, overlie the turbidites. Mineralization hosted within Aldridge Formation metasedimentary rocks is typically observed as fine-grained pyrite and pyrrhotite, up to several percent, that oxidizes when exposed on surface (Höy et al., 2000). Further east, the Creston Formation is exposed. Creston Formation rocks comprise a shallow water platformal and fan-delta succession of predominantly quartzites and siltites. South of the Bull River, Creston Formation rocks are overlain by Kitchener Formation carbonate rocks. Cretaceous monzonite-dacite stocks, plugs and dikes intrude Purcell Supergroup rocks and younger Paleozoic shallow water sediments (Höy et al., 2000). The southernmost claim group where the work was completed in 2016 is underlain by Precambrian Gateway Formation comprised of siltstone and dolomitic siltstone south of the Hosmer Thrust Fault and is juxtaposed against Paleozoic rocks of the Rundle Formation (Graf, 2014).

The 2019 exploration program was comprised of drilling fourteen surface diamond drill holes on the Empire Strathcona claims between June 11 to July 18, 2019. All work was carried out by Braveheart employees, Lucky Drilling Ltd, and an independent geological contractor.

Total expenditures on the project were \$321,432.06.

The goal of the 2019 exploration drill program was to evaluate the economical potential of the fissure vein system historically reported on the Empire Strathcona claims. Total meterage of the drill program was 1388.61m, from which 210 samples of halved NQ2 sized core samples were collected and sent for analysis to Bureau Veritas Mineral Laboratories, located in Vancouver, B.C.

The Empire Strathcona zone can be characterized by coarse grained interlocking siderite crystals, quartz (sometimes crosscutting) and variable amounts of pyrrhotite, pyrite and chalcopyrite. A footwall stockwork zone of smaller but similar veins, is often seen. The main vein is often highly fractured and sulphides in places are remobilized along fractures. a siderite-quartz-calcite fissure vein system which ranges in thickness from 0.25m-5.5m. This vein system is hosted in the metasedimentary strata of the Aldridge formation and is variably enriched in copper and silver. The vein system was historically exposed along two adits and two rock cuts which are exposed from the top of a sharp ridge at 1417m, intermittently down the steep sidehill to elevation 1204m. Presently, only the rock cuts and the upper adit are accessible. The lower adit is caved.

The drilling program was designed to target the vein below the lowest historical working, the lower adit at 1264m elevation. The program successfully tracked the vein along 80m of strike length and 85m vertical depth. The program was not successful in duplicating historical grades attributed to the adit and mine workings above the 2019 drillhole vein intersects. This may indicate that the mineralization associated with the Empire Strathcona vein system is highly variable both along strike and dip.

The Empire Strathcona zone continues to be a prospect of interest due to its proximity to other similar copper-silver-gold bearing vein systems such as the Rex zone, located 3km along strike of the vein to the west. Further exploration between these zones could result in the discovery of additional zones of mineralization.

Additional work recommended to advance the Empire Strathcona zone are listed below, and are not limited to:

- A drill program at a lower elevation, designed to continue to track the lower extension of the vein system and to determine there is an increase the in the mineralization at depth.
- Excavate and rehabilitate the mid rock cut, which contains a short adit, to sample historical workings and attempt to duplicate historically reported assay values.
- Complete ground geophysics in the valley bottom area between the Empire Strathcona zone and the Rex zone in attempt to define potential geophysical targets between the two zones; followed by greenfield exploration on any discovered targets.

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## Table of Contents

<b>Introduction</b> .....	1
<b>Location and Access</b> .....	1
<b>Tenure</b> .....	4
<b>History and Previous Work</b> .....	6
<b>Geology</b> .....	14
<b>Regional Geology</b> .....	14
<b>Property Geology</b> .....	16
<b>Empire Strathcona Claims Geology</b> .....	17
<b>2019 Field Program</b> .....	19
<b>2019 Sampling and Logging</b> .....	19
<b>Results and Recommendations</b> .....	21
<b>Results</b> .....	21
<b>Recommendations</b> .....	24
<b>References</b> .....	25

## List of Figures

Figure 1 - Property Location Map .....	2
Figure 2- Drill Site Locations.....	3
Figure 3 - Mineral Tenure Map .....	5
Figure 4 - Regional Geology Map .....	15
Figure 5 - Property Geology Map.....	18

## List of Tables

Table 1 – Tenure Summary for the Bull River Mine Property.....	4
Table 2 – History of Exploration and Geological Studies on the Bull River Mine Property .....	8
Table 3 – Summary of Drill Program Intercepts.....	22

## Appendices

Appendix I – Statement of Qualifications	
Appendix II – Statement of Expenditures	
Appendix III – Sample List	
Appendix IV – Drillhole Information	
Appendix V – Drillhole Logs	
Appendix VI – Drillhole Plan and Cross-Sections	
Appendix VII – Analytic Certificates	



## Introduction

### Location and Access

The Property is located approximately 30.0 km east of the city of Cranbrook and 30.0 km north of the town of Elko (Figure 1) in the Regional District of East Kootenay. Access to the Property from Cranbrook is gained by travelling on Highway 3 for approximately 35.0 km, then left onto the Ft. Steele-Wardner Road for approximately 8.0 km, then right onto the Bull River Road for approximately 6.0 km. The company office, mill site and historic mine workings can be accessed at this location.

In 2019, fieldwork was completed by staff from Braveheart, Drill company Lucky Drilling, and another independent geoscience professional on the Empire Strathcona Mineral Claims #1048938. The fieldwork consisted of drilling 14 NQ2 sized drillholes amongst 3 separate drill pads on the claim (Figure 2).

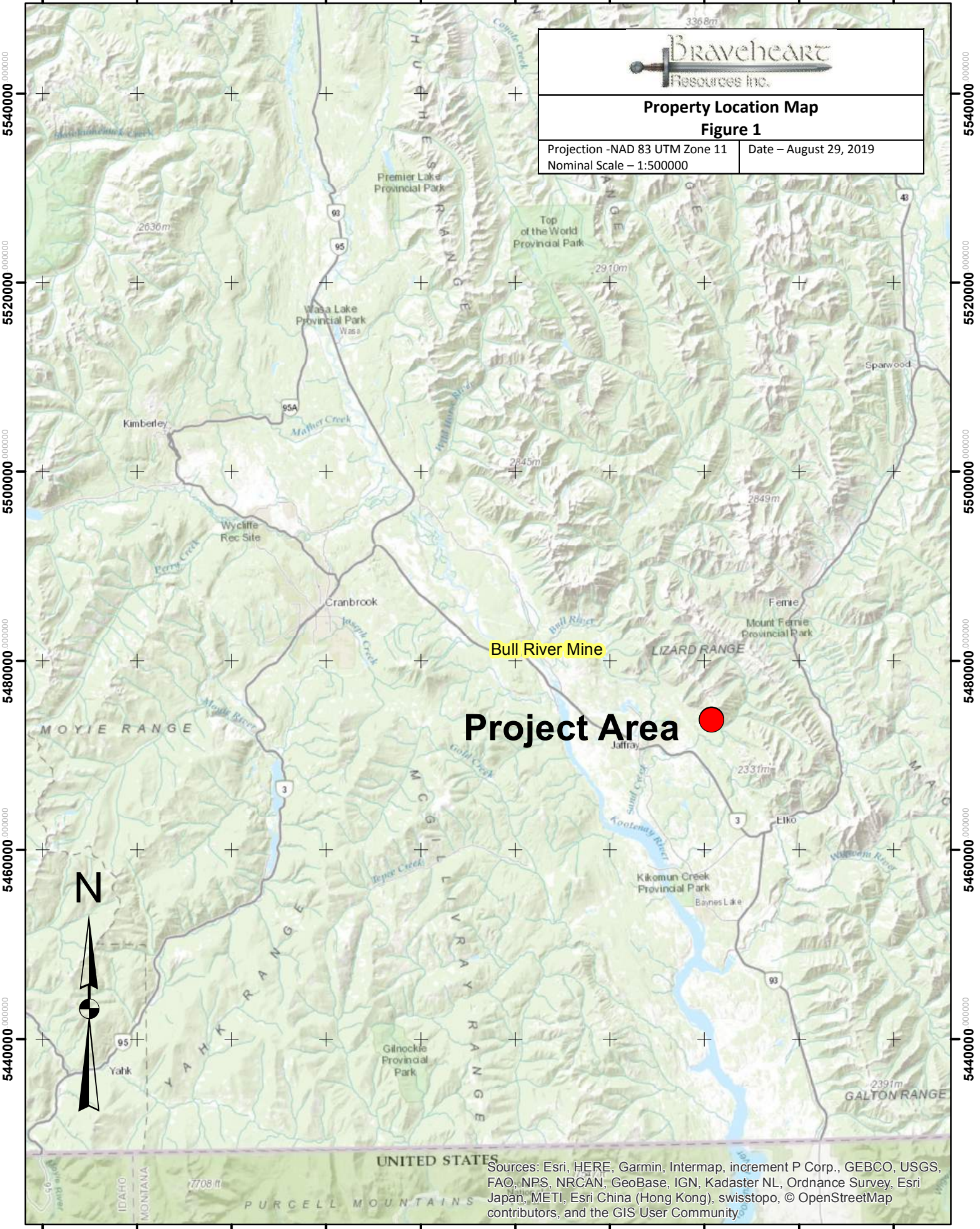
The Property is located in NTS mapsheets 082G/06, and 082G/11, and its core assets are centred at approximately at Latitude 49° 30'N, Longitude 115° 23'W.


The Property lies within the Rocky Mountain Trench at the base of the Hughes Range in southeastern British Columbia. Topography varies significantly and is characterized by gently rolling and subdued topography in the trench to steep, rugged mountain terrain in the Hughes Range. Outcrop is sparse in the valley bottom where Quaternary cover can exceed 200.0 m depth (Dzick and Ghaymghamian, 2013), and exposure increases with elevation to near continuous coverage along mountain tops. Elevations range from approximately 790.0 m to 2,641.0 m above sea level. The Bull River, Sand Creek and related tributaries are the main perennial watercourses draining the property all of which flow into the Kootenay River. Water in the creeks and streams is readily available most of the year.

The property is located within the Interior Douglas Fir and Ponderosa Pine biogeoclimatic zones (British Columbia Ministry of Forests Research Branch). The weather is typical of the Hughes Range, with moderate to dry summers and heavy snowfall at high elevations in the winter. Most of the property (low elevation) is free from snow beginning in April until November, and the road infrastructure allows for year-round drilling operations at lower elevation work sites. The terrain is characterized by open pasture and mature vegetation that is used as forage for domestic cattle, elk, big horn sheep, white tail and mule deer, and grizzly and black bears (Dzick and Ghaymghamian, 2013).

The Property is entirely within the traditional territory of the Ktunaxa First Nation.

560000 570000 580000 590000 600000 610000 620000 630000 640000 650000 2



 <b>Braveheart Resources Inc.</b>	
<b>Property Location Map</b> <b>Figure 1</b>	
Projection -NAD 83 UTM Zone 11 Nominal Scale - 1:500000	Date - August 29, 2019

5540000  
5520000  
5500000  
5480000  
5460000  
5440000

5540000  
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**Project Area**


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

560000 570000 580000 590000 600000 610000 620000 630000 640000 650000



629800 630000 630200 630400 630600 630800 631000 631200 631400 631600 3



 <b>Braveheart Resources Inc.</b>	
<b>Drill Site Locations – Empire Strathcona</b> <b>Figure 2</b>	
Projection -NAD 83 UTM Zone 11	Date – August 29, 2019
Nominal Scale – 1:10000	

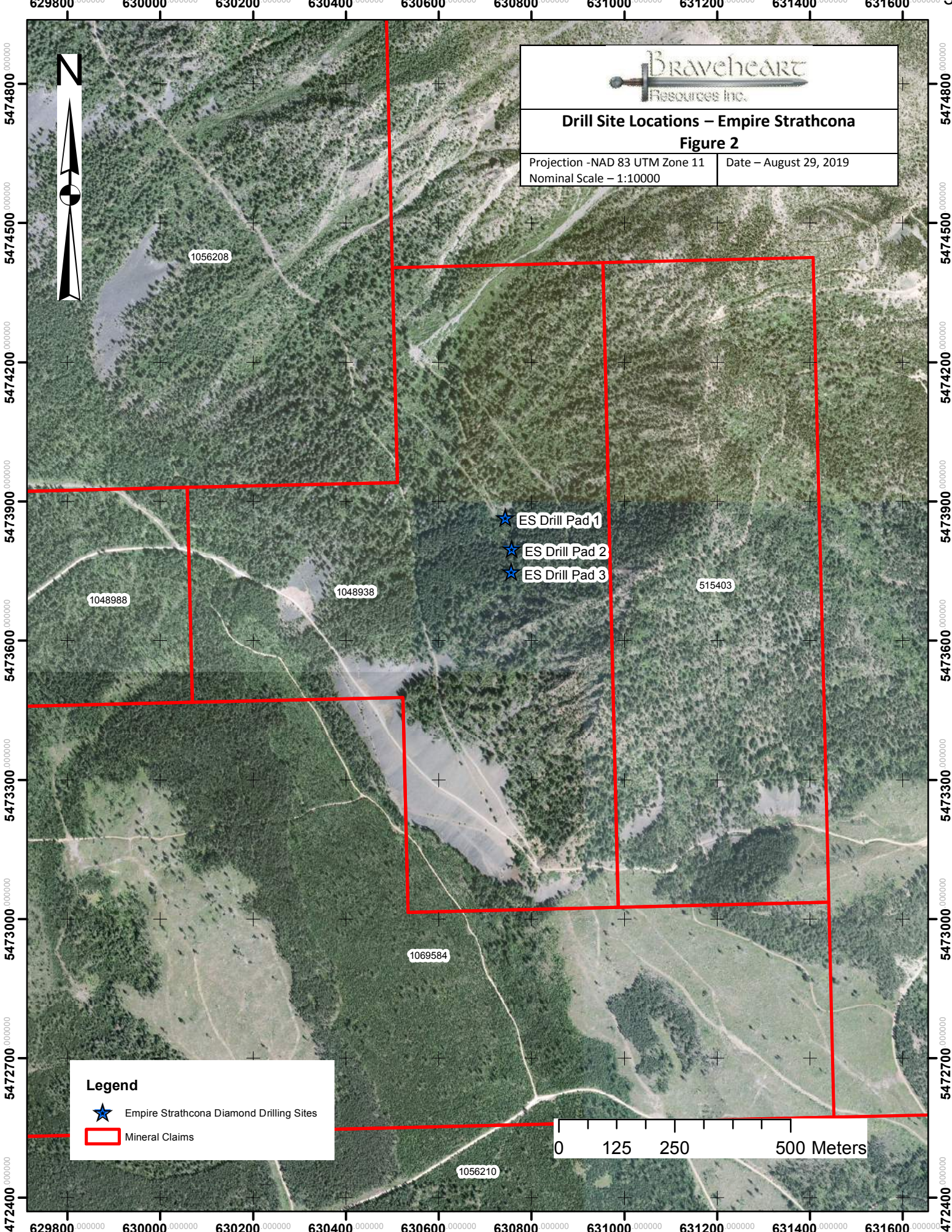
1056208

- ★ ES Drill Pad 1
- ★ ES Drill Pad 2
- ★ ES Drill Pad 3

1048988

1048938

515403



**Legend**

- ★ Empire Strathcona Diamond Drilling Sites
- ▭ Mineral Claims

0 125 250 500 Meters

1056210

547240 547270 547300 547330 547360 547390 547420 547450 547480



## Tenure

The Bull River Mine Property as currently defined is comprised of 25 Mine Claims totaling 10,374 ha in the Ft. Steele Mining Division and has been summarized below in Table 1 and Figure 3. The property is also underlain by Mining Lease 212493 which covers 486 ha and includes surface rights in addition to mineral rights. The mining lease was granted in February 1972 and expires in February 2023, with annual lease payments of \$9740.00 (Dzick and Ghaymghamian, 2013).

***Table 1 – Tenure Summary for the Bull River Mine Property***

Title Number	Claim Name	Owner	Issue Date	Good To Date	Area (ha)
212492		Bul River Mineral Corporation	1971/NOV/23	2019/NOV/23	14
212493		Bul River Mineral Corporation	1972/FEB/21	2020/FEB/21	486
515055		Bul River Mineral Corporation	2005/JUN/23	2022/MAY/16	1028
515057		Bul River Mineral Corporation	2005/JUN/23	2022/MAY/16	1238
515066	MINE SITE	Bul River Mineral Corporation	2005/JUN/23	2022/MAY/16	252
515403		Bul River Mineral Corporation	2005/JUN/27	2022/MAY/16	63
1045785	FELDSPAR	Bul River Mineral Corporation	2016/AUG/05	2022/MAY/16	840
1047428	DON CLAIM	Bul River Mineral Corporation	2016/OCT/24	2022/MAY/16	526
1047788	BUL 1	Bul River Mineral Corporation	2016/NOV/10	2022/MAY/16	503
1047789	BUL 2	Bul River Mineral Corporation	2016/NOV/10	2022/MAY/16	419
1048930		Bul River Mineral Corporation	2005/JUN/27	2022/MAY/16	105
1048932		Bul River Mineral Corporation	2005/JUN/27	2022/MAY/16	63
1048934		Bul River Mineral Corporation	2005/JUN/27	2022/MAY/16	84
1048936		Bul River Mineral Corporation	2005/JUN/27	2022/MAY/16	126
1048938		Bul River Mineral Corporation	2005/JUN/27	2022/MAY/16	84
1048940		Bul River Mineral Corporation	2005/JUN/23	2022/MAY/16	336
1048943		Bul River Mineral Corporation	2005/JUN/24	2022/MAY/16	252
1048988	BUL3	Bul River Mineral Corporation	2017/JAN/06	2022/MAY/16	1869
1056208		Bul River Mineral Corporation	2017/NOV/10	2022/MAY/16	1114
1056209		Bul River Mineral Corporation	2017/NOV/10	2022/MAY/16	336
1056210		Bul River Mineral Corporation	2017/NOV/10	2022/MAY/16	400
1061658	DON1	Bul River Mineral Corporation	2018/JUL/09	2022/MAY/16	105
1062075	CAMP	Bul River Mineral Corporation	2018/JUL/31	2022/MAY/16	42
1069583	DON WEST	Bul River Mineral Corporation	2019/JUL/10	2020/JUL/10	295
1069584		Bul River Mineral Corporation	2019/JUL/10	2020/JUL/10	168
1069585	DON EAST	Bul River Mineral Corporation	2019/JUL/10	2020/JUL/10	21
1069586	DON NORTH	Bul River Mineral Corporation	2019/JUL/10	2020/JUL/10	105



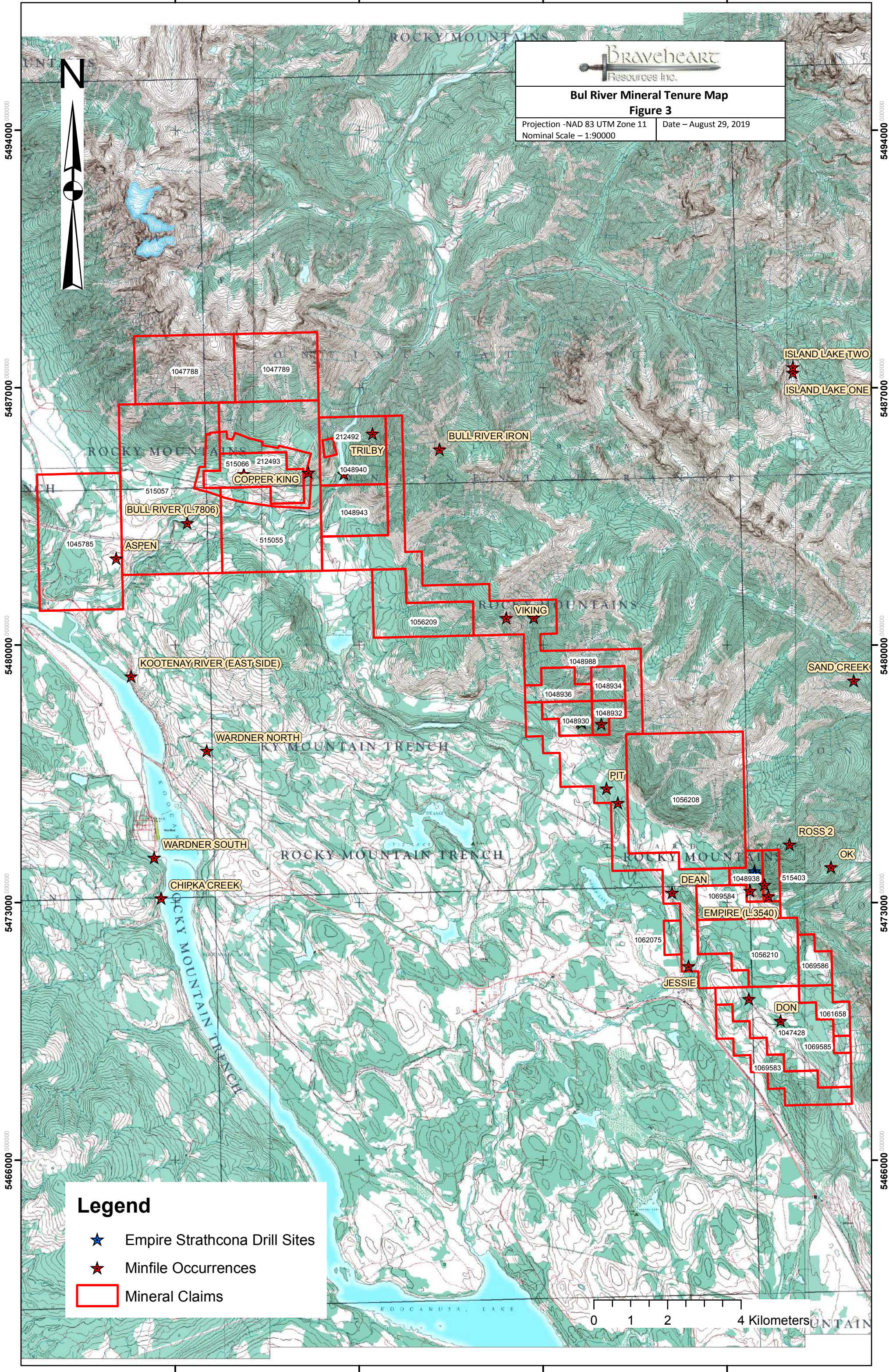


**Braveheart Resources Inc.**




**Bul River Mineral Tenure Map**

**Figure 3**

Projection - NAD 83 UTM Zone 11	Date - August 29, 2019
Nominal Scale - 1:90000	



**Legend**

-  Empire Strathcona Drill Sites
-  Minfile Occurrences
-  Mineral Claims

0 1 2 4 Kilometers



## History and Previous Work

The following summary of history and previous work on the Property has been presented as open citation from the technical report authored by Dzick and Ghaymghamian (2013), and from MINFILE 082GNW002 (2012).

Placer gold was first discovered in the early 1860s in the Bull River Canyon and numerous small mine workings have been excavated in the area since that time. A number of claims were located in the vicinity of Burntbridge Creek in about 1896. The Silver Chief, Silver Reef, and Silver Buckeye claims were owned by David Griffith of Wild Horse Creek. Development work was done in a 30.0 metre crosscut adit and 4.5 metre shaft. The Daisy Fr. claim, owned by Thomas Bevans, was developed by shallow pits and open cuts. The Silver Chief (Lot 3548) and Sirdar (Lot 3554) were Crown-granted to Dave Griffith in 1899. No further activity was reported until 1927 when the Silver Chief, Sirdar, and Khedive claims were owned by A.B. Fenwick of Bull River. The workings at that time included a crosscut adit about 40.0 metres in length (MINFILE 082GNW002, 2012). No further work was reported on the Bull River mine site until 1968 when Placid Oil Co. ("Placid") optioned the property. Initially, Placid was targeting dyke structures similar to those found at the Sullivan mine and other Purcell Supergroup deposits but instead intersected supergene-type copper mineralization and an underlying copper-silver vein system.

The Property hosts the historic Dalton mine which started milling ore on October 1st, 1971, and continued from two open pits until June 10th, 1974, producing 7,260 t (16.0 M lb) of copper, 6,354 kg (204,274 oz) of silver, and 126 kg (4,055 oz) of gold from 471,900 t milled (MINFILE 082GNW002, 2012). The Dalton mine was owned by Placid, who also attempted to go underground to access additional resources but was unsuccessful in getting the portal collared in unstable ground.

Ross Stanfield purchased the assets of the Dalton Mine from Placid on March 5th, 1976 and transferred the assets to Bull River under incorporation on March 17th, 1976. For the next 20 years Bull River and its related subsidiary companies completed detailed exploration work (geology mapping, drilling, underground development and geophysical surveys) on the various claim groups held by R.H. Stanfield. In 1996, work began on a 5.4 m wide by 4.5 m high decline north of the open pits to provide access for underground drilling and sampling. Bull River reports that, to date, approximately 21,000.0 metres of development have been done, including exposure of the mineralized structures on seven levels along access drives and crosscuts. Mapping and sampling of these headings were conducted by Bull River personnel and, starting in 1999 by independent consultants contracted to the Stanfield Mining Group (SMG). Once these underground workings were established, underground diamond drilling was done by independent contractors (Dzick and Ghaymghamian, 2013). This work, along with surface and underground diamond drilling, and baseline studies, continued on the Gallowai-Bull River Mine property under various practitioners until 2009 when work was suspended due to a lack of funding (Dzick and Ghaymghamian, 2013). The underground operation at the Bull River mine site has never been put into commercial production. Exploration activities continued on the R.H. Stanfield group of exploration claims during the underground development stage up until 2001. Until recently the Property was held by Gallowai-Bull River mine through a joint venture partnership, which was then transferred to the SMG. In January 2019, all of the mining properties were transferred and are now owned 100 % unencumbered by Braveheart Resources Inc (<http://www.braveheartresourcesinc.com/>)

The work history of the Property as recorded with the British Columbia Government is provided below in Table 2. In addition, several internal documents authored on behalf of R.H. Stanfield or Gallowai-Bull River

mine, which are stored at the mine site, have been included in the work summary as documented in the Bibliography of the report completed by Graf (2014). In 2013 a technical report was authored by Dzick and Ghaymghamian (2013) (Snowden) on behalf of the Gallowai-Bull River mine which contains a detailed record of exploration and drilling activities (surface and underground) completed on the property between 1974 and 2009. The report can be found for reference on the company website <http://purcellbasin.com/site>. Dzick and Ghaymghamian (2013) indicate that a total of 72,486.9 m of underground drilling had been completed at the Bull River mine site for the period between 1996 – 2009. The 2013 report also states that during the time period of 1974 – 2009 over 100,000.0 metres of surface diamond drilling had been completed on the R.H. Stanfield Exploration Properties, of which the author can account for 27,333.3 metres; which was filed as assessment work with the British Columbia Government as outlined in Table 2.

***Table 2 – History of Exploration and Geological Studies on the Bull River Mine Property***

<b>Year</b>	<b>Assessment Report Number</b>	<b>Report Title</b>	<b>Work Completed</b>
1898	AR_1898	BC MEMPR Annual Summary of Mining and Exploration Activities	Early prospects described under the heading “Sand Creek”, “Bull River” and “Burntbridge Creek” (P. 1002-1003).
1899	AR_1898	BC MEMPR Annual Summary of Mining and Exploration Activities	Early prospects described under the “Ft. Steele Mining Division” and “Crown Grants Issued in 1899” headings. (P. 660, 841).
1900	AR_1900	BC MEMPR Annual Summary of Mining and Exploration Activities	Early development work on two prospects, Star Group and Old Abe Group are reported (P. 798).
1929	AR_1929	BC MEMPR Annual Summary of Mining and Exploration Activities	The Empire and Strathcona Properties are reviewed and an update on work is reported (P. 298).
1930	AR_1930	BC MEMPR Annual Summary of Mining and Exploration Activities	The Empire and Strathcona copper prospects. A general overview of property ownership and development work are reported. Ore grade assays from a composite sample are provided (P. 243, 378).
1937	AR_1937	BC MEMPR Annual Summary of Mining and Exploration Activities	The Copper Silver deposits are described under the “South-East Kootenay Area” providing a detailed overview of development on the “Burnt Group” (P. E41-E42 & 142).
1965	AR_1965	BC MEMPR Annual Summary of Mining and Exploration Activities	Empire, Strathcona (Altamont Exploration Company) - First Documentation of R.H. Stanfield as President of the Exploration Company. Five Diamond Drill Holes, totalling 365.0 m completed to explore the ore body. Old adits opened and investigated (P. 199).
1966	AR_1966	BC MEMPR Annual Summary of Mining and Exploration Activities	Empire, Strathcona (Altamont Exploration Company) Nine BX-WL holes totalling 1,219.2 m of surface drilling and four holes totalling 213.3 m of underground drilling in the tram-line tunnel (P. 242).
1971	3436	Geochemical Survey Rio Alto Exploration Inc.	Geochemical surveying on the Bull River Prospect.
1971	3439	Geochemical Report Rio Alto Exploration Inc.	Geochemical Surveying on the Sand Creek Area “B” Prospect.
1972	3700	Geological Report covering claims 1 – 2 miles east of Placid Oil Company's Bull River Mine for Placid Oil Minerals	Geological field mapping and air photo interpretation.
1972	3929	A Geophysical Report on a Seismic Refraction Survey Cranbrook area of British Columbia for Rio Alto Exploration Inc.	A total of 10 complete set-ups, each 550 feet long, were surveyed to determine depth to bedrock, and locate the position of the Bull River Fault.
1973	Internal Report # 1973-01-RHS	Report on the Holdings of R.H. Stanfield, Fort Steele Mining Division, BC	



Year	Assessment Report Number	Report Title	Work Completed
1974	Internal Report # 1974-03-FORT)	Report on the Ross Claim Groups, (Galloway Property) for Fort Steele Mining Corporation, Fort Steele Mining Division, British Columbia	
1976	5900	Report: Diamond Drilling Ross Group # 2 for R.H. Stanfield	Two Drill Holes Completed (76-3 & 76-4) totalling 654.4 m.
1976	5904	Report: Churn Drilling Lillea #1-#4 for R.H. Stanfield	Churn drill overburden to depth of 35.0 m. Samples collected approximately every metre.
1976	5905	Diamond Drilling Altamont Group # 1 for R.H. Stanfield	One Drill Hole Completed (76-4 continued) to a depth of 152.4 m.
1976	5906	Report: Diamond Drilling Treasure Group for R.H. Stanfield	One Drill Hole Completed (76-6) to a depth of 152.4 m.
1976	5942	Drilling Cost Statement "Pit Group # 2" for R.H. Stanfield	Two Drill Holes Completed (76-9 & 76-11) totalling 145.9 m.
1976	Internal Report # 1976-03-RHS	Report on the Holdings of R.H. Stanfield. Geology and Ore Potential	
1977	6031	File 166 – Fort Steele Diamond Drilling Report on the Rossco Group for R.H. Stanfield	One Drill Holes Completed (76-8, 10) totalling 800.7 m.
1977	6244	Report Diamond Drilling Sunbeam Group for R.H. Stanfield	One Drill Hole extended (76-10-B) totalling 467.0 m.
1978	7086	Airborne Geophysical Survey Infrared Photography and Ground Electromagnetic Survey Ronka 16 VLF 82G/11 Steeples 1-30 Claims for R.H. Stanfield	The surveys were completed to ascertain if geophysics could detect possible occurrences of mineral deposits. The results were negative.
1980	8014	Report: Diamond Drill Hole BR1-79 Steeples 1:352 (11) and Steeples 2: 352(11) for R.H. Stanfield	One Drill Hole Completed (BR 1-79) totalling 614.4 m. Report only covers overburden drilling.
1980	8137	Geophysical Surveys and Drilling – RH Stanfield Property for R.H. Stanfield	134.0 line-km of Magnetometer and VLF-EM Surveys on two grids. Drilling was completed to a depth of 15.0 metres in 6-79. Churn drilling tested 27.0 m of overburden in two holes.
1980	8531	Report: Diamond Drill Hole BR 1-80 Steeples 11: 362 (11) and Steeples 12: 362 (11) for R.H. Stanfield	One Drill Hole Completed (BR-1-80) to a depth of 195.0 m. The top 966 metres were drilled on the Steeples 11 claim.
1980	8584	Report: Diamond Drill Hole BR 1-79 Steeples 1:35 (11) and Steeples 2: 352(11) for R.H. Stanfield	One Drill Hole Completed (BR 1-79) totalling 614.4 m.
1980	8695	Report: Diamond Drill Hole BR 1-80 Aspen 9: 787 (10) and Aspen 10: 788 (10) for R. H. Stanfield	One Drill Hole Completed (BR 1-80) totalling 369.0 m (continuation of the hole in AR 8531).

Year	Assessment Report Number	Report Title	Work Completed
1981	9486	Drilling Reports: Diamond Drill Hole B-2-80 R.H. Stanfield Property Dogwood 12 229 (6) and Dogwood 14 230 (6); Churn Drill Hole # 2 Stanfield Property Cedar 1 205 (6) and Cedar 2 206 (6) for R.H. Stanfield	One Drill Hole Completed (B-2-80) totalling 92.3 m (abandoned) and One Churn Drill Hole 36.0 m.
1982	10304	Report on Diamond Drilling Property – R.H. Stanfield Property for R.H. Stanfield	Six Diamond Drill Holes Completed (1-79, 2-79, 2-80, 3-79, 4-79, 5-79,) totalling 5,997.0 m.
1982	10570A	Geophysical Report Helicopter – Bourne Two Frequency Electromagnetic and Magnetic Survey – R.H. Stanfield Property for R.H. Stanfield	1,662.0 line-km EM-Magnetometer survey completed on 68 claims completed by Apex Airborne Surveys Ltd.
1982	10570B	Report on a Helicopter Borne Multi-Frequency Electromagnetic and Magnetic Survey on the Kootenay River Project in the Galloway Area, British Columbia for owner and operator Mr. R.H. Stanfield	1,662.0 line-km EM-Magnetometer survey completed on 68 claims completed by Apex Airborne Surveys Ltd.
1983	11681A&B	Reconnaissance Geophysical Survey Helicopter – Bourne V.L.F Electromagnetic and Magnetic Galloway Area Ft. Steele Balsam 1-4 & 5-12, Cedar 1 & 2, Cedar South 1 & 2, Elderberry 1, Elderberry South 1 & 2 for R.H. Stanfield	380.0 line-km VLF-EM Airborne Survey by Apex Airborne Surveys Ltd.
1984	12414	Bull 1 Mineral Claim Southeastern British Columbia Summary of 1983-1984 Exploration for Robert J. Morris.	Work in 1983-84 included a literature search and one day on the claim looking for outcrop, with no success.
1986	15471	Drilling Report for the Bull River Mine for R.H. Stanfield	A total of two holes were drilled totalling 162.0 m. (seven Rotary Cyclone Drill Holes Completed through overburden totalling 184.0 m).
1986	15624	Core and Rotary Drilling Report for the Aspen 9 (787), Aspen 10 (788), Aspen 10A (2576) Claims for R.H. Stanfield	Four Drill Holes Completed totalling 463.0 m.
1986	15858	Cyclone Rotary Drilling on the Aspen 11, 12, 13, 14, 15 20 Unit Claims for R.H. Stanfield	Four Vertical Holes were drilled attempting to reach bedrock. Unsuccessful. Total metres drilled: 131.0 m.
1987	16221	Drilling Report on the Cedar 1-5 Claims (100 Units) for R.H. Stanfield	Two air percussion rotary holes were drilled totalling 47.2 m.
1987	16222	Drilling Report on the Cedar 10, Cedar 12, Cedar 13, Cedar 14 (80 Units Total) for R.H. Stanfield	One Drill Hole (c-10-1-86) was drilled from a depth of 545.0 – 1346.0 m totalling 801.0 m.
1987	16235	Drilling and Physical Work Report for the Dogwood 8 & Dogwood 10 Claims (40 units total) for R.H. Stanfield	One Drill Hole (P-D-10-87) was drilled totalling 56.3 m.
1988	17757	Assessment Report for Drilling on the Cedar 3 Claim for R.H. Stanfield	Two Drill Holes totalling 246.2 m and 5.0 km or road work.

<b>Year</b>	<b>Assessment Report Number</b>	<b>Report Title</b>	<b>Work Completed</b>
1988	17758	Drilling and Physical Work Report for the Dogwood 8 Claim for R.H. Stanfield	One Drill Hole totalling 122.8 m and 13.0 km of road work.
1988	17813	Assessment Report for Drilling on the Dogwood 5 Claim for R.H. Stanfield	One Drill Hole totalling 183.7 m.
1988	17850	Assessment Report for Drilling on the Cedar 8 Claim for R.H. Stanfield	Two Drill Holes totalling 110.5 m.
1989	18227	Assessment Report for Cyclone Rotary Mud Drilling on the Aspen Group 1-A for R.H. Stanfield	One Drill Hole abandoned (A-9-1-88) totalling 91.4 m.
1989	18368	Report on Steele Property prepared for Bul River Mineral Corporation Ltd.	One Drill Hole completed (BR 3-87) from 739.8 m to 1119.2 m, totalling 379.4 m, and 7 Rotary Holes completed totalling 679.0 m.
1989	19034	Drilling Report on Cedar 1A, Cedar 3A, Dogwood 1A, Dogwood 4 Groups for R. H. Stanfield	Ten Drill Holes completed (C3-88, C8-G-1-88, D1-1-88, D2-2-88, D10-1, D10-2, D10-PP1, D10-PP2) totalling 544.8 m.
1990	19651	Report on the Steeples Property Groups 1A – 8A for R.H. Stanfield	One Drill Hole completed (BR5-89) totalling 68.5 m and 15 cyclone rotary air-mud drill holes totalling 512.0 m.
1990	20796	Report on Rotary/Percussion Drilling on the Aspen 9, 10, 10A of Aspen Group 1A for R.H. Stanfield	Two percussion drill holes completed (A1-90 & A2-90) totalling 88.3 m.
1991	21155	DIGHEM <sup>IV</sup> Survey for Bul River Mineral Corporation Ltd. (R.H. Stanfield) Steeples Claim Block & Portions of the Aspen Claim Block British Columbia	1,206.0 line-km of DIGHEM survey completed which identified several anomalies.
1991	Internal Report # 1991-01-SMG	Report on the Properties of Gallowai Metal Mining Corporation, Fort Steele Mining Division, British Columbia	
1992	21737	Report on Drilling on the Dogwood # 5, Elderberry # 5, #6, #7 and #8 (all 20-unit claims) for R.H. Stanfield	Two percussion holes completed (D5.1.91 and D5.2.92) totalling 123.7 m.
1992	22781	Report on Drilling on the Steeples Group 2B (Steeples # 12, 14, 16, 18 and 19 all 20-unit claims) for R.H. Stanfield	One Drill Hole completed (BR-3-92) totalling 602.6 m.
1992	22997	Report on Drilling on the Cedar Group 1A for R.H. Stanfield	One Drill Hole completed (C1.92) totalling 1058.2 m.
1992	Internal Report # 1992-01-BB	Report on the Properties of the R. H. Stanfield Group. Fort Steele Mining Division, British Columbia	

Year	Assessment Report Number	Report Title	Work Completed
1992	Internal Report # 1992-02-GAL	Report on the Properties of the R.H. Stanfield Group. Fort Steele Mining Division, British Columbia	
1993	23012	DIGHEM Airborne Survey on The Balsam 1A, Balsam 2A, Cedar 2A, Cedar 3A, Dogwood 3A Claim Blocks for R.H. Stanfield	337.0 line-km (Big Bear Property) and 65.0 line-km (Sand Creek Block) of DIGHEM survey completed.
1993	23602	Investigation of Commercial Feldspar Resources on the Aspen 9, 10, 11, & 12 Claims for R.H. Stanfield	Re-logging of Drill Hole A11-1-87) total depth 532.0 m; two percussion drill holes totalling 202.4 m.
1993	23615	Report on Drilling BR 2.93/94 on the Steeples Group #1C for R.H. Stanfield	One Drill Hole completed (BR-2-93) to a depth of 690.9 m.
1993	Internal Report # 1993-01-SMG	Exploration Report for the R.H. Stanfield Group, Fort Steele Mining Division, British Columbia	
1994	23632	Drilling PBR 2.94 on the Steeples Group # 2B for R.H. Stanfield	One Drill Hole completed (PBR 2.94) totalling 291.4 m.
1992-94	23786	Diamond Drilling - 1992 through 1994 on the Steeples Group # 1C for R.H. Stanfield	Five Drill Holes reported from the period of 1992-1994 (BR.1.92, BR2.92, BR4.92/93, BR1.93, BR1.94) totalling 4,106.8 m. (978.7 m of percussion drilling utilized to pre-drill through overburden)
1995	24240	Drilling Report on Steeples Group 1C and Steeples Group 2B for R.H. Stanfield	Two Drill Holes Completed (BR 1-95, BR 2-95) totalling 1,910.4 m.
1997	25129	Drilling Report on Cedar Group 3A for R.H. Stanfield	Two Drill Holes Completed (C8-1-96/97 & C8-2-96/97) totalling 312.4 m.
1997	25191	Drilling Report on Aspen Group # 1 for R.H. Stanfield	Seven Percussion Holes Completed (F5-96, F6-96, F7-96, F8-96, F9-96, F10-96, F11-96, F12-96) totalling 1,083.4 m.
1998	25637	Drilling Report on CD Group # 1 for R.H. Stanfield	One Drill Holes Extended (C8-1-96/97) totalling 700.4 m (extension from previous year).
1998	25678	Assessment Report on the Pleasant Surprise Mineral Claims for Geologic Mapping and Geochemical Sampling by/for C.C. Downie P. Geo.	One day geological reconnaissance program completed to prospect for Sullivan type Pb-Zn mineralization or shear hosted Cu-Au mineralization.
1998	25683A	Drilling Report on AB Group # 1 for R. H. Stanfield	Two Drill Holes Completed (A9-1-98 & A9WW-98) totalling 873.2 m.
1999	25881A	Drilling Report on ABJ Group # 1 for R.H. Stanfield	One Drill Hole Extended (A9-1-98) totalling 498.0 m.
1999	Internal Report # 1999-01-BUL	1998 Exploration Report for Bul River Mineral Corporation, Fort Steele Mining Division, British Columbia	

<b>Year</b>	<b>Assessment Report Number</b>	<b>Report Title</b>	<b>Work Completed</b>
2000	26323A	Assessment Report on the Pleasant Surprise Mineral Claims for Geologic Mapping and Geochemical Sampling by/for C.C. Downie P. Geo.	One day field program consisting of soil, rock and silt sampling, as well as 1:1000 scale geological mapping.
2001	26638A	Drilling Report on the Bul River Group for R.H. Stanfield	One Underground Drill Hole (BRU00-60) totalling 366.3 m.
2001	Internal Report # 2001-07-SMG	2001 Report on the Geology and Mineralogy of Stanfield Mining Group Claims, Fort Steele Mining Division, British Columbia	
2011	NI43-101	Technical Report on the history of work on the property. Prepared by RPA on behalf of Gallowai-Bul River Mine	
2012	NI43-101	Technical Report for a NI43-101 Compliant Resource Estimate. Prepared by RPA on behalf of Gallowai-Bul River Mine	
2013	NI43-101 Technical Report	Gallowai-Bul River Technical Report Project Number 12V1249. Prepared by Snowden for Gallowai-Bul River Mine	
2013	Internal Summary Report	2013 Under Ground Drilling Summary. Prepared by Moose Mountain Technical Services for Gallowai-Bul River Mine	Seven Underground Drill Holes Completed (BRU-13-01 to 07) totalling 1,156.0 m.
2013	Scoping Study	Gallowai-Bul River Mine Scoping Study. Prepared by Moose Mountain Technical Services for Gallowai-Bul River Mine	
2016	36586	Technical Report for the Bull River Mine Property	A total of 320 b-horizon samples were collected from 23 survey lines during the course of the 17 person-day field program. Total expenditures on the Property in 2016 were approximately \$24,200.00.
2017	37195	Technical Report for the Bull River Mine Property	Define exploration targets peripheral to copper ore body defined in the NI43-101 through the collection of rock samples from underground working, petrophysical characterization of the rocks samples and the processing Dighem airborne EM (AEM) data acquired during 1991-1997.
2018	37552	Technical Report for the Bull River Mine Property	Geological analysis of the previously unlogged borehole Grand 10-05 and pXRF sampling of a defined interval of interest in borehole Grand 10-05
2018	37660	Technical Report for the Bull River Mine Property	Soil Sampling Program on Don and G-Zone/Cedar Claims.
2018	37983	Technical Report for the Bull River Mine Property	Geological Mapping and Sampling of Rex and G-Zone Claims, including 36 hec of Drone Imagery; 9.6 Line Km Ground Based Magnetic Orientation Survey on Rex Claims; 3.2 Line Km Soil Sample Program on Murray Lake Claims


## Geology

### Regional Geology

The regional geologic setting of the Property is shown in Figure 4. The map was created using BCGS Open File 2017-8 compilation map (Cui et al., 2017). The Property is located within the Belt-Purcell Basin, a Meso-Proterozoic intracontinental rift filled by marine and fluvial sediments that comprise the Belt-Purcell Supergroup. Approximately 10% of the exposed area of Belt-Purcell Basin can be found in Canada, where it is referred to as the Purcell Basin and Purcell Supergroup (Lydon, 2007). The Belt-Purcell Basin is flanked by Upper Proterozoic Windermere Group or Paleozoic sedimentary rocks (Höy et al., 2000). The Aldridge Formation defines the base of the Purcell Supergroup. Within an approximate 30.0 km radius of Cranbrook, British Columbia, the Aldridge Formation also hosts the world class Sullivan deposit as well as the Estella, Kootenay King, and St. Eugene mineral deposits (Allen, 1989).

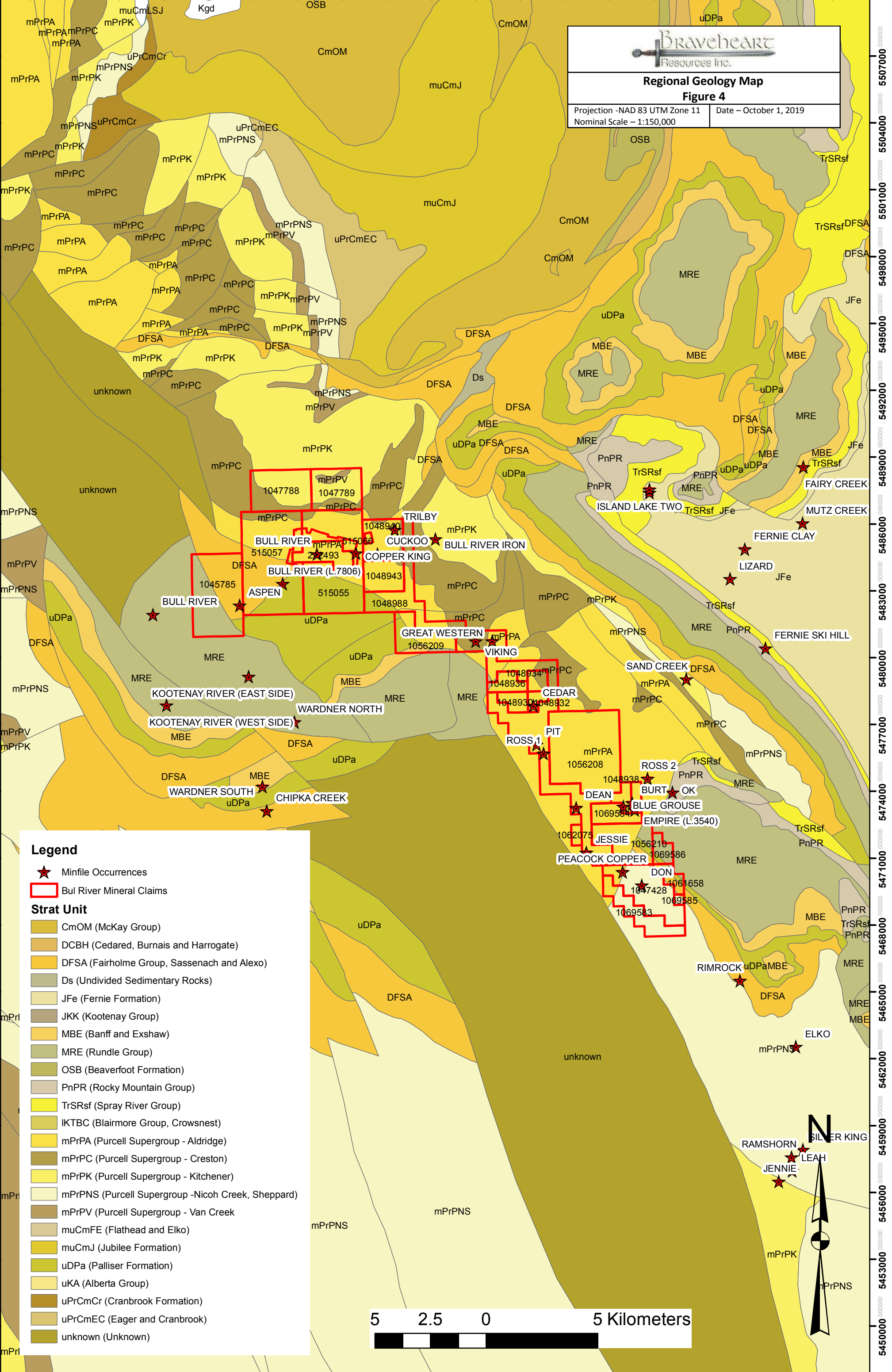
Extensional faulting and sporadic magmatism occurred from about 1,500 Ma to 1,320 Ma and is at least partially coincident with the East Kootenay Orogeny. The East Kootenay Orogeny reflects burial metamorphism of the thick sedimentary pile in the high geothermal gradient of an actively rifting environment. Syn-sedimentary faulting associated with rifting resulted in the rift-fill thicknesses of turbidites and intercalated sills of the Aldridge sequence of up to 12.0 km. Two directions of syn-sedimentary faulting have been recognized: north to northwest trending rift-parallel (extensional) and east to northeast trending transfer faults. Examples of the former include faults that control the north trending Sullivan Corridor and the Iron Range fault northeast of Creston. Examples of the later include precursors to the Moyie-Dibble Creek fault, which are found north of the Property, and St. Mary-Boulder Creek fault system (Lydon, 2007).

Beginning with the East Kootenay Orogeny (1,350 Ma to 1,300 Ma), the northwest portion of the Purcell Basin appears to have been subjected to east-west faulting along with magmatic generation along its western boundary. During the subsequent Goat River Orogeny (900 Ma – 800 Ma), the Purcell Anticlinorium was formed as a result of crustal shortening (Höy et al., 2000). The Property lies along the eastern flank of the Rocky Mountain trench, which forms the valley of the Kootenay River system in the area and is contained within the Hosmer thrust sheet east of the inferred trace of the Rocky Mountain trench fault (Dzick and Ghaymghamian, 2013). The Hosmer thrust sheet is the structurally highest thrust package in the Western Range of the Rocky Mountains (Dzick and Ghaymghamian, 2013). The Rocky Mountain trench fault is a west-side-down Tertiary normal fault with a minimum of 5.0 km of vertical displacement. Structure in the region is dominated by broad, open, east-plunging folds (Höy et al., 2000).



**Regional Geology Map**  
**Figure 4**

Projection -NAD 83 UTM Zone 11    Date - October 1, 2019  
Nominal Scale - 1:150,000



**Legend**

- ★ Minfile Occurrences
- Bul River Mineral Claims

**Strat Unit**

- CmOM (McKay Group)
- DCBH (Cedared, Burnais and Harrogate)
- DFSA (Fairholme Group, Sassenach and Alexo)
- Ds (Undivided Sedimentary Rocks)
- JFe (Fernie Formation)
- JKK (Kootenay Group)
- MBE (Banff and Exshaw)
- MRE (Rundle Group)
- OSB (Beaverfoot Formation)
- PnPR (Rocky Mountain Group)
- TrSRsf (Spray River Group)
- KTBC (Blairmore Group, Crowsnest)
- mPrPA (Purcell Supergroup - Aldridge)
- mPrPC (Purcell Supergroup - Creston)
- mPrPK (Purcell Supergroup - Kitchener)
- mPrPNS (Purcell Supergroup - Nichol Creek, Sheppard)
- mPrPV (Purcell Supergroup - Van Creek)
- muCmFE (Flathead and Elko)
- muCmJ (Jubilee Formation)
- uDPa (Palliser Formation)
- uKA (Alberta Group)
- uPrCmCr (Cranbrook Formation)
- uPrCmEC (Eager and Cranbrook)
- unknown (Unknown)



## Property Geology

The geologic setting of the Property is shown in Figure 5. The map was created using BCGS Open File 2017-8 compilation map Cui et al., 2017).

The Property, and more specifically the past producing mine and numerous mineral occurrences, are underlain by the Purcell Supergroup, a thick sequence of terrigenous clastic, carbonate and minor volcanic rocks of Middle Proterozoic age (Höy, 1993). The Aldridge Formation is characterized by thick successions of graded sandy turbidites and interbedded laminated siltstones and argillites. The turbidites are intruded by the dioritic to gabbroic Moyie sills and dykes. To the east, the Upper Aldridge rocks, composed of argillites and siltites, overlie the turbidites. Mineralization hosted within Aldridge Formation metasedimentary rocks is typically observed as fine-grained pyrite and pyrrhotite, up to several percent, that oxidizes when exposed on surface (Höy et al., 2000). Further east, the Creston Formation is exposed. Creston Formation rocks comprise a shallow water platformal and fan-delta succession of predominantly quartzites and siltites. South of the Bull River, Creston Formation rocks are overlain by Kitchener Formation carbonate rocks. Cretaceous monzonite-dacite stocks, plugs and dikes intrude Purcell Supergroup rocks and younger Paleozoic shallow water sediments within the project area (Höy et al., 2000). The southernmost claim group, where the work was completed in 2016 is underlain by Precambrian Gateway Formation comprised of siltstone and dolomitic siltstone south of the Hosmer Thrust Fault and is juxtaposed against Paleozoic rocks of the Rundle Formation (Graf, 2014). Graf (2014) cautions that due to significant cover in the area of the "Don Claim", it is not clear if the Gateway Formation geological interpretation is correct.

### Alteration

Alteration at the past producing mine was described by Dzick and Ghaymghamian (2013), and MINFILE (MINFILE 082GNW002, 2012) as silicification and carbonatization (siderite flooding) which occurs within host rock in contact with veins and up to tens of metres from the veins. Masters (1999) describes the alteration as silica and chlorite. Personal observation of alteration by the author indicate that the siderite flooding preferentially permeates thin-bedded silty metasedimentary rocks in proximity to quartz-siderite veining, and upon weathering imparts a conspicuous rusty-orange stain on the rocks. Gangue mineralogy of the veins in the underground mine and surrounding prospects is variable, with the eastern parts of the deposit consisting of quartz and siderite. The western part of the vein system is dominated by siderite (Baldys, 2001).

### Mineralization

Mineralization at the past producing mine consists of pyrite, pyrrhotite, and chalcopyrite with minor local galena, sphalerite, arsenopyrite, cobaltite and traces of tetrahedrite and native gold. Sulphides range from massive, irregular bodies within the quartz-siderite vein system to thin discontinuous veins, veinlets, and disseminations in the host rock (Höy et al., 2000). The Bull River deposit and related Cu-Ag mineral occurrences have been described as a Churchill-type vein copper-silver deposit (Lefebure, 1996).

Mineralization at the Empire Strathcona zone was described by Allen (1976) as veins which contain copper, silver and gold in a matrix of quartz, siderite and calcite hosted in Aldridge Formation argillites.



## Structural Geology

Three tectono-stratigraphic terranes subdivide the area covered by the Purcell Basin Minerals mineral tenure holdings. The Steeples Range domain is bounded to the north by the Dibble Creek fault and to the south by the Bull River Canyon fault and lies to the north of the other domains. The Sand Creek-Lizard Range domain lies south of the Bull River Canyon fault and north of the Sand Creek fault and contains the Lizard Range of mountains. The southern domain is the Broadwood Anticline whose boundary is the Sand Creek fault to the north and Mount Broadwood to the south. The Steeples Range and Sand Creek–Lizard Range domain are part of the Lizard segment of the Hosmer Thrust (Masters, 1990). In the vicinity of the Property, the trench is synclinal with major west dipping faults on its east side (Masters, 1990). Masters (1999) states that the structural geology of the property is fairly complex, with structural evolution mainly associated with the Hosmer Thrust.

## Empire Strathcona Claims Geology

The bedrock geology of the Empire Strathcona grid is presented on the geology map that accompanies BCGS Bulletin 84. The area of the Empire Strathcona claims are underlain by Precambrian Aldridge argillites and argillaceous quartzites and siltites that are well bedded, with rusty brown weathering, and strike northerly and dip 5 to 30 degrees easterly. The mineralization is exposed from the top of a sharp ridge at 1417m, intermittently down the steep sidehill to elevation 1203.9m, where it is covered by a thick layer of overburden. Chalcopyrite, pyrite and minor hematite occur with siderite, quartz and calcite in a fissure vein system striking 15 to 30 degrees west of north and dipping 55 to 80 degrees southwest. The mineralized zones are irregular and range from 1.0m to 5.5m in width, averaging at least 1.8m (Allen, 1976).

The Empire Strathcona vein system was intermittently exposed by 2 adits and 2 rock cuts. The adits are located at 1379m and 1264m elevations. Currently only the upper adit is accessible, as the lower adit has caved. The open rock cuts are located at 1328m and 1290m elevation. The upper rock cut exposes a sheared section of a 2m siderite-quartz vein, which was once heavily mineralized with pyrite and chalcopyrite and is now heavily oxidized due to long exposure (Allen, 1976). The lower rock cut had a short adit, driven along veining, which is now inaccessible due to caving.

The regional Rocky Mountain Trench Fault is shown on the map to lie less than 1 km west of the Empire Strathcona claims; however, its' position is masked by the glacial overburden. The Dighem magnetic data indicate this fault lies a short distance west of the grid. This major fault is a normal fault across which, as shown on the Bulletin 84 map cross sections, the western side has been down dropped ~ 20,000 feet (6 km) (Graf, 2018).

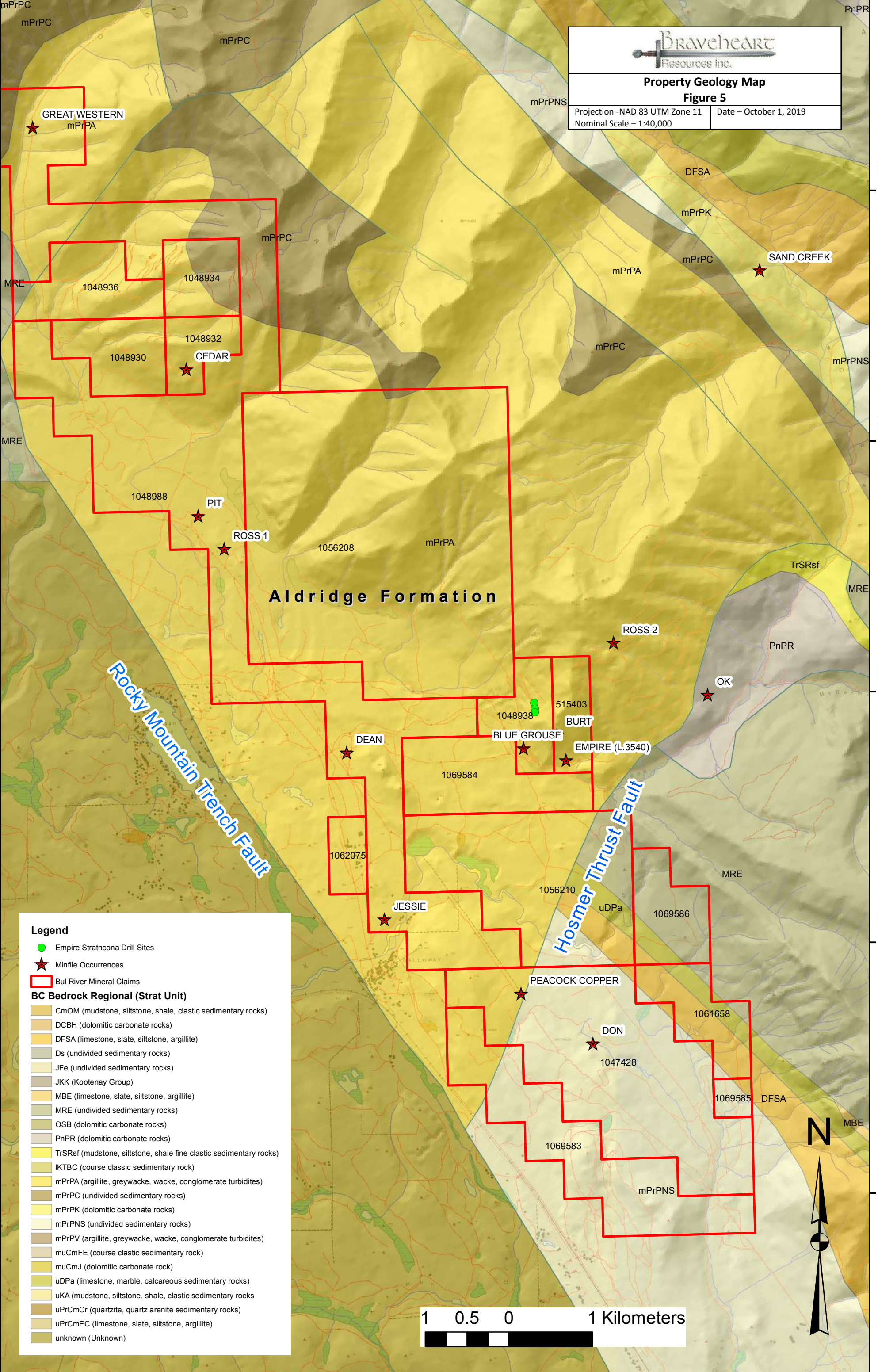
Several Paleozoic formations including the mC Burton and Elko formations, the basal middle Devonian unit, the lower upper Devonian Fairholme group and the upper Devonian Palliser formation occur south east of the Empire Strathcona claims and are steeply overturned and west dipping (Graf, 2018).





**Property Geology Map  
Figure 5**

Projection -NAD 83 UTM Zone 11  
Nominal Scale - 1:40,000  
Date - October 1, 2019



**Legend**

- Empire Strathcona Drill Sites
- ★ Minfile Occurrences
- Bul River Mineral Claims
- BC Bedrock Regional (Strat Unit)**
- CmOM (mudstone, siltstone, shale, clastic sedimentary rocks)
- DCBH (dolomitic carbonate rocks)
- DFSA (limestone, slate, siltstone, argillite)
- Ds (undivided sedimentary rocks)
- JFe (undivided sedimentary rocks)
- JKK (Kootenay Group)
- MBE (limestone, slate, siltstone, argillite)
- MRE (undivided sedimentary rocks)
- OSB (dolomitic carbonate rocks)
- PnPR (dolomitic carbonate rocks)
- TrSRsf (mudstone, siltstone, shale fine clastic sedimentary rocks)
- IKTBC (course classic sedimentary rock)
- mPrPA (argillite, greywacke, wacke, conglomerate turbidites)
- mPrPC (undivided sedimentary rocks)
- mPrPK (dolomitic carbonate rocks)
- mPrPNS (undivided sedimentary rocks)
- mPrPV (argillite, greywacke, wacke, conglomerate turbidites)
- muCmFE (course clastic sedimentary rock)
- muCmJ (dolomitic carbonate rock)
- uDPa (limestone, marble, calcareous sedimentary rocks)
- uKA (mudstone, siltstone, shale, clastic sedimentary rocks)
- uPrCmCr (quartzite, quartz arenite sedimentary rocks)
- uPrCmEC (limestone, slate, siltstone, argillite)
- unknown (Unknown)





## 2019 Field Program

In 2019, fourteen NQ2 sized diamond drillholes were drilled on the Braveheart claims from June 11, 2019 to July 18, 2019. Drilling was carried out by Lucky Drilling Ltd. The drill hole program was laid out and monitored by the author of this report, who is a Braveheart employee, and a contracted geologist. The goal of the 2019 exploration drill program was to evaluate the economical potential of the fissure vein system historically reported on the Empire Strathcona claims. Total meterage of the drill program was 1388.61m, from which 210 samples of halved NQ2 sized core samples were collected and sent for analysis to Bureau Veritas Mineral Laboratories, located in Vancouver, B.C. Total cost of the program was \$321,432.06. (Details of project expenditures can be found in Appendix II).

Work carried out on the program was comprised of logging and sampling the core, core photography, and rock quality designation (RQD) measurements. The geologists sampled all mineralized sections of the core and ensured all core boxes were properly labeled and stored in an adequate location on the Bull River mine site.

The software listed below was used in the field and the writing of this report.

- ArcGIS 10.4
- Geospark Core 1.1
- Leapfrog Geo 4.5.1
- Microsoft Office 2010

## 2019 Sampling and Logging

Logging and sampling of all drill core was undertaken by Braveheart geologist and a contract geologist. All cutting, moving, and sorting core boxes was also undertaken by a Braveheart employee and was supervised by above mentioned geologists. Sampling included collecting 210 samples, including standards and blanks, from fourteen drillholes, which were sent to Bureau Veritas Labs, in Vancouver, for analysis.

Samples were selected by the logging geologist with uniquely numbered core tags stapled to the core box. Logging was done directly into the geological logging program, Geospark. Sampling was also continued into at least 0.5m of the footwall and hanging wall of the mineralized zones.

Drill core selected for sampling was halved longitudinally, using a diamond saw, as laid out by the logging geologist. The core was cut, but not sampled, by a Braveheart employee. Both halves of the core were

returned to the core box and sampling was done by the logging geologist. One half of the core was placed in a plastic sample bag along with a tag that matched the one affixed to the core box. The sample bag was closed using a “zap strap” plastic tie. Samples were then placed into a labelled rice bag that was closed using a “zap strap” and further secured with a security tag labelled with a unique tag number. Samples were stored in the core facility on the Bull River mine site, until a sufficient number were accumulated for shipping to the laboratory via local commercial carrier, Manitoulin Transport. The remaining core was returned to the racks, in an orderly manner, for future reference and sampling. The core is stored at the mine site.

A comprehensive quality assurance/quality control program is in place to monitor precision and accuracy of assay results. Drill core samples from the property were shipped to Bureau Veritas Laboratories in Vancouver BC, for analysis. Samples represent ½ NQ core and include a commercial reference standard (three different CRM were used), and a blank, with each set of twenty to twenty-five samples.

Sample preparation involved crushing the total sample and splitting and pulverizing a 250g subsample to pass 200 mesh (Bureau Veritas codes PRP70-250 and PULSW). Gold was determined by fire assay fusion by ICP-ES using a 30g subsample (Bureau Veritas code FA330-Au). A four acid digestion and ICP-MS analysis was completed for copper, silver and 24 additional elements using a 0.5g sub-sample (Bureau Veritas code MA370), while a 1:1:1 aqua regia digestion and ICP-MS was completed for 36 element additional elements using a 0.5g sub-sample (Bureau Veritas codes AQ200 and MA200).

## Results and Recommendations

### Results

Drilling on the Empire Strathcona vein was successful in tracking the historically reported siderite-quartz-sulphide (SQS) vein system along both strike and dip. The program was specifically targeting the vein system below the adit located at 1264 m elevation, previously mentioned in the geology section of this report. This adit was historically reported to have a short drift along strike of the ore body and a small stoping block located at the south east end of the drift. The drill program traced the vein for 80m along strike NW-SE and for a vertical depth of 85m. Intervals of the Empire Strathcona structure were notably wider with stronger mineralization along strike to the north-west. As drill locations moved down strike, in the south-western direction, the structure became weaker, with smaller intersections and decreased mineralization.

It was confirmed that the SQS vein is hosted in Precambrian Aldridge argillites and siltites that are well bedded, with rusty brown weathering, and strike northerly and dip 5 to 30 degrees easterly.

All drill holes were successful in intercepting what has been deemed the main Empire Strathcona vein system, or zone. The zone can be described as comprised predominantly of siderite-quartz veining which includes narrow areas of argillite within the zone. The main SQS vein is characterized by medium to coarse grained interlocking crystals of siderite. There are often white to light grey fine to medium grained quartz veins cross-cutting or replacing the siderite. Sulphides are dominantly pyrrhotite, pyrite, and chalcopyrite. The sulphides are interstitial to the siderite or remobilized with the quartz. The zone is weak to moderately magnetic due to the presence of pyrrhotite. Alteration is weak to moderate chlorite along with Fe alteration found on fracture plains. It was often found that the vein is best mineralized near the contacts of the vein.

Stockwork style veining was noted in almost all drillholes in the footwall section of the main SQS vein. This footwall stockwork is described as argillite cut by a moderate to strong stockwork of light grey to beige siderite-quartz +/- pyrite, pyrrhotite veinlets. Stockwork veins are comprised of pale yellowish/brown to beige coarse-grained siderite with a light grey fine-grained quartz and variable pyrite and pyrrhotite.

The program was not successful in duplicating grades reported in the historical documents regarding the old mine workings on the claim, despite having drillhole targets located near the historical workings. This

may in part be due to a higher variability in mineralization than originally understood. A table of zone intercepts is listed below.

***Table 3 – Summary of Drill Program Intercepts***

Hole ID	Sample ID	From (m)	To (m)	Length (m)	Cu (%)	Lithology	Zone
ES-19-01	0027002	23.47	23.86	0.39	0.283	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-01	0027003	23.86	23.99	0.13	0.299		
ES-19-01	0027008	35.48	35.93	0.45	0.004		
ES-19-01	0027009	35.93	36.39	0.46	0.014		
ES-19-01	0027010	36.39	36.85	0.46	0.143		
ES-19-01	0027011	36.85	37.15	0.30	0.052		
ES-19-01	0027012	37.15	37.28	0.13	0.007		
ES-19-01	0027013	37.28	37.52	0.24	0.043		
ES-19-01	0027015	37.52	37.95	0.43	0.047		
ES-19-01	0027016	37.95	38.49	0.54	0.056		
ES-19-01	0027017	38.49	38.68	0.19	0.069		
ES-19-01	0027018	38.68	38.89	0.21	0.139		
ES-19-01	0027019	38.89	39.01	0.12	0.138		
ES-19-01	0027020	39.01	39.16	0.15	0.083		
ES-19-01	0027021	39.16	39.35	0.19	0.004		
ES-19-01	0027022	39.35	40.35	1.00	0.019		
ES-19-01	0027023	40.35	40.63	0.28	0.003		
ES-19-01	0027024	40.63	40.99	0.36	0.001		
ES-19-01	0027026	40.99	41.24	0.25	0.001		
ES-19-01	0027027	41.24	41.48	0.24	0.001		
ES-19-01	0027028	41.48	41.73	0.25	0.003		
ES-19-02	0027034	18.76	18.99	0.23	0.194	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-02	0027053	39.14	39.26	0.12	0.117		
ES-19-02	0027054	39.26	39.65	0.39	0.226		
ES-19-02	0027055	39.65	39.96	0.31	0.083		
ES-19-02	0027056	39.96	40.26	0.30	0.077		
ES-19-02	0027057	40.26	40.57	0.31	0.131		
ES-19-02	0027058	40.57	40.87	0.30	0.319		
ES-19-02	0027059	40.87	41.33	0.46	0.223		
ES-19-02	0027060	41.33	41.54	0.21	0.087		
ES-19-02	0027061	41.54	41.85	0.31	0.004		
ES-19-02	0027062	41.85	41.97	0.12	0.068	Arg with Stockwork Vein	FW Zone
ES-19-02	0027063	41.97	42.09	0.12	0.005		
ES-19-02	0027064	42.09	42.37	0.28	0.008	Arg with Stockwork Vein	FW Zone
ES-19-03	0027072	19.52	20.68	1.16	0.293	Arg with Stockwork Vein	HW Zone
ES-19-03	0027079	59.40	59.90	0.50	0.021	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-03	0027080	59.90	60.90	1.00	0.065		
ES-19-03	0027081	60.90	61.90	1.00	0.120		
ES-19-03	0027082	61.90	62.90	1.00	0.006		
ES-19-03	0027083	62.90	63.90	1.00	0.053		
ES-19-03	0027085	63.90	65.00	1.10	0.009	Arg with Stockwork Vein	FW Zone

Hole ID	Sample ID	From (m)	To (m)	Length (m)	Cu (%)	Lithology	Zone
ES-19-03	0027086	65.00	66.00	1.00	0.005		
ES-19-03	0027088	66.00	67.00	1.00	0.006		
ES-19-03	0027089	67.00	68.00	1.00	0.008		
ES-19-03	0027090	68.00	69.00	1.00	0.005	Arg with Stockwork Vein	FW Zone
ES-19-03	0027091	69.00	71.00	2.00	0.007		
ES-19-04	0027118	74.37	74.60	0.23	0.002	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-04	0027119	74.60	75.60	1.00	0.002	Arg with Stockwork Vein	FW Zone
ES-19-04	0027120	75.60	76.60	1.00	0.001		
ES-19-04	0027121	76.60	78.00	1.40	0.005	Argillite	FW Zone
ES-19-05	0027093	18.44	18.54	0.10	0.192	Argillite	HW Zone
ES-19-05	0027099	58.24	58.90	0.66	0.041	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-05	0027100	58.90	60.00	1.10	0.083		
ES-19-05	0027101	60.00	60.83	0.83	0.034		
ES-19-05	0027102	60.83	62.00	1.17	0.016		
ES-19-05	0027103	62.00	63.22	1.22	0.036		
ES-19-05	0027104	63.22	64.00	0.78	0.007		
ES-19-05	0027105	64.00	65.20	1.20	0.024		
ES-19-05	0027107	65.20	66.00	0.80	0.015	Arg with Stockwork Vein	FW Zone
ES-19-05	0027108	66.00	67.36	1.36	0.005		
ES-19-05	0027109	67.36	68.69	1.33	0.034		
ES-19-06	0027125	77.00	78.00	1.00	0.005	Arg with Stockwork Vein	HW Zone
ES-19-06	0027126	78.00	79.35	1.35	0.005		
ES-19-06	0027127	79.35	80.25	0.90	0.010	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-07	0027131	81.08	82.35	1.27	0.001	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-07	0027132	82.35	82.80	0.45	0.010	Arg with Stockwork Vein	FW Zone
ES-19-07	0027133	82.80	84.00	1.20	0.005	Argillite	FW Zone
ES-19-08	0027228	92.41	93.08	0.67	0.013	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-08	0027229	93.08	94.00	0.92	0.007	Arg with Stockwork Vein	FW Zone
ES-19-08	0027230	94.00	94.80	0.80	0.006		
ES-19-09	0027137	58.66	59.50	0.84	0.049	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-09	0027138	59.50	61.00	1.50	0.083		
ES-19-09	0027139	61.00	61.46	0.46	0.178		
ES-19-09	0027141	61.46	61.86	0.40	0.587		
ES-19-09	0027142	61.86	62.90	1.04	0.015	Arg with Stockwork Vein	FW Zone
ES-19-09	0027143	62.90	64.00	1.10	0.009	Argillite	FW Zone
ES-19-09	0027144	64.00	66.00	2.00	0.010		
ES-19-10	0027148	66.28	67.00	0.72	0.423		
ES-19-10	0027149	67.00	68.00	1.00	0.373	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-10	0027150	68.00	68.58	0.58	0.300		
ES-19-10	0027151	68.58	69.40	0.82	0.059	Arg with Stockwork Vein	FW Zone
ES-19-10	0027152	69.40	69.80	0.40	0.069		
ES-19-10	0027153	69.80	71.20	1.40	0.013		

Hole ID	Sample ID	From (m)	To (m)	Length (m)	Cu (%)	Lithology	Zone
ES-19-11	0027157	73.19	74.39	1.20	0.020	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-12	0035296	82.04	82.14	0.10	0.011	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-12	0035300	92.37	92.57	0.20	0.013	Argillite _QVN	FW Zone
ES-19-12	0035304	93.91	94.01	0.10	0.014	Arg with Stockwork Vein	FW Zone
ES-19-12	0035312	94.01	94.23	0.22	0.003		
ES-19-12	0035306	94.23	94.37	0.14	0.019		
ES-19-13	0035325	76.61	76.87	0.26	0.005	Arg with Stockwork Vein	FW Zone
ES-19-13	0035326	76.87	77.42	0.55	0.005		
ES-19-13	0035328	77.42	77.86	0.44	0.009		
ES-19-13	0035329	77.86	78.48	0.62	0.001		
ES-19-13	0035330	78.48	79.58	1.10	0.003		
ES-19-13	0035331	79.58	79.68	0.10	0.015		
ES-19-13	0035332	79.68	79.86	0.18	0.013		
ES-19-14	0035315	79.76	80.07	0.31	0.007	Siderite-Quartz -Sulphide Vein	Main ES Vein
ES-19-14	0035316	80.07	80.33	0.26	0.002	Arg with Stockwork Vein	FW Zone
ES-19-14	0035317	80.33	80.94	0.61	0.003		

## Recommendations

Despite not reproducing the historical assays on the initial drill program, the Empire Strathcona fissure vein system remains a prospect of interest due to its proximity to other similarly mineralized prospects, such as located on the Rex and Dean claims 3km along strike to the west.

Additional work recommended to advance the Empire Strathcona zone are listed below, and are not limited to:

- A drill program at a lower elevation, designed to continue to track the lower extension of the vein system and to determine there is an increase in the mineralization at depth. This program should target below the north western area of the structure where veining and mineralization were found to be stronger.
- Excavate and rehabilitate the mid rock cut (listed as “rock cut 2” in the Empire Strathcona geology section of this report), which contains a short adit, to sample historical workings and attempt to duplicate historically reported assay values.
- Complete ground geophysics in the valley bottom area between the Empire Strathcona zone and the Rex zone in attempt to define potential geophysical targets between the two zones; followed by greenfield exploration on any discovered targets.



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## Appendix I - Statement of Qualifications

### CERTIFICATE OF QUALIFICATIONS: Jillian Christmann

I Jillian Christmann, Geologist, Braveheart Resources Inc. hereby certify that:

1. This certificate applies to the assessment report titled Technical Report for the Bull River Mine Property – Empire Strathcona Claims Report, pursuant to Records of Work filed with the BC Mineral Titles Office on 18 October 2019.
2. I am an employee of Braveheart Resources Inc and work as a geologist.
3. That I graduated as a geologist from the University of Saskatchewan, Saskatoon, Saskatchewan, with a degree of Bachelor of Science with Honours in 2006.
4. That I have been involved in the mining and mineral industry with work on grassroots exploration projects through to mining projects since my graduation in 2006.
5. I have been employed by both junior and major companies in Canada and Chile.
5. That I am familiar with the subject area from personal fieldwork and that I personally wrote and supervised the preparation of this report.

Dated this 15th day of October 2019; in Cranbrook, British Columbia.



Jillian Christmann, B.Sc.Hons.

## **Appendix II - Statement of Expenditures**

Cost Statement (Empire Strathcona Drilling Program)					
Personnel	Position, (List Actual Days)	Day Rate	Days	Subtotal	Totals
Jill Christmann	Project Geologist, (June 4 - June 20, June 24 - July 2, July 8 - July 19, 2019)	\$516.50	38.0	\$19,627.00	
Bernhart Augsten P.Geo.	Consulting Geologist, (June 25 -July 6, July 7-9)			\$9,327.08	
Kurtis Christmann	Field Technician, (June 10 - June 20, June 27-July 5, July 7 - July 19)	\$200.00	28.0	\$5,600.00	
Robert Mills	Road/Site Preparation, (May 31st/June 1 - June 8/2019)	\$384.62	5.0	\$1,923.10	
Tim Hewison	GIS/Mapping/Drill Site Pre-Inspections/Permitting, (May 31st, June 3, June 20, July 5)	\$370.00	3.5	\$1,295.00	
				\$37,772.18	\$37,772.18
<b>Office Studies</b>		<b>Day Rate</b>	<b>Days</b>	<b>Subtotal</b>	
Badger Study (Permit)	Vast Resources Ltd			\$2,100.95	
Assessment Report	Jill Christmann	\$516.50	3.0	\$1,549.50	
GIS/Map Preparation	Tim Hewison	\$370.00	1.5	\$1,110.00	
				\$4,760.45	\$4,760.45
<b>Diamond Drilling</b>	<b>Description</b>			<b>Subtotal</b>	
Pacific Rock Works	Project Manager/Building Pads/Road Maintenance			\$16,250.13	
Lucky Drilling	14 holes (NQ2) ES-19-1 to ES-19-14			\$194,020.10	
				\$210,270.23	\$210,270.23
<b>Meals/Accommodations</b>				<b>Subtotal</b>	
Debra Therrien	Cooking/Accommodations			\$5,505.00	
Amanda Shingar	Cooking/Accommodations			\$9,120.00	
Amber Warner	Cooking/Accommodations			\$540.00	
				\$15,165.00	\$15,165.00
<b>Machinery &amp; Equipment</b>		<b>Rate</b>		<b>Subtotal</b>	
D7 Caterpillar	Per hour	\$250.00	62.0	\$15,500.00	
Skid Steer	Daily Rate	\$300.00	7.0	\$2,100.00	
4x4 Pick up Trucks	4 Pick-up Trucks/\$100 per unit/per day	\$100.00	89.0	\$8,900.00	
Hitachi 300EX	Per hour	\$175.00	48.0	\$8,400.00	
Hitachi 300EX Hauling (Amato Ent.)				\$632.00	
				\$35,532.00	\$35,532.00
<b>Geological Supplies</b>				<b>Subtotal</b>	
Standards and Blanks	Multi-element Standards & Blank			\$1,186.18	
(4) Core Cutting Blades				\$1,016.20	
Miscellaneous	Sample Bags, Tag Books, Safety Supplies, etc			\$1,333.41	
				\$3,535.79	\$3,535.79
<b>Ancillary Expenses</b>				<b>Subtotal</b>	
Travel (Jill Christmann)	Travel from Moose Jaw to Galloway (June 24, 2019)			\$123.80	
Pacific Rock Works Ltd	6 - 10' 8x8 Timbers for Drill			\$200.00	
				\$323.80	\$323.80
<b>Laboratory Analysis</b>				<b>Subtotal</b>	
Shipment #1	Bureau Veritas VAN19001694A (23 Samples) Prep, FA330AU, MA370, AQ200			\$2,682.30	
Shipment #2	Bureau Veritas VAN19001694 (47 Samples) Prep, FA330-AU, MA370, AQ200			\$2,788.28	
Shipment #3	Bureau Veritas VAN19001812 (90 Samples) Prep, FA330, AU, MA370, AQ200			\$5,386.43	
Shipment #4	Bureau Veritas VAN19002348 (42 Samples), Prep, FA330AU, MA370			\$456.86	
Shipment #5	Bureau Veritas VAN19002638 (8 Samples), Prep, FA330AU, MA370, AQ200			\$2,530.16	
Sample Shipments	Manitoulin Transport			\$228.58	
				\$14,072.61	\$14,072.61
<b>Total Expenditures</b>					\$321,432.06

### Appendix III - Sample List

HOLE_ID	SAMPLE_ID	FROM (m)	TO (m)	LENGTH (m)	SAMPLE TYPE
ES-19-01	0027001	23.16	23.50	0.34	HALFCORE
ES-19-01	0027002	23.50	23.86	0.37	HALFCORE
ES-19-01	0027003	23.86	24.05	0.18	HALFCORE
ES-19-01	0027004	24.05	24.57	0.52	HALFCORE
ES-19-01	0027005	33.80	34.29	0.49	HALFCORE
ES-19-01	0027006	34.29	34.68	0.40	HALFCORE
ES-19-01	0027007	34.68	35.48	0.79	HALFCORE
ES-19-01	0027008	35.48	35.93	0.46	HALFCORE
ES-19-01	0027009	35.93	36.39	0.46	HALFCORE
ES-19-01	0027010	36.39	36.85	0.46	HALFCORE
ES-19-01	0027011	36.85	37.15	0.30	HALFCORE
ES-19-01	0027012	37.15	37.28	0.12	HALFCORE
ES-19-01	0027013	37.28	37.52	0.24	HALFCORE
ES-19-01	0027014				BLANK
ES-19-01	0027015	37.52	37.95	0.43	HALFCORE
ES-19-01	0027016	37.95	38.49	0.55	HALFCORE
ES-19-01	0027017	38.49	38.68	0.18	HALFCORE
ES-19-01	0027018	38.68	38.89	0.21	HALFCORE
ES-19-01	0027019	38.89	39.01	0.12	HALFCORE
ES-19-01	0027020	39.01	39.16	0.15	HALFCORE
ES-19-01	0027021	39.16	39.35	0.18	HALFCORE
ES-19-01	0027022	39.35	40.35	1.01	HALFCORE
ES-19-01	0027023	40.35	40.63	0.27	HALFCORE
ES-19-01	0027024	40.63	40.99	0.37	HALFCORE
ES-19-01	0027025				Standard Cu 1709
ES-19-01	0027026	40.99	41.24	0.24	HALFCORE
ES-19-01	0027027	41.24	41.48	0.24	HALFCORE
ES-19-01	0027028	41.48	41.73	0.24	HALFCORE
ES-19-01	0027029	41.73	42.18	0.46	HALFCORE
ES-19-01	0027030	42.18	42.52	0.34	HALFCORE
ES-19-01	0027031	42.52	42.97	0.46	HALFCORE
ES-19-01	0027032				DUPLICATE
ES-19-02	0027033	18.44	18.77	0.34	HALFCORE
ES-19-02	0027034	18.77	18.99	0.21	HALFCORE
ES-19-02	0027035	18.99	19.17	0.18	HALFCORE
ES-19-02	0027036	19.17	19.48	0.30	HALFCORE
ES-19-02	0027037	19.48	19.72	0.24	HALFCORE
ES-19-02	0027038	19.72	20.33	0.61	HALFCORE
ES-19-02	0027039	25.94	26.46	0.52	HALFCORE
ES-19-02	0027040				BLANK

HOLE_ID	SAMPLE_ID	FROM (m)	TO (m)	LENGTH (m)	SAMPLE TYPE
ES-19-02	0027041	26.46	26.61	0.15	HALFCORE
ES-19-02	0027042	26.61	27.06	0.46	HALFCORE
ES-19-02	0027043	35.14	35.78	0.64	HALFCORE
ES-19-02	0027044	35.78	36.12	0.34	HALFCORE
ES-19-02	0027045	36.12	37.12	1.01	HALFCORE
ES-19-02	0027046	37.12	37.43	0.30	HALFCORE
ES-19-02	0027047	37.43	37.70	0.27	HALFCORE
ES-19-02	0027048	37.43	37.70	0.27	DUPLICATE
ES-19-02	0027049	37.70	38.25	0.55	HALFCORE
ES-19-02	0027050				Standard Cu 1705
ES-19-02	0027051	38.25	38.71	0.46	HALFCORE
ES-19-02	0027052	38.71	39.13	0.43	HALFCORE
ES-19-02	0027053	39.13	39.26	0.12	HALFCORE
ES-19-02	0027054	39.26	39.65	0.40	HALFCORE
ES-19-02	0027055	39.65	39.96	0.30	HALFCORE
ES-19-02	0027056	39.96	40.26	0.30	HALFCORE
ES-19-02	0027057	40.26	40.57	0.30	HALFCORE
ES-19-02	0027058	40.57	40.87	0.30	HALFCORE
ES-19-02	0027059	40.87	41.33	0.46	HALFCORE
ES-19-02	0027060	41.33	41.54	0.21	HALFCORE
ES-19-02	0027061	41.54	41.85	0.30	HALFCORE
ES-19-02	0027062	41.85	41.97	0.12	HALFCORE
ES-19-02	0027063	41.97	42.09	0.12	HALFCORE
ES-19-02	0027064	42.09	42.37	0.27	HALFCORE
ES-19-02	0027065	42.37	42.82	0.46	HALFCORE
ES-19-02	0027066	42.82	43.28	0.46	HALFCORE
ES-19-02	0027067	43.28	43.74	0.46	HALFCORE
ES-19-02	0027068	43.74	44.44	0.70	HALFCORE
ES-19-02	0027069	44.44	44.96	0.52	HALFCORE
ES-19-02	0027070	44.96	45.35	0.40	HALFCORE
ES-19-03	0027071	18.50	19.52	1.02	HALFCORE
ES-19-03	0027072	19.52	20.68	1.16	HALFCORE
ES-19-03	0027073	20.68	22.00	1.32	HALFCORE
ES-19-03	0027074				BLANK
ES-19-03	0027075	53.95	57.00	3.05	HALFCORE
ES-19-03	0027076	57.00	58.00	1.00	HALFCORE
ES-19-03	0027077	58.00	59.00	1.00	HALFCORE
ES-19-03	0027078	59.00	59.40	0.40	HALFCORE
ES-19-03	0027079	59.40	59.90	0.50	HALFCORE
ES-19-03	0027080	59.90	60.90	1.00	HALFCORE
ES-19-03	0027081	60.90	61.90	1.00	HALFCORE
ES-19-03	0027082	61.90	62.90	1.00	HALFCORE

HOLE_ID	SAMPLE_ID	FROM (m)	TO (m)	LENGTH (m)	SAMPLE TYPE
ES-19-03	0027084				Standard Cu 1709
ES-19-03	0027085	63.90	65.00	1.10	HALFCORE
ES-19-03	0027086	65.00	66.00	1.00	HALFCORE
ES-19-03	0027087	65.00	66.00	1.00	DUPLICATE
ES-19-03	0027088	66.00	67.00	1.00	HALFCORE
ES-19-03	0027089	67.00	68.00	1.00	HALFCORE
ES-19-03	0027090	68.00	69.00	1.00	HALFCORE
ES-19-03	0027091	69.00	71.00	2.00	HALFCORE
ES-19-04	0027110	17.60	19.60	2.00	HALFCORE
ES-19-04	0027111	19.60	19.90	0.30	HALFCORE
ES-19-04	0027112	19.90	20.89	0.99	HALFCORE
ES-19-04	0027113	20.89	21.08	0.19	HALFCORE
ES-19-04	0027114	21.08	22.00	0.92	HALFCORE
ES-19-04	0027115				BLANK
ES-19-04	0027116	73.00	74.00	1.00	HALFCORE
ES-19-04	0027117	74.00	74.37	0.37	HALFCORE
ES-19-04	0027118	74.37	74.60	0.23	HALFCORE
ES-19-04	0027119	74.60	75.60	1.00	HALFCORE
ES-19-04	0027120	75.60	76.60	1.00	HALFCORE
ES-19-04	0027121	76.60	78.00	1.40	HALFCORE
ES-19-04	0027122				Standard Cu 1709
ES-19-05	0027092	17.00	18.44	1.44	HALFCORE
ES-19-05	0027093	18.44	18.54	0.10	HALFCORE
ES-19-05	0027094	18.54	20.00	1.46	HALFCORE
ES-19-05	0027095				BLANK
ES-19-05	0027096	53.00	55.00	2.00	HALFCORE
ES-19-05	0027097	55.00	56.70	1.70	HALFCORE
ES-19-05	0027098	56.70	58.24	1.54	HALFCORE
ES-19-05	0027099	58.24	58.90	0.66	HALFCORE
ES-19-05	0027100	58.90	60.00	1.10	HALFCORE
ES-19-05	0027101	60.00	60.83	0.83	HALFCORE
ES-19-05	0027102	60.83	62.00	1.17	HALFCORE
ES-19-05	0027103	62.00	63.22	1.22	HALFCORE
ES-19-05	0027104	63.22	64.00	0.78	HALFCORE
ES-19-05	0027105	64.00	65.20	1.20	HALFCORE
ES-19-05	0027106				Standard Cu 1705
ES-19-05	0027107	65.20	66.00	0.80	HALFCORE
ES-19-05	0027108	66.00	67.36	1.36	HALFCORE
ES-19-05	0027109	67.36	68.69	1.33	HALFCORE
ES-19-06	0027123	73.00	75.00	2.00	HALFCORE
ES-19-06	0027124	75.00	77.00	2.00	HALFCORE
ES-19-06	0027125	77.00	78.00	1.00	HALFCORE



HOLE_ID	SAMPLE_ID	FROM (m)	TO (m)	LENGTH (m)	SAMPLE TYPE
ES-19-06	0027126	78.00	79.35	1.35	HALFCORE
ES-19-06	0027127	79.35	80.25	0.90	HALFCORE
ES-19-06	0027128	80.25	82.00	1.75	HALFCORE
ES-19-07	0027129	78.00	80.00	2.00	HALFCORE
ES-19-07	0027130	80.00	81.08	1.08	HALFCORE
ES-19-07	0027131	81.08	82.35	1.27	HALFCORE
ES-19-07	0027132	82.35	82.80	0.45	HALFCORE
ES-19-07	0027133	82.80	84.00	1.20	HALFCORE
ES-19-07	0027134				BLANK
ES-19-08	0027226	90.02	92.41	2.39	HALFCORE
ES-19-08	0027227				Standard Cu 1709
ES-19-08	0027228	92.41	93.08	0.67	HALFCORE
ES-19-08	0027229	93.08	94.00	0.92	HALFCORE
ES-19-08	0027230	94.00	94.80	0.80	HALFCORE
ES-19-08	0027231	94.80	96.00	1.20	HALFCORE
ES-19-08	0027232	96.00	98.00	2.00	HALFCORE
ES-19-08	0027233	98.00	99.50	1.50	HALFCORE
ES-19-09	0027135	56.00	57.50	1.50	HALFCORE
ES-19-09	0027136	57.50	58.66	1.16	HALFCORE
ES-19-09	0027137	58.66	59.50	0.84	HALFCORE
ES-19-09	0027138	59.50	61.00	1.50	HALFCORE
ES-19-09	0027139	61.00	61.46	0.46	HALFCORE
ES-19-09	0027140				Standard Cu 1410
ES-19-09	0027141	61.46	61.86	0.40	HALFCORE
ES-19-09	0027142	61.86	62.90	1.04	HALFCORE
ES-19-09	0027143	62.90	64.00	1.10	HALFCORE
ES-19-09	0027144	64.00	66.00	2.00	HALFCORE
ES-19-10	0027145	62.00	64.00	2.00	HALFCORE
ES-19-10	0027146	64.00	65.00	1.00	HALFCORE
ES-19-10	0027147	65.00	66.28	1.28	HALFCORE
ES-19-10	0027148	66.28	67.00	0.72	HALFCORE
ES-19-10	0027149	67.00	68.00	1.00	HALFCORE
ES-19-10	0027150	68.00	68.58	0.58	HALFCORE
ES-19-10	0027151	68.58	69.40	0.82	HALFCORE
ES-19-10	0027152	69.40	69.80	0.40	HALFCORE
ES-19-10	0027153	69.80	71.20	1.40	HALFCORE
ES-19-10	0027154				BLANK
ES-19-10	0027155	71.20	72.00	0.80	HALFCORE
ES-19-11	0027156	72.00	73.19	1.19	HALFCORE
ES-19-11	0027157	73.19	74.39	1.20	HALFCORE
ES-19-11	0027158	74.39	74.98	0.59	HALFCORE
ES-19-11	0027159				Standard Cu 1709

HOLE_ID	SAMPLE_ID	FROM (m)	TO (m)	LENGTH (m)	SAMPLE TYPE
ES-19-12	0035293	80.96	81.44	0.48	HALFCORE
ES-19-12	0035294	81.44	82.04	0.60	HALFCORE
ES-19-12	0035295				Standard Cu 1709
ES-19-12	0035296	82.04	82.14	0.10	HALFCORE
ES-19-12	0035297	82.14	82.58	0.44	HALFCORE
ES-19-12	0035298	91.70	91.95	0.25	HALFCORE
ES-19-12	0035299	91.95	92.37	0.42	HALFCORE
ES-19-12	0035300	92.37	92.57	0.20	HALFCORE
ES-19-12	0035301	92.57	93.27	0.70	HALFCORE
ES-19-12	0035302	93.27	93.62	0.35	HALFCORE
ES-19-12	0035303	93.62	93.91	0.29	HALFCORE
ES-19-12	0035304	93.91	94.01	0.10	HALFCORE
ES-19-12	0035305				BLANK
ES-19-12	0035312	94.01	94.23	0.22	HALFCORE
ES-19-12	0035306	94.23	94.37	0.14	HALFCORE
ES-19-12	0035307	94.37	94.79	0.42	HALFCORE
ES-19-12	0035308	94.79	95.00	0.21	HALFCORE
ES-19-12	0035309	95.00	96.06	1.06	HALFCORE
ES-19-12	0035310	96.06	96.31	0.25	HALFCORE
ES-19-12	0035311	96.31	96.62	0.31	HALFCORE
ES-19-13	0035324	76.35	76.61	0.26	HALFCORE
ES-19-13	0035325	76.61	76.87	0.26	HALFCORE
ES-19-13	0035326	76.87	77.42	0.55	HALFCORE
ES-19-13	0035327				Standard Cu 1410
ES-19-13	0035328	77.42	77.86	0.44	HALFCORE
ES-19-13	0035329	77.86	78.48	0.62	HALFCORE
ES-19-13	0035330	78.48	79.58	1.10	HALFCORE
ES-19-13	0035331	79.58	79.68	0.10	HALFCORE
ES-19-13	0035332	79.68	79.86	0.18	HALFCORE
ES-19-13	0035333				BLANK
ES-19-13	0035334	79.86	80.22	0.36	HALFCORE
ES-19-14	0035313	78.77	79.26	0.49	HALFCORE
ES-19-14	0035314	79.26	79.76	0.50	HALFCORE
ES-19-14	0035315	79.76	80.07	0.31	HALFCORE
ES-19-14	0035316	80.07	80.33	0.26	HALFCORE
ES-19-14	0035317	80.33	80.88	0.55	HALFCORE
ES-19-14	0035318				Standard Cu 1709
ES-19-14	0035319	80.88	81.94	1.06	HALFCORE
ES-19-14	0035320	81.94	82.60	0.66	HALFCORE
ES-19-14	0035321	82.60	83.04	0.44	HALFCORE
ES-19-14	0035322	83.04	83.54	0.50	HALFCORE
ES-19-14	0035323	83.54	83.90	0.36	HALFCORE

## Appendix IV – Drillhole Information

### Drillhole Collar Data

HOLE_ID	UTM Easting	UTM Northing	Elev (m)	EOH (m)	LOCATION
ES-19-01	630744	5473866	1264	87.17	ES Drill Pad 1
ES-19-02	630744	5473866	1264	59.74	ES Drill Pad 1
ES-19-03	630744	5473866	1264	81.38	ES Drill Pad 1
ES-19-04	630744	5473866	1264	105.46	ES Drill Pad 1
ES-19-05	630744	5473866	1264	81.07	ES Drill Pad 1
ES-19-06	630744	5473866	1264	93.26	ES Drill Pad 1
ES-19-07	630757	5473799	1260	105.46	ES Drill Pad 2
ES-19-08	630757	5473799	1260	111.56	ES Drill Pad 2
ES-19-09	630757	5473799	1260	73.15	ES Drill Pad 2
ES-19-10	630757	5473799	1260	80.16	ES Drill Pad 2
ES-19-11	630757	5473799	1260	84.12	ES Drill Pad 2
ES-19-12	630757	5473799	1260	108.81	ES Drill Pad 2
ES-19-13	630785	5473766	1268	201.77	ES Drill Pad 3
ES-19-14	630785	5473766	1268	115.51	ES Drill Pad 3

### Down Hole Survey Data

HOLE_ID	DEPTH (m)	AZIMUTH	DIP	MAG	HOLE SIZE
ES-19-01	35.36	57.3	-46.1	55940	NQ2
	38.40	56.6	-45.7	55990	NQ2
	53.64	57.9	-45.5	55510	NQ2
	68.88	57.7	-44.8	56018	NQ2
	87.17	58.5	-44.1	55669	NQ2
ES-19-02	26.21	72.0	-46.0	56865	NQ2
	44.50	75.1	-45.7	56140	NQ2
	59.74	76.0	-45.2	55663	NQ2
ES-19-03	26.52	75.1	-64.5	56469	NQ2
	41.76	77.0	-64.3	55416	NQ2
	60.04	78.6	-64.1	55492	NQ2
	81.38	80.2	-63.6	55149	NQ2
ES-19-04	29.26	75.4	-70.4	55753	NQ2
	44.50	79.0	-69.7	55306	NQ2
	59.74	81.9	-69.0	55171	NQ2
	81.07	83.2	-69.4	55556	NQ2
	96.31	81.7	-69.5	55337	NQ2
	105.46	81.6	-69.2	55176	NQ2
ES-19-05	26.21	98.3	-53.5	55401	NQ2
	47.55	99.2	-52.9	55533	NQ2

	62.79	100.1	-52.9	55400	NQ2
	81.07	99.5	-52.4	55249	NQ2
<b>ES-19-06</b>	29.26	96.6	-64.5	55677	NQ2
	44.50	99.3	-63.2	55437	NQ2
	60.04	100.6	-63.3	55356	NQ2
	74.98	99.5	-63.0	55742	NQ2
<b>ES-19-07</b>	32.61	67.2	-45.5	55897	NQ2
	47.55	67.8	-44.8	55699	NQ2
	62.79	67.4	-44.2	55615	NQ2
	78.02	68.1	-43.9	56287	NQ2
	90.22	70.3	-44.0	56509	NQ2
	105.46	69.0	-43.7	56860	NQ2
<b>ES-19-08</b>	29.26	65.6	-53.2	55857	NQ2
	44.50	68.1	-53.2	55936	NQ2
	59.74	68.9	-53.1	55922	NQ2
	74.98	69.6	-53.1	56272	NQ2
	90.22	70.2	-53.0	55966	NQ2
	102.41	70.0	-52.9	55826	NQ2
	111.55	68.8	-52.6	54855	NQ2
<b>ES-19-09</b>	30.48	63.2	-19.6	55593	NQ2
	45.72	63.9	-19.6	55938	NQ2
	60.96	64.8	-19.3	55586	NQ2
	73.15	63.8	-18.5	55513	NQ2
<b>ES-19-10</b>	30.48	77.6	-19.8	55473	NQ2
	45.72	76.5	-19.8	55482	NQ2
	80.16	77.5	-17.9	55547	NQ2
<b>ES-19-11</b>	32.31	77.8	-33.5	55713	NQ2
	47.55	77.9	-33.5	55698	NQ2
	62.79	79.5	-32.6	55676	NQ2
	78.02	79.5	-32.6	55636	NQ2
<b>ES-19-12</b>	32.61	78.5	-45.4	55887	NQ2
	47.85	80.0	-45.2	55851	NQ2
	63.09	79.7	-44.7	55759	NQ2
	78.33	80.6	-44.5	56380	NQ2
	93.57	80.8	-44.4	56386	NQ2
	108.81	82.0	-43.5	55992	NQ2
<b>ES-19-13</b>	18.90	68.1	-20.9	55689	NQ2
	49.38	68.6	-19.8	55873	NQ2
	64.61	68.4	-19.4	55653	NQ2
	79.85	70.8	-20.3	55888	NQ2
	95.09	70.3	-19.8	55624	NQ2
	128.62	72.7	-19.1	55706	NQ2
	134.72	72.7	-18.5	55641	NQ2
	174.34	68.4	-17.7	56267	NQ2
<b>ES-19-14</b>	21.03	51.2	-21.1	56117	NQ2
	36.27	53.1	-21.0	55550	NQ2
	51.51	53.9	-21.2	55634	NQ2
	63.70	55.6	-21.6	55566	NQ2
	94.18	56.2	-21.2	55564	NQ2
	115.51	59.0	-21.3	55680	NQ2

## **Appendix V – Drillhole Logs**

**Project:** Bull River

**Hole:** ES-19-01

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	J Christmann	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-11	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630744	<b>Azimuth:</b>	63	<b>Date Completed:</b>	2019-06-13	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473866	<b>Dip:</b>	-46	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1264	<b>Length (m):</b>	87.17	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-15	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-16	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>							
<b>Hole Status:</b>	Completed	<b>Comments:</b>					
<b>Hole Purpose:</b>	EXPL	Hole was collared to test the northerly strike extension of the Empire Strathcona vein. The hole is underlain by gently east dipping laminated argillites, siltstones, and minor quartzites of the mid Aldridge Formation of Precambrian age which are cut by the empire strathcona vein.					

Hole was originally logged in feet and was converted to meters  
34.59-41.73 Massive siderite quartz vein with sulphides dominated by pyrrhotite-pyrite and less chalcopyrite

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
35.36	EZShot	Jeff	2019-06-13	-46	43.2	14.1	57.3	55940	<input checked="" type="checkbox"/>	
38.4	EZShot	Jeff	2019-06-13	-45.7	38.4	14.1	52.5	55990	<input checked="" type="checkbox"/>	
53.64	EZShot	Jeff	2019-06-14	-45.5	43.8	14.1	57.9	55510	<input checked="" type="checkbox"/>	
68.88	EZShot	Jeff	2019-06-14	-44.8	43.6	14.1	57.7	56018	<input checked="" type="checkbox"/>	
87.17	EZShot	Jeff	2019-06-15	-44.1	44.4	14.1	58.5	55669	<input checked="" type="checkbox"/>	



## GeoSpark: Drill Hole Report

Hole: ES-19-01

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<b>0.00</b>	<b>16.55</b>	<b>OVB Overburden</b>									
<p>Overburden here consists of colluvium and fine to coarse talus of Aldridge formation argillite/argillaceous siltstone; Exact bedrock interface somewhat difficult to determine due to highly fractured nature of bedrock and the similarity in geology between bedrock and talus material.</p>											
<b>16.55</b>	<b>23.47</b>	<b>ARGL Argillite</b>	<b>dark grey</b>	<b>VFG</b>							
<p>Dark grey to light grey finely laminated to massive fine grained argillite to argillaceous siltstone; characteristically mm-scale dk to light grey laminae interbedded with more massive decimeter-scale, fine grained lighter grey argillaceous siltstone; Tr fg-mg py stringers &lt;3mm width; Tr carb stringers 1-2mm width; wk-mod Fe staining along fractures and bedding plane; weakly magnetic with fg pyrr</p> <p>16.55-16.92 rubble zone            17.07-17.92 rubble zone            19.84-20.15 fault zone with fg mud/sand gouge; upper contact wavy at 20; lower contact NP            20.54-20.91 bedding 1mm-5cm; planar; at 40 tca            20.91-22.74 abrupt change in bedding to 10 tca            22.74-23.47 fault with minor argillite angular to sub ang frags; gouge fill is fg silt/sand/clay; upper contact at 10 tca; lower contact NP</p>											
			23.16	23.47	0.31	0027001	7	1	0.022	0.01	0.005
<b>23.47</b>	<b>23.99</b>	<b>SQS Siderite-quartz-sulphide Vein</b>	<b>red</b>	<b>MCG</b>							
<p>Almost completely oxidized coarse grained siderite (now a deep red to reddish brown) with some coarse grained chalcopyrite; also includes fragments of white med grained quartz vein material</p>											
			23.47	23.86	0.39	0027002	33	4	0.283	0.01	0.005
			23.86	23.99	0.13	0027003	8	4	0.299	0.01	0.01
<b>23.99</b>	<b>34.29</b>	<b>ARGL Argillite</b>	<b>dark grey</b>	<b>FG</b>							
<p>Dark grey to light grey finely laminated to massive fine grained argillite to argillaceous siltstone; characteristically mm-scale dk to light grey laminae interbedded with more massive decimeter-scale, fine grained lighter grey argillaceous siltstone; bedding is 45 tca; increase in qtz/carb stringers 1-2mm in width; trace radial calcite xstals along thin ned planes approx 1cm in diameter; mm thin Fe staining along bedding planes; Tr fg py+pyrr 0.5%; Py is fg cubic-vfg mx and fg bands // to bedding</p> <p>23.79-23.96 Rubble zone            26.03-26.52 Rubble zone            29.56-29.75 minor qtz stringers 1-5mm wide on lower contact of unit; upper contact is irreg; lower contact at 35 tca; minor Fe staining; tr py+pyrr</p>											
			23.99	24.57	0.58	0027004	10	1	0.008	0.01	0.005

Hole: ES-19-01

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
			33.80	34.29	0.49	0027005	5	1	0.006	0.01	0.005
			34.29	34.68	0.39	0027006	4	1	0.002	0.01	0.005
<b>34.29</b>	<b>35.48</b>	<b>ARGL Argillite dark grey VFG</b>	34.68	35.48	0.80	0027007	7	1	0.011	0.01	0.005
<p>Drk grey-med grey argillite with interbedded finely laminated med grey siltite; 34.29-34.68 argil is brecciated; angular clasts; cement mod oxidized with Fe staining; upper contact of bx 50 tca; lower contact of bx NP; 34.68-35.48 faulted/sheared contact; vfg clay and fg silt gouge; missing 2' core</p>											
<b>35.48</b>	<b>41.73</b>	<b>SQS Siderite-quartz-sulphide Vein beige MCG</b>									
<p>Interval comprised predominantly of Siderite-Quartz vein (the main Empire-Strathcona Vein) but includes areas of argillite noted below. The vein is characterized by mg-cg (5-10mm) interlocking crystals of siderite. White to light grey fine to med quartz veins cross-cutting or replacing the siderite. Sulphides are interstitial to the siderite or remobilized with the quartz; wk-mod magnetic due to pyrr; wk-mod drk green chl alt throughout; wk-mod Fe alt on fracture plains. The vein is best mineralized near the, particularly the upper contact where see heavy pyrrhotite (see Min Sct);</p>											
<p>35.48-37.19 Siderite Qtz vein 0.5% pyrr; 0.5% fg py; 1% fg cpy            37.19-37.52 Qtz vein xcutting SQS 0.5% pyrr and py; 0.5% cpy concentrated at lower contact; upper contact is iregg/wavy at 50 tca; lower contact wavy at 60 tca            37.52-38.68 Siderite Qtz vein with increased areas of heavy Fe staining            38.68-39.01 Qtz Sid vein; 90% qtz with 10% beige coarse xstalline sid; 0.2% fg cpy blebs; lower contact wavy at 60 tca; upper contact 50 tca            39.01-39.2 area of complete Fe replacement; orig text not visible            39.2-41.20 Sid Qtz vein; dom beige course sid; tr fg-mg cpy blebs, 0.5% py+pyrr            41.20-41.73 85% Sid Qtz Stwk with 15% argillite; mod chl alt; tr diss py+pyrr</p>											
			35.48	35.93	0.45	0027008	8	1	0.004	0.01	0.005
			35.93	36.39	0.46	0027009	11	1	0.014	0.01	0.01
			36.39	36.85	0.46	0027010	11	3	0.143	0.01	0.005
			36.85	37.15	0.30	0027011	6	1	0.052	0.01	0.005
			37.15	37.28	0.13	0027012	3	1	0.007	0.01	0.005
			37.28	37.52	0.24	0027013	8	1	0.043	0.01	0.005
			37.52	37.95	0.43	0027015	7	1	0.047	0.01	0.005
			37.95	38.49	0.54	0027016	5	1	0.056	0.01	0.03
			38.49	38.68	0.19	0027017	6	1	0.069	0.01	0.005
			38.68	38.89	0.21	0027018	5	2	0.139	0.01	0.005
			38.89	39.01	0.12	0027019	7	1	0.138	0.01	0.005





## GeoSpark: Drill Hole Report

Hole: ES-19-01

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
			39.01	39.16	0.15	0027020	6	1	0.083	0.01	0.005
			39.16	39.35	0.19	0027021	11	1	0.004	0.01	0.02
			39.35	40.35	1.00	0027022	6	1	0.019	0.01	0.005
			40.35	40.63	0.28	0027023	8	1	0.003	0.01	0.02
			40.63	40.99	0.36	0027024	5	1	0.001	0.01	0.005
			40.99	41.24	0.25	0027026	5	1	0.0005	0.01	0.005
			41.24	41.48	0.24	0027027	6	1	0.0005	0.01	0.005
			41.48	41.73	0.25	0027028	6	1	0.003	0.01	0.005
<b>41.73</b>	<b>87.17</b>	<b>ARGL Argillite</b>									
						<b>dark grey</b>					
						<b>VFG</b>					
<p>Drk grey vfg argillite with localized interbedded med grey fg siltite and lesser quartzite which are 2mm-1cm in width; bedding is fine planar at 50 tca; tr 1-22m qtz/carb stringers xcutting bedding; tr fg py+pyrr bands // to bedding and are 1-2 mm in width; at 66.14m bedding shallows locally to 30-40 tca - EOH</p>											
			41.73	42.18	0.45	0027029	5	1	0.007	0.01	0.005
			42.18	42.52	0.34	0027030	7	1	0.008	0.01	0.005
			42.52	42.97	0.45	0027031	6	1	0.008	0.01	0.005

End of Hole @ 87.17



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-02

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	J Christmann	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-17	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630744	<b>Azimuth:</b>	77	<b>Date Completed:</b>	2019-06-18	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473866	<b>Dip:</b>	-45	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1264	<b>Length (m):</b>	59.74	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-06-15	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-06-18	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	Hole was collared to test the stike extension of the ES vein to the south of DDH ES-19-01. Host rock is the mid Aldridge argillites/argillaceous siltstones and is cut by the ES vein 39.23-41.33 siderite quartz Empire Strathcona vein; Sulphides dominately pyrr-py and lesser chalco				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL						

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
26.21	EZShot	Jeff	2019-06-16	-46	57.9	14.1	72	56865	<input checked="" type="checkbox"/>	
44.5	EZShot	Jeff	2019-06-16	-45.7	61	14.1	75.1	56140	<input checked="" type="checkbox"/>	
59.74	EZShot	Jeff	2019-06-18	-45.2	61.9	14.1	76	55663	<input checked="" type="checkbox"/>	



## GeoSpark: Drill Hole Report

Hole: ES-19-02

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<b>0.00</b>	<b>9.57</b>	<b>OVB Overburden</b> Broken/cobbles fragments of Argillite talus									
<b>9.57</b>	<b>18.76</b>	<b>ARGL Argillite</b> Dark grey to light grey finely laminated to massive fine grained argillite to argillaceous siltstone; characteristically mm-scale dk to light grey laminae interbedded with more massive decimeter-scale, fine grained lighter grey argillaceous siltstone; unit is heavily fractured with Fe staining on fracture plains; bedding is dom 50 tca; Tr fg bands of Py mm width; tr qtz/carb stringers 1-2mm width									
		11.03-11.19 Rubble zone 13.87-18.56 Sub unit dominated by rubble zones									
			18.44	18.76	0.32	0027033	5	1	0.006	0.01	0.005
			18.76	18.99	0.23	0027034	53	5	0.194	0.01	0.08
<b>18.76</b>	<b>18.99</b>	<b>SQS Siderite-quartz-sulphide Vein</b> Siderite-Qtz vein with pervassive Fe oxidization; unit is dark brown-red; 40% qtz and 60% siderite originally; Weakly magnetic; mod drk green-black chlorite alt; upper contact NP; lower contact approx 50 tca; high concentration of sulphides in areas stongly oxidized with 4% pyrr; 4% py; and 2% chalco									
<b>18.99</b>	<b>19.72</b>	<b>ARGL_ST Argillite with siderite-quartz</b> Dark grey vfg argillite with 35% siderite quartz stockwork; stockwork is dominately siderite; stkwk shows micro scaled faults with mm-2cm displacement; minor Fe staining on fractures; siderite is course xstalline beige; 1.5% fg py stringers and blebs ~2mm; 0.3% fg cpy blebs; Tr pyrr fg stringers									
		<b>KWK stockwork</b>									
			18.99	19.17	0.18	0027035	9	1	0.02	0.01	0.005
			19.17	19.48	0.31	0027036	47	3	0.036	0.01	0.02
			19.48	19.72	0.24	0027037	6	1	0.013	0.01	0.005



## GeoSpark: Drill Hole Report

Hole: ES-19-02

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<b>19.72</b>	<b>35.78</b>	<b>ARGL Argillite</b>									
<p>Argillite; drk grey; finely bedded with med-light grey siltite and lesser quartzite beds 1-5mm and localized; bedding at 50 tca; minor Fe staining along bedding and fractures; tr qtz/carb stringers 1-3mm; tr fg radial calcite xstals 3mm in diameter found on fracture plains; 0.5% py+pyrr bands 1-3mm width both // to bedding and crosscutting bedding; wk magnetic</p> <p>19.72-21.21 dom Rubble Zone or possible fault zone with mod drk to med brown clay and silt gouge; contacts NP</p> <p>26.46-26.61 subunit of siderite and quartz stringers 1-4mm in width with 1.5% py+pyrr stringers and tr cpy; sulphides are fg; wk magnetic; minor fe staining; stringers are // to bedding with both upper and lower contacts at 50 tca</p> <p>29.2-29.38 bedding shallow to 20 tca</p> <p>29.38-29.50 Fault zone; drk gry soft clay gouge with minor silt and sand; minor 1cm rounded frags of metaseds; contacts are irreg/wavt at 50 tca</p> <p>29.50-32.58 area is highly fractured and jointed at 60 tca; joints have carb cement 1mm and are wavy; rough; with Fe staining and minor radial calcite xstalls 2mm diameter on joint faces</p> <p>32.58-32.86 fault as above with upper contact at 60 tca and lower contact NP</p> <p>33.71-35.78 Rubble Zone with low recovery of core</p>											
		<b>dark grey</b>									
		<b>VFG</b>									
			19.72	20.33	0.61	0027038	6	1	0.02	0.01	0.005
			25.94	26.46	0.52	0027039	8	1	0.015	0.01	0.005
			26.46	26.61	0.15	0027041	17	1	0.007	0.01	0.005
			26.61	27.06	0.45	0027042	9	1	0.004	0.01	0.005
			35.14	35.78	0.64	0027043	6	1	0.012	0.01	0.005
<b>35.78</b>	<b>39.14</b>	<b>ARGL_ST Argillite with siderite-quartz</b>									
<p>Dark gry vfg argillite with minor intercalated fg lighter gry siltstone containing 25% siderite quartz stockwork; argillite within stockwork is brecciated into subangular to angular fragments; Veinlets of beige siderite-quartz average 5cm in width; Siderite is mg-cg xstalline; contains tr fg diss py and pyrrhotite; minor Fe staining along fractures;</p>											
		<b>dark grey</b>									
		<b>VFG</b>									
		<b>KWK stockwork</b>									
			35.78	36.12	0.34	0027044	10	1	0.016	0.01	0.005
			36.12	37.12	1.00	0027045	8	1	0.01	0.01	0.005
			37.12	37.43	0.31	0027046	9	1	0.005	0.01	0.005

Hole: ES-19-02

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
			37.43	37.70	0.27	0027047	11	1	0.005	0.01	0.005
			37.70	38.25	0.55	0027049	6	1	0.008	0.01	0.005
			38.25	38.71	0.46	0027051	4	1	0.008	0.01	0.005
			38.71	39.14	0.43	0027052	6	1	0.009	0.01	0.005
<b>39.14</b>	<b>41.85</b>	<b>SQS Siderite-quartz-sulphide Vein cream to pale yellow MCG</b>									
<p>Siderite Quartz vein; cream colour; Dominantly mg-cg siderite xstals; wk-mod drk green chlorite alteration throughout; weakly magnetic; mod Fe staining along fractures; areas of drk gry vfg argillite; upper portion of vein contains approx. 2% fg blebs and fg stringers of cpy; 2.5% py +/- pyrrhotite as both fg disseminated and fg stringers; sulphide percentages decrease near end of unit with 0.2% fg cpy blebs and 0.1% fg diss pyrrhotite; upper contact is wavy at 60 tca and contains heavy Fe staining; lower contact is NP</p> <p>41.33-41.54 area more dominantly drk gry argillite with 15% siderite quartz veinlets 1-10mm</p>											
			39.14	39.26	0.12	0027053	13	3	0.117	0.05	0.005
			39.26	39.65	0.39	0027054	24	4	0.226	0.05	0.03
			39.65	39.96	0.31	0027055	8	1	0.083	0.01	0.005
			39.96	40.26	0.30	0027056	7	1	0.077	0.01	0.005
			40.26	40.57	0.31	0027057	8	3	0.131	0.01	0.005
			40.57	40.87	0.30	0027058	70	4	0.319	0.01	0.005
			40.87	41.33	0.46	0027059	7	4	0.223	0.01	0.005
			41.33	41.54	0.21	0027060	10	1	0.087	0.01	0.005
			41.54	41.85	0.31	0027061	5	1	0.004	0.01	0.005
<b>41.85</b>	<b>42.37</b>	<b>ARGL_ST Argillite with siderite-quartz cream to pale yellow MG</b>									
		<b>KWK stockwork</b>									
<p>Argillite with Siderite Quartz stockwork; Siderite Quartz veinlets are cream colour; mg; with trace amounts of both disseminated cpy and py; Argillite is vfg drk gry</p>											
			41.85	41.97	0.12	0027062	14	1	0.068	0.01	0.005
			41.97	42.09	0.12	0027063	8	1	0.005	0.01	0.005
			42.09	42.37	0.28	0027064	21	1	0.008	0.01	0.005

Hole: ES-19-02

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<b>42.37</b>	<b>44.44</b>	<b>ARGL Argillite</b>									
<p><b>dark grey VFG</b></p> <p>Dominantly vfg finely laminated argillite with interbedded fg siltstone; trace amounts of Fe staining along fractures; bedding is 40 tca; contains 5% fg-mg siderite quartz stringers/veinlets 1mm-20mm in width; tr fg blebs of py and pyrrhotite 2mm to 10mm in diameter and fg stringers 1mm-2mm in width; both upper and lower contacts are gradational</p>											
42.37	42.82		42.37	42.82	0.45	0027065	9	1	0.009	0.01	0.005
			42.82	43.28	0.46	0027066	6	1	0.011	0.01	0.005
			43.28	43.74	0.46	0027067	6	1	0.006	0.01	0.005
			43.74	44.44	0.70	0027068	10	1	0.009	0.01	0.005
<b>44.44</b>	<b>59.74</b>	<b>ARGL Argillite</b>									
<p><b>dark grey VFG</b></p> <p>Drk gry vfg finely laminated argillite with lesser fg light gry siltite beds 1-10mm in width; highly jointed/fractured with weak to mod Fe staining; tr qtz/carb stringers 1-2mm in width; weakly mag; 1% fg bands of py parallel to bedding 1-10mm in width; tr fg diss pyrrhotite; bedding is dom 40-50 tca - EOH</p> <p>166.4-173.0 bedding shallows to 20 tca</p> <p>170.9-172.4 Rubble Zone</p>											
			44.44	44.96	0.52	0027069	8	1	0.007	0.01	0.005
			44.96	45.35	0.39	0027070	9	1	0.006	0.01	0.005

End of Hole @ 59.74

**Project:** Bull River

**Hole:** ES-19-03

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-18	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630744	<b>Azimuth:</b>	77	<b>Date Completed:</b>	2019-06-21	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473866	<b>Dip:</b>	-64	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1264	<b>Length (m):</b>	81.38	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-06-18	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-06-20	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>							
<b>Hole Status:</b>	Completed	<b>Comments:</b>					
<b>Hole Purpose:</b>	EXPL	<p>Hole was collared to test the strike extension of the Empire Strathcona vein to the south of Holes ES-19-01 and 02. The hole is underlain by middle Aldridge argillites/argillaceous siltstone and is cut by the Empire-Strathcona vein; 59.4 - 63.9 - Massive siderite-quartz-sulphide vein (Empire-Strathcona Vein); sulphides dominated by pyrrhotite-pyrite and lesser chalcopyrite. 63.9 - 71 - strong stockwork of siderite-quartz-pyrite-pyrrhotite veining.</p>					

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
26.52	ReflexEzs		2019-06-19	-64.5	61	14.1	75.1	56469	<input checked="" type="checkbox"/>	
41.76	ReflexEzs		2019-06-19	-64.3	62.9	14.1	77	55416	<input checked="" type="checkbox"/>	
60.05	ReflexEzs		2019-06-20	-64.1	64.5	14.1	78.6	55492	<input checked="" type="checkbox"/>	
81.38	ReflexEzs		2019-06-20	-63.6	66.1	14.1	80.2	55149	<input checked="" type="checkbox"/>	



## GeoSpark: Drill Hole Report

Hole: ES-19-03

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
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**0.00 13.11 OVB Overburden**

Overburden here consists of colluvium and fine to coarse talus of Aldridge formation argillite/argillaceous siltstone; Exact bedrock interface somewhat difficult to determine due to highly fractured nature of bedrock and the similarity in geology between bedrock and talus material.

**13.11 59.40 ARGL Argillite dark grey VFG**

Dark grey to light grey finely laminated to massive fine grained argillite to argillaceous siltstone; characteristically mm-scale dk to light grey laminae interbedded with more massive decimeter-scale, fine grained lighter grey argillaceous siltstone;

13.11 - 19.52 - rock mass strongly fractured with several narrow rubbly zones;

19.52 - 20.68 - interval marked by several narrow intensely oxidized siderite-quartz+/-chalcopyrite 'veins'; oxidized portions are interspersed with unoxidized segments of laminated argillite; recovery is poor thru this zone; Interval breaks down as follows;

- 19.52 - 19.73 - oxidized coarse grained siderite (now a deep red to reddish brown) with some coarse grained chalcopyrite; also includes fragments of white med grained quartz vein material;
- 19.73 - 20.00 - unaltered argillite/argillaceous siltstone cut by several narrow siderite veinlets (1-4mm);
- 20.00 - 20.21 - oxidized siderite-quartz+/-sulphide? vein;
- 20.21 - 20.42 - laminated argillite cut by several 1-3mm qtz-siderite stringers; N.V.S.
- 20.42 - 20.68 - intensely oxidized wallrock with some more reddish qtz+/-siderite+/-cpy 'vein' material

53.65 - 57.1 - rock mass is intensely fractured and largely reduced to rubble including two narrow zones of clay gouge (fautl? - see notes in structures);

57.1 - 59.4 - rock mass is more competent with several narrow zones of dense fracturing - overall recoveries good.  
 <<Min: 13.11 - 19.52: 0.5% pyrite>> Pyrite occurs as aggregates of small blebs (<1mm) within cm-scale light grey, bedding parallel bands within the argillite; pyrite content within individual bands can be up to 5% but bands are sporadically distributed.

<<Min: 19.52 - 19.73: 2% chalcopyrite>>

<<Min: 19.73 - 20.42: 0.5% pyrite>>

<<Min: 20.42 - 20.68: 0.1% chalcopyrite>>

<<Min: 20.68 - 59.4: 0.7% pyrite / 0.1% pyrite / 0.5% pyrrhotite>> Both pyrite and pyrrhotite occur as fine diss to somewhat coarser blebs and fine bands/seams generally confined to laminae parallel to bedding, (diagenetic); More rarely see coarser rounded aggregates of pyrrhotite to 15mm, eg. 41.2m; Rare mm-scale cross-cutting quartz-pyrite veinlets;





## GeoSpark: Drill Hole Report

Hole: ES-19-03

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
		<<Alt: 19.52 - 20.68: strong Iron oxide>> Strong oxidation in siderite/sulphide vein segments;									
		<<Alt: 20.68 - 59.4: weak to moderate Limonite>> Oxidation as limonite occurs on fracture surfaces;									
		<<Vein: 20.68 - 59.4: 0.3% Pyrite +/- pyrrhotite / 0.5% Calcite>> Interval contains sporadic cross-cutting pyrite/pyrrhotite(rarely trace cpy) veinlets usually 1-4mm in thickness;									
		<<Struc: 13.11 - 19.52: strong Finely laminated/laminated/finely bedded 50 deg. >> Millimeter to decimeter scale laminations/beds;									
		<<Struc: 19.52 - 19.73: intense Veining - fracture fill>> Intensely oxidized siderite-chalcopyrite +/-quartz vein									
		<<Struc: 20 - 20.21: intense Veining - fracture fill>> oxidized siderite-quartz+/-sulphide vein									
		<<Struc: 20.42 - 20.68: intense Veining - fracture fill>> Intensely oxidized rubble zone which includes in part a oxidized siderite-sulphide vein.									
		<<Struc: 20.68 - 24.87: strong Finely laminated/laminated/finely bedded 50 deg. >> Millimeter to decimeter scale laminations/bedding in argillite and argillaceous siltstone; laminations vary somewhat from about 45 to 52 TCA but mostly at around 50.									
		<<Struc: 24.87 - 24.88: moderate to strong Veining - fracture fill 43 deg. >> White to grey strongly fractured quartz-calcite-pyrite +/-pyrrhotite veinlet subparallel to bedding;									
		<<Struc: 24.88 - 55: strong Finely laminated/laminated/finely bedded 50 deg. >> Millimeter to decimeter scale laminations/bedding in argillite and argillaceous siltstone; laminations vary somewhat from about 45 to 52 TCA but mostly at around 50									
		<<Struc: 55 - 55.4: intense Fault>> Dk grey clay gouge fault?/shear; no good contact angles;									
		<<Struc: 56.75 - 57: intense Fault>> Dk grey clay gouge fault? ; no good contacts;									
	18.50		19.52	19.52	1.02	0027071	4	1	0.006	0.01	0.005
	19.52		20.68	20.68	1.16	0027072	22	4	0.293	0.01	0.005
	20.68		22.00	22.00	1.32	0027073	7	1	0.005	0.01	0.005
	53.95		57.00	57.00	3.05	0027075	9	1	0.034	0.01	0.005
	57.00		58.00	58.00	1.00	0027076	7	1	0.013	0.01	0.005
	58.00		59.00	59.00	1.00	0027077	5	1	0.006	0.01	0.005
	59.00		59.40	59.40	0.40	0027078	5	1	0.005	0.01	0.005
	59.40		59.90	59.90	0.50	0027079	7	1	0.021	0.01	0.005

Hole: ES-19-03

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
59.40	63.90	<b>SQS Siderite-quartz-sulphide Vein beige CG</b>	59.90	60.90	1.00	0027080	5	1	0.065	0.01	0.005
<p>Massive siderite-quartz-sulphide vein consisting predominantly of coarse grained beige to pale orange/yellow siderite crystals to 1cm; most quartz appears late occurring in fractures cutting the siderite; quartz varies from white to blue-grey. Blue/grey quartz in particular is very fine grained, almost chalcedonic. Sulphide content within vein in order of abundance is pyrrhotite, pyrite and chalcopyrite (see Section on mineralization);</p> <p>&lt;&lt;Min: 59.4 - 63.9: 1.5% pyrrhotite / 0.5% pyrite / 0.3% chalcopyrite&gt;&gt; Sulphide content within this interval (Main Vein) highly variable but includes pyrrhotite, pyrite and chalcopyrite;</p> <p>Sulphides generally occur as fine to coarser grains, blebs and irregular aggregates; Locally pyrrhotite to 3-4% as irregular small aggregates, pyrite to 2% and chalcopyrite to 1%;</p> <p>&lt;&lt;Vein: 59.4 - 63.9: 100% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p> <p>&lt;&lt;Struc: 59.4 - 59.4: moderate Contact 74 deg. &gt;&gt; Upper contact of main siderite-sulphide vein;</p>											
60.90	61.90		60.90	61.90	1.00	0027081	9	1	0.12	0.01	0.005
61.90	62.90		61.90	62.90	1.00	0027082	6	1	0.006	0.01	0.005
62.90	63.90		62.90	63.90	1.00	0027083	22	1	0.053	0.01	0.005
63.90	65.00		63.90	65.00	1.10	0027085	11	1	0.009	0.01	0.005
65.00	66.00		65.00	66.00	1.00	0027086	18	1	0.005	0.01	0.005
63.90	71.00	<b>ARGL_ST Argillite with siderite-quartz dark grey FG KWK stockwork</b>	66.00	67.00	1.00	0027088	6	1	0.006	0.01	0.005
<p>Interval comprised of the same argillite as seen elsewhere but in this case cut by a moderate to strong stockwork of light grey to beige siderite-quartz +/- pyrite, pyrrhotite veinlets. Stockwork comprises approximately 5% of the rock mass diminishing in intensity downhole. Lower contact of zone gradational and therefore somewhat arbitrarily placed; Stockwork veins are comprised of pale yellowish/brown to beige coarse grained siderite with a light grey fine grained quartz and variable pyrite and pyrrhotite. Both sulphides can occur as fine blebs within the vein and also commonly on the margins.</p> <p>Vein widths vary from &lt;1mm to about 10mm, and are commonly offset by small fractures. Also locally they display a curvy almost pygmatic appearance.</p> <p>&lt;&lt;Min: 63.9 - 71: 1% pyrrhotite / 1% pyrite&gt;&gt; Pyrrhotite predominantly seen as fine aggregates, blebs within the veinlets. Pyrite seen similarly within the veinlets and also commonly on the margins of the veinlets.</p> <p>&lt;&lt;Vein: 63.9 - 71: 5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p> <p>&lt;&lt;Struc: 63.9 - 63.9: weak to moderate Contact 20 deg. &gt;&gt; Lower contact of main siderite-sulphide vein;</p> <p>&lt;&lt;Struc: 63.91 - 71: strong Finely laminated/laminated/finely bedded 50 deg. &gt;&gt; Finely laminated bedding varies from 45 to about 55 but averages around 50 TCA;</p>											
67.00	68.00		67.00	68.00	1.00	0027089	5	1	0.008	0.01	0.005
68.00	69.00		68.00	69.00	1.00	0027090	4	1	0.005	0.01	0.005
69.00	71.00		69.00	71.00	2.00	0027091	5	1	0.007	0.01	0.005
71.00	81.38	<b>ARGL Argillite dark grey FG</b>									
<p>Finely laminated argillite as seen previously;</p> <p>&lt;&lt;Min: 71 - 79.49: 0.5% pyrite / 0.2% pyrite / 0.3% pyrrhotite / 0.1% pyrrhotite / 0.05% chalcopyrite&gt;&gt; Pyrite and pyrrhotite both occur as fine diss grains and more rarely in narrow mm-scale cross-cutting veinlets; more rarely see larger blebs or aggregates of pyrrhotite; trace diss blebs of chalcopyrite.</p>											



## GeoSpark: Drill Hole Report

Hole: ES-19-03

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<p>&lt;&lt;Vein: 71 - 79.49: 0.3% Pyrite +/- pyrrhotite / 1% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Pyrite-pyrrhotite veinlets are typically &lt;1-4mm in size and are usually pyrite with none or variable pyrrhotite; locally see some associated med green chlorite.</p> <p>&lt;&lt;Struc: 71 - 79.4: strong Finely laminated/laminated/finely bedded 50 deg. &gt;&gt;</p>											

**End of Hole @ 81.38**



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-04

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-21	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630744	<b>Azimuth:</b>	77	<b>Date Completed:</b>	2019-06-25	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473866	<b>Dip:</b>	-70	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1264	<b>Length (m):</b>	105.46	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	14.02
<b>Local Grid:</b>		<b>Drill Started:</b>		<b>Drill Completed:</b>		<b>Reduced (m):</b>	
<b>Local East:</b>		<b>Drill Completed:</b>				<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	<p>This hole was collared to test the E-S structure downdip of ES19-3;            The main Empire-Strathcona structure is relatively narrow in this hole and poorly mineralized.            74.37 - 74.6 - Main Vein with just trace cpy.            74.6 - 76.6 - Footwall stockwork vein network with just trace cpy at best.</p>				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL						

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
26.26	ReflexEZS		2019-06-23	-70.4	61.3	14.1	75.4	55753	<input checked="" type="checkbox"/>	
44.5	ReflexEZS		2019-06-23	-69.7	64.9	14.1	79	55306	<input checked="" type="checkbox"/>	
59.74	ReflexEZS		2019-06-23	-69	67.8	14.1	81.9	55171	<input checked="" type="checkbox"/>	
81.08	ReflexEZS		2019-06-24	-69.4	69.1	14.1	83.2	55556	<input checked="" type="checkbox"/>	
96.32	ReflexEZS		2019-06-24	-69.5	67.6	14.1	81.7	55337	<input checked="" type="checkbox"/>	
105.46	ReflexEZS		2019-06-24	-69.2	67.5	14.1	81.6	55176	<input checked="" type="checkbox"/>	

Hole: ES-19-04

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<b>0.00</b>	<b>14.02</b>	<b>OVB Overburden</b>									
Overburden here consists primarily of fine to coarse talus material predominantly comprised of Aldridge Formation argillites.											
<b>14.02</b>	<b>74.37</b>	<b>ARGL Argillite</b>									
		<b>dark grey FG</b>	17.60	19.60	2.00	0027110	6	1	0.01	0.01	0.005
Finely laminated dk grey to black to light grey argillite to argillaceous siltstone; Strongly fractured down to about 22m with accompanying stronger oxidation. Thereafter oxidation on fractures only.											
19.6 - 19.9 - sediments cut by strongly oxidized siderite-sulphide vein; actual contacts difficult to determine due to poor recovery in interval; (See vein description under structures)											
20.89 - 20.08 - strongly oxidized quartz-siderite-sulphide vein;											
74.17 - 74.37 - narrow zone of siderite-quartz stockwork in the hangingwall of the main E-S structure; minor pyrite within stockwork and diss peripherally.											
		<<Min: 14.02 - 19.6: 0.3% pyrite>> Minor visible pyrite in narrow seams conformable to bedding. Most sulphides if present oxidized.	19.60	19.90	0.30	0027111	5	1	0.035	0.01	0.005
		<<Min: 19.6 - 19.9: 0.1% chalcopyrite / 30% hematite>> Most of interval (vein) intensely oxidized to hematite/goethite, some limonite; minor visible chalcopyrite.	19.90	20.89	0.99	0027112	6	3	0.012	0.01	0.005
		<<Min: 19.9 - 20.89: 0.5% pyrite>> Most sulphides oxidized.	20.89	21.08	0.19	0027113	10	1	0.005	0.01	0.17
		<<Min: 20.89 - 21.08: 3% pyrite>> Pyrite occurs as partially oxidized aggregates within the siderite vein; possible trace cpy..	21.08	22.00	0.92	0027114	6	1	0.006	0.01	0.005
		<<Min: 21.08 - 74: 1% pyrrhotite / 0.1% pyrrhotite / 0.5% pyrite / 0.1% pyrite / 0.05% chalcopyrite / 0.05% magnetite>> Most pyrrhotite occurs as small grains, aggregates in seams/laminae conformable to bedding. Minor pyrrhotite in narrow 1-3mm siderite-qtz veinlets with pyrite. Pyrite also occurs as small grains and aggregates in laminae (often lighter coloured) within the argillite. Minor pyrite as cross-cutting veinlets. See minor fine grained magnetite as individual grains/small aggregates along laminae boundaries, eg. 41.75	73.00	74.00	1.00	0027116	5	1	0.003	0.01	0.005
		<<Min: 74 - 74.37: 0.5% pyrite>> Most pyrite occurs within the siderite-quartz veins/stockwork or selvage to.	74.00	74.37	0.37	0027117	6	1	0.004	0.01	0.005
		<<Vein: 19 - 22: 16% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / 0.5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / 0.3% Calcite>> Veins and veinlets are largely oxidized in this interval.									
		<<Vein: 22 - 30: 0.5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> Veinlets only rarely have sulphides;									
		<<Vein: 74 - 74.37: 5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> See some med to pale green chlorite on vein margins.									



# GeoSpark: Drill Hole Report

Hole: ES-19-04

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
		<<Struc: 19.6 - 19.9: strong Veining - fracture fill>> Intensely oxidized siderite-sulphide vein; upper and lower contacts unclear due to rubble;									
		<<Struc: 20.89 - 21.08: intense Veining - fracture fill 15 deg. >> Strongly oxidized quartz siderite sulphide vein; sulphides completely oxidized to a reddish iron oxide mass; relatively sharp contact between oxide material and quartz siderite indicate a 15 dg TCA for the vein;									
		<<Struc: 22 - 43: moderate to strong Finely laminated/laminated/finely bedded 50 deg. >> Some variation thru interval from 47 to 53.									
		<<Struc: 43 - 48.6: moderate to strong Finely laminated/laminated/finely bedded 55 deg. >>									
		<<Struc: 49.35 - 50.6: moderate to strong Finely laminated/laminated/finely bedded 60 deg. >>									
		<<Struc: 55.8 - 56.25: strong Finely laminated/laminated/finely bedded 67 deg. >>									
		<<Struc: 57.35 - 59: strong Finely laminated/laminated/finely bedded 50 deg. >>									
		<<Struc: 59 - 59.75: strong Finely laminated/laminated/finely bedded 55 deg. >>									
		<<Struc: 61.1 - 61.4: intense Sheared 10 deg. >> 3cm cemented clay gouge/rubble shear;									
		<<Struc: 62.6 - 63.5: moderate to strong Finely laminated/laminated/finely bedded 44 deg. >>									
		<<Struc: 71.7 - 72.5: moderate to strong Finely laminated/laminated/finely bedded 50 deg. >>									
			74.37	74.60	0.23	0027118	7	1	0.002	0.01	0.005
<b>74.37</b>	<b>74.60</b>	<b>SQS Siderite-quartz-sulphide Vein cream to pale yellow</b>									
		Extremely narrow zone of siderite-qtz+/-sulphide veining; This represents the main Empire-Strathcona 'vein' (structure) in this hole. UC@42, LC@50 TCA; <<Min: 74.37 - 74.6: 0.5% pyrite / 0.05% chalcopryite>> <<Vein: 74.37 - 74.6: 87% Siderite quartz sulphide (pyrrhotite+/-pyrite+/-chalcopryite)>> <<Struc: 74.37 - 74.37: strong Contact 42 deg. >> Upper contact of E-S vein structure;									
<b>74.60</b>	<b>76.60</b>	<b>ARGL_ST Argillite with siderite-quartz grey KWK stockwork FG</b>									
		Narrow interval of siderite-quartz-pyrite+/-pyrrhotite stockwork in the footwall of the E-S structure; <<Min: 74.6 - 76.6: 1% pyrite>> <<Alt: 74.6 - 76.6: moderate Bleaching>> Argillite is bleached to a light to med grey colour.									



## GeoSpark: Drill Hole Report

Hole: ES-19-04

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Vein: 74.6 - 76.6: 3% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> <<Struc: 74.6 - 74.6: strong Contact 50 deg. >> Lower contact of the main E-S vein structure.											
74.60	75.60		74.60	75.60	1.00	0027119	5	1	0.002	0.01	0.005
75.60	76.60		75.60	76.60	1.00	0027120	4	1	0.0005	0.01	0.005
<b>76.60</b>	<b>105.46</b>	<b>ARGL Argillite</b>									
<b>dark grey VFG</b> Finely laminated dk grey to black to light grey argillite to argillaceous siltstone; bedding ranges from 45-55 tca, with angle increasing at approx 92m to 60 tca <<Min: 76.6 - 105.46: 1% pyrrhotite / 0.1% pyrrhotite / 0.1% pyrite>> <<Struc: 83.4 - 85: strong Finely laminated/laminated/finely bedded 46 deg. >> <<Struc: 87 - 93: strong Finely laminated/laminated/finely bedded 55 deg. >> <<Struc: 93.5 - 98.6: moderate to strong Finely laminated/laminated/finely bedded 60 deg. >> <<Struc: 99.4 - 105: strong Finely laminated/laminated/finely bedded 55 deg. >>											
76.60	78.00		76.60	78.00	1.40	0027121	9	1	0.005	0.01	0.01

End of Hole @ 105.46

**Project:** Bull River

**Hole:** ES-19-05

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-25	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630744	<b>Azimuth:</b>	104	<b>Date Completed:</b>	2019-06-26	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473866	<b>Dip:</b>	-54	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1264	<b>Length (m):</b>	81.08	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-06-24	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-06-26	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	This hole was collared to test the E-S structure along strike to the south relative to holes ES19-3,4; 58.24 - 65.2 - Main E-S vein; sulphides dominated by pyrrhotite with minor chalcopyrite; best pyrrhotite near upper and lower contacts; 65.2 - 68.69 - overall weak to moderate siderite-qtz-sulphide stockwork in the footwall to the vein;				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL						

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
26.21	ReflexEzs		2019-06-26	-53.5	84.2	14.1	98.3	55401	<input checked="" type="checkbox"/>	
47.55	ReflexEzs		2019-06-26	-52.9	85.1	14.1	99.2	55533	<input checked="" type="checkbox"/>	
62.79	ReflexEzs		2019-06-26	-52.9	86	14.1	100.1	55400	<input checked="" type="checkbox"/>	
81.07	ReflexEzs		2019-06-26	-52.4	85.4	14.1	99.5	55249	<input checked="" type="checkbox"/>	





## GeoSpark: Drill Hole Report

Hole: ES-19-05

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
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**0.00 16.46 OVB Overburden**

Overburden consists of a thin poorly developed B-horizon and predominantly talus material of Aldridge argillites. Talus varies from fine gravel size to coarse boulders.

**16.46 58.24 ARGL Argillite dark grey FG**

Finely laminated to bedded dk grey to black argillite with lighter grey, possibly finer grained laminae and narrow beds; some variation of bedding near top of hole which may be a function of surficial slumping. Lower contact with the main vein at 58.24 is marked by rubble and a narrow (4-5cm), zone of faulting.

44.9 - 45.7 - narrow (1cm) siderite-quartz-po-py vein parallel to subparallel to core axis; similar style of vein to that which forms the footwall stockwork to the main Empire-Strathcona vein in ES19-03 for example.

<<Min: 18.44 - 18.54: 0.3% chalcopyrite>> narrow veinlet/fx-fill of chalcopyrite cutting completely oxidized siderite-sulphide? Vein. Cpy veinlet <0.5mm thick.

<<Min: 18.54 - 54.7: 1% pyrrhotite / 0.1% pyrrhotite>> Pyrrhotite is the dominant sulphide in this interval occurring as fine grains/disseminations parallel to bedding laminations, small rounded aggregates (<3mm) confined to narrow 1-2cm wide bands parallel to bedding. Minor pyrrhotite and/or pyrite in mm-scale seams or veinlets parallel to bedding.

<<Min: 54.7 - 55.35: 5% pyrite / 0.5% pyrrhotite>> Pyrite +/- pyrrhotite occur as fine seams or bands parallel to bedding laminations; minor cross-cutting pyrite fxs;

<<Min: 55.35 - 58.24: 0.5% pyrrhotite>>

<<Vein: 16.46 - 58.24: 0.1% Siderite quartz sulphide (pyrrhotite+/pyrite+-chalcopyrite) / 0.1% Calcite>> Extensional calcite veins characterized by needle-like/tabular clear calcite crystals.

<<Struc: 16.46 - 17.07: moderate to strong Finely laminated/laminated/finely bedded 70 deg. >> Bedding orientation in this interval may be due to surficial slumping of bedrock blocks;

<<Struc: 18.44 - 18.54: strong Veining - fracture fill>> Distinctive reddish oxidized siderite +/-cpy vein; rare cpy as <1mm thick veinlet/fx-fill; this is correlatable with similar narrow zones in other holes; interval consists of two pieces of coarse rubble;

<<Struc: 18.54 - 44.9: strong Finely laminated/laminated/finely bedded 40 deg. >> Finely laminated bedding varies from 38 to 43 TCA but averages around 40;

<<Struc: 44.9 - 45.7: moderate Veining - fracture fill 3 deg. >> Low angle (0-5) siderite-pyrite-pyrrhotite vein; generally about 1cm thick;

<<Struc: 49.35 - 49.8: strong Finely laminated/laminated/finely bedded 36 deg. >>

<<Struc: 49.8 - 50.75: strong Finely laminated/laminated/finely bedded 30 deg. >>

<<Struc: 51 - 51.5: strong Finely laminated/laminated/finely bedded 12 deg. >>



## GeoSpark: Drill Hole Report

Hole: ES-19-05

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Struc: 53 - 53.65: strong Finely laminated/laminated/finely bedded 5 deg. >>											
<<Struc: 53.65 - 54.6: strong Finely laminated/laminated/finely bedded 10 deg. >>											
<<Struc: 54.6 - 55.3: strong Finely laminated/laminated/finely bedded 20 deg. >>											
			17.00	18.44	1.44	0027092	7	1	0.006	0.01	0.005
			18.44	18.54	0.10	0027093	11	1	0.192	0.01	0.005
			18.54	20.00	1.46	0027094	6	1	0.01	0.01	0.005
			53.00	55.00	2.00	0027096	8	1	0.017	0.01	0.005
			55.00	56.70	1.70	0027097	8	1	0.022	0.01	0.005
			56.70	58.24	1.54	0027098	8	1	0.016	0.01	0.005
			58.24	58.90	0.66	0027099	8	1	0.041	0.01	0.005
<b>58.24</b>	<b>65.20</b>	<b>SQS Siderite-quartz-sulphide Vein cream to pale yellow CG</b>	58.90	60.00	1.10	0027100	8	1	0.083	0.01	0.005
Interval comprised predominantly of the main 'Empire-Strathcona vein' but includes septa of argillite as noted below, likely indicating an anastomosing vein. The vein is characterized by coarse (5-10mm) interlocking crystals of siderite. White to light grey fine to med quartz often appears late cross-cutting or replacing the siderite. Sulphides are interstitial to the siderite or remobilized with the quartz. The vein is best mineralized near the, particularly the upper contact where see heavy pyrrhotite (see Min Sct);											
58.24 - 59.69 - Vein											
59.69 - 59.74 - Argillite											
59.74 - 60 - Vein											
60 - 60.83 - Argillite											
60.83 - 61.47 - Vein											
61.47 - 61.72 - Argillite											
61.72 - 63.22 - Vein											
63.22 - 64 - Argillite											
64 - 64.23 - Argillite											
64.23 - 64.7 - Vein											
64.7 - 65.2 - Vein											
		<<Min: 58.24 - 58.9: 10% pyrrhotite / 0.1% pyrite / 0.1% chalcopyrite>> Sulphides are dominated by pyrrhotite which forms coarse aggregates interstitial to siderite; minor pyrite and chalcopyrite occur as much small grains also interstitial to siderite.	60.00	60.83	0.83	0027101	9	1	0.034	0.01	0.005
		<<Min: 58.9 - 64.95: 0.5% pyrrhotite / 0.5% pyrite / 0.3% chalcopyrite>> Interval contains narrow intervals of less mineralized argillite as septa within or enveloped by the vein.	60.83	62.00	1.17	0027102	5	1	0.016	0.01	0.005

Hole: ES-19-05

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Min: 64.95 - 65.2:		4% pyrrhotite / 0.3% pyrite / 0.2% chalcopyrite>>	62.00	63.22	1.22	0027103	6	1	0.036	0.01	0.005
<<Vein: 58.24 - 65.2:		66% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> Massive siderite-qtz-pyrrhotite-pyrite vein with subordinate to trace chalcopyrite. Rest of interval comprised of argillite.	63.22	64.00	0.78	0027104	7	1	0.007	0.01	0.005
<<Struc: 58.24 - 58.24:		strong Contact 38 deg. >> Upper contact of the main Empire-Strathcona vein; immediate contact marked by some fault gouge and rubble.	64.00	65.20	1.20	0027105	10	1	0.024	0.01	0.005
<b>65.20</b>	<b>68.69</b>	<b>ARGL_ST Argillite with siderite-quartz stockwork</b>									
		<b>dark grey</b>									
		<b>KWK</b>									
<p>Argillite with a much weaker developed footwall stockwork relative to ES-10-03;          65.2 - 67.36 - very weak stockwork of finer fxs/veinlets of pyrite-siderite+/-pyrrhotite.          67.36 - 68.69 - stronger stockwork of siderite-pyrrhotite+/-pyrite veining;          &lt;&lt;Min: 65.2 - 67.36: 0.3% pyrite / 0.5% pyrite / 0.1% pyrrhotite / 0.5% pyrrhotite&gt;&gt; Pyrite and pyrrhotite both occur as fine grains/aggregates in very narrow seams/bands parallel to laminations;          &lt;&lt;Min: 67.36 - 68.69: 0.5% pyrrhotite / 0.5% pyrrhotite / 0.5% pyrite&gt;&gt; Pyrrhotite occurs diss in host rock and as somewhat coarser aggregates within siderite veins/stockwork.          &lt;&lt;Struc: 65.21 - 65.21: strong Contact 25 deg. &gt;&gt; Lower contact of the main Empire Strathcona vein.          &lt;&lt;Struc: 65.22 - 68.7: moderate to strong Finely laminated/laminated/finely bedded 5 deg. &gt;&gt;</p>											
			65.20	66.00	0.80	0027107	6	1	0.015	0.01	0.005
			66.00	67.36	1.36	0027108	5	1	0.005	0.01	0.005
			67.36	68.69	1.33	0027109	9	1	0.034	0.01	0.005
<b>68.69</b>	<b>81.08</b>	<b>ARGL Argillite</b>									
		<b>dark grey</b>									
		<b>FG</b>									
<p>Dk grey to black finely laminated argillite; joint planes locally graphitic; generally poorly mineralized;          &lt;&lt;Min: 68.69 - 81.08: 1% pyrrhotite / 0.1% pyrite / 0.05% chalcopyrite&gt;&gt;          &lt;&lt;Struc: 70.45 - 71: strong Finely laminated/laminated/finely bedded 30 deg. &gt;&gt;          &lt;&lt;Struc: 71.1 - 72.55: strong Finely laminated/laminated/finely bedded 38 deg. &gt;&gt;          &lt;&lt;Struc: 72.55 - 73.45: strong Finely laminated/laminated/finely bedded 42 deg. &gt;&gt;          &lt;&lt;Struc: 75.2 - 81: strong Finely laminated/laminated/finely bedded 54 deg. &gt;&gt;</p>											

End of Hole @ 81.08



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-06

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-26	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630744	<b>Azimuth:</b>	104	<b>Date Completed:</b>	2019-06-28	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473866	<b>Dip:</b>	-62	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1264	<b>Length (m):</b>	93.27	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-06-27	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-06-28	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	Hole was collared to test the E-S vein downdip of ES19-05;				
<b>Hole Status:</b>	Completed	77 - 79.35 - siderite-qtz-sulphide stockwork in the hangingwall to the E-S vein;					
<b>Hole Purpose:</b>	EXPL	79.35 - 80.25 - poorly developed and mineralized E-S vein; more of a stockwork.					

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
29.26	ReflexEzs	Jeff	2019-06-27	-64.5	82.5	14.1	96.6	55677	<input checked="" type="checkbox"/>	
44.5	ReflexEzs	Jeff	2019-06-27	-63.2	85.2	14.1	99.3	55437	<input checked="" type="checkbox"/>	
60.04	ReflexEzs	Jeff	2019-06-27	-63.3	86.5	14.1	100.6	55356	<input checked="" type="checkbox"/>	
74.98	ReflexEzs	Jeff	2019-06-28	-63	85.4	14.1	99.5	55742	<input checked="" type="checkbox"/>	



# GeoSpark: Drill Hole Report

Hole: ES-19-06

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	15.24	<b>OVB Overburden</b>									
Overburden consists of loose shaly fine to coarse talus of Aldridge Fm argillites/argillaceous siltstone.											
15.24	77.00	<b>ARGL Argillite dark grey FG</b>									
Predominantly well-laminated, med to dk grey to black argillite to argillaceous siltstone. Includes intercalated lenses/beds (usually<10cm) of lighter grey more massive bedded fine grained argillaceous siltstone;											
15.24 - 20.12 - lots of rubble(partially oxidized); poor recovery											
56.15 - 59.74 - massive fine grained, light grey siltstone; no discernible bedding;											
70.5 - 72.2 - several clay-rich cemented rubble zones; no clear orientations; generally highly fractured interval; no associated increase in sulphides;											
<<Min: 15.24 - 56.15: 0.5% pyrrhotite / 0.1% pyrrhotite / 0.1% pyrite / 0.3% pyrite / 0.05% pyrite>> Majority of sulphide is conformable with sediments. Pyrrhotite and pyrite both occur as fine grains, small aggregates within conformable laminae (usually the lighter grey coloured); More rarely see pyrrhotite in fine fxs; also see heavier aggregates of pyrite +/- pyrrhotite in narrow (<1cm) seams with possible whitish siderite also conformable with laminae; Minor py, po in cross-cutting siderite veinlets. Minor py in late extensional calcite+/-qtz veinlets.											
<<Min: 56.15 - 59.74: 0.5% pyrrhotite / 0.1% pyrite>>											
<<Min: 59.74 - 77: 0.5% pyrrhotite / 0.2% pyrrhotite / 0.2% pyrite / 0.3% pyrite>> Sulphide mineralization distribution similar to higher in the hole; siderite-quartz sulphide veins increase toward lower end of interval.											
<<Vein: 15.24 - 56.15: 0.05% Siderite quartz sulphide (pyrrhotite+/-pyrite+/-chalcopyrite) / 0.5% Siderite / 0.3% Quartz-calcite>> Fine siderite veins form fine clusters of fxs or hairline stockworks; Quartz-calcite/calcite +/- rare pyrite form extensional veins with drusy calcite interiors;											
<<Vein: 59.74 - 77: 0.3% Siderite quartz sulphide (pyrrhotite+/-pyrite+/-chalcopyrite)>> Siderite-quartz-pyrite-pyrrhotite veinlets increase toward lower end of interval; range in thickness from 1mm to 15mm; they cross-cut the bedding;											
<<Struc: 15.24 - 27.7: moderate to strong Finely laminated/laminated/finely bedded 50 deg. >>											
<<Struc: 27.7 - 27.72: strong Sheared 10 deg. >> Narrow dk grey clay gouge/gravel shear; no related sulphides;											
<<Struc: 27.72 - 56.15: moderate to strong Finely laminated/laminated/finely bedded 50 deg. >> Minor variation in laminae angles from about 47 to 60 TCA but predominantly at around 50 TCA;											
<<Struc: 59.74 - 66.25: moderate to strong Finely laminated/laminated/finely bedded 35 deg. >>											
<<Struc: 66.5 - 74.15: moderate to strong Finely laminated/laminated/finely bedded 53 deg. >>											
<<Struc: 74.15 - 74.16: strong Veining - fracture fill 28 deg. >> 1cm siderite-pyrite-pyrrhotite vein;											
<<Struc: 74.16 - 77: moderate to strong Finely laminated/laminated/finely bedded 53 deg. >>											

Hole: ES-19-06

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
			73.00	75.00	2.00	0027123	8	1	0.017	0.01	0.005
			75.00	77.00	2.00	0027124	6	1	0.004	0.01	0.005
<b>77.00</b>	<b>79.35</b>	<b>ARGL_ST Argillite with siderite-quartz KWK stockwork</b>									
		<b>dark grey FG</b>	77.00	78.00	1.00	0027125	5	1	0.005	0.01	0.005
<p>This interval of stockworked argillite is in the hangingwall of the main Empire-Strathcona vein (elsewhere seen in the footwall); the stockwork consists of a network of siderite-quartz (+/-chlorite) pyrrhotite-pyrite veins with a dominant set of veinlets at 20-25 dg TCA cutting the bedding. Bedding here is at around 30 TCA (differing from the majority of the hole).            &lt;&lt;Min: 77 - 79.35: 1.5% pyrrhotite / 0.3% pyrite / 0.05% chalcopyrite&gt;&gt; Sulphide assemblage in this interval is dominated by pyrrhotite within the siderite-qtz veins. Here pyrrhotite occurs mostly as finer grains within the vein and vein margins and less commonly as coarser aggregates to 5mm; pyrite is subordinate occurring similarly; cpy is rare.            &lt;&lt;Vein: 77 - 79.35: 7% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Siderite veining locally has some well-developed med green chlorite often on vein margins.            &lt;&lt;Struc: 77 - 79.35: moderate to strong Finely laminated/laminated/finely bedded 30 deg. / moderate to strong Veining - fracture fill 22 deg. &gt;&gt; Siderite-quartz-sulphide veining cross-cuts bedding;</p>											
<b>79.35</b>	<b>80.25</b>	<b>SQS Siderite-quartz-sulphide Vein</b>									
		<b>cream to pale yellow MCG</b>	78.00	79.35	1.35	0027126	5	1	0.005	0.01	0.005
<p>Interval represents the main Empire-Strathcona structure(vein) but it is more of a strong stockwork with a narrow section of coarse grained siderite veining and generally strong siderite-quartz-pyrrhotite stockwork veining. Poorly mineralized overall with pyrrhotite dominant and trace chalcopyrite.            &lt;&lt;Min: 79.35 - 80.25: 2% pyrrhotite / 0.3% pyrite / 0.05% chalcopyrite&gt;&gt;            &lt;&lt;Vein: 79.35 - 80.25: 60% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p>											
<b>80.25</b>	<b>93.27</b>	<b>ARGL Argillite</b>									
		<b>dark grey FG</b>	79.35	80.25	0.90	0027127	7	1	0.01	0.01	0.005
			80.25	82.00	1.75	0027128	8	1	0.008	0.01	0.005
<p>Same argillite as above the main Empire-Strathcona vein structure; some weak siderite veining near upper end of interval; despite being the hangingwall of the vein there is no real stockwork development as seen in other holes.            &lt;&lt;Min: 80.25 - 83: 0.5% pyrrhotite / 0.3% pyrite / 1% pyrrhotite&gt;&gt;            &lt;&lt;Min: 83 - 93.27: 1% pyrrhotite / 0.2% pyrrhotite / 0.3% pyrite / 0.2% pyrite&gt;&gt; Pyrrhotite and pyrite occur in rare narrow(&lt;5mm), conformable semi-massive seams.            &lt;&lt;Vein: 80.25 - 83: 2% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Weak siderite-sulphide veining.            &lt;&lt;Struc: 80.25 - 93.27: strong Finely laminated/laminated/finely bedded 55 deg. &gt;&gt;</p>											



## GeoSpark: Drill Hole Report

Hole: ES-19-06

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
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End of Hole @ 93.27



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-07

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-06-28	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630775	<b>Azimuth:</b>	67	<b>Date Completed:</b>	2019-06-29	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473816	<b>Dip:</b>	-45	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1260	<b>Length (m):</b>	105.46	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	21.34
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-06-29	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-06-30	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	First hole collared on Pad#2 immediately south of the old #1 Portal of the Empire Strathcona mine.				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL		81.08 - 82.35 - Main E-S vein; massive siderite; trace cpy 82.35 - 82.8 - narrow zone of footwall stockwork with pyrrhotite and pyrite;				

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
32.61	ReflexEZS	Curtis	2019-06-30	-45.5	53.1	14.1	67.2	55897	<input checked="" type="checkbox"/>	
47.55	ReflexEZS	Curtis	2019-06-30	-44.8	53.7	14.1	67.8	55699	<input checked="" type="checkbox"/>	
62.79	ReflexEZS	Curtis	2019-06-30	-44.2	53.3	14.1	67.4	55615	<input checked="" type="checkbox"/>	
78.03	ReflexEZS	Jeff	2019-06-30	-43.9	54	14.1	68.1	56287	<input checked="" type="checkbox"/>	
90.22	ReflexEZS	Jeff	2019-06-30	-44	56.2	14.1	70.3	56509	<input checked="" type="checkbox"/>	
105.46	ReflexEZS	Jeff	2019-07-01	-43.7	54.9	14.1	69	56860	<input checked="" type="checkbox"/>	



Hole: ES-19-07

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
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**0.00 15.24 OVB Overburden**

Overburden consists of fine to coarse talus fines comprised primarily of rock of Aldridge Formation.

**15.24 81.08 ARGL Argillite dark grey FG**

Dk to light grey finely laminated to locally massive bedded argillite and argillaceous siltstone; contains diagenetic pyrrhotite and pyrite in variable amounts as noted.

Weak oxidation (manifested as limonite, manganese oxides) occurs on fractures down to about 69m;

Locally cut by narrow (cm-scale), high angle, shears/faults as noted.

Bedding largely consistent, with some local variations as noted.

Rock mass is weakly altered (argillic?) not withstanding the oxidation on fractures; locally see small (2-4mm), light grey/cream coloured, circular halos around pyrrhotite/pyrite grains, eg. 62.3m;

15.24 - 20.12 - intensely fractured, reduced to partially oxidized rubble.

19.87 - 201.12 - distinctive, narrow interval of brecciated argillite with drusy calcite matrix; (see structures); interval length estimated due to extremely poor recovery. No associated sulphides;

60.45 - 62.95 - massive fg to vfg black argillite;

64.95 - 69.2 - massive fine grained lt grey argillaceous siltstone;

80 - 81.08 - increase in density of siderite sulphide veining.

<<Min: 20.12 - 78: 0.5% pyrrhotite / 0.2% pyrrhotite / 0.1% pyrrhotite / 0.5% pyrite / 0.2% pyrite / 0.05% chalcopryite>> Pyrrhotite and pyrite are predominantly diagenetic occurring within the argillite as very fine diss grains, coarse grains/blebs/wisps and very small aggregates and as semi-massive aggregates in narrow (<5mm) bands conformable to bedding. Only rarely see pyrrhotite, pyrite with siderite in vein, eg. 74.6m;

<<Min: 78 - 81.08: 1% pyrrhotite / 0.5% pyrrhotite / 1% pyrite / 0.3% pyrite>> Heaviest po/py within siderite veins particular on the inside margins;

<<Vein: 20.12 - 78: 0.3% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopryite) / 0.2% Pyrite +/- pyrrhotite>> Two types of 'veining' occur in this interval, neither is common. See white siderite/qtz+/-pyrite hairline to very narrow veinlets (discordant), sometimes forming narrow fine stockwork; secondly see conformable semi-massive pyrite/pyrrhotite veins/seams with some siderite? Usually <5mm thick; Rare singular coarse grained (2cm thick) siderite-qtz-sulphide vein, eg. 74.6m;

<<Vein: 78 - 81.08: 1.5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopryite)>> See increase in siderite-sulphide veining toward lower end of interval approaching the main E-S vein;

<<Struc: 20.5 - 27: moderate to strong Finely laminated/laminated/finely bedded 33 deg. >>



## GeoSpark: Drill Hole Report

Hole: ES-19-07

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Struc: 27.31 - 27.35: strong Fault 67 deg. >>		Narrow clay gouge/rubble fault.									
<<Struc: 27.5 - 49: moderate to strong Finely laminated/laminated/finely bedded 33 deg. >>		Minor variations in bedding angles.									
<<Struc: 49.35 - 49.38: strong Fault 40 deg. >>											
<<Struc: 49.7 - 49.85: strong Fault 42 deg. >>											
<<Struc: 49.9 - 51.7: moderate to strong Finely laminated/laminated/finely bedded 32 deg. >>											
<<Struc: 55.37 - 55.4: strong Fault 40 deg. >>		Clay gouge/rubble; cemented;									
<<Struc: 55.45 - 60.45: moderate to strong Finely laminated/laminated/finely bedded 30 deg. >>		See some graphitic slips, eg. 58.4m;									
<<Struc: 62.95 - 64.95: weak Finely laminated/laminated/finely bedded 30 deg. >>											
<<Struc: 74 - 74.03: strong Fault 65 deg. >>		cemented clay gouge fault;									
<<Struc: 74.3 - 78.1: moderate to strong Finely laminated/laminated/finely bedded 35 deg. >>											
<<Struc: 78.2 - 81: moderate to strong Finely laminated/laminated/finely bedded 40 deg. >>											
	78.00	80.00	2.00	0027129	7	1	0.01	0.01	0.005		
	80.00	81.08	1.08	0027130	6	1	0.006	0.01	0.005		
	81.08	82.35	1.27	0027131	5	1	0.001	0.01	0.005		

**81.08 82.35 SQS Siderite-quartz-sulphide Vein cream to CG pale yellow**

Main Empire-Strathcona Vein; fairly uniformly massive siderite-qtz+/-sulphide vein; strongly to intensely fractured (late); trace cpy only;

<<Min: 81.08 - 82.35: 2% pyrrhotite / 0.3% pyrite>> Minor pyrite along a thin fx within vein;

<<Vein: 81.08 - 82.35: 100% Siderite quartz sulphide (pyrrhotite+pyrite+/-chalcopyrite)>>

<<Struc: 81.08 - 82.35: intense Veining - fracture fill 35 deg. >> Main Empire-Strathcona vein; upper contact unclear; lower contact sharp @ 35 TCA;

**82.35 82.80 ARGL\_ST Argillite with siderite-quartz grey KWK stockwork**

Short interval of siderite-qtz+/- sulphide stockwork in the footwall of the main E-S vein;

<<Min: 82.35 - 82.8: 2% pyrrhotite / 0.3% pyrite>> Narrow veinlets in the stockwork have a pale green colour due to stronger pale chlorite content.

Hole: ES-19-07

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<p>&lt;&lt;Vein: 82.35 - 82.8: 4% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Weak stockwork system with several narrow 'sheeted' veins. Veins have some pale green chlorite on margins;</p> <p>&lt;&lt;Struc: 82.35 - 82.35: intense Contact 35 deg. &gt;&gt; Lower contact of E-S vein; marked by rubble and some gouge on contact surface;</p>											
82.35	82.80		82.35	82.80	0.45	0027132	7	1	0.01	0.01	0.005
82.80	84.00		82.80	84.00	1.20	0027133	5	1	0.005	0.01	0.005
<b>82.80</b>	<b>105.46</b>	<b>ARGL Argillite</b>	<b>grey</b>	<b>FG</b>	<p>Similar argillite as above the main vein; well-laminated; less fractured overall;</p> <p>&lt;&lt;Min: 82.8 - 105.46: 1% pyrrhotite / 0.3% pyrite / 0.05% chalcopyrite&gt;&gt; Pyrrhotite is diagenetic and occurs in the argillite as fine disseminations, coarser disseminations, some rounded blebs in lighter coloured bands (in particular), and as very narrow (&lt;0.5mm) seams, aggregates (sometimes semi-massive) conformable to bedding. Pyrite occurs similarly.</p> <p>Rare fine diss blebs of cpy usually with po.</p> <p>&lt;&lt;Vein: 82.8 - 105.46: 2% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Fine networks of siderite-quartz veining with rare po/py; often form discrete stockworks over several cm's; have the appearance of tension gashes often.</p> <p>&lt;&lt;Struc: 82.8 - 87: moderate to strong Finely laminated/laminated/finely bedded 25 deg. &gt;&gt; Variable orientation from 20 to 28 TCA increasing generally downhole.</p> <p>&lt;&lt;Struc: 87 - 90: moderate to strong Finely laminated/laminated/finely bedded 35 deg. &gt;&gt;</p> <p>&lt;&lt;Struc: 90 - 97.4: moderate to strong Finely laminated/laminated/finely bedded 40 deg. &gt;&gt;</p> <p>&lt;&lt;Struc: 97.4 - 103.8: strong Finely laminated/laminated/finely bedded 45 deg. &gt;&gt;</p> <p>&lt;&lt;Struc: 103.8 - 105.46: strong Finely laminated/laminated/finely bedded 54 deg. &gt;&gt; Variable from 50 - 67 TCA;</p>						

End of Hole @ 105.46

**Project:** Bull River

**Hole:** ES-19-08

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-08-03	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630738	<b>Azimuth:</b>	67	<b>Date Completed:</b>	2019-08-05	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473827	<b>Dip:</b>	-53	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1260	<b>Length (m):</b>	111.56	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	17.07
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-06-30	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-02	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	<p>Hole was collared to intersect the E-S structure downdip of ES-19-07 and was successful in intersecting the vein.            92.41 - 93.08 - Empire-Strathcona Vein; quartz-siderite to quartz vein with some pyrrhotite and lesser pyrite; no chalcopyrite            93.08 - 94.8 - weak to moderate footwall stockwork of siderite-qtz-pyrrhotite veining; no chalcopyrite;            94.8 - 99.5 - see narrow, spaced, cross-cutting pyrite-pyrrhotite+/-siderite+/-qtz veinlets with trace arsenopyrite;</p>				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL						

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
29.26	ReflexEZS	Jeff	2019-07-01	-53.2	51.5	14.1	65.6	55857	<input checked="" type="checkbox"/>	
44.5	ReflexEZS	Jeff	2019-07-01	-53.2	54	14.1	68.1	55936	<input checked="" type="checkbox"/>	
59.74	ReflexEZS	Jeff	2019-07-01	-53.1	54.8	14.1	68.9	56272	<input checked="" type="checkbox"/>	
74.98	ReflexEZS	Jeff	2019-07-01	-53.1	55.5	14.1	69.6	56272	<input checked="" type="checkbox"/>	
90.22	ReflexEZS	Curtis	2019-07-01	-53	56.1	14.1	70.2	55966	<input checked="" type="checkbox"/>	
102.41	ReflexEZS	Curtis	2019-07-01	-52.9	55.9	14.1	70	55826	<input checked="" type="checkbox"/>	
111.56	ReflexEZS	Curtis	2019-07-01	-52.6	54.7	14.1	68.8	54855	<input checked="" type="checkbox"/>	



## GeoSpark: Drill Hole Report

Hole: ES-19-08

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	17.07	OVB Overburden									
Cased to 17.07m;											
17.07	92.41	ARGL Argillite									
Intercalated sequence of finely laminated to laminated to massively bedded dk grey very fine grained argillite and lighter grey siltstone(siltite); where very finely laminated, laminated texture is manifested by thin mm-scale intercalated dk grey to black argillite with light grey siltstone(siltite).											
17.07 - 20.25 - rock mass reduced to rubble; (Note there is rubble between start of box and 17.07 but unsure of the origin.											
20.25 - 20.5 - brecciated argillite with drusy calcite matrix; no sulphides;											
24.7 - 24.94 - FAULT											
51.1 - 54.95 - massive light grey siltite; no or faint bedding;											
88.09 - 92.41 - zone of strong rubble and cave											
<<Min: 20.5 - 51.1: 0.5% pyrite / 0.3% pyrite / 0.1% pyrrhotite / 0.1% pyrrhotite>> Overall the rock isn't too sulphide-rich; pyrite and pyrrhotite occur as diagenetic sulphides in the sediments either as fine to coarser diss blebs and clots or remobilized into bedding parallel semi-massive pyrite+/-pyrrhotite-siderite-qtz veinlets; these veinlets occur about one every 2 metres and range from 1-5mm thick.											
<<Min: 51.1 - 54.95: 0.5% pyrite / 0.5% pyrrhotite>> Rare larger blebs of pyrite to 6mmx4mm;											
<<Min: 54.95 - 92.41: 1% pyrite / 0.1% pyrite / 0.5% pyrrhotite / 0.1% pyrrhotite>> Pyrite and to a lesser extent pyrrhotite occur as fine diss, and somewhat larger aggregates either diss or relegated to specific laminae											
<<Vein: 20.5 - 51.1: 0.2% Quartz-Carbonate-Sulphide / 1% Quartz-Carbonate / 0.3% Siderite quartz sulphide (pyrrhotite+pyrite+/-chalcopyrite)>> Hairline quartz-carbonate(siderite and/or calcite) veinlets often form small clusters or almost stockworks over several cm's; Bedding parallel pyrite+/-pyrrhotite siderite+/-qtz veinlets (<5mm) are erratically distributed(1per 2metres on average).											
<<Vein: 51.1 - 54.95: 0.5% Quartz-Carbonate>>											
<<Vein: 54.95 - 92.41: 0.5% Quartz-Carbonate / 0.3% Siderite quartz sulphide (pyrrhotite+pyrite+/-chalcopyrite)>>											
<<Struc: 20.25 - 20.5: strong Brecciated 35 deg. / strong Finely laminated/laminated/finely bedded 55 deg. >> Breccia cuts laminated argillite at an acute angle.											
<<Struc: 24.7 - 24.94: intense Fault 30 deg. / strong Finely laminated/laminated/finely bedded 40 deg. >> Dk grey clay gouge/pebbly fault; no visible sulphides; fault cuts bedding at acute angle.											

Hole: ES-19-08

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Struc: 25 - 42: moderate Finely laminated/laminated/finely bedded 40 deg. >> Some local variability in orientation of laminations.											
<<Struc: 42 - 51.1: moderate Finely laminated/laminated/finely bedded 45 deg. >>											
<<Struc: 53.75 - 53.8: strong Fault 45 deg. >> Clay gouge,rubbly fault;											
<<Struc: 55 - 76.8: moderate to strong Finely laminated/laminated/finely bedded 45 deg. >> Some variability; flattens toward lower end of interval; locally not well-developed;											
<<Struc: 76.8 - 76.85: strong Fault 70 deg. >> Clay gouge/rubble fault;											
<<Struc: 79 - 88: moderate to strong Finely laminated/laminated/finely bedded 30 deg. >>											
			90.02	92.41	2.39	0027226	3	1	0.002	0.01	0.005
			92.41	93.08	0.67	0027228	7	1	0.013	0.01	0.005
<b>92.41</b>	<b>93.08</b>	<b>SQS Siderite-quartz-sulphide Vein cream to pale yellow MG</b>									
Massive siderite-quartz vein with minor sulphides; vein somewhat bimodal as noted;											
92.41 - 92.83 - highly fractured, brecciated siderite-qtz-po vein with 2% po											
92.83 - 93.08 - predominantly white fractured,convoluted bands of qtz with minor siderite and much less po (<0.5%).											
<<Min: 92.41 - 93.08: 2% pyrrhotite / 0.5% pyrite>>											
<<Struc: 92.41 - 93.08: intense Veining - fracture fill 32 deg. >> Somewhat uncertain on contact; used an internal fabric; UC in rubble; lower contact somewhat more gradational.											
			93.08	94.00	0.92	0027229	5	1	0.007	0.01	0.005
			94.00	94.80	0.80	0027230	4	1	0.006	0.01	0.005
<b>93.08</b>	<b>94.80</b>	<b>ARGL_ST Argillite with siderite-quartz grey KWK stockwork</b>									
Argillite with a weakly developed stockwork of siderite-qtz-py-po veins; individual veins are <1cm; lower contact of zone somewhat gradational.											
<<Min: 93.08 - 94.8: 3% pyrite / 1% pyrrhotite>>											
<<Vein: 93.08 - 94.8: 5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcocopyrite)>>											
<<Struc: 93.08 - 94.8: moderate to strong Finely laminated/laminated/finely bedded 40 deg. >>											
			94.80	96.00	1.20	0027231	5	1	0.005	0.01	0.005



## GeoSpark: Drill Hole Report

Hole: ES-19-08

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
94.80	111.56	ARGL Argillite dark grey VFG Laminated,intercalated argillite/siltstone(siltite) as seen in uper part of hole; Several gaphitic slip surfaces thru interval; <<Min: 94.8 - 99.5: 1% pyrite / 0.3% pyrite / 0.5% pyrrhotite / 0.5% pyrrhotite / 0.07% arsenopyrite>> See minor small grains of arsenopyrite in cross-cutting sulphide +/-qtz+/-siderite veinlets <<Min: 99.5 - 111.56: 0.5% pyrite / 0.3% pyrite / 1% pyrrhotite / 0.3% pyrrhotite>> <<Vein: 94.8 - 99.5: 1% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / 0.5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> Several very narrow, 1-5mm, sulphide veins with lesser quartz and possible minor siderite but consisting of mostly sulphides, pyrite, pyrrhotite and trace arsenopyrite. Veins cut stratigraphy at acute angles, 35-40 TCA; Crosscutting veins contain some pale green chlorite in places; <<Vein: 99.5 - 111.56: 0.5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / 0.1% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> <<Struc: 95.6 - 96.3: strong Finely laminated/laminated/finely bedded 60 deg. >> <<Struc: 96.35 - 100: strong Finely laminated/laminated/finely bedded 45 deg. >> <<Struc: 100.3 - 100.42: intense Veining - fracture fill 40 deg. >> Laminated siderite+/-qtz-py-po vein; no visible chalcopyrite; vein has a laminated appearance manifested by several parallel narrow septa of argillite; <<Struc: 100.42 - 100.7: strong Finely laminated/laminated/finely bedded 50 deg. >> <<Struc: 101.2 - 111.56: strong Finely laminated/laminated/finely bedded 55 deg. >>	96.00	98.00	2.00	0027232	5	1	0.007	0.01	0.005
			98.00	99.50	1.50	0027233	6	1	0.008	0.01	0.005

End of Hole @ 111.56



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-09

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-07-03	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630775	<b>Azimuth:</b>	67	<b>Date Completed:</b>	2019-07-04	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473816	<b>Dip:</b>	-20	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1260	<b>Length (m):</b>	73.15	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	21.03
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-02	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-04	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>							
<b>Hole Status:</b>	Completed	<b>Comments:</b>					
<b>Hole Purpose:</b>	EXPL	This is the first 'flat' hole from Pad#2 designed to test updip sections of the E-S vein structure; Due to the shallow angle (-20) of this drill hole and the regional dip to the bedding the hole does not cross-cut significant thicknesses of stratigraphy. The hole is testing the main vein updip of Hole ES19-07;					

58.66 - 61.86 - Empire-Strathcona Vein; locally up to 3%cpy over 40cm;  
61.86 - 62.9 - footwall stockwork; trace cpy;

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
30.48	ReflexEzs	Jeff	2019-07-04	-19.6	49.1	14.1	63.2	55593	<input checked="" type="checkbox"/>	
45.72	ReflexEzs	Jeff	2019-07-03	-19.6	49.8	14.1	63.9	55938	<input checked="" type="checkbox"/>	
60.96	ReflexEzs	Jeff	2019-07-04	-19.3	50.7	14.1	64.8	55586	<input checked="" type="checkbox"/>	
73.15	ReflexEzs	Jeff	2019-07-04	-18.5	49.7	14.1	63.8	55513	<input checked="" type="checkbox"/>	



Hole: ES-19-09

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<b>0.00</b>	<b>21.03</b>	<b>OVB Overburden</b>									
<p>Overburden consists of fine to coarse talus of flaggy Aldridge Fm argillite; Generally there appears to be a very thin poorly developed B-horizon; Despite this the mountain slope in the vicinity of the drilling is populated by mature Douglas Fir predominantly.</p>											
<b>21.03</b>	<b>58.66</b>	<b>ARGL Argillite dark grey FG</b>	56.00	57.50	1.50	0027135	7	1	0.012	0.01	0.005
<p>Med to dk grey to black finely laminated to thin bedded argillite/argillaceous siltstone; Bedding at very low angles (10) to core axis. Weakly mineralized as noted with diagenetic pyrrhotite, pyrite; oxidation on fractures down to about 56m;</p>											
<p>21.03 - 21.27 - brecciated argillite with drusy calcite breccia matrix;</p>											
<p>&lt;&lt;Min: 21.03 - 58: 0.5% pyrite / 0.3% pyrrhotite / 0.05% pyrrhotite&gt;&gt; Pyrite and pyrrhotite preferentially occur in the lighter coloured laminae as fine grains, somewhat larger (1-3mm) blebs and fine seams/aggregates; all this sulphide is diagenetic;</p>											
<p>&lt;&lt;Min: 58 - 58.66: 0.3% pyrite / 0.05% chalcopyrite&gt;&gt; Minor py,cpy associated with weak siderite/qtz veining;</p>											
<p>&lt;&lt;Vein: 21.03 - 28: 1.5% Calcite&gt;&gt;</p>											
<p>&lt;&lt;Vein: 28 - 58: 0.3% Calcite / 0.05% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p>											
<p>&lt;&lt;Vein: 58 - 58.66: 1.5% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Singular siderite vein in interval;</p>											
<p>&lt;&lt;Struc: 21.03 - 40.2: moderate to strong Finely laminated/laminated/finely bedded 10 deg. &gt;&gt; Laminations manifested by alternating light grey to dk grey black bands varying from &lt;1mm to decimeter scale;</p>											
<p>&lt;&lt;Struc: 40.2 - 40.22: intense Sheared 10 deg. &gt;&gt; Bedding parallel dk grey clay gouge shear.</p>											
<p>&lt;&lt;Struc: 40.22 - 58.66: moderate to strong Finely laminated/laminated/finely bedded 10 deg. &gt;&gt;</p>											
<b>58.66</b>	<b>61.86</b>	<b>SQS Siderite-quartz-sulphide Vein cream to pale yellow CG</b>									
<p>Massive pale yellowy/beige coloured, coarse grained siderite vein with lesser white to light grey med grained quartz, and variable pyrrhotite, pyrite and chalcopyrite; rock mass has been fractured with fine to coarse sulphides remobilized along fractures; lower contact placed where more massive vein gives way to a stockwork zone of similar veining.</p>											
<p>&lt;&lt;Min: 58.66 - 61.46: 1.5% pyrite / 0.7% chalcopyrite / 0.5% pyrrhotite&gt;&gt; All sulphides occur as fine to coarse grains, blebs in fractures within the vein; pyrite&gt;&gt;po in this interval; sulphide distribution is patchy however;</p>											
<p>&lt;&lt;Min: 61.46 - 61.86: 3% chalcopyrite / 1.5% pyrite&gt;&gt; Chalcopyrite occurs as coarse blebs/aggregates with pyrite and as fine fc disseminations; distribution erratic;</p>											
<p>&lt;&lt;Vein: 58.66 - 61.86: 100% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Main E-S vein;</p>											

Hole: ES-19-09

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<p>&lt;&lt;Struc: 58.66 - 58.66: moderate Contact 55 deg. &gt;&gt; Upper contact of the main E-S vein structure; somewhat ambiguous contact due to poor core recovery right at contact;</p> <p>&lt;&lt;Struc: 58.67 - 61.86: intense Veining - fracture fill 55 deg. &gt;&gt; Main E-S vein; contacts not really great but upper contact around 55-60 TCA; LC unclear;</p>											
	58.66		59.50	0.84	0027137	11	1	0.049	0.01	0.005	
	59.50		61.00	1.50	0027138	44	1	0.083	0.01	0.005	
	61.00		61.46	0.46	0027139	17	2	0.178	0.01	0.005	
	61.46		61.86	0.40	0027141	23	6	0.587	0.01	0.005	
	61.86		62.90	1.04	0027142	11	1	0.015	0.01	0.005	
<b>61.86</b>	<b>62.90</b>	<b>ARGL_ST Argillite with siderite-quartz KWK stockwork</b>	<b>grey</b>	<b>FG</b>	<p>Strongly veined and stockworked argillite with predominantly pale yellowy siderite+/-qtz+/-sulphide veining and smaller (&lt;1mm) light grey to white quartz veining(stockwork) with some larger clearly crosscutting white med grained quartz veins. Veining and vein stockwork comprise approximately 10-15% of the rock mass;</p> <p>&lt;&lt;Min: 61.86 - 62.9: 0.5% pyrrhotite / 0.3% pyrite / 0.1% chalcopyrite&gt;&gt; Po and Py occur as fine to coarser blebs in vein stockwork and locally remobilized in fxs/veinlets; Cp rare as fine grains in vein stockwork.</p> <p>&lt;&lt;Vein: 61.86 - 62.9: 12% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / 3% Quartz-Sulphide&gt;&gt;</p> <p>&lt;&lt;Struc: 62.1 - 62.25: moderate Veining - fracture fill 40 deg. &gt;&gt; Main siderite veining within the overall stockwork has a rough parallelism to it ranging from about 35-45 TCA;</p> <p>&lt;&lt;Struc: 62.42 - 62.425: strong Sheared 45 deg. &gt;&gt;</p>						
	62.90		64.00	1.10	0027143	7	1	0.009	0.01	0.005	
	64.00		66.00	2.00	0027144	5	1	0.01	0.01	0.005	
<b>62.90</b>	<b>73.15</b>	<b>ARGL Argillite</b>	<b>dark grey</b>	<b>FG</b>	<p>As above the vein; finely laminated light to dk grey (black) argillite; argillite is weakly veined (siderite-qtz+/-sulphide) to about 64m; this represents the distal expression of the Empire-Strathcona vein structure/system;</p> <p>64 - 73.15 - relatively undisturbed rock mass with weak siderite veinlets locally developed in tension gashes;</p> <p>&lt;&lt;Min: 62.9 - 64: 1% pyrrhotite / 0.5% pyrite&gt;&gt;</p> <p>&lt;&lt;Min: 64 - 73.15: 0.5% pyrrhotite / 0.5% pyrite&gt;&gt; Pyrrhotite and pyrite occur as fine grains to coarser, rounded, clots/blebs often nucleating at the margins of lighter grey laminae, eg. 72.45; also here see the pyrrhotite and pyrite forming elongated blebs up to 3mm oriented more or less orthogonal to the laminae margin;</p>						



## GeoSpark: Drill Hole Report

Hole: ES-19-09

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
		<<Vein: 62.9 - 64: 5% Siderite quartz sulphide (pyrrhotite+pyrite+/-chalcopyrite)>> Crosscutting siderite-qtz-po-py veins up to 3cm thick;									
		<<Vein: 64 - 73.15: 0.3% Siderite>>									
		<<Struc: 64 - 65.15: strong Finely laminated/laminated/finely bedded 0 deg. >>									
		<<Struc: 66.6 - 67.65: strong Finely laminated/laminated/finely bedded 5 deg. >>									
		<<Struc: 68.45 - 72.2: strong Finely laminated/laminated/finely bedded 7 deg. >> Variable bedding from about 6 to 11 TCA;									
		<<Struc: 72.2 - 73.15: strong Finely laminated/laminated/finely bedded 15 deg. >>									

**End of Hole @ 73.15**

**Project:** Bull River

**Hole:** ES-19-10

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-07-05	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630775	<b>Azimuth:</b>	78	<b>Date Completed:</b>	2019-07-06	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473816	<b>Dip:</b>	-20	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1260	<b>Length (m):</b>	80.16	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	21.03
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-04	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-06	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	Hole was collared (at same location as ES19-7,8,9), to test the Main E-S vein to the south;				
<b>Hole Status:</b>	Completed		66.28 - 68.58 - Main E-S vein; well developed siderite-qtz-sulphide vein; approximately 1% cpy overall mostly as fine grains on fractures with some coarser fracture-controlled cpy				
<b>Hole Purpose:</b>	EXPL		68.58 - 71.2 - well-developed siderite-qtz-sulphide stockwork with strong pyrrhotite and minor cpy;				

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
30.48	ReflexEzs	Jeff	2019-07-05	-19.8	63.5	14.1	77.6	55473	<input checked="" type="checkbox"/>	Reading may have been taken too close to casing.
45.72	ReflexEzs	Jeff	2019-07-05	-19.6	62.4	14.1	76.5	55482	<input checked="" type="checkbox"/>	
80.16	ReflexEzs	Jeff	2019-07-05	-17.9	63.4	14.1	77.5	55547	<input checked="" type="checkbox"/>	



## GeoSpark: Drill Hole Report

Hole: ES-19-10

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	15.24	<b>OVB Overburden</b>									
Chased casing down to 66' (20.12m); Exact bedrock/talus interface difficult to determine;											
15.24	66.28	<b>ARGL Argillite dark grey</b>									
Dark to light grey finely laminated argillite/argillaceous siltstone as seen previously; Oxidation on fracture surfaces down to about 47m; Laminations/bedding at low angles to core axis;											
<<Min: 19.2 - 60.8: 0.5% pyrite / 0.1% pyrrhotite>> Pyrite >>pyrrhotite here; both occur as small grains to rounded blebs usually in lighter coloured bands, often concentrated on the margins of the bands. More rarely as bedding parallel seams;											
<<Min: 60.8 - 66.28: 2% pyrrhotite / 0.3% pyrrhotite / 1% pyrite / 0.5% pyrite / 0.07% chalcocopyrite>> Pyrrhotite and pyrite occur as more less massive aggregates in very narrow 'sheeted' veinlets with subordinate qtz and siderite +/- chlorite and toward the lower end of interval as massive aggregates in white qtz dominant veins;											
<<Vein: 19.2 - 30: 1% Calcite>> Veins vary from hairline to 1mm; often contain clear drusy calcite crystals;											
<<Vein: 30 - 61: 0.3% Calcite / 0.1% Siderite / 0.05% Siderite>>											
<<Vein: 61 - 64.1: 0.8% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcocopyrite)>> Narrow, 1-3mm, subparallel pyrite/pyrrhotite siderite?-qtz veinlets; some exhibit strong chlorite on margins; have a density of approximately 3/metre; they crosscut bedding at high angles and at about 60 TCA, (40-70);											
<<Struc: 20 - 31: strong Finely laminated/laminated/finely bedded 7 deg. >> Laminations range from 5-10 TCA;											
<<Struc: 31.3 - 31.32: intense Sheared 7 deg. >> Bedding parallel shear with siderite veining; black cemented clay gouge (comminuted argillite) in shear;											
<<Struc: 31.4 - 34: strong Finely laminated/laminated/finely bedded 7 deg. >>											
<<Struc: 35.1 - 37.5: strong Finely laminated/laminated/finely bedded 12 deg. >>											
<<Struc: 37.9 - 38.75: strong Finely laminated/laminated/finely bedded 30 deg. >>											
<<Struc: 40 - 41.8: strong Finely laminated/laminated/finely bedded 20 deg. >>											
<<Struc: 43.5 - 55: strong Finely laminated/laminated/finely bedded 10 deg. >> Somewhat variable up to 15 TCA;											
<<Struc: 55.5 - 61: strong Finely laminated/laminated/finely bedded 5 deg. >> Variable from 0 -5 TCA;											
<<Struc: 61 - 64.1: weak Veining - fracture fill 60 deg. / strong Finely laminated/laminated/finely bedded 5 deg. >> Series of 'sheeted' pyrite/pyrrhotite-siderite?qtz veinlets, usually 1-2mm thick;											
	62.00	64.00	2.00	0027145	5	1	0.003	0.01	0.005		
	64.00	65.00	1.00	0027146	6	1	0.008	0.01	0.005		
	65.00	66.28	1.28	0027147	4	1	0.016	0.01	0.005		





## GeoSpark: Drill Hole Report

Hole: ES-19-10

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
66.28	68.58	<b>SQS Siderite-quartz-sulphide Vein cream to pale yellow CG</b>									
<p>Massive cream to pale yellowy/beige siderite-qtz-sulphide vein; sulphides include pyrrhotite, pyrite and chalcopyrite; quartz is a fine to med grained light grey to white quartz and often appears late; sulphides are late, remobilized along fractures with or without quartz.            Lower contact of main vein in this case, is somewhat gradational into a gradually weakening siderite-qtz-sulphide stockwork;            &lt;&lt;Min: 66.28 - 68.58: 2% pyrrhotite / 1% chalcopyrite / 0.3% pyrite&gt;&gt; In this particular vein intercept, pyrrhotite is the dominant sulphide with lesser cpy and even less pyrite            All sulphides occur as fine to coarse grains, blebs along fractures with quartz and in larger cross-cutting quartz veins/veinlets; cpy is erratically distributed but occurs best where the coarse grained siderite has been crackle-fractured and injected with quartz+sulphides, eg. 67.6 - 68m; here the cpy is quite fine grained along fractures; more rarely cpy and po form coarser aggregates along fxs or in cross-cutting veins, eg. 66.65m;            &lt;&lt;Vein: 66.28 - 68.58: 100% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Main E-S vein;            &lt;&lt;Struc: 66.28 - 66.28: moderate to strong Contact&gt;&gt; Upper contact of main E-S vein; rubbly contact so orientation uncertain; see proximal fault immediately below;            &lt;&lt;Struc: 66.33 - 66.4: strong Fault 55 deg. &gt;&gt; Narrow zone of faulting; includes 1.5cm gouge; overall brecciated with light grey quartz, some chlorite in matrix; includes a conformable 1cm siderite-qtz vein;</p>											
			66.28	67.00	0.72	0027148	11	4	0.423	0.01	0.005
			67.00	68.00	1.00	0027149	29	4	0.373	0.01	0.005
			68.00	68.58	0.58	0027150	26	3	0.3	0.01	0.005
			68.58	69.40	0.82	0027151	12	1	0.059	0.01	0.005
			69.40	69.80	0.40	0027152	15	1	0.069	0.01	0.005
68.58	71.20	<b>ARGL_ST Argillite with siderite-quartz grey MG KWK stockwork</b>									
<p>Well-developed siderite-qtz-sulphide stockwork hosted by laminated argillites; intensity of stockwork diminishes gradually toward lower end of interval;            The stockwork displays multiple pulses of veining; Pretty certain there are three at least. First phase appears to be the coarse grained siderite, second phase - light grey fine grained quartz (these two phases may be coeval), and third phase consists of somewhat coarser grained white quartz.            The stockwork is mineralized predominantly by pyrrhotite with minor cpy and py.            &lt;&lt;Min: 68.58 - 71.2: 3.5% pyrrhotite / 0.3% pyrite / 0.07% chalcopyrite&gt;&gt;            &lt;&lt;Vein: 68.58 - 71.2: 12% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / Quartz-Sulphide / 1% Quartz&gt;&gt;</p>											
			69.80	71.20	1.40	0027153	12	1	0.013	0.01	0.005



## GeoSpark: Drill Hole Report

Hole: ES-19-10

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
71.20	80.16	ARGL Argillite dark grey FG Laminated argillite as above the main vein; strongly laminated with numerous small cross faults with mm-cm-scale displacements; <<Min: 71.2 - 80.16: 1% pyrite>> <<Vein: 71.2 - 80.16: 0.5% Siderite>> Locally fine siderite veining forms fine stockworks; <<Struc: 71.2 - 80.16: moderate to strong Finely laminated/laminated/finely bedded 15 deg. >> Local variations in bedding up to 25 dg TCA;	71.20	72.00	0.80	0027155	5	1	0.004	0.01	0.005

End of Hole @ 80.16



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-11

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Bernie Augsten	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-07-06	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630775	<b>Azimuth:</b>	78	<b>Date Completed:</b>	2019-07-07	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473816	<b>Dip:</b>	-35	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1260	<b>Length (m):</b>	84.12	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	15.24
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-06	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-07	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	Hole was collared at same location as ES19-10 and steepened to intersect the E-S vein downdip.				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL		73.19 - 74.39 - E-S vein; strongly fractured; pyrrhotite-rich; trace cpy; no footwall stockwork;				

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
32.31	ReflexEZS	Jeff		-33.5	63.7	14.1	77.8	55713	<input checked="" type="checkbox"/>	
47.55	ReflexEZS	Jeff		-33.5	63.8	14.1	77.9	55698	<input checked="" type="checkbox"/>	
62.79	ReflexEZS	Jeff		-32.6	65.4	14.1	79.5	55676	<input checked="" type="checkbox"/>	
78.03	ReflexEZS	Jeff		-32.5	65.4	14.1	79.5	55636	<input checked="" type="checkbox"/>	



# GeoSpark: Drill Hole Report

Hole: ES-19-11

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	15.24	<b>OVB Overburden</b>									
15.24	73.19	<b>ARGL Argillite</b> dark grey FG									
<p>Predominantly fine grained, finely laminated argillite but includes some intercalated beds of massive fine grained argillite within which there are no discernible laminations; See oxidation on fractures (as limonite) down to about 68m; Generally this rock mass is strongly fractured and broken up;</p> <p>56.08 - 60.95 - dk grey to black, very fine grained, massive argillite;</p> <p>64.95 - 65.8 - massive fine grained, light grey siltstone; &lt;&lt;Min: 15.24 - 72: 1% pyrrhotite / 0.3% pyrrhotite / 0.5% pyrite / 0.5% pyrite&gt;&gt; &lt;&lt;Min: 72 - 73.19: 1% pyrrhotite / 0.5% pyrrhotite / 2% pyrite / 2% pyrite&gt;&gt; Pyrite and pyrrhotite occur in veinlets with siderite-qtz+/-chlorite; also stronger than normal disseminated pyrite/pyrrhotite in wallrock to veinlets; Mineralization is in the hanging wall to the main E-S vein; Veinlets are &lt;1mm to 4mm thick; &lt;&lt;Vein: 15.24 - 70.4: 0.3% Siderite / 0.3% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite) / 0.1% Calcite&gt;&gt; Siderite (+/-qtz?) veinlets form fine tension gashes or small clusters of hairline tension gashes; Rare bedding parallel pyrite+/-pyrrhotite siderite-qtz veinlets usually 2-4mm; Near top of hole see narrow 1-2mm drusy calcite veinlets; &lt;&lt;Vein: 70.4 - 70.6: 25% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; Very short interval of siderite-qtz-py-po (+chlorite) stockwork veining; no visible cpy; &lt;&lt;Vein: 72 - 73.19: 4% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt; &lt;&lt;Struc: 20.5 - 25.6: moderate to strong Finely laminated/laminated/finely bedded 20 deg. &gt;&gt; &lt;&lt;Struc: 25.62 - 25.63: strong Fault 53 deg. &gt;&gt; Oxidized clay rubble fault; &lt;&lt;Struc: 25.7 - 34.9: moderate to strong Finely laminated/laminated/finely bedded 20 deg. &gt;&gt; &lt;&lt;Struc: 35.15 - 35.25: strong Fault 50 deg. &gt;&gt; &lt;&lt;Struc: 35.6 - 43.6: moderate to strong Finely laminated/laminated/finely bedded 20 deg. &gt;&gt;</p>											
	72.00		73.19	1.19	0027156	8	1	0.009	0.01	0.005	
	73.19		74.39	1.20	0027157	7	1	0.02	0.01	0.005	
73.19	74.39	<b>SQS Siderite-quartz-sulphide Vein</b> cream to pale yellow									
MCG											

Hole: ES-19-11

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<p>&lt;&lt;Min: 73.19 - 74.39: 7% pyrrhotite / 0.5% pyrite&gt;&gt; Pyrrhotite occurs as interstitial to siderite grains or along fxs as fine to coarser aggregates (5mmx2mm); Pyrite only seen at lower contact as a narrow (5mm) massive band and with narrow qtz-sid-chl veins; Possible trace cpy only;</p> <p>&lt;&lt;Vein: 73.19 - 74.39: 100% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p> <p><b>74.39 84.12 ARGL Argillite dark grey FG</b></p> <p>Light to dark grey, fine grained finely laminated argillite;</p> <p>&lt;&lt;Min: 74.39 - 80.14: 1% pyrrhotite / 0.3% pyrrhotite / 0.5% pyrite / 0.2% pyrite&gt;&gt; Pyrrhotite and pyrite occur as diss grains and blebs usually within lighter grey coloured laminae, often close to margins with darker grey laminae; also more rarely see narrow (1-4mm), semi-massive, bands of pyrrhotite and pyrite with siderite and quartz conformable with laminae, eg 82.1m;</p> <p>&lt;&lt;Vein: 74.39 - 84.12: 0.5% Siderite / 0.1% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p> <p>&lt;&lt;Struc: 74.39 - 74.39: moderate Contact 62 deg. &gt;&gt; Lower contact of the main E-S vein; Some uncertainty to validity of the contact orientation;</p> <p>&lt;&lt;Struc: 75 - 76.6: moderate to strong Finely laminated/laminated/finely bedded 7 deg. &gt;&gt;</p> <p>&lt;&lt;Struc: 79.2 - 83: moderate to strong Finely laminated/laminated/finely bedded 10 deg. &gt;&gt;</p>											
	74.39	74.98	0.59	0027158	5	1	0.009	0.01	0.005		
	74.98	76.00	1.02	0027160	6	1	0.01	0.01	0.005		

End of Hole @ 84.12





## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-12

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Jill Christmann	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-07-06	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630775	<b>Azimuth:</b>	78	<b>Date Completed:</b>	2019-09-07	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473816	<b>Dip:</b>	-45	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1260	<b>Length (m):</b>	108.81	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-07	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-09	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>					
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL						

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
32.61	EZShot	Curtis	2019-07-07	-45.4	64.4	14.1	78.5	55887	<input checked="" type="checkbox"/>	
47.85	EZShot	Curtis	2019-07-07	-45.2	65.9	14.1	80	55851	<input checked="" type="checkbox"/>	
63.09	EZShot	Curtis	2019-07-08	-44.7	65.6	14.1	79.7	55759	<input checked="" type="checkbox"/>	
78.33	EZShot	Curtis	2019-07-08	-44.5	66.5	14.1	80.6	56380	<input checked="" type="checkbox"/>	
93.57	EZShot	Curtis	2019-07-08	-44.4	66.7	14.1	80.8	56386	<input checked="" type="checkbox"/>	
108.81	EZShot	Curtis	2019-07-08	-43.5	67.9	14.1	82	55992	<input checked="" type="checkbox"/>	

Hole: ES-19-12

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	20.30	<b>OVB Overburden</b>									
20.30	82.04	<b>ARGL Argillite</b> <span style="float: right;"><b>dark grey VFG</b></span>									
<p>Dark grey to light grey finely laminated to massive fine grained argillite to argillaceous siltstone; characteristically mm-scale dk to light grey laminae interbedded with more massive decimeter-scale, fine grained lighter grey argillaceous siltstone; Unit contains 0.2% - 0.5% fg-mg blebs of py and po &lt;1cm diameter and local narrow bands of py and po contractions along laminae; tr qtz carb stringers 1-2mm in diameter Unit is overall highly fractured; bedding varies locally from 35-50 degrees tca</p> <p>80.96-82.04 increase in fractures and microdefects; increase to mod chl and carb alt</p> <p>&lt;&lt;Min: 20.42 - 82.04: 0.5% pyrite / 0.2% pyrrhotite&gt;&gt; Pyrite and pyrrhotite both occur as fine diss grains and more rarely in narrow mm-scale cross-cutting veinlets; also larger blebs or aggregates of pyrr + py &lt;1cm in diameter</p> <p>&lt;&lt;Alt: 20.42 - 80.96: weak Iron oxide / trace Chlorite / trace Carbonate&gt;&gt;</p> <p>&lt;&lt;Alt: 80.96 - 82.55: moderate Chlorite / weak Carbonate&gt;&gt;</p> <p>&lt;&lt;Vein: 20.3 - 80.04: 1% Quartz-Carbonate&gt;&gt;</p> <p>&lt;&lt;Struc: 20.42 - 41.78: moderate to strong Finely laminated/laminated/finely bedded 35 deg. / moderate to strong Fractured 85 deg. &gt;&gt; Unit is highly fractured dominately near perpendicular tca; joints have moderate Fe staining, minor carb infill and in more rare occurances fg radial calcite crystal mm in diameter;</p> <p>&lt;&lt;Struc: 41.78 - 64.7: moderate to strong Finely laminated/laminated/finely bedded 40 deg. &gt;&gt; Argillite is mod bedded with 10-30cm beds of fg siltite and localized areas of more mx argillite. Unit is less fractured than previous</p> <p>&lt;&lt;Struc: 64.7 - 64.92: moderate to strong Fault 40 deg. &gt;&gt; Closed fault with area of increased Fe staining; light grey mod soft fault gauge of clay; apparent contacts at 40 tca however it is difficult to discern clearly</p> <p>&lt;&lt;Struc: 64.92 - 82.04: strong Fractured 90 deg. / strong Finely laminated/laminated/finely bedded 50 deg. &gt;&gt; unit is strongly fractured/jointed near 90 tca;</p>											
	80.96		81.44	0.48	0035293	6	1	0.004	0.01	0.005	
	81.44		82.04	0.60	0035294	4	1	0.004	0.01	0.005	
	82.04		82.14	0.10	0035296	7	1	0.011	0.01	0.005	
82.04	82.14	<b>SQS Siderite-quartz-sulphide Vein</b> <span style="float: right;"><b>light grey FG</b></span>									
<p>Siderite Quartz vein with 3% bleb/diss Py, 1.5% fg diss Po and tr fg diss Cpy; Vn is light gry-grn in colour due to mod chl alteration; siderite xstals are fg-mg;</p> <p>&lt;&lt;Min: 82.04 - 84.12: 3.5% pyrite / 1.5% pyrrhotite / 0.01% chalcopyrite&gt;&gt;</p> <p>&lt;&lt;Vein: 82.04 - 82.14: 100% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p>											



## GeoSpark: Drill Hole Report

Hole: ES-19-12

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Struc: 82.04 - 82.14: moderate Veining - fracture fill 30 deg. >> Argillite siderite quartz vn; UP NP; LC at 30 and is wavy <b>82.14 92.37 ARGL Argillite dark grey VFG</b> Vfg drk grey-black finely laminated argillite with lesser localized interbedded fg light grey siltite; <1% qtz/carb stringers xcut bedding and are 1mm or less in diameter <<Alt: 91.8 - 93.91: moderate Chlorite >> <<Struc: 82.14 - 92.57: moderate to strong Finely laminated/laminated/finely bedded 30 deg. / strong Fractured>> Unit highly fractured/jointed/broken - multiple rubble zones											
	82.14		82.58	0.44		0035297	3	1	0.002	0.01	0.005
	91.70		91.95	0.25		0035298	4	1	0.002	0.01	0.005
	91.95		92.37	0.42		0035299	3	1	0.008	0.01	0.005
	92.37		92.57	0.20		0035300	33	1	0.013	0.01	0.005
<b>92.37 92.57 ARGL_QV Argillite with strong dark grey VFG</b> <b>N disrupted qtz veining; veining conformable to bedding</b> Quartz Siderite veinlet with in finely bedded argillite; veinlets are parallel to bedding at 30 tca; lower contact at 30 tca with fault unit; 4% mx py along bedding with 1% fg diss po and tr fg diss cpy <<Min: 92.37 - 92.57: 4% pyrite / 1% pyrrhotite / 0.01% chalcopyrite>> <<Vein: 92.37 - 92.57: 15% Siderite-quartz>>											
	92.57		93.91								
<b>92.57 93.91 ARGL Argillite dark grey VFG</b> Vfg drk grey finely bedded argillite with interbeds of fg grey siltite; 0.5% mm thin qtz carb stringers both parallel and crosscutting to bedding; these stringers have heavy concentrations of fg-mg Py and Po <<Min: 92.57 - 93.91: 3% pyrite / 2% pyrrhotite>> <<Struc: 92.57 - 92.65: moderate Fault 30 deg. >> fault has drk grey mod soft clay gouge with sid qtz stringers at UC that contain py, po, tr cpy <<Struc: 92.65 - 93.91: moderate Finely laminated/laminated/finely bedded 40 deg. >> bedding varies locally from 35-45 tca											
	92.57		93.27	0.70		0035301	11	1	0.006	0.01	0.005
	93.27		93.62	0.35		0035302	4	1	0.006	0.01	0.005
	93.62		93.91	0.29		0035303	4	1	0.005	0.01	0.005

Hole: ES-19-12

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
93.91	94.01		93.91	94.01	0.10	0035304	5	1	0.014	0.01	0.005
<b>93.91</b>	<b>94.37</b>	<b>ARGL_ST Argillite with siderite-quartz KWK stockwork</b>	94.01	94.23	0.22	0035312	4	1	0.003	0.01	0.005
<p>Vfg drk grey finely bedded argillite with mutiple 1-4cm wide siderite quartz sulphide veinlets xcutting the bedding at 60-70 tca;</p> <p>&lt;&lt;Min: 93.91 - 94.37: 3.5% pyrite / 1.5% pyrrhotite / 0.25% chalcopyrite&gt;&gt;</p> <p>&lt;&lt;Vein: 93.91 - 94.37: 3% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)&gt;&gt;</p> <p>&lt;&lt;Struc: 93.91 - 94.01: weak to moderate Veining - fracture fill 70 deg. &gt;&gt;</p> <p>&lt;&lt;Struc: 94.01 - 108.81: moderate to strong Finely laminated/laminated/finely bedded 40 deg. / moderate Fractured 90 deg. &gt;&gt;</p>											
	94.23		94.23	94.37	0.14	0035306	6	1	0.019	0.01	0.005
	94.37		94.37	94.79	0.42	0035307	5	1	0.002	0.01	0.005
<b>94.37</b>	<b>108.81</b>	<b>ARGL Argillite</b>	94.79	95.00	0.21	0035308	6	1	0.014	0.01	0.005
<p>Vfg drk grey finely bedded argillite with interbeds of fg grey siltite; 0.5% qtz carb stringers &lt;1mm throughout unit; high amount of fracturing in the rock;</p> <p>&lt;&lt;Min: 94.37 - 108.81: 0.5% pyrite / 0.2% pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Vein: 94.37 - 108.81: 0.5% Quartz-Carbonate&gt;&gt;</p>											
	95.00		95.00	96.06	1.06	0035309	5	1	0.003	0.01	0.005
	96.06		96.06	96.31	0.25	0035310	5	1	0.006	0.01	0.005
	96.31		96.31	96.62	0.31	0035311	3	1	0.002	0.01	0.005

End of Hole @ 108.81



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-13

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Jill Christmann	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	Jill Christmann	<b>Date Started:</b>	2019-09-11	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630785	<b>Azimuth:</b>	62	<b>Date Completed:</b>		<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473766	<b>Dip:</b>	-20	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1268	<b>Length (m):</b>	201.77	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-10	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-15	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>					
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL						

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
49.38	EZShot	Curtis	2019-07-11	-19.8	54.5	14.1	68.6	55873	<input checked="" type="checkbox"/>	
64.61	EZShot	Curtis	2019-07-11	-19.4	54.3	14.1	68.4	55653	<input checked="" type="checkbox"/>	
79.85	EZShot	Curtis	2019-07-12	-20.3	56.7	14.1	70.8	55888	<input checked="" type="checkbox"/>	
95.09	EZShot	Curtis	2019-07-12	-19.8	56.2	14.1	70.3	55624	<input checked="" type="checkbox"/>	
128.62	EZShot	Curtis	2019-07-13	-19.1	58.6	14.1	72.7	55706	<input checked="" type="checkbox"/>	
134.72	EZShot	Curtis	2019-07-13	-18.5	58.6	14.1	72.7	55641	<input checked="" type="checkbox"/>	
174.34	EZShot	Curtis	2019-07-14	-17.7	54.3	14.1	68.4	56267	<input checked="" type="checkbox"/>	





# GeoSpark: Drill Hole Report

Hole: ES-19-13

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	5.85	<b>OVB Overburden</b>									
Upper contact is rubbled. Difficult to determine overburden/rock interface											
5.85	76.61	<b>ARGL Argillite</b>									
Unit is an Intercalated sequence of finely laminated dk grey argillite and lighter grey siltite; local areas of more massively bedded drk grey to black argillite; less common areas of disturbed bedding with micro faults and folds displaying minor offset <1cm; 1% of laminations carry both fg py and po stringers along the bedding plane and less common py blebs of <1cm diameter; Overall unit is highly fractured dominantly 90 tca; fracture faces have wk to locally moderate Fe oxidation and more rare fg radial/fibrous calcite (?) xstals; Amount of oxidation on fracture faces decreases after 65m; Upper 30m of unit contains 1% fg thin (1-2mm) qtz carb stringers throughout unit both // and oblique to bedding plane. These stringers decrease with depth; bedding is dominately 10-15 tca with local areas of 20-30 tca - Geology is very similar to hole ES-19-13, which is located to the south and is drilled at the same dip.											
6.94-7.19 Brecciated fault; UC NP; LC at 80 tca; fault infill is med brown clay silt gouge with fg-vcg angular frags of argillite											
13.32-13.65 Brecciated Fault; as above; Contacts NP											
<<Min: 5.85 - 76.61: 0.5% pyrite / 0.3% pyrhotite / 0.2% pyrite>>											
<<Alt: 5.85 - 65: weak to moderate Iron oxide>> upper portion of unit is mod FEO alt which decreases with depth to weak intensity											
<<Vein: 5.85 - 30: 1% Quartz-Carbonate>>											
<<Struc: 5.85 - 6.94: moderate to strong Finely laminated/laminated/finely bedded 15 deg. >>											
<<Struc: 6.94 - 7.19: moderate to strong Fault 80 deg. >>											
<<Struc: 7.19 - 13.32: moderate to strong Finely laminated/laminated/finely bedded 10 deg. >>											
<<Struc: 13.32 - 13.65: strong Fault 70 deg. >> Contacts NP - UP contact est at 70											
<<Struc: 13.65 - 18.25: moderate to strong Finely laminated/laminated/finely bedded 15 deg. >>											
<<Struc: 18.25 - 27.7: moderate to strong Finely laminated/laminated/finely bedded 35 deg. >> localized area where bedding angle increases from 15 to 35-40 tca											
<<Struc: 27.7 - 76.61: moderate to strong Finely laminated/laminated/finely bedded 15 deg. >> locally varied from 15-20 tca											
	76.35	76.61	0.26	0035324	4	1	0.002	0.01	0.005		
	76.61	76.87	0.26	0035325	7	1	0.005	0.01	0.005		



## GeoSpark: Drill Hole Report

Hole: ES-19-13

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
76.61	79.86	ARGL_ST Argillite with siderite-quartz KWK stockwork	76.87	77.42	0.55	0035326	4	1	0.005	0.01	0.005
Dominantly vfg drk gry-black argillite with 10% siderite quartz vein stockwork veins 1cm-10cm in width; unit is very broken/fractured; SQS veinles/veinlets are 70 tca; Siderite is dominant in the veins and is mg-cg; 4% fg diss py; 3.5% fg diss Po; tr fg diss cpy; wk-mod drk green chl alteration within the argillite and minor amounts along veinlets <<Min: 76.61 - 79.86: 4% pyrite / 3.5% pyrrhotite / 0.01% chalcopyrite>> <<Alt: 76.61 - 79.86: trace Chlorite >> <<Vein: 76.61 - 79.86: 10% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>>			77.42	77.86	0.44	0035328	5	1	0.009	0.01	0.005
			77.86	78.48	0.62	0035329	3	1	0.0005	0.01	0.005
			78.48	79.58	1.10	0035330	5	1	0.003	0.01	0.005
			79.58	79.68	0.10	0035331	9	1	0.015	0.01	0.005
			79.68	79.86	0.18	0035332	7	1	0.013	0.01	0.005
			79.86	80.22	0.36	0035334	7	1	0.004	0.01	0.005
79.86	201.77	ARGL Argillite									

End of Hole @ 201.77



## GeoSpark: Drill Hole Report

**Project:** Bull River

**Hole:** ES-19-14

<b>Prospect:</b>	EMPIRE STATHCONA	<b>Survey Type:</b>	GPS	<b>Logged By:</b>	Jill Christmann	<b>Hole Type:</b>	DD
<b>UTM Grid:</b>	NAD83_Z11	<b>Survey By:</b>	J Christmann	<b>Date Started:</b>	2019-09-09	<b>Hole Diameter:</b>	7.57
<b>UTM East:</b>	630785	<b>Azimuth:</b>	50	<b>Date Completed:</b>	2019-09-10	<b>Core Size:</b>	NQ2
<b>UTM North:</b>	5473766	<b>Dip:</b>	-20	<b>Drill Company:</b>	Lucky	<b>Casing Pulled?:</b>	<input checked="" type="checkbox"/>
<b>UTM Elevation (m):</b>	1268	<b>Length (m):</b>	146.91	<b>Drill Rig:</b>	Rig1	<b>Casing Depth (m):</b>	
<b>Local Grid:</b>				<b>Drill Started:</b>	2019-07-16	<b>Reduced (m):</b>	
<b>Local East:</b>				<b>Drill Completed:</b>	2019-07-18	<b>Reduced Size:</b>	
<b>Local North:</b>						<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>	Hole was drilled from pad 3, west of hole 13, as infill.				
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>	EXPL		Main ES vein intersected at 79.76-80.33m; vein is dom cg siderite with trace diss sulphides				

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
21.03	EZShot	Curtis	2019-07-16	-21.1	37.1	14.1	51.2	56117	<input checked="" type="checkbox"/>	
36.27	EZShot	Curtis	2019-07-16	-21	39	14.1	53.1	55550	<input checked="" type="checkbox"/>	
51.51	EZShot	Curtis	2019-07-17	-21.2	39.8	14.1	53.9	55634	<input checked="" type="checkbox"/>	
63.7	EZShot	Curtis	2019-07-18	-21.6	41.5	14.1	55.6	55566	<input checked="" type="checkbox"/>	
94.18	EZShot	Curtis	2019-07-18	-21.2	42.1	14.1	56.2	55564	<input checked="" type="checkbox"/>	
115.51	EZShot	Curtis	2019-07-19	-21.3	44.9	14.1	59	55680	<input checked="" type="checkbox"/>	



# GeoSpark: Drill Hole Report

Hole: ES-19-14

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
0.00	10.83	<b>OVB Overburden</b> casing down to 9.14m; rock overburden contact cannot be determined <<Min: 0 - 79.76: 0.5% pyrite / 0.5% pyrrhotite / 0.2% pyrite>>									
10.83	79.76	<b>ARGL Argillite</b> Intercalated sequence of finely laminated dk grey argillite and lighter grey siltite; local areas of more massively bedded drk grey to black argillite; less common areas of disturbed bedding with micro faults and fractures displaying minor offset <1cm; 0.5% of laminations carry both fg py and po stringers along the bedding plane and less common py blebs of < 1cm diameter; Overall unit is highly fractured both along bedding plane and 90 tca; fracture faces have wk to locally moderate Fe oxidation and more rare fg radial/fibrous calcite (?) xstals; Amount of oxidation on fracture faces decreases after 68.5m, though amount of fracturing is still high; 1% fg thin (1-2mm) qtz carb stringers throughout unit both // and oblique to bedding plane (qtz/carb stringers are most abundant near top of hole and decrease in abundance after 23m depth); bedding is dominately 10-15 tca with local areas of 20-30 tca									
		13.64-13.97 area of breccia with mg-cg angular to subangular clasts of drk grey argillite cemented with effivcent white carbonate UC 90 to ca LC gradational/irregular									
		17.43-17.66 Fault; UC and LC 70 tca; fault gouge is hard and moderately oxidized drk grey clay with mod carbonate <<Alt: 10.83 - 68.5: weak to moderate Iron oxide>> <<Alt: 68.5 - 79.76: weak Iron oxide>> <<Vein: 10.83 - 23: 1% Quartz-Carbonate>> <<Struc: 10.83 - 13.64: moderate to strong Bedded 15 deg. >> <<Struc: 13.64 - 13.97: weak to moderate Brecciated 90 deg. >> <<Struc: 13.97 - 17.43: moderate to strong Bedded 15 deg. >> <<Struc: 17.43 - 17.66: moderate to strong Fault 70 deg. >> <<Struc: 17.66 - 79.76: moderate to strong Bedded 15 deg. >> bedding varies locally from 15-30									
			78.77	79.26	0.49	0035313	6	1	0.013	0.01	0.005
			79.26	79.76	0.50	0035314	4	1	0.013	0.01	0.005
			79.76	80.07	0.31	0035315	5	1	0.007	0.01	0.005
79.76	80.33	<b>SQS Siderite-quartz-sulphide Vein</b> Main Empire Strathcone vein; Dominately cg siderite with lesser qtz; mod drk green chl alt; fg diss sulphides concentrated near contacts; tr cpy; UC wavy at 20 tca LC 40 tca	80.07	80.33	0.26	0035316	5	1	0.002	0.01	0.005
		<b>cream to pale yellow CG</b>									

Hole: ES-19-14

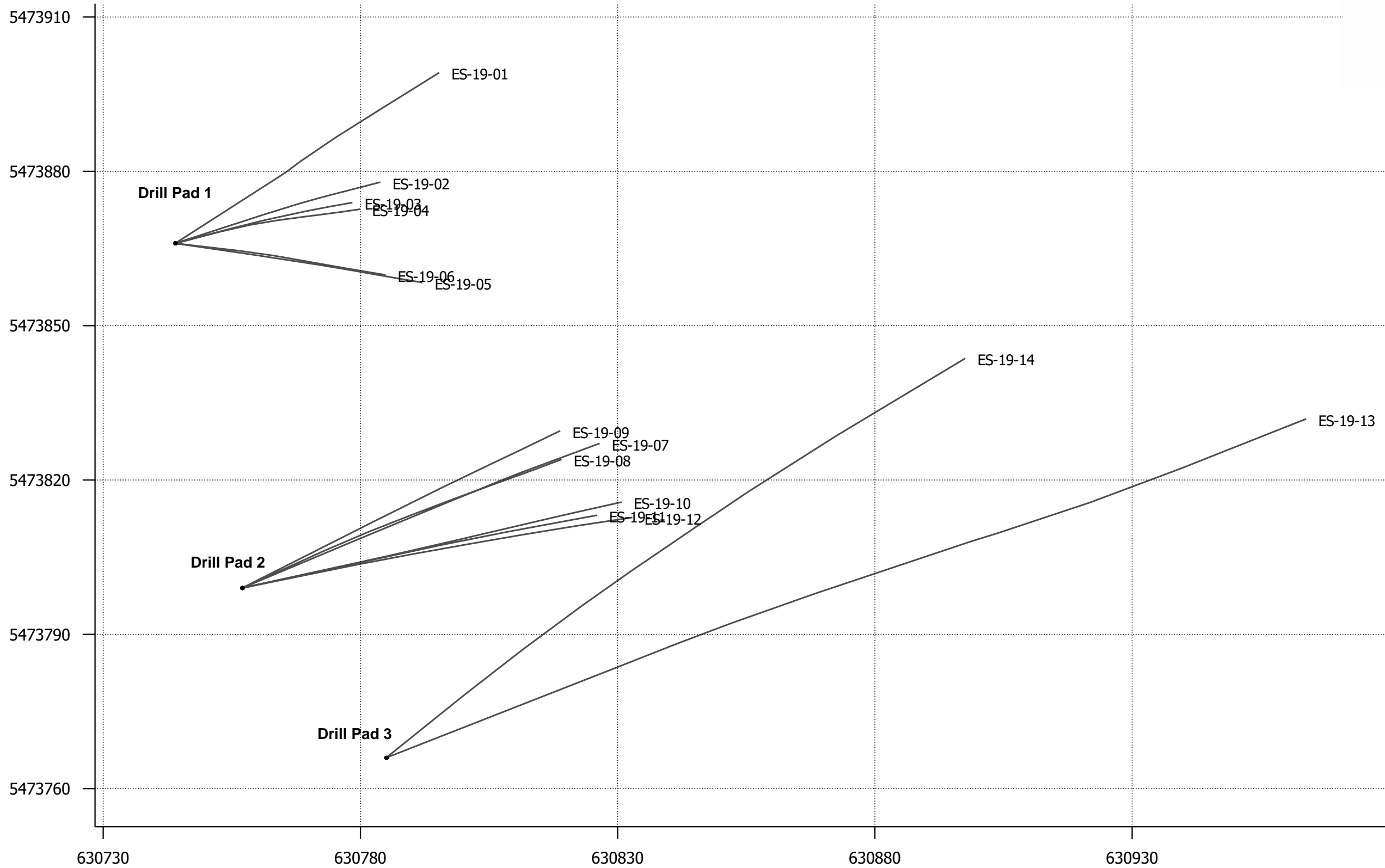
From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppb	Ag Best ppm	Cu Best pct	Pb Best pct	Zn Best pct
<<Min: 79.76 - 80.33: 2% pyrite / 2% pyrrhotite / 0.01% chalcopyrite>> <<Alt: 79.76 - 80.94: weak Chlorite >> <<Vein: 79.76 - 80.33: 100% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> <<Struc: 79.76 - 80.33: moderate to strong Veining - fracture fill 40 deg. >> UC wavy at 20 tca and LC sharp at 40 tca											
80.33	80.94	<b>ARGL_ST Argillite with siderite-quartz KWK stockwork</b>	80.33	80.94	0.61	0035317	4	1	0.003	0.01	0.005
<b>80.33 80.94 ARGL_ST Argillite with siderite-quartz dark grey VFG</b> Dark grey vfg argillite with 10% siderite quartz veins 1-5cm; moderate drk grn chl alt throughout unit; SQ veins contain mainly cg siderite xstals with lesser qtz; veins contain fg diss py and po with tr cpy; SQ veins run 75-90 tca; contacts are gradational with LC eventually becoming argillite without veining <<Min: 80.33 - 83.04: 2% pyrite / 1% pyrrhotite / 0.01% chalcopyrite>> <<Vein: 80.33 - 80.94: 10% Siderite quartz sulphide (pyrrhotite+/pyrite+/-chalcopyrite)>> <<Struc: 80.33 - 115.51: moderate to strong Bedded 15 deg. >>											
80.94	81.94	<b>ARGL Argillite</b>	80.94	81.94	1.00	0035319	6	1	0.003	0.01	0.005
81.94	82.60	<b>ARGL Argillite</b>	81.94	82.60	0.66	0035320	5	1	0.003	0.01	0.005
<b>80.94 146.91 ARGL Argillite dark grey VFG</b> VFG drk gry to black argillite interbedded with fg light grey siltite as seen above; again local areas of more massive bedded vfg argillite; 0.5% fg diss py and po along bedding planes and 0.2% py +/- po blebs <1cm; lesser qtz carb stringers than seen in above unit; bedding is dom 15 tca with local areas of bedding 20-30 tca; again unit is highly fractured however there is no oxidation on fracture faces; local areas of wk drk grn chl alt - EOH <<Min: 83.04 - 115.51: 0.5% pyrite / 0.5% pyrrhotite / 0.2% pyrite>> <<Alt: 80.94 - 115.51: trace Chlorite >>											
82.60	83.04		82.60	83.04	0.44	0035321	5	1	0.006	0.01	0.005
83.04	83.54		83.04	83.54	0.50	0035322	5	1	0.007	0.01	0.005
83.54	83.90		83.54	83.90	0.36	0035323	5	1	0.016	0.01	0.005

End of Hole @ 146.91

## **Appendix VI – Drillhole Plan and Cross-Sections**



# Empire Strathcona Drill Program 2019 - Planview 1260m Elev



## Location

W: 630728, 5473913, 1260

E: 630979, 5473913, 1260

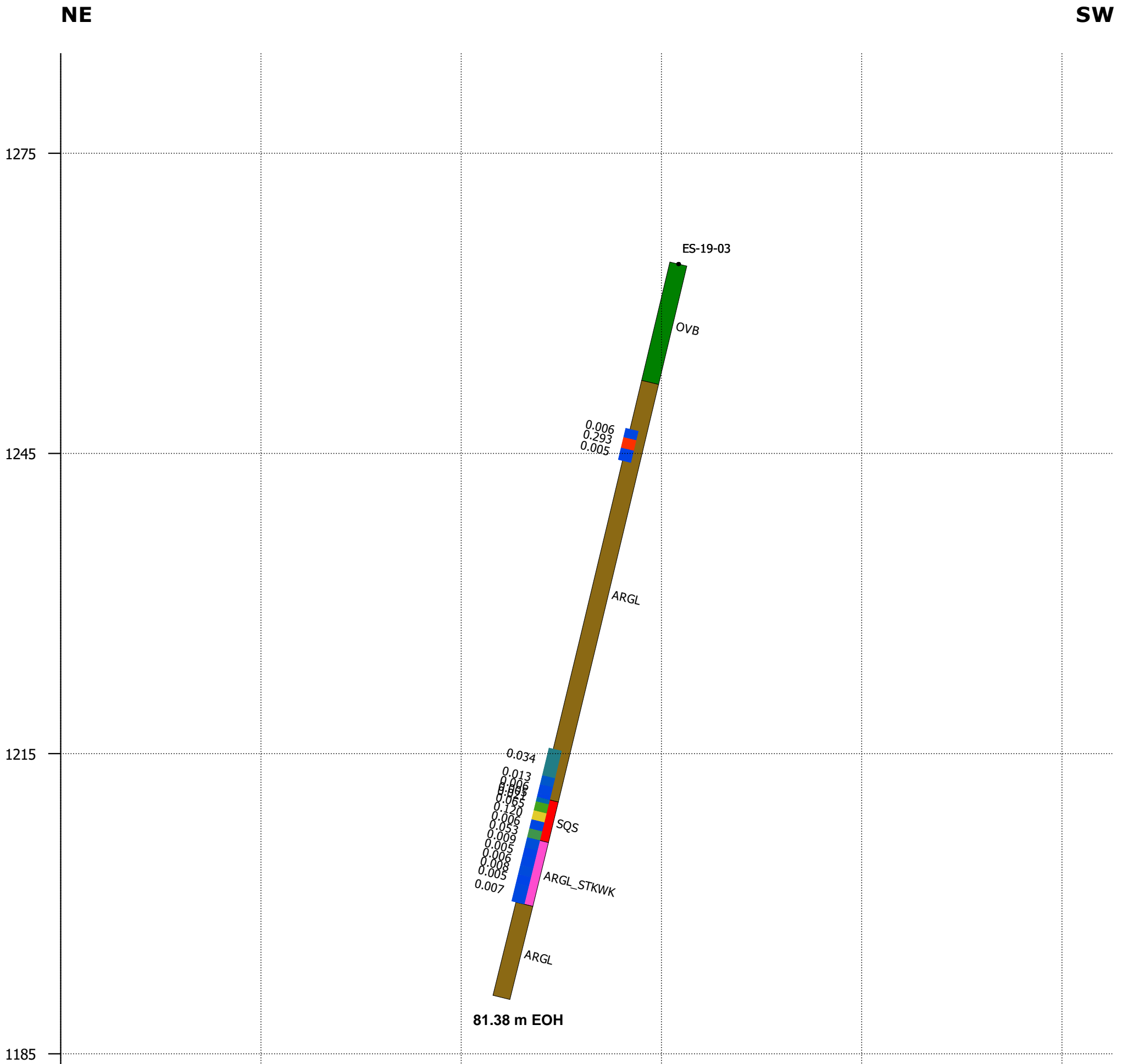
Scale: 1:800







# Empire Strathcona 2019 - ES-19-03 Cross Section



**Legend**

**Lithology**

- ARGL - Argillite
- ARGL QVN - Argillite with 10% quartz veining
- ARGL STKWK - Argillite with 10% quartz stockwork
- OVB - Overburden
- SQS - Siderite Quartz Sulphide Vein

<span style="display: inline-block; width: 15px; height: 15px; background-color: brown; border: 1px solid black;"></span> ARGL	<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> OVB
<span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> ARGL_QVN	<span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span> SQS
<span style="display: inline-block; width: 15px; height: 15px; background-color: pink; border: 1px solid black;"></span> ARGL_STKWK	

**Cu %**

0.001   0.05   0.1   0.15   0.2

x: 630864	x: 630825	x: 630786	x: 630747	x: 630708	x: 630669
y: 5473894	y: 5473885	y: 5473876	y: 5473867	y: 5473858	y: 5473849

**Location**

NE: 630864, 5473894, 1285

SW: 630659, 5473847, 1285

Scale: 1:830

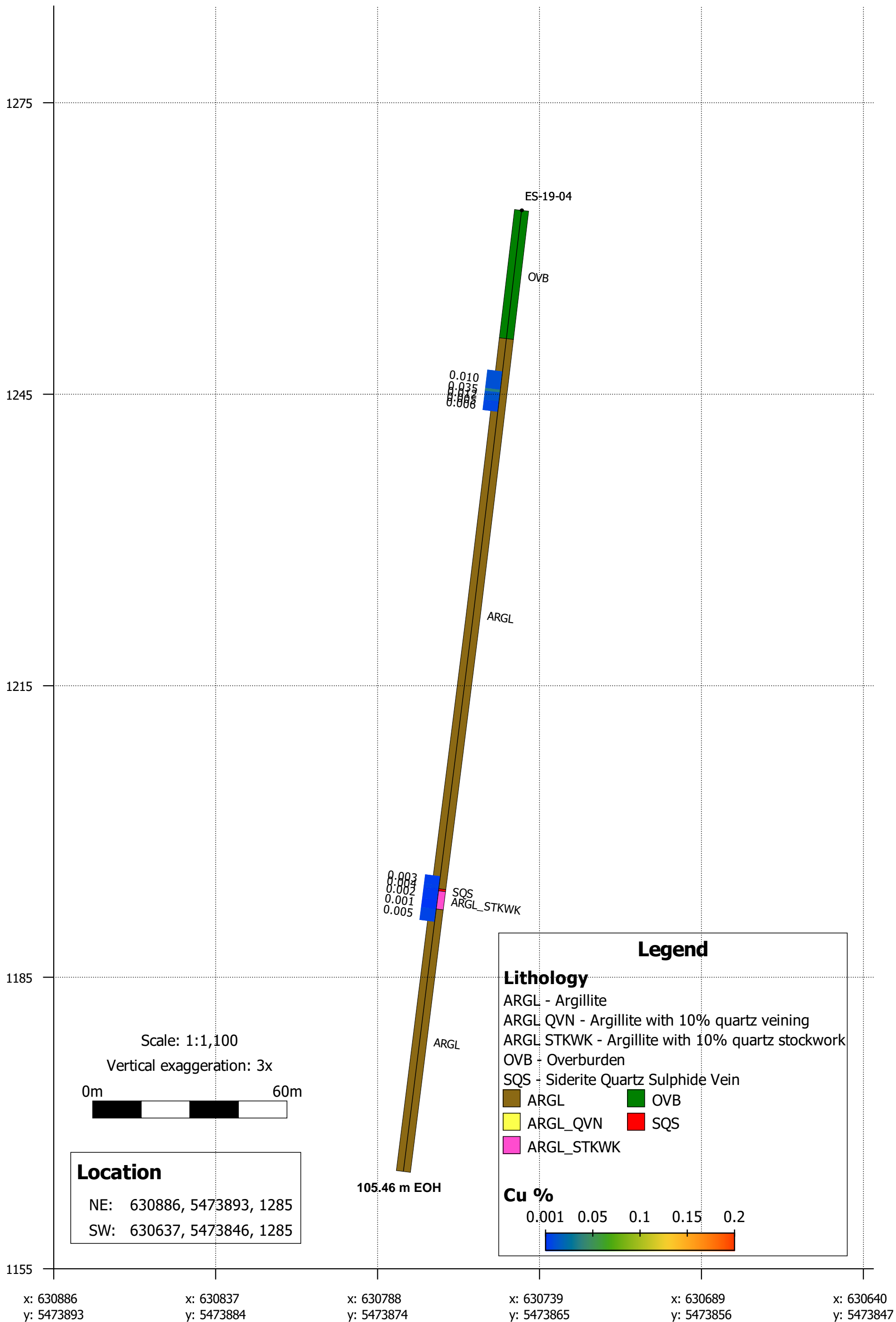
Vertical exaggeration: 2x

0m  60m

# Empire Strathcona 2019 - ES-19-04 Cross Section

NE

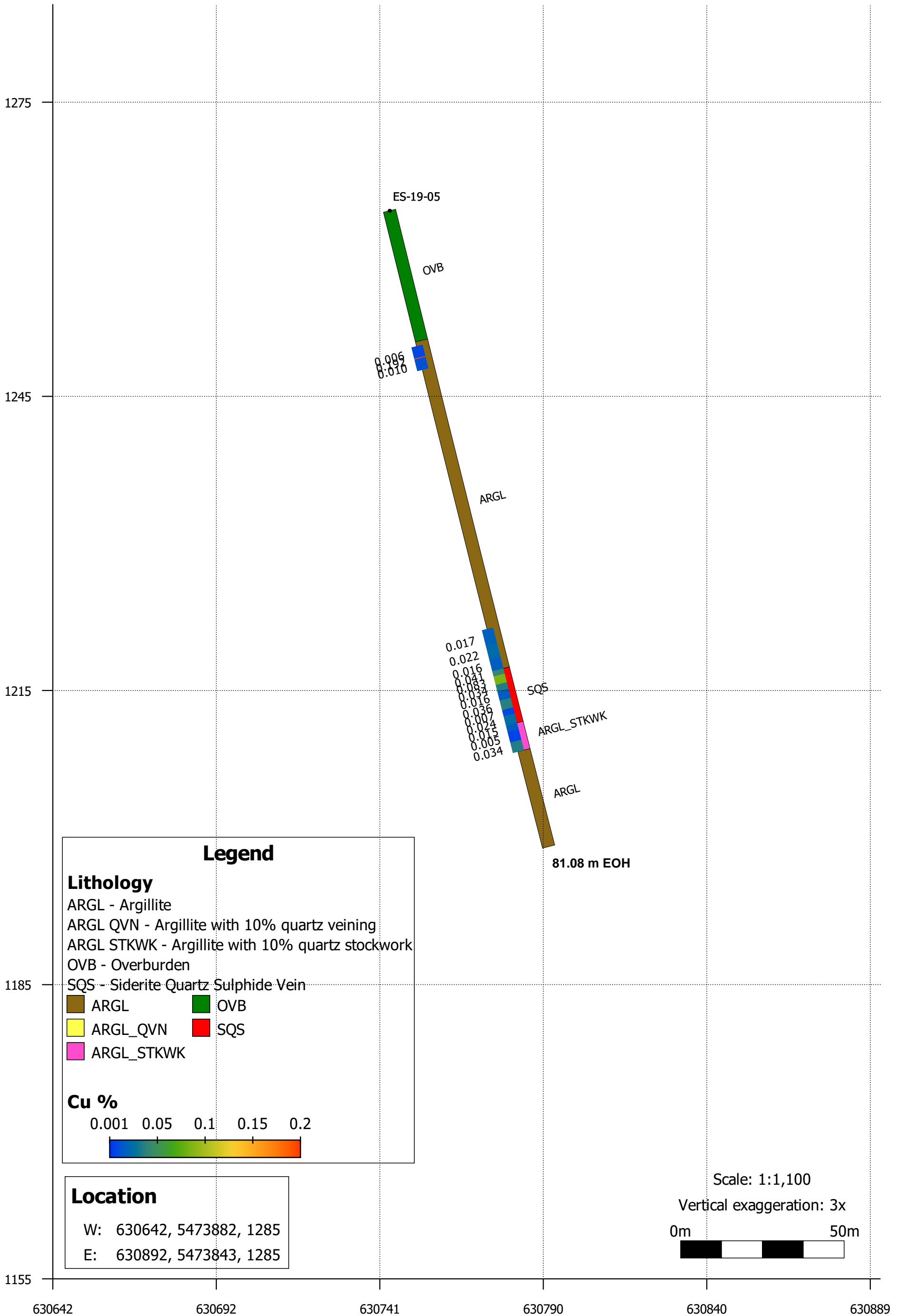
SW



# Empire Strathcona 2019 - ES-19-05 Cross Section

W

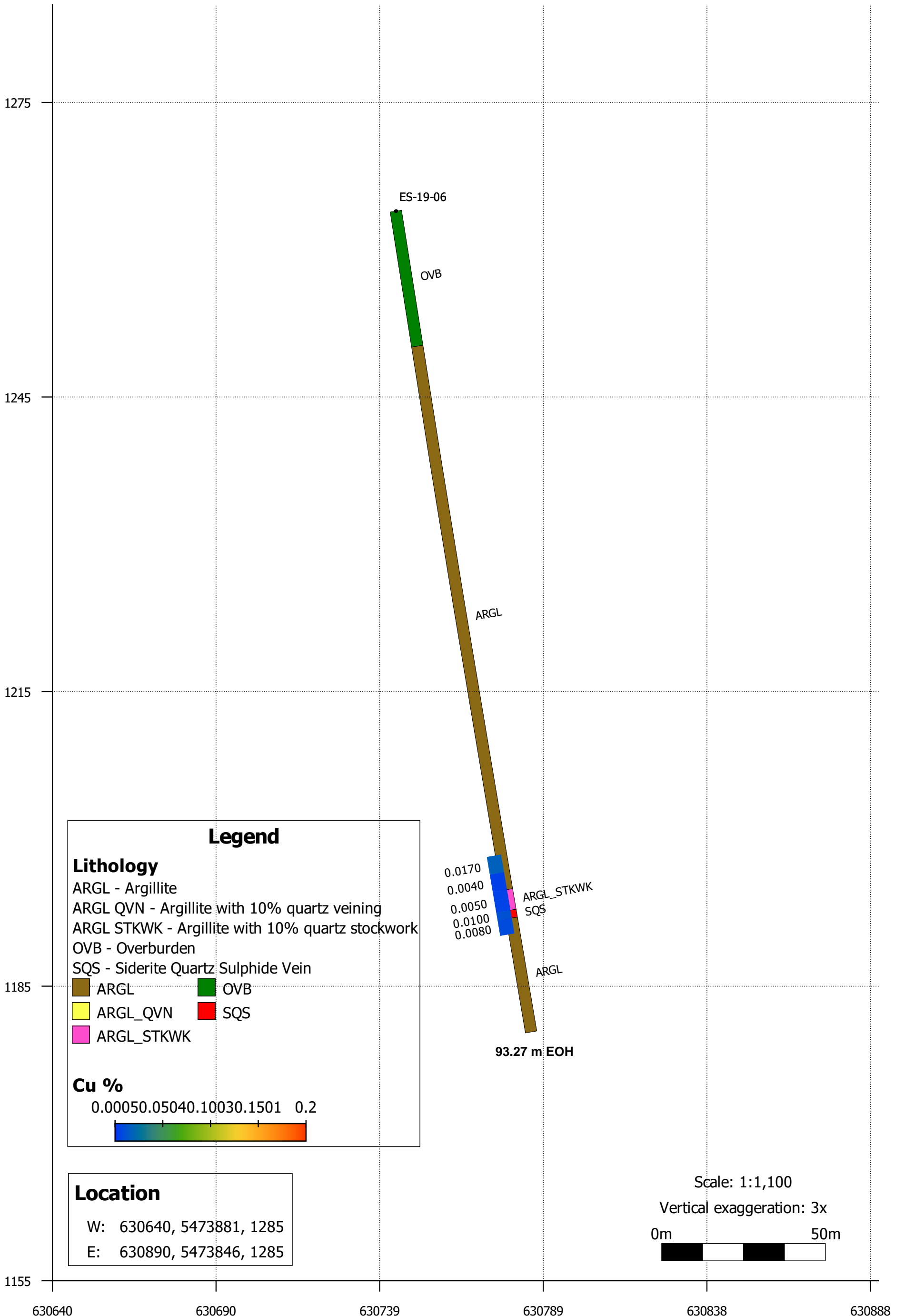
E





# w Empire Strathcona 2019 - ES-19-06 Cross Section E

E



**Legend**

**Lithology**  
 ARGL - Argillite  
 ARGL QVN - Argillite with 10% quartz veining  
 ARGL STKWK - Argillite with 10% quartz stockwork  
 OVB - Overburden  
 SQS - Siderite Quartz Sulphide Vein

ARGL      OVB  
 ARGL\_QVN      SQS  
 ARGL\_STKWK

**Cu %**  
 0.0005 0.0504 0.1003 0.1501 0.2

**Location**

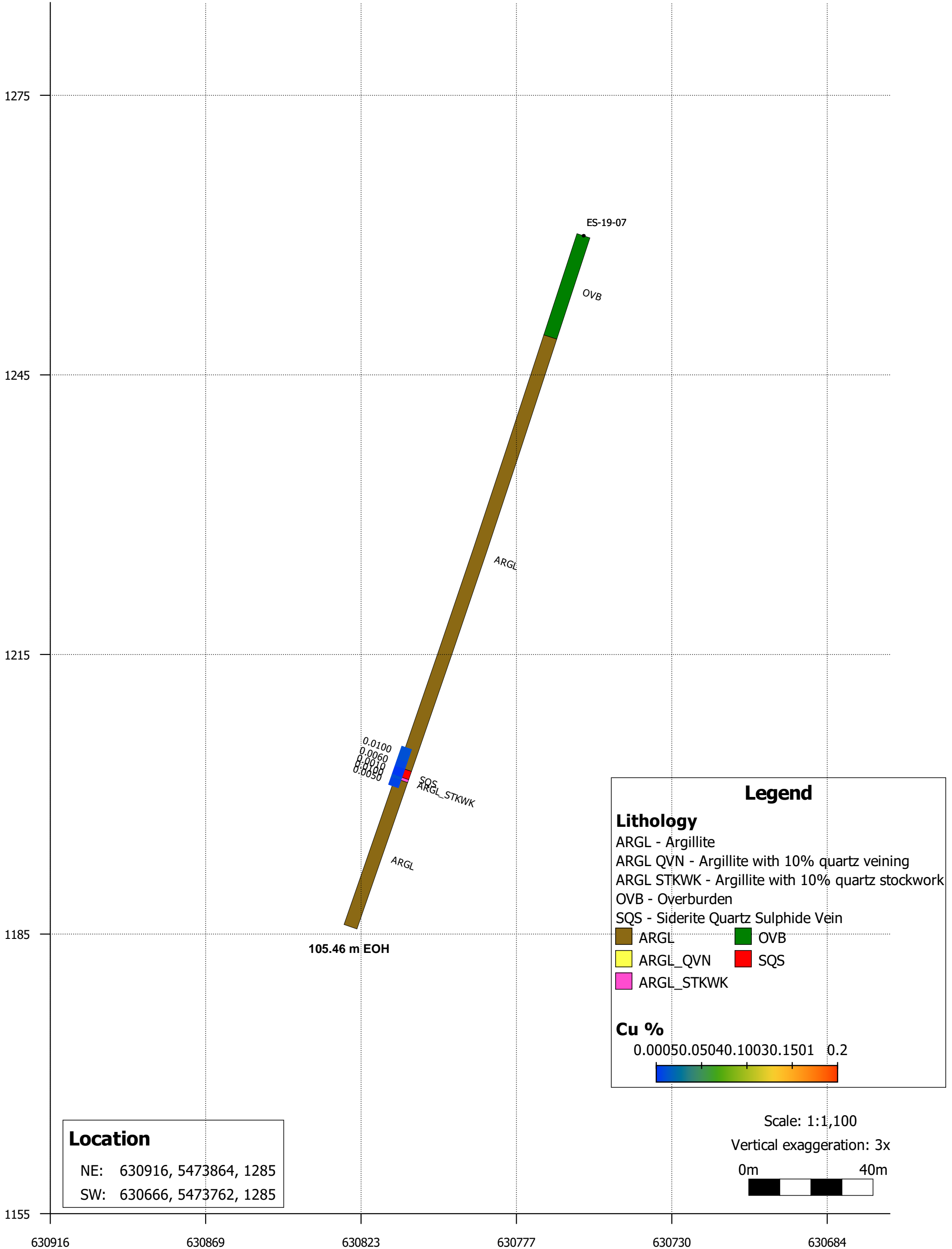
W: 630640, 5473881, 1285  
 E: 630890, 5473846, 1285

Scale: 1:1,100  
 Vertical exaggeration: 3x

# Empire Strathcona 2019 - ES-19-07 Cross Section

NE

SW



105.46 m EOH

ES-19-07

OVB

ARGL

ARGL

0.0100  
0.0060  
0.0010  
0.0010  
0.0050

SQS  
ARGL\_STKWK

### Legend

#### Lithology

- ARGL - Argillite
  - ARGL QVN - Argillite with 10% quartz veining
  - ARGL STKWK - Argillite with 10% quartz stockwork
  - OVB - Overburden
  - SQS - Siderite Quartz Sulphide Vein
- |  |   |
|--|---|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black;"></span> ARGL       | <span style="display: inline-block; width: 15px; height: 15px; background-color: #008000; border: 1px solid black;"></span> OVB |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black;"></span> ARGL_QVN   | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF0000; border: 1px solid black;"></span> SQS |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF00FF; border: 1px solid black;"></span> ARGL_STKWK |   |

#### Cu %

0.0005 0.0504 0.1003 0.1501 0.2

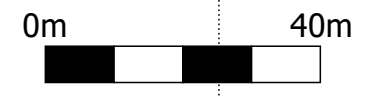


### Location

NE: 630916, 5473864, 1285  
SW: 630666, 5473762, 1285

Scale: 1:1,100

Vertical exaggeration: 3x



630916

630869

630823

630777

630730

630684

1155

1185

1215

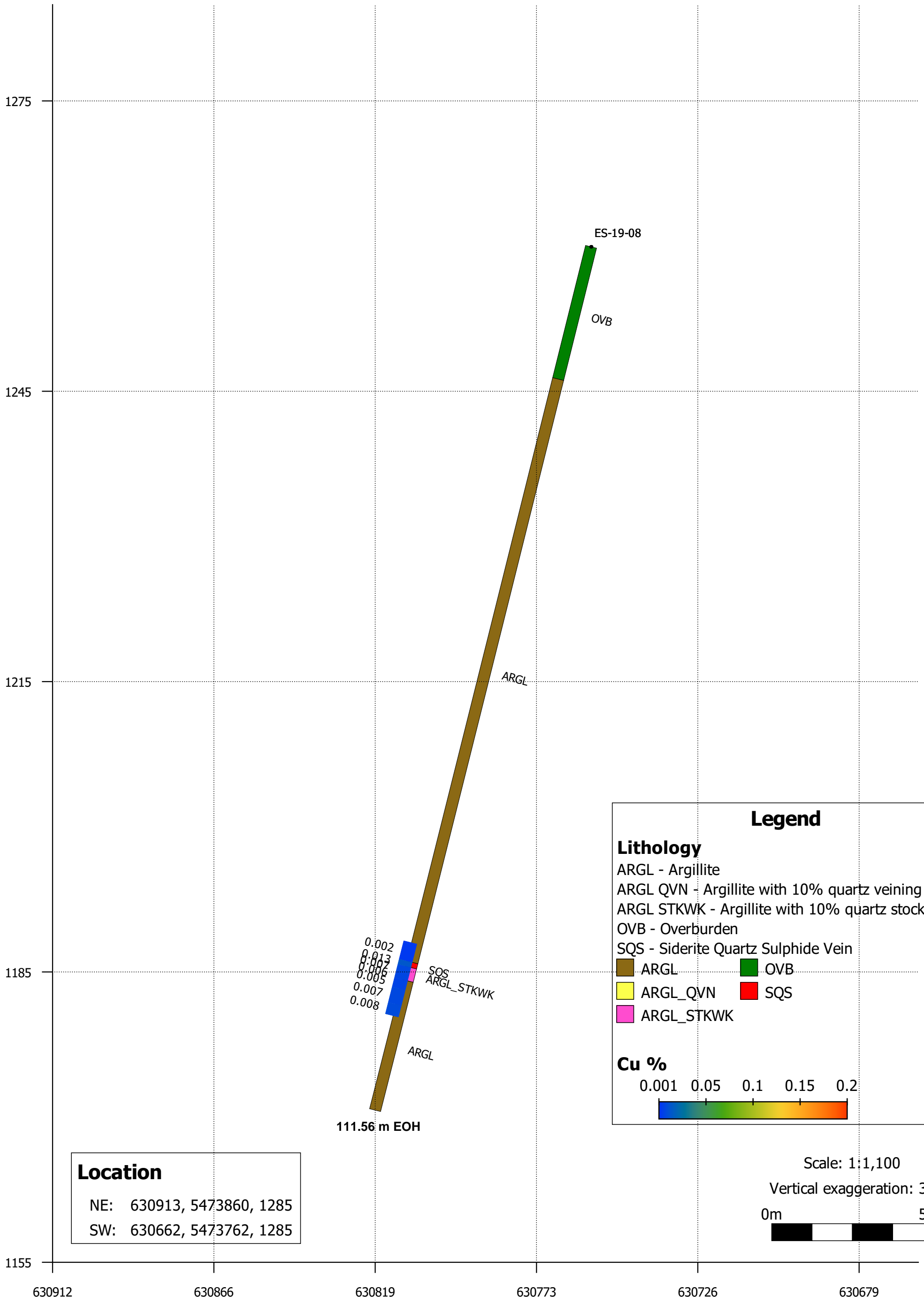
1245

1275

# Empire Strathcona 2019 - ES-19-08 Cross Section

NE

SW



**Location**  
 NE: 630913, 5473860, 1285  
 SW: 630662, 5473762, 1285

**Legend**

**Lithology**  
 ARGL - Argillite  
 ARGL QVN - Argillite with 10% quartz veining  
 ARGL STKWK - Argillite with 10% quartz stockwork  
 OVB - Overburden  
 SQS - Siderite Quartz Sulphide Vein

ARGL (Brown)      OVB (Green)  
 ARGL\_QVN (Yellow)      SQS (Red)  
 ARGL\_STKWK (Pink)

**Cu %**  
 0.001 0.05 0.1 0.15 0.2

Scale: 1:1,100  
 Vertical exaggeration: 3x  
 0m 50m

# Empire Strathcona 2019 - ES-19-09 Cross Section

NE

SW

1262

ES-19-09






OVB

ARGL


**Location**  
 NE: 630825, 5473833, 1262  
 SW: 630751, 5473796, 1262

**Legend**

**Lithology**  
 ARGL - Argillite  
 ARGL QVN - Argillite with 10% quartz veining  
 ARGL STKWK - Argillite with 10% quartz stockwork  
 OVB - Overburden  
 SQS - Siderite Quartz Sulphide Vein

 ARGL	 OVB
 ARGL_QVN	 SQS
 ARGL_STKWK	

**Cu %**  
 0.001 0.05 0.1 0.15 0.2



73.15 m EOH

Scale: 1:330

Vertical exaggeration: 4x



1233

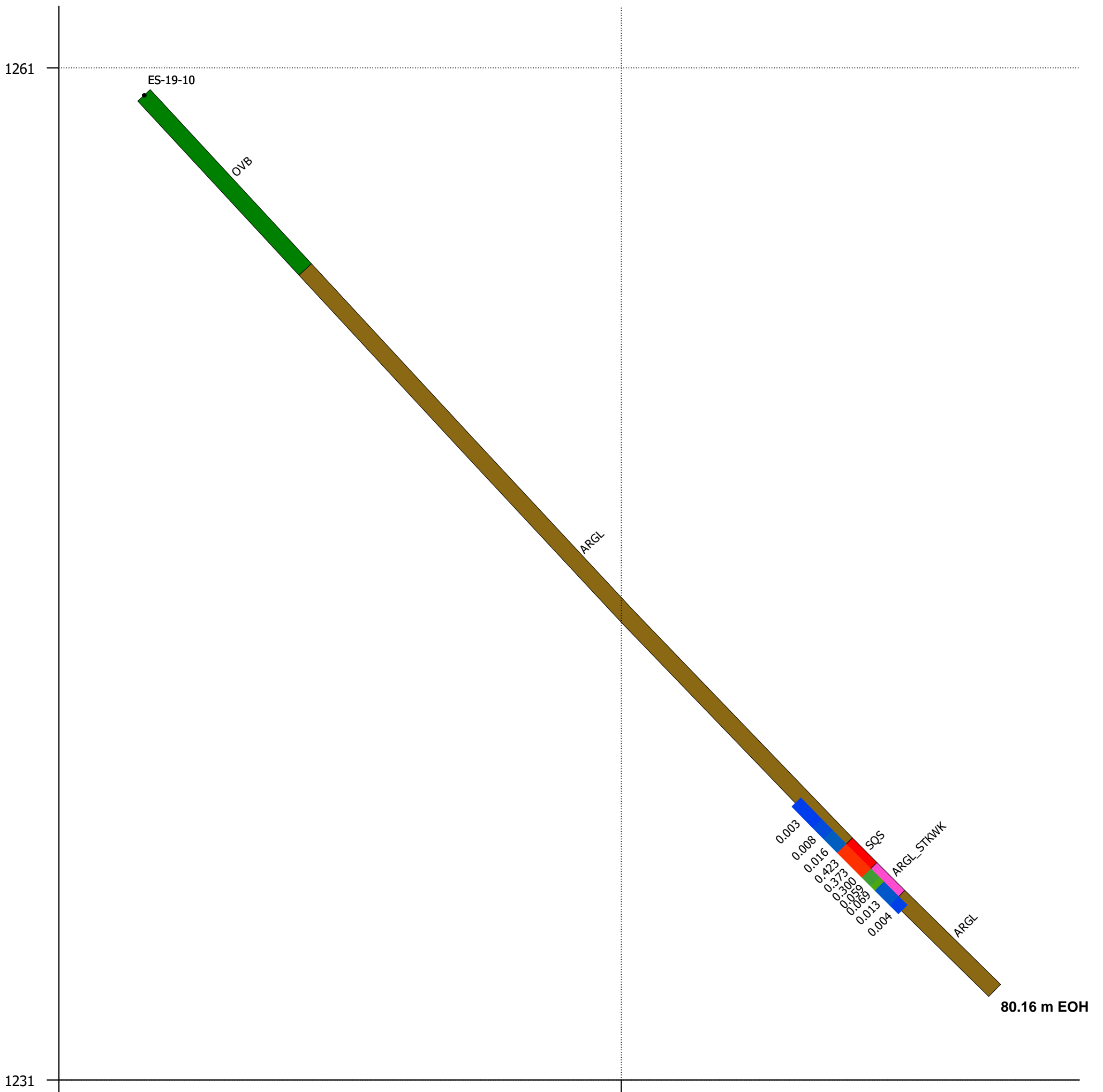
630825

630780

# Empire Strathcona 2019 - ES-19-10 Cross Section

WSW

ENE



## Legend

### Lithology

- ARGL - Argillite
- ARGL QVN - Argillite with 10% quartz veining
- ARGL STKWK - Argillite with 10% quartz stockwork
- OVB - Overburden
- SQS - Siderite Quartz Sulphide Vein
- ARGL ARGL
- OVB OVB
- ARGL\_QVN ARGL\_QVN
- SQS SQS
- ARGL\_STKWK ARGL\_STKWK

### Cu %

0.001 0.05 0.1 0.15 0.2



## Location

WSW: 630750, 5473798  
ENE: 630838, 5473818

Scale: 1:360

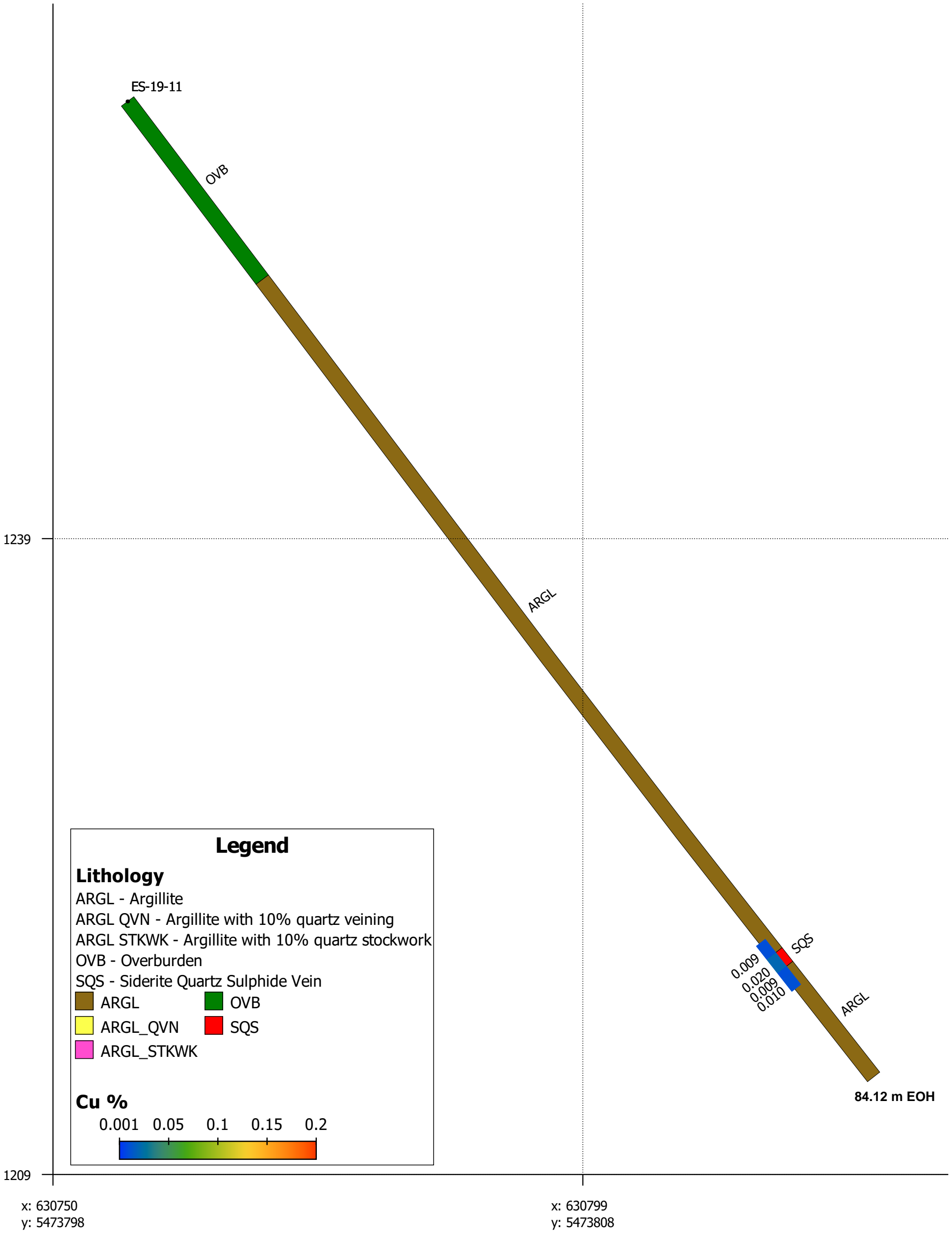
Vertical exaggeration: 3x



# Empire Strathcona 2019 - ES-19-11 Cross Section

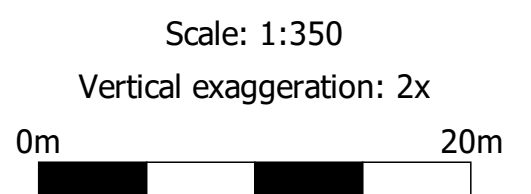
WSW

ENE



## Location

WSW: 630750, 5473798  
 ENE: 630833, 5473815

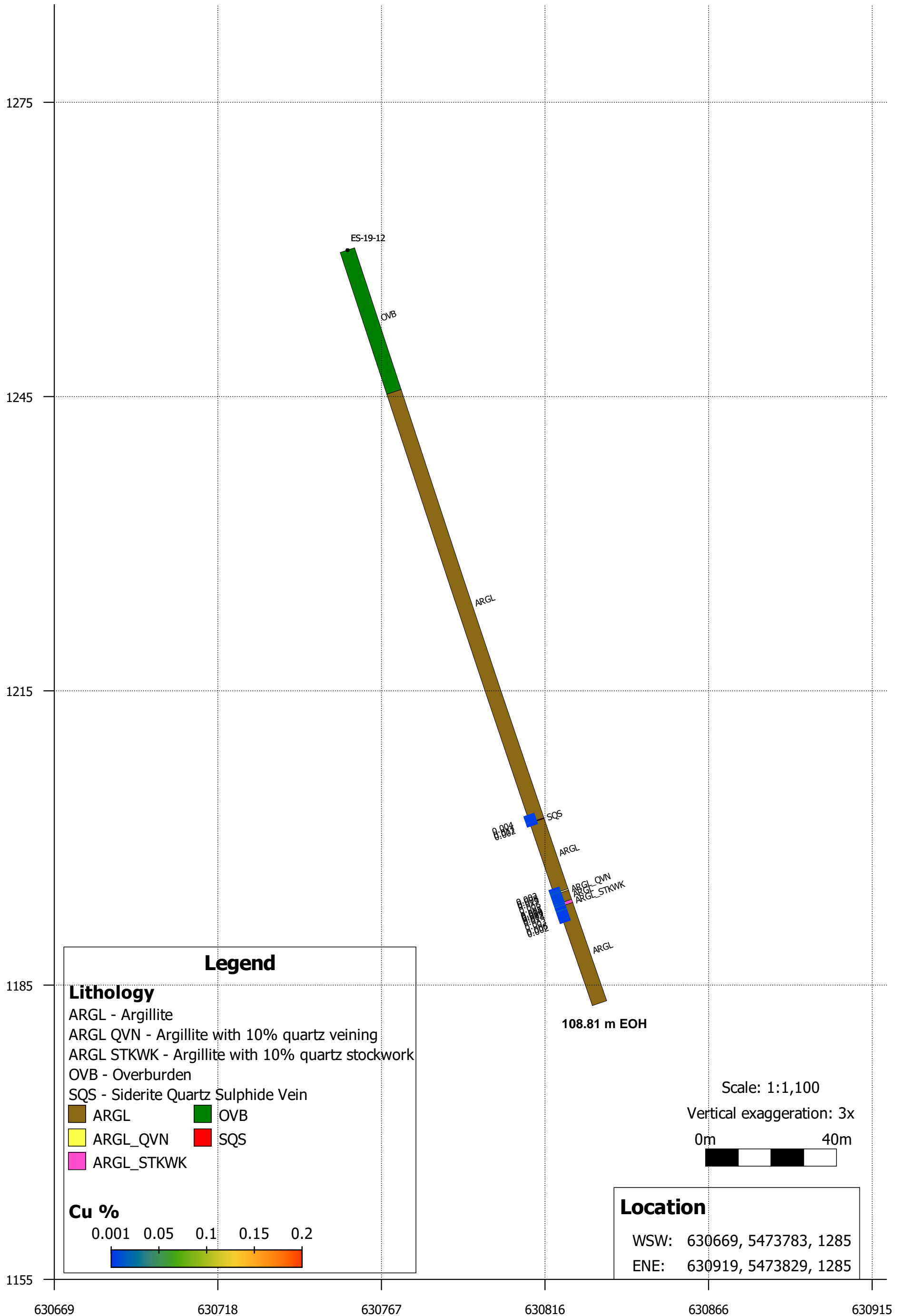




# Empire Strathcona 2019 - ES-19-12 Cross Section

WSW

ENE



**Legend**

**Lithology**

- ARGL - Argillite
- ARGL QVN - Argillite with 10% quartz veining
- ARGL STKWK - Argillite with 10% quartz stockwork
- OVB - Overburden
- SQS - Siderite Quartz Sulphide Vein

<span style="display: inline-block; width: 15px; height: 15px; background-color: brown; border: 1px solid black;"></span> ARGL	<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> OVB
<span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> ARGL_QVN	<span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span> SQS
<span style="display: inline-block; width: 15px; height: 15px; background-color: pink; border: 1px solid black;"></span> ARGL_STKWK	

**Cu %**

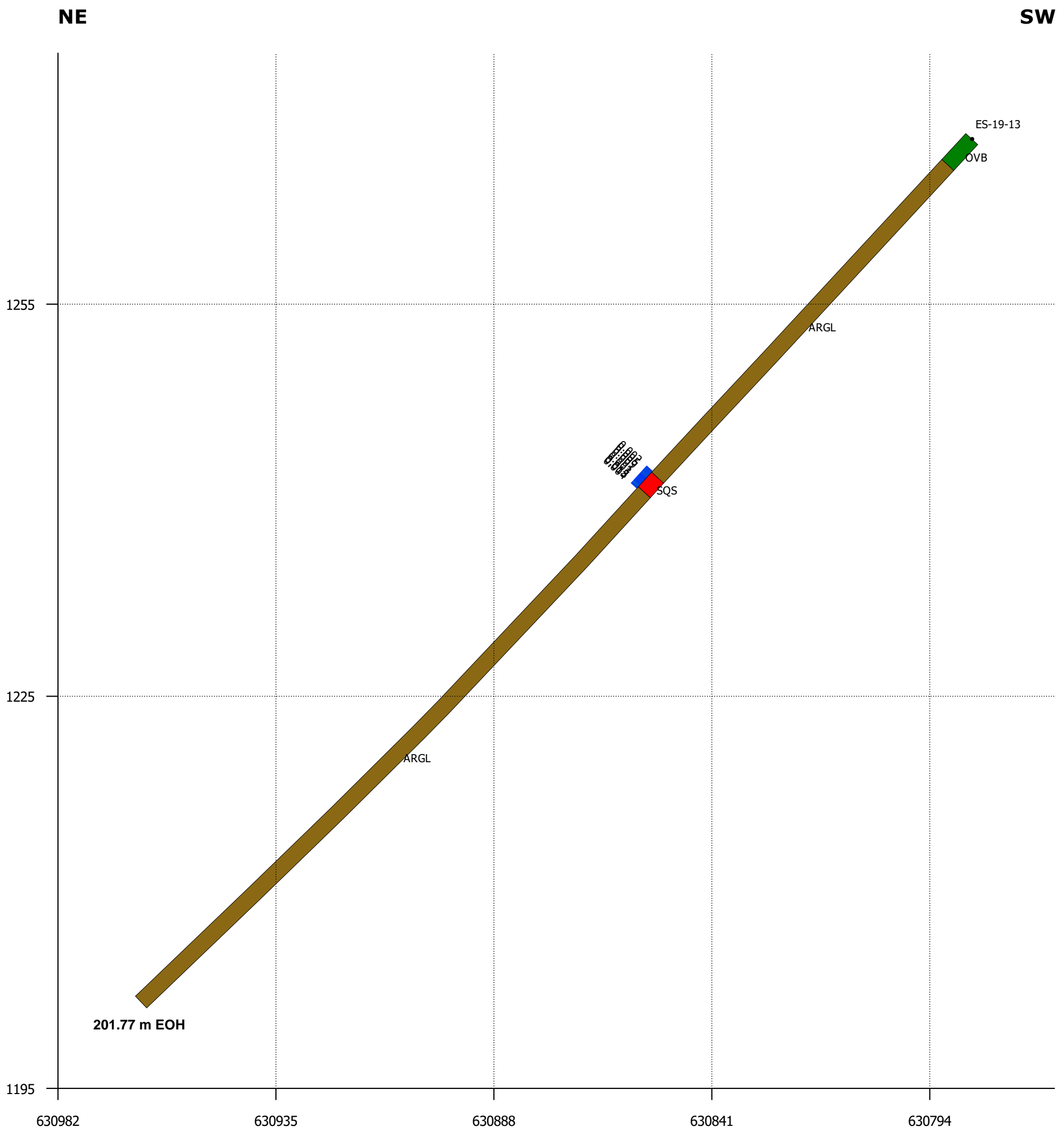
0.001   0.05   0.1   0.15   0.2

Scale: 1:1,100  
 Vertical exaggeration: 3x  
 0m 40m

**Location**

WSW: 630669, 5473783, 1285  
 ENE: 630919, 5473829, 1285

# Empire Strathcona 2019 - ES-19-13 Cross Section



**Legend**

**Lithology**

- ARGL - Argillite
- ARGL\_QVN - Argillite with 10% quartz veining
- ARGL\_STKWK - Argillite with 10% quartz stockwork
- OVB - Overburden
- SQS - Siderite Quartz Sulphide Vein

ARGL
  OVB

ARGL\_QVN
  SQS

ARGL\_STKWK

**Cu%**

0.001 0.05 0.1 0.15 0.2

**Location**

NE: 630982, 5473838, 1275

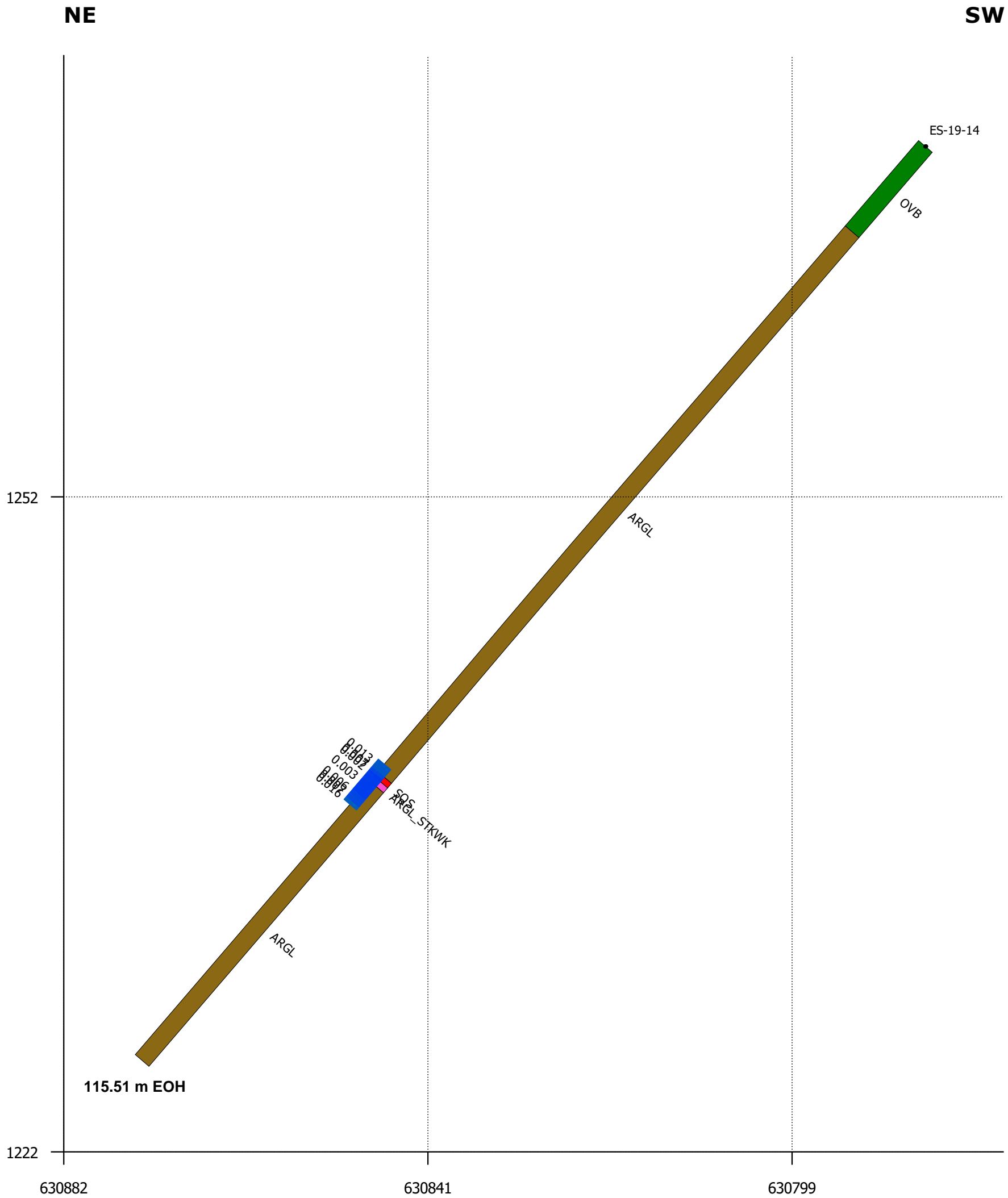
SW: 630767, 5473760, 1275

Scale: 1:890

Vertical exaggeration: 3x

0m  50m

# Empire Strathcona 2019 - ES-19-14 Cross Section



## Legend

### Lithology

- ARGL - Argillite
  - ARGL QVN - Argillite with 10% quartz veining
  - ARGL STKWK - Argillite with 10% quartz stockwork
  - OVB - Overburden
  - SQS - Siderite Quartz Sulphide Vein
- |  |   |
|--|---|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black;"></span> ARGL       | <span style="display: inline-block; width: 15px; height: 15px; background-color: #008000; border: 1px solid black;"></span> OVB |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black;"></span> ARGL_QVN   | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF0000; border: 1px solid black;"></span> SQS |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF00FF; border: 1px solid black;"></span> ARGL_STKWK |   |

### Cu%



### Location

NE: 630882, 5473833, 1272  
 SW: 630776, 5473760, 1272

Scale: 1:590

**Vertical exaggeration: 3x**



## **Appendix VII - Analytic Certificates**



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

[www.bureauveritas.com/um](http://www.bureauveritas.com/um)

Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Submitted By: Jill Christmann  
Receiving Lab: Canada-Vancouver  
Received: July 02, 2019  
Report Date: July 12, 2019  
Page: 1 of 3

## CERTIFICATE OF ANALYSIS

VAN19001694.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 47

### SAMPLE DISPOSAL

IMM-PLP Return immediately after analysis  
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Bul River Mineral Corporation  
Box 845  
Cranbrook British Columbia V1C 4J6  
Canada

CC: Tim Hewison

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	45	Crush, split and pulverize 250 g rock to 200 mesh			VAN
SLBHP	2	Sort, label and box pulps			VAN
FA330-Au	47	Fire assay fusion Au by ICP-ES	30	Completed	VAN
EN002	47	Environmental disposal charge-Fire assay lead waste			VAN
MA370	47	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN
EN001-MA	47	Environmental disposal fee - Multi-acid neutralization			VAN
AQ200	47	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

### ADDITIONAL COMMENTS

  
JEFFREY CANNON  
Geochemistry Department Supervisor

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

# CERTIFICATE OF ANALYSIS

VAN19001694.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
0027001	Drill Core	0.72	7	<0.001	0.022	<0.02	<0.01	<2	0.003	0.002	0.34	10.26	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.04	0.004	0.58
0027002	Drill Core	0.58	33	<0.001	0.283	<0.02	<0.01	4	0.007	0.004	1.73	44.14	<0.02	0.02	<0.001	<0.01	<0.01	0.28	<0.01	<0.001	0.41
0027003	Drill Core	0.43	8	<0.001	0.299	<0.02	0.01	4	0.003	<0.001	1.87	54.16	<0.02	0.01	<0.001	<0.01	<0.01	0.19	<0.01	<0.001	0.25
0027004	Drill Core	1.11	10	<0.001	0.008	<0.02	<0.01	<2	0.003	0.002	0.09	5.05	<0.02	<0.01	<0.001	<0.01	<0.01	0.28	0.07	0.004	0.90
0027005	Drill Core	1.11	5	<0.001	0.006	<0.02	<0.01	<2	0.003	0.001	0.02	4.24	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.08	0.004	1.00
0027006	Drill Core	0.72	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.03	4.00	<0.02	<0.01	<0.001	<0.01	<0.01	0.12	0.07	0.004	0.98
0027007	Drill Core	0.55	7	<0.001	0.011	<0.02	<0.01	<2	0.004	0.002	0.11	7.42	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	0.06	0.004	1.02
0027019	Drill Core	0.46	7	<0.001	0.138	<0.02	<0.01	<2	0.003	<0.001	2.03	46.70	<0.02	<0.01	<0.001	<0.01	<0.01	0.33	<0.01	<0.001	1.18
0027020	Drill Core	0.58	6	<0.001	0.083	<0.02	<0.01	<2	0.003	0.001	1.50	35.90	<0.02	<0.01	<0.001	<0.01	<0.01	0.46	<0.01	<0.001	4.32
0027021	Drill Core	0.46	11	<0.001	0.004	<0.02	0.02	<2	0.004	0.003	0.68	22.59	<0.02	<0.01	<0.001	<0.01	<0.01	0.46	0.08	0.005	1.95
0027022	Drill Core	0.56	6	<0.001	0.019	<0.02	<0.01	<2	0.005	0.003	1.76	29.75	<0.02	<0.01	<0.001	<0.01	<0.01	0.29	0.01	0.002	0.82
0027027	Drill Core	0.76	6	<0.001	<0.001	<0.02	<0.01	<2	0.002	<0.001	1.24	21.05	<0.02	0.01	<0.001	<0.01	<0.01	3.90	0.01	0.002	2.50
0027028	Drill Core	0.58	6	<0.001	0.003	<0.02	<0.01	<2	<0.001	0.002	0.39	6.52	<0.02	<0.01	<0.001	<0.01	<0.01	2.69	0.04	0.003	1.44
0027029	Drill Core	1.25	5	<0.001	0.007	<0.02	<0.01	<2	0.002	0.001	0.08	3.87	<0.02	<0.01	<0.001	<0.01	<0.01	0.26	0.08	0.005	0.81
0027030	Drill Core	1.05	7	<0.001	0.008	<0.02	<0.01	<2	0.002	0.001	0.03	3.41	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.06	0.003	0.68
0027031	Drill Core	0.86	6	<0.001	0.008	<0.02	<0.01	<2	0.002	0.001	0.08	4.78	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.06	0.003	0.86
0027032	Drill Core	0.84	6	<0.001	0.002	<0.02	<0.01	<2	0.002	<0.001	2.03	34.55	<0.02	<0.01	<0.001	<0.01	<0.01	0.42	<0.01	<0.001	3.92
0027033	Drill Core	1.53	5	<0.001	0.006	<0.02	<0.01	<2	0.001	<0.001	0.09	3.77	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.04	0.004	0.60
0027034	Drill Core	0.39	53	<0.001	0.194	<0.02	0.08	5	0.037	0.018	1.14	26.42	<0.02	<0.01	<0.001	<0.01	<0.01	0.12	0.01	<0.001	0.47
0027035	Drill Core	0.52	9	<0.001	0.020	<0.02	<0.01	<2	0.030	0.010	0.11	8.48	0.02	<0.01	<0.001	<0.01	<0.01	0.10	0.04	0.003	0.83
0027036	Drill Core	0.94	47	<0.001	0.036	<0.02	0.02	3	0.153	0.102	0.59	17.86	0.19	<0.01	<0.001	<0.01	<0.01	0.14	0.02	0.002	1.70
0027037	Drill Core	0.81	6	<0.001	0.013	<0.02	<0.01	<2	0.006	0.003	0.32	7.56	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.003	0.60
0027038	Drill Core	0.49	6	<0.001	0.020	<0.02	<0.01	<2	0.003	<0.001	0.33	10.64	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.05	0.003	0.65
0027039	Drill Core	1.31	8	<0.001	0.015	<0.02	<0.01	<2	0.003	0.001	0.08	4.03	<0.02	<0.01	<0.001	<0.01	<0.01	1.08	0.06	0.003	1.33
0027040	Rock Pulp	0.11	6	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.81	<0.02	0.02	<0.001	<0.01	<0.01	1.65	0.04	<0.001	0.54
0027041	Drill Core	0.36	17	<0.001	0.007	<0.02	<0.01	<2	0.001	0.001	0.13	4.61	<0.02	0.02	<0.001	<0.01	<0.01	3.07	0.04	0.003	1.55
0027042	Drill Core	1.06	9	<0.001	0.004	<0.02	<0.01	<2	0.002	0.002	0.07	4.06	<0.02	<0.01	<0.001	<0.01	<0.01	1.12	0.06	0.004	1.21
0027043	Drill Core	1.06	6	<0.001	0.012	<0.02	<0.01	<2	0.004	0.004	0.03	5.23	<0.02	<0.01	<0.001	<0.01	<0.01	0.29	0.06	0.004	1.14
0027044	Drill Core	0.91	10	<0.001	0.016	<0.02	<0.01	<2	0.005	0.003	0.48	10.75	<0.02	<0.01	<0.001	<0.01	<0.01	1.50	0.04	0.003	1.62
0027045	Drill Core	0.89	8	<0.001	0.010	<0.02	<0.01	<2	0.003	0.001	0.05	5.11	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	0.05	0.004	0.98





Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

**Project:** None Given  
**Report Date:** July 12, 2019

**Page:** 2 of 3

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

VAN19001694.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	1	0.5	0.5	0.1	1	0.1	0.1
0027001	Drill Core	7.49	0.05	3.92	<0.01	0.29	2.8	226.3	7.1	25	0.3	33.6	19.1	3514	9.49	19.0	3.6	7.3	31	<0.1	1.3
0027002	Drill Core	1.74	0.04	0.84	<0.01	0.22	1.4	2792.3	21.2	44	2.7	65.9	49.5	>10000	>40	60.8	16.7	1.5	151	<0.1	1.5
0027003	Drill Core	0.10	<0.01	0.05	<0.01	0.16	0.3	2987.6	1.6	78	2.7	29.1	8.6	>10000	>40	4.5	2.2	<0.1	133	0.2	0.4
0027004	Drill Core	7.87	0.05	4.16	<0.01	0.40	1.7	66.6	5.8	24	<0.1	23.5	14.8	873	4.08	23.6	1.4	6.0	10	<0.1	1.2
0027005	Drill Core	7.73	0.03	3.95	<0.01	0.69	1.5	54.9	2.2	42	<0.1	24.9	13.2	219	3.43	41.5	<0.5	6.7	7	<0.1	0.6
0027006	Drill Core	8.28	0.03	4.11	<0.01	0.15	1.0	17.9	1.3	34	<0.1	7.3	5.4	265	3.00	21.1	<0.5	5.6	9	<0.1	0.4
0027007	Drill Core	7.05	0.03	3.31	<0.01	1.41	1.6	108.6	4.3	45	0.4	36.9	15.7	1090	6.34	33.3	1.7	5.8	8	<0.1	1.0
0027019	Drill Core	0.33	0.01	0.05	<0.01	0.08	2.1	1335.9	2.0	40	1.2	27.8	11.8	>10000	>40	5.8	2.5	0.3	83	<0.1	0.3
0027020	Drill Core	1.24	0.05	0.19	<0.01	0.14	0.3	836.8	3.9	53	0.8	26.7	18.4	>10000	37.03	18.2	1.3	0.1	11	<0.1	0.1
0027021	Drill Core	6.65	0.03	1.45	<0.01	0.21	2.7	33.1	2.6	121	0.1	34.1	31.9	6851	21.15	43.7	3.5	9.1	36	<0.1	0.3
0027022	Drill Core	3.41	0.02	1.38	<0.01	0.06	3.9	173.2	7.0	62	0.2	40.7	28.0	>10000	28.82	42.6	1.2	3.5	48	0.1	0.5
0027027	Drill Core	3.92	0.03	1.50	<0.01	0.16	1.9	5.8	1.6	56	<0.1	12.9	6.0	>10000	18.76	4.2	1.5	1.3	101	<0.1	0.2
0027028	Drill Core	5.81	0.03	3.03	<0.01	0.18	3.3	27.7	1.5	21	<0.1	6.1	14.2	3936	5.45	21.0	<0.5	3.5	77	<0.1	0.2
0027029	Drill Core	8.82	0.04	4.95	<0.01	0.72	4.4	55.6	2.9	12	<0.1	14.5	11.4	782	2.73	10.6	<0.5	7.1	10	<0.1	0.3
0027030	Drill Core	9.45	0.04	5.37	<0.01	0.53	3.6	70.1	5.0	12	0.1	17.1	12.0	284	2.21	12.4	0.8	8.1	7	<0.1	0.5
0027031	Drill Core	8.08	0.04	4.70	<0.01	0.63	3.2	65.2	1.5	17	<0.1	18.6	12.9	838	3.73	11.1	0.7	7.4	5	<0.1	0.3
0027032	Drill Core	0.44	0.02	0.13	<0.01	0.19	0.4	20.1	2.0	46	<0.1	21.7	8.9	>10000	35.12	2.5	1.5	0.3	7	<0.1	0.4
0027033	Drill Core	7.28	0.04	4.61	<0.01	0.14	1.9	48.6	4.0	10	0.1	10.5	4.6	859	2.90	4.3	1.0	8.2	10	<0.1	0.6
0027034	Drill Core	1.93	0.02	1.02	<0.01	2.53	1.2	1923.9	179.7	758	4.5	349.1	175.8	>10000	25.41	168.9	37.9	1.6	65	2.5	4.0
0027035	Drill Core	5.19	0.02	2.12	<0.01	1.21	3.5	193.4	7.6	71	0.3	295.0	97.1	1083	7.85	317.1	3.8	4.8	5	<0.1	0.8
0027036	Drill Core	2.98	0.02	1.52	<0.01	2.77	1.2	365.3	111.6	169	2.9	1497.8	1008.4	6062	17.35	3602.2	29.2	2.8	4	0.5	9.2
0027037	Drill Core	4.56	0.02	2.44	<0.01	0.30	1.4	128.2	23.8	78	0.3	61.5	30.4	3217	6.76	51.8	1.1	4.6	7	0.2	0.5
0027038	Drill Core	5.98	0.03	3.06	<0.01	<0.05	2.0	203.2	4.3	23	0.3	27.0	10.5	3315	9.69	9.9	1.4	5.6	28	<0.1	0.9
0027039	Drill Core	7.87	0.05	3.98	<0.01	0.91	3.4	152.8	4.9	24	<0.1	27.2	13.7	781	3.25	13.5	0.5	6.1	39	<0.1	0.9
0027040	Rock Pulp	7.30	3.33	1.57	<0.01	0.05	4.1	18.2	0.7	31	<0.1	7.5	3.6	580	2.42	1.4	<0.5	1.6	26	<0.1	0.2
0027041	Drill Core	7.22	0.14	3.48	<0.01	0.94	3.7	59.0	10.7	46	<0.1	11.6	8.0	1228	3.76	30.4	0.5	5.5	160	0.1	1.2
0027042	Drill Core	7.41	0.05	3.67	<0.01	1.35	1.9	34.5	5.2	26	<0.1	19.5	13.6	687	3.34	38.3	0.8	5.3	41	<0.1	1.9
0027043	Drill Core	7.64	0.05	3.60	<0.01	1.96	3.2	118.4	2.5	36	0.1	43.0	29.6	275	4.38	144.6	0.5	4.5	9	<0.1	0.8
0027044	Drill Core	4.71	0.03	2.20	<0.01	2.58	2.1	154.2	3.5	34	0.2	48.0	27.9	4843	10.24	17.1	1.3	2.7	57	<0.1	1.0
0027045	Drill Core	6.66	0.05	3.13	<0.01	1.23	3.9	93.8	1.9	33	0.1	27.2	11.0	485	4.24	17.3	1.1	3.9	6	<0.1	0.5



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Bul River Mineral Corporation**

Box 845

Cranbrook British Columbia V1C 4J6 Canada

Project: None Given

Report Date: July 12, 2019

Page: 2 of 3

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

# VAN19001694.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.01	0.05	1	0.5	
0027001	Drill Core	0.6	5	0.13	0.033	17	4	0.18	33	<0.001	<20	0.56	0.008	0.36	<0.1	0.03	2.1	0.1	0.28	1	<0.5
0027002	Drill Core	0.5	4	0.28	0.005	2	2	0.32	16	<0.001	<20	0.24	0.005	0.14	<0.1	0.10	2.7	<0.1	0.18	<1	0.6
0027003	Drill Core	<0.1	3	0.21	<0.001	<1	<1	0.24	4	<0.001	<20	0.02	0.003	0.02	<0.1	0.06	2.1	<0.1	0.15	<1	<0.5
0027004	Drill Core	0.4	7	0.28	0.048	15	6	0.38	32	0.002	<20	1.04	0.006	0.43	<0.1	0.01	1.9	0.1	0.39	3	0.5
0027005	Drill Core	0.7	11	0.15	0.055	39	10	0.60	33	0.002	<20	1.52	0.007	0.44	<0.1	0.02	1.5	0.1	0.66	4	<0.5
0027006	Drill Core	0.1	11	0.12	0.056	8	10	0.52	33	0.002	<20	1.40	0.006	0.43	<0.1	0.01	1.3	0.1	0.14	4	<0.5
0027007	Drill Core	0.3	12	0.18	0.045	9	10	0.68	32	0.002	<20	1.50	0.006	0.37	1.0	0.06	2.2	0.1	1.38	4	0.7
0027019	Drill Core	<0.1	5	0.32	<0.001	1	2	1.19	12	<0.001	<20	0.13	0.005	0.02	<0.1	0.03	4.0	<0.1	0.07	<1	<0.5
0027020	Drill Core	<0.1	9	0.45	<0.001	<1	1	4.29	5	<0.001	<20	0.64	0.025	0.05	<0.1	0.01	3.8	<0.1	0.14	2	<0.5
0027021	Drill Core	0.1	33	0.44	0.053	12	30	1.79	19	0.003	<20	3.49	0.007	0.19	<0.1	0.02	3.7	<0.1	0.19	11	<0.5
0027022	Drill Core	<0.1	10	0.27	0.009	11	5	0.63	37	<0.001	<20	0.77	0.006	0.18	<0.1	0.03	5.7	0.1	<0.05	2	<0.5
0027027	Drill Core	<0.1	10	3.78	0.007	7	6	2.14	17	0.001	<20	1.07	0.009	0.22	<0.1	<0.01	3.3	<0.1	0.14	3	<0.5
0027028	Drill Core	<0.1	6	2.76	0.030	11	5	1.14	32	<0.001	<20	0.51	0.009	0.36	<0.1	<0.01	1.8	<0.1	0.17	2	<0.5
0027029	Drill Core	0.1	6	0.26	0.058	14	5	0.30	41	0.002	<20	0.71	0.008	0.52	<0.1	0.02	1.1	0.2	0.68	2	<0.5
0027030	Drill Core	0.2	4	0.15	0.048	16	3	0.14	36	0.001	<20	0.66	0.006	0.48	<0.1	0.01	0.9	0.2	0.48	2	<0.5
0027031	Drill Core	0.2	5	0.12	0.043	12	4	0.38	35	0.002	<20	0.87	0.007	0.48	<0.1	<0.01	1.2	0.1	0.62	2	<0.5
0027032	Drill Core	<0.1	4	0.40	0.001	1	1	3.83	4	<0.001	<20	0.13	0.010	0.04	<0.1	<0.01	1.3	<0.1	0.17	<1	<0.5
0027033	Drill Core	0.4	5	0.11	0.031	27	4	0.12	37	0.001	<20	0.62	0.006	0.43	<0.1	<0.01	1.9	0.1	0.14	2	<0.5
0027034	Drill Core	1.8	3	0.13	0.010	2	3	0.37	19	<0.001	<20	0.18	0.006	0.16	0.7	0.72	1.1	0.1	2.50	<1	2.2
0027035	Drill Core	1.3	15	0.10	0.031	6	14	0.65	28	0.002	<20	1.67	0.006	0.31	<0.1	0.03	2.7	0.1	1.15	5	0.8
0027036	Drill Core	24.8	4	0.15	0.017	6	4	1.63	23	<0.001	<20	0.38	0.007	0.25	0.1	0.12	1.6	0.1	2.79	1	2.4
0027037	Drill Core	0.5	4	0.11	0.028	6	4	0.39	32	<0.001	<20	0.46	0.005	0.33	<0.1	0.06	1.8	0.1	0.29	1	<0.5
0027038	Drill Core	0.5	7	0.11	0.035	10	7	0.30	27	0.001	<20	0.77	0.005	0.34	<0.1	0.02	1.8	0.1	<0.05	2	<0.5
0027039	Drill Core	0.4	7	1.11	0.047	8	7	0.86	33	0.002	<20	1.19	0.006	0.43	<0.1	0.02	1.7	0.1	0.91	3	<0.5
0027040	Rock Pulp	<0.1	23	0.71	0.033	4	13	0.49	44	0.069	<20	1.00	0.065	0.08	0.2	<0.01	2.0	<0.1	<0.05	4	<0.5
0027041	Drill Core	0.3	7	3.03	0.033	5	4	1.10	38	<0.001	<20	0.62	0.011	0.40	<0.1	0.03	1.7	<0.1	0.91	2	<0.5
0027042	Drill Core	0.4	8	1.12	0.052	8	8	0.78	35	0.002	<20	1.06	0.006	0.45	<0.1	0.02	1.7	0.1	1.37	3	<0.5
0027043	Drill Core	0.4	10	0.27	0.046	8	9	0.73	33	0.002	<20	1.52	0.010	0.45	<0.1	0.03	1.3	0.2	1.91	4	0.7
0027044	Drill Core	0.4	8	1.50	0.028	4	6	1.40	25	0.002	<20	0.85	0.008	0.32	<0.1	0.03	1.9	0.1	2.55	2	0.9
0027045	Drill Core	0.2	9	0.17	0.040	9	8	0.61	29	0.002	<20	1.28	0.007	0.39	0.1	0.02	1.1	0.1	1.18	3	0.5



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

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Project: None Given

Report Date: July 12, 2019

Page: 2 of 3

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19001694.1

Method	AQ200
Analyte	Te
Unit	ppm
MDL	0.2
0027001	Drill Core <0.2
0027002	Drill Core <0.2
0027003	Drill Core <0.2
0027004	Drill Core <0.2
0027005	Drill Core 0.5
0027006	Drill Core <0.2
0027007	Drill Core <0.2
0027019	Drill Core <0.2
0027020	Drill Core <0.2
0027021	Drill Core <0.2
0027022	Drill Core <0.2
0027027	Drill Core <0.2
0027028	Drill Core <0.2
0027029	Drill Core <0.2
0027030	Drill Core <0.2
0027031	Drill Core <0.2
0027032	Drill Core <0.2
0027033	Drill Core <0.2
0027034	Drill Core 0.2
0027035	Drill Core <0.2
0027036	Drill Core 0.4
0027037	Drill Core <0.2
0027038	Drill Core <0.2
0027039	Drill Core 0.2
0027040	Rock Pulp <0.2
0027041	Drill Core 0.2
0027042	Drill Core <0.2
0027043	Drill Core 0.3
0027044	Drill Core <0.2
0027045	Drill Core <0.2



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Page: 3 of 3

Part: 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19001694.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
0027046	Drill Core	0.74	9	<0.001	0.005	<0.02	<0.01	<2	0.001	<0.001	0.32	6.23	<0.02	<0.01	<0.001	<0.01	<0.01	0.36	0.04	0.003	0.95
0027047	Drill Core	0.49	11	<0.001	0.005	<0.02	<0.01	<2	0.001	0.001	0.04	3.87	<0.02	<0.01	<0.001	<0.01	<0.01	0.16	0.05	0.003	0.63
0027048	Drill Core	0.33	11	<0.001	0.008	<0.02	<0.01	<2	0.002	0.002	0.07	4.67	<0.02	<0.01	<0.001	<0.01	<0.01	0.33	0.04	0.003	0.68
0027049	Drill Core	1.19	6	<0.001	0.008	<0.02	<0.01	<2	0.002	0.002	0.31	8.59	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	0.04	0.003	0.86
0027050	Rock Pulp	0.11	3432	0.040	1.375	0.06	0.73	80	0.002	0.004	0.11	8.03	<0.02	0.02	0.003	<0.01	<0.01	3.08	0.04	0.002	1.45
0027051	Drill Core	1.23	4	<0.001	0.008	<0.02	<0.01	<2	0.002	0.002	0.61	12.20	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.03	0.002	0.94
0027052	Drill Core	1.31	6	<0.001	0.009	<0.02	<0.01	<2	0.002	0.002	0.64	13.28	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.03	0.003	1.00
0027060	Drill Core	0.54	10	<0.001	0.087	<0.02	<0.01	<2	0.002	0.002	0.49	11.27	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	0.03	0.003	0.98
0027062	Drill Core	0.35	14	<0.001	0.068	<0.02	<0.01	<2	0.002	0.003	0.57	13.44	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.02	0.002	0.92
0027063	Drill Core	0.47	8	<0.001	0.005	<0.02	<0.01	<2	0.001	0.001	1.19	24.09	<0.02	<0.01	<0.001	<0.01	<0.01	0.19	0.01	0.001	1.78
0027064	Drill Core	0.60	21	<0.001	0.008	<0.02	<0.01	<2	0.002	0.003	0.76	16.00	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.02	0.002	1.29
0027065	Drill Core	1.01	9	<0.001	0.009	<0.02	<0.01	<2	0.003	0.003	0.39	8.97	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.04	0.003	0.85
0027066	Drill Core	0.94	6	<0.001	0.011	<0.02	<0.01	<2	0.003	0.008	0.26	6.92	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.04	0.003	0.75
0027067	Drill Core	1.23	6	<0.001	0.006	<0.02	<0.01	<2	0.002	0.003	0.35	8.04	<0.02	<0.01	<0.001	<0.01	<0.01	0.12	0.03	0.003	0.91
0027068	Drill Core	1.20	10	<0.001	0.009	<0.02	<0.01	<2	0.003	0.003	0.24	7.03	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.04	0.004	0.94
0027069	Drill Core	1.41	8	<0.001	0.007	<0.02	<0.01	<2	0.003	0.002	0.04	5.14	<0.02	<0.01	<0.001	<0.01	<0.01	0.70	0.06	0.004	1.31
0027070	Drill Core	1.03	9	0.001	0.006	<0.02	<0.01	<2	0.002	0.002	0.08	4.46	<0.02	<0.01	<0.001	<0.01	<0.01	1.47	0.06	0.004	1.41



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Project: None Given

Report Date: July 12, 2019

Page: 3 of 3

Part: 2 of 4

# CERTIFICATE OF ANALYSIS

**VAN19001694.1**

Method	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	
Unit	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	
0027046	Drill Core	4.96	0.07	2.52	<0.01	0.64	2.5	40.1	2.4	27	<0.1	12.6	7.4	3039	5.59	11.3	1.5	3.5	11	<0.1	0.5
0027047	Drill Core	6.24	0.11	3.05	<0.01	0.94	2.2	42.4	3.7	23	<0.1	13.5	11.5	386	3.11	20.5	1.7	4.1	6	<0.1	0.7
0027048	Drill Core	5.94	0.05	2.85	<0.01	1.39	2.1	62.4	6.1	24	<0.1	20.1	16.7	700	3.89	28.7	1.3	3.6	10	<0.1	1.1
0027049	Drill Core	4.75	0.03	2.15	<0.01	1.02	0.9	76.1	4.0	31	0.1	19.3	17.8	2882	7.61	45.4	1.3	4.5	7	<0.1	0.4
0027050	Rock Pulp	5.81	0.97	1.89	<0.01	4.90	309.0	>10000	584.7	6582	73.9	18.1	39.9	792	6.66	274.4	3254.3	5.5	48	30.9	42.4
0027051	Drill Core	3.85	0.03	1.85	<0.01	0.70	0.7	72.1	142.4	25	0.2	20.6	19.5	5808	11.53	49.4	<0.5	4.3	5	<0.1	0.7
0027052	Drill Core	4.30	0.03	2.17	<0.01	0.59	0.8	80.0	129.3	29	0.3	22.0	23.0	6533	13.22	38.0	1.1	5.0	6	<0.1	0.7
0027060	Drill Core	4.45	0.07	2.35	<0.01	0.24	2.9	866.9	5.3	20	0.9	15.3	22.7	5050	11.01	29.9	2.9	3.1	8	<0.1	0.5
0027062	Drill Core	3.41	0.05	1.79	<0.01	0.45	2.2	668.2	6.7	62	0.6	19.6	28.0	5616	13.07	34.2	4.1	2.7	5	0.2	0.7
0027063	Drill Core	1.25	0.03	0.67	<0.01	0.10	1.0	44.9	12.8	49	0.2	13.0	10.1	>10000	24.77	6.4	1.4	1.2	5	0.2	0.5
0027064	Drill Core	3.12	0.03	1.63	<0.01	0.48	1.4	73.2	14.4	30	0.1	23.3	23.4	7389	15.87	48.6	0.8	3.4	5	<0.1	0.6
0027065	Drill Core	4.80	0.03	2.53	<0.01	0.74	1.7	82.3	5.3	12	<0.1	24.7	28.5	3751	8.18	49.1	0.6	5.0	4	<0.1	0.4
0027066	Drill Core	5.52	0.04	2.92	<0.01	1.04	2.2	110.8	14.3	17	0.1	31.9	79.8	2577	6.13	106.5	<0.5	5.9	5	<0.1	0.3
0027067	Drill Core	4.94	0.04	2.62	<0.01	0.52	3.5	61.4	5.8	13	<0.1	18.0	24.2	3390	7.33	28.7	<0.5	5.1	4	<0.1	0.2
0027068	Drill Core	6.03	0.04	3.08	<0.01	0.81	3.2	76.7	20.9	24	0.1	24.4	29.9	2337	6.01	68.0	0.8	6.6	7	<0.1	0.8
0027069	Drill Core	7.54	0.05	3.46	<0.01	1.26	5.2	60.5	4.7	40	<0.1	25.8	21.2	403	4.12	62.3	0.6	7.4	24	<0.1	0.7
0027070	Drill Core	7.06	0.05	3.41	<0.01	0.99	11.2	51.3	3.6	30	<0.1	23.2	15.3	739	3.47	37.1	<0.5	7.2	46	<0.1	0.7



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Project: None Given

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Page: 3 of 3

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

**VAN19001694.1**

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
Unit		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	
0027046	Drill Core	0.1	6	0.34	0.032	12	5	0.72	25	0.001	<20	0.55	0.009	0.33	<0.1	0.01	1.5	<0.1	0.57	1	<0.5
0027047	Drill Core	0.1	7	0.15	0.037	14	6	0.31	28	0.001	<20	0.73	0.009	0.38	<0.1	0.01	1.2	0.1	0.91	2	<0.5
0027048	Drill Core	0.1	8	0.30	0.031	9	6	0.38	30	0.001	<20	0.80	0.007	0.37	<0.1	0.06	1.4	0.2	1.33	2	<0.5
0027049	Drill Core	0.3	10	0.17	0.032	13	7	0.62	36	0.002	<20	0.85	0.004	0.30	<0.1	0.05	1.6	0.1	0.86	2	<0.5
0027050	Rock Pulp	7.4	42	1.97	0.032	12	24	1.06	75	0.070	<20	1.46	0.087	0.32	2.0	0.98	2.5	1.2	4.52	6	13.3
0027051	Drill Core	0.2	9	0.13	0.029	12	6	0.74	32	0.001	<20	0.66	0.004	0.28	<0.1	<0.01	2.0	<0.1	0.61	2	<0.5
0027052	Drill Core	0.3	8	0.17	0.029	13	5	0.81	37	0.001	<20	0.49	0.005	0.31	<0.1	0.02	1.7	0.1	0.51	1	<0.5
0027060	Drill Core	0.2	6	0.21	0.029	18	4	0.79	38	<0.001	<20	0.37	0.004	0.34	<0.1	0.02	1.3	0.1	0.20	1	<0.5
0027062	Drill Core	0.3	6	0.13	0.019	10	4	0.76	31	<0.001	<20	0.32	0.003	0.27	<0.1	0.04	1.4	<0.1	0.37	<1	<0.5
0027063	Drill Core	1.3	6	0.18	0.009	5	2	1.63	16	<0.001	<20	0.12	0.006	0.11	<0.1	0.03	1.1	<0.1	0.07	<1	<0.5
0027064	Drill Core	0.5	6	0.16	0.021	13	3	1.13	28	<0.001	<20	0.27	0.005	0.24	<0.1	0.02	1.4	<0.1	0.40	<1	<0.5
0027065	Drill Core	0.4	7	0.12	0.031	13	4	0.61	38	0.001	<20	0.51	0.004	0.38	<0.1	0.01	1.9	0.1	0.64	1	<0.5
0027066	Drill Core	0.4	6	0.12	0.035	12	4	0.49	39	0.001	<20	0.53	0.003	0.38	<0.1	0.03	1.8	0.1	0.93	2	<0.5
0027067	Drill Core	0.3	6	0.11	0.030	14	4	0.67	37	0.001	<20	0.44	0.004	0.36	<0.1	0.01	1.4	0.1	0.46	1	<0.5
0027068	Drill Core	0.4	7	0.13	0.038	18	6	0.62	46	0.001	<20	0.70	0.006	0.41	<0.1	0.04	1.7	0.1	0.72	2	<0.5
0027069	Drill Core	0.5	12	0.64	0.054	13	11	0.91	40	0.002	<20	1.60	0.004	0.41	<0.1	0.04	1.8	0.1	1.10	4	<0.5
0027070	Drill Core	0.4	10	1.37	0.049	11	10	0.99	38	0.002	<20	1.28	0.003	0.41	<0.1	0.03	2.1	0.1	0.84	3	<0.5





**BUREAU** MINERAL LABORATORIES  
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Project: None Given

Report Date: July 12, 2019

Page: 3 of 3

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19001694.1

Method	AQ200
Analyte	Te
Unit	ppm
MDL	0.2
0027046	Drill Core <0.2
0027047	Drill Core <0.2
0027048	Drill Core <0.2
0027049	Drill Core <0.2
0027050	Rock Pulp 0.9
0027051	Drill Core <0.2
0027052	Drill Core <0.2
0027060	Drill Core <0.2
0027062	Drill Core <0.2
0027063	Drill Core <0.2
0027064	Drill Core <0.2
0027065	Drill Core <0.2
0027066	Drill Core <0.2
0027067	Drill Core <0.2
0027068	Drill Core <0.2
0027069	Drill Core <0.2
0027070	Drill Core <0.2



# QUALITY CONTROL REPORT

VAN19001694.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
Pulp Duplicates																					
0027003	Drill Core	0.43	8	<0.001	0.299	<0.02	0.01	4	0.003	<0.001	1.87	54.16	<0.02	0.01	<0.001	<0.01	<0.01	0.19	<0.01	<0.001	0.25
REP 0027003	QC		8																		
0027029	Drill Core	1.25	5	<0.001	0.007	<0.02	<0.01	<2	0.002	0.001	0.08	3.87	<0.02	<0.01	<0.001	<0.01	<0.01	0.26	0.08	0.005	0.81
REP 0027029	QC																				
0027037	Drill Core	0.81	6	<0.001	0.013	<0.02	<0.01	<2	0.006	0.003	0.32	7.56	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.003	0.60
REP 0027037	QC			<0.001	0.013	<0.02	<0.01	<2	0.006	0.003	0.32	7.58	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.003	0.60
0027048	Drill Core	0.33	11	<0.001	0.008	<0.02	<0.01	<2	0.002	0.002	0.07	4.67	<0.02	<0.01	<0.001	<0.01	<0.01	0.33	0.04	0.003	0.68
REP 0027048	QC		10																		
0027062	Drill Core	0.35	14	<0.001	0.068	<0.02	<0.01	<2	0.002	0.003	0.57	13.44	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.02	0.002	0.92
REP 0027062	QC																				
0027068	Drill Core	1.20	10	<0.001	0.009	<0.02	<0.01	<2	0.003	0.003	0.24	7.03	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.04	0.004	0.94
REP 0027068	QC			<0.001	0.009	<0.02	<0.01	<2	0.003	0.003	0.24	7.17	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.04	0.004	0.96
Core Reject Duplicates																					
0027036	Drill Core	0.94	47	<0.001	0.036	<0.02	0.02	3	0.153	0.102	0.59	17.86	0.19	<0.01	<0.001	<0.01	<0.01	0.14	0.02	0.002	1.70
DUP 0027036	QC		48	<0.001	0.036	<0.02	0.02	3	0.150	0.098	0.59	17.95	0.19	<0.01	<0.001	<0.01	<0.01	0.15	0.02	0.002	1.71
Reference Materials																					
STD BVGEO01	Standard																				
STD CDN-ME-14	Standard			0.002	1.289	0.51	3.26	44	0.002	0.018	0.09	18.44	<0.02	<0.01	0.009	<0.01	0.01	0.78	0.02	<0.001	1.31
STD CDN-ME-9	Standard			<0.001	0.682	<0.02	0.01	3	0.920	0.018	0.13	14.33	<0.02	0.03	<0.001	<0.01	<0.01	4.31	0.06	0.030	4.11
STD CDN-ME-14	Standard			0.002	1.239	0.51	3.19	44	0.002	0.018	0.09	17.96	<0.02	<0.01	0.010	<0.01	0.01	0.79	0.02	0.001	1.26
STD DS11	Standard																				
STD OREAS131B	Standard			<0.001	0.022	1.92	3.08	34	0.003	0.002	0.18	5.74	<0.02	<0.01	0.009	<0.01	<0.01	5.32	0.06	0.002	3.09
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OXC145	Standard		210																		
STD OXC145	Standard		216																		
STD OXC145	Standard		221																		
STD OXH139	Standard		1301																		



# QUALITY CONTROL REPORT

VAN19001694.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.01	0.5	0.5	0.1	1	0.1	0.1
Pulp Duplicates																					
0027003	Drill Core	0.10	<0.01	0.05	<0.01	0.16	0.3	2987.6	1.6	78	2.7	29.1	8.6	>10000	>40	4.5	2.2	<0.1	133	0.2	0.4
REP 0027003	QC																				
0027029	Drill Core	8.82	0.04	4.95	<0.01	0.72	4.4	55.6	2.9	12	<0.1	14.5	11.4	782	2.73	10.6	<0.5	7.1	10	<0.1	0.3
REP 0027029	QC						4.6	58.2	3.0	13	<0.1	14.7	11.2	808	2.85	10.8	<0.5	7.4	10	<0.1	0.3
0027037	Drill Core	4.56	0.02	2.44	<0.01	0.30	1.4	128.2	23.8	78	0.3	61.5	30.4	3217	6.76	51.8	1.1	4.6	7	0.2	0.5
REP 0027037	QC	4.58	0.02	2.44	<0.01	0.31															
0027048	Drill Core	5.94	0.05	2.85	<0.01	1.39	2.1	62.4	6.1	24	<0.1	20.1	16.7	700	3.89	28.7	1.3	3.6	10	<0.1	1.1
REP 0027048	QC																				
0027062	Drill Core	3.41	0.05	1.79	<0.01	0.45	2.2	668.2	6.7	62	0.6	19.6	28.0	5616	13.07	34.2	4.1	2.7	5	0.2	0.7
REP 0027062	QC						2.1	652.0	6.7	61	0.6	20.3	27.2	5519	12.99	32.0	3.8	2.6	5	0.1	0.6
0027068	Drill Core	6.03	0.04	3.08	<0.01	0.81	3.2	76.7	20.9	24	0.1	24.4	29.9	2337	6.01	68.0	0.8	6.6	7	<0.1	0.8
REP 0027068	QC	6.13	0.04	3.15	<0.01	0.84															
Core Reject Duplicates																					
0027036	Drill Core	2.98	0.02	1.52	<0.01	2.77	1.2	365.3	111.6	169	2.9	1497.8	1008.4	6062	17.35	3602.2	29.2	2.8	4	0.5	9.2
DUP 0027036	QC	2.99	0.02	1.53	<0.01	2.75	1.1	357.5	106.0	167	2.8	1441.8	966.0	5991	17.23	3456.0	32.1	2.8	4	0.5	9.7
Reference Materials																					
STD BVGEO01	Standard						10.9	4307.2	195.0	1801	2.6	165.1	24.9	730	3.62	122.7	208.1	14.5	55	6.8	3.2
STD CDN-ME-14	Standard	4.67	0.54	1.76	<0.01	16.29															
STD CDN-ME-9	Standard	6.98	1.90	0.64	<0.01	2.69															
STD CDN-ME-14	Standard	4.53	0.54	1.68	<0.01	16.11															
STD DS11	Standard						14.9	143.5	119.1	359	1.8	80.6	11.7	991	3.11	37.6	57.7	6.0	65	2.1	6.7
STD OREAS131B	Standard	4.62	0.15	3.41	<0.01	5.05															
STD OREAS262	Standard						0.7	115.5	53.0	141	0.5	67.4	23.5	546	3.41	33.1	65.8	8.5	36	0.6	3.3
STD OREAS262	Standard						0.7	114.6	56.3	148	0.5	63.9	29.2	530	3.26	36.3	70.8	8.9	35	0.7	4.4
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXH139	Standard																				



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Project: None Given  
Report Date: July 12, 2019

Page: 1 of 2

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19001694.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5		
Pulp Duplicates																					
0027003	Drill Core	<0.1	3	0.21	<0.001	<1	<1	0.24	4	<0.001	<20	0.02	0.003	0.02	<0.1	0.06	2.1	<0.1	0.15	<1	<0.5
REP 0027003	QC																				
0027029	Drill Core	0.1	6	0.26	0.058	14	5	0.30	41	0.002	<20	0.71	0.008	0.52	<0.1	0.02	1.1	0.2	0.68	2	<0.5
REP 0027029	QC	0.2	6	0.26	0.061	15	5	0.31	42	0.002	<20	0.72	0.008	0.53	<0.1	0.01	1.1	0.2	0.69	2	<0.5
0027037	Drill Core	0.5	4	0.11	0.028	6	4	0.39	32	<0.001	<20	0.46	0.005	0.33	<0.1	0.06	1.8	0.1	0.29	1	<0.5
REP 0027037	QC																				
0027048	Drill Core	0.1	8	0.30	0.031	9	6	0.38	30	0.001	<20	0.80	0.007	0.37	<0.1	0.06	1.4	0.2	1.33	2	<0.5
REP 0027048	QC																				
0027062	Drill Core	0.3	6	0.13	0.019	10	4	0.76	31	<0.001	<20	0.32	0.003	0.27	<0.1	0.04	1.4	<0.1	0.37	<1	<0.5
REP 0027062	QC	0.4	6	0.13	0.018	10	4	0.74	31	<0.001	<20	0.31	0.004	0.27	<0.1	0.03	1.2	0.1	0.37	<1	<0.5
0027068	Drill Core	0.4	7	0.13	0.038	18	6	0.62	46	0.001	<20	0.70	0.006	0.41	<0.1	0.04	1.7	0.1	0.72	2	<0.5
REP 0027068	QC																				
Core Reject Duplicates																					
0027036	Drill Core	24.8	4	0.15	0.017	6	4	1.63	23	<0.001	<20	0.38	0.007	0.25	0.1	0.12	1.6	0.1	2.79	1	2.4
DUP 0027036	QC	24.2	4	0.15	0.017	6	4	1.60	22	<0.001	<20	0.36	0.007	0.24	<0.1	0.13	1.6	0.1	2.65	1	2.4
Reference Materials																					
STD BVGEO01	Standard	25.4	70	1.31	0.072	25	166	1.27	335	0.233	<20	2.25	0.181	0.86	4.0	0.09	5.5	0.6	0.63	7	5.0
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD CDN-ME-14	Standard																				
STD DS11	Standard	8.5	49	1.01	0.060	13	57	0.83	371	0.086	<20	1.15	0.070	0.40	2.4	0.24	2.7	4.6	0.27	5	2.3
STD OREAS131B	Standard																				
STD OREAS262	Standard	0.8	23	3.05	0.035	12	39	1.20	223	0.003	<20	1.27	0.070	0.31	0.1	0.16	2.9	0.4	0.27	4	0.5
STD OREAS262	Standard	1.1	21	3.17	0.041	16	44	1.17	248	0.003	<20	1.23	0.067	0.30	0.2	0.15	3.1	0.4	0.25	4	<0.5
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXH139	Standard																				



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Project: None Given  
Report Date: July 12, 2019

Page: 1 of 2

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19001694.1

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
Pulp Duplicates		
0027003	Drill Core	<0.2
REP 0027003	QC	
0027029	Drill Core	<0.2
REP 0027029	QC	<0.2
0027037	Drill Core	<0.2
REP 0027037	QC	
0027048	Drill Core	<0.2
REP 0027048	QC	
0027062	Drill Core	<0.2
REP 0027062	QC	<0.2
0027068	Drill Core	<0.2
REP 0027068	QC	
Core Reject Duplicates		
0027036	Drill Core	0.4
DUP 0027036	QC	0.4
Reference Materials		
STD BVGEO01	Standard	1.1
STD CDN-ME-14	Standard	
STD CDN-ME-9	Standard	
STD CDN-ME-14	Standard	
STD DS11	Standard	4.6
STD OREAS131B	Standard	
STD OREAS262	Standard	0.2
STD OREAS262	Standard	0.2
STD OXC145	Standard	
STD OXC145	Standard	
STD OXC145	Standard	
STD OXH139	Standard	



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Page: 2 of 2

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19001694.1

		WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
		kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
STD OXH139	Standard		1299																		
STD OXH139	Standard		1302																		
STD CDN-ME-9 Expected					0.654		0.012		0.93	0.0169	0.121	13.84		0.03			4.21	0.06	0.0284	4.05	
STD CDN-ME-14 Expected					1.221	0.495	3.17	43.5	0.002	0.0172	0.0883	18.04	0.0088		0.0088		0.0094	0.747	0.0147	0.0014	1.28
STD OREAS131B Expected				0.0003	0.0216	1.86	3.14	33.3	0.0025	0.00181	0.1771	5.705	0.0072	0.0026	0.0089	0.005		5.37	0.0536	0.0027	3.128
STD DS11 Expected																					
STD BVGEO01 Expected																					
STD OREAS262 Expected																					
STD OXC145 Expected			212																		
STD OXH139 Expected			1312																		
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank		4																		
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank		5																		
BLK	Blank																				
BLK	Blank																				
BLK	Blank		4																		
Prep Wash																					
ROCK-VAN	Prep Blank		3	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.25	<0.02	0.02	<0.001	<0.01	<0.01	1.59	0.04	<0.001	0.52
ROCK-VAN	Prep Blank		4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.37	<0.02	0.02	<0.001	<0.01	<0.01	1.62	0.04	<0.001	0.61





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Project: None Given  
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Page: 2 of 2

Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19001694.1

		MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	
STD OXH139	Standard																					
STD OXH139	Standard																					
STD CDN-ME-9 Expected		6.74	1.86	0.616		2.58																
STD CDN-ME-14 Expected		4.47	0.53	1.7		16.14																
STD OREAS131B Expected		4.57	0.139	3.34		5.01																
STD DS11 Expected							13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2	
STD BVGEO01 Expected							10.8	4415	187	1741	2.53	163	25	733	3.7	121	219	14.4	55	6.5	2.2	
STD OREAS262 Expected							0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39	
STD OXC145 Expected																						
STD OXH139 Expected																						
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05																
BLK	Blank																					
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05																
BLK	Blank																					
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	
BLK	Blank						<0.1	0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	
BLK	Blank																					
Prep Wash																						
ROCK-VAN	Prep Blank	7.64	3.69	1.56	<0.01	<0.05	0.8	1.2	0.6	28	<0.1	0.8	3.2	497	1.86	0.6	<0.5	1.8	34	<0.1	<0.1	
ROCK-VAN	Prep Blank	7.56	3.48	1.68	<0.01	<0.05	1.2	1.2	0.7	33	<0.1	1.5	3.4	581	2.01	0.6	<0.5	1.8	21	<0.1	<0.1	



Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
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**Client:** Bul River Mineral Corporation  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Project: None Given  
Report Date: July 12, 2019

Page: 2 of 2

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19001694.1

		AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200		
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	
STD OXH139	Standard																					
STD OXH139	Standard																					
STD CDN-ME-9 Expected																						
STD CDN-ME-14 Expected																						
STD OREAS131B Expected																						
STD DS11 Expected		12.2	50	1.063	0.0701	18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2	
STD BVGEO01 Expected		25.6	73	1.3219	0.0727	25.9	171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	0.1	5.97	0.62	0.6655	7.37	5.09	
STD OREAS262 Expected		1.03	22.5	2.98	0.04	15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4	
STD OXC145 Expected																						
STD OXH139 Expected																						
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	
BLK	Blank																					
Prep Wash																						
ROCK-VAN	Prep Blank	<0.1	22	0.72	0.038	5	3	0.47	64	0.088	<20	0.93	0.111	0.12	<0.1	<0.01	2.6	<0.1	<0.05	4	<0.5	
ROCK-VAN	Prep Blank	<0.1	26	0.79	0.038	5	6	0.55	55	0.097	<20	1.09	0.125	0.14	<0.1	<0.01	2.9	<0.1	<0.05	4	<0.5	



Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Project: None Given  
Report Date: July 12, 2019

Page: 2 of 2

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19001694.1

		AQ200 Te ppm 0.2
STD OXH139	Standard	
STD OXH139	Standard	
STD CDN-ME-9 Expected		
STD CDN-ME-14 Expected		
STD OREAS131B Expected		
STD DS11 Expected		4.56
STD BVGEO01 Expected		1.07
STD OREAS262 Expected		0.23
STD OXC145 Expected		
STD OXH139 Expected		
BLK	Blank	
BLK	Blank	
BLK	Blank	
BLK	Blank	
BLK	Blank	<0.2
BLK	Blank	<0.2
BLK	Blank	
Prep Wash		
ROCK-VAN	Prep Blank	<0.2
ROCK-VAN	Prep Blank	<0.2



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

[www.bureauveritas.com/um](http://www.bureauveritas.com/um)

Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Submitted By: Jill Christmann  
Receiving Lab: Canada-Vancouver  
Received: July 03, 2019  
Report Date: July 09, 2019  
Page: 1 of 2

# CERTIFICATE OF ANALYSIS

VAN19001694A.1

## CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 23

## SAMPLE DISPOSAL

IMM-PLP Return immediately after analysis  
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	21	Crush, split and pulverize 250 g rock to 200 mesh			VAN
SLBHP	2	Sort, label and box pulps			VAN
FA330-Au	23	Fire assay fusion Au by ICP-ES	30	Completed	VAN
EN002	23	Environmental disposal charge-Fire assay lead waste			VAN
MA370	23	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN
EN001-MA	23	Environmental disposal fee - Multi-acid neutralization			VAN
AQ200	23	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

## ADDITIONAL COMMENTS

Invoice To: Bul River Mineral Corporation  
Box 845  
Cranbrook British Columbia V1C 4J6  
Canada

CC: Tim Hewison

  
LUCIA HALL  
Wet Assay Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

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Client: **Bul River Mineral Corporation**

Box 845

Cranbrook British Columbia V1C 4J6 Canada

Project: None Given

Report Date: July 09, 2019

Page: 2 of 2

Part: 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19001694A.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
027008	Drill Core	0.76	8	<0.001	0.004	<0.02	<0.01	<2	0.003	<0.001	1.82	33.31	<0.02	<0.01	0.001	<0.01	<0.01	<0.01	<0.001	4.04	
027009	Drill Core	1.39	11	<0.001	0.014	<0.02	0.01	<2	0.003	0.001	1.97	29.95	<0.02	<0.01	0.001	<0.01	<0.01	<0.01	<0.001	4.06	
027010	Drill Core	1.55	11	<0.001	0.143	<0.02	<0.01	3	0.005	0.001	2.06	36.23	<0.02	<0.01	0.001	<0.01	<0.01	<0.01	<0.001	4.16	
027011	Drill Core	1.03	6	<0.001	0.052	<0.02	<0.01	<2	0.002	<0.001	1.58	38.24	<0.02	<0.01	0.002	<0.01	<0.01	<0.01	<0.001	4.33	
027012	Drill Core	0.61	3	<0.001	0.007	<0.02	<0.01	<2	<0.001	<0.001	0.50	9.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	1.08	
027013	Drill Core	0.71	8	<0.001	0.043	<0.02	<0.01	<2	0.001	<0.001	0.35	5.62	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	0.85	
027014	Rock Pulp	0.11	12	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.77	<0.02	0.02	<0.001	<0.01	<0.01	1.64	0.04	<0.001	0.55
027015	Drill Core	1.17	7	<0.001	0.047	<0.02	<0.01	<2	0.002	<0.001	1.46	36.69	<0.02	<0.01	0.001	<0.01	<0.01	0.25	<0.01	<0.001	4.27
027016	Drill Core	1.50	5	<0.001	0.056	<0.02	0.03	<2	0.002	<0.001	1.70	37.77	<0.02	<0.01	0.002	<0.01	<0.01	0.28	<0.01	<0.001	4.69
027017	Drill Core	0.65	5	<0.001	0.069	<0.02	<0.01	<2	0.002	<0.001	2.16	42.93	<0.02	<0.01	0.002	<0.01	<0.01	0.27	<0.01	0.001	1.98
027018	Drill Core	0.56	5	<0.001	0.139	<0.02	<0.01	2	0.002	0.001	1.27	26.47	<0.02	<0.01	0.001	<0.01	<0.01	0.27	<0.01	<0.001	2.95
027023	Drill Core	0.56	8	<0.001	0.003	<0.02	0.02	<2	0.002	<0.001	1.65	35.44	<0.02	<0.01	0.001	<0.01	<0.01	0.93	<0.01	<0.001	4.27
027024	Drill Core	0.36	5	<0.001	0.001	<0.02	<0.01	<2	0.002	<0.001	1.69	27.18	<0.02	<0.01	0.001	<0.01	<0.01	0.52	<0.01	<0.001	2.03
027025	Rock Pulp	0.11	184	<0.001	0.138	0.06	0.20	13	0.002	0.002	0.07	8.16	0.03	<0.01	0.001	<0.01	<0.01	1.26	0.03	0.006	1.88
027026	Drill Core	0.88	5	<0.001	<0.001	<0.02	<0.01	<2	0.001	<0.001	1.88	34.24	<0.02	<0.01	0.001	<0.01	<0.01	1.37	<0.01	<0.001	4.86
027053	Drill Core	0.30	13	<0.001	0.117	0.05	<0.01	3	0.009	0.004	1.76	32.89	0.03	<0.01	0.001	<0.01	<0.01	0.24	0.01	<0.001	0.74
027054	Drill Core	1.10	24	<0.001	0.226	0.05	0.03	4	0.007	0.006	1.75	32.49	0.03	<0.01	0.001	<0.01	<0.01	0.22	<0.01	<0.001	2.14
027055	Drill Core	1.10	8	<0.001	0.083	<0.02	<0.01	<2	0.002	0.001	2.05	37.59	<0.02	<0.01	0.002	<0.01	<0.01	0.25	<0.01	<0.001	2.44
027056	Drill Core	0.97	7	<0.001	0.077	<0.02	<0.01	<2	0.002	<0.001	2.14	40.27	<0.02	<0.01	0.002	<0.01	<0.01	0.26	<0.01	<0.001	2.39
027057	Drill Core	1.31	8	<0.001	0.131	<0.02	<0.01	3	0.002	0.001	2.26	40.20	<0.02	<0.01	0.002	<0.01	<0.01	0.26	<0.01	<0.001	2.31
027058	Drill Core	1.24	70	<0.001	0.319	<0.02	<0.01	4	0.003	0.003	1.81	39.48	<0.02	<0.01	0.002	<0.01	<0.01	0.24	<0.01	<0.001	2.77
027059	Drill Core	0.91	7	<0.001	0.223	<0.02	<0.01	4	0.002	0.001	1.66	34.32	<0.02	<0.01	0.001	<0.01	<0.01	0.21	<0.01	<0.001	2.68
027061	Drill Core	1.06	4	<0.001	0.004	<0.02	<0.01	<2	0.001	<0.001	1.56	31.25	<0.02	<0.01	0.001	<0.01	<0.01	0.21	<0.01	<0.001	2.66



Bureau Veritas Commodities Canada Ltd.

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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

**Project:** None Given  
**Report Date:** July 09, 2019

**Page:** 2 of 2

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

VAN19001694A.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1
027008	Drill Core	0.66	0.03	0.24	<0.01	0.33	0.6	40.1	4.4	49	0.1	29.3	12.4	>10000	32.97	5.8	2.6	1.0	14	<0.1	0.5
027009	Drill Core	1.21	0.02	0.08	<0.01	0.57	0.7	134.7	9.5	107	0.2	34.1	15.4	>10000	30.46	13.7	3.1	2.0	4	<0.1	0.5
027010	Drill Core	0.03	0.01	0.01	<0.01	0.88	0.4	1392.4	7.6	72	1.7	45.1	17.2	>10000	35.09	6.9	5.0	0.2	3	0.2	0.4
027011	Drill Core	0.01	0.02	<0.01	<0.01	0.07	0.3	488.0	0.8	21	0.6	20.6	9.3	>10000	36.48	0.7	2.3	<0.1	4	<0.1	<0.1
027012	Drill Core	<0.01	0.01	<0.01	<0.01	<0.05	0.2	66.5	1.1	17	0.1	4.8	2.3	5171	8.45	0.8	1.5	<0.1	4	<0.1	<0.1
027013	Drill Core	<0.01	0.01	<0.01	<0.01	0.24	0.2	430.7	4.8	32	0.6	10.9	5.0	3359	4.97	3.4	4.2	<0.1	19	0.1	0.2
027014	Rock Pulp	7.32	3.35	1.60	<0.01	<0.05	4.2	19.6	0.9	30	<0.1	7.0	4.3	587	2.43	1.3	<0.5	2.0	28	<0.1	0.1
027015	Drill Core	0.02	0.02	<0.01	<0.01	<0.05	0.5	463.3	0.7	24	0.5	17.3	8.4	>10000	36.65	2.2	<0.5	<0.1	5	<0.1	<0.1
027016	Drill Core	0.07	0.02	0.01	<0.01	0.08	0.4	537.8	14.0	272	0.8	15.8	7.9	>10000	35.57	3.1	1.0	<0.1	4	1.0	0.4
027017	Drill Core	0.03	<0.01	0.02	<0.01	0.06	1.2	668.6	1.1	51	0.7	21.6	9.8	>10000	>40	0.8	1.7	0.1	53	<0.1	0.2
027018	Drill Core	0.03	0.01	<0.01	<0.01	0.14	0.3	1354.0	2.3	61	1.5	19.4	16.9	>10000	25.99	19.6	2.3	<0.1	8	0.1	0.2
027023	Drill Core	0.18	0.02	0.03	<0.01	0.12	0.5	23.2	3.6	163	<0.1	21.4	9.9	>10000	35.27	1.6	1.3	0.1	20	0.4	0.2
027024	Drill Core	0.42	0.02	0.06	<0.01	0.14	0.6	12.9	1.8	51	<0.1	15.1	6.7	>10000	25.61	4.8	0.6	0.6	22	<0.1	0.1
027025	Rock Pulp	5.48	0.13	1.32	<0.01	4.16	3.3	1372.6	555.6	1979	11.3	18.7	22.4	633	7.34	302.2	143.2	1.1	27	11.5	20.0
027026	Drill Core	0.10	0.01	0.03	<0.01	<0.05	0.4	1.8	0.6	59	<0.1	13.8	7.9	>10000	33.02	0.6	<0.5	0.2	25	<0.1	<0.1
027053	Drill Core	1.63	0.02	0.82	<0.01	0.20	3.1	1103.1	460.9	47	2.4	85.5	46.6	>10000	32.36	295.9	7.9	2.8	40	0.2	12.8
027054	Drill Core	0.08	0.01	0.02	<0.01	0.68	0.5	2232.2	495.3	273	3.2	73.8	66.2	>10000	33.42	336.7	8.9	0.3	4	1.1	14.8
027055	Drill Core	0.03	0.03	<0.01	<0.01	0.11	0.5	766.4	105.6	29	1.0	17.0	12.9	>10000	36.53	4.3	1.4	<0.1	4	<0.1	2.8
027056	Drill Core	0.18	0.04	0.09	<0.01	0.09	1.2	735.0	6.6	23	0.7	16.9	12.2	>10000	38.81	0.9	<0.5	<0.1	4	<0.1	0.2
027057	Drill Core	0.06	0.03	<0.01	<0.01	0.15	0.8	1271.4	36.4	31	1.5	18.5	13.3	>10000	38.75	1.6	1.6	<0.1	4	<0.1	0.5
027058	Drill Core	0.51	0.02	0.06	<0.01	0.95	6.0	3038.4	5.6	48	3.0	31.9	32.0	>10000	37.73	24.1	64.2	0.6	5	<0.1	1.0
027059	Drill Core	0.03	0.02	<0.01	<0.01	0.20	0.7	2163.8	10.7	33	2.1	18.5	16.8	>10000	34.79	10.3	2.9	<0.1	6	<0.1	0.3
027061	Drill Core	0.03	0.01	<0.01	<0.01	<0.05	0.4	35.7	0.6	31	<0.1	13.3	9.3	>10000	30.84	<0.5	0.7	0.1	4	<0.1	<0.1



Bureau Veritas Commodities Canada Ltd.

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Client: **Bul River Mineral Corporation**

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Cranbrook British Columbia V1C 4J6 Canada

Project: None Given

Report Date: July 09, 2019

Page: 2 of 2

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

VAN19001694A.1

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
Unit		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	
027008	Drill Core	<0.1	3	0.60	0.001	2	2	3.75	7	<0.001	<20	0.14	0.008	0.05	<0.1	0.01	1.6	<0.1	0.25	<1	<0.5
027009	Drill Core	0.1	10	0.19	0.007	5	10	3.89	4	0.002	<20	1.05	0.005	0.03	<0.1	0.03	2.1	<0.1	0.47	1	<0.5
027010	Drill Core	0.1	<1	0.22	<0.001	<1	<1	3.85	3	<0.001	<20	0.02	0.007	<0.01	<0.1	0.03	1.2	<0.1	0.70	<1	0.5
027011	Drill Core	<0.1	1	0.27	<0.001	<1	<1	4.08	3	<0.001	<20	<0.01	0.008	<0.01	<0.1	0.01	2.3	<0.1	<0.05	<1	<0.5
027012	Drill Core	<0.1	1	0.12	<0.001	<1	5	1.09	2	<0.001	<20	<0.01	0.006	<0.01	<0.1	<0.01	0.6	<0.1	<0.05	<1	<0.5
027013	Drill Core	0.1	<1	0.89	<0.001	<1	5	0.81	3	<0.001	<20	<0.01	0.004	<0.01	<0.1	0.02	1.4	<0.1	0.21	<1	<0.5
027014	Rock Pulp	<0.1	21	0.76	0.035	5	15	0.50	60	0.065	<20	1.05	0.066	0.07	0.2	<0.01	2.3	<0.1	<0.05	4	<0.5
027015	Drill Core	<0.1	2	0.25	<0.001	<1	1	3.92	3	<0.001	<20	<0.01	0.008	<0.01	<0.1	<0.01	2.6	<0.1	<0.05	<1	<0.5
027016	Drill Core	<0.1	2	0.27	<0.001	<1	<1	4.32	3	<0.001	<20	0.02	0.006	<0.01	<0.1	0.17	1.9	<0.1	0.05	<1	<0.5
027017	Drill Core	<0.1	1	0.26	<0.001	<1	<1	1.89	8	<0.001	<20	0.01	0.003	<0.01	<0.1	0.03	1.7	<0.1	<0.05	<1	<0.5
027018	Drill Core	<0.1	2	0.28	<0.001	2	3	2.71	3	<0.001	<20	0.01	0.007	<0.01	<0.1	0.05	2.3	<0.1	0.12	<1	<0.5
027023	Drill Core	<0.1	3	0.88	<0.001	<1	1	3.98	5	<0.001	<20	0.06	0.009	0.01	<0.1	0.09	2.4	<0.1	0.07	<1	<0.5
027024	Drill Core	<0.1	3	0.50	<0.001	3	3	1.85	7	<0.001	<20	0.23	0.006	0.02	<0.1	<0.01	4.5	<0.1	0.10	<1	<0.5
027025	Rock Pulp	7.2	25	1.18	0.022	4	39	1.62	106	0.003	<20	1.77	0.008	0.16	2.3	2.03	3.9	2.3	3.92	6	24.0
027026	Drill Core	<0.1	2	1.33	<0.001	<1	1	4.44	4	<0.001	<20	0.03	0.009	0.01	<0.1	<0.01	2.0	<0.1	<0.05	<1	<0.5
027053	Drill Core	1.2	4	0.25	0.009	7	3	0.65	34	<0.001	<20	0.24	0.005	0.17	0.1	0.05	1.6	<0.1	0.15	<1	1.5
027054	Drill Core	1.6	<1	0.23	<0.001	<1	1	2.10	5	<0.001	<20	0.03	0.007	<0.01	<0.1	0.26	0.6	<0.1	0.59	<1	3.6
027055	Drill Core	0.5	<1	0.24	<0.001	<1	1	2.16	3	<0.001	<20	<0.01	0.009	<0.01	<0.1	0.02	0.4	<0.1	0.07	<1	0.8
027056	Drill Core	<0.1	1	0.26	<0.001	1	<1	2.28	5	<0.001	<20	0.03	0.013	0.03	<0.1	0.01	0.6	<0.1	0.05	<1	<0.5
027057	Drill Core	0.5	<1	0.27	<0.001	<1	<1	2.20	5	<0.001	<20	0.03	0.014	<0.01	<0.1	<0.01	0.8	<0.1	0.11	<1	<0.5
027058	Drill Core	0.3	4	0.24	0.002	4	4	2.53	6	<0.001	<20	0.41	0.014	0.02	<0.1	0.05	1.1	<0.1	0.76	<1	1.7
027059	Drill Core	0.2	<1	0.22	<0.001	<1	2	2.49	4	<0.001	<20	0.02	0.010	<0.01	<0.1	0.02	0.8	<0.1	0.16	<1	0.9
027061	Drill Core	<0.1	<1	0.21	<0.001	1	1	2.44	3	<0.001	<20	0.01	0.010	<0.01	<0.1	<0.01	0.9	<0.1	<0.05	<1	<0.5





**BUREAU** MINERAL LABORATORIES  
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Bureau Veritas Commodities Canada Ltd.

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**Client:** **Bul River Mineral Corporation**

Box 845

Cranbrook British Columbia V1C 4J6 Canada

Project: None Given

Report Date: July 09, 2019

Page: 2 of 2

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19001694A.1

Method	AQ200
Analyte	Te
Unit	ppm
MDL	0.2
027008	Drill Core <0.2
027009	Drill Core <0.2
027010	Drill Core <0.2
027011	Drill Core <0.2
027012	Drill Core <0.2
027013	Drill Core <0.2
027014	Rock Pulp <0.2
027015	Drill Core <0.2
027016	Drill Core <0.2
027017	Drill Core <0.2
027018	Drill Core <0.2
027023	Drill Core <0.2
027024	Drill Core <0.2
027025	Rock Pulp 0.2
027026	Drill Core <0.2
027053	Drill Core <0.2
027054	Drill Core <0.2
027055	Drill Core <0.2
027056	Drill Core <0.2
027057	Drill Core <0.2
027058	Drill Core <0.2
027059	Drill Core <0.2
027061	Drill Core <0.2



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# QUALITY CONTROL REPORT

VAN19001694A.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
Pulp Duplicates																					
027009 Drill Core	1.39	11	<0.001	0.014	<0.02	0.01	<2	0.003	0.001	1.97	29.95	<0.02	<0.01	0.001	<0.01	<0.01	0.19	<0.01	<0.001	4.06	
REP 027009 QC			<0.001	0.014	<0.02	0.01	<2	0.004	0.001	1.95	30.15	<0.02	<0.01	0.001	<0.01	<0.01	0.19	<0.01	<0.001	4.07	
027010 Drill Core	1.55	11	<0.001	0.143	<0.02	<0.01	3	0.005	0.001	2.06	36.23	<0.02	<0.01	0.001	<0.01	<0.01	0.22	<0.01	<0.001	4.16	
REP 027010 QC																					
027017 Drill Core	0.65	5	<0.001	0.069	<0.02	<0.01	<2	0.002	<0.001	2.16	42.93	<0.02	<0.01	0.002	<0.01	<0.01	0.27	<0.01	0.001	1.98	
REP 027017 QC		6																			
Core Reject Duplicates																					
027061 Drill Core	1.06	4	<0.001	0.004	<0.02	<0.01	<2	0.001	<0.001	1.56	31.25	<0.02	<0.01	0.001	<0.01	<0.01	0.21	<0.01	<0.001	2.66	
DUP 027061 QC		5	<0.001	0.004	<0.02	<0.01	<2	0.001	<0.001	1.56	31.40	<0.02	<0.01	0.001	<0.01	<0.01	0.21	<0.01	<0.001	2.69	
Reference Materials																					
STD CDN-ME-14 Standard			0.002	1.257	0.50	3.18	47	0.002	0.017	0.09	18.03	<0.02	<0.01	0.010	<0.01	0.01	0.76	0.02	0.002	1.31	
STD CDN-ME-9 Standard			<0.001	0.669	<0.02	0.01	4	0.946	0.018	0.12	14.04	<0.02	0.03	<0.001	<0.01	<0.01	4.21	0.06	0.030	4.20	
STD DS11 Standard																					
STD OREAS262 Standard																					
STD OXC145 Standard		206																			
STD OXC145 Standard		210																			
STD OXH139 Standard		1299																			
STD OXH139 Standard		1301																			
STD DS11 Expected																					
STD OREAS262 Expected																					
STD CDN-ME-14 Expected				1.221	0.495	3.17	43.5	0.002	0.0172	0.0883	18.04	0.0088		0.0088		0.0094	0.747	0.0147	0.0014	1.28	
STD CDN-ME-9 Expected				0.654		0.012		0.93	0.0169	0.121	13.84		0.03				4.21	0.06	0.0284	4.05	
STD OXC145 Expected		212																			
STD OXH139 Expected		1312																			
BLK Blank																					
BLK Blank		5																			
BLK Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01	
BLK Blank		4																			



# QUALITY CONTROL REPORT

VAN19001694A.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.01	0.5	0.5	0.1	1	0.1	0.1
Pulp Duplicates																					
027009	Drill Core	1.21	0.02	0.08	<0.01	0.57	0.7	134.7	9.5	107	0.2	34.1	15.4	>10000	30.46	13.7	3.1	2.0	4	<0.1	0.5
REP 027009	QC	1.22	0.02	0.08	<0.01	0.57															
027010	Drill Core	0.03	0.01	0.01	<0.01	0.88	0.4	1392.4	7.6	72	1.7	45.1	17.2	>10000	35.09	6.9	5.0	0.2	3	0.2	0.4
REP 027010	QC						0.6	1351.7	7.5	73	1.7	45.3	17.0	>10000	35.38	7.1	5.3	<0.1	3	0.1	0.4
027017	Drill Core	0.03	<0.01	0.02	<0.01	0.06	1.2	668.6	1.1	51	0.7	21.6	9.8	>10000	>40	0.8	1.7	0.1	53	<0.1	0.2
REP 027017	QC																				
Core Reject Duplicates																					
027061	Drill Core	0.03	0.01	<0.01	<0.01	<0.05	0.4	35.7	0.6	31	<0.1	13.3	9.3	>10000	30.84	<0.5	0.7	0.1	4	<0.1	<0.1
DUP 027061	QC	0.03	0.01	<0.01	<0.01	<0.05	0.4	34.6	0.6	31	<0.1	13.4	9.7	>10000	30.91	<0.5	<0.5	0.1	4	<0.1	0.1
Reference Materials																					
STD CDN-ME-14	Standard	4.47	0.53	1.70	<0.01	16.37															
STD CDN-ME-9	Standard	6.82	1.82	0.65	<0.01	2.51															
STD DS11	Standard						14.1	136.3	129.2	324	1.7	78.2	13.8	1022	2.99	43.9	58.1	8.3	63	2.2	8.1
STD OREAS262	Standard						0.7	113.3	56.8	154	0.5	67.1	29.3	549	3.27	36.4	60.1	9.6	35	0.6	3.4
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD DS11 Expected							13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2
STD OREAS262 Expected							0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39
STD CDN-ME-14 Expected		4.47	0.53	1.7		16.14															
STD CDN-ME-9 Expected		6.74	1.86	0.616		2.58															
STD OXC145 Expected																					
STD OXH139 Expected																					
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank																				
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank																				



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Project: None Given  
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Page: 1 of 2

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19001694A.1

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
Unit		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm
MDL		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	
Pulp Duplicates																					
027009	Drill Core	0.1	10	0.19	0.007	5	10	3.89	4	0.002	<20	1.05	0.005	0.03	<0.1	0.03	2.1	<0.1	0.47	1	<0.5
REP 027009	QC																				
027010	Drill Core	0.1	<1	0.22	<0.001	<1	<1	3.85	3	<0.001	<20	0.02	0.007	<0.01	<0.1	0.03	1.2	<0.1	0.70	<1	0.5
REP 027010	QC	0.1	<1	0.22	<0.001	<1	<1	3.84	3	<0.001	<20	0.02	0.008	<0.01	<0.1	0.03	1.2	<0.1	0.69	<1	0.6
027017	Drill Core	<0.1	1	0.26	<0.001	<1	<1	1.89	8	<0.001	<20	0.01	0.003	<0.01	<0.1	0.03	1.7	<0.1	<0.05	<1	<0.5
REP 027017	QC																				
Core Reject Duplicates																					
027061	Drill Core	<0.1	<1	0.21	<0.001	1	1	2.44	3	<0.001	<20	0.01	0.010	<0.01	<0.1	<0.01	0.9	<0.1	<0.05	<1	<0.5
DUP 027061	QC	<0.1	<1	0.21	<0.001	1	1	2.49	3	<0.001	<20	0.01	0.009	<0.01	<0.1	<0.01	0.9	<0.1	<0.05	<1	<0.5
Reference Materials																					
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD DS11	Standard	11.6	44	1.01	0.068	16	58	0.83	451	0.080	<20	1.13	0.070	0.39	2.7	0.26	3.0	4.8	0.26	5	2.1
STD OREAS262	Standard	1.0	20	3.15	0.039	14	45	1.21	269	0.003	<20	1.27	0.067	0.30	0.2	0.16	3.0	0.4	0.24	4	<0.5
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD DS11 Expected		12.2	50	1.063	0.0701	18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2
STD OREAS262 Expected		1.03	22.5	2.98	0.04	15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4
STD CDN-ME-14 Expected																					
STD CDN-ME-9 Expected																					
STD OXC145 Expected																					
STD OXH139 Expected																					
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				



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Project: None Given  
Report Date: July 09, 2019

Page: 1 of 2

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19001694A.1

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
Pulp Duplicates		
027009	Drill Core	<0.2
REP 027009	QC	
027010	Drill Core	<0.2
REP 027010	QC	<0.2
027017	Drill Core	<0.2
REP 027017	QC	
Core Reject Duplicates		
027061	Drill Core	<0.2
DUP 027061	QC	<0.2
Reference Materials		
STD CDN-ME-14	Standard	
STD CDN-ME-9	Standard	
STD DS11	Standard	4.4
STD OREAS262	Standard	0.3
STD OXC145	Standard	
STD OXC145	Standard	
STD OXH139	Standard	
STD OXH139	Standard	
STD DS11 Expected		4.56
STD OREAS262 Expected		0.23
STD CDN-ME-14 Expected		
STD CDN-ME-9 Expected		
STD OXC145 Expected		
STD OXH139 Expected		
BLK	Blank	<0.2
BLK	Blank	
BLK	Blank	
BLK	Blank	



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Page: 2 of 2

Part: 1 of 4

**QUALITY CONTROL REPORT** **VAN19001694A.1**

		WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
		kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
Prep Wash																					
ROCK-VAN	Prep Blank		3	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.30	<0.02	0.02	<0.001	<0.01	<0.01	1.54	0.04	<0.001	0.60
ROCK-VAN	Prep Blank		4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.26	<0.02	0.02	<0.001	<0.01	<0.01	1.53	0.04	<0.001	0.61



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Page: 2 of 2

Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19001694A.1

		MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	
Prep Wash																						
ROCK-VAN	Prep Blank	7.33	3.47	1.57	<0.01	<0.05	0.8	2.3	0.9	33	<0.1	1.6	3.8	575	1.90	<0.5	1.2	3.3	23	<0.1	<0.1	
ROCK-VAN	Prep Blank	7.36	3.48	1.57	<0.01	<0.05	0.8	2.5	0.8	31	<0.1	2.6	3.9	574	1.95	0.5	<0.5	2.4	23	<0.1	<0.1	





Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Project: None Given  
Report Date: July 09, 2019

Page: 2 of 2

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19001694A.1

		AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm
		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5
Prep Wash																					
ROCK-VAN	Prep Blank	<0.1	21	0.71	0.040	5	6	0.53	72	0.075	<20	1.05	0.116	0.12	<0.1	<0.01	2.5	<0.1	<0.05	4	<0.5
ROCK-VAN	Prep Blank	<0.1	22	0.70	0.040	5	8	0.55	71	0.078	<20	1.07	0.118	0.12	<0.1	<0.01	2.7	<0.1	<0.05	4	<0.5



**BUREAU** MINERAL LABORATORIES  
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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**

Box 845

Cranbrook British Columbia V1C 4J6 Canada

Project: None Given

Report Date: July 09, 2019

Page: 2 of 2

Part: 4 of 4

## QUALITY CONTROL REPORT

VAN19001694A.1

		AQ200 Te ppm 0.2
Prep Wash		
ROCK-VAN	Prep Blank	<0.2
ROCK-VAN	Prep Blank	<0.2



Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Submitted By: Jill Christmann  
Receiving Lab: Canada-Vancouver  
Received: July 15, 2019  
Report Date: July 30, 2019  
Page: 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19001812.1

## CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 90

## SAMPLE DISPOSAL

IMM-PLP Return immediately after analysis  
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	79	Crush, split and pulverize 250 g rock to 200 mesh			VAN
SPTRF	1	Split samples by riffle splitter			VAN
PUL85	1	Pulverize to 85% passing 200 mesh			VAN
SLBHP	10	Sort, label and box pulps			VAN
FA330-Au	90	Fire assay fusion Au by ICP-ES	30	Completed	VAN
EN002	90	Environmental disposal charge-Fire assay lead waste			VAN
MA370	90	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN
EN001-MA	90	Environmental disposal fee - Multi-acid neutralization			VAN
AQ200	90	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

## ADDITIONAL COMMENTS

Invoice To: Bul River Mineral Corporation  
Box 845  
Cranbrook British Columbia V1C 4J6  
Canada

CC: Tim Hewison

  
JEFFREY CANNON  
Geochemistry Department Supervisor



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
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# CERTIFICATE OF ANALYSIS

VAN19001812.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
27071	Drill Core	1.10	4	<0.001	0.006	<0.02	<0.01	<2	0.002	0.002	0.12	5.85	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.05	0.004	0.59
27072	Drill Core	1.47	22	<0.001	0.293	<0.02	<0.01	4	0.008	0.002	0.75	20.56	<0.02	<0.01	<0.001	<0.01	<0.01	0.38	0.03	0.003	0.42
27073	Drill Core	2.80	7	<0.001	0.005	<0.02	<0.01	<2	0.002	<0.001	0.36	5.05	<0.02	0.03	<0.001	<0.01	<0.01	5.78	0.06	0.003	2.64
27074	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.69	<0.02	0.02	<0.001	<0.01	<0.01	1.58	0.04	0.001	0.52
27075	Drill Core	2.68	9	<0.001	0.034	<0.02	<0.01	<2	0.008	0.004	0.30	12.21	<0.02	<0.01	<0.001	<0.01	<0.01	1.81	0.04	0.004	2.16
27076	Drill Core	2.01	7	<0.001	0.013	<0.02	<0.01	<2	0.004	0.002	0.11	9.66	<0.02	<0.01	<0.001	<0.01	<0.01	0.42	0.05	0.004	1.80
27077	Drill Core	2.09	5	<0.001	0.006	<0.02	<0.01	<2	0.002	0.001	0.04	7.30	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.05	0.005	1.39
27078	Drill Core	0.85	5	<0.001	0.005	<0.02	<0.01	<2	0.002	0.001	0.04	6.48	<0.02	<0.01	<0.001	<0.01	<0.01	0.37	0.05	0.004	1.17
27079	Drill Core	1.24	7	<0.001	0.021	<0.02	<0.01	<2	0.004	0.001	2.11	34.16	<0.02	<0.01	<0.001	<0.01	<0.01	0.71	<0.01	0.001	3.84
27080	Drill Core	3.31	5	<0.001	0.065	<0.02	<0.01	<2	0.002	<0.001	1.56	36.41	<0.02	<0.01	<0.001	<0.01	<0.01	0.35	<0.01	0.002	3.79
27081	Drill Core	3.16	9	<0.001	0.120	<0.02	<0.01	<2	0.002	<0.001	1.31	35.86	<0.02	<0.01	<0.001	<0.01	<0.01	0.42	<0.01	0.002	4.44
27082	Drill Core	3.20	6	<0.001	0.006	<0.02	<0.01	<2	0.003	<0.001	1.84	35.55	<0.02	<0.01	<0.001	<0.01	<0.01	0.32	<0.01	0.002	3.89
27083	Drill Core	3.58	22	<0.001	0.053	<0.02	<0.01	<2	0.013	0.004	2.06	32.34	<0.02	<0.01	<0.001	<0.01	<0.01	0.24	<0.01	0.002	3.60
27084	Rock Pulp	0.11	170	<0.001	0.136	0.05	0.20	12	0.002	0.002	0.06	8.04	0.03	<0.01	0.001	<0.01	<0.01	1.24	0.03	0.007	1.78
27085	Drill Core	2.53	11	<0.001	0.009	<0.02	<0.01	<2	0.004	0.003	0.36	7.95	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.03	0.003	1.04
27086	Drill Core	2.42	18	<0.001	0.005	<0.02	<0.01	<2	0.003	0.003	0.14	4.87	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.05	0.004	0.77
27087	Core DUP		6	0.001	0.004	<0.02	<0.01	<2	0.003	0.003	0.14	4.83	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.05	0.003	0.76
27088	Drill Core	2.58	6	<0.001	0.006	<0.02	<0.01	<2	0.003	0.003	0.24	6.62	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.004	0.96
27089	Drill Core	2.33	5	<0.001	0.008	<0.02	<0.01	<2	0.003	0.002	0.27	7.82	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.04	0.004	1.07
27090	Drill Core	2.59	4	<0.001	0.005	<0.02	<0.01	<2	0.003	0.002	0.21	6.20	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.004	0.91
27091	Drill Core	4.63	5	<0.001	0.007	<0.02	<0.01	<2	0.003	0.002	0.26	8.47	<0.02	<0.01	<0.001	<0.01	<0.01	0.22	0.05	0.005	1.33
27110	Drill Core	1.47	6	<0.001	0.010	<0.02	<0.01	<2	0.004	0.002	0.31	10.57	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.004	0.80
27111	Drill Core	0.74	5	<0.001	0.035	<0.02	<0.01	<2	0.004	<0.001	2.02	43.86	<0.02	0.01	<0.001	<0.01	<0.01	0.25	<0.01	0.002	1.57
27112	Drill Core	1.96	6	<0.001	0.012	<0.02	<0.01	3	0.005	0.006	0.40	9.74	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.04	0.004	0.61
27113	Drill Core	0.35	10	<0.001	0.005	<0.02	0.17	<2	0.002	<0.001	0.87	18.07	<0.02	<0.01	<0.001	<0.01	<0.01	2.42	0.08	0.005	0.97
27114	Drill Core	1.90	6	<0.001	0.006	<0.02	<0.01	<2	0.003	<0.001	0.15	5.17	<0.02	<0.01	<0.001	<0.01	<0.01	1.99	0.05	0.003	0.97
27115	Rock Pulp	0.11	8	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.77	<0.02	0.02	<0.001	<0.01	<0.01	1.61	0.04	<0.001	0.53
27116	Drill Core	2.09	5	<0.001	0.003	<0.02	<0.01	<2	0.002	0.001	0.02	4.73	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.04	0.004	1.14
27117	Drill Core	1.07	6	<0.001	0.004	<0.02	<0.01	<2	0.002	0.002	0.11	5.35	<0.02	<0.01	<0.001	<0.01	<0.01	0.38	0.04	0.004	1.17
27118	Drill Core	0.54	7	<0.001	0.002	<0.02	<0.01	<2	0.002	0.001	0.45	13.03	<0.02	<0.01	<0.001	<0.01	<0.01	0.38	0.02	0.002	1.82



Bureau Veritas Commodities Canada Ltd.

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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

**Project:** None Given  
**Report Date:** July 30, 2019

**Page:** 2 of 4

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

# VAN19001812.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	1	0.5	0.5	0.1	1	0.1	0.1
27071	Drill Core	7.56	0.05	4.30	<0.01	0.09	2.3	63.3	5.4	13	<0.1	18.3	17.5	1270	5.00	16.7	<0.5	10.3	11	<0.1	0.7
27072	Drill Core	3.39	0.03	1.74	<0.01	0.52	4.6	2962.6	18.3	112	3.4	90.0	27.2	7182	18.98	42.7	11.9	4.6	59	0.1	1.1
27073	Drill Core	5.66	0.05	2.84	<0.01	0.55	10.5	50.0	8.4	55	<0.1	23.6	11.6	3753	4.52	4.5	<0.5	4.0	308	0.1	1.0
27074	Rock Pulp	7.08	3.27	1.56	<0.01	0.06	4.2	22.4	1.0	33	<0.1	7.7	4.2	597	2.44	1.5	<0.5	2.2	30	<0.1	0.1
27075	Drill Core	5.04	0.02	1.87	<0.01	4.00	12.3	375.9	8.9	71	0.2	82.2	41.3	3104	11.71	145.1	0.7	6.2	91	<0.1	2.2
27076	Drill Core	6.23	0.02	2.05	<0.01	1.75	2.9	146.8	3.0	102	0.1	38.6	22.7	1089	9.29	53.5	<0.5	6.9	16	<0.1	0.7
27077	Drill Core	8.06	0.02	3.31	<0.01	0.71	1.0	79.4	1.6	80	<0.1	18.3	14.1	396	6.79	40.9	<0.5	8.5	6	<0.1	0.5
27078	Drill Core	6.81	0.02	2.87	<0.01	0.76	0.9	59.9	1.7	54	0.1	21.8	13.2	461	5.82	30.9	<0.5	6.4	7	<0.1	0.4
27079	Drill Core	0.08	0.01	0.01	<0.01	1.04	0.8	253.8	6.1	46	0.3	45.8	20.5	>10000	34.96	2.6	<0.5	0.2	11	<0.1	0.6
27080	Drill Core	0.04	0.01	<0.01	<0.01	0.19	0.6	664.5	1.2	20	0.5	24.8	12.3	>10000	36.36	1.6	<0.5	<0.1	6	<0.1	0.2
27081	Drill Core	0.02	0.01	<0.01	<0.01	0.23	0.4	1179.1	1.2	26	0.9	24.4	11.0	>10000	35.09	3.1	<0.5	<0.1	8	<0.1	0.2
27082	Drill Core	0.02	0.01	<0.01	<0.01	0.55	0.6	97.3	2.1	29	0.1	35.6	14.6	>10000	36.73	2.1	0.6	<0.1	9	<0.1	0.2
27083	Drill Core	0.04	0.01	<0.01	<0.01	3.83	0.9	562.5	25.8	48	0.8	123.5	49.0	>10000	33.34	16.4	13.9	0.1	6	<0.1	2.6
27084	Rock Pulp	5.41	0.12	1.32	<0.01	4.24	3.2	1348.7	564.3	1870	12.6	19.6	23.4	662	7.62	304.4	139.9	1.9	28	12.9	20.8
27085	Drill Core	5.10	0.03	2.87	<0.01	0.71	1.4	104.5	13.8	27	0.2	39.5	28.4	3720	7.28	33.3	<0.5	5.6	6	<0.1	0.5
27086	Drill Core	6.22	0.03	3.46	<0.01	0.58	11.2	59.1	16.0	13	<0.1	28.5	31.2	1473	4.14	46.1	<0.5	7.8	5	<0.1	0.7
27087	Core DUP	6.20	0.03	3.41	<0.01	0.58	10.8	54.2	16.0	12	<0.1	28.0	28.6	1450	4.12	41.4	<0.5	7.6	5	<0.1	0.7
27088	Drill Core	5.85	0.03	3.16	<0.01	0.85	1.7	75.0	6.7	17	<0.1	30.6	32.9	2408	5.73	58.7	<0.5	7.2	4	<0.1	0.8
27089	Drill Core	5.50	0.03	3.03	<0.01	1.05	1.8	91.3	3.7	15	<0.1	33.7	27.5	2778	7.09	41.1	<0.5	6.4	5	<0.1	0.7
27090	Drill Core	5.63	0.03	3.15	<0.01	0.73	2.2	59.0	3.3	10	<0.1	27.6	22.2	2135	5.44	90.1	<0.5	6.7	4	<0.1	0.7
27091	Drill Core	6.30	0.03	3.28	<0.01	1.08	3.3	72.3	2.6	24	0.1	33.4	27.0	2624	7.57	87.5	<0.5	6.8	8	<0.1	0.9
27110	Drill Core	6.26	0.03	3.26	<0.01	0.38	5.0	114.9	16.5	36	0.2	40.9	20.8	3073	9.63	22.3	<0.5	8.0	16	<0.1	0.9
27111	Drill Core	0.13	<0.01	0.06	<0.01	0.08	3.8	375.1	14.9	54	0.5	39.0	13.4	>10000	>40	4.3	<0.5	0.3	106	0.1	0.4
27112	Drill Core	5.17	0.03	2.86	<0.01	0.19	2.7	132.0	14.4	27	1.0	45.4	62.7	4144	9.22	89.2	<0.5	7.3	19	<0.1	0.5
27113	Drill Core	2.07	<0.01	0.04	<0.01	0.10	6.5	73.8	7.5	1581	0.3	19.5	7.3	8383	17.77	9.5	1.6	10.7	97	7.8	0.5
27114	Drill Core	6.72	0.06	3.42	<0.01	0.47	1.9	75.4	8.3	52	0.1	26.7	11.5	1547	4.58	14.0	<0.5	7.2	73	<0.1	1.0
27115	Rock Pulp	7.17	3.32	1.60	<0.01	0.06	4.0	21.9	0.9	33	<0.1	7.4	4.2	599	2.44	1.4	<0.5	2.2	29	<0.1	0.1
27116	Drill Core	8.60	0.03	4.20	<0.01	0.52	1.3	35.9	2.5	47	<0.1	18.1	14.5	235	3.99	25.3	<0.5	10.3	5	<0.1	0.5
27117	Drill Core	7.63	0.03	3.81	<0.01	0.61	1.3	52.0	2.2	41	<0.1	21.0	18.8	1147	4.73	29.4	1.6	13.7	15	<0.1	0.4
27118	Drill Core	3.85	0.09	1.97	<0.01	0.54	0.6	43.1	3.5	42	<0.1	19.6	16.6	4734	13.46	29.8	3.1	6.4	13	0.1	0.5



Bureau Veritas Commodities Canada Ltd.

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**Client:** **Bul River Mineral Corporation**  
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**Project:** None Given  
**Report Date:** July 30, 2019

**Page:** 2 of 4

**Part:** 3 of 4

# CERTIFICATE OF ANALYSIS

# VAN19001812.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.01	0.05	1	0.5	
27071	Drill Core	0.5	3	0.10	0.041	19	3	0.14	31	<0.001	<20	0.40	0.006	0.30	<0.1	<0.01	1.9	<0.1	0.09	<1	<0.5
27072	Drill Core	0.6	5	0.37	0.021	7	4	0.28	28	<0.001	<20	0.41	0.005	0.20	0.1	0.07	2.0	<0.1	0.49	<1	0.7
27073	Drill Core	0.5	6	5.69	0.054	6	6	2.44	25	0.001	<20	0.95	0.005	0.25	<0.1	0.03	1.6	<0.1	0.53	2	<0.5
27074	Rock Pulp	<0.1	22	0.74	0.038	5	15	0.50	57	0.071	<20	1.01	0.066	0.07	0.2	<0.01	2.4	<0.1	0.05	4	<0.5
27075	Drill Core	1.2	14	1.83	0.040	3	16	2.02	26	0.003	<20	2.05	0.008	0.23	0.1	0.11	2.8	0.1	3.62	5	1.1
27076	Drill Core	0.6	24	0.41	0.047	8	24	1.65	24	0.004	<20	3.05	0.009	0.24	<0.1	0.03	3.9	<0.1	1.70	8	<0.5
27077	Drill Core	0.4	21	0.12	0.045	12	22	1.15	34	0.003	<20	2.81	0.007	0.34	<0.1	0.02	3.3	<0.1	0.72	8	<0.5
27078	Drill Core	0.2	17	0.37	0.039	12	16	0.92	26	0.002	<20	1.99	0.008	0.26	<0.1	0.04	2.8	<0.1	0.74	6	<0.5
27079	Drill Core	0.4	2	0.63	<0.001	<1	<1	3.86	3	<0.001	<20	0.03	0.009	<0.01	<0.1	0.02	0.8	<0.1	0.95	<1	0.5
27080	Drill Core	<0.1	1	0.31	<0.001	<1	<1	3.69	3	<0.001	<20	0.03	0.016	<0.01	<0.1	<0.01	1.5	<0.1	0.17	<1	<0.5
27081	Drill Core	<0.1	2	0.37	<0.001	<1	<1	4.26	3	<0.001	<20	0.02	0.010	<0.01	<0.1	0.02	3.7	<0.1	0.21	<1	<0.5
27082	Drill Core	<0.1	1	0.29	<0.001	<1	<1	3.88	3	<0.001	<20	0.02	0.016	<0.01	<0.1	<0.01	2.3	<0.1	0.54	<1	<0.5
27083	Drill Core	0.7	2	0.22	<0.001	<1	<1	3.61	4	<0.001	<20	0.02	0.014	<0.01	0.2	0.04	1.2	<0.1	3.52	<1	3.5
27084	Rock Pulp	7.8	27	1.22	0.022	4	39	1.66	119	0.004	<20	1.77	0.015	0.17	0.3	2.03	4.4	2.3	3.86	6	23.7
27085	Drill Core	0.3	3	0.14	0.028	10	3	0.81	29	<0.001	<20	0.35	0.007	0.28	<0.1	0.02	1.4	<0.1	0.69	<1	<0.5
27086	Drill Core	0.4	5	0.11	0.039	17	5	0.44	38	0.001	<20	0.60	0.007	0.35	<0.1	<0.01	1.6	0.1	0.58	2	<0.5
27087	Core DUP	0.4	5	0.11	0.038	17	5	0.43	38	0.001	<20	0.61	0.006	0.36	<0.1	<0.01	1.7	0.1	0.57	2	<0.5
27088	Drill Core	0.6	5	0.11	0.035	11	4	0.64	29	0.001	<20	0.57	0.006	0.28	<0.1	<0.01	2.0	<0.1	0.82	1	<0.5
27089	Drill Core	0.4	5	0.14	0.034	11	4	0.79	29	0.001	<20	0.46	0.006	0.28	<0.1	0.02	2.4	<0.1	0.98	1	<0.5
27090	Drill Core	0.4	6	0.11	0.033	14	5	0.59	35	0.001	<20	0.55	0.006	0.35	<0.1	<0.01	2.3	<0.1	0.68	1	<0.5
27091	Drill Core	0.6	7	0.22	0.039	14	6	1.01	33	0.001	<20	0.80	0.007	0.32	0.3	0.02	2.7	0.2	1.06	2	<0.5
27110	Drill Core	0.6	6	0.10	0.035	18	6	0.43	33	<0.001	<20	0.63	0.005	0.29	0.1	0.02	2.7	0.1	0.34	1	<0.5
27111	Drill Core	0.1	3	0.21	0.001	1	<1	1.51	7	<0.001	<20	0.03	0.006	0.02	<0.1	0.02	3.0	<0.1	0.07	<1	<0.5
27112	Drill Core	0.5	6	0.14	0.033	13	9	0.35	37	0.001	<20	0.54	0.008	0.34	3.2	0.01	2.4	0.1	0.18	1	<0.5
27113	Drill Core	0.1	20	2.45	0.067	11	44	1.02	17	0.005	<20	1.98	0.003	0.01	<0.1	1.08	3.8	<0.1	0.09	5	0.6
27114	Drill Core	0.3	7	2.06	0.045	17	8	0.58	41	0.002	<20	1.01	0.008	0.33	<0.1	0.04	2.0	0.1	0.45	2	<0.5
27115	Rock Pulp	<0.1	22	0.73	0.035	5	15	0.49	55	0.068	<20	1.01	0.068	0.08	0.2	<0.01	2.4	<0.1	0.05	4	<0.5
27116	Drill Core	0.8	11	0.10	0.037	16	12	0.73	36	0.002	<20	1.70	0.007	0.36	<0.1	0.02	1.5	0.1	0.53	4	<0.5
27117	Drill Core	0.6	11	0.39	0.036	17	10	0.89	42	0.002	<20	1.41	0.007	0.39	<0.1	0.01	2.6	0.1	0.63	4	<0.5
27118	Drill Core	0.4	7	0.39	0.018	10	5	1.80	28	0.001	<20	0.43	0.009	0.27	<0.1	0.02	3.4	<0.1	0.55	<1	<0.5



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

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Box 845

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Project: None Given

Report Date: July 30, 2019

Page: 2 of 4

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19001812.1

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
27071	Drill Core	<0.2
27072	Drill Core	<0.2
27073	Drill Core	<0.2
27074	Rock Pulp	<0.2
27075	Drill Core	0.2
27076	Drill Core	<0.2
27077	Drill Core	<0.2
27078	Drill Core	<0.2
27079	Drill Core	<0.2
27080	Drill Core	<0.2
27081	Drill Core	<0.2
27082	Drill Core	<0.2
27083	Drill Core	<0.2
27084	Rock Pulp	0.2
27085	Drill Core	<0.2
27086	Drill Core	<0.2
27087	Core DUP	<0.2
27088	Drill Core	0.2
27089	Drill Core	<0.2
27090	Drill Core	<0.2
27091	Drill Core	0.2
27110	Drill Core	<0.2
27111	Drill Core	<0.2
27112	Drill Core	<0.2
27113	Drill Core	<0.2
27114	Drill Core	<0.2
27115	Rock Pulp	<0.2
27116	Drill Core	<0.2
27117	Drill Core	<0.2
27118	Drill Core	<0.2





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# CERTIFICATE OF ANALYSIS

VAN19001812.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
27119	Drill Core	2.17	5	<0.001	0.002	<0.02	<0.01	<2	0.003	0.002	0.12	4.64	<0.02	<0.01	<0.001	<0.01	<0.01	0.16	0.03	0.003	0.88
27120	Drill Core	1.84	4	<0.001	<0.001	<0.02	<0.01	<2	0.002	<0.001	0.31	7.96	<0.02	<0.01	<0.001	<0.01	<0.01	0.10	0.03	0.002	1.13
27121	Drill Core	3.28	9	<0.001	0.005	<0.02	0.01	<2	0.002	0.002	0.06	5.98	<0.02	<0.01	<0.001	<0.01	<0.01	0.41	0.06	0.004	1.31
27122	Rock Pulp	0.11	187	<0.001	0.136	0.05	0.20	12	0.002	0.002	0.07	8.24	0.03	<0.01	0.001	<0.01	<0.01	1.32	0.03	0.006	1.85
27092	Drill Core	2.14	7	<0.001	0.006	<0.02	<0.01	<2	0.002	0.001	0.12	5.76	<0.02	<0.01	<0.001	<0.01	<0.01	0.25	0.05	0.004	0.79
27093	Drill Core	0.09	11	<0.001	0.192	<0.02	<0.01	<2	0.004	0.002	2.69	49.44	<0.02	0.01	<0.001	<0.01	<0.01	0.30	<0.01	<0.001	0.37
27094	Drill Core	1.68	6	<0.001	0.010	<0.02	<0.01	<2	0.002	0.001	0.20	5.71	<0.02	<0.01	<0.001	<0.01	<0.01	1.53	0.06	0.004	1.01
27095	Rock Pulp	0.11	5	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.89	<0.02	0.02	<0.001	<0.01	<0.01	1.78	0.04	0.001	0.55
27096	Drill Core	5.42	8	<0.001	0.017	<0.02	<0.01	<2	0.006	0.002	0.09	7.32	<0.02	<0.01	<0.001	<0.01	<0.01	1.46	0.06	0.004	1.67
27097	Drill Core	4.50	8	<0.001	0.022	<0.02	<0.01	<2	0.006	0.002	0.02	6.93	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	0.06	0.005	1.52
27098	Drill Core	0.99	8	<0.001	0.016	<0.02	<0.01	<2	0.004	0.002	0.21	8.29	<0.02	<0.01	<0.001	<0.01	<0.01	1.26	0.05	0.004	2.02
27099	Drill Core	2.08	8	<0.001	0.041	<0.02	<0.01	<2	0.009	0.003	2.11	28.91	<0.02	0.02	<0.001	<0.01	<0.01	4.65	<0.01	<0.001	4.30
27100	Drill Core	3.98	8	<0.001	0.083	<0.02	<0.01	<2	0.004	0.002	1.48	36.21	<0.02	<0.01	<0.001	<0.01	<0.01	0.29	<0.01	<0.001	3.98
27101	Drill Core	2.04	9	<0.001	0.034	<0.02	<0.01	<2	0.006	0.008	0.16	7.25	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.04	0.004	1.10
27102	Drill Core	3.12	5	<0.001	0.016	<0.02	<0.01	<2	0.003	0.001	1.17	31.23	<0.02	<0.01	<0.001	<0.01	<0.01	0.83	<0.01	<0.001	4.00
27103	Drill Core	4.14	6	<0.001	0.036	<0.02	<0.01	<2	0.003	0.001	1.24	30.42	<0.02	<0.01	<0.001	<0.01	<0.01	1.50	<0.01	<0.001	4.23
27104	Drill Core	1.90	7	<0.001	0.007	<0.02	<0.01	<2	0.002	0.002	0.03	5.08	<0.02	<0.01	<0.001	<0.01	<0.01	0.19	0.05	0.005	1.20
27105	Drill Core	2.58	10	<0.001	0.024	<0.02	<0.01	<2	0.004	0.002	1.07	25.77	<0.02	<0.01	<0.001	<0.01	<0.01	6.33	<0.01	<0.001	4.47
27106	Rock Pulp	0.11	3377	0.038	1.346	0.06	0.73	80	0.002	0.004	0.11	8.06	0.03	0.02	0.003	<0.01	<0.01	3.10	0.04	0.003	1.48
27107	Drill Core	2.12	6	<0.001	0.015	<0.02	<0.01	<2	0.003	0.003	0.02	5.55	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.05	0.005	1.14
27108	Drill Core	3.68	5	<0.001	0.005	<0.02	<0.01	<2	0.002	0.001	0.02	5.04	<0.02	<0.01	<0.001	<0.01	<0.01	0.19	0.05	0.004	1.27
27109	Drill Core	3.58	9	<0.001	0.034	<0.02	<0.01	<2	0.007	0.005	0.17	9.79	<0.02	<0.01	<0.001	<0.01	<0.01	0.48	0.05	0.003	1.51
27123	Drill Core	3.34	8	<0.001	0.017	<0.02	<0.01	<2	0.005	0.003	0.10	8.65	<0.02	<0.01	<0.001	<0.01	<0.01	0.34	0.05	0.004	1.55
27124	Drill Core	4.63	6	<0.001	0.004	<0.02	<0.01	<2	0.002	0.002	0.07	6.37	<0.02	<0.01	<0.001	<0.01	<0.01	0.43	0.05	0.004	1.38
27125	Drill Core	2.59	5	<0.001	0.005	<0.02	<0.01	<2	0.002	0.001	0.24	8.92	<0.02	<0.01	<0.001	<0.01	<0.01	0.42	0.04	0.003	1.40
27126	Drill Core	3.94	5	<0.001	0.005	<0.02	<0.01	<2	0.003	0.004	0.24	8.73	<0.02	<0.01	<0.001	<0.01	<0.01	0.16	0.04	0.003	1.25
27127	Drill Core	2.61	7	<0.001	0.010	<0.02	<0.01	<2	0.009	0.007	0.72	19.44	<0.02	<0.01	<0.001	<0.01	<0.01	0.39	0.02	0.001	2.42
27128	Drill Core	3.31	8	<0.001	0.008	<0.02	<0.01	<2	0.003	0.002	0.11	7.10	<0.02	<0.01	<0.001	<0.01	<0.01	0.39	0.06	0.004	1.53
27135	Drill Core	3.62	7	<0.001	0.012	<0.02	<0.01	<2	0.003	0.002	0.02	4.99	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	0.06	0.004	1.31
27136	Drill Core	2.53	7	<0.001	0.006	<0.02	<0.01	<2	0.002	0.001	0.03	4.04	<0.02	<0.01	<0.001	<0.01	<0.01	0.19	0.06	0.004	1.08



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**Project:** None Given  
**Report Date:** July 30, 2019

**Page:** 3 of 4

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

# VAN19001812.1

Method Analyte Unit MDL	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	
	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	
27119	Drill Core	6.44	0.03	3.52	<0.01	0.28	1.8	32.5	1.3	15	<0.1	29.9	17.7	1219	4.02	52.2	1.6	8.6	7	<0.1	0.3
27120	Drill Core	4.90	0.02	2.64	<0.01	0.18	2.6	18.0	1.1	14	<0.1	23.0	11.7	3208	7.67	43.6	1.4	7.9	4	<0.1	0.3
27121	Drill Core	6.85	0.02	2.95	<0.01	0.93	5.3	59.3	12.2	121	0.2	25.6	18.8	606	5.47	77.6	1.2	8.9	15	0.2	0.7
27122	Rock Pulp	5.62	0.14	1.29	<0.01	4.36	3.3	1372.6	552.7	1928	12.2	19.8	23.7	678	8.02	320.7	146.0	2.2	32	13.7	20.7
27092	Drill Core	8.13	0.06	4.10	<0.01	0.15	2.3	70.1	9.8	19	0.1	18.0	11.4	1159	4.86	8.3	<0.5	9.5	11	<0.1	0.6
27093	Drill Core	0.04	<0.01	0.02	<0.01	0.16	4.5	1842.7	1.3	46	1.9	39.9	13.2	>10000	>40	10.7	5.3	1.7	133	<0.1	0.3
27094	Drill Core	7.43	0.09	3.68	<0.01	0.16	2.0	98.5	4.5	22	0.1	21.2	10.2	1803	4.51	10.6	1.2	8.0	42	<0.1	0.7
27095	Rock Pulp	7.67	3.59	1.60	<0.01	0.06	3.7	21.8	0.9	32	<0.1	7.5	4.1	556	2.28	1.3	<0.5	2.1	27	<0.1	0.1
27096	Drill Core	7.07	0.04	3.20	<0.01	2.97	1.9	166.4	6.0	40	0.1	57.5	22.8	789	6.00	32.1	<0.5	7.3	41	<0.1	1.0
27097	Drill Core	8.90	0.05	3.98	<0.01	2.38	1.0	245.4	6.3	51	0.2	54.5	19.7	208	6.15	17.2	1.4	10.3	8	<0.1	1.0
27098	Drill Core	7.14	0.04	2.91	<0.01	1.94	1.2	171.8	6.3	65	0.1	40.0	25.9	2075	7.88	34.9	3.0	7.2	53	<0.1	1.7
27099	Drill Core	0.43	<0.01	0.01	<0.01	3.10	0.5	404.0	7.0	81	0.5	93.9	30.0	>10000	28.82	0.7	3.4	0.5	160	0.1	1.0
27100	Drill Core	0.40	0.02	0.17	<0.01	0.61	1.7	825.2	2.8	26	0.7	41.6	19.2	>10000	37.93	6.3	3.4	0.6	10	<0.1	0.5
27101	Drill Core	6.70	0.04	3.14	<0.01	0.99	3.9	358.0	2.6	29	0.3	55.1	78.7	1521	6.47	123.6	2.6	7.9	7	<0.1	0.6
27102	Drill Core	1.05	0.01	0.17	<0.01	0.61	1.2	166.9	1.7	37	0.1	32.7	15.4	>10000	32.20	11.9	1.2	1.4	21	<0.1	0.4
27103	Drill Core	0.35	0.01	0.04	<0.01	0.71	0.1	366.9	2.6	28	0.3	26.2	11.7	>10000	29.91	5.7	2.0	0.5	38	<0.1	0.9
27104	Drill Core	8.45	0.05	3.84	<0.01	0.81	3.3	73.3	2.4	42	0.1	21.1	18.9	292	4.28	31.8	<0.5	9.7	8	<0.1	0.2
27105	Drill Core	1.63	0.02	0.64	<0.01	1.30	0.8	236.6	5.8	24	0.4	34.0	19.0	>10000	23.79	4.4	1.4	1.6	64	<0.1	1.3
27106	Rock Pulp	5.87	1.00	1.90	<0.01	4.76	387.5	>10000	597.7	6992	79.1	20.6	41.2	885	7.34	274.3	4063.1	7.2	58	30.8	43.4
27107	Drill Core	8.83	0.05	4.08	<0.01	1.42	2.2	156.2	3.9	36	0.1	34.2	26.6	165	4.70	31.0	1.1	9.5	7	<0.1	0.7
27108	Drill Core	8.48	0.05	3.72	<0.01	0.55	1.9	53.4	2.1	50	<0.1	16.0	13.8	217	4.15	15.1	0.9	9.2	9	<0.1	0.4
27109	Drill Core	6.17	0.04	2.55	<0.01	3.23	1.9	359.5	6.3	59	0.2	65.3	47.7	1692	9.58	53.1	1.3	7.5	17	<0.1	1.3
27123	Drill Core	7.30	0.04	2.93	<0.01	2.53	7.2	183.4	4.7	66	0.1	49.5	30.5	996	8.05	76.9	2.4	8.2	15	<0.1	0.9
27124	Drill Core	7.08	0.04	2.84	<0.01	0.84	2.7	45.2	2.3	58	<0.1	18.1	17.1	690	5.48	78.4	1.3	8.1	14	<0.1	0.6
27125	Drill Core	5.53	0.03	2.13	<0.01	0.93	0.7	57.0	3.1	55	<0.1	20.6	11.5	2340	8.45	23.9	1.5	6.4	15	<0.1	0.5
27126	Drill Core	5.63	0.03	2.42	<0.01	0.78	0.8	58.4	2.4	56	0.2	32.9	38.1	2382	8.18	74.4	0.9	6.9	7	<0.1	0.3
27127	Drill Core	2.32	0.03	1.05	<0.01	0.70	0.5	102.0	7.0	27	0.2	83.6	72.8	6776	18.75	144.2	3.7	2.9	10	<0.1	1.2
27128	Drill Core	7.24	0.04	2.96	<0.01	0.98	4.7	80.6	4.7	64	<0.1	25.8	17.3	1011	6.47	62.4	0.5	8.9	14	<0.1	0.9
27135	Drill Core	8.30	0.05	3.80	<0.01	1.23	3.1	130.8	3.7	48	<0.1	31.0	19.2	207	4.23	51.9	2.2	7.5	8	<0.1	0.6
27136	Drill Core	7.75	0.05	3.62	<0.01	0.68	4.4	63.2	2.8	37	<0.1	18.8	14.5	289	3.30	26.6	2.2	7.5	8	<0.1	0.4



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**Project:** None Given  
**Report Date:** July 30, 2019

**Page:** 3 of 4

**Part:** 3 of 4

# CERTIFICATE OF ANALYSIS

# VAN19001812.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	1	0.5	
27119	Drill Core	0.4	6	0.17	0.032	22	5	0.57	42	0.001	<20	0.67	0.009	0.37	<0.1	<0.01	2.3	0.1	0.30	2	<0.5
27120	Drill Core	0.2	5	0.11	0.026	17	4	0.97	33	0.001	<20	0.56	0.005	0.32	<0.1	<0.01	2.8	<0.1	0.19	1	<0.5
27121	Drill Core	0.5	16	0.41	0.062	11	14	1.05	36	0.002	<20	1.83	0.004	0.32	<0.1	0.05	2.8	0.1	0.93	4	<0.5
27122	Rock Pulp	8.4	30	1.24	0.027	5	42	1.69	129	0.004	<20	1.86	0.009	0.20	0.4	2.13	5.0	2.4	4.05	6	25.9
27092	Drill Core	0.5	5	0.24	0.044	17	6	0.32	47	0.001	<20	0.78	0.005	0.40	0.2	<0.01	2.1	0.1	0.13	1	<0.5
27093	Drill Core	<0.1	<1	0.29	<0.001	<1	3	0.35	11	<0.001	<20	0.03	<0.001	0.02	<0.1	0.02	1.0	<0.1	0.09	<1	<0.5
27094	Drill Core	0.3	5	1.38	0.046	17	7	0.51	38	0.002	<20	0.85	0.005	0.35	<0.1	<0.01	2.2	0.1	0.12	2	<0.5
27095	Rock Pulp	<0.1	20	0.72	0.033	5	14	0.47	53	0.072	<20	0.98	0.061	0.07	0.2	<0.01	2.5	<0.1	<0.05	4	<0.5
27096	Drill Core	1.2	9	1.32	0.051	7	12	1.21	36	0.002	<20	1.49	0.004	0.36	<0.1	0.04	2.2	0.1	2.65	3	<0.5
27097	Drill Core	1.6	14	0.18	0.058	14	17	1.11	52	0.003	<20	1.98	0.005	0.48	<0.1	0.04	2.1	0.2	2.36	5	0.7
27098	Drill Core	1.0	15	1.25	0.052	9	18	1.73	44	0.003	<20	2.21	0.005	0.37	0.2	0.05	2.3	0.1	1.94	5	0.6
27099	Drill Core	0.6	6	4.08	0.003	<1	3	4.26	5	0.001	<20	0.39	0.006	<0.01	<0.1	0.23	1.7	0.2	3.56	<1	1.7
27100	Drill Core	0.2	4	0.28	0.002	2	1	4.00	10	<0.001	<20	0.10	0.018	0.04	<0.1	0.04	3.3	<0.1	0.56	<1	<0.5
27101	Drill Core	0.6	9	0.12	0.038	19	8	0.82	44	0.002	<20	1.00	0.006	0.37	<0.1	0.05	2.0	0.2	0.99	3	<0.5
27102	Drill Core	0.1	10	0.78	0.008	4	5	4.10	10	0.002	<20	0.76	0.015	0.05	<0.1	0.03	4.9	<0.1	0.56	1	<0.5
27103	Drill Core	0.1	5	1.44	0.002	1	2	4.16	7	<0.001	<20	0.26	0.015	0.01	<0.1	0.02	3.5	<0.1	0.71	<1	<0.5
27104	Drill Core	0.3	14	0.18	0.051	20	13	0.81	51	0.002	<20	1.80	0.005	0.47	<0.1	0.04	2.5	0.1	0.82	5	<0.5
27105	Drill Core	0.2	8	5.72	0.004	2	3	4.34	16	<0.001	<20	0.56	0.008	0.12	<0.1	0.10	5.2	0.2	1.28	<1	<0.5
27106	Rock Pulp	7.8	49	1.97	0.034	15	26	1.13	88	0.082	<20	1.65	0.109	0.35	1.9	0.99	3.2	1.2	4.79	7	13.2
27107	Drill Core	0.8	12	0.13	0.048	16	12	0.74	56	0.002	<20	1.69	0.005	0.46	<0.1	0.06	2.1	0.2	1.43	4	<0.5
27108	Drill Core	0.4	15	0.17	0.050	20	13	0.89	49	0.003	<20	1.86	0.005	0.43	<0.1	0.02	2.4	0.1	0.53	5	<0.5
27109	Drill Core	0.9	15	0.46	0.047	10	13	1.27	42	0.003	<20	1.85	0.004	0.37	<0.1	0.08	3.3	0.2	3.23	4	0.6
27123	Drill Core	1.2	16	0.32	0.045	9	15	1.23	37	0.003	<20	2.20	0.005	0.36	0.1	0.05	2.8	0.1	2.51	6	0.9
27124	Drill Core	0.4	16	0.38	0.045	15	15	1.07	38	0.003	<20	2.06	0.004	0.38	<0.1	0.02	3.4	0.1	0.78	6	<0.5
27125	Drill Core	0.4	16	0.39	0.038	23	13	1.17	34	0.003	<20	1.82	0.007	0.33	<0.1	0.03	4.2	0.1	0.93	5	<0.5
27126	Drill Core	0.4	13	0.15	0.035	18	10	1.04	41	0.003	<20	1.51	0.003	0.37	<0.1	0.02	3.6	0.1	0.79	4	<0.5
27127	Drill Core	0.5	6	0.37	0.016	12	4	2.39	22	<0.001	<20	0.47	0.006	0.18	<0.1	0.02	2.5	<0.1	0.74	<1	<0.5
27128	Drill Core	0.5	17	0.36	0.059	17	16	1.25	43	0.003	<20	2.08	0.006	0.41	<0.1	0.04	3.3	0.1	0.96	5	<0.5
27135	Drill Core	0.6	12	0.19	0.061	17	11	0.92	55	0.003	<20	1.77	0.005	0.48	<0.1	0.03	2.0	0.1	1.18	4	<0.5
27136	Drill Core	0.4	11	0.18	0.055	14	12	0.71	67	0.003	<20	1.51	0.006	0.48	<0.1	0.02	2.1	0.1	0.66	4	<0.5



**BUREAU** MINERAL LABORATORIES  
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Project: None Given

Report Date: July 30, 2019

Page: 3 of 4

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19001812.1

Method	AQ200
Analyte	Te
Unit	ppm
MDL	0.2
27119	Drill Core <0.2
27120	Drill Core <0.2
27121	Drill Core <0.2
27122	Rock Pulp <0.2
27092	Drill Core <0.2
27093	Drill Core <0.2
27094	Drill Core <0.2
27095	Rock Pulp <0.2
27096	Drill Core 0.2
27097	Drill Core 0.4
27098	Drill Core 0.3
27099	Drill Core 0.2
27100	Drill Core <0.2
27101	Drill Core <0.2
27102	Drill Core <0.2
27103	Drill Core <0.2
27104	Drill Core <0.2
27105	Drill Core <0.2
27106	Rock Pulp 0.9
27107	Drill Core <0.2
27108	Drill Core <0.2
27109	Drill Core 0.2
27123	Drill Core <0.2
27124	Drill Core <0.2
27125	Drill Core <0.2
27126	Drill Core <0.2
27127	Drill Core <0.2
27128	Drill Core <0.2
27135	Drill Core <0.2
27136	Drill Core <0.2



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# CERTIFICATE OF ANALYSIS

## VAN19001812.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
27137	Drill Core	1.95	11	<0.001	0.049	<0.02	<0.01	<2	0.003	0.001	1.77	33.95	<0.02	<0.01	<0.001	<0.01	<0.01	0.68	<0.01	<0.001	3.24
27138	Drill Core	3.49	44	<0.001	0.083	<0.02	<0.01	<2	0.003	0.002	1.56	35.96	<0.02	<0.01	<0.001	<0.01	<0.01	0.41	<0.01	<0.001	3.99
27139	Drill Core	1.69	17	<0.001	0.178	<0.02	<0.01	2	0.003	0.002	1.67	37.89	<0.02	<0.01	<0.001	<0.01	<0.01	0.24	<0.01	<0.001	3.86
27140	Rock Pulp	0.12	561	<0.001	3.789	0.27	3.82	73	0.006	0.033	0.09	29.87	<0.02	<0.01	0.011	<0.01	<0.01	0.94	0.01	0.002	2.17
27141	Drill Core	1.27	23	<0.001	0.587	<0.02	<0.01	6	0.005	0.003	1.36	29.09	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	<0.01	<0.001	2.77
27142	Drill Core	2.74	11	<0.001	0.015	<0.02	<0.01	<2	0.003	0.003	0.41	11.03	<0.02	<0.01	<0.001	<0.01	<0.01	0.16	0.04	0.003	1.29
27143	Drill Core	2.77	7	<0.001	0.009	<0.02	<0.01	<2	0.003	0.002	0.11	7.22	<0.02	<0.01	<0.001	<0.01	<0.01	0.37	0.06	0.004	1.44
27144	Drill Core	4.96	5	<0.001	0.010	<0.02	<0.01	<2	0.003	0.002	0.10	5.46	<0.02	<0.01	<0.001	<0.01	<0.01	2.40	0.05	0.004	1.76
27145	Drill Core	4.79	5	<0.001	0.003	<0.02	<0.01	<2	0.002	<0.001	0.03	3.98	<0.02	<0.01	<0.001	<0.01	<0.01	0.52	0.06	0.004	1.32
27146	Drill Core	2.54	6	<0.001	0.008	<0.02	<0.01	<2	0.002	0.001	0.06	4.42	<0.02	<0.01	<0.001	<0.01	<0.01	0.38	0.06	0.003	1.09
27147	Drill Core	2.92	4	<0.001	0.016	<0.02	<0.01	<2	0.003	0.002	0.20	6.92	<0.02	<0.01	<0.001	<0.01	<0.01	0.55	0.04	0.003	1.08
27148	Drill Core	2.52	11	<0.001	0.423	<0.02	<0.01	4	0.003	0.002	1.94	33.99	<0.02	<0.01	<0.001	<0.01	<0.01	0.52	0.01	0.001	2.97
27149	Drill Core	3.41	29	<0.001	0.373	<0.02	<0.01	4	0.006	0.002	2.32	38.54	<0.02	<0.01	<0.001	<0.01	<0.01	0.26	<0.01	0.001	3.63
27150	Drill Core	1.67	26	<0.001	0.300	<0.02	<0.01	3	0.003	0.002	1.59	29.59	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	<0.01	0.001	2.37
27151	Drill Core	2.30	12	<0.001	0.059	<0.02	<0.01	<2	0.006	0.005	1.00	20.75	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.01	0.002	1.50
27152	Drill Core	1.21	15	<0.001	0.069	<0.02	<0.01	<2	0.030	0.031	0.51	19.54	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.02	0.002	1.00
27153	Drill Core	3.73	12	<0.001	0.013	<0.02	<0.01	<2	0.005	0.003	0.28	7.27	<0.02	<0.01	<0.001	<0.01	<0.01	0.28	0.04	0.003	0.94
27154	Rock Pulp	0.11	7	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.83	<0.02	0.02	<0.001	<0.01	<0.01	1.73	0.04	<0.001	0.55
27155	Drill Core	2.11	5	<0.001	0.004	<0.02	<0.01	<2	0.001	<0.001	0.06	3.69	<0.02	<0.01	<0.001	<0.01	<0.01	1.18	0.05	0.004	1.38
27156	Drill Core	2.27	8	<0.001	0.009	<0.02	<0.01	<2	0.004	0.002	0.03	6.94	<0.02	<0.01	<0.001	<0.01	<0.01	0.30	0.06	0.004	1.62
27157	Drill Core	2.68	7	<0.001	0.020	<0.02	<0.01	<2	0.007	0.003	1.62	27.13	<0.02	0.02	<0.001	<0.01	<0.01	6.15	<0.01	<0.001	4.95
27158	Drill Core	1.04	5	<0.001	0.009	<0.02	<0.01	<2	0.004	0.002	0.02	5.45	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	0.07	0.005	1.32
27159	Rock Pulp	0.11	189	<0.001	0.136	0.06	0.20	12	0.002	0.002	0.07	8.19	0.03	<0.01	0.001	<0.01	<0.01	1.33	0.03	0.006	1.84
27160	Drill Core	2.71	6	<0.001	0.010	<0.02	<0.01	<2	0.004	0.001	0.02	4.69	<0.02	<0.01	<0.001	<0.01	<0.01	0.24	0.07	0.004	1.28
27129	Drill Core	2.54	7	<0.001	0.010	<0.02	<0.01	<2	0.004	0.002	0.06	8.59	<0.02	<0.01	<0.001	<0.01	<0.01	0.43	0.06	0.004	1.98
27130	Drill Core	1.69	6	<0.001	0.006	<0.02	<0.01	<2	0.003	0.002	0.12	8.66	<0.02	<0.01	<0.001	<0.01	<0.01	0.58	0.06	0.004	1.78
27131	Drill Core	2.72	5	<0.001	0.001	<0.02	<0.01	<2	0.002	0.002	1.37	32.64	<0.02	<0.01	<0.001	<0.01	<0.01	1.95	<0.01	0.001	4.59
27132	Drill Core	1.28	7	<0.001	0.010	<0.02	<0.01	<2	0.004	0.002	0.10	7.78	<0.02	<0.01	<0.001	<0.01	<0.01	0.65	0.04	0.004	1.71
27133	Drill Core	3.20	5	<0.001	0.005	<0.02	<0.01	<2	0.003	0.002	0.02	5.35	<0.02	<0.01	<0.001	<0.01	<0.01	0.26	0.06	0.004	1.29
27134	Rock Pulp	0.11	5	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.87	<0.02	0.02	<0.001	<0.01	<0.01	1.76	0.04	0.001	0.55



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**Project:** None Given  
**Report Date:** July 30, 2019

**Page:** 4 of 4

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

# VAN19001812.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.1	1	0.1	0.1
27137	Drill Core	0.32	0.02	0.11	<0.01	0.37	1.3	511.0	6.4	80	0.9	33.8	15.2	>10000	35.06	8.2	11.9	0.6	18	0.3	0.8
27138	Drill Core	0.32	0.08	0.11	<0.01	1.09	0.2	836.0	14.6	25	1.1	25.2	17.3	>10000	36.38	40.3	39.1	0.5	15	<0.1	2.6
27139	Drill Core	0.27	0.05	0.11	<0.01	0.69	0.2	1711.2	6.7	25	2.1	28.2	15.7	>10000	37.88	13.5	13.2	0.5	6	<0.1	1.4
27140	Rock Pulp	1.28	0.08	0.16	<0.01	23.92	9.7	>10000	2654.6	>10000	75.7	58.3	319.5	596	29.03	194.9	388.9	1.0	3	114.8	11.8
27141	Drill Core	0.68	0.17	0.20	<0.01	1.63	0.7	5868.9	14.1	54	6.1	44.8	34.1	>10000	28.51	20.9	17.3	0.7	7	0.1	1.1
27142	Drill Core	5.43	0.20	2.59	<0.01	0.91	0.8	159.3	14.0	24	0.2	31.0	28.2	4102	10.71	39.8	3.1	6.6	8	<0.1	0.9
27143	Drill Core	7.10	0.04	3.00	<0.01	1.43	1.5	91.1	7.6	50	0.1	30.7	22.8	1053	6.21	44.9	<0.5	8.8	14	<0.1	0.6
27144	Drill Core	6.91	0.05	3.26	<0.01	1.48	2.1	107.3	5.5	30	0.1	32.4	19.5	1037	4.58	25.0	<0.5	8.0	71	<0.1	0.7
27145	Drill Core	8.06	0.05	3.72	<0.01	0.60	4.2	42.1	3.1	38	<0.1	15.7	7.8	326	3.22	17.1	<0.5	7.7	20	<0.1	0.5
27146	Drill Core	7.15	0.05	3.47	<0.01	1.13	3.0	85.3	3.4	32	<0.1	24.0	16.0	564	3.53	26.8	<0.5	6.9	15	<0.1	0.5
27147	Drill Core	5.99	0.04	2.81	<0.01	1.45	3.3	171.8	35.5	38	0.2	28.4	25.1	1847	5.78	17.4	0.9	5.4	21	<0.1	0.5
27148	Drill Core	0.59	0.03	0.27	<0.01	0.67	0.7	4249.6	12.7	63	4.2	29.2	21.6	>10000	32.85	20.3	11.1	0.5	12	0.2	0.8
27149	Drill Core	0.07	0.01	<0.01	<0.01	1.34	0.7	3830.3	5.3	59	3.9	52.9	21.6	>10000	38.70	6.4	20.7	<0.1	5	0.1	1.0
27150	Drill Core	1.20	0.06	0.21	<0.01	0.58	0.8	3079.9	20.4	73	3.2	28.1	19.7	>10000	29.08	19.4	7.8	0.8	4	0.2	1.0
27151	Drill Core	2.38	0.03	1.18	<0.01	1.09	0.8	624.5	133.1	36	1.0	59.5	48.7	9834	20.77	63.0	7.7	2.6	5	<0.1	2.6
27152	Drill Core	2.71	0.02	1.40	<0.01	5.48	1.3	712.1	95.8	45	1.3	295.7	294.3	5180	19.39	336.3	6.1	2.9	4	0.1	1.4
27153	Drill Core	4.96	0.08	2.58	<0.01	1.40	1.7	144.2	109.1	35	0.3	45.0	30.6	2824	6.61	42.4	4.0	6.4	13	<0.1	1.1
27154	Rock Pulp	7.39	3.53	1.57	<0.01	0.06	4.0	24.0	1.2	37	<0.1	7.3	4.7	623	2.53	1.7	6.8	2.1	35	<0.1	0.1
27155	Drill Core	7.20	0.05	3.59	<0.01	0.56	1.5	47.4	3.6	31	<0.1	12.0	8.1	547	2.93	13.6	<0.5	8.3	44	<0.1	0.3
27156	Drill Core	7.13	0.04	2.89	<0.01	2.31	1.6	100.1	4.5	57	<0.1	39.5	21.3	277	6.07	11.0	0.7	7.2	11	<0.1	0.7
27157	Drill Core	0.37	0.01	0.03	<0.01	3.23	0.5	205.1	4.9	43	0.2	59.3	28.2	>10000	25.62	12.0	1.5	0.4	194	<0.1	1.7
27158	Drill Core	8.32	0.05	3.74	<0.01	1.60	2.0	97.5	2.9	38	<0.1	32.5	15.7	146	4.50	30.7	<0.5	7.0	7	<0.1	0.4
27159	Rock Pulp	5.56	0.14	1.29	<0.01	4.33	3.1	1404.0	524.4	2000	12.0	19.5	23.7	679	7.67	310.5	142.1	1.1	30	12.7	17.6
27160	Drill Core	8.44	0.05	3.94	<0.01	1.36	1.1	119.3	4.4	38	<0.1	35.7	15.1	163	3.97	6.4	<0.5	7.7	9	<0.1	0.8
27129	Drill Core	7.14	0.03	2.54	<0.01	1.99	1.3	110.0	4.0	94	<0.1	36.8	20.5	511	7.74	4.4	1.7	8.5	13	<0.1	0.8
27130	Drill Core	6.57	0.03	2.35	<0.01	1.56	1.2	69.9	2.5	75	<0.1	26.6	19.4	1140	7.47	21.2	1.3	6.8	19	<0.1	0.5
27131	Drill Core	0.63	0.01	0.09	<0.01	0.64	0.3	33.2	1.4	34	<0.1	20.3	13.8	>10000	31.29	7.0	2.2	0.6	56	<0.1	0.7
27132	Drill Core	7.27	0.04	2.83	<0.01	1.72	1.2	107.5	4.9	58	<0.1	30.6	22.8	927	6.75	41.8	0.5	6.4	21	<0.1	1.1
27133	Drill Core	7.73	0.05	3.45	<0.01	1.17	7.6	59.1	3.2	47	<0.1	27.9	15.8	221	4.50	32.0	0.8	8.4	9	<0.1	0.5
27134	Rock Pulp	7.60	3.56	1.59	<0.01	0.06	3.5	21.5	1.0	33	<0.1	6.9	3.9	596	2.40	1.2	<0.5	1.9	32	<0.1	0.2



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Project: None Given

Report Date: July 30, 2019

Page: 4 of 4

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

## VAN19001812.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.01	0.05	1	0.5	
27137	Drill Core	0.4	3	0.62	0.002	1	2	3.26	31	<0.001	<20	0.13	0.016	0.03	0.3	0.04	1.4	<0.1	0.33	<1	<0.5
27138	Drill Core	0.5	3	0.39	0.002	1	1	3.99	11	<0.001	<20	0.07	0.016	0.03	<0.1	0.04	3.5	<0.1	0.95	<1	<0.5
27139	Drill Core	0.1	3	0.23	0.002	2	<1	3.70	7	<0.001	<20	0.05	0.008	0.03	<0.1	0.08	3.0	<0.1	0.60	<1	<0.5
27140	Rock Pulp	99.9	9	0.64	0.011	4	19	1.05	7	0.010	<20	0.87	0.004	0.05	1.0	4.36	1.3	4.6	>10	11	61.9
27141	Drill Core	0.3	4	0.21	0.004	2	3	2.58	8	<0.001	<20	0.16	0.009	0.04	<0.1	0.17	1.2	<0.1	1.37	<1	1.2
27142	Drill Core	0.2	8	0.16	0.033	15	6	1.07	50	0.001	<20	0.73	0.007	0.38	<0.1	0.04	2.6	0.1	0.84	2	0.7
27143	Drill Core	0.3	14	0.36	0.049	16	13	1.12	51	0.002	<20	1.88	0.005	0.40	<0.1	0.06	2.8	0.2	1.29	5	<0.5
27144	Drill Core	0.4	9	2.38	0.052	8	10	1.40	44	0.002	<20	1.27	0.005	0.42	<0.1	0.02	2.4	0.1	1.36	3	<0.5
27145	Drill Core	0.3	10	0.52	0.063	16	10	0.89	50	0.003	<20	1.60	0.007	0.45	<0.1	0.01	1.8	0.1	0.57	4	<0.5
27146	Drill Core	0.3	9	0.36	0.051	13	9	0.69	46	0.003	<20	1.43	0.004	0.44	<0.1	0.04	1.6	0.1	1.01	3	<0.5
27147	Drill Core	0.4	7	0.50	0.036	9	8	0.77	34	0.002	<20	1.06	0.004	0.31	<0.1	0.02	1.2	0.1	1.35	3	<0.5
27148	Drill Core	0.2	3	0.50	0.008	2	2	2.66	9	<0.001	<20	0.12	0.008	0.05	<0.1	0.11	0.9	<0.1	0.61	<1	<0.5
27149	Drill Core	0.3	3	0.26	0.001	<1	<1	3.27	3	<0.001	<20	0.06	0.009	<0.01	<0.1	0.06	1.3	<0.1	1.23	<1	1.6
27150	Drill Core	0.2	8	0.18	0.006	3	5	2.20	7	0.001	<20	0.75	0.008	0.04	<0.1	0.05	1.6	<0.1	0.51	3	<0.5
27151	Drill Core	0.6	4	0.16	0.013	4	3	1.36	20	<0.001	<20	0.25	0.008	0.17	<0.1	0.04	1.3	<0.1	1.12	1	0.7
27152	Drill Core	2.3	4	0.11	0.019	5	3	0.84	22	<0.001	<20	0.29	0.004	0.20	<0.1	0.07	1.5	<0.1	5.62	1	3.3
27153	Drill Core	0.4	5	0.27	0.036	12	5	0.69	39	0.001	<20	0.51	0.006	0.33	<0.1	0.09	1.6	0.1	1.39	2	<0.5
27154	Rock Pulp	<0.1	23	0.82	0.044	6	16	0.52	64	0.089	<20	1.09	0.071	0.08	0.2	<0.01	2.8	<0.1	<0.05	4	<0.5
27155	Drill Core	0.1	7	1.15	0.050	14	9	0.95	50	0.002	<20	1.22	0.004	0.39	<0.1	0.04	1.8	0.1	0.51	3	<0.5
27156	Drill Core	0.7	14	0.29	0.059	8	15	1.29	31	0.003	<20	2.06	0.004	0.31	<0.1	0.03	1.9	0.1	2.25	5	<0.5
27157	Drill Core	0.6	5	5.79	0.002	<1	2	4.36	6	<0.001	<20	0.29	0.007	0.01	<0.1	0.08	2.8	<0.1	2.96	1	1.1
27158	Drill Core	0.5	12	0.18	0.058	10	11	0.88	33	0.002	<20	1.75	0.003	0.36	<0.1	0.07	1.3	0.2	1.46	4	<0.5
27159	Rock Pulp	7.7	28	1.24	0.025	4	41	1.66	123	0.004	<20	1.87	0.009	0.18	0.4	2.13	4.8	2.3	4.09	6	23.8
27160	Drill Core	0.7	11	0.24	0.064	14	12	0.85	43	0.003	<20	1.72	0.004	0.44	<0.1	0.02	1.6	0.1	1.30	4	<0.5
27129	Drill Core	0.8	21	0.42	0.058	10	23	1.70	31	0.004	<20	2.83	0.003	0.30	<0.1	0.03	3.0	0.1	1.91	7	<0.5
27130	Drill Core	0.5	20	0.55	0.050	10	20	1.47	29	0.004	<20	2.58	0.004	0.28	<0.1	0.06	3.1	0.1	1.37	6	<0.5
27131	Drill Core	0.2	8	1.80	0.004	2	4	4.12	6	0.001	<20	0.48	0.006	0.02	<0.1	0.03	3.4	<0.1	0.51	2	<0.5
27132	Drill Core	0.5	18	0.60	0.042	10	15	1.38	33	0.002	<20	2.19	0.003	0.28	<0.1	0.08	3.0	0.2	1.54	5	<0.5
27133	Drill Core	0.6	18	0.25	0.057	18	19	0.93	78	0.005	<20	2.46	0.008	0.78	<0.1	0.02	3.0	0.2	1.09	6	<0.5
27134	Rock Pulp	<0.1	21	0.76	0.043	5	15	0.49	58	0.081	<20	1.02	0.064	0.07	0.2	<0.01	2.6	<0.1	<0.05	4	<0.5





**BUREAU VERITAS** MINERAL LABORATORIES  
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Project: None Given

Report Date: July 30, 2019

Page: 4 of 4

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19001812.1

Method	AQ200
Analyte	Te
Unit	ppm
MDL	0.2
27137	Drill Core <0.2
27138	Drill Core <0.2
27139	Drill Core <0.2
27140	Rock Pulp 0.2
27141	Drill Core <0.2
27142	Drill Core <0.2
27143	Drill Core <0.2
27144	Drill Core <0.2
27145	Drill Core <0.2
27146	Drill Core <0.2
27147	Drill Core <0.2
27148	Drill Core <0.2
27149	Drill Core <0.2
27150	Drill Core <0.2
27151	Drill Core <0.2
27152	Drill Core 0.5
27153	Drill Core <0.2
27154	Rock Pulp <0.2
27155	Drill Core <0.2
27156	Drill Core 0.2
27157	Drill Core 0.3
27158	Drill Core <0.2
27159	Rock Pulp 0.2
27160	Drill Core <0.2
27129	Drill Core <0.2
27130	Drill Core <0.2
27131	Drill Core <0.2
27132	Drill Core <0.2
27133	Drill Core <0.2
27134	Rock Pulp <0.2



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Project: None Given  
Report Date: July 30, 2019

Page: 1 of 3

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
Pulp Duplicates																					
27086	Drill Core	2.42	18	<0.001	0.005	<0.02	<0.01	<2	0.003	0.003	0.14	4.87	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.05	0.004	0.77
REP 27086	QC		6	<0.001	0.005	<0.02	<0.01	<2	0.003	0.003	0.15	4.91	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.04	0.004	0.77
27118	Drill Core	0.54	7	<0.001	0.002	<0.02	<0.01	<2	0.002	0.001	0.45	13.03	<0.02	<0.01	<0.001	<0.01	<0.01	0.38	0.02	0.002	1.82
REP 27118	QC																				
27096	Drill Core	5.42	8	<0.001	0.017	<0.02	<0.01	<2	0.006	0.002	0.09	7.32	<0.02	<0.01	<0.001	<0.01	<0.01	1.46	0.06	0.004	1.67
REP 27096	QC																				
27106	Rock Pulp	0.11	3377	0.038	1.346	0.06	0.73	80	0.002	0.004	0.11	8.06	0.03	0.02	0.003	<0.01	<0.01	3.10	0.04	0.003	1.48
REP 27106	QC		3463																		
27107	Drill Core	2.12	6	<0.001	0.015	<0.02	<0.01	<2	0.003	0.003	0.02	5.55	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.05	0.005	1.14
REP 27107	QC			<0.001	0.015	<0.02	<0.01	<2	0.003	0.003	0.02	5.56	<0.02	<0.01	<0.001	<0.01	<0.01	0.13	0.05	0.005	1.14
27141	Drill Core	1.27	23	<0.001	0.587	<0.02	<0.01	6	0.005	0.003	1.36	29.09	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	<0.01	<0.001	2.77
REP 27141	QC																				
27154	Rock Pulp	0.11	7	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.83	<0.02	0.02	<0.001	<0.01	<0.01	1.73	0.04	<0.001	0.55
REP 27154	QC		4																		
27155	Drill Core	2.11	5	<0.001	0.004	<0.02	<0.01	<2	0.001	<0.001	0.06	3.69	<0.02	<0.01	<0.001	<0.01	<0.01	1.18	0.05	0.004	1.38
REP 27155	QC			<0.001	0.004	<0.02	<0.01	<2	0.001	<0.001	0.06	3.69	<0.02	<0.01	<0.001	<0.01	<0.01	1.21	0.05	0.003	1.39
Core Reject Duplicates																					
27116	Drill Core	2.09	5	<0.001	0.003	<0.02	<0.01	<2	0.002	0.001	0.02	4.73	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.04	0.004	1.14
DUP 27116	QC		5	<0.001	0.003	<0.02	<0.01	<2	0.002	0.001	0.02	4.73	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.04	0.004	1.14
27138	Drill Core	3.49	44	<0.001	0.083	<0.02	<0.01	<2	0.003	0.002	1.56	35.96	<0.02	<0.01	<0.001	<0.01	<0.01	0.41	<0.01	<0.001	3.99
DUP 27138	QC		42	<0.001	0.080	<0.02	<0.01	<2	0.003	0.002	1.58	35.62	<0.02	<0.01	<0.001	<0.01	<0.01	0.41	<0.01	<0.001	3.97
Reference Materials																					
STD BVGEO01	Standard																				
STD CDN-ME-14	Standard			0.002	1.221	0.49	3.18	43	0.002	0.017	0.09	18.12	<0.02	<0.01	0.009	<0.01	<0.01	0.78	0.02	0.001	1.30
STD CDN-ME-14	Standard			0.001	1.218	0.49	3.16	42	0.002	0.018	0.09	17.91	<0.02	<0.01	0.009	<0.01	0.01	0.78	0.02	0.002	1.30
STD CDN-ME-9	Standard			<0.001	0.657	<0.02	0.01	4	0.923	0.018	0.13	14.15	<0.02	0.03	<0.001	<0.01	<0.01	4.39	0.06	0.030	4.09
STD CDN-ME-14	Standard			0.002	1.293	0.52	3.31	46	0.002	0.018	0.09	18.86	<0.02	<0.01	0.009	<0.01	0.01	0.79	0.02	0.002	1.32
STD CDN-ME-9	Standard			<0.001	0.669	<0.02	0.01	3	0.916	0.017	0.12	13.97	<0.02	0.03	<0.001	<0.01	<0.01	4.20	0.06	0.032	4.00



# QUALITY CONTROL REPORT

VAN19001812.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.01	0.5	0.5	0.1	1	0.1	0.1
Pulp Duplicates																					
27086	Drill Core	6.22	0.03	3.46	<0.01	0.58	11.2	59.1	16.0	13	<0.1	28.5	31.2	1473	4.14	46.1	<0.5	7.8	5	<0.1	0.7
REP 27086	QC	6.23	0.03	3.47	<0.01	0.59															
27118	Drill Core	3.85	0.09	1.97	<0.01	0.54	0.6	43.1	3.5	42	<0.1	19.6	16.6	4734	13.46	29.8	3.1	6.4	13	0.1	0.5
REP 27118	QC						0.6	42.7	3.3	40	<0.1	18.6	15.8	4558	13.08	28.6	2.9	5.5	13	<0.1	0.5
27096	Drill Core	7.07	0.04	3.20	<0.01	2.97	1.9	166.4	6.0	40	0.1	57.5	22.8	789	6.00	32.1	<0.5	7.3	41	<0.1	1.0
REP 27096	QC						1.9	166.5	6.1	42	0.2	57.9	24.0	805	6.20	31.3	<0.5	7.2	42	<0.1	1.1
27106	Rock Pulp	5.87	1.00	1.90	<0.01	4.76	387.5	>10000	597.7	6992	79.1	20.6	41.2	885	7.34	274.3	4063.1	7.2	58	30.8	43.4
REP 27106	QC																				
27107	Drill Core	8.83	0.05	4.08	<0.01	1.42	2.2	156.2	3.9	36	0.1	34.2	26.6	165	4.70	31.0	1.1	9.5	7	<0.1	0.7
REP 27107	QC	8.85	0.05	4.10	<0.01	1.42															
27141	Drill Core	0.68	0.17	0.20	<0.01	1.63	0.7	5868.9	14.1	54	6.1	44.8	34.1	>10000	28.51	20.9	17.3	0.7	7	0.1	1.1
REP 27141	QC						0.9	5923.2	14.1	57	6.2	45.3	34.6	>10000	28.79	21.6	16.9	0.6	7	0.2	1.2
27154	Rock Pulp	7.39	3.53	1.57	<0.01	0.06	4.0	24.0	1.2	37	<0.1	7.3	4.7	623	2.53	1.7	6.8	2.1	35	<0.1	0.1
REP 27154	QC																				
27155	Drill Core	7.20	0.05	3.59	<0.01	0.56	1.5	47.4	3.6	31	<0.1	12.0	8.1	547	2.93	13.6	<0.5	8.3	44	<0.1	0.3
REP 27155	QC	7.46	0.06	3.62	<0.01	0.56															
Core Reject Duplicates																					
27116	Drill Core	8.60	0.03	4.20	<0.01	0.52	1.3	35.9	2.5	47	<0.1	18.1	14.5	235	3.99	25.3	<0.5	10.3	5	<0.1	0.5
DUP 27116	QC	8.64	0.03	4.23	<0.01	0.51	1.3	35.9	2.4	46	<0.1	17.2	13.2	211	3.84	24.1	<0.5	10.4	5	<0.1	0.4
27138	Drill Core	0.32	0.08	0.11	<0.01	1.09	0.2	836.0	14.6	25	1.1	25.2	17.3	>10000	36.38	40.3	39.1	0.5	15	<0.1	2.6
DUP 27138	QC	0.32	0.08	0.10	<0.01	1.00	0.2	810.2	13.6	26	1.1	25.6	17.3	>10000	36.64	37.9	37.7	0.5	15	<0.1	2.6
Reference Materials																					
STD BVGE001	Standard						11.7	4602.2	202.5	1802	2.7	167.1	25.9	766	3.89	130.0	240.5	17.6	64	6.9	2.6
STD CDN-ME-14	Standard	4.59	0.54	1.70	<0.01	16.38															
STD CDN-ME-14	Standard	4.56	0.54	1.68	<0.01	15.97															
STD CDN-ME-9	Standard	6.92	1.87	0.63	<0.01	2.65															
STD CDN-ME-14	Standard	4.69	0.55	1.81	<0.01	16.99															
STD CDN-ME-9	Standard	6.84	1.88	0.63	<0.01	2.50															



# QUALITY CONTROL REPORT

VAN19001812.1

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
Unit		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	
Pulp Duplicates																					
27086	Drill Core	0.4	5	0.11	0.039	17	5	0.44	38	0.001	<20	0.60	0.007	0.35	<0.1	<0.01	1.6	0.1	0.58	2	<0.5
REP 27086	QC																				
27118	Drill Core	0.4	7	0.39	0.018	10	5	1.80	28	0.001	<20	0.43	0.009	0.27	<0.1	0.02	3.4	<0.1	0.55	<1	<0.5
REP 27118	QC	0.4	7	0.39	0.019	10	5	1.77	27	<0.001	<20	0.43	0.008	0.26	<0.1	0.01	3.3	<0.1	0.55	<1	<0.5
27096	Drill Core	1.2	9	1.32	0.051	7	12	1.21	36	0.002	<20	1.49	0.004	0.36	<0.1	0.04	2.2	0.1	2.65	3	<0.5
REP 27096	QC	1.3	9	1.34	0.056	7	12	1.22	37	0.003	<20	1.54	0.004	0.37	<0.1	0.04	2.1	0.1	2.72	4	<0.5
27106	Rock Pulp	7.8	49	1.97	0.034	15	26	1.13	88	0.082	<20	1.65	0.109	0.35	1.9	0.99	3.2	1.2	4.79	7	13.2
REP 27106	QC																				
27107	Drill Core	0.8	12	0.13	0.048	16	12	0.74	56	0.002	<20	1.69	0.005	0.46	<0.1	0.06	2.1	0.2	1.43	4	<0.5
REP 27107	QC																				
27141	Drill Core	0.3	4	0.21	0.004	2	3	2.58	8	<0.001	<20	0.16	0.009	0.04	<0.1	0.17	1.2	<0.1	1.37	<1	1.2
REP 27141	QC	0.3	3	0.21	0.003	2	3	2.58	8	<0.001	<20	0.16	0.010	0.04	<0.1	0.15	1.2	<0.1	1.36	<1	1.6
27154	Rock Pulp	<0.1	23	0.82	0.044	6	16	0.52	64	0.089	<20	1.09	0.071	0.08	0.2	<0.01	2.8	<0.1	<0.05	4	<0.5
REP 27154	QC																				
27155	Drill Core	0.1	7	1.15	0.050	14	9	0.95	50	0.002	<20	1.22	0.004	0.39	<0.1	0.04	1.8	0.1	0.51	3	<0.5
REP 27155	QC																				
Core Reject Duplicates																					
27116	Drill Core	0.8	11	0.10	0.037	16	12	0.73	36	0.002	<20	1.70	0.007	0.36	<0.1	0.02	1.5	0.1	0.53	4	<0.5
DUP 27116	QC	0.8	10	0.09	0.035	16	12	0.71	35	0.002	<20	1.62	0.006	0.34	<0.1	0.01	1.5	0.1	0.50	4	<0.5
27138	Drill Core	0.5	3	0.39	0.002	1	1	3.99	11	<0.001	<20	0.07	0.016	0.03	<0.1	0.04	3.5	<0.1	0.95	<1	<0.5
DUP 27138	QC	0.5	4	0.39	0.002	1	1	4.00	11	<0.001	<20	0.07	0.016	0.03	<0.1	0.04	3.6	<0.1	0.88	<1	<0.5
Reference Materials																					
STD BVGE001	Standard	28.0	78	1.39	0.080	29	185	1.35	364	0.244	<20	2.43	0.211	0.93	3.5	0.10	6.6	0.7	0.70	8	4.8
STD CDN-ME-14	Standard																				
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				



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Project: None Given  
Report Date: July 30, 2019

Page: 1 of 3

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
Pulp Duplicates		
27086	Drill Core	<0.2
REP 27086	QC	
27118	Drill Core	<0.2
REP 27118	QC	<0.2
27096	Drill Core	0.2
REP 27096	QC	0.3
27106	Rock Pulp	0.9
REP 27106	QC	
27107	Drill Core	<0.2
REP 27107	QC	
27141	Drill Core	<0.2
REP 27141	QC	<0.2
27154	Rock Pulp	<0.2
REP 27154	QC	
27155	Drill Core	<0.2
REP 27155	QC	
Core Reject Duplicates		
27116	Drill Core	<0.2
DUP 27116	QC	<0.2
27138	Drill Core	<0.2
DUP 27138	QC	<0.2
Reference Materials		
STD BVGE001	Standard	1.0
STD CDN-ME-14	Standard	
STD CDN-ME-14	Standard	
STD CDN-ME-9	Standard	
STD CDN-ME-14	Standard	
STD CDN-ME-9	Standard	



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Page: 2 of 3

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
		kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
STD DS11	Standard																				
STD DS11	Standard																				
STD DS11	Standard																				
STD DS11	Standard																				
STD OREAS131B	Standard			<0.001	0.023	1.88	3.15	35	0.003	0.002	0.19	5.92	<0.02	<0.01	0.009	<0.01	<0.01	5.73	0.06	0.002	3.25
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OXC145	Standard		210																		
STD OXC145	Standard		216																		
STD OXC145	Standard		210																		
STD OXH139	Standard		1251																		
STD OXH139	Standard		1294																		
STD OXH139	Standard		1305																		
STD BVGEO01 Expected																					
STD OXC145 Expected			212																		
STD OXH139 Expected			1312																		
STD OREAS131B Expected				0.0003	0.0216	1.86	3.14	33.3	0.0025	0.00181	0.1771	5.705	0.0072	0.0026	0.0089	0.005		5.37	0.0536	0.0027	3.128
STD CDN-ME-14 Expected					1.221	0.495	3.17	43.5	0.002	0.0172	0.0883	18.04	0.0088		0.0088		0.0094	0.747	0.0147	0.0014	1.28
STD CDN-ME-9 Expected					0.654		0.012		0.93	0.0169	0.121	13.84		0.03				4.21	0.06	0.0284	4.05
STD DS11 Expected																					
STD OREAS262 Expected																					
BLK	Blank																				
BLK	Blank		4																		
BLK	Blank																				
BLK	Blank																				
BLK	Blank		4																		
BLK	Blank		5																		



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Report Date: July 30, 2019

Page: 2 of 3

Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1
STD DS11	Standard						14.3	152.9	144.0	362	1.7	80.3	13.4	988	3.11	42.3	98.3	7.7	66	2.3	7.9
STD DS11	Standard						13.5	145.1	136.3	331	1.6	75.7	12.8	1000	2.97	42.5	60.0	7.7	69	2.4	7.5
STD DS11	Standard						16.2	161.0	142.9	366	1.8	84.6	14.3	1069	3.22	46.0	52.1	8.5	67	2.3	7.4
STD DS11	Standard						14.8	150.7	134.5	342	1.6	79.8	13.2	1027	3.01	41.6	68.4	7.3	66	2.2	7.3
STD OREAS131B	Standard	4.83	0.15	3.63	<0.01	5.14															
STD OREAS262	Standard						0.7	120.0	57.4	144	0.5	64.4	26.9	539	3.26	35.3	61.9	9.5	35	0.6	3.2
STD OREAS262	Standard						0.7	122.9	59.1	157	0.5	64.2	28.5	559	3.39	38.5	71.9	10.0	38	0.7	3.1
STD OREAS262	Standard						0.7	121.6	53.3	150	0.4	63.4	26.4	514	3.18	35.5	65.8	9.4	33	0.6	3.4
STD OREAS262	Standard						0.6	121.7	56.9	155	0.5	66.0	26.8	549	3.38	35.6	71.2	9.2	35	0.5	4.0
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD BVGE001 Expected							10.8	4415	187	1741	2.53	163	25	733	3.7	121	219	14.4	55	6.5	2.2
STD OXC145 Expected																					
STD OXH139 Expected																					
STD OREAS131B Expected		4.57	0.139	3.34		5.01															
STD CDN-ME-14 Expected		4.47	0.53	1.7		16.14															
STD CDN-ME-9 Expected		6.74	1.86	0.616		2.58															
STD DS11 Expected							13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2
STD OREAS262 Expected							0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank																				
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	3	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank																				
BLK	Blank																				





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Report Date: July 30, 2019

Page: 2 of 3

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm
		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5
STD DS11	Standard	12.5	49	1.03	0.067	18	58	0.82	420	0.092	<20	1.15	0.073	0.39	3.1	0.25	3.1	5.1	0.28	5	2.2
STD DS11	Standard	11.3	45	1.02	0.070	18	57	0.81	423	0.094	<20	1.17	0.071	0.39	2.6	0.23	3.1	4.8	0.26	5	2.1
STD DS11	Standard	10.8	49	1.10	0.074	19	61	0.88	439	0.097	<20	1.24	0.076	0.41	2.5	0.28	3.4	4.8	0.28	5	2.5
STD DS11	Standard	11.1	48	1.05	0.070	18	57	0.84	409	0.088	<20	1.19	0.072	0.39	2.7	0.27	3.0	4.8	0.27	5	1.6
STD OREAS131B	Standard																				
STD OREAS262	Standard	1.0	21	2.94	0.038	16	41	1.17	257	0.003	<20	1.26	0.071	0.30	0.1	0.16	3.1	0.4	0.26	4	<0.5
STD OREAS262	Standard	1.1	23	3.25	0.040	19	45	1.23	269	0.004	<20	1.43	0.071	0.35	0.1	0.15	3.3	0.5	0.26	4	<0.5
STD OREAS262	Standard	0.8	19	3.03	0.039	17	41	1.13	237	0.004	<20	1.18	0.065	0.29	0.1	0.16	3.2	0.4	0.24	4	<0.5
STD OREAS262	Standard	1.0	21	2.98	0.041	17	43	1.18	253	0.003	<20	1.29	0.068	0.31	0.1	0.17	2.9	0.5	0.26	4	<0.5
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXC145	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD BVGEO01 Expected		25.6	73	1.3219	0.0727	25.9	171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	0.1	5.97	0.62	0.6655	7.37	4.84
STD OXC145 Expected																					
STD OXH139 Expected																					
STD OREAS131B Expected																					
STD CDN-ME-14 Expected																					
STD CDN-ME-9 Expected																					
STD DS11 Expected		12.2	50	1.063	0.0701	18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2
STD OREAS262 Expected		1.03	22.5	2.98	0.04	15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank																				
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank																				
BLK	Blank																				



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Page: 2 of 3

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		AQ200 Te ppm 0.2
STD DS11	Standard	4.7
STD DS11	Standard	4.5
STD DS11	Standard	4.5
STD DS11	Standard	4.1
STD OREAS131B	Standard	
STD OREAS262	Standard	0.2
STD OREAS262	Standard	0.2
STD OREAS262	Standard	0.2
STD OREAS262	Standard	<0.2
STD OXC145	Standard	
STD OXC145	Standard	
STD OXC145	Standard	
STD OXH139	Standard	
STD OXH139	Standard	
STD OXH139	Standard	
STD BVGEO01 Expected		1.02
STD OXC145 Expected		
STD OXH139 Expected		
STD OREAS131B Expected		
STD CDN-ME-14 Expected		
STD CDN-ME-9 Expected		
STD DS11 Expected		4.56
STD OREAS262 Expected		0.23
BLK	Blank	<0.2
BLK	Blank	
BLK	Blank	<0.2
BLK	Blank	<0.2
BLK	Blank	
BLK	Blank	



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**

Box 845

Cranbrook British Columbia V1C 4J6 Canada

Project: None Given

Report Date: July 30, 2019

Page: 3 of 3

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
		kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank																				
BLK	Blank																				
	Prep Wash																				
ROCK-VAN	Prep Blank		5	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.12	<0.02	0.02	<0.001	<0.01	<0.01	1.58	0.04	<0.001	0.50
ROCK-VAN	Prep Blank		3	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.16	<0.02	0.02	<0.001	<0.01	<0.01	1.62	0.04	<0.001	0.49



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Project: None Given

Report Date: July 30, 2019

Page: 3 of 3

Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank	0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
Prep Wash																					
ROCK-VAN	Prep Blank	7.43	3.55	1.52	<0.01	0.08	1.0	1.8	1.1	33	<0.1	0.3	3.6	500	1.82	0.9	0.5	2.6	23	<0.1	<0.1
ROCK-VAN	Prep Blank	7.37	3.40	1.76	<0.01	0.07	1.0	1.6	1.1	30	<0.1	0.8	3.5	464	1.84	1.0	<0.5	2.4	23	<0.1	<0.1



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Project: None Given

Report Date: July 30, 2019

Page: 3 of 3

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	
Prep Wash																						
ROCK-VAN	Prep Blank	<0.1	23	0.60	0.043	6	3	0.44	54	0.081	<20	0.93	0.118	0.10	<0.1	<0.01	2.6	<0.1	<0.05	4	<0.5	
ROCK-VAN	Prep Blank	<0.1	24	0.62	0.039	6	4	0.43	60	0.084	<20	0.97	0.134	0.12	<0.1	<0.01	2.7	<0.1	0.06	4	<0.5	



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Project: None Given

Report Date: July 30, 2019

Page: 3 of 3

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19001812.1

		AQ200 Te ppm 0.2
BLK	Blank	
BLK	Blank	
BLK	Blank	
BLK	Blank	<0.2
BLK	Blank	<0.2
Prep Wash		
ROCK-VAN	Prep Blank	<0.2
ROCK-VAN	Prep Blank	<0.2



Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Submitted By: Jill Christmann  
Receiving Lab: Canada-Vancouver  
Received: August 22, 2019  
Report Date: September 12, 2019  
Page: 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19002348.1

## CLIENT JOB INFORMATION

Project: Bul River  
Shipment ID: BR-EXP\_2019\_03  
P.O. Number  
Number of Samples: 73

## SAMPLE DISPOSAL

IMM-PLP Return immediately after analysis  
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	66	Crush, split and pulverize 250 g rock to 200 mesh			VAN
PULSW	66	Extra Wash with Silica between each sample			VAN
SLBHP	7	Sort, label and box pulps			VAN
FA330-Au	73	Fire assay fusion Au by ICP-ES	30	Completed	VAN
EN002	73	Environmental disposal charge-Fire assay lead waste			VAN
MA370	73	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN
EN001-MA	73	Environmental disposal fee - Multi-acid neutralization			VAN
AQ200	73	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

## ADDITIONAL COMMENTS

Invoice To: Bul River Mineral Corporation  
Box 845  
Cranbrook British Columbia V1C 4J6  
Canada

CC: Tim Hewison

  
LILYBETH DE VERA-BOY  
Fire Assay Spectroscopy Manager





Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

# CERTIFICATE OF ANALYSIS

VAN19002348.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
0027161	Drill Core	3.10	7	<0.001	0.004	<0.02	0.01	<2	0.002	<0.001	0.01	2.91	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.003	0.32
0027162	Drill Core	1.43	12	<0.001	0.008	<0.02	0.02	<2	0.002	<0.001	<0.01	2.91	<0.02	<0.01	<0.001	<0.01	<0.01	0.07	0.05	0.004	0.29
0027163	Drill Core	2.16	7	<0.001	0.007	<0.02	0.01	<2	0.002	0.001	0.01	2.63	<0.02	<0.01	<0.001	<0.01	<0.01	0.07	0.04	0.003	0.31
0027164	Drill Core	2.10	11	<0.001	0.005	<0.02	0.01	<2	0.002	<0.001	<0.01	4.21	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.05	0.003	0.28
0027165	Drill Core	2.24	6	<0.001	0.006	0.03	0.01	<2	0.002	<0.001	<0.01	3.27	<0.02	<0.01	<0.001	<0.01	<0.01	0.04	0.03	0.004	0.33
0027166	Drill Core	1.23	20	<0.001	0.019	0.04	0.04	<2	0.004	0.002	0.01	5.89	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.05	0.004	0.35
0027167	Drill Core	1.40	19	<0.001	0.025	0.04	0.04	<2	0.004	0.001	<0.01	8.13	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.09	0.004	0.30
0027168	Drill Core	1.63	9	<0.001	0.014	0.04	0.02	<2	0.003	<0.001	<0.01	4.14	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.05	0.003	0.29
0027169	Drill Core	1.51	8	<0.001	0.007	0.04	0.03	<2	0.003	<0.001	<0.01	4.31	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.04	0.002	0.27
0027170	Rock Pulp	0.11	188	<0.001	0.141	0.05	0.19	11	0.002	0.002	0.07	7.88	0.03	<0.01	<0.001	<0.01	<0.01	1.27	0.03	0.006	1.91
0027171	Drill Core	1.27	11	<0.001	0.005	0.04	0.02	<2	0.003	<0.001	0.02	4.88	<0.02	<0.01	<0.001	<0.01	<0.01	0.04	0.04	0.003	0.27
0027172	Drill Core	1.33	13	<0.001	0.010	0.05	0.02	<2	0.003	<0.001	<0.01	4.20	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.004	0.32
0027173	Drill Core	1.99	14	<0.001	0.006	0.07	0.02	<2	0.002	<0.001	<0.01	5.09	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.07	0.004	0.28
0027174	Drill Core	2.11	9	<0.001	0.003	0.03	0.01	<2	0.001	<0.001	<0.01	3.63	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.003	0.32
0027175	Drill Core	2.22	8	<0.001	0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	2.35	<0.02	<0.01	<0.001	<0.01	<0.01	0.02	0.02	0.003	0.35
0027176	Drill Core	2.36	6	<0.001	0.003	<0.02	0.01	<2	0.001	<0.001	<0.01	3.14	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.003	0.31
0027177	Drill Core	3.43	6	<0.001	0.002	<0.02	0.01	<2	0.001	<0.001	<0.01	3.06	<0.02	<0.01	<0.001	<0.01	<0.01	0.01	0.05	0.003	0.34
0027178	Drill Core	2.74	10	<0.001	0.006	<0.02	0.02	<2	0.002	<0.001	<0.01	4.73	<0.02	<0.01	<0.001	<0.01	<0.01	0.01	0.07	0.004	0.34
0027179	Drill Core	1.61	13	<0.001	0.023	0.04	0.08	<2	0.004	0.003	0.10	9.34	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	0.05	0.004	0.29
0027180	Rock Pulp	0.11	8	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.80	<0.02	0.02	<0.001	<0.01	<0.01	1.66	0.04	<0.001	0.55
0027181	Drill Core	3.53	5	<0.001	0.005	<0.02	0.04	<2	0.002	<0.001	<0.01	3.56	<0.02	<0.01	<0.001	<0.01	<0.01	0.02	0.04	0.003	0.31
0027182	Drill Core	4.38	8	<0.001	0.003	<0.02	0.03	<2	0.001	<0.001	<0.01	3.42	<0.02	<0.01	<0.001	<0.01	<0.01	0.02	0.04	0.004	0.32
0027183	Drill Core	3.43	5	<0.001	0.002	<0.02	0.02	<2	0.001	<0.001	0.01	3.85	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	0.05	0.003	0.32
0027184	Drill Core	3.34	6	<0.001	0.003	<0.02	0.02	<2	0.002	<0.001	<0.01	3.10	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.003	0.34
0027185	Drill Core	3.74	6	<0.001	0.005	<0.02	0.03	<2	0.002	<0.001	<0.01	2.84	<0.02	<0.01	<0.001	<0.01	<0.01	0.07	0.04	0.004	0.38
0027186	Drill Core	3.41	7	<0.001	0.003	<0.02	0.02	<2	0.001	<0.001	<0.01	3.46	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.04	0.003	0.35
0027187	Drill Core	3.33	11	<0.001	0.016	0.04	0.07	<2	0.003	0.001	<0.01	7.23	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.06	0.003	0.33
0027188	Drill Core	2.40	10	<0.001	0.008	<0.02	0.03	<2	0.003	0.001	<0.01	4.21	<0.02	<0.01	<0.001	<0.01	<0.01	0.04	0.03	0.004	0.41
0027189	Drill Core	3.36	7	<0.001	0.006	0.03	0.03	<2	0.002	<0.001	<0.01	3.58	<0.02	<0.01	<0.001	<0.01	<0.01	0.07	0.04	0.003	0.39
0027190	Rock Pulp	0.11	188	<0.001	0.139	0.05	0.19	13	0.002	0.002	0.07	8.24	0.03	<0.01	<0.001	<0.01	<0.01	1.26	0.03	0.006	1.90



Bureau Veritas Commodities Canada Ltd.

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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

**Project:** Bul River  
**Report Date:** September 12, 2019

Page: 2 of 4

Part: 2 of 4

# CERTIFICATE OF ANALYSIS

## VAN19002348.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.1	1	0.1	0.1
0027161	Drill Core	8.62	0.67	3.73	<0.01	<0.05	1.6	43.8	149.4	99	0.3	14.5	4.9	116	2.34	1.8	2.4	10.3	4	0.3	1.7
0027162	Drill Core	8.45	0.67	3.26	<0.01	<0.05	1.7	88.9	132.0	207	0.1	14.5	9.0	94	2.39	2.2	4.2	8.2	7	0.5	7.3
0027163	Drill Core	8.71	0.45	3.18	<0.01	<0.05	2.7	73.8	119.6	99	0.2	11.5	12.3	115	2.16	2.3	3.1	7.1	10	0.2	3.8
0027164	Drill Core	7.62	0.38	3.02	<0.01	<0.05	2.0	46.7	159.0	114	0.3	12.0	2.8	43	3.65	2.4	3.2	6.9	9	<0.1	4.7
0027165	Drill Core	8.83	0.34	3.68	<0.01	<0.05	2.1	68.9	262.5	114	0.2	12.2	3.1	31	2.79	1.8	2.5	8.8	7	<0.1	2.5
0027166	Drill Core	10.19	0.35	4.18	<0.01	0.11	4.0	190.3	382.0	342	0.4	36.8	16.5	121	4.97	5.7	5.6	10.6	6	0.4	13.3
0027167	Drill Core	8.54	0.30	3.47	<0.01	<0.05	5.2	264.3	402.4	365	0.3	41.7	11.3	73	7.27	5.0	7.3	10.4	10	0.6	7.8
0027168	Drill Core	9.04	0.24	3.49	<0.01	<0.05	2.1	137.2	337.2	188	0.2	25.6	5.6	52	3.58	1.3	1.8	9.0	7	0.7	2.3
0027169	Drill Core	6.68	0.18	2.58	<0.01	<0.05	1.8	68.7	386.4	262	0.3	23.7	6.9	87	3.81	1.4	1.5	5.8	5	0.9	2.0
0027170	Rock Pulp	5.81	0.14	1.26	<0.01	3.99	3.2	1318.6	516.7	1821	11.8	20.4	22.9	657	7.49	290.7	144.8	0.3	28	12.9	22.7
0027171	Drill Core	7.27	0.14	2.87	<0.01	<0.05	2.2	59.2	370.0	236	0.2	27.1	10.6	183	4.29	2.0	2.0	6.2	5	1.0	2.2
0027172	Drill Core	8.89	0.19	3.64	<0.01	<0.05	2.7	112.7	482.1	232	0.3	20.0	6.6	38	3.61	1.8	3.6	8.3	5	0.7	3.2
0027173	Drill Core	7.73	0.11	3.23	<0.01	<0.05	2.3	63.2	674.7	202	0.2	21.4	4.9	28	4.53	1.7	5.9	6.7	5	0.3	4.4
0027174	Drill Core	8.12	0.22	3.55	<0.01	<0.05	2.5	35.0	289.4	150	0.2	11.0	2.6	34	3.13	2.9	3.3	7.3	6	0.2	1.7
0027175	Drill Core	9.00	0.23	4.09	<0.01	<0.05	2.1	15.1	79.1	63	0.1	4.8	1.4	24	1.81	1.6	1.8	7.9	5	<0.1	0.7
0027176	Drill Core	7.98	0.27	3.39	<0.01	0.05	2.0	26.5	170.7	143	0.2	8.9	2.6	36	2.53	1.2	<0.5	8.0	10	<0.1	0.6
0027177	Drill Core	8.48	0.35	3.55	<0.01	0.09	2.1	24.7	148.3	130	0.2	11.7	2.1	25	2.52	2.0	0.5	7.7	11	<0.1	0.6
0027178	Drill Core	8.58	0.40	3.54	<0.01	0.08	2.4	67.3	200.9	250	0.3	14.7	5.3	98	4.05	3.2	1.0	8.7	7	0.3	1.1
0027179	Drill Core	7.94	0.53	3.10	<0.01	0.31	3.7	236.1	355.3	748	0.6	39.3	31.1	970	8.34	5.1	5.9	7.7	9	0.7	2.7
0027180	Rock Pulp	7.71	3.51	1.59	<0.01	<0.05	4.4	23.1	1.1	32	<0.1	7.4	4.5	578	2.36	2.2	0.5	1.1	30	<0.1	0.2
0027181	Drill Core	8.55	0.78	3.63	<0.01	<0.05	2.5	50.8	90.1	433	0.1	11.0	3.9	97	3.01	2.2	<0.5	10.4	4	0.3	1.0
0027182	Drill Core	8.64	0.64	3.78	<0.01	<0.05	2.5	27.2	77.1	303	0.1	8.2	3.8	65	2.79	7.1	1.3	9.8	4	0.1	2.0
0027183	Drill Core	8.17	0.39	3.43	<0.01	0.10	2.3	25.9	141.5	213	0.2	9.2	4.1	142	3.24	2.1	<0.5	9.3	13	<0.1	1.2
0027184	Drill Core	8.47	0.42	3.69	<0.01	<0.05	1.9	34.5	176.0	239	0.2	11.5	4.5	60	2.56	2.4	0.6	9.0	7	0.2	1.0
0027185	Drill Core	8.56	0.45	3.80	<0.01	<0.05	1.4	52.7	169.6	257	0.2	20.4	6.7	52	2.32	2.9	<0.5	10.7	7	0.6	1.3
0027186	Drill Core	8.54	0.29	3.75	<0.01	<0.05	1.8	37.2	203.9	230	0.2	10.5	4.5	20	2.94	3.1	<0.5	8.4	6	0.3	1.5
0027187	Drill Core	8.42	0.36	3.44	<0.01	<0.05	2.0	174.5	447.9	661	0.3	30.2	9.8	68	6.69	5.0	1.7	8.3	8	0.4	1.8
0027188	Drill Core	10.24	0.42	4.42	<0.01	<0.05	2.1	83.6	189.8	334	0.3	24.6	12.0	82	3.54	19.9	1.7	10.1	5	1.7	1.8
0027189	Drill Core	8.51	0.32	3.55	<0.01	<0.05	1.7	63.0	321.9	292	0.3	19.7	6.3	31	3.09	3.5	<0.5	7.2	11	0.8	1.1
0027190	Rock Pulp	5.74	0.14	1.30	<0.01	4.11	3.1	1354.6	542.2	1863	11.9	19.4	23.8	650	7.63	298.8	150.5	0.3	27	13.3	22.1



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Project: Bul River

Report Date: September 12, 2019

Page: 2 of 4

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

## VAN19002348.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	1	0.5	
0027161	Drill Core	1.9	4	0.02	0.042	35	3	0.02	33	<0.001	<20	0.45	0.013	0.28	<0.1	0.02	1.9	<0.1	<0.05	<1	<0.5
0027162	Drill Core	1.5	3	0.07	0.051	22	3	0.02	32	<0.001	<20	0.50	0.008	0.17	<0.1	0.05	1.8	<0.1	<0.05	<1	<0.5
0027163	Drill Core	1.2	3	0.07	0.039	19	4	0.03	35	<0.001	<20	0.78	0.012	0.23	<0.1	0.05	1.6	<0.1	<0.05	<1	<0.5
0027164	Drill Core	1.3	3	0.05	0.046	19	3	0.02	26	<0.001	<20	0.29	0.013	0.18	<0.1	0.06	1.2	<0.1	0.05	<1	<0.5
0027165	Drill Core	1.4	3	0.05	0.034	29	3	0.03	31	<0.001	<20	0.41	0.010	0.24	<0.1	0.07	1.6	<0.1	<0.05	<1	<0.5
0027166	Drill Core	3.5	4	0.03	0.050	39	3	0.02	21	<0.001	<20	0.52	0.006	0.19	<0.1	0.09	2.2	<0.1	0.11	<1	<0.5
0027167	Drill Core	3.4	4	0.05	0.085	35	3	0.03	24	<0.001	<20	0.57	0.009	0.23	<0.1	0.10	3.1	<0.1	<0.05	<1	<0.5
0027168	Drill Core	1.1	4	0.04	0.045	34	3	0.02	20	<0.001	<20	0.70	0.007	0.19	<0.1	0.05	3.2	<0.1	<0.05	<1	<0.5
0027169	Drill Core	1.1	8	0.05	0.041	23	5	0.08	22	<0.001	<20	0.65	0.009	0.19	<0.1	0.08	2.3	<0.1	<0.05	2	<0.5
0027170	Rock Pulp	7.8	26	1.19	0.026	4	40	1.62	108	0.003	<20	1.73	0.010	0.16	1.9	1.85	4.4	2.2	3.86	5	23.9
0027171	Drill Core	1.3	8	0.04	0.040	22	5	0.06	24	<0.001	<20	0.52	0.007	0.17	0.1	0.09	2.6	0.1	<0.05	2	<0.5
0027172	Drill Core	2.0	6	0.04	0.036	37	4	0.04	29	<0.001	<20	0.59	0.009	0.27	<0.1	0.07	2.4	0.1	<0.05	1	<0.5
0027173	Drill Core	1.8	8	0.03	0.068	17	4	0.04	29	<0.001	<20	0.45	0.006	0.20	<0.1	0.12	2.2	<0.1	<0.05	2	<0.5
0027174	Drill Core	1.5	6	0.03	0.041	23	5	0.04	29	<0.001	<20	0.47	0.011	0.26	<0.1	0.06	1.7	<0.1	<0.05	1	<0.5
0027175	Drill Core	0.9	3	0.02	0.019	24	3	0.02	25	<0.001	<20	0.31	0.012	0.23	<0.1	0.05	1.1	<0.1	<0.05	<1	<0.5
0027176	Drill Core	0.9	6	0.03	0.037	28	5	0.03	30	<0.001	<20	0.52	0.018	0.26	<0.1	0.04	1.8	<0.1	0.06	2	<0.5
0027177	Drill Core	1.1	5	0.01	0.061	27	5	0.05	28	<0.001	<20	0.52	0.013	0.23	<0.1	0.05	2.1	<0.1	0.09	1	<0.5
0027178	Drill Core	1.7	6	0.01	0.074	27	6	0.06	35	<0.001	<20	0.69	0.012	0.28	<0.1	0.12	2.3	<0.1	0.08	2	0.5
0027179	Drill Core	3.0	5	<0.01	0.051	29	4	0.03	38	<0.001	<20	0.64	0.007	0.18	<0.1	0.34	2.7	0.1	0.30	1	0.8
0027180	Rock Pulp	<0.1	21	0.74	0.042	6	16	0.48	58	0.077	<20	1.00	0.063	0.07	0.2	<0.01	2.6	<0.1	<0.05	4	<0.5
0027181	Drill Core	1.0	4	0.02	0.046	40	4	0.03	33	<0.001	<20	0.47	0.016	0.28	<0.1	0.07	2.4	<0.1	<0.05	<1	<0.5
0027182	Drill Core	1.3	3	0.01	0.042	35	3	0.02	27	<0.001	<20	0.31	0.012	0.21	<0.1	0.06	1.9	<0.1	<0.05	<1	<0.5
0027183	Drill Core	1.1	6	<0.01	0.054	38	5	0.04	37	<0.001	<20	0.48	0.014	0.25	<0.1	0.09	2.1	<0.1	0.10	1	<0.5
0027184	Drill Core	1.2	4	0.03	0.051	33	4	0.05	29	<0.001	<20	0.46	0.009	0.22	<0.1	0.10	2.1	<0.1	<0.05	1	<0.5
0027185	Drill Core	1.5	5	0.07	0.046	61	5	0.09	30	<0.001	<20	0.63	0.011	0.27	<0.1	0.08	1.9	<0.1	<0.05	1	<0.5
0027186	Drill Core	1.4	5	0.06	0.042	32	4	0.04	27	<0.001	<20	0.42	0.010	0.22	<0.1	0.10	1.6	<0.1	<0.05	1	<0.5
0027187	Drill Core	2.6	6	0.06	0.058	28	5	0.05	35	<0.001	<20	0.64	0.009	0.24	<0.1	0.20	2.6	<0.1	<0.05	2	<0.5
0027188	Drill Core	1.6	3	0.04	0.027	45	3	0.06	23	<0.001	<20	0.52	0.006	0.22	<0.1	0.08	1.1	<0.1	<0.05	<1	<0.5
0027189	Drill Core	1.2	6	0.07	0.045	23	6	0.12	30	<0.001	<20	0.76	0.013	0.27	<0.1	0.07	2.3	0.2	<0.05	2	<0.5
0027190	Rock Pulp	7.7	27	1.19	0.025	5	41	1.63	112	0.004	<20	1.79	0.011	0.17	0.4	1.87	4.5	2.3	3.94	6	23.9



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Report Date: September 12, 2019

Page: 2 of 4

Part: 4 of 4

# CERTIFICATE OF ANALYSIS

**VAN19002348.1**

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
0027161	Drill Core	<0.2
0027162	Drill Core	<0.2
0027163	Drill Core	<0.2
0027164	Drill Core	<0.2
0027165	Drill Core	<0.2
0027166	Drill Core	0.4
0027167	Drill Core	0.3
0027168	Drill Core	<0.2
0027169	Drill Core	<0.2
0027170	Rock Pulp	0.2
0027171	Drill Core	<0.2
0027172	Drill Core	0.2
0027173	Drill Core	<0.2
0027174	Drill Core	<0.2
0027175	Drill Core	<0.2
0027176	Drill Core	<0.2
0027177	Drill Core	<0.2
0027178	Drill Core	<0.2
0027179	Drill Core	0.3
0027180	Rock Pulp	<0.2
0027181	Drill Core	<0.2
0027182	Drill Core	<0.2
0027183	Drill Core	<0.2
0027184	Drill Core	<0.2
0027185	Drill Core	<0.2
0027186	Drill Core	<0.2
0027187	Drill Core	0.3
0027188	Drill Core	0.3
0027189	Drill Core	<0.2
0027190	Rock Pulp	0.2



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# CERTIFICATE OF ANALYSIS

VAN19002348.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
0027191	Drill Core	3.91	6	<0.001	0.004	0.03	0.04	<2	0.003	<0.001	<0.01	3.59	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.05	0.004	0.42
0027192	Drill Core	2.95	5	<0.001	0.001	<0.02	0.04	<2	0.002	<0.001	<0.01	2.67	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.05	0.004	0.44
0027193	Drill Core	2.83	7	<0.001	0.004	<0.02	0.03	<2	0.002	<0.001	<0.01	2.33	<0.02	<0.01	<0.001	<0.01	<0.01	0.08	0.05	0.003	0.36
0027194	Drill Core	2.55	9	<0.001	0.007	<0.02	0.05	<2	0.003	0.003	0.04	4.58	<0.02	<0.01	<0.001	<0.01	<0.01	0.32	0.04	0.004	0.41
0027195	Drill Core	4.21	8	<0.001	0.004	<0.02	0.02	<2	0.002	<0.001	<0.01	3.45	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.005	0.32
0027196	Drill Core	2.85	7	<0.001	0.005	<0.02	0.02	<2	0.002	<0.001	0.02	3.21	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.005	0.34
0027197	Drill Core	2.45	9	<0.001	0.006	<0.02	0.01	<2	0.001	<0.001	<0.01	4.29	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.005	0.40
0027198	Drill Core	2.35	9	<0.001	0.014	<0.02	0.03	<2	0.006	0.004	0.03	4.36	<0.02	<0.01	<0.001	<0.01	<0.01	0.12	0.04	0.004	0.47
0027199	Drill Core	2.61	7	<0.001	0.004	<0.02	0.01	<2	0.002	0.002	0.03	2.51	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.03	0.005	0.51
0027200	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.61	<0.02	0.02	<0.001	<0.01	<0.01	1.56	0.04	0.002	0.53
0027201	Drill Core	1.99	4	<0.001	<0.001	<0.02	<0.01	<2	0.001	<0.001	0.07	3.01	<0.02	<0.01	<0.001	<0.01	<0.01	2.39	0.02	0.002	1.08
0027202	Drill Core	0.80	8	<0.001	0.009	<0.02	0.02	<2	0.005	0.003	0.03	3.72	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.03	0.005	0.46
0027203	Drill Core	2.74	3	<0.001	0.002	0.03	0.07	<2	0.002	<0.001	0.06	2.63	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.02	0.003	0.32
0027204	Drill Core	0.29	46	<0.001	0.009	>10	1.74	669	<0.001	0.001	0.03	1.93	<0.02	<0.01	0.014	0.07	0.02	<0.01	<0.01	<0.001	<0.01
0027205	Drill Core	0.42	10	<0.001	0.004	3.47	0.33	35	0.002	0.001	0.10	4.77	<0.02	<0.01	0.001	<0.01	<0.01	0.03	0.03	0.001	0.29
0027206	Drill Core	2.77	8	<0.001	0.007	0.08	0.08	<2	0.003	0.002	0.05	3.82	<0.02	<0.01	<0.001	<0.01	<0.01	0.02	0.03	0.004	0.31
0027207	Drill Core	3.49	4	<0.001	0.003	<0.02	0.01	<2	0.002	0.001	0.05	3.39	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.03	0.004	0.42
0027208	Drill Core	2.68	3	<0.001	0.002	<0.02	0.02	<2	0.002	<0.001	0.07	3.42	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.03	0.004	0.44
0027209	Drill Core	4.08	5	<0.001	0.001	<0.02	0.02	<2	0.002	<0.001	0.07	3.90	<0.02	<0.01	<0.001	<0.01	<0.01	0.48	0.03	0.004	0.50
0027210	Rock Pulp	0.11	497	0.001	3.867	0.24	3.70	77	0.006	0.032	0.08	28.60	<0.02	<0.01	0.011	<0.01	0.01	0.91	0.01	0.003	2.13
0027211	Drill Core	3.85	6	<0.001	0.001	0.02	0.02	<2	0.001	<0.001	0.02	3.26	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.004	0.35
0027212	Drill Core	3.38	7	<0.001	0.003	0.03	0.03	<2	0.002	<0.001	0.02	3.41	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	0.03	0.003	0.31
0027213	Drill Core	1.31	11	<0.001	0.013	0.05	0.06	<2	0.004	0.002	0.08	4.51	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.05	0.004	0.33
0027214	Drill Core	2.21	7	<0.001	0.005	0.02	0.05	<2	0.002	0.001	0.04	3.40	<0.02	<0.01	<0.001	<0.01	<0.01	0.02	0.04	0.004	0.34
0027215	Drill Core	3.23	4	<0.001	0.001	<0.02	0.06	<2	0.002	<0.001	0.07	1.73	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.02	0.002	0.33
0027216	Drill Core	1.60	4	<0.001	0.002	<0.02	0.06	<2	0.002	0.001	0.10	3.37	<0.02	<0.01	<0.001	<0.01	<0.01	0.04	0.03	0.003	0.37
0027217	Drill Core	1.24	5	<0.001	0.001	<0.02	0.03	<2	0.002	<0.001	0.05	3.10	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.02	0.003	0.25
0027218	Drill Core	2.18	3	<0.001	0.002	<0.02	0.01	<2	0.002	<0.001	0.02	2.19	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.02	0.002	0.27
0027219	Drill Core	0.78	5	<0.001	<0.001	<0.02	<0.01	<2	0.001	<0.001	0.11	3.54	<0.02	<0.01	<0.001	<0.01	<0.01	2.60	0.02	<0.001	1.13
0027220	Drill Core	3.33	13	0.002	0.007	0.03	0.03	<2	0.003	0.002	0.05	4.08	<0.02	<0.01	<0.001	<0.01	<0.01	1.28	0.04	0.003	0.85



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Project: Bul River

Report Date: September 12, 2019

Page: 3 of 4

Part: 2 of 4

# CERTIFICATE OF ANALYSIS

# VAN19002348.1

Method	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	
Unit	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	
0027191	Drill Core	8.82	0.33	3.69	<0.01	0.20	1.7	39.3	283.0	397	0.3	20.7	8.5	47	3.10	2.0	<0.5	8.4	7	2.8	0.6
0027192	Drill Core	9.00	0.40	3.82	<0.01	0.07	1.8	10.2	175.7	394	0.3	11.7	4.8	48	2.33	1.6	<0.5	9.2	10	4.7	0.5
0027193	Drill Core	8.78	0.52	3.72	<0.01	0.59	1.9	52.5	145.4	263	0.3	16.8	8.5	23	1.90	3.5	0.6	8.7	7	1.4	1.7
0027194	Drill Core	8.22	0.72	3.58	<0.01	1.85	4.2	78.2	173.1	506	0.4	31.3	29.9	405	4.01	10.8	1.2	6.2	13	3.1	3.0
0027195	Drill Core	7.76	0.40	3.52	<0.01	<0.05	2.7	42.4	144.1	186	0.2	13.8	5.6	83	2.99	2.0	2.2	10.3	8	0.3	1.4
0027196	Drill Core	8.25	0.59	3.74	<0.01	<0.05	3.8	52.6	110.5	201	0.2	19.5	7.3	152	2.69	2.3	3.2	10.4	3	0.7	0.8
0027197	Drill Core	9.94	0.35	4.79	<0.01	<0.05	7.4	58.2	159.8	134	0.2	10.7	6.0	92	3.58	31.2	2.5	13.9	7	<0.1	1.4
0027198	Drill Core	10.05	0.27	4.49	<0.01	0.74	9.7	142.5	142.1	257	0.3	54.8	36.8	296	3.85	16.5	3.3	10.7	9	0.6	2.2
0027199	Drill Core	10.54	0.38	5.01	<0.01	0.16	6.7	39.0	36.8	139	<0.1	17.4	14.5	329	1.92	25.3	2.0	15.2	7	1.3	0.8
0027200	Rock Pulp	6.84	3.12	1.48	<0.01	0.05	3.8	21.2	0.9	32	<0.1	6.6	4.2	596	2.47	1.2	1.1	2.3	32	<0.1	0.1
0027201	Drill Core	5.11	0.80	2.10	<0.01	<0.05	2.0	2.8	9.7	54	<0.1	8.7	3.4	698	2.89	2.1	<0.5	7.4	61	0.3	3.9
0027202	Drill Core	9.63	0.36	4.46	<0.01	1.05	5.0	101.4	64.3	182	0.8	46.3	32.4	370	3.33	29.3	<0.5	12.3	9	0.8	1.6
0027203	Drill Core	6.78	0.07	3.46	<0.01	<0.05	0.7	23.0	313.9	714	0.2	14.0	7.5	667	2.31	4.3	<0.5	10.1	3	4.1	0.8
0027204	Drill Core	0.09	<0.01	<0.01	<0.01	10.54	0.2	88.5	>10000	>10000	>100	5.3	10.5	351	1.92	6.8	31.2	0.4	4	143.0	722.5
0027205	Drill Core	6.60	0.06	3.08	<0.01	0.48	3.2	44.7	>10000	3339	33.4	17.2	14.7	1068	4.46	7.8	1.4	7.0	4	10.0	9.2
0027206	Drill Core	7.28	0.07	3.61	<0.01	<0.05	7.4	74.4	797.6	834	0.7	26.0	15.0	552	3.40	3.5	5.0	9.7	3	4.0	1.6
0027207	Drill Core	9.13	0.08	4.51	<0.01	0.14	0.4	27.1	55.4	123	0.2	19.9	10.7	570	2.90	6.8	1.3	12.2	4	0.8	0.9
0027208	Drill Core	8.73	0.08	4.33	<0.01	<0.05	0.4	22.7	138.7	190	0.2	12.8	6.8	710	2.93	2.7	0.9	11.9	5	0.8	0.7
0027209	Drill Core	7.63	0.07	3.77	<0.01	0.56	0.3	12.5	52.0	158	<0.1	20.9	9.7	785	3.52	19.0	2.4	10.1	14	1.2	3.9
0027210	Rock Pulp	1.24	0.07	0.15	<0.01	22.06	8.6	>10000	2445.7	>10000	66.9	54.4	283.3	558	27.15	175.7	361.4	1.0	3	105.6	7.0
0027211	Drill Core	8.25	0.07	4.15	<0.01	<0.05	0.7	22.0	187.5	203	0.3	12.0	4.0	226	2.74	5.2	<0.5	10.2	5	0.2	0.9
0027212	Drill Core	7.00	0.07	3.69	<0.01	<0.05	8.3	33.3	253.3	302	0.3	18.5	5.1	173	3.02	4.8	1.3	9.3	3	0.2	0.9
0027213	Drill Core	7.55	0.08	3.47	<0.01	<0.05	2.4	130.5	357.7	614	0.3	34.9	19.0	821	4.09	3.5	2.3	10.4	9	2.7	1.5
0027214	Drill Core	7.78	0.15	3.80	<0.01	<0.05	8.1	49.2	177.0	426	0.3	20.8	10.9	368	2.87	3.1	2.6	11.2	3	1.2	1.1
0027215	Drill Core	7.88	0.07	3.92	<0.01	<0.05	0.9	10.1	47.1	549	0.1	14.9	6.3	700	1.22	2.9	0.7	14.3	3	4.0	2.0
0027216	Drill Core	8.28	0.08	4.06	<0.01	<0.05	0.9	19.9	76.5	564	<0.1	14.6	14.5	998	2.82	3.7	1.2	12.9	6	3.9	1.1
0027217	Drill Core	6.04	0.06	3.00	<0.01	<0.05	1.1	12.2	12.9	257	<0.1	17.6	2.9	527	2.73	2.8	1.2	9.5	3	1.5	1.4
0027218	Drill Core	7.12	0.07	3.60	<0.01	<0.05	0.8	7.5	13.4	127	<0.1	12.7	3.4	239	1.69	6.7	1.5	10.1	2	0.6	0.5
0027219	Drill Core	3.77	0.04	1.82	<0.01	0.08	0.3	3.4	82.4	17	0.1	9.1	3.6	1075	3.20	4.7	0.8	4.8	77	<0.1	1.6
0027220	Drill Core	7.04	0.07	3.47	<0.01	1.66	14.3	75.4	303.9	261	0.8	27.7	21.0	490	3.74	10.3	2.1	7.2	39	1.6	1.3



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Project: Bul River

Report Date: September 12, 2019

Page: 3 of 4

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

VAN19002348.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	1	0.5	
0027191	Drill Core	1.0	6	0.10	0.053	18	5	0.14	30	<0.001	<20	0.79	0.010	0.24	<0.1	0.08	2.2	0.1	0.21	2	<0.5
0027192	Drill Core	0.9	6	0.18	0.059	12	6	0.17	37	<0.001	<20	0.83	0.012	0.30	<0.1	0.06	2.0	<0.1	0.08	2	<0.5
0027193	Drill Core	1.2	4	0.08	0.058	30	4	0.06	33	<0.001	<20	0.49	0.011	0.24	<0.1	0.09	1.6	<0.1	0.62	1	<0.5
0027194	Drill Core	1.4	3	0.32	0.042	17	4	0.13	71	<0.001	<20	0.47	0.011	0.25	<0.1	0.05	2.3	<0.1	1.80	<1	<0.5
0027195	Drill Core	1.5	3	0.02	0.036	38	3	0.02	73	<0.001	<20	0.36	0.008	0.22	<0.1	0.05	1.6	<0.1	<0.05	1	<0.5
0027196	Drill Core	1.1	3	0.02	0.032	40	2	0.02	29	<0.001	<20	0.45	0.008	0.25	<0.1	0.04	2.1	<0.1	<0.05	1	<0.5
0027197	Drill Core	1.5	2	0.02	0.034	47	2	0.01	24	<0.001	<20	0.36	0.004	0.22	<0.1	0.04	1.7	<0.1	<0.05	<1	<0.5
0027198	Drill Core	1.2	4	0.13	0.035	21	3	0.09	31	<0.001	<20	0.51	0.007	0.25	<0.1	0.06	1.7	<0.1	0.72	1	<0.5
0027199	Drill Core	0.4	3	0.12	0.033	38	2	0.09	31	<0.001	<20	0.38	0.005	0.23	<0.1	0.03	1.7	<0.1	0.17	1	<0.5
0027200	Rock Pulp	<0.1	23	0.79	0.037	5	15	0.50	56	0.080	<20	1.04	0.068	0.08	0.3	<0.01	2.7	<0.1	0.05	4	<0.5
0027201	Drill Core	0.1	3	2.56	0.023	30	2	0.97	23	<0.001	<20	0.29	0.014	0.22	<0.1	<0.01	2.2	<0.1	<0.05	<1	<0.5
0027202	Drill Core	1.1	3	0.19	0.030	31	3	0.08	30	<0.001	<20	0.38	0.006	0.22	1.9	0.03	1.5	0.1	1.08	1	<0.5
0027203	Drill Core	0.1	3	0.03	0.022	32	2	0.05	28	<0.001	<20	0.40	0.005	0.27	<0.1	0.06	1.8	<0.1	<0.05	<1	<0.5
0027204	Drill Core	192.5	<1	<0.01	0.002	1	<1	<0.01	2	<0.001	<20	0.08	0.003	<0.01	<0.1	18.90	0.3	1.3	>10	<1	62.5
0027205	Drill Core	11.8	4	0.03	0.024	14	3	0.03	24	<0.001	<20	0.44	0.006	0.24	<0.1	1.28	2.7	0.2	0.51	1	3.2
0027206	Drill Core	1.2	3	0.02	0.033	30	2	0.02	21	<0.001	<20	0.27	0.005	0.21	0.1	0.16	2.2	<0.1	<0.05	<1	<0.5
0027207	Drill Core	0.5	4	0.05	0.026	26	2	0.06	29	<0.001	<20	0.46	0.006	0.27	<0.1	0.07	1.8	<0.1	0.13	<1	<0.5
0027208	Drill Core	0.2	3	0.05	0.031	29	2	0.08	23	<0.001	<20	0.33	0.005	0.23	<0.1	0.07	1.8	<0.1	<0.05	<1	<0.5
0027209	Drill Core	0.4	3	0.48	0.028	17	2	0.20	27	<0.001	<20	0.41	0.005	0.26	<0.1	0.04	2.0	<0.1	0.56	<1	<0.5
0027210	Rock Pulp	103.6	7	0.56	0.010	4	18	1.03	6	0.008	<20	0.84	0.004	0.05	1.5	4.17	1.2	4.6	>10	10	52.1
0027211	Drill Core	0.9	3	0.03	0.033	27	2	0.02	20	<0.001	<20	0.26	0.004	0.20	<0.1	0.04	2.2	<0.1	<0.05	<1	<0.5
0027212	Drill Core	1.1	3	0.01	0.033	29	3	0.01	27	0.001	<20	0.34	0.004	0.25	<0.1	0.03	2.2	<0.1	<0.05	1	<0.5
0027213	Drill Core	1.5	4	0.05	0.051	32	3	0.03	29	<0.001	<20	0.45	0.006	0.21	<0.1	0.09	2.2	<0.1	<0.05	1	<0.5
0027214	Drill Core	1.0	3	0.02	0.040	42	2	0.02	27	<0.001	<20	0.44	0.005	0.26	<0.1	0.04	2.0	<0.1	<0.05	1	<0.5
0027215	Drill Core	0.3	2	0.02	0.022	49	1	0.02	28	<0.001	<20	0.38	0.005	0.25	<0.1	0.01	1.2	<0.1	<0.05	1	<0.5
0027216	Drill Core	0.3	3	0.04	0.029	39	2	0.03	27	<0.001	<20	0.38	0.006	0.21	<0.1	0.03	2.0	<0.1	<0.05	<1	<0.5
0027217	Drill Core	<0.1	3	0.02	0.021	31	2	0.03	25	<0.001	<20	0.28	0.004	0.21	<0.1	0.01	2.1	<0.1	<0.05	<1	<0.5
0027218	Drill Core	<0.1	2	0.02	0.018	31	2	0.02	21	<0.001	<20	0.23	0.004	0.19	<0.1	<0.01	1.4	<0.1	<0.05	<1	<0.5
0027219	Drill Core	0.2	2	2.58	0.015	12	2	0.99	14	<0.001	<20	0.23	0.005	0.15	<0.1	0.02	1.4	<0.1	0.08	<1	<0.5
0027220	Drill Core	2.1	3	1.34	0.036	9	2	0.60	22	<0.001	<20	0.33	0.004	0.22	<0.1	0.06	2.2	<0.1	1.63	<1	<0.5





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Project: Bul River

Report Date: September 12, 2019

Page: 3 of 4

Part: 4 of 4

# CERTIFICATE OF ANALYSIS

**VAN19002348.1**

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
0027191	Drill Core	<0.2
0027192	Drill Core	<0.2
0027193	Drill Core	<0.2
0027194	Drill Core	0.2
0027195	Drill Core	<0.2
0027196	Drill Core	<0.2
0027197	Drill Core	<0.2
0027198	Drill Core	<0.2
0027199	Drill Core	<0.2
0027200	Rock Pulp	<0.2
0027201	Drill Core	<0.2
0027202	Drill Core	<0.2
0027203	Drill Core	<0.2
0027204	Drill Core	4.7
0027205	Drill Core	0.5
0027206	Drill Core	<0.2
0027207	Drill Core	<0.2
0027208	Drill Core	<0.2
0027209	Drill Core	<0.2
0027210	Rock Pulp	0.3
0027211	Drill Core	<0.2
0027212	Drill Core	<0.2
0027213	Drill Core	<0.2
0027214	Drill Core	<0.2
0027215	Drill Core	<0.2
0027216	Drill Core	<0.2
0027217	Drill Core	<0.2
0027218	Drill Core	<0.2
0027219	Drill Core	<0.2
0027220	Drill Core	0.2



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Page: 4 of 4

Part: 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19002348.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
0027221	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.60	<0.02	0.02	<0.001	<0.01	<0.01	1.52	0.04	0.001	0.51
0027222	Drill Core	2.75	6	<0.001	0.004	0.02	0.03	<2	0.003	<0.001	0.04	2.93	<0.02	<0.01	<0.001	<0.01	<0.01	1.58	0.05	0.004	0.82
0027223	Drill Core	1.93	11	<0.001	0.012	0.02	0.01	<2	0.004	0.002	0.05	4.78	<0.02	<0.01	<0.001	<0.01	<0.01	1.18	0.04	0.004	0.83
0027224	Drill Core	2.81	10	0.003	0.007	<0.02	0.01	<2	0.003	0.002	0.07	4.13	<0.02	<0.01	<0.001	<0.01	<0.01	2.06	0.04	0.004	1.09
0027225	Drill Core	2.74	6	<0.001	0.004	<0.02	0.02	<2	0.002	0.001	0.05	2.90	<0.02	<0.01	<0.001	<0.01	<0.01	1.35	0.05	0.003	0.88
0027226	Drill Core	4.32	3	<0.001	0.002	<0.02	<0.01	<2	0.002	<0.001	0.03	4.38	<0.02	<0.01	<0.001	<0.01	<0.01	0.50	0.05	0.004	1.55
0027227	Rock Pulp	0.11	185	<0.001	0.138	0.05	0.19	13	0.002	0.002	0.06	8.01	0.03	<0.01	0.001	<0.01	<0.01	1.25	0.03	0.007	1.85
0027228	Drill Core	1.90	7	<0.001	0.013	<0.02	<0.01	<2	0.004	0.002	0.34	9.06	<0.02	<0.01	<0.001	<0.01	<0.01	3.39	0.01	0.001	1.89
0027229	Drill Core	2.95	5	<0.001	0.007	<0.02	<0.01	<2	0.003	<0.001	0.16	8.68	<0.02	<0.01	<0.001	<0.01	<0.01	0.49	0.05	0.004	1.65
0027230	Drill Core	2.39	4	<0.001	0.006	<0.02	<0.01	<2	0.003	<0.001	0.10	7.31	<0.02	<0.01	<0.001	<0.01	<0.01	0.40	0.06	0.004	1.46
0027231	Drill Core	3.39	5	<0.001	0.005	<0.02	<0.01	<2	0.002	<0.001	0.03	6.11	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.06	0.004	1.44
0027232	Drill Core	5.65	5	<0.001	0.007	<0.02	<0.01	<2	0.003	0.003	0.03	5.69	0.03	<0.01	<0.001	<0.01	<0.01	0.15	0.07	0.004	1.41
0027233	Drill Core	3.93	6	<0.001	0.008	<0.02	<0.01	<2	0.003	0.005	0.03	5.64	0.05	<0.01	<0.001	<0.01	<0.01	0.18	0.06	0.005	1.51



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Page: 4 of 4

Part: 2 of 4

# CERTIFICATE OF ANALYSIS

VAN19002348.1

Method	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	
Unit	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	
0027221	Rock Pulp	5.73	3.20	1.47	<0.01	0.06	3.4	21.4	0.9	30	<0.1	7.3	4.2	563	2.42	1.2	2.1	2.1	30	<0.1	<0.1
0027222	Drill Core	7.59	0.08	3.46	<0.01	0.47	1.0	33.9	223.8	305	0.4	23.0	9.9	421	2.51	2.3	0.5	7.5	52	2.0	0.9
0027223	Drill Core	7.17	0.07	3.64	<0.01	2.27	6.4	120.9	197.5	124	0.6	34.8	24.0	498	4.25	7.9	1.6	7.8	35	0.7	2.4
0027224	Drill Core	6.67	0.07	3.26	<0.01	1.31	26.8	69.2	197.5	130	0.4	25.3	17.5	699	3.68	5.0	1.3	6.7	64	0.9	1.4
0027225	Drill Core	7.57	0.08	3.79	<0.01	0.53	3.8	37.1	186.1	158	0.4	15.9	12.2	504	2.51	5.2	<0.5	7.6	43	1.3	0.6
0027226	Drill Core	7.61	0.04	3.47	<0.01	0.57	1.2	22.8	2.6	47	<0.1	19.1	8.6	311	3.76	21.1	1.7	7.2	21	<0.1	0.5
0027227	Rock Pulp	5.32	0.13	1.24	<0.01	4.10	3.0	1365.2	527.0	1849	13.0	19.2	23.7	654	7.75	297.8	209.2	1.2	31	13.1	17.3
0027228	Drill Core	2.10	0.01	0.55	<0.01	2.13	1.1	126.6	8.0	36	<0.1	42.0	24.2	3248	8.71	56.5	1.0	1.8	88	<0.1	2.4
0027229	Drill Core	6.13	0.03	2.14	<0.01	1.22	1.1	68.3	2.3	68	<0.1	27.7	9.0	1680	8.66	27.1	<0.5	6.0	16	<0.1	0.5
0027230	Drill Core	7.17	0.04	2.87	<0.01	1.21	0.7	73.3	2.3	67	<0.1	26.1	9.9	957	6.49	34.4	<0.5	6.4	12	<0.1	0.5
0027231	Drill Core	8.22	0.05	3.38	<0.01	1.06	1.3	51.1	2.0	58	<0.1	22.6	9.4	266	4.94	69.7	<0.5	6.6	5	<0.1	0.6
0027232	Drill Core	8.02	0.05	3.40	<0.01	1.18	2.0	77.5	3.5	53	<0.1	27.4	32.5	237	4.88	438.6	<0.5	7.5	5	<0.1	1.1
0027233	Drill Core	7.70	0.05	3.28	<0.01	1.16	1.7	90.6	4.8	56	<0.1	31.6	49.1	276	5.03	709.5	<0.5	8.1	7	<0.1	1.5



**BUREAU VERITAS** MINERAL LABORATORIES  
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Cranbrook British Columbia V1C 4J6 Canada

Project: Bul River

Report Date: September 12, 2019

Page: 4 of 4

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

**VAN19002348.1**

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
Unit		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	
0027221	Rock Pulp	<0.1	22	0.77	0.037	5	15	0.50	54	0.075	<20	1.02	0.063	0.07	0.2	<0.01	2.5	<0.1	0.05	4	<0.5
0027222	Drill Core	1.0	5	1.62	0.045	11	4	0.53	25	<0.001	<20	0.55	0.008	0.26	<0.1	0.06	2.1	<0.1	0.46	1	<0.5
0027223	Drill Core	1.3	3	1.21	0.037	8	2	0.54	22	<0.001	<20	0.28	0.004	0.22	<0.1	0.02	1.8	<0.1	2.19	<1	0.6
0027224	Drill Core	0.9	3	2.10	0.039	9	2	0.84	25	<0.001	<20	0.33	0.005	0.24	<0.1	0.02	2.1	<0.1	1.27	<1	0.5
0027225	Drill Core	0.8	3	1.42	0.044	13	2	0.60	23	<0.001	<20	0.29	0.003	0.22	<0.1	0.04	1.9	<0.1	0.52	<1	<0.5
0027226	Drill Core	0.3	10	0.50	0.050	12	13	1.13	31	0.002	<20	1.88	0.004	0.33	<0.1	<0.01	1.6	<0.1	0.57	4	<0.5
0027227	Rock Pulp	8.0	28	1.21	0.025	4	40	1.63	85	0.004	<20	1.82	0.009	0.17	2.8	2.11	4.6	2.4	3.94	5	24.5
0027228	Drill Core	1.4	9	3.28	0.011	3	8	1.73	16	0.002	<20	1.16	0.003	0.08	<0.1	0.06	1.9	0.1	2.10	3	0.9
0027229	Drill Core	0.4	20	0.50	0.049	11	17	1.44	27	0.003	<20	2.46	0.004	0.24	<0.1	0.03	3.1	<0.1	1.24	6	<0.5
0027230	Drill Core	0.4	16	0.40	0.053	11	14	1.16	25	0.003	<20	2.16	0.003	0.26	<0.1	0.02	2.6	<0.1	1.18	6	<0.5
0027231	Drill Core	0.4	13	0.14	0.052	13	14	1.00	30	0.002	<20	2.06	0.003	0.33	<0.1	<0.01	1.9	0.1	1.01	5	<0.5
0027232	Drill Core	0.5	11	0.14	0.055	10	12	0.95	26	0.002	<20	1.79	0.003	0.25	<0.1	0.05	1.5	<0.1	1.12	4	<0.5
0027233	Drill Core	0.6	12	0.18	0.053	10	13	1.08	28	0.002	<20	1.95	0.004	0.29	<0.1	0.02	1.5	<0.1	1.17	5	<0.5



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Project: Bul River

Report Date: September 12, 2019

Page: 4 of 4

Part: 4 of 4

## CERTIFICATE OF ANALYSIS

VAN19002348.1

Method	AQ200
Analyte	Te
Unit	ppm
MDL	0.2
0027221	Rock Pulp <0.2
0027222	Drill Core <0.2
0027223	Drill Core 0.2
0027224	Drill Core <0.2
0027225	Drill Core <0.2
0027226	Drill Core <0.2
0027227	Rock Pulp 0.2
0027228	Drill Core <0.2
0027229	Drill Core <0.2
0027230	Drill Core <0.2
0027231	Drill Core <0.2
0027232	Drill Core <0.2
0027233	Drill Core 0.2



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Project: Bul River  
Report Date: September 12, 2019

Page: 1 of 3

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
Pulp Duplicates																					
0027161	Drill Core	3.10	7	<0.001	0.004	<0.02	0.01	<2	0.002	<0.001	0.01	2.91	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.003	0.32
REP 0027161	QC	7																			
0027163	Drill Core	2.16	7	<0.001	0.007	<0.02	0.01	<2	0.002	0.001	0.01	2.63	<0.02	<0.01	<0.001	<0.01	<0.01	0.07	0.04	0.003	0.31
REP 0027163	QC	<0.001 0.008 <0.02 0.01 <2 0.002 0.001 0.01 2.68 <0.02 <0.01 <0.001 <0.01 <0.01 0.07 0.04 0.003 0.31																			
0027168	Drill Core	1.63	9	<0.001	0.014	0.04	0.02	<2	0.003	<0.001	<0.01	4.14	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.05	0.003	0.29
REP 0027168	QC																				
0027170	Rock Pulp	0.11	188	<0.001	0.141	0.05	0.19	11	0.002	0.002	0.07	7.88	0.03	<0.01	<0.001	<0.01	<0.01	1.27	0.03	0.006	1.91
REP 0027170	QC	177																			
0027197	Drill Core	2.45	9	<0.001	0.006	<0.02	0.01	<2	0.001	<0.001	<0.01	4.29	<0.02	<0.01	<0.001	<0.01	<0.01	0.03	0.04	0.005	0.40
REP 0027197	QC	<0.001 0.006 <0.02 0.01 <2 0.001 <0.001 <0.01 4.22 <0.02 <0.01 <0.001 <0.01 <0.01 0.03 0.04 0.005 0.39																			
0027202	Drill Core	0.80	8	<0.001	0.009	<0.02	0.02	<2	0.005	0.003	0.03	3.72	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.03	0.005	0.46
REP 0027202	QC																				
0027205	Drill Core	0.42	10	<0.001	0.004	3.47	0.33	35	0.002	0.001	0.10	4.77	<0.02	<0.01	0.001	<0.01	<0.01	0.03	0.03	0.001	0.29
REP 0027205	QC	8																			
0027230	Drill Core	2.39	4	<0.001	0.006	<0.02	<0.01	<2	0.003	<0.001	0.10	7.31	<0.02	<0.01	<0.001	<0.01	<0.01	0.40	0.06	0.004	1.46
REP 0027230	QC	<0.001 0.007 <0.02 <0.01 <2 0.003 <0.001 0.10 7.48 <0.02 <0.01 <0.001 <0.01 <0.01 0.41 0.06 0.004 1.50																			
0027231	Drill Core	3.39	5	<0.001	0.005	<0.02	<0.01	<2	0.002	<0.001	0.03	6.11	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.06	0.004	1.44
REP 0027231	QC	4																			
Core Reject Duplicates																					
0027214	Drill Core	2.21	7	<0.001	0.005	0.02	0.05	<2	0.002	0.001	0.04	3.40	<0.02	<0.01	<0.001	<0.01	<0.01	0.02	0.04	0.004	0.34
DUP 0027214	QC	8 <0.001 0.005 <0.02 0.05 <2 0.002 0.001 0.04 3.30 <0.02 <0.01 <0.001 <0.01 <0.01 0.02 0.04 0.003 0.33																			
Reference Materials																					
STD BVGEO01	Standard																				
STD CDN-ME-14	Standard	0.002 1.251 0.51 3.26 44 0.002 0.018 0.09 18.39 <0.02 <0.01 0.008 <0.01 0.01 0.76 0.02 0.002 1.34																			
STD CDN-ME-9	Standard	<0.001 0.655 <0.02 0.01 4 0.899 0.017 0.12 13.81 <0.02 0.03 <0.001 <0.01 <0.01 4.28 0.06 0.030 4.06																			
STD CDN-ME-14	Standard	0.002 1.198 0.47 3.09 43 0.002 0.017 0.09 17.88 <0.02 <0.01 0.009 <0.01 <0.01 0.77 0.02 0.001 1.31																			
STD CDN-ME-9	Standard	<0.001 0.632 <0.02 0.01 3 0.910 0.017 0.12 13.68 <0.02 0.03 <0.001 <0.01 <0.01 4.13 0.06 0.030 4.04																			
STD CDN-ME-14	Standard	0.002 1.224 0.48 3.08 44 0.002 0.017 0.09 17.54 <0.02 <0.01 0.009 <0.01 0.01 0.74 0.02 0.002 1.27																			



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Project: Bul River  
Report Date: September 12, 2019

Page: 1 of 3 Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.01	0.5	0.5	0.1	1	0.1	0.1
Pulp Duplicates																					
0027161	Drill Core	8.62	0.67	3.73	<0.01	<0.05	1.6	43.8	149.4	99	0.3	14.5	4.9	116	2.34	1.8	2.4	10.3	4	0.3	1.7
REP 0027161	QC																				
0027163	Drill Core	8.71	0.45	3.18	<0.01	<0.05	2.7	73.8	119.6	99	0.2	11.5	12.3	115	2.16	2.3	3.1	7.1	10	0.2	3.8
REP 0027163	QC	8.74	0.45	3.18	<0.01	<0.05															
0027168	Drill Core	9.04	0.24	3.49	<0.01	<0.05	2.1	137.2	337.2	188	0.2	25.6	5.6	52	3.58	1.3	1.8	9.0	7	0.7	2.3
REP 0027168	QC						2.1	139.2	339.0	195	0.2	25.1	5.8	53	3.60	1.6	1.5	9.2	6	0.7	2.2
0027170	Rock Pulp	5.81	0.14	1.26	<0.01	3.99	3.2	1318.6	516.7	1821	11.8	20.4	22.9	657	7.49	290.7	144.8	0.3	28	12.9	22.7
REP 0027170	QC																				
0027197	Drill Core	9.94	0.35	4.79	<0.01	<0.05	7.4	58.2	159.8	134	0.2	10.7	6.0	92	3.58	31.2	2.5	13.9	7	<0.1	1.4
REP 0027197	QC	9.86	0.35	4.70	<0.01	<0.05															
0027202	Drill Core	9.63	0.36	4.46	<0.01	1.05	5.0	101.4	64.3	182	0.8	46.3	32.4	370	3.33	29.3	<0.5	12.3	9	0.8	1.6
REP 0027202	QC						5.5	96.1	60.9	178	0.6	43.9	32.6	375	3.31	26.6	<0.5	12.0	8	1.1	1.5
0027205	Drill Core	6.60	0.06	3.08	<0.01	0.48	3.2	44.7	>10000	3339	33.4	17.2	14.7	1068	4.46	7.8	1.4	7.0	4	10.0	9.2
REP 0027205	QC																				
0027230	Drill Core	7.17	0.04	2.87	<0.01	1.21	0.7	73.3	2.3	67	<0.1	26.1	9.9	957	6.49	34.4	<0.5	6.4	12	<0.1	0.5
REP 0027230	QC	7.34	0.04	2.91	<0.01	1.21															
0027231	Drill Core	8.22	0.05	3.38	<0.01	1.06	1.3	51.1	2.0	58	<0.1	22.6	9.4	266	4.94	69.7	<0.5	6.6	5	<0.1	0.6
REP 0027231	QC																				
Core Reject Duplicates																					
0027214	Drill Core	7.78	0.15	3.80	<0.01	<0.05	8.1	49.2	177.0	426	0.3	20.8	10.9	368	2.87	3.1	2.6	11.2	3	1.2	1.1
DUP 0027214	QC	7.74	0.15	3.73	<0.01	<0.05	8.3	53.1	180.3	428	0.3	22.2	11.4	371	2.85	3.3	2.3	11.3	3	1.4	1.1
Reference Materials																					
STD BVGE001	Standard						9.2	4352.6	187.4	1694	2.5	159.2	25.4	742	3.67	116.9	200.2	14.3	53	5.8	2.6
STD CDN-ME-14	Standard	4.77	0.55	1.73	<0.01	15.25															
STD CDN-ME-9	Standard	7.03	1.93	0.61	<0.01	2.22															
STD CDN-ME-14	Standard	4.55	0.54	1.68	<0.01	15.13															
STD CDN-ME-9	Standard	6.70	1.82	0.62	<0.01	2.43															
STD CDN-ME-14	Standard	4.32	0.50	1.62	<0.01	15.14															





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Project: Bul River  
Report Date: September 12, 2019

Page: 1 of 3 Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5		
Pulp Duplicates																					
0027161	Drill Core	1.9	4	0.02	0.042	35	3	0.02	33	<0.001	<20	0.45	0.013	0.28	<0.1	0.02	1.9	<0.1	<0.05	<1	<0.5
REP 0027161	QC																				
0027163	Drill Core	1.2	3	0.07	0.039	19	4	0.03	35	<0.001	<20	0.78	0.012	0.23	<0.1	0.05	1.6	<0.1	<0.05	<1	<0.5
REP 0027163	QC																				
0027168	Drill Core	1.1	4	0.04	0.045	34	3	0.02	20	<0.001	<20	0.70	0.007	0.19	<0.1	0.05	3.2	<0.1	<0.05	<1	<0.5
REP 0027168	QC	1.1	4	0.04	0.042	35	3	0.02	21	<0.001	<20	0.69	0.007	0.19	<0.1	0.05	3.2	<0.1	<0.05	<1	<0.5
0027170	Rock Pulp	7.8	26	1.19	0.026	4	40	1.62	108	0.003	<20	1.73	0.010	0.16	1.9	1.85	4.4	2.2	3.86	5	23.9
REP 0027170	QC																				
0027197	Drill Core	1.5	2	0.02	0.034	47	2	0.01	24	<0.001	<20	0.36	0.004	0.22	<0.1	0.04	1.7	<0.1	<0.05	<1	<0.5
REP 0027197	QC																				
0027202	Drill Core	1.1	3	0.19	0.030	31	3	0.08	30	<0.001	<20	0.38	0.006	0.22	1.9	0.03	1.5	0.1	1.08	1	<0.5
REP 0027202	QC	1.1	3	0.19	0.030	29	3	0.08	28	<0.001	<20	0.38	0.007	0.21	1.9	0.05	1.4	<0.1	1.08	1	<0.5
0027205	Drill Core	11.8	4	0.03	0.024	14	3	0.03	24	<0.001	<20	0.44	0.006	0.24	<0.1	1.28	2.7	0.2	0.51	1	3.2
REP 0027205	QC																				
0027230	Drill Core	0.4	16	0.40	0.053	11	14	1.16	25	0.003	<20	2.16	0.003	0.26	<0.1	0.02	2.6	<0.1	1.18	6	<0.5
REP 0027230	QC																				
0027231	Drill Core	0.4	13	0.14	0.052	13	14	1.00	30	0.002	<20	2.06	0.003	0.33	<0.1	<0.01	1.9	0.1	1.01	5	<0.5
REP 0027231	QC																				
Core Reject Duplicates																					
0027214	Drill Core	1.0	3	0.02	0.040	42	2	0.02	27	<0.001	<20	0.44	0.005	0.26	<0.1	0.04	2.0	<0.1	<0.05	1	<0.5
DUP 0027214	QC	1.0	3	0.02	0.037	40	2	0.02	22	<0.001	<20	0.36	0.005	0.21	<0.1	0.03	1.7	<0.1	<0.05	<1	<0.5
Reference Materials																					
STD BVGEO01	Standard	24.1	72	1.28	0.069	27	179	1.28	335	0.239	<20	2.30	0.184	0.89	3.5	0.10	5.6	0.7	0.67	7	5.1
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD CDN-ME-14	Standard																				
STD CDN-ME-9	Standard																				
STD CDN-ME-14	Standard																				



Bureau Veritas Commodities Canada Ltd.  
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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Project: Bul River  
Report Date: September 12, 2019

Page: 1 of 3

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

Method	AQ200	
Analyte	Te	
Unit	ppm	
MDL	0.2	
Pulp Duplicates		
0027161	Drill Core	<0.2
REP 0027161	QC	
0027163	Drill Core	<0.2
REP 0027163	QC	
0027168	Drill Core	<0.2
REP 0027168	QC	<0.2
0027170	Rock Pulp	0.2
REP 0027170	QC	
0027197	Drill Core	<0.2
REP 0027197	QC	
0027202	Drill Core	<0.2
REP 0027202	QC	<0.2
0027205	Drill Core	0.5
REP 0027205	QC	
0027230	Drill Core	<0.2
REP 0027230	QC	
0027231	Drill Core	<0.2
REP 0027231	QC	
Core Reject Duplicates		
0027214	Drill Core	<0.2
DUP 0027214	QC	<0.2
Reference Materials		
STD BVGEO01	Standard	0.8
STD CDN-ME-14	Standard	
STD CDN-ME-9	Standard	
STD CDN-ME-14	Standard	
STD CDN-ME-9	Standard	
STD CDN-ME-14	Standard	



# QUALITY CONTROL REPORT

VAN19002348.1

		WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
		kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
STD DS11	Standard																				
STD DS11	Standard																				
STD DS11	Standard																				
STD OREAS131B	Standard			<0.001	0.022	1.75	3.01	34	0.003	0.002	0.18	5.48	<0.02	<0.01	0.009	<0.01	<0.01	5.08	0.05	0.003	3.16
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OREAS262	Standard																				
STD OXC152	Standard		225																		
STD OXC152	Standard		218																		
STD OXC152	Standard		217																		
STD OXC152	Standard		218																		
STD OXH139	Standard		1323																		
STD OXH139	Standard		1269																		
STD OXH139	Standard		1324																		
STD OXH139	Standard		1327																		
STD CDN-ME-9 Expected				0.654		0.012		0.93	0.0169	0.121	13.84		0.03				4.21	0.06	0.0284	4.05	
STD CDN-ME-14 Expected				1.221	0.495	3.17	43.5	0.002	0.0172	0.0883	18.04	0.0088		0.0088		0.0094	0.747	0.0147	0.0014	1.28	
STD OREAS131B Expected				0.0003	0.0216	1.86	3.14	33.3	0.0025	0.00181	0.1771	5.705	0.0072	0.0026	0.0089	0.005		5.37	0.0536	0.0027	3.128
STD BVGEO01 Expected																					
STD DS11 Expected																					
STD OREAS262 Expected																					
STD OXC152 Expected			216																		
STD OXH139 Expected			1312																		
BLK	Blank																				
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank			<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank																				



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Client: **Bul River Mineral Corporation**

Box 845

Cranbrook British Columbia V1C 4J6 Canada

Project: Bul River

Report Date: September 12, 2019

Page: 2 of 3

Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

		MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1
STD DS11	Standard						14.4	159.4	144.7	342	1.7	83.2	13.8	1043	3.15	46.4	67.0	6.7	65	2.6	8.1
STD DS11	Standard						14.0	148.8	134.9	322	1.5	76.7	13.0	995	3.09	42.1	58.5	7.3	66	2.2	6.9
STD DS11	Standard						15.2	154.4	130.0	344	1.7	77.3	12.9	1044	3.13	39.5	113.8	7.5	70	2.6	7.0
STD OREAS131B	Standard	4.45	0.14	3.35	<0.01	4.70															
STD OREAS262	Standard						0.7	128.8	60.3	154	0.5	67.9	29.3	556	3.32	37.8	79.1	7.6	36	0.7	4.1
STD OREAS262	Standard						0.6	117.5	55.9	156	0.4	65.8	27.4	529	3.31	36.6	61.0	9.3	36	0.6	3.2
STD OREAS262	Standard						0.6	118.8	55.2	147	0.5	65.4	26.9	537	3.28	34.4	56.2	9.6	37	0.6	2.8
STD OREAS262	Standard						0.6	118.6	52.5	147	0.4	63.2	26.6	530	3.27	34.0	55.0	9.1	34	0.6	2.7
STD OXC152	Standard																				
STD OXC152	Standard																				
STD OXC152	Standard																				
STD OXC152	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD CDN-ME-9 Expected		6.74	1.86	0.616		2.58															
STD CDN-ME-14 Expected		4.47	0.53	1.7		16.14															
STD OREAS131B Expected		4.57	0.139	3.34		5.01															
STD BVGEO01 Expected							10.8	4415	187	1741	2.53	163	25	733	3.7	121	219	14.4	55	6.5	2.2
STD DS11 Expected							13.9	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	7.2
STD OREAS262 Expected							0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	65	9.33	36	0.61	3.39
STD OXC152 Expected																					
STD OXH139 Expected																					
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	0.2	<1	<0.1	<0.1
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05															
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1



# QUALITY CONTROL REPORT

VAN19002348.1

		AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm
		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5
STD DS11	Standard	11.9	49	1.06	0.075	19	60	0.85	416	0.093	<20	1.20	0.075	0.41	3.2	0.29	3.1	5.0	0.28	5	2.1
STD DS11	Standard	10.8	45	1.02	0.066	16	56	0.82	362	0.088	<20	1.12	0.069	0.38	2.6	0.26	3.1	4.7	0.26	5	2.1
STD DS11	Standard	11.8	50	1.08	0.073	19	61	0.85	438	0.094	<20	1.21	0.076	0.41	2.3	0.31	3.2	5.0	0.30	5	2.0
STD OREAS131B	Standard																				
STD OREAS262	Standard	1.1	21	3.03	0.041	16	44	1.20	255	0.003	<20	1.29	0.072	0.30	0.1	0.17	3.1	0.5	0.26	4	<0.5
STD OREAS262	Standard	1.0	21	3.03	0.039	16	42	1.15	244	0.003	<20	1.20	0.069	0.29	0.1	0.18	3.0	0.5	0.25	4	<0.5
STD OREAS262	Standard	1.1	22	2.95	0.038	16	42	1.18	234	0.003	<20	1.32	0.070	0.31	<0.1	0.16	3.2	0.4	0.26	4	<0.5
STD OREAS262	Standard	1.0	22	2.96	0.039	17	44	1.20	251	0.003	<20	1.35	0.069	0.33	<0.1	0.16	3.4	0.5	0.27	4	<0.5
STD OXC152	Standard																				
STD OXC152	Standard																				
STD OXC152	Standard																				
STD OXC152	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD OXH139	Standard																				
STD CDN-ME-9 Expected																					
STD CDN-ME-14 Expected																					
STD OREAS131B Expected																					
STD BVGEO01 Expected		25.6	73	1.3219	0.0727	25.9	171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	0.1	5.97	0.62	0.6655	7.37	4.84
STD DS11 Expected		12.2	50	1.063	0.0701	18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	0.26	3.1	4.9	0.2835	4.7	2.2
STD OREAS262 Expected		1.03	22.5	2.98	0.04	15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	0.17	3.24	0.47	0.253	3.73	0.4
STD OXC152 Expected																					
STD OXH139 Expected																					
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5



Bureau Veritas Commodities Canada Ltd.  
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**Client:** **Bul River Mineral Corporation**  
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Project: Bul River  
Report Date: September 12, 2019

Page: 2 of 3

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

		AQ200 Te ppm 0.2
STD DS11	Standard	4.7
STD DS11	Standard	4.4
STD DS11	Standard	4.9
STD OREAS131B	Standard	
STD OREAS262	Standard	0.2
STD OREAS262	Standard	0.3
STD OREAS262	Standard	<0.2
STD OREAS262	Standard	0.2
STD OXC152	Standard	
STD OXC152	Standard	
STD OXC152	Standard	
STD OXC152	Standard	
STD OXH139	Standard	
STD OXH139	Standard	
STD OXH139	Standard	
STD OXH139	Standard	
STD CDN-ME-9 Expected		
STD CDN-ME-14 Expected		
STD OREAS131B Expected		
STD BVGE001 Expected		1.02
STD DS11 Expected		4.56
STD OREAS262 Expected		0.23
STD OXC152 Expected		
STD OXH139 Expected		
BLK	Blank	<0.2
BLK	Blank	
BLK	Blank	
BLK	Blank	
BLK	Blank	<0.2



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Project: Bul River

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Page: 3 of 3

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19002348.1

		WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
		Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
		kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
BLK	Blank																				
BLK	Blank		4																		
BLK	Blank		4																		
BLK	Blank																				
BLK	Blank		2																		
BLK	Blank		3																		
Prep Wash																					
ROCK-VAN	Prep Blank		5	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.13	<0.02	0.02	<0.001	<0.01	<0.01	1.75	0.04	<0.001	0.52
ROCK-VAN	Prep Blank		49	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.08	<0.02	0.02	<0.001	<0.01	<0.01	1.48	0.04	<0.001	0.45





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Page: 3 of 3

Part: 2 of 4

# QUALITY CONTROL REPORT

**VAN19002348.1**

		MA370	MA370	MA370	MA370	MA370	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank																				
BLK	Blank																				
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-VAN	Prep Blank	7.63	3.60	1.77	<0.01	<0.05	1.0	4.3	2.3	36	<0.1	1.4	3.7	445	1.78	1.3	4.4	2.3	24	<0.1	<0.1
ROCK-VAN	Prep Blank	6.38	3.57	1.66	<0.01	<0.05	1.0	2.1	1.9	34	<0.1	0.6	3.2	454	1.76	1.2	35.2	1.8	26	<0.1	<0.1



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Report Date: September 12, 2019

Page: 3 of 3

Part: 3 of 4

# QUALITY CONTROL REPORT

**VAN19002348.1**

		AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm
		0.1	1	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.1	<1	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
ROCK-VAN	Prep Blank	<0.1	26	0.66	0.040	6	4	0.44	56	0.085	<20	0.94	0.107	0.10	<0.1	<0.01	2.7	<0.1	<0.05	4	<0.5
ROCK-VAN	Prep Blank	<0.1	22	0.61	0.038	7	4	0.39	66	0.082	<20	0.83	0.090	0.09	0.1	<0.01	2.5	<0.1	<0.05	3	<0.5



**BUREAU** MINERAL LABORATORIES  
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Bureau Veritas Commodities Canada Ltd.

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Report Date: September 12, 2019

Page: 3 of 3

Part: 4 of 4

## QUALITY CONTROL REPORT

VAN19002348.1

		AQ200 Te ppm 0.2
BLK	Blank	<0.2
BLK	Blank	
BLK	Blank	
BLK	Blank	<0.2
BLK	Blank	
BLK	Blank	
Prep Wash		
ROCK-VAN	Prep Blank	<0.2
ROCK-VAN	Prep Blank	<0.2



Bureau Veritas Commodities Canada Ltd.  
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**Client:** **Bul River Mineral Corporation**  
Box 845  
Cranbrook British Columbia V1C 4J6 Canada

Submitted By: Jill Christmann  
Receiving Lab: Canada-Vancouver  
Received: September 16, 2019  
Report Date: October 01, 2019  
Page: 1 of 5

# CERTIFICATE OF ANALYSIS

VAN19002638.1

## CLIENT JOB INFORMATION

Project: Bull River  
Shipment ID: BR-EXP\_05\_2019  
P.O. Number  
Number of Samples: 118

## SAMPLE DISPOSAL

IMM-PLP Return immediately after analysis  
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Bul River Mineral Corporation  
Box 845  
Cranbrook British Columbia V1C 4J6  
Canada

CC: Tim Hewison

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	108	Crush, split and pulverize 250 g rock to 200 mesh			VAN
SLBHP	10	Sort, label and box pulps			VAN
FA330-Au	118	Fire assay fusion Au by ICP-ES	30	Completed	VAN
EN002	118	Environmental disposal charge-Fire assay lead waste			VAN
MA370	118	4-Acid Digestion ICP-ES Finish	0.5	Completed	VAN
EN001-MA	118	Environmental disposal fee - Multi-acid neutralization			VAN
MA200	118	4 Acid digestion ICP-MS analysis	0.25	Completed	VAN

## ADDITIONAL COMMENTS

  
MAY LAI  
Data Validation Specialist



Bureau Veritas Commodities Canada Ltd.

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**Client:** **Bul River Mineral Corporation**  
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**Project:** Bull River  
**Report Date:** October 01, 2019

**Page:** 2 of 5

**Part:** 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
27234	Drill Core	5.28	4	<0.001	0.007	<0.02	<0.01	<2	0.001	0.001	0.12	3.26	<0.02	<0.01	<0.001	<0.01	<0.01	2.39	0.05	0.003	1.43
27235	Drill Core	5.29	3	<0.001	0.006	<0.02	<0.01	<2	0.001	0.001	0.11	3.09	<0.02	<0.01	<0.001	<0.01	<0.01	2.06	0.05	0.003	1.33
27236	Drill Core	5.40	3	<0.001	0.006	<0.02	<0.01	<2	0.001	0.001	0.11	3.41	<0.02	<0.01	<0.001	<0.01	<0.01	1.96	0.04	0.003	1.31
27237	Drill Core	5.55	11	<0.001	0.011	<0.02	<0.01	<2	0.001	0.001	0.27	7.20	<0.02	<0.01	<0.001	<0.01	<0.01	1.69	0.03	0.003	2.07
27238	Drill Core	5.40	4	<0.001	0.016	<0.02	<0.01	<2	0.001	0.001	0.22	4.90	<0.02	<0.01	<0.001	<0.01	<0.01	2.52	0.04	0.003	1.68
27239	Drill Core	5.16	5	<0.001	0.014	<0.02	<0.01	<2	0.001	0.001	0.21	3.99	<0.02	<0.01	<0.001	<0.01	<0.01	3.67	0.04	0.003	1.72
27240	Drill Core	5.43	6	<0.001	0.023	<0.02	<0.01	<2	0.002	0.002	0.18	4.65	<0.02	<0.01	<0.001	<0.01	<0.01	3.32	0.03	0.003	1.75
27241	Drill Core	5.43	8	<0.001	0.029	<0.02	<0.01	<2	0.003	0.003	0.13	4.69	<0.02	<0.01	<0.001	<0.01	<0.01	2.14	0.04	0.004	1.18
27242	Drill Core	2.58	6	<0.001	0.022	<0.02	<0.01	<2	0.002	0.001	0.14	4.16	<0.02	<0.01	<0.001	<0.01	<0.01	1.63	0.04	0.003	1.18
27243	Drill Core	4.43	4	<0.001	0.019	<0.02	<0.01	<2	0.001	<0.001	0.04	4.82	<0.02	<0.01	<0.001	<0.01	<0.01	0.39	0.05	0.004	1.15
27246	Drill Core	5.30	4	<0.001	0.006	<0.02	<0.01	<2	0.002	0.001	0.03	4.61	<0.02	<0.01	<0.001	<0.01	<0.01	0.18	0.05	0.004	1.19
27247	Drill Core	2.89	7	<0.001	0.016	<0.02	<0.01	<2	0.002	0.003	0.10	5.70	0.04	<0.01	<0.001	<0.01	<0.01	0.47	0.05	0.004	1.41
27248	Drill Core	4.02	27	<0.001	0.027	<0.02	<0.01	<2	0.002	0.001	0.35	10.38	<0.02	<0.01	<0.001	<0.01	<0.01	3.24	0.03	0.003	2.86
27249	Drill Core	5.23	5	<0.001	0.010	<0.02	<0.01	<2	0.001	0.001	0.14	3.38	<0.02	<0.01	<0.001	<0.01	<0.01	1.98	0.05	0.003	1.35
27250	Drill Core	5.23	6	<0.001	0.009	<0.02	<0.01	<2	0.001	<0.001	0.16	3.45	<0.02	<0.01	<0.001	<0.01	<0.01	2.17	0.05	0.003	1.40
27256	Drill Core	5.13	10	<0.001	0.013	<0.02	<0.01	<2	0.001	0.001	0.11	3.63	<0.02	<0.01	<0.001	<0.01	<0.01	1.50	0.04	0.003	1.21
27257	Drill Core	5.37	9	<0.001	0.015	<0.02	<0.01	<2	0.001	0.001	0.23	5.50	<0.02	<0.01	<0.001	<0.01	<0.01	2.60	0.04	0.003	1.83
27258	Drill Core	6.77	7	<0.001	0.019	<0.02	<0.01	<2	0.001	<0.001	0.14	3.16	<0.02	<0.01	<0.001	<0.01	<0.01	2.09	0.04	0.003	1.29
27261	Drill Core	2.70	4	<0.001	0.008	<0.02	<0.01	<2	0.002	0.001	0.26	3.97	<0.02	<0.01	<0.001	<0.01	<0.01	3.66	0.04	0.003	1.79
27262	Drill Core	4.31	4	<0.001	0.005	<0.02	<0.01	<2	0.001	<0.001	0.26	4.97	<0.02	<0.01	<0.001	<0.01	<0.01	3.49	0.04	0.003	2.18
27263	Drill Core	3.38	6	<0.001	0.004	<0.02	<0.01	<2	0.002	0.001	0.30	5.84	<0.02	<0.01	<0.001	<0.01	<0.01	2.37	0.04	0.003	2.02
27264	Drill Core	3.26	5	<0.001	0.008	<0.02	<0.01	<2	0.001	0.001	0.10	4.40	<0.02	<0.01	<0.001	<0.01	<0.01	2.16	0.04	0.003	1.60
27265	Rock Pulp	0.11	181	<0.001	0.138	0.06	0.19	13	0.002	0.002	0.07	7.97	0.03	<0.01	0.001	<0.01	<0.01	1.26	0.03	0.006	1.86
27266	Drill Core	2.30	4	<0.001	0.008	<0.02	<0.01	<2	0.001	<0.001	0.16	5.61	<0.02	<0.01	<0.001	<0.01	<0.01	1.84	0.03	0.003	1.91
27267	Drill Core	2.70	4	<0.001	0.025	<0.02	<0.01	<2	0.004	0.005	0.39	12.24	<0.02	<0.01	<0.001	<0.01	<0.01	2.69	0.03	0.002	2.90
27268	Drill Core	2.68	6	<0.001	0.025	<0.02	<0.01	<2	0.003	0.002	0.34	12.63	<0.02	<0.01	<0.001	<0.01	<0.01	2.63	0.03	0.001	2.91
27269	Drill Core	2.73	12	<0.001	0.009	<0.02	<0.01	<2	0.002	0.003	0.05	8.84	<0.02	<0.01	<0.001	<0.01	<0.01	0.20	0.05	0.003	1.81
27270	Drill Core	2.77	22	<0.001	0.019	<0.02	<0.01	<2	0.002	0.005	0.18	8.73	<0.02	<0.01	<0.001	<0.01	<0.01	1.36	0.03	0.002	1.99
27271	Drill Core	5.27	8	<0.001	0.010	<0.02	<0.01	<2	0.002	0.002	0.23	6.30	<0.02	<0.01	<0.001	<0.01	<0.01	0.84	0.05	0.002	1.69
27272	Drill Core	5.20	4	<0.001	0.005	<0.02	<0.01	<2	0.001	<0.001	0.27	5.79	<0.02	<0.01	<0.001	<0.01	<0.01	6.68	0.03	0.002	3.30



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**Project:** Bull River  
**Report Date:** October 01, 2019

**Page:** 2 of 5

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

**VAN19002638.1**

Method Analyte Unit MDL	MA370	MA370	MA370	MA370	MA370	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	
	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.2	1	0.01	1	0.1	0.1	1	0.1	0.1	
27234	Drill Core	6.97	0.05	3.86	<0.01	0.72	1.3	71.2	8.5	18	0.1	12.6	11.8	1191	3.28	19	1.8	8.8	31	<0.1	1.3
27235	Drill Core	6.83	0.05	3.66	<0.01	0.66	1.0	68.8	6.5	18	0.1	10.6	13.3	1171	3.36	20	2.0	10.5	29	<0.1	1.2
27236	Drill Core	6.28	0.04	3.26	<0.01	0.51	0.8	67.7	4.1	20	0.1	10.4	12.3	1139	3.51	31	1.7	8.2	24	<0.1	1.0
27237	Drill Core	5.34	0.03	1.94	<0.01	0.77	0.6	116.5	3.5	63	0.2	13.5	11.3	2772	6.76	6	1.3	7.2	35	<0.1	0.9
27238	Drill Core	5.63	0.04	2.72	<0.01	0.67	0.9	147.4	4.7	29	0.2	11.0	14.4	2125	4.68	78	1.7	8.4	36	<0.1	1.1
27239	Drill Core	5.83	0.04	3.18	<0.01	0.70	1.2	147.1	6.3	13	0.2	13.0	12.7	2130	3.90	19	1.8	8.7	46	<0.1	1.2
27240	Drill Core	5.72	0.04	3.26	<0.01	1.17	1.1	226.6	8.2	13	0.3	19.6	16.3	1834	4.50	25	1.7	7.7	35	<0.1	1.4
27241	Drill Core	6.47	0.04	3.61	<0.01	1.40	1.2	285.7	8.3	13	0.4	23.3	26.1	1307	4.51	55	1.9	8.4	29	<0.1	1.7
27242	Drill Core	7.10	0.04	3.85	<0.01	1.01	1.7	233.0	5.6	17	0.3	16.8	12.9	1465	4.20	20	1.8	9.1	26	<0.1	1.2
27243	Drill Core	6.77	0.04	3.34	<0.01	0.49	1.3	198.6	3.9	47	0.3	12.1	8.9	446	4.87	23	1.9	9.5	10	<0.1	1.0
27246	Drill Core	7.22	0.04	3.34	<0.01	0.37	1.5	66.5	2.5	52	<0.1	19.1	13.1	321	4.74	181	2.1	11.3	8	<0.1	1.2
27247	Drill Core	6.47	0.03	2.86	<0.01	0.58	0.8	165.7	2.7	57	0.2	17.3	26.2	942	5.46	351	1.8	8.7	12	<0.1	1.4
27248	Drill Core	4.18	0.01	0.94	<0.01	0.94	0.8	275.0	3.0	88	0.3	17.7	13.8	3640	9.46	54	1.2	6.1	40	<0.1	0.9
27249	Drill Core	6.50	0.04	3.40	<0.01	0.39	1.3	93.9	4.7	25	0.2	11.5	12.2	1413	3.35	103	1.9	10.1	30	<0.1	1.2
27250	Drill Core	6.76	0.04	3.45	<0.01	0.38	1.2	96.0	4.3	23	0.2	13.7	8.1	1556	3.38	43	1.9	9.9	32	<0.1	1.4
27256	Drill Core	6.70	0.04	3.43	<0.01	0.53	1.8	129.2	2.5	25	0.2	14.2	11.6	1129	3.74	58	1.8	9.1	22	<0.1	1.2
27257	Drill Core	5.74	0.04	2.78	<0.01	0.54	2.4	154.3	3.9	30	0.2	15.8	11.6	2503	5.73	57	1.8	9.0	36	<0.1	1.3
27258	Drill Core	6.36	0.04	3.42	<0.01	0.53	0.9	190.8	3.7	19	0.3	11.2	8.4	1374	3.23	34	2.2	10.7	33	<0.1	1.4
27261	Drill Core	6.04	0.04	3.25	<0.01	0.47	2.0	83.0	4.4	21	0.1	16.0	14.3	2695	4.02	86	1.8	9.3	60	<0.1	1.5
27262	Drill Core	5.69	0.04	2.78	<0.01	0.50	2.5	52.9	4.0	30	<0.1	14.3	9.0	2733	4.98	14	1.8	8.8	46	<0.1	1.1
27263	Drill Core	5.59	0.03	2.45	<0.01	0.78	3.0	43.8	4.0	42	<0.1	16.2	12.6	2993	5.74	33	1.6	8.1	39	<0.1	1.3
27264	Drill Core	5.96	0.04	2.80	<0.01	1.04	1.6	82.6	7.8	29	0.1	14.9	13.0	987	4.42	11	1.7	9.6	26	<0.1	1.2
27265	Rock Pulp	5.21	0.13	1.30	<0.01	4.18	3.3	1439.9	558.2	2226	13.1	22.1	23.1	699	8.03	312	1.3	3.2	65	13.5	26.8
27266	Drill Core	5.64	0.04	2.45	<0.01	0.83	1.6	80.4	4.8	40	0.1	11.6	9.5	1572	5.35	7	1.8	7.8	26	<0.1	0.9
27267	Drill Core	3.50	0.02	0.77	<0.01	2.95	1.0	259.2	5.1	71	0.2	42.3	56.8	4083	11.26	121	1.0	5.6	48	<0.1	1.3
27268	Drill Core	3.18	0.01	0.24	<0.01	2.85	0.6	255.8	4.3	85	0.1	24.5	22.3	3428	11.51	5	0.9	4.8	45	<0.1	1.7
27269	Drill Core	6.75	0.04	2.33	<0.01	2.06	1.3	89.9	5.3	73	0.1	22.4	27.1	428	8.11	36	1.7	6.2	6	<0.1	1.5
27270	Drill Core	5.46	0.03	1.86	<0.01	1.53	2.6	185.6	3.3	65	0.2	21.7	48.1	1840	7.95	167	1.5	6.4	27	<0.1	1.2
27271	Drill Core	6.64	0.05	3.21	<0.01	1.01	1.7	98.3	3.4	33	0.1	17.9	16.4	2275	5.96	19	1.8	8.5	19	<0.1	1.0
27272	Drill Core	4.82	0.04	2.34	<0.01	0.70	1.5	39.4	11.5	24	0.2	10.9	6.5	2633	5.30	25	1.6	6.5	66	<0.1	1.7



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**Page:** 2 of 5

**Part:** 3 of 4

# CERTIFICATE OF ANALYSIS

# VAN19002638.1

Method	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.1	1	0.01	0.001	0.1	1	0.01	1	0.001	0.01	0.001	0.01	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	
27234	Drill Core	0.9	53	2.47	0.051	29.4	30	1.41	189	0.134	6.98	0.056	3.52	0.8	69.2	63	2.9	13.2	3.3	0.2	7
27235	Drill Core	1.0	56	2.43	0.053	48.1	31	1.43	284	0.135	7.28	0.055	3.53	0.9	74.6	96	3.2	13.8	3.8	0.2	6
27236	Drill Core	0.5	48	2.07	0.041	24.1	27	1.34	589	0.145	6.46	0.047	3.04	0.8	68.3	45	2.6	12.2	6.0	0.3	3
27237	Drill Core	0.4	44	1.73	0.032	25.4	27	2.04	134	0.090	5.52	0.029	1.84	0.4	46.5	51	1.6	11.4	4.2	0.2	3
27238	Drill Core	0.8	41	2.67	0.041	39.4	27	1.62	176	0.147	5.63	0.039	2.56	0.6	58.3	79	2.0	14.3	6.0	0.4	3
27239	Drill Core	1.7	44	3.83	0.043	45.0	28	1.69	200	0.166	5.85	0.042	2.75	0.8	64.1	90	2.4	14.1	6.0	0.4	5
27240	Drill Core	3.1	45	3.54	0.033	17.1	29	1.71	133	0.139	5.87	0.043	2.96	0.6	61.2	35	2.3	11.1	4.1	0.2	5
27241	Drill Core	4.1	46	2.29	0.044	28.5	31	1.16	246	0.191	6.42	0.049	3.37	0.9	69.6	59	2.5	12.7	6.3	0.3	5
27242	Drill Core	2.3	53	1.68	0.037	49.0	30	1.19	135	0.248	7.22	0.052	3.57	0.9	66.5	99	3.1	13.5	8.7	0.5	6
27243	Drill Core	0.7	59	0.41	0.052	30.0	37	1.17	647	0.241	7.08	0.045	3.16	1.0	58.1	60	2.9	9.9	10.0	0.6	5
27246	Drill Core	0.5	58	0.19	0.053	55.2	46	1.22	1203	0.201	7.32	0.043	3.03	0.8	63.5	114	2.8	10.4	9.4	0.6	4
27247	Drill Core	0.6	50	0.46	0.045	40.0	38	1.37	368	0.167	6.25	0.039	2.55	0.7	55.5	81	2.4	9.9	7.7	0.5	3
27248	Drill Core	0.6	37	3.47	0.030	27.8	25	2.80	287	0.081	4.36	0.016	0.88	0.2	35.3	53	0.7	8.5	3.7	0.2	2
27249	Drill Core	1.4	51	2.10	0.047	41.1	31	1.33	1004	0.229	6.65	0.046	2.51	0.9	74.6	83	2.4	13.5	9.2	0.6	4
27250	Drill Core	1.7	49	2.32	0.042	41.3	30	1.38	980	0.207	6.71	0.049	2.77	0.9	76.4	84	2.6	13.8	8.9	0.6	5
27256	Drill Core	1.0	49	1.52	0.044	36.0	30	1.23	670	0.227	6.94	0.051	2.97	0.8	73.3	75	2.4	13.2	8.7	0.6	5
27257	Drill Core	1.0	48	2.96	0.040	36.1	32	1.96	784	0.187	6.03	0.045	2.49	0.8	63.3	69	2.3	13.2	7.3	0.5	4
27258	Drill Core	1.0	51	2.34	0.046	42.1	31	1.29	855	0.219	6.55	0.052	3.14	0.7	72.2	80	2.6	14.1	8.6	0.5	5
27261	Drill Core	0.7	48	3.99	0.042	39.8	29	1.80	807	0.166	6.23	0.048	2.83	0.7	70.1	78	2.5	12.5	6.6	0.4	5
27262	Drill Core	0.4	45	3.86	0.043	41.9	29	2.22	645	0.127	5.97	0.044	2.40	0.7	72.4	82	2.0	12.5	5.3	0.3	3
27263	Drill Core	0.4	45	2.60	0.039	52.3	28	2.04	312	0.097	5.73	0.037	2.47	0.6	61.0	100	1.9	12.1	4.4	0.2	3
27264	Drill Core	1.1	45	2.34	0.037	41.8	29	1.61	127	0.102	6.06	0.041	2.67	0.6	61.6	87	1.8	10.8	3.0	0.1	3
27265	Rock Pulp	8.5	68	1.34	0.030	13.4	69	1.95	54	0.136	5.77	0.142	1.39	6.5	56.3	31	12.3	11.3	3.6	0.2	<1
27266	Drill Core	0.5	44	1.81	0.035	24.7	27	1.95	405	0.094	5.71	0.036	2.32	0.5	65.4	51	1.7	9.8	4.6	0.3	2
27267	Drill Core	1.1	29	2.82	0.029	34.6	17	3.00	53	0.037	3.66	0.016	0.81	0.2	32.0	73	0.5	10.4	1.8	<0.1	<1
27268	Drill Core	0.5	25	2.69	0.028	29.0	14	2.96	52	0.030	3.28	0.011	0.23	<0.1	26.7	60	0.2	10.5	1.3	<0.1	<1
27269	Drill Core	1.4	47	0.19	0.046	17.0	29	1.81	61	0.124	6.60	0.036	2.33	0.4	59.2	39	1.8	7.2	5.3	0.3	3
27270	Drill Core	0.6	39	1.33	0.033	20.0	25	2.01	47	0.092	5.56	0.030	1.85	0.4	51.2	39	1.3	9.4	4.1	0.2	2
27271	Drill Core	0.9	43	0.81	0.044	29.4	26	1.71	114	0.130	6.63	0.048	2.87	0.6	62.7	60	2.4	10.4	5.6	0.3	4
27272	Drill Core	0.7	35	6.42	0.027	32.9	21	3.24	513	0.075	4.94	0.040	2.03	0.5	55.1	67	1.6	12.6	1.8	0.1	3



**BUREAU VERITAS** MINERAL LABORATORIES  
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Project: Bull River

Report Date: October 01, 2019

Page: 2 of 5

Part: 4 of 4

# CERTIFICATE OF ANALYSIS

**VAN19002638.1**

Method	Analyte	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200
		Sc	Li	S	Rb	Hf	In	Re	Se	Te	Tl
Unit		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		1	0.1	0.1	0.1	0.1	0.05	0.005	1	0.5	0.5
27234	Drill Core	10	21.5	0.7	140.3	2.1	0.19	<0.005	<1	<0.5	1.6
27235	Drill Core	11	26.9	0.6	165.5	2.2	0.18	<0.005	<1	<0.5	1.5
27236	Drill Core	9	22.0	0.5	138.3	2.1	0.21	<0.005	<1	0.7	1.3
27237	Drill Core	8	29.4	0.8	79.4	1.4	0.20	<0.005	<1	0.5	0.8
27238	Drill Core	8	22.1	0.6	112.7	1.9	0.18	<0.005	<1	<0.5	1.1
27239	Drill Core	9	18.8	0.6	129.4	1.9	0.13	<0.005	<1	0.6	1.3
27240	Drill Core	9	18.4	1.0	135.7	1.7	0.16	<0.005	<1	0.8	1.4
27241	Drill Core	9	19.3	1.3	141.7	2.3	0.16	<0.005	<1	0.6	1.4
27242	Drill Core	11	23.5	0.9	147.8	1.9	0.24	<0.005	<1	<0.5	1.4
27243	Drill Core	11	24.5	0.4	129.0	1.8	0.29	<0.005	<1	<0.5	1.3
27246	Drill Core	11	25.6	0.3	131.0	1.9	0.17	<0.005	<1	<0.5	1.3
27247	Drill Core	9	24.1	0.5	103.8	1.7	0.16	<0.005	<1	<0.5	1.2
27248	Drill Core	7	19.7	0.9	35.9	0.9	0.25	<0.005	<1	0.9	0.7
27249	Drill Core	10	21.3	0.3	121.3	2.2	0.14	<0.005	<1	<0.5	1.7
27250	Drill Core	10	20.1	0.3	125.5	2.3	0.18	<0.005	<1	0.6	1.3
27256	Drill Core	10	20.8	0.5	131.7	2.4	0.17	<0.005	<1	<0.5	1.4
27257	Drill Core	10	19.7	0.5	122.9	2.2	0.26	<0.005	<1	<0.5	1.3
27258	Drill Core	10	20.1	0.5	142.9	2.5	0.27	<0.005	<1	0.6	1.5
27261	Drill Core	9	18.0	0.4	136.7	1.9	0.16	<0.005	<1	0.7	1.3
27262	Drill Core	9	19.0	0.5	113.2	1.9	0.13	<0.005	<1	0.7	1.3
27263	Drill Core	9	21.4	0.7	103.2	1.6	0.17	<0.005	<1	0.6	1.1
27264	Drill Core	9	23.0	1.0	119.3	1.9	0.17	<0.005	<1	0.7	1.2
27265	Rock Pulp	12	34.0	4.3	51.6	1.8	1.29	<0.005	25	<0.5	5.3
27266	Drill Core	9	28.9	0.8	100.5	1.9	0.14	<0.005	<1	0.7	1.2
27267	Drill Core	6	29.5	2.9	31.3	1.0	0.17	<0.005	<1	0.7	0.7
27268	Drill Core	5	39.4	2.8	9.0	0.8	0.34	<0.005	<1	0.6	0.6
27269	Drill Core	9	40.6	2.0	71.4	1.8	0.20	<0.005	1	<0.5	0.9
27270	Drill Core	8	24.7	1.5	72.3	1.6	0.19	<0.005	<1	<0.5	0.8
27271	Drill Core	10	21.8	0.9	125.6	2.3	0.25	<0.005	<1	<0.5	1.2
27272	Drill Core	6	23.0	0.6	91.5	1.7	0.17	<0.005	<1	2.8	1.0





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**Project:** Bull River  
**Report Date:** October 01, 2019

**Page:** 3 of 5

**Part:** 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
27273	Rock Pulp	0.11	7	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.89	<0.02	0.02	<0.001	<0.01	<0.01	1.74	0.04	0.001	0.54
27274	Drill Core	2.73	4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.05	6.49	<0.02	<0.01	<0.001	<0.01	<0.01	0.31	0.02	0.001	1.75
27275	Drill Core	2.51	6	<0.001	0.067	<0.02	<0.01	<2	<0.001	<0.001	0.24	5.95	<0.02	<0.01	<0.001	<0.01	<0.01	2.31	<0.01	<0.001	1.77
27276	Drill Core	3.21	8	<0.001	<0.001	<0.02	0.01	<2	<0.001	0.001	0.19	10.33	<0.02	<0.01	<0.001	<0.01	<0.01	2.04	0.02	0.001	3.03
27277	Drill Core	4.36	124	<0.001	0.010	<0.02	<0.01	<2	0.002	0.003	0.45	11.87	0.04	<0.01	<0.001	<0.01	<0.01	4.00	0.02	0.002	3.35
27278	Drill Core	2.70	7	<0.001	0.006	<0.02	<0.01	<2	0.001	<0.001	0.20	4.77	<0.02	<0.01	<0.001	<0.01	<0.01	4.15	0.04	0.002	2.16
27279	Drill Core	2.82	3	<0.001	0.003	<0.02	<0.01	<2	<0.001	<0.001	0.50	5.27	<0.02	0.02	<0.001	<0.01	<0.01	9.11	<0.01	<0.001	3.14
27280	Drill Core	4.62	6	<0.001	0.015	<0.02	<0.01	<2	0.002	0.002	0.11	4.11	<0.02	<0.01	<0.001	<0.01	<0.01	2.67	0.05	0.003	1.59
27281	Drill Core	5.43	13	<0.001	0.011	<0.02	<0.01	<2	0.002	0.004	0.10	4.70	0.04	<0.01	<0.001	<0.01	<0.01	2.18	0.04	0.003	1.52
27282	Drill Core	5.28	14	<0.001	0.014	<0.02	<0.01	<2	0.002	0.002	0.19	6.14	0.02	<0.01	<0.001	<0.01	<0.01	1.83	0.04	0.003	1.89
27283	Drill Core	4.72	9	<0.001	0.008	<0.02	<0.01	<2	0.004	0.004	0.07	4.76	<0.02	<0.01	<0.001	<0.01	<0.01	1.76	0.04	0.003	1.30
27284	Drill Core	4.03	6	<0.001	0.007	<0.02	<0.01	<2	0.002	0.001	0.13	4.06	<0.02	<0.01	<0.001	<0.01	<0.01	3.39	0.04	0.003	1.82
27285	Rock Pulp	0.11	122	<0.001	0.140	0.06	0.20	13	0.002	0.002	0.07	8.35	0.03	<0.01	0.001	<0.01	<0.01	1.33	0.03	0.007	1.85
27286	Drill Core	3.34	4	<0.001	0.006	<0.02	<0.01	<2	0.001	<0.001	0.12	3.45	<0.02	<0.01	<0.001	<0.01	<0.01	3.00	0.04	0.003	1.68
27287	Drill Core	3.54	3	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.21	3.37	<0.02	<0.01	<0.001	<0.01	<0.01	5.09	0.03	0.002	2.20
27288	Drill Core	4.63	4	<0.001	0.003	<0.02	<0.01	<2	0.002	0.001	0.07	3.05	<0.02	<0.01	<0.001	<0.01	<0.01	2.18	0.05	0.003	1.25
27289	Drill Core	4.01	4	<0.001	0.003	<0.02	<0.01	<2	0.001	0.001	0.10	3.18	<0.02	<0.01	<0.001	<0.01	<0.01	2.88	0.05	0.003	1.57
27290	Drill Core	3.63	3	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.06	1.95	<0.02	<0.01	<0.001	<0.01	<0.01	1.00	0.06	0.003	1.11
27291	Drill Core	3.90	4	<0.001	0.012	<0.02	<0.01	<2	0.005	0.005	0.21	10.83	<0.02	<0.01	<0.001	<0.01	<0.01	2.02	0.03	0.002	3.07
27292	Drill Core	3.82	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.47	<0.02	<0.01	<0.001	<0.01	<0.01	1.12	0.05	0.002	1.15
27293	Rock Pulp	0.11	3	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.84	<0.02	0.02	<0.001	<0.01	<0.01	1.72	0.04	<0.001	0.54
27294	Drill Core	4.16	6	<0.001	0.010	<0.02	<0.01	<2	0.003	0.004	0.30	7.68	<0.02	<0.01	<0.001	<0.01	<0.01	3.06	0.04	0.002	2.48
27295	Drill Core	3.28	8	<0.001	0.003	<0.02	<0.01	<2	0.001	0.001	0.03	3.72	<0.02	<0.01	<0.001	<0.01	<0.01	0.28	0.06	0.003	1.36
27296	Drill Core	2.06	4	<0.001	0.014	<0.02	<0.01	<2	0.004	0.004	0.26	9.52	<0.02	<0.01	<0.001	<0.01	<0.01	2.68	0.04	0.002	2.48
27297	Drill Core	4.40	4	<0.001	0.006	<0.02	<0.01	<2	0.001	0.001	0.20	5.07	<0.02	<0.01	<0.001	<0.01	<0.01	3.20	0.04	0.003	2.05
27298	Drill Core	5.25	11	<0.001	0.007	<0.02	<0.01	<2	0.001	0.001	0.08	5.08	<0.02	<0.01	<0.001	<0.01	<0.01	0.64	0.05	0.003	1.45
27299	Drill Core	2.72	4	<0.001	0.003	<0.02	<0.01	<2	<0.001	<0.001	0.14	4.26	<0.02	<0.01	<0.001	<0.01	<0.01	0.96	0.05	0.003	1.33
27300	Drill Core	3.10	6	<0.001	0.006	<0.02	<0.01	<2	0.001	0.001	0.35	8.69	<0.02	<0.01	<0.001	<0.01	<0.01	2.42	0.04	0.002	2.55
35251	Drill Core	4.74	5	<0.001	0.011	<0.02	<0.01	<2	0.002	0.002	0.06	5.01	<0.02	<0.01	<0.001	<0.01	<0.01	0.51	0.05	0.003	1.09
35252	Drill Core	4.81	4	<0.001	0.019	<0.02	<0.01	<2	0.003	0.003	0.05	6.77	<0.02	<0.01	<0.001	<0.01	<0.01	0.35	0.04	0.003	1.27



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**Project:** Bull River  
**Report Date:** October 01, 2019

**Page:** 3 of 5

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

# VAN19002638.1

Method Analyte Unit MDL	MA370	MA370	MA370	MA370	MA370	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	
	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.2	1	0.01	1	0.1	0.1	1	0.1	0.1	0.1
27273	Rock Pulp	7.31	3.52	1.58	<0.01	0.06	3.9	22.0	2.5	35	<0.1	7.5	4.4	705	2.73	3	1.1	2.5	200	<0.1	0.3
27274	Drill Core	3.07	0.01	0.18	<0.01	<0.05	0.3	4.0	1.5	75	<0.1	3.9	6.9	491	6.06	42	0.6	3.1	7	<0.1	0.6
27275	Drill Core	1.68	0.01	<0.01	<0.01	0.20	0.2	664.0	1.5	54	0.2	3.7	5.6	2220	5.58	47	0.3	1.8	39	<0.1	0.6
27276	Drill Core	4.09	<0.01	0.01	<0.01	0.10	1.9	7.4	2.4	109	<0.1	6.7	13.9	1725	9.00	167	1.2	6.2	33	<0.1	0.6
27277	Drill Core	3.53	<0.01	0.04	<0.01	0.67	1.2	94.8	6.9	95	<0.1	20.6	28.1	4348	10.52	452	1.1	5.0	74	<0.1	1.0
27278	Drill Core	5.64	0.05	2.97	<0.01	0.51	1.6	63.0	4.7	15	0.1	10.8	8.4	1838	4.36	45	2.0	8.3	42	<0.1	1.2
27279	Drill Core	0.10	0.02	0.04	<0.01	0.17	0.2	35.3	3.9	17	<0.1	1.4	1.4	4879	4.75	3	<0.1	0.2	140	0.1	0.3
27280	Drill Core	7.35	0.06	3.77	<0.01	0.66	1.8	136.9	4.3	20	0.1	14.7	21.7	1023	3.81	215	2.8	11.1	33	<0.1	1.5
27281	Drill Core	7.31	0.06	3.67	<0.01	0.83	1.7	101.2	4.1	24	<0.1	20.3	39.6	920	4.22	503	2.8	11.1	26	<0.1	1.7
27282	Drill Core	6.41	0.05	2.95	<0.01	0.67	2.1	136.1	4.5	37	0.1	16.0	19.6	1721	5.61	213	2.3	9.0	29	<0.1	1.5
27283	Drill Core	7.69	0.06	4.06	<0.01	1.50	2.1	82.5	11.2	15	0.3	34.3	34.3	651	4.28	91	2.7	9.1	19	<0.1	2.3
27284	Drill Core	6.48	0.05	3.35	<0.01	0.97	2.1	67.4	8.6	27	0.2	15.8	11.4	1184	3.70	25	2.5	9.3	35	<0.1	3.3
27285	Rock Pulp	5.52	0.14	1.31	<0.01	4.47	3.1	1316.9	502.0	1961	12.0	19.8	22.3	678	7.52	299	1.2	3.0	63	12.8	21.4
27286	Drill Core	6.79	0.06	3.55	<0.01	0.62	4.1	58.8	4.7	14	0.1	14.3	8.4	1123	3.33	19	2.5	9.5	38	<0.1	1.5
27287	Drill Core	3.96	0.04	2.14	<0.01	0.51	0.6	15.9	16.4	13	0.2	7.8	7.1	2008	3.17	3	1.2	5.9	64	<0.1	1.6
27288	Drill Core	6.89	0.06	3.71	<0.01	0.88	1.5	26.1	7.7	9	0.1	15.7	11.0	722	2.87	3	2.1	9.4	30	<0.1	1.4
27289	Drill Core	6.11	0.05	3.28	<0.01	0.72	1.5	27.2	11.2	11	0.1	13.6	10.7	975	3.04	8	2.0	8.5	36	<0.1	1.4
27290	Drill Core	7.46	0.06	3.88	<0.01	0.24	1.2	9.7	7.4	16	<0.1	5.1	3.9	583	1.77	2	2.1	9.5	21	<0.1	1.2
27291	Drill Core	3.95	0.02	0.94	<0.01	2.76	0.8	115.5	22.0	77	0.3	46.6	45.3	1995	9.64	3	1.1	5.2	46	<0.1	2.0
27292	Drill Core	7.01	0.06	3.65	<0.01	0.41	0.9	15.3	7.3	18	<0.1	6.9	5.1	558	2.29	3	1.9	8.4	19	<0.1	1.3
27293	Rock Pulp	7.34	3.52	1.58	<0.01	0.06	3.8	22.7	2.5	35	<0.1	7.4	4.7	764	2.75	3	1.1	2.6	214	<0.1	0.3
27294	Drill Core	5.50	0.05	2.77	<0.01	2.95	0.8	97.1	23.4	28	0.4	30.5	38.8	2738	6.96	42	1.5	7.5	56	<0.1	4.3
27295	Drill Core	8.24	0.06	4.02	<0.01	0.62	2.2	29.7	5.9	39	<0.1	11.3	9.9	252	3.54	7	2.3	9.5	9	<0.1	1.4
27296	Drill Core	4.25	0.03	1.35	<0.01	2.31	1.7	145.8	8.2	61	0.2	40.5	36.4	2503	8.68	18	1.3	5.7	57	<0.1	1.1
27297	Drill Core	5.67	0.05	2.86	<0.01	0.83	1.2	60.2	6.3	23	0.1	13.7	14.9	1871	4.78	31	1.9	9.2	41	<0.1	1.4
27298	Drill Core	7.25	0.05	3.29	<0.01	0.80	2.3	70.0	4.8	41	<0.1	14.0	13.9	790	4.80	16	2.1	9.0	14	<0.1	1.5
27299	Drill Core	6.81	0.05	3.30	<0.01	0.48	2.1	27.4	3.2	31	<0.1	8.0	7.0	1316	4.07	10	2.2	10.7	24	<0.1	1.2
27300	Drill Core	5.29	0.03	1.75	<0.01	0.80	1.5	54.8	5.7	70	<0.1	12.5	11.9	3168	7.70	15	1.6	7.6	50	<0.1	1.2
35251	Drill Core	7.36	0.05	3.46	<0.01	1.03	1.1	114.6	3.2	31	<0.1	18.5	18.0	565	4.55	63	1.8	8.0	12	<0.1	1.2
35252	Drill Core	6.02	0.04	2.49	<0.01	1.51	1.0	184.8	3.0	44	<0.1	28.2	28.6	450	6.29	79	1.7	7.6	8	<0.1	1.0



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Project: Bull River

Report Date: October 01, 2019

Page: 3 of 5

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

## VAN19002638.1

Method	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.1	1	0.01	0.001	0.1	1	0.01	1	0.001	0.01	0.001	0.01	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	
27273	Rock Pulp	<0.1	33	1.63	0.039	11.4	12	0.53	801	0.195	6.77	3.262	1.61	0.5	49.7	23	1.9	14.6	4.9	0.3	<1
27274	Drill Core	0.1	23	0.28	0.016	17.3	14	1.71	51	0.023	3.05	0.014	0.17	<0.1	10.7	33	0.1	2.5	0.9	<0.1	<1
27275	Drill Core	<0.1	15	2.34	0.008	11.4	8	1.77	10	0.010	1.69	0.012	0.01	<0.1	4.0	22	<0.1	6.4	0.3	<0.1	<1
27276	Drill Core	0.1	26	1.87	0.021	29.6	15	2.88	8	0.028	3.98	0.008	0.01	<0.1	22.6	59	<0.1	8.0	0.9	<0.1	<1
27277	Drill Core	0.4	23	3.65	0.018	19.9	16	3.26	15	0.025	3.54	0.009	0.04	<0.1	26.4	40	<0.1	11.5	0.8	<0.1	<1
27278	Drill Core	1.9	36	3.79	0.036	41.3	25	2.10	753	0.119	5.57	0.045	2.88	0.6	70.2	83	2.1	11.5	4.2	0.2	3
27279	Drill Core	<0.1	2	8.41	<0.001	2.2	2	2.99	20	0.001	0.10	0.017	0.04	<0.1	0.3	5	0.2	14.1	<0.1	<0.1	<1
27280	Drill Core	1.3	49	2.42	0.045	33.6	31	1.51	694	0.234	6.93	0.054	3.21	0.9	92.2	70	2.5	14.3	8.7	0.5	5
27281	Drill Core	1.6	56	1.99	0.040	37.0	34	1.44	459	0.244	7.00	0.053	3.45	1.0	87.9	81	2.5	11.9	8.4	0.6	5
27282	Drill Core	1.1	52	1.69	0.033	39.4	31	1.84	425	0.194	6.19	0.044	2.90	0.8	73.3	80	2.3	11.5	6.4	0.4	3
27283	Drill Core	7.2	58	1.59	0.033	26.4	37	1.21	108	0.120	6.98	0.053	3.59	0.9	81.3	62	3.0	10.9	2.9	0.1	7
27284	Drill Core	1.3	49	3.07	0.038	25.8	30	1.76	348	0.108	6.33	0.046	3.36	0.8	85.5	49	2.4	11.8	2.9	0.2	4
27285	Rock Pulp	8.0	61	1.23	0.028	12.2	62	1.80	40	0.129	5.40	0.136	1.21	10.9	47.8	29	11.7	10.9	3.3	0.2	1
27286	Drill Core	1.3	44	2.86	0.043	34.4	27	1.70	781	0.122	6.77	0.051	3.06	0.8	100.2	71	2.5	14.6	3.2	0.2	5
27287	Drill Core	0.4	25	4.73	0.032	49.5	18	2.19	340	0.073	4.02	0.033	1.95	0.5	49.3	95	1.4	12.2	2.0	0.1	2
27288	Drill Core	0.6	44	2.03	0.051	45.0	29	1.21	598	0.120	6.53	0.051	3.26	0.7	79.0	99	2.4	12.5	3.0	0.2	4
27289	Drill Core	0.5	43	2.74	0.044	37.5	26	1.56	574	0.116	6.11	0.047	3.00	0.7	76.1	69	2.1	11.6	2.9	0.2	4
27290	Drill Core	0.3	53	0.85	0.051	68.1	28	1.03	613	0.147	6.45	0.051	2.64	0.7	71.0	150	2.6	10.8	3.7	0.2	3
27291	Drill Core	0.7	28	1.91	0.029	22.8	19	2.99	53	0.035	3.97	0.018	0.84	0.2	34.9	47	0.6	8.9	0.7	<0.1	1
27292	Drill Core	0.4	47	1.01	0.053	15.0	26	1.09	583	0.132	6.31	0.048	2.89	0.6	72.8	32	2.5	9.5	3.3	0.2	4
27293	Rock Pulp	<0.1	34	1.62	0.040	11.9	12	0.53	834	0.197	6.90	3.604	1.50	0.4	53.1	24	2.3	15.2	5.1	0.4	1
27294	Drill Core	1.4	39	2.78	0.039	44.7	23	2.41	62	0.074	5.33	0.044	2.76	0.5	53.6	88	1.6	13.2	1.6	<0.1	3
27295	Drill Core	0.6	58	0.24	0.053	67.7	28	1.30	661	0.134	6.96	0.053	3.35	0.9	87.9	135	2.7	10.8	3.1	0.2	5
27296	Drill Core	0.6	28	2.48	0.034	35.1	19	2.47	65	0.044	4.32	0.023	1.28	0.3	44.0	69	0.9	8.9	0.8	<0.1	2
27297	Drill Core	0.6	42	3.03	0.042	44.9	28	2.08	514	0.097	5.66	0.040	2.79	0.6	65.9	94	2.1	11.5	2.6	0.2	3
27298	Drill Core	0.7	54	0.56	0.043	24.5	34	1.41	253	0.122	6.20	0.044	3.32	0.8	65.8	48	2.7	8.6	5.7	0.3	4
27299	Drill Core	0.3	51	0.89	0.049	118.9	29	1.30	656	0.135	6.30	0.047	3.04	0.7	67.3	249	2.7	11.6	6.2	0.3	5
27300	Drill Core	0.3	39	2.22	0.033	58.2	25	2.50	324	0.068	5.13	0.028	1.58	0.4	57.5	111	1.3	10.9	3.1	0.2	3
35251	Drill Core	0.6	51	0.42	0.045	23.8	30	1.01	184	0.128	6.27	0.043	3.19	0.6	57.1	48	2.8	8.4	5.8	0.3	3
35252	Drill Core	0.9	42	0.30	0.037	35.2	27	1.22	60	0.094	5.41	0.036	2.44	0.6	51.7	74	1.8	7.7	4.6	0.2	3



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Project: Bull River

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Page: 3 of 5

Part: 4 of 4

# CERTIFICATE OF ANALYSIS

**VAN19002638.1**

Method	Analyte	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200
		Sc	Li	S	Rb	Hf	In	Re	Se	Te	Tl
Unit		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		1	0.1	0.1	0.1	0.1	0.05	0.005	1	0.5	0.5
27273	Rock Pulp	6	1.8	<0.1	29.7	1.8	<0.05	<0.005	<1	<0.5	<0.5
27274	Drill Core	3	19.8	<0.1	6.0	0.3	0.08	<0.005	<1	0.6	<0.5
27275	Drill Core	3	12.6	0.2	0.7	0.1	0.20	<0.005	<1	0.7	<0.5
27276	Drill Core	5	27.3	<0.1	1.3	0.8	0.19	<0.005	<1	0.9	<0.5
27277	Drill Core	6	23.5	0.6	2.0	0.8	0.29	<0.005	<1	0.9	<0.5
27278	Drill Core	8	19.1	0.5	112.8	2.2	0.19	<0.005	<1	0.7	1.4
27279	Drill Core	8	1.2	0.1	1.8	<0.1	0.15	<0.005	<1	0.5	<0.5
27280	Drill Core	10	23.5	0.6	129.1	3.0	0.16	<0.005	<1	<0.5	1.8
27281	Drill Core	11	22.6	0.7	131.6	2.5	0.15	<0.005	1	<0.5	1.8
27282	Drill Core	10	21.4	0.6	105.9	2.2	0.24	<0.005	<1	0.7	1.4
27283	Drill Core	11	20.5	1.3	127.3	2.2	0.18	<0.005	<1	<0.5	1.4
27284	Drill Core	9	20.7	0.9	131.2	2.6	0.13	<0.005	<1	<0.5	1.3
27285	Rock Pulp	11	29.9	4.1	49.1	1.4	1.14	<0.005	23	<0.5	4.9
27286	Drill Core	10	19.6	0.6	131.0	2.9	0.13	<0.005	<1	0.7	1.7
27287	Drill Core	6	13.7	0.5	89.4	1.3	0.08	<0.005	<1	1.8	1.0
27288	Drill Core	9	17.8	0.8	134.2	2.3	0.09	<0.005	<1	<0.5	1.7
27289	Drill Core	8	18.2	0.7	136.7	2.0	0.09	<0.005	<1	<0.5	1.2
27290	Drill Core	8	20.8	0.2	110.6	2.0	0.15	<0.005	<1	<0.5	1.8
27291	Drill Core	7	29.6	2.5	37.5	1.0	0.06	<0.005	1	<0.5	0.7
27292	Drill Core	9	21.2	0.4	119.2	1.9	0.08	<0.005	<1	<0.5	1.4
27293	Rock Pulp	6	1.3	<0.1	31.1	1.8	<0.05	<0.005	<1	<0.5	<0.5
27294	Drill Core	9	37.4	2.7	112.0	1.6	0.16	<0.005	<1	0.8	1.0
27295	Drill Core	10	28.4	0.6	131.4	2.4	0.13	<0.005	<1	<0.5	1.5
27296	Drill Core	7	25.9	2.1	54.1	1.3	0.13	<0.005	<1	0.7	0.7
27297	Drill Core	8	19.1	0.8	118.0	2.0	0.21	<0.005	<1	0.6	1.1
27298	Drill Core	10	25.3	0.7	115.7	1.9	0.21	<0.005	<1	<0.5	1.3
27299	Drill Core	9	22.6	0.4	126.9	1.8	0.21	0.006	<1	<0.5	1.3
27300	Drill Core	9	23.9	0.7	69.9	1.6	0.25	<0.005	<1	0.9	0.9
35251	Drill Core	10	22.3	0.9	127.8	1.7	0.17	<0.005	1	<0.5	1.2
35252	Drill Core	8	23.7	1.4	95.9	1.5	0.19	<0.005	<1	<0.5	1.0



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**Project:** Bull River  
**Report Date:** October 01, 2019

**Page:** 4 of 5

**Part:** 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
35253	Drill Core	2.49	6	<0.001	0.011	<0.02	<0.01	<2	0.003	0.002	0.02	5.62	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.05	0.004	0.96
35293	Drill Core	1.34	6	<0.001	0.004	<0.02	<0.01	<2	0.002	0.001	0.15	4.40	<0.02	0.01	<0.001	<0.01	<0.01	4.07	0.05	0.004	2.16
35294	Drill Core	1.55	4	<0.001	0.004	<0.02	<0.01	<2	0.002	0.001	0.15	4.30	<0.02	0.01	<0.001	<0.01	<0.01	4.00	0.05	0.004	2.15
35295	Rock Pulp	0.11	173	<0.001	0.139	0.06	0.20	12	0.002	0.002	0.07	8.18	0.03	<0.01	0.001	<0.01	<0.01	1.31	0.03	0.007	1.82
35296	Drill Core	0.35	7	<0.001	0.011	<0.02	<0.01	<2	0.006	0.003	0.15	5.90	<0.02	0.01	<0.001	<0.01	<0.01	3.65	0.06	0.004	2.12
35297	Drill Core	1.25	3	<0.001	0.002	<0.02	<0.01	<2	0.001	0.001	0.08	2.67	<0.02	<0.01	<0.001	<0.01	<0.01	2.02	0.05	0.004	1.49
35298	Drill Core	0.65	4	<0.001	0.002	<0.02	<0.01	<2	0.002	0.001	0.09	4.38	<0.02	<0.01	<0.001	<0.01	<0.01	1.77	0.06	0.004	1.64
35299	Drill Core	1.07	3	<0.001	0.008	<0.02	<0.01	<2	0.004	0.002	0.13	6.89	<0.02	<0.01	<0.001	<0.01	<0.01	2.42	0.06	0.004	2.09
35300	Drill Core	0.56	33	0.002	0.013	<0.02	<0.01	<2	0.009	0.007	0.04	9.05	<0.02	<0.01	<0.001	<0.01	<0.01	0.75	0.06	0.003	1.68
35301	Drill Core	1.65	11	<0.001	0.006	<0.02	<0.01	<2	0.003	0.002	0.02	5.77	<0.02	<0.01	<0.001	<0.01	<0.01	0.20	0.07	0.004	1.34
35302	Drill Core	1.04	4	<0.001	0.007	<0.02	<0.01	<2	0.003	0.002	0.02	5.34	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.07	0.005	1.32
35303	Drill Core	0.76	4	<0.001	0.005	<0.02	<0.01	<2	0.003	0.002	0.03	6.45	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.07	0.005	1.61
35304	Drill Core	0.25	5	<0.001	0.014	<0.02	<0.01	<2	0.007	0.003	0.83	12.60	<0.02	0.03	<0.001	<0.01	<0.01	7.32	0.02	0.002	3.58
35305	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.08	2.84	<0.02	0.02	<0.001	<0.01	<0.01	1.74	0.04	0.001	0.54
35306	Drill Core	0.33	6	<0.001	0.019	<0.02	<0.01	<2	0.010	0.004	0.33	11.35	<0.02	0.01	<0.001	<0.01	<0.01	3.22	0.05	0.003	2.26
35307	Drill Core	1.12	5	<0.001	0.002	<0.02	<0.01	<2	0.001	<0.001	0.04	4.66	<0.02	<0.01	<0.001	<0.01	<0.01	0.59	0.07	0.004	1.55
35308	Drill Core	0.62	6	0.001	0.014	<0.02	<0.01	<2	0.009	0.002	0.14	8.59	<0.02	<0.01	<0.001	<0.01	<0.01	2.39	0.06	0.004	1.90
35309	Drill Core	1.96	5	<0.001	0.003	<0.02	<0.01	<2	0.002	<0.001	0.11	4.75	<0.02	<0.01	<0.001	<0.01	<0.01	2.05	0.06	0.004	1.80
35310	Drill Core	0.63	5	<0.001	0.006	<0.02	<0.01	<2	0.004	0.003	0.15	5.67	<0.02	<0.01	<0.001	<0.01	<0.01	2.69	0.06	0.004	1.89
35311	Drill Core	0.91	3	<0.001	0.002	<0.02	<0.01	<2	0.001	<0.001	0.15	3.75	<0.02	<0.01	<0.001	<0.01	<0.01	3.07	0.06	0.004	1.80
35312	Drill Core	0.58	4	<0.001	0.003	<0.02	<0.01	<2	0.002	0.001	0.02	4.48	<0.02	<0.01	<0.001	<0.01	<0.01	0.16	0.07	0.004	1.28
35313	Drill Core	1.27	6	<0.001	0.013	<0.02	<0.01	<2	0.008	0.002	0.04	8.80	<0.02	<0.01	<0.001	<0.01	<0.01	0.22	0.06	0.004	1.44
35314	Drill Core	1.44	4	<0.001	0.013	<0.02	<0.01	<2	0.007	0.002	0.02	7.72	<0.02	<0.01	<0.001	<0.01	<0.01	0.16	0.06	0.004	1.29
35315	Drill Core	1.03	5	<0.001	0.007	<0.02	<0.01	<2	0.004	0.002	1.18	29.70	<0.02	<0.01	<0.001	<0.01	<0.01	1.73	<0.01	<0.001	3.65
35316	Drill Core	0.94	5	<0.001	0.002	<0.02	<0.01	<2	0.003	0.002	1.36	32.08	<0.02	<0.01	<0.001	<0.01	<0.01	0.38	<0.01	<0.001	3.11
35317	Drill Core	1.70	4	0.001	0.003	<0.02	<0.01	<2	0.004	0.003	0.61	16.40	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.03	0.003	1.76
35318	Rock Pulp	0.11	169	<0.001	0.139	0.06	0.20	12	0.002	0.002	0.07	8.27	0.03	<0.01	0.001	<0.01	<0.01	1.32	0.03	0.006	1.83
35319	Drill Core	1.43	6	<0.001	0.003	<0.02	<0.01	<2	0.005	0.005	0.28	10.82	<0.02	<0.01	<0.001	<0.01	<0.01	0.35	0.04	0.004	1.52
35320	Drill Core	1.65	5	<0.001	0.003	<0.02	<0.01	<2	0.002	0.002	0.04	7.11	<0.02	<0.01	<0.001	<0.01	<0.01	0.14	0.05	0.005	1.44
35321	Drill Core	1.20	5	<0.001	0.006	<0.02	<0.01	<2	0.004	0.003	0.13	7.32	<0.02	<0.01	<0.001	<0.01	<0.01	0.78	0.05	0.004	1.43



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**Page:** 4 of 5

**Part:** 2 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method Analyte Unit MDL	MA370	MA370	MA370	MA370	MA370	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
	Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	
	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.2	1	0.01	1	0.1	0.1	1	0.1	0.1	0.1
35253	Drill Core	7.28	0.05	3.47	<0.01	1.50	2.1	114.2	5.4	31	0.1	29.0	23.4	145	5.26	57	2.3	8.6	6	<0.1	1.2
35293	Drill Core	6.49	0.05	3.28	<0.01	0.99	2.5	42.6	4.4	25	<0.1	22.8	10.4	1444	4.08	3	2.9	10.5	136	<0.1	2.0
35294	Drill Core	6.38	0.04	3.22	<0.01	0.77	2.6	35.1	4.6	25	<0.1	22.6	9.9	1382	3.94	2	2.7	10.3	134	<0.1	2.4
35295	Rock Pulp	5.51	0.14	1.29	<0.01	4.34	3.1	1331.0	501.8	1935	11.8	19.9	22.0	642	7.49	293	1.2	3.0	62	11.4	18.4
35296	Drill Core	6.12	0.04	2.95	<0.01	2.22	2.0	105.1	9.9	30	<0.1	51.4	24.7	1427	5.59	4	2.6	11.0	118	<0.1	6.8
35297	Drill Core	8.06	0.05	4.27	<0.01	0.32	1.4	22.5	3.0	23	<0.1	12.0	9.8	744	2.60	10	3.2	12.2	73	<0.1	1.7
35298	Drill Core	7.64	0.05	3.74	<0.01	0.62	0.9	23.6	4.6	40	<0.1	17.5	11.2	817	4.16	12	2.7	11.5	61	<0.1	1.7
35299	Drill Core	6.64	0.04	2.90	<0.01	1.52	2.6	77.8	6.0	52	<0.1	38.2	21.1	1192	6.27	26	3.1	11.7	76	<0.1	2.1
35300	Drill Core	6.78	0.04	2.65	<0.01	4.66	15.5	122.4	35.1	65	0.3	78.6	66.7	377	7.94	130	2.5	10.4	26	<0.1	12.0
35301	Drill Core	7.65	0.04	3.24	<0.01	1.17	4.2	51.6	5.4	56	<0.1	26.5	15.0	170	5.17	50	2.7	8.3	12	<0.1	2.3
35302	Drill Core	7.80	0.05	3.43	<0.01	1.16	1.3	63.1	4.4	54	<0.1	27.2	20.2	167	4.79	94	2.3	9.4	10	<0.1	2.0
35303	Drill Core	7.63	0.04	3.06	<0.01	1.12	4.2	51.8	3.1	67	<0.1	27.2	16.8	236	5.78	72	2.3	9.0	10	<0.1	1.7
35304	Drill Core	3.22	0.03	1.32	<0.01	2.90	1.2	130.8	3.9	42	<0.1	57.1	23.3	7880	10.84	20	1.5	5.2	272	<0.1	2.1
35305	Rock Pulp	7.45	3.55	1.59	<0.01	0.06	4.0	20.3	2.3	32	<0.1	6.6	4.0	674	2.50	2	1.0	2.5	188	<0.1	0.3
35306	Drill Core	4.73	0.03	1.72	<0.01	4.30	1.1	172.7	6.5	57	0.1	84.4	31.8	3028	10.10	24	2.6	6.5	118	<0.1	2.8
35307	Drill Core	8.04	0.05	3.62	<0.01	0.46	3.2	22.5	2.4	55	<0.1	12.6	7.7	380	4.09	26	2.3	9.1	19	<0.1	1.8
35308	Drill Core	6.54	0.04	2.92	<0.01	2.94	11.9	138.5	4.7	49	<0.1	79.0	20.8	1387	7.99	22	2.4	9.7	67	<0.1	2.1
35309	Drill Core	7.28	0.05	3.40	<0.01	0.72	2.9	32.2	3.9	46	<0.1	19.6	8.0	990	4.49	11	2.7	10.9	62	<0.1	2.0
35310	Drill Core	6.67	0.04	3.15	<0.01	1.56	0.8	61.8	5.0	39	<0.1	33.0	24.9	1481	5.31	108	2.7	11.3	70	<0.1	2.6
35311	Drill Core	7.11	0.05	3.60	<0.01	0.39	1.1	17.4	3.0	29	<0.1	11.8	4.5	1409	3.49	4	2.5	11.8	88	<0.1	1.9
35312	Drill Core	7.76	0.04	3.42	<0.01	0.45	1.9	25.4	2.9	56	<0.1	14.3	8.9	176	4.18	39	2.4	10.0	10	<0.1	1.7
35313	Drill Core	7.03	0.04	2.85	<0.01	3.25	1.3	129.4	6.2	66	0.2	68.0	20.4	341	8.12	18	2.4	9.6	12	<0.1	2.3
35314	Drill Core	7.22	0.04	3.03	<0.01	2.42	1.4	124.4	5.1	62	0.1	59.9	22.1	207	7.23	33	2.5	9.5	11	<0.1	1.6
35315	Drill Core	0.89	0.01	0.24	<0.01	0.96	0.3	63.4	2.5	44	<0.1	38.0	14.3	>10000	28.41	8	0.5	1.4	51	<0.1	1.1
35316	Drill Core	0.85	0.02	0.35	<0.01	0.29	0.8	16.1	1.2	22	<0.1	27.1	14.3	>10000	29.71	14	0.6	1.6	8	<0.1	1.1
35317	Drill Core	4.13	0.03	1.78	<0.01	0.42	12.5	25.3	1.6	40	<0.1	39.2	24.3	5864	15.75	28	1.8	6.8	9	<0.1	1.3
35318	Rock Pulp	5.50	0.14	1.28	<0.01	4.38	3.2	1350.8	508.0	2059	12.9	20.3	22.5	640	7.79	292	1.2	3.1	63	11.8	20.8
35319	Drill Core	5.58	0.03	2.32	<0.01	0.60	7.3	31.3	1.7	50	<0.1	49.8	51.4	2676	10.09	115	2.4	9.0	12	<0.1	1.7
35320	Drill Core	7.44	0.04	2.77	<0.01	0.62	2.7	31.7	2.1	89	<0.1	21.2	17.2	330	6.70	12	2.8	9.6	10	<0.1	1.3
35321	Drill Core	6.94	0.04	2.91	<0.01	1.37	2.3	64.3	4.1	61	<0.1	36.3	24.8	1161	6.70	26	3.1	11.6	29	<0.1	2.1



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Project: Bull River

Report Date: October 01, 2019

Page: 4 of 5

Part: 3 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method Analyte Unit MDL	MA200 Bi ppm	MA200 V ppm	MA200 Ca %	MA200 P %	MA200 La ppm	MA200 Cr ppm	MA200 Mg %	MA200 Ba ppm	MA200 Ti %	MA200 Al %	MA200 Na %	MA200 K %	MA200 W ppm	MA200 Zr ppm	MA200 Ce ppm	MA200 Sn ppm	MA200 Y ppm	MA200 Nb ppm	MA200 Ta ppm	MA200 Be ppm	
35253	Drill Core	1.9	54	0.12	0.046	16.7	35	0.91	66	0.121	6.26	0.047	3.39	0.7	65.6	36	2.6	8.3	5.5	0.3	4
35293	Drill Core	0.7	56	3.76	0.053	38.6	37	2.15	282	0.144	6.27	0.042	2.63	0.8	77.5	81	2.1	15.6	3.8	0.2	2
35294	Drill Core	0.6	56	3.73	0.048	31.4	35	2.13	288	0.145	6.24	0.041	3.13	0.8	75.9	65	2.2	14.5	3.8	0.2	3
35295	Rock Pulp	8.1	63	1.24	0.031	12.7	61	1.80	26	0.126	5.32	0.143	1.20	2.6	50.0	29	11.3	10.7	3.3	0.2	<1
35296	Drill Core	1.4	52	3.45	0.055	37.5	37	2.12	107	0.127	6.12	0.038	2.99	0.7	68.5	83	2.0	14.8	3.2	0.2	3
35297	Drill Core	0.4	73	1.95	0.052	43.6	41	1.48	389	0.205	7.84	0.051	3.55	1.0	97.0	93	2.9	15.5	5.5	0.4	3
35298	Drill Core	0.7	64	1.71	0.055	36.8	43	1.64	359	0.141	7.26	0.043	3.05	0.8	86.6	79	3.0	13.2	3.3	0.2	3
35299	Drill Core	0.9	50	2.23	0.057	33.5	37	2.03	245	0.118	6.50	0.037	2.75	0.8	76.2	70	2.2	13.5	2.9	0.2	3
35300	Drill Core	2.6	55	0.61	0.050	38.5	33	1.52	33	0.095	5.63	0.038	2.27	0.5	70.7	84	2.1	10.9	2.2	0.1	3
35301	Drill Core	0.5	65	0.16	0.063	19.6	42	1.22	276	0.135	6.35	0.038	2.24	0.7	75.2	45	2.2	10.0	3.1	0.2	3
35302	Drill Core	0.7	66	0.14	0.063	23.7	46	1.21	308	0.138	6.43	0.037	2.46	0.8	72.8	53	2.2	9.8	3.1	0.2	2
35303	Drill Core	0.4	64	0.14	0.058	26.7	46	1.46	262	0.118	6.29	0.034	2.03	0.8	70.7	63	1.9	9.0	2.3	0.1	2
35304	Drill Core	0.6	33	6.56	0.021	13.7	22	3.29	118	0.047	3.08	0.022	1.29	0.3	32.0	25	0.9	14.5	1.0	<0.1	1
35305	Rock Pulp	<0.1	32	1.42	0.034	10.9	11	0.50	736	0.182	6.48	3.212	1.48	0.5	48.1	22	1.8	13.8	4.8	0.3	<1
35306	Drill Core	1.2	41	2.94	0.043	11.3	28	2.13	30	0.068	4.45	0.026	1.68	0.5	46.7	27	1.1	10.5	1.6	<0.1	2
35307	Drill Core	0.2	66	0.47	0.054	29.4	41	1.40	300	0.146	6.32	0.037	2.45	0.8	83.7	69	2.2	10.4	3.6	0.2	2
35308	Drill Core	0.8	55	2.23	0.051	27.9	39	1.84	69	0.110	6.28	0.037	2.85	0.7	75.0	61	1.8	13.7	2.5	0.1	3
35309	Drill Core	0.3	68	1.94	0.060	37.8	42	1.79	320	0.145	7.12	0.042	2.62	0.9	86.3	80	2.2	13.7	3.4	0.2	3
35310	Drill Core	0.5	56	2.51	0.055	46.5	39	1.83	179	0.123	6.47	0.037	2.82	0.8	77.4	105	2.0	14.1	3.0	0.2	3
35311	Drill Core	0.2	61	2.85	0.056	36.6	39	1.76	344	0.156	6.81	0.043	2.71	0.9	85.5	79	2.1	14.2	4.0	0.2	3
35312	Drill Core	0.3	68	0.14	0.063	25.3	44	1.22	325	0.150	6.61	0.038	2.43	0.8	80.8	61	2.5	9.7	3.8	0.2	2
35313	Drill Core	0.5	59	0.19	0.051	23.8	39	1.37	31	0.133	6.27	0.035	2.64	0.6	68.8	54	2.0	11.8	3.7	0.2	3
35314	Drill Core	0.4	62	0.14	0.051	27.6	44	1.25	52	0.175	6.76	0.034	2.83	0.6	72.0	60	2.2	11.9	5.5	0.3	2
35315	Drill Core	0.1	16	1.61	0.005	5.0	7	3.52	28	0.012	0.90	0.013	0.24	<0.1	8.7	11	0.1	10.0	0.4	<0.1	<1
35316	Drill Core	<0.1	14	0.34	0.005	9.5	7	2.94	36	0.023	0.85	0.013	0.31	<0.1	10.9	19	0.2	9.6	0.9	<0.1	<1
35317	Drill Core	0.2	37	0.15	0.022	31.2	31	1.68	175	0.116	4.03	0.025	1.74	0.3	50.3	62	1.2	10.9	4.6	0.3	2
35318	Rock Pulp	7.1	63	1.21	0.030	12.6	64	1.81	37	0.129	5.29	0.126	1.27	1.5	49.4	30	10.9	11.6	3.5	0.2	<1
35319	Drill Core	0.3	47	0.31	0.037	35.9	41	1.46	235	0.172	5.42	0.029	2.09	0.5	66.1	78	1.6	10.4	6.5	0.4	1
35320	Drill Core	0.2	62	0.12	0.045	24.2	51	1.35	255	0.145	6.45	0.033	2.29	0.5	83.9	55	1.9	8.7	3.4	0.2	3
35321	Drill Core	0.2	57	0.70	0.044	36.2	48	1.36	286	0.120	6.40	0.032	2.25	0.7	74.0	70	2.2	10.7	2.5	0.1	3



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Project: Bull River

Report Date: October 01, 2019

Page: 4 of 5

Part: 4 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method	Analyte	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200
		Sc	Li	S	Rb	Hf	In	Re	Se	Te	Tl
Unit	Unit	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL	MDL	1	0.1	0.1	0.1	0.1	0.05	0.005	1	0.5	0.5
35253	Drill Core	10	22.8	1.5	128.1	2.0	0.15	<0.005	<1	<0.5	1.2
35293	Drill Core	10	38.8	0.9	143.6	2.1	0.09	<0.005	<1	0.9	1.0
35294	Drill Core	10	43.9	0.7	153.3	2.2	0.12	<0.005	<1	0.7	1.0
35295	Rock Pulp	11	30.7	4.1	48.1	1.3	1.13	<0.005	26	<0.5	4.8
35296	Drill Core	9	44.0	2.1	154.2	2.0	0.08	<0.005	<1	0.7	1.1
35297	Drill Core	13	40.0	0.3	173.1	2.8	0.13	<0.005	<1	0.7	1.4
35298	Drill Core	12	37.0	0.6	159.8	2.6	0.20	<0.005	<1	<0.5	1.2
35299	Drill Core	10	35.3	1.4	146.1	2.1	0.11	<0.005	<1	0.7	1.0
35300	Drill Core	9	47.7	4.1	114.0	2.2	0.12	<0.005	2	0.8	0.9
35301	Drill Core	10	45.1	1.0	113.9	2.2	0.11	<0.005	1	<0.5	1.1
35302	Drill Core	11	38.2	1.0	137.7	2.1	0.18	<0.005	1	<0.5	1.1
35303	Drill Core	11	38.3	1.0	113.2	2.3	0.10	<0.005	<1	<0.5	1.0
35304	Drill Core	6	19.1	2.5	58.3	0.9	0.60	<0.005	<1	1.2	<0.5
35305	Rock Pulp	6	1.6	<0.1	28.2	1.6	<0.05	<0.005	<1	<0.5	<0.5
35306	Drill Core	7	28.6	3.8	77.6	1.4	0.25	<0.005	1	0.7	0.8
35307	Drill Core	10	36.2	0.4	108.5	2.5	0.13	<0.005	<1	<0.5	1.2
35308	Drill Core	10	31.0	2.7	138.4	2.2	0.13	<0.005	1	<0.5	1.0
35309	Drill Core	12	35.3	0.6	123.5	2.5	0.14	<0.005	<1	0.6	1.2
35310	Drill Core	10	31.4	1.5	150.4	2.3	0.11	<0.005	<1	<0.5	1.1
35311	Drill Core	11	29.8	0.3	155.6	2.5	0.12	<0.005	<1	0.6	1.3
35312	Drill Core	11	35.5	0.4	131.7	2.6	0.19	<0.005	<1	<0.5	1.2
35313	Drill Core	10	42.6	3.0	129.1	2.3	0.16	<0.005	1	<0.5	0.9
35314	Drill Core	10	41.3	2.3	142.2	2.1	0.15	<0.005	2	<0.5	1.0
35315	Drill Core	3	14.3	0.8	10.0	0.3	1.63	<0.005	<1	0.6	0.5
35316	Drill Core	2	9.3	0.2	16.3	0.3	2.42	<0.005	<1	0.6	0.8
35317	Drill Core	6	21.7	0.3	88.7	1.3	1.60	<0.005	<1	<0.5	0.9
35318	Rock Pulp	11	31.5	4.1	48.0	1.5	1.09	<0.005	25	<0.5	5.0
35319	Drill Core	9	31.9	0.5	113.3	2.0	0.74	<0.005	<1	<0.5	1.0
35320	Drill Core	11	43.6	0.6	102.8	2.5	0.24	<0.005	<1	<0.5	1.1
35321	Drill Core	11	39.1	1.2	139.7	2.1	0.30	<0.005	1	<0.5	1.0





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Report Date: October 01, 2019

Page: 5 of 5

Part: 1 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
35322	Drill Core	1.32	6	<0.001	0.007	<0.02	<0.01	<2	0.004	0.002	0.03	6.94	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	0.06	0.004	1.68
35323	Drill Core	1.06	5	<0.001	0.016	<0.02	<0.01	<2	0.008	0.004	0.09	8.49	<0.02	<0.01	<0.001	<0.01	<0.01	1.71	0.05	0.004	2.14
35271	Drill Core	1.09	5	<0.001	0.004	<0.02	<0.01	<2	0.002	<0.001	0.07	4.69	<0.02	<0.01	<0.001	<0.01	<0.01	1.18	0.03	0.004	1.19
35273	Drill Core	1.25	4	<0.001	0.003	<0.02	<0.01	<2	0.002	<0.001	0.06	4.13	<0.02	<0.01	<0.001	<0.01	<0.01	0.55	0.03	0.004	1.06
35274	Drill Core	1.11	4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.99	<0.02	<0.01	<0.001	<0.01	<0.01	0.04	0.02	0.002	0.46
35278	Drill Core	1.13	3	<0.001	0.008	<0.02	<0.01	<2	0.002	0.001	0.05	3.00	<0.02	<0.01	<0.001	<0.01	<0.01	0.06	0.03	0.002	0.52
35279	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.60	<0.02	0.02	<0.001	<0.01	<0.01	1.64	0.03	<0.001	0.53
35281	Drill Core	1.13	7	<0.001	0.001	<0.02	<0.01	<2	0.003	0.011	0.51	18.21	<0.02	<0.01	<0.001	<0.01	<0.01	0.11	0.01	0.002	2.32
35282	Drill Core	1.48	3	<0.001	<0.001	<0.02	<0.01	<2	0.001	<0.001	0.08	3.01	<0.02	<0.01	<0.001	<0.01	<0.01	0.04	0.02	0.002	0.45
35283	Drill Core	1.40	6	<0.001	<0.001	<0.02	<0.01	<2	<0.001	0.003	0.08	3.46	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.02	0.002	0.59
35286	Drill Core	1.43	6	<0.001	<0.001	<0.02	<0.01	<2	0.002	0.009	0.10	3.66	<0.02	<0.01	<0.001	<0.01	<0.01	0.05	0.01	0.002	0.62
35287	Drill Core	0.88	7	<0.001	0.001	<0.02	<0.01	<2	0.001	<0.001	0.09	4.30	<0.02	<0.01	<0.001	<0.01	<0.01	0.19	0.02	0.003	0.81
35288	Drill Core	0.92	11	<0.001	0.011	<0.02	<0.01	<2	0.004	0.003	0.10	5.63	<0.02	<0.01	<0.001	<0.01	<0.01	0.46	0.03	0.003	0.84
35289	Drill Core	0.91	5	<0.001	0.001	<0.02	<0.01	<2	0.001	0.001	0.07	3.70	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.04	0.004	0.78
35290	Drill Core	1.32	6	<0.001	0.003	<0.02	<0.01	<2	0.003	0.001	0.08	4.10	<0.02	<0.01	<0.001	<0.01	<0.01	1.16	0.03	0.004	1.08
35291	Drill Core	0.66	13	0.003	0.005	<0.02	<0.01	<2	0.005	0.004	0.14	5.90	<0.02	<0.01	<0.001	<0.01	<0.01	3.65	0.02	0.002	1.70
35292	Drill Core	1.33	8	<0.001	0.003	<0.02	<0.01	<2	0.003	0.002	0.07	3.97	<0.02	<0.01	<0.001	<0.01	<0.01	1.00	0.02	0.003	0.98
35324	Drill Core	0.71	4	<0.001	0.002	<0.02	<0.01	<2	0.001	<0.001	0.02	3.86	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.07	0.004	1.44
35325	Drill Core	0.93	7	<0.001	0.005	<0.02	<0.01	<2	0.002	0.003	0.09	5.18	<0.02	<0.01	<0.001	<0.01	<0.01	0.84	0.06	0.004	1.64
35326	Drill Core	1.60	4	<0.001	0.005	<0.02	<0.01	<2	0.004	0.002	0.02	5.29	<0.02	<0.01	<0.001	<0.01	<0.01	0.15	0.07	0.004	1.62
35327	Rock Pulp	0.11	596	<0.001	3.816	0.26	3.91	74	0.006	0.030	0.08	28.43	<0.02	<0.01	0.011	<0.01	<0.01	0.90	0.01	0.001	2.10
35328	Drill Core	1.10	5	<0.001	0.009	<0.02	<0.01	<2	0.003	0.001	0.05	5.60	<0.02	<0.01	<0.001	<0.01	<0.01	0.50	0.06	0.003	1.42
35329	Drill Core	1.72	4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.01	3.19	<0.02	<0.01	<0.001	<0.01	<0.01	0.12	0.06	0.004	1.20
35330	Drill Core	1.51	5	<0.001	0.003	<0.02	<0.01	<2	0.003	0.001	0.01	4.79	<0.02	<0.01	<0.001	<0.01	<0.01	0.10	0.05	0.003	1.39
35331	Drill Core	0.31	9	<0.001	0.015	<0.02	<0.01	<2	0.006	0.003	0.39	9.70	<0.02	0.02	<0.001	<0.01	<0.01	4.85	0.01	<0.001	2.35
35332	Drill Core	0.53	7	<0.001	0.013	<0.02	<0.01	<2	0.004	0.002	0.13	6.40	<0.02	0.01	<0.001	<0.01	<0.01	2.98	0.05	0.003	2.28
35333	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.60	<0.02	0.02	<0.001	<0.01	<0.01	1.63	0.04	<0.001	0.53
35334	Drill Core	1.57	7	<0.001	0.004	<0.02	<0.01	<2	<0.001	<0.001	0.09	3.03	<0.02	<0.01	<0.001	<0.01	<0.01	2.32	0.04	0.004	1.71



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Project: Bull River

Report Date: October 01, 2019

Page: 5 of 5

Part: 2 of 4

# CERTIFICATE OF ANALYSIS

VAN19002638.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.1	0.2	1	0.01	1	0.1	0.1	1	0.1
35322	Drill Core	7.52	0.04	2.94	<0.01	1.53	2.4	69.3	3.7	78	<0.1	35.8	22.6	272	6.38	8	2.8	9.9	11	<0.1	1.6
35323	Drill Core	7.12	0.04	2.84	<0.01	2.67	2.4	147.6	5.2	71	<0.1	70.1	30.3	882	7.82	16	2.7	10.1	46	<0.1	1.9
35271	Drill Core	9.11	0.07	4.67	<0.01	0.65	0.6	39.6	14.0	20	<0.1	21.6	9.0	637	4.27	4	2.3	14.0	36	<0.1	3.9
35273	Drill Core	7.31	0.06	4.83	<0.01	0.52	0.6	26.6	14.2	22	<0.1	17.8	7.0	610	4.32	3	2.7	16.5	25	<0.1	3.9
35274	Drill Core	5.64	0.05	3.42	<0.01	0.09	0.5	6.9	6.3	15	<0.1	8.3	5.3	722	3.16	10	2.1	12.4	9	<0.1	4.0
35278	Drill Core	7.51	0.06	4.43	<0.01	0.47	0.4	83.8	8.2	12	0.1	20.9	12.5	505	3.20	14	2.2	14.3	10	<0.1	3.4
35279	Rock Pulp	7.15	3.56	1.59	<0.01	<0.05	3.8	20.8	2.4	34	<0.1	6.6	4.1	692	2.60	3	1.0	2.6	195	<0.1	0.3
35281	Drill Core	4.60	0.03	2.40	<0.01	0.15	0.3	16.6	4.8	16	<0.1	21.6	103.0	4981	17.45	155	1.1	8.1	8	<0.1	2.9
35282	Drill Core	5.09	0.04	2.99	<0.01	0.07	0.2	8.9	4.4	9	<0.1	7.4	9.0	783	3.08	15	1.7	12.0	7	<0.1	2.1
35283	Drill Core	6.52	0.05	3.72	<0.01	<0.05	0.2	3.1	6.0	10	<0.1	10.2	41.1	834	3.72	58	2.1	13.6	8	<0.1	2.8
35286	Drill Core	5.91	0.04	3.27	<0.01	0.06	0.2	5.5	8.0	12	<0.1	15.9	99.7	1030	3.86	143	1.7	10.9	7	<0.1	2.1
35287	Drill Core	6.86	0.06	4.30	<0.01	0.43	0.3	9.1	11.1	16	<0.1	9.2	4.2	942	4.51	9	2.0	12.6	14	<0.1	4.3
35288	Drill Core	7.33	0.06	4.29	<0.01	2.14	0.6	113.6	11.7	14	0.2	35.5	29.6	936	5.78	22	2.0	11.5	17	<0.1	5.2
35289	Drill Core	9.30	0.07	4.99	<0.01	0.30	0.6	16.8	7.0	17	<0.1	12.4	12.1	629	3.71	16	2.9	12.5	12	<0.1	2.7
35290	Drill Core	8.55	0.07	4.51	<0.01	0.46	0.7	27.9	8.7	20	<0.1	24.0	13.6	701	4.04	33	2.8	13.3	32	<0.1	2.7
35291	Drill Core	6.12	0.05	3.24	<0.01	1.40	33.8	50.0	15.7	18	0.2	47.0	42.1	1359	5.81	81	2.2	9.7	64	0.1	3.4
35292	Drill Core	8.17	0.06	4.48	<0.01	0.96	10.8	35.1	13.2	14	0.2	30.0	19.2	614	3.99	25	2.7	13.1	26	<0.1	3.3
35324	Drill Core	7.53	0.04	3.43	<0.01	0.33	2.5	17.9	2.2	57	<0.1	10.4	6.4	153	3.87	15	1.7	7.2	11	<0.1	1.7
35325	Drill Core	6.99	0.03	3.13	<0.01	1.18	2.2	53.9	4.5	61	<0.1	22.7	32.3	886	5.12	199	2.2	9.9	35	<0.1	2.3
35326	Drill Core	7.66	0.03	3.38	<0.01	1.20	2.9	56.1	4.6	80	<0.1	42.0	27.1	184	5.46	125	2.4	10.3	13	<0.1	2.4
35327	Rock Pulp	1.25	0.08	0.15	<0.01	23.10	9.7	>10000	2650.5	>10000	70.9	56.8	297.7	791	28.30	170	0.9	1.2	7	105.6	20.5
35328	Drill Core	6.86	0.03	3.14	<0.01	1.67	2.0	89.7	6.8	60	<0.1	38.1	16.3	469	5.68	25	2.2	8.8	25	<0.1	2.5
35329	Drill Core	7.14	0.04	3.87	<0.01	0.11	1.5	10.1	1.9	46	<0.1	7.2	2.6	121	3.33	2	2.2	9.1	12	<0.1	1.6
35330	Drill Core	6.83	0.04	3.43	<0.01	1.35	1.1	33.1	4.6	62	<0.1	25.0	12.9	157	4.79	25	2.0	8.1	10	<0.1	2.2
35331	Drill Core	1.39	<0.01	0.14	<0.01	3.52	7.5	162.0	8.6	45	0.2	61.1	34.9	3813	8.73	27	0.8	2.2	145	<0.1	3.9
35332	Drill Core	5.92	0.03	2.52	<0.01	2.11	2.4	142.1	9.9	49	0.1	36.9	25.7	1249	6.49	24	2.7	9.3	98	<0.1	3.7
35333	Rock Pulp	7.18	3.51	1.59	<0.01	<0.05	3.7	20.9	2.4	35	<0.1	7.3	4.6	740	2.64	2	1.0	2.6	197	<0.1	0.2
35334	Drill Core	7.04	0.05	3.68	<0.01	0.56	2.4	38.2	5.1	27	<0.1	8.5	10.8	850	3.07	11	2.6	10.5	77	<0.1	2.5



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**Project:** Bull River  
**Report Date:** October 01, 2019

**Page:** 5 of 5

**Part:** 3 of 4

# CERTIFICATE OF ANALYSIS

# VAN19002638.1

Method	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.1	1	0.01	0.001	0.1	1	0.01	1	0.001	0.01	0.001	0.01	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	
35322	Drill Core	0.3	60	0.17	0.046	27.6	48	1.55	262	0.117	6.31	0.032	2.22	0.5	78.5	63	1.8	9.4	2.6	0.1	2
35323	Drill Core	0.6	57	1.51	0.046	31.3	44	2.06	63	0.101	6.51	0.031	2.68	0.5	70.3	71	1.8	10.5	2.1	0.1	4
35271	Drill Core	0.6	76	1.03	0.027	34.8	46	1.10	314	0.231	7.77	0.056	2.90	1.7	74.0	78	3.3	9.7	8.1	0.5	3
35273	Drill Core	0.6	74	0.58	0.030	40.1	47	1.06	305	0.252	7.76	0.057	2.80	1.9	80.7	87	3.2	10.0	8.9	0.5	3
35274	Drill Core	0.2	39	0.05	0.019	39.0	27	0.50	229	0.229	6.10	0.047	2.33	1.4	42.0	87	2.3	8.2	8.5	0.5	2
35278	Drill Core	0.5	57	0.06	0.030	49.3	35	0.52	295	0.233	7.82	0.061	2.61	1.5	53.6	108	3.0	8.8	9.4	0.6	3
35279	Rock Pulp	<0.1	33	1.48	0.036	11.9	12	0.51	777	0.184	6.45	3.240	1.53	0.6	50.0	24	1.8	14.7	4.8	0.3	<1
35281	Drill Core	0.3	35	0.10	0.014	39.3	23	2.14	161	0.102	4.34	0.038	2.02	1.0	34.0	87	1.5	9.1	4.2	0.2	1
35282	Drill Core	0.3	31	0.04	0.015	33.6	21	0.47	190	0.162	5.36	0.042	1.96	1.1	30.7	73	2.0	7.1	7.1	0.4	2
35283	Drill Core	0.3	45	0.05	0.019	44.5	32	0.62	268	0.174	7.02	0.051	2.32	1.3	48.7	100	2.5	8.0	7.8	0.5	3
35286	Drill Core	0.5	37	0.05	0.018	40.5	25	0.63	227	0.141	6.06	0.047	2.10	1.1	39.3	90	2.2	7.5	6.3	0.4	2
35287	Drill Core	0.7	56	0.20	0.026	39.1	36	0.81	280	0.238	7.12	0.050	2.55	1.6	62.1	85	3.1	10.5	9.9	0.6	4
35288	Drill Core	1.3	55	0.43	0.027	37.6	35	0.81	102	0.226	6.87	0.052	2.76	1.6	59.9	81	2.8	11.3	8.6	0.6	3
35289	Drill Core	0.8	71	0.08	0.031	35.0	44	0.71	279	0.288	7.95	0.065	3.52	1.9	81.6	84	3.8	10.4	11.8	0.9	4
35290	Drill Core	0.8	71	1.07	0.030	34.5	44	1.00	290	0.218	7.57	0.063	3.70	1.9	80.0	83	3.1	9.6	9.2	0.7	3
35291	Drill Core	1.8	46	3.47	0.025	35.9	28	1.62	212	0.135	5.76	0.048	2.82	1.6	49.9	74	2.1	8.8	5.8	0.4	2
35292	Drill Core	1.2	67	0.92	0.022	39.1	40	0.91	317	0.205	7.39	0.062	3.12	2.1	68.0	84	3.0	7.8	8.2	0.5	2
35324	Drill Core	0.2	63	0.14	0.056	7.1	42	1.31	313	0.136	6.30	0.043	3.01	0.5	75.0	20	2.3	8.0	3.4	0.2	2
35325	Drill Core	0.4	59	0.81	0.059	53.6	42	1.57	322	0.125	6.34	0.036	2.90	0.7	73.6	126	2.2	13.5	3.1	0.2	3
35326	Drill Core	0.4	65	0.15	0.059	37.5	46	1.61	343	0.131	7.20	0.038	2.97	0.6	82.8	95	2.3	10.7	3.1	0.2	2
35327	Rock Pulp	100.2	12	0.89	0.009	8.3	23	2.12	17	0.042	1.27	0.077	0.14	2.1	29.6	17	20.6	4.8	1.4	0.1	<1
35328	Drill Core	0.4	58	0.46	0.056	32.0	43	1.37	109	0.119	6.03	0.037	2.79	0.7	69.1	78	2.0	11.3	2.9	0.2	2
35329	Drill Core	<0.1	70	0.12	0.057	33.0	41	1.18	380	0.161	6.80	0.044	3.59	0.7	88.7	77	2.6	10.3	4.5	0.3	3
35330	Drill Core	0.3	62	0.10	0.044	22.7	42	1.37	323	0.139	6.32	0.038	3.11	0.8	84.0	52	2.2	9.2	3.5	0.2	2
35331	Drill Core	0.5	12	4.67	0.010	12.0	10	2.30	21	0.012	1.37	0.010	0.14	0.3	12.7	27	<0.1	21.6	0.3	<0.1	<1
35332	Drill Core	0.5	47	2.87	0.047	29.1	35	2.28	115	0.112	5.86	0.035	2.49	0.6	65.5	61	1.4	14.5	2.5	0.2	3
35333	Rock Pulp	<0.1	34	1.56	0.034	10.9	12	0.51	769	0.191	6.64	3.455	1.45	0.5	50.5	22	2.0	14.6	5.0	0.3	1
35334	Drill Core	0.2	59	2.22	0.044	35.8	38	1.65	332	0.160	6.80	0.053	2.98	0.8	82.8	74	1.9	13.8	4.2	0.3	2



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Page: 5 of 5

Part: 4 of 4

# CERTIFICATE OF ANALYSIS

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Method	Analyte	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200
		Sc	Li	S	Rb	Hf	In	Re	Se	Te	Tl
Unit		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		1	0.1	0.1	0.1	0.1	0.05	0.005	1	0.5	0.5
35322	Drill Core	10	46.7	1.4	115.4	2.4	0.17	<0.005	<1	<0.5	1.0
35323	Drill Core	10	38.2	2.5	111.8	2.1	0.12	<0.005	<1	<0.5	1.0
35271	Drill Core	14	23.7	0.6	180.8	2.2	0.11	<0.005	<1	<0.5	1.1
35273	Drill Core	13	24.7	0.4	161.9	2.5	0.12	<0.005	1	<0.5	1.5
35274	Drill Core	9	11.2	<0.1	135.5	1.4	0.12	<0.005	<1	<0.5	1.3
35278	Drill Core	12	14.3	0.5	151.8	1.8	0.11	<0.005	<1	<0.5	1.3
35279	Rock Pulp	6	1.7	<0.1	28.8	1.5	<0.05	<0.005	<1	<0.5	<0.5
35281	Drill Core	12	9.8	0.1	116.9	0.9	1.23	<0.005	<1	0.5	0.9
35282	Drill Core	8	9.3	<0.1	125.7	1.0	0.10	<0.005	<1	<0.5	0.9
35283	Drill Core	10	11.9	<0.1	148.5	1.6	0.14	<0.005	<1	<0.5	1.1
35286	Drill Core	8	11.2	<0.1	138.6	1.2	0.19	<0.005	<1	<0.5	1.0
35287	Drill Core	12	16.2	0.4	160.5	1.9	0.14	<0.005	<1	<0.5	1.1
35288	Drill Core	11	19.1	2.1	159.7	1.8	0.11	<0.005	<1	<0.5	1.2
35289	Drill Core	14	19.3	0.3	192.7	2.6	0.13	<0.005	<1	<0.5	1.4
35290	Drill Core	14	18.7	0.6	190.3	2.5	0.11	<0.005	<1	<0.5	1.3
35291	Drill Core	10	13.4	1.4	150.2	1.7	0.09	<0.005	1	0.7	1.1
35292	Drill Core	12	16.0	1.0	174.2	2.1	0.14	<0.005	<1	<0.5	1.0
35324	Drill Core	10	37.0	0.3	129.2	2.2	0.13	<0.005	<1	<0.5	1.2
35325	Drill Core	11	36.6	1.2	140.0	2.3	0.16	<0.005	1	<0.5	1.2
35326	Drill Core	11	42.3	1.2	153.8	2.3	0.13	<0.005	1	<0.5	1.3
35327	Rock Pulp	2	7.3	>10	4.4	0.8	6.88	<0.005	12	<0.5	5.3
35328	Drill Core	10	42.5	1.7	142.9	1.9	0.16	<0.005	2	<0.5	1.1
35329	Drill Core	11	40.7	0.1	156.8	2.3	0.13	<0.005	<1	<0.5	1.2
35330	Drill Core	11	40.3	1.3	141.6	2.4	0.20	<0.005	<1	<0.5	1.2
35331	Drill Core	3	19.7	3.5	5.4	0.3	0.21	<0.005	1	1.6	<0.5
35332	Drill Core	9	43.3	2.1	120.9	2.5	0.10	<0.005	2	<0.5	1.0
35333	Rock Pulp	6	1.6	<0.1	29.1	1.6	<0.05	<0.005	<1	<0.5	<0.5
35334	Drill Core	11	32.9	0.6	152.0	2.4	0.15	<0.005	1	<0.5	1.1



# QUALITY CONTROL REPORT

VAN19002638.1

Method	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	
Unit	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	
Pulp Duplicates																					
27234	Drill Core	5.28	4	<0.001	0.007	<0.02	<0.01	<2	0.001	0.001	0.12	3.26	<0.02	<0.01	<0.001	<0.01	<0.01	2.39	0.05	0.003	1.43
REP 27234	QC																				
27263	Drill Core	3.38	6	<0.001	0.004	<0.02	<0.01	<2	0.002	0.001	0.30	5.84	<0.02	<0.01	<0.001	<0.01	<0.01	2.37	0.04	0.003	2.02
REP 27263	QC			<0.001	0.004	<0.02	<0.01	<2	0.002	0.001	0.29	5.82	<0.02	<0.01	<0.001	<0.01	<0.01	2.35	0.04	0.003	2.01
27264	Drill Core	3.26	5	<0.001	0.008	<0.02	<0.01	<2	0.001	0.001	0.10	4.40	<0.02	<0.01	<0.001	<0.01	<0.01	2.16	0.04	0.003	1.60
REP 27264	QC		5																		
27276	Drill Core	3.21	8	<0.001	<0.001	<0.02	0.01	<2	<0.001	0.001	0.19	10.33	<0.02	<0.01	<0.001	<0.01	<0.01	2.04	0.02	0.001	3.03
REP 27276	QC																				
27298	Drill Core	5.25	11	<0.001	0.007	<0.02	<0.01	<2	0.001	0.001	0.08	5.08	<0.02	<0.01	<0.001	<0.01	<0.01	0.64	0.05	0.003	1.45
REP 27298	QC		4	<0.001	0.007	<0.02	<0.01	<2	0.002	0.002	0.08	5.32	<0.02	<0.01	<0.001	<0.01	<0.01	0.67	0.05	0.003	1.50
35300	Drill Core	0.56	33	0.002	0.013	<0.02	<0.01	<2	0.009	0.007	0.04	9.05	<0.02	<0.01	<0.001	<0.01	<0.01	0.75	0.06	0.003	1.68
REP 35300	QC																				
35322	Drill Core	1.32	6	<0.001	0.007	<0.02	<0.01	<2	0.004	0.002	0.03	6.94	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	0.06	0.004	1.68
REP 35322	QC		5	<0.001	0.007	<0.02	<0.01	<2	0.004	0.002	0.03	6.94	<0.02	<0.01	<0.001	<0.01	<0.01	0.21	0.05	0.005	1.66
35289	Drill Core	0.91	5	<0.001	0.001	<0.02	<0.01	<2	0.001	0.001	0.07	3.70	<0.02	<0.01	<0.001	<0.01	<0.01	0.09	0.04	0.004	0.78
REP 35289	QC																				
35329	Drill Core	1.72	4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.01	3.19	<0.02	<0.01	<0.001	<0.01	<0.01	0.12	0.06	0.004	1.20
REP 35329	QC		3																		
35333	Rock Pulp	0.11	4	<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.60	<0.02	0.02	<0.001	<0.01	<0.01	1.63	0.04	<0.001	0.53
REP 35333	QC			<0.001	0.002	<0.02	<0.01	<2	<0.001	<0.001	0.07	2.59	<0.02	0.02	<0.001	<0.01	<0.01	1.65	0.04	<0.001	0.53
Core Reject Duplicates																					
27236	Drill Core	5.40	3	<0.001	0.006	<0.02	<0.01	<2	0.001	0.001	0.11	3.41	<0.02	<0.01	<0.001	<0.01	<0.01	1.96	0.04	0.003	1.31
DUP 27236	QC		3	<0.001	0.007	<0.02	<0.01	<2	0.001	0.001	0.11	3.52	<0.02	<0.01	<0.001	<0.01	<0.01	2.00	0.04	0.002	1.34
27279	Drill Core	2.82	3	<0.001	0.003	<0.02	<0.01	<2	<0.001	<0.001	0.50	5.27	<0.02	0.02	<0.001	<0.01	<0.01	9.11	<0.01	<0.001	3.14
DUP 27279	QC		4	<0.001	0.005	<0.02	<0.01	<2	<0.001	<0.001	0.54	5.69	<0.02	0.02	<0.001	<0.01	<0.01	9.72	<0.01	<0.001	3.35
35302	Drill Core	1.04	4	<0.001	0.007	<0.02	<0.01	<2	0.003	0.002	0.02	5.34	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.07	0.005	1.32
DUP 35302	QC		4	<0.001	0.006	<0.02	<0.01	<2	0.003	0.002	0.02	5.39	<0.02	<0.01	<0.001	<0.01	<0.01	0.17	0.07	0.005	1.34
35290	Drill Core	1.32	6	<0.001	0.003	<0.02	<0.01	<2	0.003	0.001	0.08	4.10	<0.02	<0.01	<0.001	<0.01	<0.01	1.16	0.03	0.004	1.08



# QUALITY CONTROL REPORT

VAN19002638.1

Method	Analyte	MA370	MA370	MA370	MA370	MA370	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb
Unit		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.2	1	0.01	1	0.1	0.1	0.1	1	0.1
Pulp Duplicates																					
27234	Drill Core	6.97	0.05	3.86	<0.01	0.72	1.3	71.2	8.5	18	0.1	12.6	11.8	1191	3.28	19	1.8	8.8	31	<0.1	1.3
REP 27234	QC						1.3	68.6	8.5	18	0.1	11.7	11.4	1211	3.30	17	1.8	9.2	31	<0.1	1.2
27263	Drill Core	5.59	0.03	2.45	<0.01	0.78	3.0	43.8	4.0	42	<0.1	16.2	12.6	2993	5.74	33	1.6	8.1	39	<0.1	1.3
REP 27263	QC	5.52	0.03	2.45	<0.01	0.73															
27264	Drill Core	5.96	0.04	2.80	<0.01	1.04	1.6	82.6	7.8	29	0.1	14.9	13.0	987	4.42	11	1.7	9.6	26	<0.1	1.2
REP 27264	QC																				
27276	Drill Core	4.09	<0.01	0.01	<0.01	0.10	1.9	7.4	2.4	109	<0.1	6.7	13.9	1725	9.00	167	1.2	6.2	33	<0.1	0.6
REP 27276	QC						1.5	7.0	2.1	104	<0.1	6.8	12.8	1702	8.86	156	1.1	5.5	32	<0.1	0.6
27298	Drill Core	7.25	0.05	3.29	<0.01	0.80	2.3	70.0	4.8	41	<0.1	14.0	13.9	790	4.80	16	2.1	9.0	14	<0.1	1.5
REP 27298	QC	7.40	0.05	3.40	<0.01	0.83															
35300	Drill Core	6.78	0.04	2.65	<0.01	4.66	15.5	122.4	35.1	65	0.3	78.6	66.7	377	7.94	130	2.5	10.4	26	<0.1	12.0
REP 35300	QC						15.1	120.7	33.3	63	0.3	75.1	64.9	374	8.01	127	2.5	9.6	26	<0.1	11.0
35322	Drill Core	7.52	0.04	2.94	<0.01	1.53	2.4	69.3	3.7	78	<0.1	35.8	22.6	272	6.38	8	2.8	9.9	11	<0.1	1.6
REP 35322	QC	7.48	0.04	2.94	<0.01	1.52															
35289	Drill Core	9.30	0.07	4.99	<0.01	0.30	0.6	16.8	7.0	17	<0.1	12.4	12.1	629	3.71	16	2.9	12.5	12	<0.1	2.7
REP 35289	QC						0.7	15.7	6.9	16	<0.1	12.0	11.4	614	3.66	17	2.9	12.4	12	<0.1	2.8
35329	Drill Core	7.14	0.04	3.87	<0.01	0.11	1.5	10.1	1.9	46	<0.1	7.2	2.6	121	3.33	2	2.2	9.1	12	<0.1	1.6
REP 35329	QC																				
35333	Rock Pulp	7.18	3.51	1.59	<0.01	<0.05	3.7	20.9	2.4	35	<0.1	7.3	4.6	740	2.64	2	1.0	2.6	197	<0.1	0.2
REP 35333	QC	7.13	3.49	1.59	<0.01	<0.05															
Core Reject Duplicates																					
27236	Drill Core	6.28	0.04	3.26	<0.01	0.51	0.8	67.7	4.1	20	0.1	10.4	12.3	1139	3.51	31	1.7	8.2	24	<0.1	1.0
DUP 27236	QC	6.37	0.04	3.30	<0.01	0.55	0.8	69.1	4.1	18	0.1	11.0	11.7	1160	3.60	32	1.8	8.0	24	<0.1	1.1
27279	Drill Core	0.10	0.02	0.04	<0.01	0.17	0.2	35.3	3.9	17	<0.1	1.4	1.4	4879	4.75	3	<0.1	0.2	140	0.1	0.3
DUP 27279	QC	0.11	0.02	0.05	<0.01	0.23	0.1	44.5	3.7	14	<0.1	1.8	1.9	5286	5.09	2	<0.1	0.1	150	0.1	0.3
35302	Drill Core	7.80	0.05	3.43	<0.01	1.16	1.3	63.1	4.4	54	<0.1	27.2	20.2	167	4.79	94	2.3	9.4	10	<0.1	2.0
DUP 35302	QC	7.87	0.05	3.46	<0.01	1.16	1.3	55.1	4.2	54	<0.1	27.9	19.9	172	4.85	93	2.4	9.1	10	<0.1	2.0
35290	Drill Core	8.55	0.07	4.51	<0.01	0.46	0.7	27.9	8.7	20	<0.1	24.0	13.6	701	4.04	33	2.8	13.3	32	<0.1	2.7



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**Project:** Bull River  
**Report Date:** October 01, 2019

Page: 1 of 3

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19002638.1

Method	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.1	1	0.01	0.001	0.1	1	0.01	1	0.001	0.01	0.001	0.01	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	
Pulp Duplicates																					
27234	Drill Core	0.9	53	2.47	0.051	29.4	30	1.41	189	0.134	6.98	0.056	3.52	0.8	69.2	63	2.9	13.2	3.3	0.2	7
REP 27234	QC	1.0	53	2.50	0.052	31.9	29	1.43	235	0.132	7.22	0.058	3.74	0.7	70.9	68	2.7	13.5	3.2	0.2	6
27263	Drill Core	0.4	45	2.60	0.039	52.3	28	2.04	312	0.097	5.73	0.037	2.47	0.6	61.0	100	1.9	12.1	4.4	0.2	3
REP 27263	QC																				
27264	Drill Core	1.1	45	2.34	0.037	41.8	29	1.61	127	0.102	6.06	0.041	2.67	0.6	61.6	87	1.8	10.8	3.0	0.1	3
REP 27264	QC																				
27276	Drill Core	0.1	26	1.87	0.021	29.6	15	2.88	8	0.028	3.98	0.008	0.01	<0.1	22.6	59	<0.1	8.0	0.9	<0.1	<1
REP 27276	QC	0.1	25	1.84	0.020	28.6	14	2.83	7	0.028	3.92	0.008	0.01	<0.1	22.3	58	<0.1	7.6	0.9	<0.1	<1
27298	Drill Core	0.7	54	0.56	0.043	24.5	34	1.41	253	0.122	6.20	0.044	3.32	0.8	65.8	48	2.7	8.6	5.7	0.3	4
REP 27298	QC																				
35300	Drill Core	2.6	55	0.61	0.050	38.5	33	1.52	33	0.095	5.63	0.038	2.27	0.5	70.7	84	2.1	10.9	2.2	0.1	3
REP 35300	QC	2.5	56	0.62	0.048	37.8	33	1.54	33	0.094	5.74	0.038	2.27	0.6	65.8	84	1.9	10.8	2.0	0.1	2
35322	Drill Core	0.3	60	0.17	0.046	27.6	48	1.55	262	0.117	6.31	0.032	2.22	0.5	78.5	63	1.8	9.4	2.6	0.1	2
REP 35322	QC																				
35289	Drill Core	0.8	71	0.08	0.031	35.0	44	0.71	279	0.288	7.95	0.065	3.52	1.9	81.6	84	3.8	10.4	11.8	0.9	4
REP 35289	QC	0.9	69	0.09	0.032	36.3	40	0.71	283	0.282	7.98	0.063	3.42	2.0	84.9	90	3.5	10.7	12.0	0.8	4
35329	Drill Core	<0.1	70	0.12	0.057	33.0	41	1.18	380	0.161	6.80	0.044	3.59	0.7	88.7	77	2.6	10.3	4.5	0.3	3
REP 35329	QC																				
35333	Rock Pulp	<0.1	34	1.56	0.034	10.9	12	0.51	769	0.191	6.64	3.455	1.45	0.5	50.5	22	2.0	14.6	5.0	0.3	1
REP 35333	QC																				
Core Reject Duplicates																					
27236	Drill Core	0.5	48	2.07	0.041	24.1	27	1.34	589	0.145	6.46	0.047	3.04	0.8	68.3	45	2.6	12.2	6.0	0.3	3
DUP 27236	QC	0.5	48	2.07	0.041	22.3	28	1.36	423	0.142	6.41	0.044	2.99	0.7	66.4	42	2.4	11.9	5.6	0.3	4
27279	Drill Core	<0.1	2	8.41	<0.001	2.2	2	2.99	20	0.001	0.10	0.017	0.04	<0.1	0.3	5	0.2	14.1	<0.1	<0.1	<1
DUP 27279	QC	<0.1	2	8.92	<0.001	1.5	2	3.27	22	0.001	0.12	0.018	0.05	<0.1	0.3	4	<0.1	14.0	<0.1	<0.1	<1
35302	Drill Core	0.7	66	0.14	0.063	23.7	46	1.21	308	0.138	6.43	0.037	2.46	0.8	72.8	53	2.2	9.8	3.1	0.2	2
DUP 35302	QC	0.6	67	0.14	0.060	22.1	46	1.23	300	0.145	6.51	0.039	2.17	0.8	74.2	49	2.3	9.4	3.2	0.2	3
35290	Drill Core	0.8	71	1.07	0.030	34.5	44	1.00	290	0.218	7.57	0.063	3.70	1.9	80.0	83	3.1	9.6	9.2	0.7	3



# QUALITY CONTROL REPORT

VAN19002638.1

Method	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200
Analyte	Sc	Li	S	Rb	Hf	In	Re	Se	Te	Tl	
Unit	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	1	0.1	0.1	0.1	0.1	0.05	0.005	1	0.5	0.5	
Pulp Duplicates											
27234	Drill Core	10	21.5	0.7	140.3	2.1	0.19	<0.005	<1	<0.5	1.6
REP 27234	QC	11	21.7	0.7	151.6	1.9	0.12	0.005	<1	<0.5	1.7
27263	Drill Core	9	21.4	0.7	103.2	1.6	0.17	<0.005	<1	0.6	1.1
REP 27263	QC										
27264	Drill Core	9	23.0	1.0	119.3	1.9	0.17	<0.005	<1	0.7	1.2
REP 27264	QC										
27276	Drill Core	5	27.3	<0.1	1.3	0.8	0.19	<0.005	<1	0.9	<0.5
REP 27276	QC	5	27.8	<0.1	1.0	0.7	0.18	<0.005	<1	1.0	<0.5
27298	Drill Core	10	25.3	0.7	115.7	1.9	0.21	<0.005	<1	<0.5	1.3
REP 27298	QC										
35300	Drill Core	9	47.7	4.1	114.0	2.2	0.12	<0.005	2	0.8	0.9
REP 35300	QC	9	48.6	4.1	107.3	1.9	0.12	<0.005	1	<0.5	0.8
35322	Drill Core	10	46.7	1.4	115.4	2.4	0.17	<0.005	<1	<0.5	1.0
REP 35322	QC										
35289	Drill Core	14	19.3	0.3	192.7	2.6	0.13	<0.005	<1	<0.5	1.4
REP 35289	QC	14	19.4	0.4	181.2	2.6	0.12	<0.005	<1	<0.5	1.3
35329	Drill Core	11	40.7	0.1	156.8	2.3	0.13	<0.005	<1	<0.5	1.2
REP 35329	QC										
35333	Rock Pulp	6	1.6	<0.1	29.1	1.6	<0.05	<0.005	<1	<0.5	<0.5
REP 35333	QC										
Core Reject Duplicates											
27236	Drill Core	9	22.0	0.5	138.3	2.1	0.21	<0.005	<1	0.7	1.3
DUP 27236	QC	9	23.0	0.5	143.1	2.0	0.15	<0.005	<1	<0.5	1.4
27279	Drill Core	8	1.2	0.1	1.8	<0.1	0.15	<0.005	<1	0.5	<0.5
DUP 27279	QC	9	1.5	0.2	2.0	<0.1	0.17	<0.005	<1	2.1	<0.5
35302	Drill Core	11	38.2	1.0	137.7	2.1	0.18	<0.005	1	<0.5	1.1
DUP 35302	QC	11	37.0	1.0	122.1	2.3	0.17	<0.005	<1	<0.5	1.2
35290	Drill Core	14	18.7	0.6	190.3	2.5	0.11	<0.005	<1	<0.5	1.3













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Project: Bull River  
Report Date: October 01, 2019

Page: 3 of 3

Part: 1 of 4

# QUALITY CONTROL REPORT

VAN19002638.1

	WGHT	FA330	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370	MA370
	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg
	kg	ppb	%	%	%	%	ppm	%	%	%	%	%	%	%	%	%	%	%	%	%
	0.01	2	0.001	0.001	0.02	0.01	2	0.001	0.001	0.01	0.01	0.02	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01
STD CDN-ME-9 Expected				0.654		0.012		0.93	0.0169	0.121	13.84		0.03				4.21	0.06	0.0284	4.05
STD CDN-ME-14 Expected				1.221	0.495	3.17	43.5	0.002	0.0172	0.0883	18.04	0.0088		0.0088		0.0094	0.747	0.0147	0.0014	1.28
STD OREAS131B Expected			0.0003	0.0216	1.86	3.14	33.3	0.0025	0.00181	0.1771	5.705	0.0072	0.0026	0.0089	0.005		5.37	0.0536	0.0027	3.128
STD OREAS45H Expected																				
STD OREAS25A-4A Expected																				
STD OREAS45E Expected																				
BLK	Blank		3																	
BLK	Blank		<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank		<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank		3																	
BLK	Blank		3																	
BLK	Blank		3																	
BLK	Blank		<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank		<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.02	<0.01	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.01
BLK	Blank																			
BLK	Blank																			
BLK	Blank																			
BLK	Blank																			
Prep Wash																				
ROCK-VAN	Prep Blank	3	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.14	<0.02	0.02	<0.001	<0.01	<0.01	1.46	0.04	<0.001	0.51
ROCK-VAN	Prep Blank	4	<0.001	<0.001	<0.02	<0.01	<2	<0.001	<0.001	0.06	2.18	<0.02	0.02	<0.001	<0.01	<0.01	1.50	0.04	<0.001	0.54



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Project: Bull River

Report Date: October 01, 2019

Page: 3 of 3

Part: 2 of 4

# QUALITY CONTROL REPORT

VAN19002638.1

		MA370	MA370	MA370	MA370	MA370	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
		Al	Na	K	W	S	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	
		%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	
		0.01	0.01	0.01	0.01	0.05	0.1	0.1	0.1	1	0.1	0.1	0.2	1	0.01	1	0.1	0.1	1	0.1	0.1	
STD CDN-ME-9 Expected		6.74	1.86	0.616		2.58																
STD CDN-ME-14 Expected		4.47	0.53	1.7		16.14																
STD OREAS131B Expected		4.57	0.139	3.34		5.01																
STD OREAS45H Expected							1.55	767	11.9	39.7	0.147	423	88	380	19.52	16.9	1.68	7.26	27.1		0.63	
STD OREAS25A-4A Expected							2.41	33.9	25.2	44.4		45.8	7.7	480	6.6	9.94	2.94	15.8	48.5		0.65	
STD OREAS45E Expected							2.4	780	18.2	46.7	0.311	454	57	570	24.12	16.3	2.41	12.9	15.9	0.06	1	
BLK	Blank																					
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05																
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05																
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05																
BLK	Blank	<0.01	<0.01	<0.01	<0.01	<0.05																
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	0.2	<0.2	<1	<0.01	<1	<0.1	<0.1	<1	<0.1	<0.1	
BLK	Blank						<0.1	0.2	<0.1	2	<0.1	0.2	<0.2	<1	<0.01	<1	<0.1	<0.1	<1	<0.1	<0.1	
BLK	Blank						<0.1	0.2	<0.1	<1	<0.1	0.2	<0.2	<1	<0.01	<1	<0.1	<0.1	<1	<0.1	<0.1	
BLK	Blank						<0.1	<0.1	<0.1	<1	<0.1	0.3	<0.2	<1	<0.01	<1	<0.1	<0.1	<1	<0.1	<0.1	
BLK	Blank						<0.1	0.3	<0.1	<1	<0.1	0.2	<0.2	1	<0.01	<1	<0.1	<0.1	<1	<0.1	<0.1	
Prep Wash																						
ROCK-VAN	Prep Blank	6.85	3.30	1.66	<0.01	<0.05	1.1	3.8	3.3	46	<0.1	1.1	3.5	619	2.14	2	1.2	3.0	205	<0.1	0.2	
ROCK-VAN	Prep Blank	6.67	3.28	1.65	<0.01	<0.05	0.9	5.5	3.6	60	<0.1	1.2	3.9	657	2.12	2	1.1	3.0	203	0.1	0.2	



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Project: Bull River

Report Date: October 01, 2019

Page: 3 of 3

Part: 3 of 4

# QUALITY CONTROL REPORT

VAN19002638.1

		MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200		
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Ce	Sn	Y	Nb	Ta	Be	
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		0.1	1	0.01	0.001	0.1	1	0.01	1	0.001	0.01	0.001	0.01	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	
STD CDN-ME-9 Expected																						
STD CDN-ME-14 Expected																						
STD OREAS131B Expected																						
STD OREAS45H Expected		0.17	263	0.135	0.023	12.4	602	0.238	332	0.878	7.99	0.09	0.205	0.99	131	23.6	1.93	10.4	14.8	1.08	1.09	
STD OREAS25A-4A Expected		0.37	157	0.301	0.048	21.8	115	0.327	147	0.93	8.87	0.131	0.482	2	155	47.3	4.06	10.5	20.9	1.4	0.93	
STD OREAS45E Expected		0.28	322	0.065	0.034	11	979	0.156	252	0.559	6.78	0.059	0.324	1.07	97	23.5	1.32	8.28	6.8	0.54		
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.1	<1	<0.01	<0.001	<0.1	<1	<0.01	<1	<0.001	<0.01	0.002	<0.01	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<1	
BLK	Blank	<0.1	<1	<0.01	<0.001	<0.1	<1	<0.01	<1	<0.001	<0.01	0.001	<0.01	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<1	
BLK	Blank	<0.1	<1	<0.01	<0.001	<0.1	<1	<0.01	<1	<0.001	<0.01	0.001	<0.01	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<1	
BLK	Blank	<0.1	<1	<0.01	<0.001	<0.1	<1	<0.01	<1	<0.001	<0.01	0.001	<0.01	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<1	
BLK	Blank	<0.1	<1	<0.01	<0.001	<0.1	<1	<0.01	<1	<0.001	<0.01	0.002	<0.01	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<1	
Prep Wash																						
ROCK-VAN	Prep Blank	<0.1	32	1.49	0.042	12.3	3	0.49	771	0.198	6.96	3.289	1.59	0.2	49.2	24	0.5	15.5	5.2	0.4	<1	
ROCK-VAN	Prep Blank	<0.1	33	1.54	0.043	11.5	3	0.52	805	0.199	6.79	3.388	1.58	0.3	49.1	23	0.6	15.3	5.3	0.4	<1	



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Project: Bull River

Report Date: October 01, 2019

Page: 3 of 3

Part: 4 of 4

# QUALITY CONTROL REPORT

VAN19002638.1

		MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	MA200	
		Sc	Li	S	Rb	Hf	In	Re	Se	Te	Tl
		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		1	0.1	0.1	0.1	0.1	0.05	0.005	1	0.5	0.5
STD CDN-ME-9 Expected											
STD CDN-ME-14 Expected											
STD OREAS131B Expected											
STD OREAS45H Expected		57	13.1		22.5	3.6	0.1		2.02		
STD OREAS25A-4A Expected		13.7	36.7	0.047	61	4.14	0.09		2.4		0.35
STD OREAS45E Expected		93	6.58	0.046	21.2	3.11	0.099		2.97	0.1	0.15
BLK	Blank										
BLK	Blank										
BLK	Blank										
BLK	Blank										
BLK	Blank										
BLK	Blank										
BLK	Blank										
BLK	Blank										
BLK	Blank	<1	<0.1	<0.1	0.3	<0.1	<0.05	<0.005	1	<0.5	<0.5
BLK	Blank	<1	<0.1	<0.1	0.5	<0.1	<0.05	<0.005	<1	<0.5	<0.5
BLK	Blank	<1	<0.1	<0.1	0.3	<0.1	<0.05	<0.005	<1	<0.5	<0.5
BLK	Blank	<1	0.1	<0.1	0.2	<0.1	<0.05	<0.005	2	<0.5	<0.5
BLK	Blank	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.005	<1	<0.5	<0.5
Prep Wash											
ROCK-VAN	Prep Blank	6	3.6	<0.1	39.3	1.5	<0.05	<0.005	<1	<0.5	<0.5
ROCK-VAN	Prep Blank	6	4.0	<0.1	36.9	1.6	<0.05	<0.005	<1	<0.5	<0.5