Ministry of Energy and Mines
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geological & Geochemical

TOTAL COST: $8,344.09

AUTHOR(S): M. McCuaig & K. Bates

SIGNATURE(S): In Appendix 1

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A

YEAR OF WORK: 2018

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5695217 (2018/APR/26)

PROPERTY NAME: Bull River Mine Property

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

515055, 515057, 515066 (MINE SITE), 515403, 1047428 (Don Claim), 1047788 (BUL1)

1047789 (BUL2), 1048930, 1048932, 1048934, 1048936, 1048938, 1048940, 1048943, 1048988 (BUL 3)

COMMODITIES SOUGHT: Cu-Ag-Au+/-Pb-Zn

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 082GNW002; 082GNW006; 082GNW028; 082GNW072;082GNW015;082GNW

MINING DIVISION: Fort Steele

NTS/BCGS: 82G/06 & 82G/11

LATITUDE: 49 ° 22 ' " **LONGITUDE:** 115 ° 11 ' " **(at centre of work)**

OWNER(S):

1) Purcell Basin Minerals

2)

MAILING ADDRESS:

PO Box 845 Cranbrook, BC, Canada

V1C 4J6

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

1)

2)

MAILING ADDRESS:

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

Purcell Supergroup, Proterozoic, Paleozoic, Aldridge Formation, Palliser Formation, Rocky Mountain Trench Fault, Siderite

Silica, Chlorite, Chalcopyrite, Pyrrhotite, Pyrite, Galena, Sphalerite, Barite, Bull River Deposit

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 3436, 3439, 3700, 3929, 5900, 5904, 5905, 590

5942, 6031, 6244, 7086, 8014, 8137, 8531, 8584, 8965, 10304, 10570A&B, 11681A&B, 12414, 15471, 15624, 15858, 16221, 162

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TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock			
Other	pXRF (53 samples Cu, Pb, Zn)	1048988	$1,775.00
DRILLING (total metres; number of holes, size)			
Core			
Non-core	Core Logging - 175.2 m	1048988	$6,569.09
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	$8,344.09

Print Form

Technical Report for the Bull River Mine Property

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

Map Sheets 82G/11 and 82G/06

Ft. Steele Mining Division

Prepared on behalf of:

Purcell Basin Minerals

Box 845

Cranbrook, British Columbia, Canada

V1C 4J6

Prepared by:

Michael McCuaig, P. Geo

&

Kerry Bates, M.Sc., GIT

TerraLogic Exploration Inc.

Suite 200, 44-12th Avenue South

Cranbrook, British Columbia, Canada

V1C 2R7

April 27th, 2018

Summary

Purcell Basin Minerals Inc., ("Purcell") 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.

The following summary of history and previous work on the Property is provided as open citation from the technical report authored by Dzick and Ghaymghamian (2013).

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. No 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 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. Until recently the Property was held by Gallowai-Bull River Mine through a joint venture partnership, which was then transferred to the Stanfield Mining Group (SMG). In December 2014, all of the mining properties were transferred from SMG and are now owned 100 % unencumbered by Purcell Basin Minerals Incorporated (http://purcellbasin.com/site/about-us).

The Property currently includes 15 contiguous MTO Mineral Claims with a total area of 6,948 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 goal of the 2018 exploration program was to define exploration targets peripheral to the copper ore body defined in the NI43-101 compliant resource, and to investigate the source of an intersecting north-south trending magnetic anomaly with a northwest-southeast resistivity anomaly. The work program consisted of the following exploration activities:

- Geological analysis of the previously unlogged borehole Grand 10-05
- pXRF sampling of a defined interval of interest in borehole Grand 10-05

Total expenditures on the Bull River Mine Property in 2018 were approximately $8,344.09.

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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.

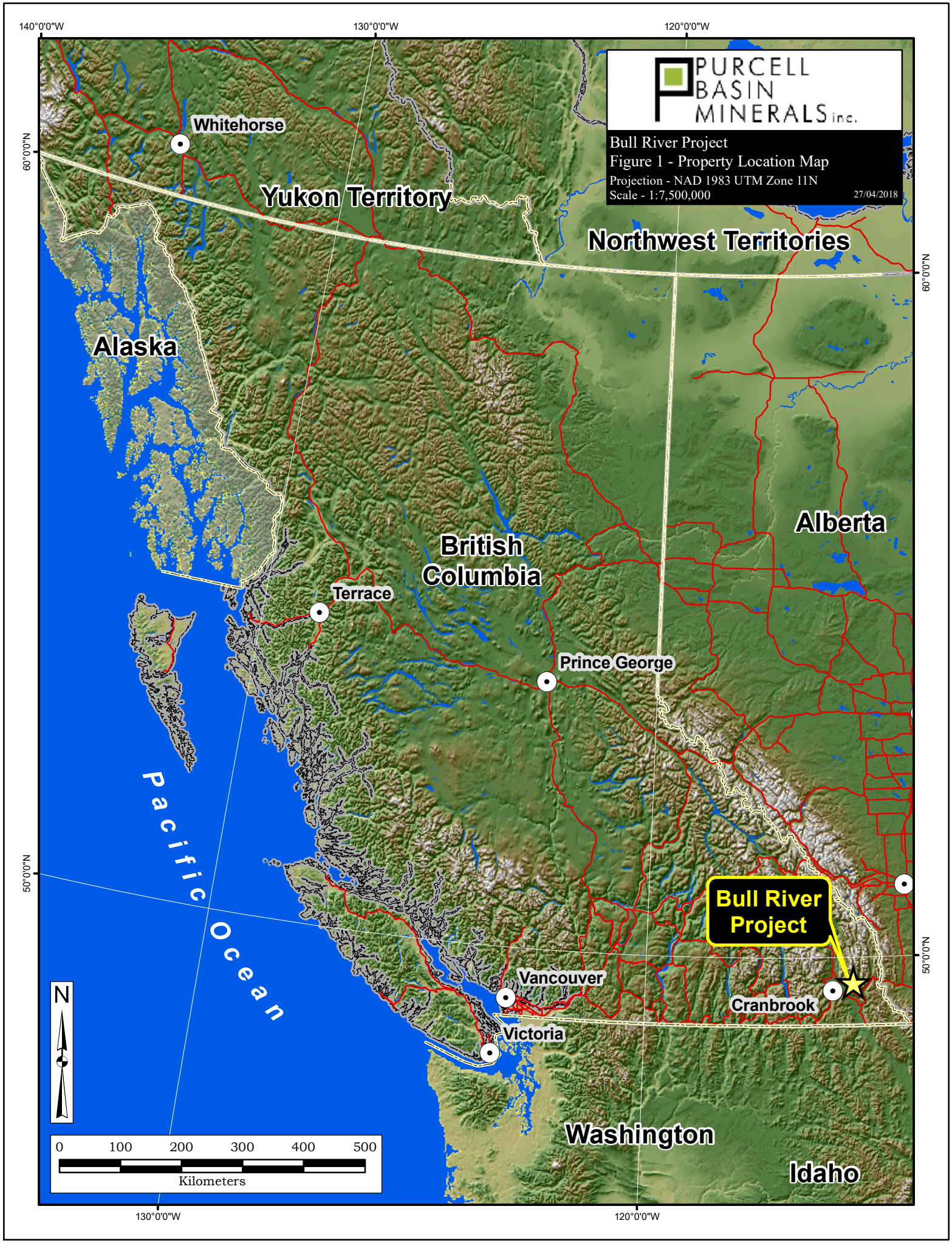
In 2018, fieldwork was completed by consultants from TerraLogic Exploration Inc., logging core at the Bull River Mine Facility. The borehole was originally drilled in 2005, however geologic information was not recorded at the time of drilling. Borehole Grand-10-05 was drilled on Tenure #1048988.

The Property is located in NTS map sheets 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.


PURCELL BASIN MINERALS inc.
Bull River Project
Figure 1 - Property Location Map
Projection - NAD 1983 UTM Zone 11N
Scale - 1:7,500,000
27/04/2018
140°0'0"W
130°0'0"W
120°0'0"W
60°0'0"N
50°0'0"N
Whitehorse
Yukon Territory
Northwest Territories
Alaska
British Columbia
Alberta
Terrace
Prince George
Pacific Ocean
Bull River Project
Vancouver
Victoria
Cranbrook
Washington
Idaho
N
0 100 200 300 400 500
Kilometers

Tenure

The Property is comprised of 15 Mineral Claims totaling 6,948 ha in the Ft. Steele Mining Division and has been summarized below in Table 1 and Figure 2. 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 $9,740.00 (Dzick and Ghaymghamian, 2013).

Table 1 – Tenure Summary for the Bull River Mine Property

Tenure Number	Claim Name	Issue Date	Good To Date	Owner Name	Ha
515055		23/06/2005	16/07/2018	BUL RIVER MINERAL CORPORATION	1028
515057		23/06/2005	16/07/2018	BUL RIVER MINERAL CORPORATION	1238
515066	MINE SITE	23/05/2005	23/11/2018	BUL RIVER MINERAL CORPORATION	252
515403		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	63
1048988	BUL3	06/01/2017	16/07/2018	BUL RIVER MINERAL CORPORATION	1869
1047428	DON CLAIM	24/10/2016	16/07/2018	BUL RIVER MINERAL CORPORATION	526
1048943		24/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	252
1047788	BUL 1	10/11/2016	16/07/2018	BUL RIVER MINERAL CORPORATION	503
1047789	BUL 2	10/11/2016	16/07/2018	BUL RIVER MINERAL CORPORATION	419
1048930		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	105
1048932		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	63
1048934		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	84
1048936		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	126
1048938		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	84
1048940		27/06/2005	10/07/2018	BUL RIVER MINERAL CORPORATION	336

PURCELL BASIN MINERALS inc.

Bull River Project
Figure 2 - Mineral Tenure Map
Projection - NAD 1983 UTM Zone 11N
Scale - 1:80,000
27/04/2018

615000 620000 625000 630000

5490000 5485000 5480000 5475000 5470000 5465000

1047788
1047789
212492
1048940
BULL RIVER
212493
515066
COPPER KING
TRILBY
CUCKOO
515057
1048943
515055
VIKING
GREAT WESTERN
1048988
1048936
1048934
1048930
1048932
G-Zone
PIT
ROSS 1
MOUNTAIN
1048938
515403
BLUE GROUSE
EMPIRE
JESSIE
PEACOCK COPPER
DON
1047428

Legend
- BC Minfile Location
- Trail
- Light Road
- Road
- Stream
- Contour
- Fault
- Transmission Line
- Lake
- Purcell Basin Tenure

N

0 1 2 3 4 5 km

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 it's 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 December 2014, all of the mining properties were transferred from SMG and are now owned 100 % unencumbered by Purcell Basin Minerals Incorporated (http://purcellbasin.com/site/about-us).

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 time period of 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

Year	Assessment Report Number	Report Title	Work Completed
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.

Year	Assessment Report Number	Report Title	Work Completed
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	
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.

Year	Assessment Report Number	Report Title	Work Completed
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).
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 – Borne 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.

Year	Assessment Report Number	Report Title	Work Completed
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.
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^{IV} 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.

Year	Assessment Report Number	Report Title	Work Completed
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	
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.

Year	Assessment Report Number	Report Title	Work Completed
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	
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	TBD	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.

GEOLOGY

Regional Geology

The regional geologic setting of the Property is shown in Figure 3. The map was created using BCGS Open File 2013-4 compilation map by Cui et al., 2013.

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 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).

610000 620000 630000 640000

5500000 5490000 5480000 5470000 5460000 5450000

N

PURCELL BASIN MINERALS inc.

Bull River Project
Figure 3 - Regional Geology Map
Projection - NAD 1983 UTM Zone 11N
Scale - 1:150,000 27/04/2018

CmCr DCBH OSB muCmJ mPrPV uPrCmEC CmOM uDPa MBE Ds mPrPK mPrPC PnPR JFe JKK MRE mPrPA mPrPNS unknown

TRILBY CUCKOO COPPER KING BULL RIVER GREAT WESTERN VIKING G-Zone PIT ROSS 1 MOUNTAIN BLUE GROUSE EMPIRE JESSIE PEACOCK COPPER DON

20/04/2018

Elko

Geology Legend

Fault

Strat Unit

CmOM	mudstone, siltstone, shale fine clastic sedimentary rocks
DCBH	dolomitic carbonate rocks
DFSA	limestone, slate, siltstone, argillite
Ds	undivided sedimentary rocks
JFe	undivided sedimentary rocks
JKK	undivided sedimentary rocks
Kgd	granodioritic intrusive rocks
MBE	limestone, slate, siltstone, argillite
MRE	dolomitic carbonate rocks
OSB	dolomitic carbonate rocks
PnPR	dolomitic carbonate rocks
TrSRsf	mudstone, siltstone, shale fine clastic sedimentary rocks
lKTBC	coarse clastic sedimentary rocks
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	coarse clastic sedimentary rocks
muCmJ	dolomitic carbonate rocks
muCmLSJ	limestone, marble, calcareous sedimentary rocks
uDPa	limestone, marble, calcareous sedimentary rocks
uPrCmCr	quartzite, quartz arenite sedimentary rocks
uPrCmEC	limestone, slate, siltstone, argillite
unknown	unknown

Legend

- BC Minfile Location
- Trail
- Light Road
- Road
- Stream
- Contour
- Fault
- Transmission Line
- Lake
- Purcell Basin Tenure
- Park

0 2 4 6 8 10 km

Property Geology

The geologic setting of the Property is shown in Figure 4. The map was created using BCGS Open File 2013-4 compilation map by Cui et al., 2013.

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 Don zone was described by Masters (1992) as veins which contain copper, silver and gold in a matrix of quartz, siderite and barite hosted in Gateway Formation argillites. Masters (1992) also describes barite-copper±silver-gold mineralization at the Elderberry prospect, which is associated with a zone of intense structural deformation.

Mineralization at the G-Zone (Cedar) is characterized by massive galena±pyrite-chalcopyrite-sphalerite hosted within quartz and limonite after siderite in rusty-weathering sheared metasedimentary rocks of

the Aldridge Formation (Graf, 2014). A 1978 company report authored by Allen stated “a sample of the galena assayed 85.1 % lead and 36.92 oz/t silver, and a check sample assayed 84.0 % lead and 37.9 oz/t silver” (Graf, 2014). The style of mineralization at the G-Zone is more akin to the veins mined at St. Eugene (Purcell Supergroup), and to a lesser extent with the Coeur d'Alene silver-lead-copper deposits (Dzick and Ghaymghamian, 2013) in Idaho (Belt-Purcell).

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.

PURCELL BASIN MINERALS Inc.

Bull River Project
Figure 4 - Property Geology Map

Projection - NAD 1983 UTM Zone 11N
Scale - 1: 40,000
27/04/2018

615000 620000 625000 630000

5495000 5490000 5485000 5480000 5475000 5470000 5465000

uPrCmEC muCmJ CmOM uDPa MBE Ds mPrPV mPrPK PnPR TrSRsf JFe mPrPC mPrPA unknown mPrPNS MRE

1047788 1047789 212492 1048940 212493 515066 515057 1048943 515055 1048988 1048936 1048934 1048930 1048932 1048938 515403 1047428

N

Geology Legend

Fault

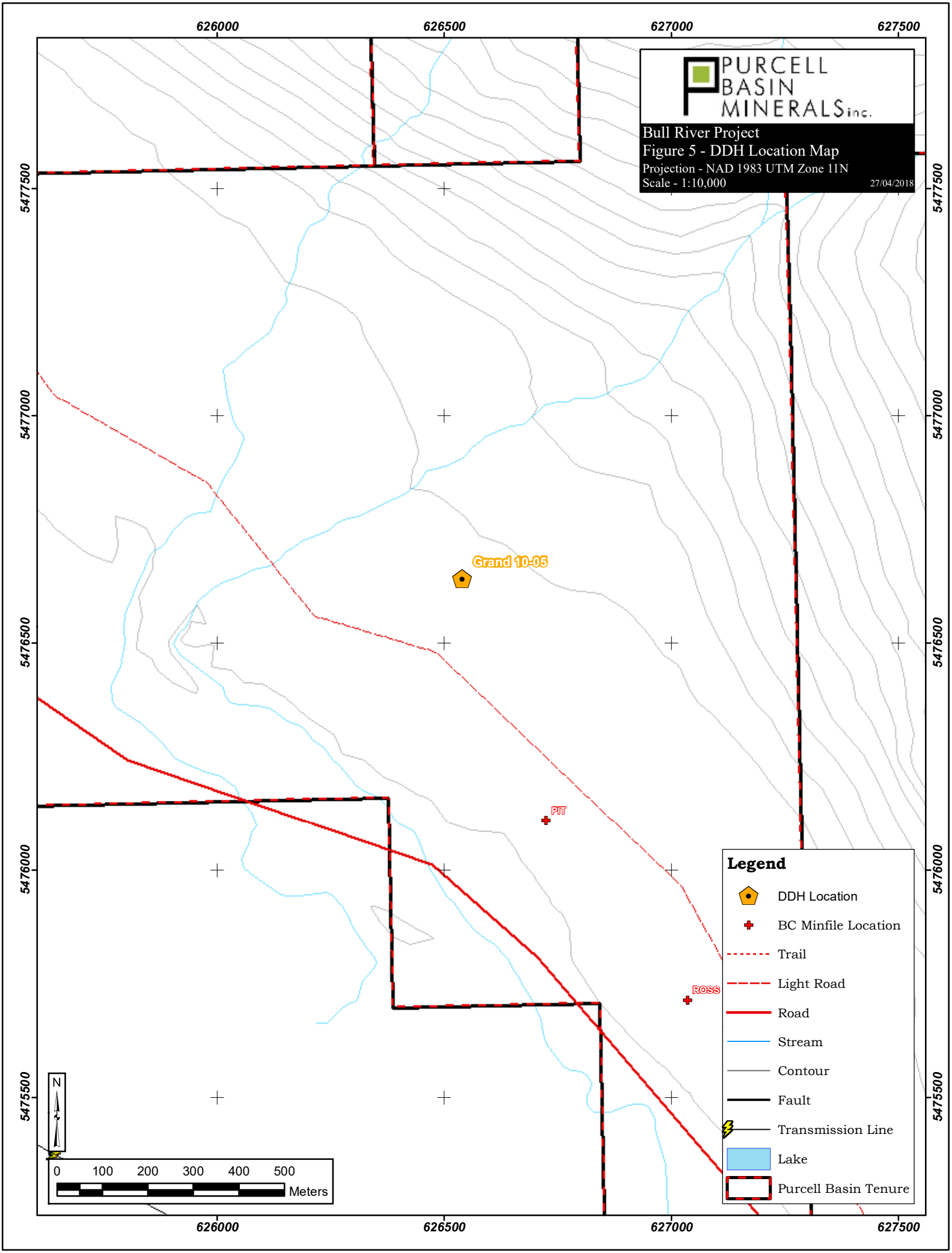
Strat Unit

unknown	unknown
lKTBC	coarse clastic sedimentary rocks
Kgd	granodioritic intrusive rocks
JFe	undivided sedimentary rocks
JKK	undivided sedimentary rocks
TrSRsf	mudstone, siltstone, shale fine clastic sedimentary rocks
PnPR	dolomitic carbonate rocks
MBE	limestone, slate, siltstone, argillite
MRE	dolomitic carbonate rocks
uDPa	limestone, marble, calcareous sedimentary rocks
DCBH	dolomitic carbonate rocks
DFSA	limestone, slate, siltstone, argillite
Ds	undivided sedimentary rocks
OSB	dolomitic carbonate rocks
muCmFE	coarse clastic sedimentary rocks
muCmJ	dolomitic carbonate rocks
muCmLSJ	limestone, marble, calcareous sedimentary rocks
CmOM	mudstone, siltstone, shale fine clastic sedimentary rocks
uPrCmCr	quartzite, quartz arenite sedimentary rocks
uPrCmEC	limestone, slate, siltstone, argillite
mPrPV	argillite, greywacke, wacke, conglomerate turbidites
mPrPNS	undivided sedimentary rocks
mPrPK	dolomitic carbonate rocks
mPrPC	undivided sedimentary rocks
mPrPA	argillite, greywacke, wacke, conglomerate turbidites

Legend

- BC Minfile Location
- Trail
- Light Road
- Road
- Stream
- Contour
- Fault
- Transmission Line
- Lake
- Purcell Basin Tenure

0 1 2 3 4 5 km


626000
626500
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5477500
5477000
5476500
5476000
5475500
PURCELL BASIN MINERALS inc.
Bull River Project
Figure 5 - DDH Location Map
Projection - NAD 1983 UTM Zone 11N
Scale - 1:10,000
27/04/2018
Grand 10-05
PIT
ROSS
Legend
DDH Location
BC Minfile Location
Trail
Light Road
Road
Stream
Contour
Fault
Transmission Line
Lake
Purcell Basin Tenure
N
0 100 200 300 400 500
Meters

2018 EXPLORATION PROGRAM

The field component of the 2018 exploration program consisted of 4 person days. Field activities were based out of the Bull River Mine, British Columbia, and occurred on April 20th and April 23-24th, 2018.

The goal of the 2018 exploration program was to examine drill core from a 2005 drill program which had never been logged or geochemically characterized. TerraLogic was contracted by Purcell Basin Minerals to produce a detailed core log accompanied by pXRF data to identify potential intervals of economic interest. Six previously unlogged holes were made available for the project and one of these holes, Grand 10-05, was selected for logging (Refer to Figure 5 for geographic reference). The collar location for Grand 10-05 was provided to TerraLogic Exploration Inc., by staff of Purcell Basin Minerals. The TerraLogic crew has not independently verified the location of the hole, and is relying on the information provided by Purcell Basin Minerals.

Total expenditures on the Purcell Basin Minerals Tenure in 2018 were $8,344.09. Refer to Appendix I for Statements of Qualifications for personnel involved with the collection, management and reporting of data from the 2018 exploration program. Refer to Appendix II for a detailed breakdown of project expenditures.

2018 EXPLORATION RESULTS

Core Logging Program

A total of 133.91 meters of core were logged from DDH Grand 10-05 (Az: 000°, Dip: -90°, total depth 175.25 m). The borehole was selected to examine the intersection of a north-south trending magnetic anomaly and a northwest-southeast trending resistivity anomaly. The hole was collared in overburden and then intersected the Grand Dyke at a depth of 41.3 metres which is comprised of medium-coarse grained granodiorite (Plate A). The granodiorite is pervasively chlorite altered with selective epidote alteration envelopes associated with quartz-carbonate-epidote veins (Plate C) and strong iron staining envelopes (Plate D) associated with un-mineralized quartz-siderite veins. Mineralization in this interval of the Grand Dyke consists of very fine-fine grained disseminated pyrite and small blebby pyrite (1-2 mm) and is considered to be economically insignificant. The granodiorite is weakly – moderately magnetic.

The contact between the Grand Dyke and the underlying Aldridge Formation was observed at 122.9 m. At this locations the Aldridge Formation is comprised of laminated argillite with bedding ranging from 65-90° to core axis. Carbonate and silica alteration in this interval is typically constrained to bedding. The underlying argillite within 3.0 meters of the contact zone is un-mineralized. Mineralization between 125.30-175.25 meters is dominated by diagenetic pyrite, commonly concentrated along bedding (associated with calcite cement, Plated D) and in quartz-carbonate veins ranging from 1-10 millimeters thick (Plate E). Rare sphalerite and galena was observed in quartz-carbonate veins (average 15° TCA and 5 millimeters thick). Mineralization observed in this interval is considered economically insignificant.

Refer to Figure 6 for the geological drill hole section. A detailed drill hole summary log, and drill hole geologic data are presented in Appendix V.

Plate A: Grand Dyke granodiorite. DDH: Grand 10-05, 82.25 m

Plate B: Granodiorite with pervasive chlorite alteration and quartz-carbonate-epidote veins with epidote alteration envelopes. DDH Grand 10-05, 94.04 m.

Plate C: Granodiorite (iron staining) with quartz-carbonate (siderite) vein. DDH: Grand 10-05, 104.80 m.

Plate D: Aldridge Formation. Mineralized (pyrite) argillite laminations disrupted by a flame structure. DDH: Grand 10-05, 165.15 m.

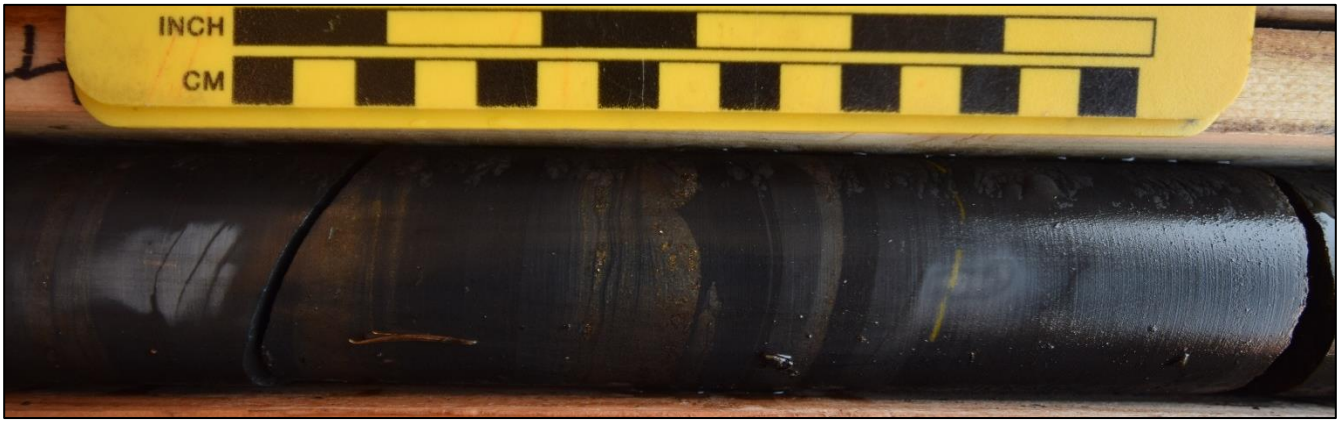
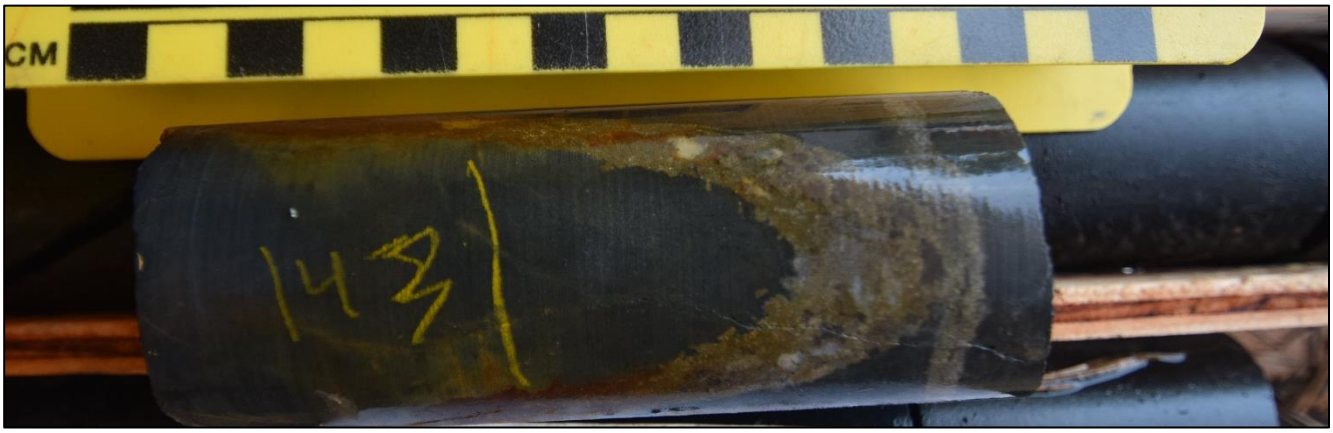


Plate E: Aldridge Formation. Mineralized quartz-carbonate vein (dominantly pyrite with minor sphalerite. DDH: Grand 10-05, 143.00 m



pXRF Program

Drill core was analyzed using an Olympus Innov-X Delta Line 50 kEv portable hand held x-ray fluorescence (XRF) analyzer (Model Number DP-4050/Serial Number 550160/Date of Manufacture August 2013).

Prior to analysis and after lunch the pXRF analyzer was calibrated using the calibration disk provided by Olympus. During the calibration check a radiation meter (Manufacturer: SE International, Model: Monitor 4EC, Serial Number: 68864, Background: 0.2 uSv/hr) was used to conduct a radiation scatter profile survey, ensuring that the operator is not exposed to any back scattered radiation during use. Once the radiation profile survey is complete sample analysis was initiated

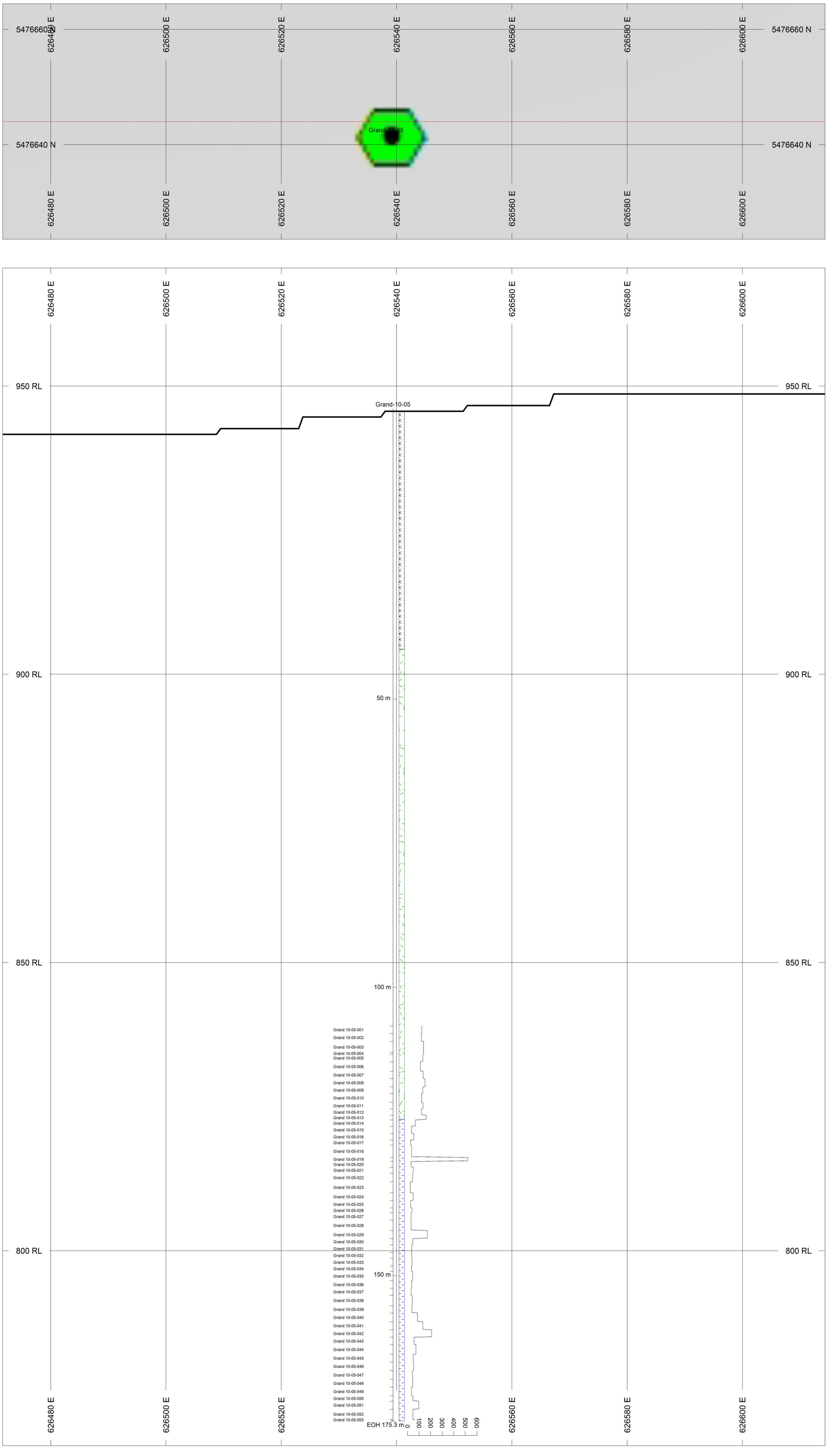
Approximately seventy metres of diamond drill core was selected by the core logging geologist to be scanned with the portable pXRF. Base line readings were established over three one metre sections of drill core to ensure that the pXRF results were accurate and repeatable. Each scan of the core was 30 seconds in duration. Each one metre section of core was scanned 10 times and the results were compared to ensure the results were consistent.

After establishing that the XRF results were consistent each row of core in the core boxes was then scanned with the overall length of the scan being recorded. At the end of the day the data was uploaded from the pXRF and imported into TerraLogic Explorations XRF database located on its main server at its head office in Cranbrook, BC.

pXRF Results

The results from the pXRF survey show that there are minor differences in the background signatures of the two rock types in the DDH Grand 10-05. The granodiorite interval has average background values of: 87.7 ppm Cu, 130.4 ppm Zn, and 8.4 ppm Pb. Peak values from the granodiorite returned 129.0 ppm Cu (Sample Grand 10-05-003), 151.0 ppm Zn (Sample Grand 10-05-008), and 14.0 ppm Pb (Sample Grand 10-05-004) (Refer to Figure 6 for Zn results).

The Aldridge Formation has lower average background results than the overlying granodiorite for both Cu (36.4 ppm) and Zn (91.75 ppm) and a slightly higher average Pb value (10.8 ppm). In the Aldridge interval Zn values return as high as 522 ppm and 209 ppm (Grand 10-05-019 and 10-05-042 respectively). This peak values were recorded in intervals with mineralized quartz-carbonate veins.



TOPOGRAPHY

Topographic Surface

PROFILES	L/R	COL
Zn_ppm	R	

ROCK CODES	PAT	LABEL
Major Rock Type		argillite
		granodiorite
		overburden

POSTED TEXT	L/R	TEXT	ITEMS
2018 Sample ID	L	-------	All

SECTION SPECS:

REF. PT. E, N	626543 m	5476644 m
EXTENTS	142.7 m	204.3 m
SECTION TOP, BOT	970.4 m	766.2 m
TOLERANCE +/-	25 m	

SCALE 1 : 500

(m)

-5 0 5 10 15 20

*unknown

AZIMUTH = 90°

N W E S

Purcell Basin Minerals

Bull River Mine

Figure 6: Grand 10-05

CONCLUSIONS

The results of the 2018 geological analysis and pXRF sampling program have demonstrated that there is no significant economic potential in borehole Grand 10-05. The pXRF results show that the analysis was successful identifying zones of increased Zn concentrations where minor amounts of sphalerite may have been missed during visual logging. The geological investigation of borehole Grand-10-05 has confirmed that the Grand Dyke is the source of the north-south trending magnetic anomaly. At this time no further conclusions have been reached regarding the source of the resistivity anomaly. Alteration paragenesis has shown that epidote alteration predates quartz-siderite veining. In the Aldridge, intervals with anomalous Zn concentrations correlate with mineralized quartz-carbonate veins discordant with respect to bedding. This has been interpreted to indicate that base metal-enrichment is the result of hydrothermal processes with no evidence for economic exhalative or vein-style mineralization at the location of Grand 10-05.

RECOMMENDATIONS

Additional work is recommended to advance the Property including, but not limited to the following:

- Detailed research and compilation of all existing historic data from the property resulting in a comprehensive database from which future exploration programs can be designed and implemented as budget allows;
- Ground based geophysics orientation survey (IP ± Gravity) on high-priority targets identified in proximity to the mineral deposit. The orientation survey(s) should be designed by a qualified professional whilst on the property to determine the preferred location to minimize interference from existing infrastructure and a conceptual budget to perform the work;
- Ground based geophysics survey on high-priority targets pending favourable results from the orientation survey;
- Geologic investigation and pXRF analysis of previously drilled but unlogged drill holes, focussing on boreholes that have tested defined geophysical anomalies;
- Diamond drilling focusing on the following targets:
    - Resource expansion of the existing mineral deposit;
    - Brownfield exploration within 1.0 km of the existing mineral deposit;
    - Greenfield exploration on outlying targets defined by geochemical and geophysics surveys.

A conceptual budget has not been drafted for this report as the scope of work spans what would most likely be a multi-phase exploration campaign completed in a staged approach over several years. Detailed proposals covering the scope of exploration work and related budgets will be completed for each stage of exploration on the property.

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Appendix I

Statement of Qualifications

STATEMENT OF QUALIFICATIONS

I, Michael A. McCuaig, Do hereby certify that:

I am currently employed as a Geologist, with TerraLogic Exploration Inc., Suite 200, 44-12th Avenue South, Cranbrook, BC, V1C 2R7.

I graduated with a Bachelor of Science Degree from St. Francis Xavier University in 2003.

I have worked as a geologist for 11 years since my graduation from University.

I am currently a member in good standing with the British Columbia Engineers and Geoscientists, Registration Number 39402.

I managed the 2018 exploration program on the Bull River Mine project.

The report is supported by geochemical data and samples collected during fieldwork on the Bull River Mine Property in the Fort Steele Mining District, during the month of April 2018. The drill core and geographic collar location for borehole Grand 10-05 was made available for investigation by Purcell Basin Minerals staff and is believed to be accurate.

I have co-authored the assessment report titled "2018 Technical Report for the Bull River Mine Property", and dated April 27th, 2018 on behalf of Purcell Basin Minerals.

Dated this 27th day of April 2018, in Cranbrook, British Columbia.

M. McCuaig

Michael A. McCuaig, P. Geo.

STATEMENT OF QUALIFICATIONS

I, Kerry B. Bates, Do hereby certify that:

I am currently employed as a Geologist, with TerraLogic Exploration Inc., Suite 200, 44-12th Avenue South, Cranbrook, BC, V1C 2R7.

I graduated with a Bachelor of Science Degree (Earth Sciences) from Dalhousie University in 2011 and a Master of Science Degree (Geological Sciences) from the University of Manitoba in 2016.

I have worked as a geologist for 2.5 years since my graduation from University.

I am currently a Geologist-in-Training (GIT) in good standing with Engineers & Geoscientists BC, Registration Number 187940.

The report is supported by geochemical data and samples collected by qualified staff employed by TerraLogic Exploration Inc., from the Bull River Mine Property in the Fort Steele Mining District, during the month of April 2018.

I have co-authored the assessment report titled "2018 Technical Report for the Bull River Mine Property", and dated April 27th, 2018 on behalf of Purcell Basin Minerals.

Dated this 27th day of April 2018, in Cranbrook, British Columbia.

Kerry B. Bates, M.Sc., GIT

Appendix II

Statement of Expenditures

Geological Analysis					**Totals**
Personnel (Name) / Position	**Field Days**	**Days**	**Rate**	**Subtotal**	
K. Bates, Geologist	April 20, 23, 24, 2018	3.0	$625.00	$1,875.00	
B. Robison, Geotechnician	April 24, 2018	1.0	$575.00	$575.00	
				$2,450.00	**$2,450.00**
Office Studies	**Personnel**	**Hours**	**Rate**	**Subtotal**	
Project Management & Planning	J. Campbell, President TerraLogic Exploration Inc.	7.0	$90.00	$630.00	
Project Management	M. McCuaig, P. Geo.	9.0	$82.00	$738.00	
pXRF data manager	C. Gallagher	4.0	$90.00	$360.00	
Map preparation	B. Robison	8.5	$65.00	$552.50	
Tenure Management	B. Lovelette	1.0	$73.50	$73.50	
Report Preparation	K. Bates, GIT	43.0	$59.50	$2,558.50	
				$4,912.50	**$4,912.50**
Equipment Rentals		**No.**	**Rate**	**Subtotal**	
4WD vehicle	TerraLogic F150 day rate	3.0	$100.00	$300.00	
Travel Expense	Cranbrook - Bull River Mine (return trip) km @ $0.30/km	395.3	$0.30	$118.59	
Truck Fuel	TerraLogic F150 Fuel	1.0	$80.00	$80.00	
Field Gear	Field Pack, FA Kit, Sampling Equipment	3.0	$10.00	$30.00	
Camera	Daily rental rate for camera	3.0	$35.00	$105.00	
Computer	Daily rentail rate for field laptops	4.0	$10.00	$40.00	
pXRF	Daily rental rate for portable XRF	1.00	$300.00	$300.00	
				$973.59	**$973.59**
TerraLogic Exploration Handling and Adminstration Fees				**Subtotal**	
				$8.00	
				$8.00	**$8.00**
TOTAL Expenditures					**$8,344.09**

Appendix III

Geochemical Protocol and Analytical Techniques

XRF Analysis

Drill core was analyzed using an Olympus Innov-X Delta Line 50 kEv portable hand held x-ray fluorescence (XRF) analyzer (Model Number DP-4050/Serial Number 550160/Date of Manufacture August 2013).

Prior to analysis and after lunch the pXRF analyzer was calibrated using the calibration disk provided by Olympus. During the calibration check a radiation meter (Manufacturer: SE International, Model: Monitor 4EC, Serial Number: 68864, Background: 0.2 uSv/hr) was used to conduct a radiation scatter profile survey, ensuring that the operator is not exposed to any back scattered radiation during use. Once the radiation profile survey is complete sample analysis was initiated.

Approximately seventy metres of diamond drill hole core was selected by the core logging geologist to be scanned with the portable pXRF. Base line readings were established over three one metre sections of drill core to ensure that the pXRF results were accurate and repeatable. Each scan of the core was 30 seconds in duration. Each one metre section of core was scanned 10 times and the results were compared to ensure the results were consistent.

After establishing that the XRF results were consistent each row of core in the core boxes was then scanned with the overall length of the scan being recorded. At the end of the day the data was uploaded from the pXRF and imported into TerraLogic Explorations XRF database located on its main server at its head office in Cranbrook, BC.

Quality Control & Quality Assurance

The integrity of the pXRF analyzer was tested by verifying calibration of the analyzer, repeat, and standard samples. Standard samples are compared to assure they are within the accepted range of values provided by the standard supplier. Repeat scans were completed on every fourth row of core.

Software

The following is a list of software used in the field and writing of this report:
•Arc GIS 9.3 & 10.3
•Microsoft Office 2010 & 2016
•Apache Open Office
•Libre Office Calc
•Adobe Acrobat 10
•Geosoft Oasis Montaj
•Innov-X Advanced PC Software

Appendix IV

pXRF Sample Intervals and Results

Appendix IV - Sample Intervals and pXRF Geochemistry

DDH SAMP ID	Reading #	From (m)	To (m)	Sample Type	Date	Mode	Total Elapsed Time	Live Analysis Time Total	Cu ppm	Pb ppm	Zn ppm	XRF Serial Number	Model	XRF Operator Certification Number
Grand 10-05-001	#45	106.70	108.00	sample	4/24/2018	Soil	36.09	30.31	85	8	124	550160	Delta Premium-50kV	18503
Grand 10-05-002	#46	108.00	109.40	sample	4/24/2018	Soil	36.22	30.39	84	7	120	550160	Delta Premium-50kV	18503
Grand 10-05-003	#48	109.40	111.30	sample	4/24/2018	Soil	36.11	30.31	129	10	139	550160	Delta Premium-50kV	18503
Grand 10-05-004	#49	111.30	111.59	sample	4/24/2018	Soil	35.58	30.01	96	14	140	550160	Delta Premium-50kV	18503
Grand 10-05-004	#50	111.30	111.59	repeat	4/24/2018	Soil	35.91	30.34	64	4	113	550160	Delta Premium-50kV	18503
Grand 10-05-005	#51	111.59	112.90	sample	4/24/2018	Soil	35.72	30.25	76	6	133	550160	Delta Premium-50kV	18503
Grand 10-05-006	#52	112.90	114.55	sample	4/24/2018	Soil	36.19	30.35	91	5	111	550160	Delta Premium-50kV	18503
Grand 10-05-007	#53	114.55	115.85	sample	4/24/2018	Soil	35.68	30.02	68	9	136	550160	Delta Premium-50kV	18503
Grand 10-05-008	#55	115.85	117.25	sample	4/24/2018	Soil	36.07	30.30	97	2	151	550160	Delta Premium-50kV	18503
Grand 10-05-008	#56	115.85	117.25	repeat	4/24/2018	Soil	35.72	30.00	65	11	126	550160	Delta Premium-50kV	18503
Grand 10-05-009	#57	117.25	118.40	sample	4/24/2018	Soil	35.61	30.02	83	9	133	550160	Delta Premium-50kV	18503
Grand 10-05-010	#58	118.40	119.95	sample	4/24/2018	Soil	35.73	30.25	102	9	123	550160	Delta Premium-50kV	18503
Grand 10-05-011	#59	119.95	121.10	sample	4/24/2018	Soil	36.03	30.37	64	12	134	550160	Delta Premium-50kV	18503
Grand 10-05-012	#60	121.10	122.20	sample	4/24/2018	Soil	35.68	30.13	77	10	121	550160	Delta Premium-50kV	18503
Grand 10-05-012	#61	121.10	122.20	repeat	4/24/2018	Soil	35.74	30.27	103	9	125	550160	Delta Premium-50kV	18503
Grand 10-05-013	#65	122.20	123.00	sample	4/24/2018	Soil	36.52	30.29	90	11	162	550160	Delta Premium-50kV	18503
Grand 10-05-014	#67	123.00	124.10	sample	4/24/2018	Soil	36.15	30.33	80	8	68	550160	Delta Premium-50kV	18503
Grand 10-05-015	#68	124.10	125.35	sample	4/24/2018	Soil	37.54	30.39	19	7	35	550160	Delta Premium-50kV	18503
Grand 10-05-016	#69	125.35	126.50	sample	4/24/2018	Soil	37.06	30.37	26	23	55	550160	Delta Premium-50kV	18503
Grand 10-05-017	#70	126.50	127.38	sample	4/24/2018	Soil	37.51	30.30	14	11	27	550160	Delta Premium-50kV	18503
Grand 10-05-017	#71	126.50	127.38	repeat	4/24/2018	Soil	37.40	30.23	19	7	28	550160	Delta Premium-50kV	18503
Grand 10-05-018	#72	127.38	129.45	sample	4/24/2018	Soil	37.20	30.30	14	8	35	550160	Delta Premium-50kV	18503
Grand 10-05-019	#75	129.45	130.20	sample	4/24/2018	Soil	37.50	30.39	14	10	522	550160	Delta Premium-50kV	18503
Grand 10-05-020	#78	130.20	131.20	sample	4/24/2018	Soil	37.04	30.25	29	11	31	550160	Delta Premium-50kV	18503
Grand 10-05-021	#79	131.20	132.25	sample	4/24/2018	Soil	37.39	30.33	57	9	49	550160	Delta Premium-50kV	18503
Grand 10-05-021	#80	131.20	132.25	repeat	4/24/2018	Soil	36.99	30.17	53	13	62	550160	Delta Premium-50kV	18503
Grand 10-05-022	#81	132.25	133.73	sample	4/24/2018	Soil	37.54	30.20	27	10	44	550160	Delta Premium-50kV	18503
Grand 10-05-023	#83	133.73	135.63	sample	4/24/2018	Soil	37.48	30.31	6	15	23	550160	Delta Premium-50kV	18503
Grand 10-05-024	#84	135.63	137.00	sample	4/24/2018	Soil	37.48	30.13	61	7	50	550160	Delta Premium-50kV	18503
Grand 10-05-025	#85	137.00	138.26	sample	4/24/2018	Soil	37.52	30.32	21	5	26	550160	Delta Premium-50kV	18503
Grand 10-05-025	#86	137.00	138.26	repeat	4/24/2018	Soil	37.41	30.23	18	11	35	550160	Delta Premium-50kV	18503
Grand 10-05-026	#87	138.26	139.10	sample	4/24/2018	Soil	37.00	30.10	49	13	39	550160	Delta Premium-50kV	18503
Grand 10-05-027	#88	139.10	140.40	sample	4/24/2018	Soil	37.41	30.38	14	18	31	550160	Delta Premium-50kV	18503
Grand 10-05-028	#90	140.40	142.20	sample	4/24/2018	Soil	37.35	30.27	12	8	31	550160	Delta Premium-50kV	18503
Grand 10-05-029	#91	142.20	143.60	sample	4/24/2018	Soil	37.55	30.34	27	17	171	550160	Delta Premium-50kV	18503
Grand 10-05-030	#95	143.60	144.65	sample	4/24/2018	Soil	37.46	30.17	40	18	46	550160	Delta Premium-50kV	18503
Grand 10-05-031	#96	144.65	146.00	sample	4/24/2018	Soil	37.54	30.36	0	10	36	550160	Delta Premium-50kV	18503
Grand 10-05-032	#97	146.00	147.00	sample	4/24/2018	Soil	37.50	30.33	7	22	36	550160	Delta Premium-50kV	18503
Grand 10-05-033	#98	147.00	148.35	sample	4/24/2018	Soil	37.27	30.14	20	11	39	550160	Delta Premium-50kV	18503
Grand 10-05-033	#100	147.00	148.35	repeat	4/24/2018	Soil	37.48	30.29	13	9	38	550160	Delta Premium-50kV	18503
Grand 10-05-034	#101	148.35	149.25	sample	4/24/2018	Soil	37.08	30.02	4	11	34	550160	Delta Premium-50kV	18503
Grand 10-05-035	#102	149.25	150.90	sample	4/24/2018	Soil	36.98	30.04	26	12	43	550160	Delta Premium-50kV	18503
Grand 10-05-036	#103	150.90	152.20	sample	4/24/2018	Soil	37.05	30.02	4	19	36	550160	Delta Premium-50kV	18503
Grand 10-05-037	#104	152.20	153.42	sample	4/24/2018	Soil	37.09	30.06	3	14	32	550160	Delta Premium-50kV	18503
Grand 10-05-037	#106	152.00	153.42	repeat	4/24/2018	Soil	37.16	30.09	6	11	32	550160	Delta Premium-50kV	18503
Grand 10-05-038	#108	153.42	155.22	sample	4/24/2018	Soil	37.49	30.22	38	19	41	550160	Delta Premium-50kV	18503
Grand 10-05-039	#109	155.22	156.50	sample	4/24/2018	Soil	37.45	30.21	11	17	37	550160	Delta Premium-50kV	18503
Grand 10-05-040	#110	156.50	158.00	sample	4/24/2018	Soil	37.46	30.43	22	17	87	550160	Delta Premium-50kV	18503
Grand 10-05-041	#111	158.00	159.40	sample	4/24/2018	Soil	37.26	30.10	42	24	132	550160	Delta Premium-50kV	18503
Grand 10-05-041	#112	158.00	159.40	repeat	4/24/2018	Soil	36.94	30.21	30	23	129	550160	Delta Premium-50kV	18503
Grand 10-05-042	#113	159.40	160.70	sample	4/24/2018	Soil	37.48	30.31	47	22	209	550160	Delta Premium-50kV	18503
Grand 10-05-043	#115	160.70	162.00	sample	4/24/2018	Soil	37.43	30.20	24	26	56	550160	Delta Premium-50kV	18503
Grand 10-05-044	#117	162.00	163.65	sample	4/24/2018	Soil	37.42	30.35	14	17	73	550160	Delta Premium-50kV	18503
Grand 10-05-045	#118	163.65	164.98	sample	4/24/2018	Soil	37.44	30.42	7	26	49	550160	Delta Premium-50kV	18503
Grand 10-05-045	#119	164.98	164.98	repeat	4/24/2018	Soil	37.55	30.36	23	22	50	550160	Delta Premium-50kV	18503
Grand 10-05-046	#121	164.98	166.50	sample	4/24/2018	Soil	37.49	30.15	9	30	53	550160	Delta Premium-50kV	18503
Grand 10-05-047	#122	166.50	168.00	sample	4/24/2018	Soil	37.48	30.29	10	29	43	550160	Delta Premium-50kV	18503
Grand 10-05-048	#124	168.00	169.38	sample	4/24/2018	Soil	37.42	30.07	16	33	45	550160	Delta Premium-50kV	18503
Grand 10-05-049	#125	169.38	170.83	sample	4/24/2018	Soil	37.46	30.25	10	34	35	550160	Delta Premium-50kV	18503
Grand 10-05-049	#126	169.38	170.83	repeat	4/24/2018	Soil	37.49	30.31	2	32	36	550160	Delta Premium-50kV	18503
Grand 10-05-050	#128	170.83	171.78	sample	4/24/2018	Soil	37.83	30.30	33	21	48	550160	Delta Premium-50kV	18503
Grand 10-05-051	#129	171.78	173.18	sample	4/24/2018	Soil	37.01	30.05	4	23	97	550160	Delta Premium-50kV	18503
Grand 10-05-052	#131	173.18	174.91	sample	4/24/2018	Soil	37.07	30.12	23	25	47	550160	Delta Premium-50kV	18503
Grand 10-05-052	#134	173.18	174.91	repeat	4/24/2018	Soil	36.59	30.01	25	24	35	550160	Delta Premium-50kV	18503
Grand 10-05-053	#136	174.91	175.10	sample	4/24/2018	Soil	37.96	30.40	45	31	59	550160	Delta Premium-50kV	18503

Appendix V

Drill Hole Geology Data

Grand 10-05: Purcell Basin Minerals

Location: E: 626539.4 N: 5476642.0

Pad: Grand 10-05

Azimuth: 0

Dip: -90

EOH: 175.2 metres

Logging Geologist: Kerry Bates

Target: The purpose of this hole was to test an intersecting resistivity and magnetic anomaly associated with the Grand dyke.

Summary

Lithology

- 41.3 – 122.9 m: Grand Dyke. Comprised of medium to coarse grained granodiorite which is pervasively chlorite altered with iron oxide and minor epidote alteration forming envelopes around quartz-carbonate vein systems. Grain size decreases to fine grained between 112.0-122.9 metres at the contact with the underlying Aldridge sediments.

Alteration

- 41.3 – 122.9 m: pervasive chlorite alteration of mafic minerals and locally concentrated along quartz-carbonate vein margins. Quartz-carbonate (siderite/ankerite?) veins have centimetre to meter-scale iron staining alteration envelopes. Epidote alteration envelopes is common in pervasively chlorite altered intervals. Weak to moderate silicification is patchy throughout.

- 122.9 – 124.1 m: unidentified alteration of the Aldridge Formation contact zone. The interval is pale grey (bleaching), soft and weak to moderately reactive with HCl. Primary sedimentary structures are destroyed.

- 124.1 – 130.4 m: selective moderate silicification of light grey laminae/beds. Alteration is constrained by bedding planes.

- 130.4 – 175.2 m: Weak selective carbonate and silica alteration is vein envelopes (quartz-carbonate veins).

Mineralization

- 41.3 – 122.9 m: Grand Dyke. Very weakly mineralized (0.1%) with finely disseminated and blebby pyrite-pyrrhotite.
- 122.9-175.2 m: Aldridge Formation. Mineralization (pyrite with rare sphalerite, galena, chalcopyrite) is concentrated in 4 forms: along bedding, associated with calcite (interpreted to be secondary pyrite, not syn-sedimentary); in thin veins (average 1 mm thick) with an average angle of 80° TCA, and in veins (1-10 mm thick) with an average angle of 15° TCA; and very fine to coarse grained cubic pyrite disseminated throughout the interval.

Veining

- 41.3 – 122.9 m: The granodiorite interval has multiple un-mineralized vein types. The earliest veins are quartz-carbonate veins that often have chlorite concentrated along the vein margins. Other thin (1-5 mm) quartz-carbonate veins are associated with epidote alteration. Quartz-carbonate (siderite/ankerite) are often associated with strong iron staining, overprinting any earlier chlorite and epidote alteration. These veins have the greatest variability in thickness and angles relative TCA.

Structure

- 122.9-175.2 m: Bedding ranges from 65-90° TCA

Observations

- The contact between the Grand Dyke and the underlying argillite of the Aldridge Formation does not host significant mineralization.
- Pyrite is the most common mineral observed in veins and along bedding in the argillites. Polymetallic veins (pyrite dominant) are at shallow angles relative TCA (average of 15°)

Appendix V - Lithology Description Log

DDH Number	From (m)	To (m)	Map Unit	Major Rock Type	Minor Rock Type	Dominant Colour	Subordinate Colour	Grain Size	Notes
Grand 10-05	0.00	41.34		overburden					
Grand 10-05	41.34	112.00	Grand	granodiorite		dark green	orange	medium-coarse	Hole starts in weakly chloritized and epidote altered dyke alteration gives the intrusive a dark green colour for top 20 meters. After intro of Q-C veining oxidation changes core colour to green-orange.
Grand 10-05	112.00	122.90	Grand	granodiorite		dark green	orange	very fine-fine	porphyritic around 112 m depth, feldspar phenos decrease towards contact/chill margin. Rock is vfg at contact.
Grand 10-05	122.90	124.11	Aldridge	argillite		dark grey	light grey	very fine	top of the aldridge fm, some alteration (bleaching?) has destroyed any primary sed structures (bedding).
Grand 10-05	124.11	143.55	Aldridge	argillite		dark grey	light grey	very fine	dark grey, laminated to bedded argillite. Rare thin graphitic laminae in upper part of interval.
Grand 10-05	143.55	159.30	Aldridge	argillite		dark grey	light grey	very fine	dark grey laminated argillite.
Grand 10-05	159.30	175.25	Aldridge	argillite		dark grey	light grey	very fine	dark grey laminated argillite. Unit is laminated throughout with rusty oxide staining in mineralized intervals. Laminae are steep TCA (75-90 deg) and dominantly uniform (rare flames and erosional bedding contacts).

Appendix V - Alteration Log

DDH Number	From (m)	To (m)	Process	Texture	Assemblage Distribution	Alteration Assemblage Intensity	Description	Notes
Grand 10-05	41.5	43.4	replacement	pervasive	pervasive	2	chlorite (2), selective epidote (2)	Pervasive chlorite alteration with epidote envelopes (2-4 cm) outwards from veins.
Grand 10-05	43.4	44.0	replacement	selective	envelope	3	massive chlorite (1), massive iron staining (3)	Patchy oxidation of interval in proximity to oxidized Quartz-Carbonate veins. Oxidation overprints the chlorite alteration.
Grand 10-05	44.0	47.9	replacement	pervasive	envelope	3	massive chlorite (3), silica (1), epidote (1)	Chlorite pervasive but locally stronger around quartz-carbonate veins and some fracture surfaces. Silicification of rock around larger qtz veins (up to 5 cm envelope)
Grand 10-05	47.9	49.1	replacement	pervasive	envelope	3	chlorite (1), iron staining (3)	
Grand 10-05	49.1	55.8	replacement	pervasive	pervasive	2	chlorite (1), epidote (2)	Pervasive chlorite with localized epidote alteration around thin (<1mm) veins.
Grand 10-05	55.8	56.9	replacement	pervasive	envelope	3	chlorite (1), iron staining (3)	
Grand 10-05	58.1	60.0	replacement	pervasive	pervasive	2	chlorite (2), epidote (1)	Pervasive chlorite alteration with epidote envelopes around <1 mm veins
Grand 10-05	60.0	60.3	replacement	pervasive	envelope	3	chlorite (1), iron staining (3)	
Grand 10-05	60.3	66.8	replacement	pervasive	pervasive	3	chlorite (3), epidote (1)	
Grand 10-05	63.4	63.6	replacement	pervasive	envelope	3	chlorite (1), iron staining (3)	
Grand 10-05	66.8	67.9	replacement	pervasive	envelope	3	chlorite (1), iron staining (3)	
Grand 10-05	67.9	69.9	replacement	pervasive	pervasive	2	chlorite (2), epidote (1)	
Grand 10-05	69.9	70.2	replacement	pervasive	envelope	2	pervasive chlorite (2), selective iron staining (2)	
Grand 10-05	70.2	84.3	replacement	pervasive	pervasive	1	pervasive chlorite (1), selective epidote (1)	Weakly chlorite altered interval. Some minor epidote alteration near epidote stringers and on some fracture surfaces.
Grand 10-05	84.3	85.8	Replacement	selective	envelope	3	pervasive chlorite (2), selective iron staining (3)	Iron staining from quartz-carbonate vein.
Grand 10-05	85.8	87.1	replacement	pervasive	pervasive	3	pervasive chlorite (3)	
Grand 10-05	87.1	88.1	replacement	pervasive	envelope		pervasive chlorite (1), selective iron staining (3)	
Grand 10-05	88.1	95.7	replacement	pervasive	pervasive	3	pervasive chlorite (3), pervasive silica (2)	
Grand 10-05	95.7	96.8	replacement	selective	envelope	3	pervasive chlorite (2), pervasive silica (2), selective iron staining (3)	
Grand 10-05	96.8	97.3	replacement	pervasive	pervasive	3	pervasive chlorite (3), pervasive silica (2), selective epidote (1)	Epidote alteration envelopes around quartz-carbonate veins
Grand 10-05	96.8	97.3	replacement	pervasive	pervasive	3	pervasive chlorite (3), pervasive silica (2), selective epidote (1)	Epidote alteration envelopes around quartz-carbonate veins
Grand 10-05	97.3	100.0	replacement	selective	envelope	3	pervasive chlorite (1), pervasive silica (2), selective iron staining (3)	

DDH Number	From (m)	To (m)	Process	Texture	Assemblage Distribution	Alteration Assemblage Intensity	Description	Notes
Grand 10-05	100.0	100.3	replacement	pervasive	pervasive	3	pervasive chlorite (3), pervasive silica (2), selective epidote (2)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm)
Grand 10-05	100.0	100.3	replacement	pervasive	pervasive	3	pervasive chlorite (3), pervasive silica (2), selective epidote (2)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm)
Grand 10-05	100.3	100.7	replacement	pervasive	envelope		pervasive chlorite (1), selective iron staining (3)	
Grand 10-05	100.7	100.9	replacement	pervasive			pervasive chlorite (3), selective epidote (1)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm) and on some fracture surfaces
Grand 10-05	100.7	100.9	replacement	pervasive			pervasive chlorite (3), selective epidote (1)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm) and on some fracture surfaces
Grand 10-05	100.9	101.3	replacement	pervasive	envelope		pervasive chlorite (), selective iron staining ()	
Grand 10-05	101.3	101.8	replacement	pervasive			pervasive chlorite (3), selc epidote (1)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm)
Grand 10-05	101.8	101.8	replacement	pervasive	envelope		pervasive chlorite (), selective iron staining (3)	
Grand 10-05	101.8	103.6	replacement	pervasive			pervasive chlorite (2), selective epidote (1)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm)
Grand 10-05	101.8	103.6	replacement	pervasive			pervasive chlorite (2), selective epidote (1)	Epidote alteration envelopes around thin quartz-carbonate veins (1mm)
Grand 10-05	103.6	104.7	replacement	pervasive	envelope		pervasive chlorite (1), selective iron staining (3)	
Grand 10-05	104.7	105.6	replacement	pervasive			pervasive chlorite (2)	
Grand 10-05	105.6	105.9	replacement	pervasive	envelope		pervasive chlorite (1), selective iron staining (3), patchy silica (1)	patchy silicifaction in iron stained interval.
Grand 10-05	106.0	110.0	replacement	pervasive		3	pervasive chlorite (2), patchy silica (1), patchy calcite (1)	
Grand 10-05	110.0	111.6	replacement	pervasive	selective		selective carbonate (1), pervasive chlorite (1), selective silica (2), selective iron staining (3)	
Grand 10-05	111.6	111.7	replacement	pervasive	selective		pervasive chlorite (3), patchy silica (1), patchy carbonate (1)	
Grand 10-05	111.7	111.9	replacement	pervasive	envelope		pervasive chlorite (2), pervasive silica (1), selective carbonate (1), selective iron staining (2)	
Grand 10-05	111.9	114.6	replacement	pervasive	pervasive		pervasive chlorite (3), selective iron staining (1)	Standard chlorite alteration. Some very weak irons staining around thin veins
Grand 10-05	114.6	115.0	replacement	pervasive	envelope		pervasive chlorite (3), selective iron staining (2)	
Grand 10-05	115.0	117.2	replacement	pervasive	massive		massive chlorite (3), selective silica (1), selective carbonate (1)	Standard chlorite altered interval. Some weak silicification and carbonate alteration envelopes around quartz-carbonate veins.
Grand 10-05	118.0	122.9	replacement	pervasive	massive		pervasive chlorite (3), selective silica (1), selective carbonate (1)	

DDH Number	From (m)	To (m)	Process	Texture	Assemblage Distribution	Alteration Assemblage Intensity	Description	Notes
Grand 10-05	122.9	124.1	replacement	pervasive	massive	1	pervasive carbonate (1), envelopes iron staining (1)	bleaching at the contact with the overlying intrusive. Alteration is weak, rock is soft. Weak to moderate reaction with HCL, some minor alteration in vein envelopes from FeO
Grand 10-05	124.1	127.4	replacement	selective	envelope	1	selective silica (2)	patchy silicification of interval. Not associated with nearby veins, seems to be constrained by bedding.
Grand 10-05	129.5	130.4	replacement	pervasive	massive	1	pervasive silica (2), chlorite (1)	silicification of argillite. Possibly weak chlorite.
Grand 10-05	130.0	143.6	replacement	pervasive		1	1 graphitic ()	graphitic alteration on polished fracture surfaces.
Grand 10-05	133.0	138.0	replacement	selective		1	selective carbonate (1), patchy silica (2)	patchy silicification, strata bound into 5-10 cm thick intervals. Seems to be selective to light grey laminae. Weak carbonate alteration of bedding planes.
Grand 10-05	133.0	138.0	replacement	selective		1	selective carbonate (1), patchy silica (2)	patchy silicification, strata bound into 5-10 cm thick intervals. Seems to be selective to light grey laminae. Weak carbonate alteration of bedding planes.
Grand 10-05	138.0	159.3	replacement	selective		1	selective silica (1), selective carbonate (1)	weak, bedding selective silicification. Weak carbonate alteration of bedding planes
Grand 10-05	138.0	159.3	replacement	selective		1	selective silica (1), selective carbonate (1)	weak, bedding selective silicification. Weak carbonate alteration of bedding planes
Grand 10-05	159.4	175.3	replacement	selective		1	selective silica (1), selective carbonate (1)	weak carbonate alteration in envelopes around thin carb veins (min and unmin) also along bedding (typically mineralized). Weak silicification around some thicker quartz-carbonate veins (up to 5 mm).

Appendix V - Mineralization Log

DDH Number	From (m)	To (m)	Mineralization Description
Grand 10-05	41.45	43.35	0.1% disseminated very fine-fine pyrite
Grand 10-05	56.88	66.68	0.1% disseminated very fine-fine pyrite
Grand 10-05	67.55	111.59	0.1% blebby very fine pyrrhotite
Grand 10-05	67.55	111.59	0.1% disseminated very fine pyrite
Grand 10-05	111.59	122.9	0.1% disseminated very fine pyrite
Grand 10-05	125.3	127.38	0.5% fractures very fine-fine pyrite
Grand 10-05	128	128.2	0.5% blebby very fine pyrite
Grand 10-05	130.2	130.6	10% pyrite
Grand 10-05	130.6	130.62	5% bedded very fine pyrite
Grand 10-05	130.62	132	0.5% pyrite
Grand 10-05	130.62	132	0.1% malachite
Grand 10-05	132	137.49	0.1% malachite
Grand 10-05	132	137.49	1% pyrite
Grand 10-05	137.49	137.51	0.5% pyrite
Grand 10-05	137.51	137.9	0.1% blebby pyrite
Grand 10-05	137.9	138.1	0.1% very fine-fine pyrite
Grand 10-05	138.1	138.4	1% pyrite
Grand 10-05	138.4	142.55	1% pyrite
Grand 10-05	142.55	142.67	10% veined fine pyrite
Grand 10-05	142.55	142.67	0.1% veined fine sphalerite
Grand 10-05	142.55	142.67	0.1% veined fine galena
Grand 10-05	142.95	143.08	0.1% veined chalcopyrite
Grand 10-05	142.95	143.08	0.1% veined galena

DDH Number	From (m)	To (m)	Mineralization Description
Grand 10-05	142.95	143.08	0.1% veined sphalerite
Grand 10-05	142.95	143.08	5% veined pyrite
Grand 10-05	145	147	0.1% pyrite
Grand 10-05	147	149.9	0.1% pyrite
Grand 10-05	149.9	152.5	1% very fine pyrite
Grand 10-05	152.5	159.4	2% replacement very fine pyrite
Grand 10-05	159.4	163.95	0.1% veined very fine chalcopyrite
Grand 10-05	159.4	163.95	1% veined very fine-fine pyrite
Grand 10-05	163.95	165.23	3% very fine-fine pyrite
Grand 10-05	165.23	168	1% veined very fine-coarse pyrite
Grand 10-05	168	168.7	0.5% disseminated coarse-very coarse pyrite
Grand 10-05	168.7	175.25	1% very fine pyrite
Grand 10-05	168.7	175.25	0.1% very fine chalcopyrite