2011 Soil Geochemistry Program on the North Brenda Property

Tenure Numbers: 520512, 520513, 520514, 521890, 521893, 521894, 539978, 539979, 544954, 544956, 544957, 555878, 555881, 592311, 619503, 672628, 672629, 672630, 672631, 672632, 672633, 672634, 837395, 837397, 837400, 837401, 837403, 837404 and 837406

Brenda Lake Area
(NTS 92H/16 & 82E/13),

Nicola Mining Division, South-Central British Columbia
Latitude 49° 54', Longitude 120° 04'

for

Bitterroot Resources Ltd.

by

J.D.Rowe (B.Sc.) and C.J. Greig (M.Sc. P.Geo)

February 20, 2012

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1.0 Summary

The North Brenda property is centered 40 km west of Kelowna and 55 km southeast of the town of Merritt, in south-central British Columbia. The property, which was initially staked in 2005, was, at the time of this exploration program, comprised of 318 claim units (6615 hec) in the Nicola Mining Division. The claims extend about 8 km north and 8 km west from the formerly producing Brenda Cu-Mo Mine, which processed 177 million tonnes grading 0.169 % Cu and 0.043 % Mo, between 1970 and 1990. The work undertaken at North Brenda in 2011 was located 19 kilometres northeast of the Elk gold deposit, where 51,750 ounces of gold were mined at an average grade of 2.8 oz/ton from a small open pit in the early 1990's. The Okanagan Connector highway (97C) crosses the claims and, as well, numerous logging roads, both active and deactivated, provide excellent access to most of the claim areas. The claims that comprise the North Brenda property are owned 100% by Bitterroot Resources Ltd. of West Vancouver, BC.

The North Brenda property covers over 8 kilometres of the contact zone between a large pendant of Nicola Group Triassic volcanic and sedimentary rocks and the Pennask Batholith of Jurassic age. The southwest part of the property is predominantly underlain by Nicola sedimentary rocks, with lesser volcanic rocks, and the northeast part by granodiorite batholith. A number of mineral occurrences are known within the property area, the majority consisting of Cu-Mo mineralization in weakly altered granodiorite or quartz diorite of the Brenda Stock, a sub-division of the Pennask Batholith. The Brenda ore body, located immediately to the southeast of the property, was comprised of a similar style of Cu-Mo mineralization, hosted by the same Brenda stock. In addition to the Cu-Mo occurrences, there is an extensive, northeast-trending belt of strongly anomalous Ag-As-Zn-Ni soil geochemistry on the south-central part of the property (Brenda Lake Area), underlain by Nicola volcanic and sedimentary rocks.

Drilling of a portion of the Brenda Lake geochemical belt in early 2007 returned disappointing results, typically associated with narrow, discontinuous, weakly mineralized veins (O'Neill et al, 2009). Later in 2007, drilling of Cu-Mo geochemical and geophysical targets directly to the northeast of the Brenda open pit intersected extensive sections of mineralization that, although below economic grade, indicate that the Brenda mineral trend continues in that direction and the area holds considerable potential for new mineral discoveries (Rowe et al, 2009).

In 2009, in the central part of the property, excavator trenching tested areas of previously defined gold geochemical anomalies and gold-mineralized quartz vein float hosted by granodiorite. The trenching revealed a 25 centimetre-wide shear zone, comprised of blue-green clay gouge and alteration, containing fragments of broken quartz veins and disseminated pyrite.

Several samples across this zone assayed greater than 20 g/t gold; up to 39.2 g/t gold over 25 cm width. Cross trenches have cut this east-west trending structure at intervals of 30 to 40 m, extending the known strike length to 100 metres.

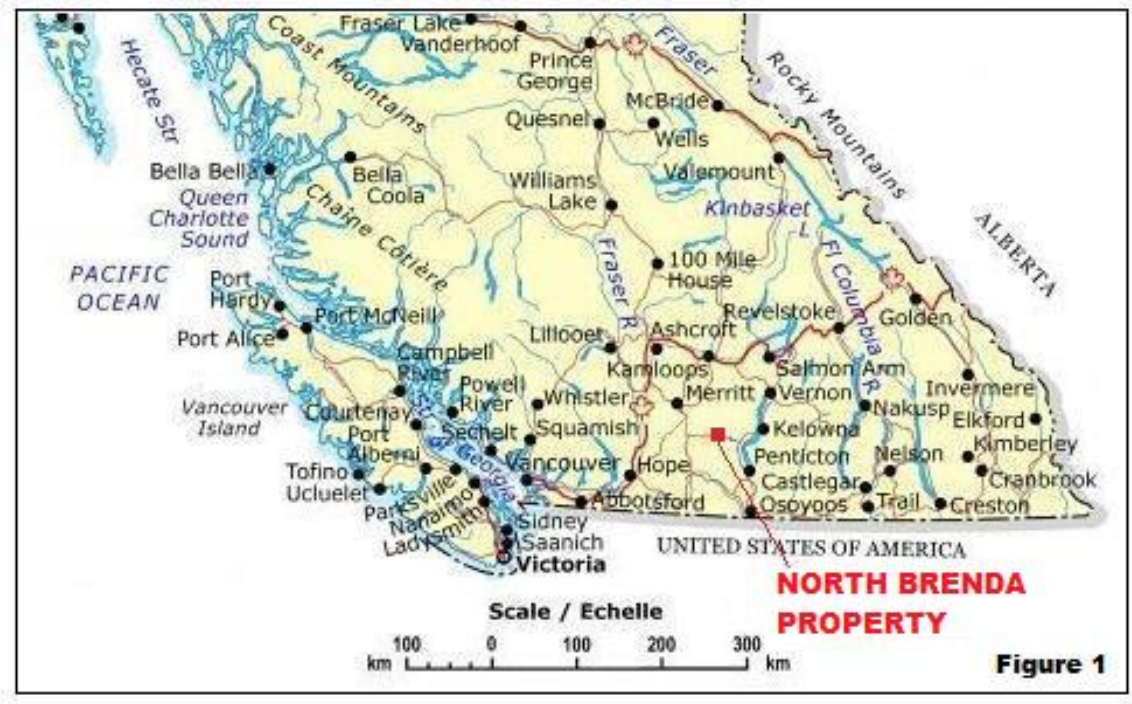
In June and August, 2011 a total of 268 soil samples were collected from ten flagged, compassed lines located in the south-central part of the property, to the west of a soil grid that had been established in 2006 and had outlined a large multi-element geochemical anomaly. The 2011 sampling covering an area measuring about 1.2 km x 1.5 km, with two additional reconnaissance lines located about 1.5 km to the south. The soil samples were analyzed for gold plus an ICP suite of 35 elements.

The soil sampling outlined a relatively large area of multi-element geochemical anomalies that extend generally west to southwest from the anomalies previously defined in 2006. The main elements that define the anomalous trend are As, Zn, Ag and Ni with lesser, spotty Au and Mo. The strongest part of the multi-element anomaly appears to coincide with a small exposure of brecciated, limonitic felsite dyke and its estimated projection to the northeast and southwest. The anomalous areas remain open to the north and to the southwest.

Additional proposed work should consist of extending the current soil grid to the north and southwest to trace the extent of the defined multi-element anomaly. As well, geological mapping and prospecting should be carried out in the areas of anomalous soil stations to attempt to determine the sources of the high metal values. Based upon evaluation of the geochemical targets, excavator trenching may be warranted. Magnetometer surveying may prove useful to help define targets because there has been a noted relationship between low magnetic response and gold-bearing sheared, altered granodiorite.

2.0 Location, Access, Physiography, Climate and Vegetation

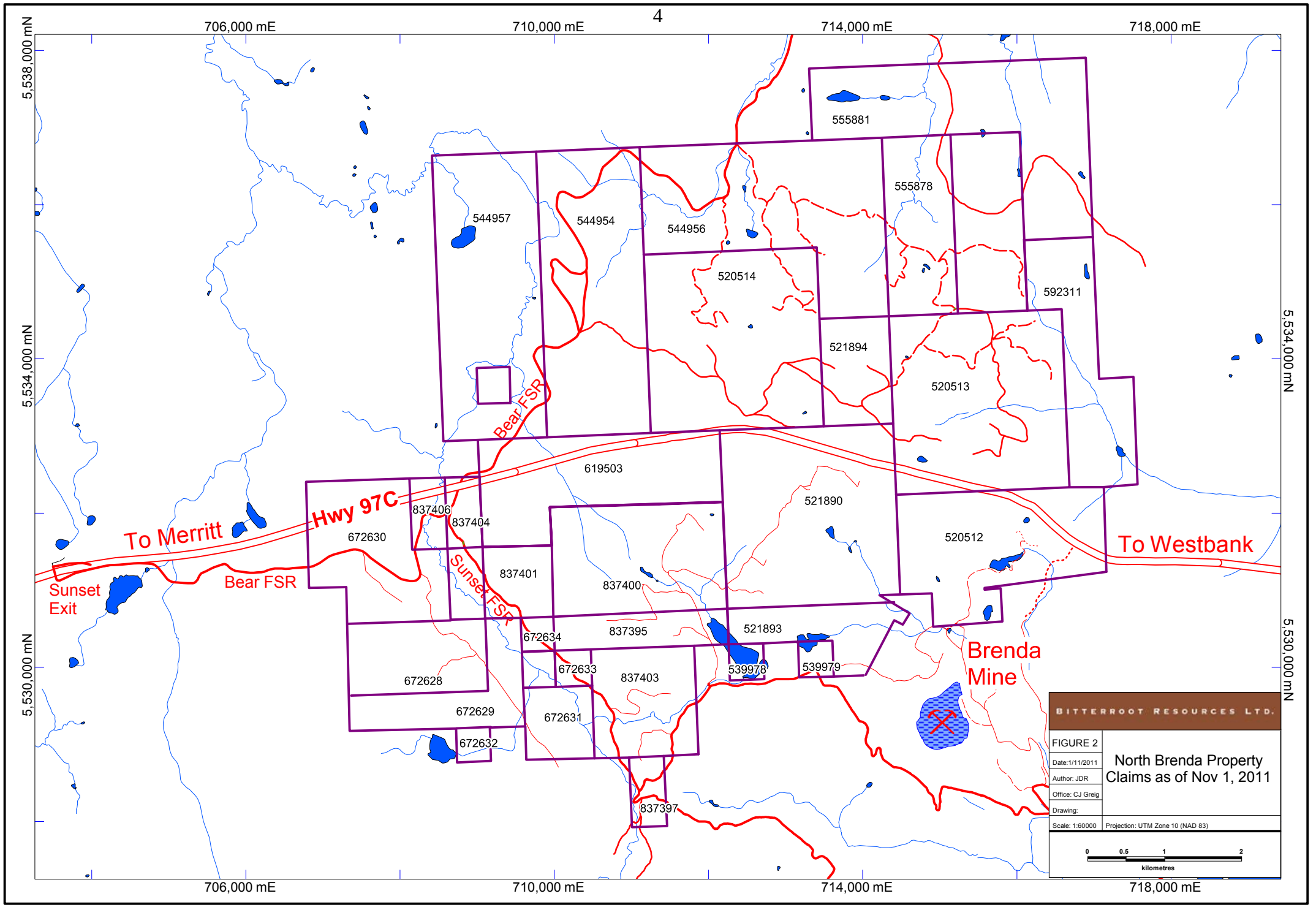
The North Brenda property straddles the Okanagan Connector highway (97C), at a location 40 km west of Kelowna and 55 km southeast of the town of Merritt, in south-central British Columbia (Figures 1 & 2). Previous exploration programs have evaluated several parts of this large property; however, the 2011 program focused on a relatively small area in the south-central part of the claim block, immediately to the northwest of Brenda Lake.



The soil sampling area is readily accessible by two-wheel drive vehicle via Highway 97C to the Sunset exit, which is located about half way between the Okanagan Valley and the junction with highway 5A (Merritt-Princeton) and, from there, travelling a distance of 6 km east on the Bear forest service road (FSR) and 4.7 km south on Sunset FSR. At the 3-way junction go north-easterly 1.8 km and then turn north on a spur logging road that extends 2.0 km to the sampling area.

The main roads are well maintained, since active logging is ongoing within this region; however, many of the spur roads have been decommissioned. They are still passable by two or four-wheel drive vehicles, with care and attention paid to water bars that have been cut across the roads. A two-way radio is recommended for travelling the forest service roads to communicate with logging trucks. In the winter months the roads are generally not ploughed, so a four-wheel drive vehicle equipped with chains is essential, although deep snow and drifting may render the roads impassable to trucks from November to June.

The North Brenda claims cover an area of 66 square kilometres in which the elevation ranges from 1450 to 1890 metres above sea level. The claims are situated on the divide between the Okanagan and Nicola drainage systems. On the Okanagan side, several small- to medium-size creeks on the southeast part of the property flow into Peachland Creek and those on the eastern claims flow into Trepanier Creek. Streams on the southwestern and northern parts of the property mostly flow northerly into Pennask Creek and ultimately to the Nicola River.


706,000 mE
710,000 mE
714,000 mE
718,000 mE
5,538,000 mN
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5,530,000 mN
555881
555878
544957
544954
544956
520514
592311
521894
520513
Bear FSR
619503
521890
837406
837404
672630
520512
To Merritt
Hwy 97C
To Westbank
Sunset Exit
Bear FSR
Sunset FSR
837401
837400
672634
837395
521893
672633
837403
539978
539979
672628
672629
672631
672632
837397
Brenda Mine
BITTERROOT RESOURCES LTD.
FIGURE 2
North Brenda Property Claims as of Nov 1, 2011
Date:1/11/2011
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:60000
Projection: UTM Zone 10 (NAD 83)
0 0.5 1 2
kilometres

Bedrock exposure on the property varies from scarce to moderate with significant outcrop found along creeks and road cuts. Steep bluffs are located on the south-eastern portion of the property between MacDonald Lake and Long Lake and road cut exposures along highway 97C are up to 10 metres high. In the 2011 sampling area outcrop extent amounts to less than 5% although there are a number of bedrock exposures along road ditches that have been excavated through relatively thin overburden.

Glacial overburden depth is variable but thickest in flatter areas on the northwest part of the property, where depths may be greater than 10 metres. Small grassy meadows and swamps are found throughout the property and in these areas the soil is typically comprised of black organic material. In the 2011 soil sampling area the overburden is primarily sand, gravel and boulder till estimated to range from < 0.5 m to 2 m in depth.

The property area is predominately within the Montane Spruce biogeoclimatic zone, which is transitional between the Interior Douglas Fir and the higher elevation Engelmann Spruce Sub Alpine Fir biogeoclimatic zones. Mature stands of Lodgepole pine, spruce and fir populate the property, from which an estimated 50% have been logged within the last 30 years from all areas of the claims. The east ends of some of the soil lines established in 2011 are located in a fairly recently logged block, the remainder are mainly in moderately dense forest.

The area of the North Brenda property is characterized by short, warm summers (up to $+30^{o}$ C) and long cold winters (down to -20^{o} C). Annual precipitation is low to moderate with most of the precipitation falling as snow. The claims are predominately snow-free from June to October. The property is generally easy to traverse, as the underbrush is not dense and the topography is moderate, with few challenging steep sections.

3.0 Claims

At the time of the 2011 program the North Brenda property consisted of 318 contiguous claim units covering approximately 66 square kilometres. The work done during the 2011 program was applied for assessment to seven claims (39 units) that cover, or surround, the area of sampling.

The claims are located in the Nicola Mining Division (Figure 2) and the status of the tenures, as of Nov 1, 2011, is listed in Table 1. Originally, 110 claim units were staked in September and November, 2005 by Charles Greig and Bernard Kreft and subsequently optioned in April 2006 to Bitterroot Resources Ltd of West Vancouver, BC. Additional claims have been added to the core property at various times since then.

Table 1. North Brenda Property - Claim Information

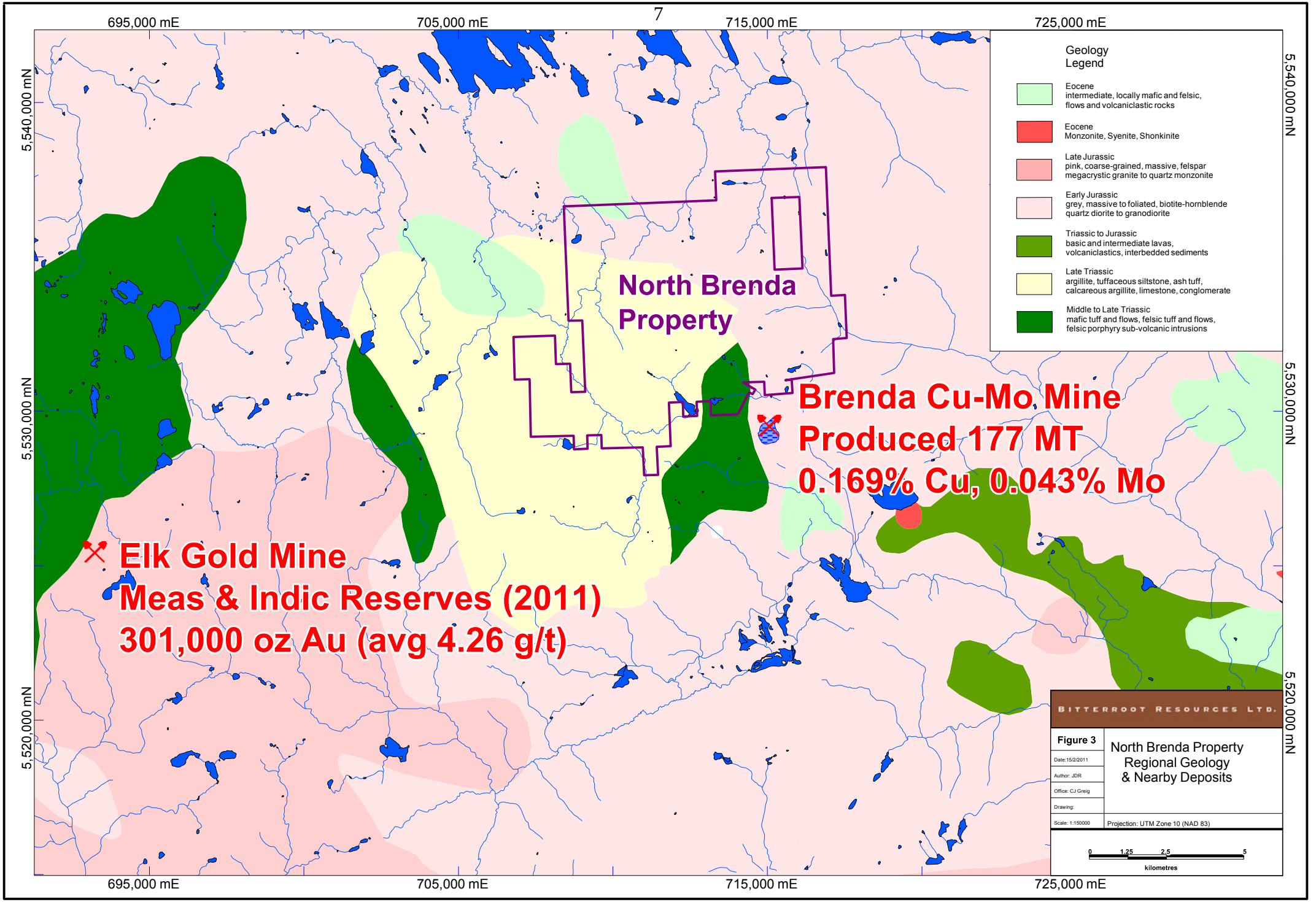
Tenure No.	Claim Name	Date Staked	Expiry Date	Area (Hec)	No. of Cells
520512	GEORGELONG	2005/sep/28	2021/feb/25	457.86	22
520513	YEAROFTHECOQ	2005/sep/28	2021/feb/25	520.10	25
520514	MARNOKREMO	2005/sep/28	2021/feb/25	519.98	25
521890	BRENDAWEST	2005/nov/03	2021/feb/25	520.20	25
521893	SLIVER	2005/nov/03	2021/feb/25	145.70	7
521894	SLOT	2005/nov/03	2021/feb/25	124.80	6
539978	NUB	2006/aug/28	2021/feb/25	20.82	1
539979	NIB	2006/aug/28	2021/feb/25	20.82	1
544954	MINIPCOCO	2006/nov/06	2021/feb/25	499.12	24
544956	FILL-ME	2006/nov/06	2021/feb/25	519.83	25
544957	MINIPCOCOW	2006/nov/06	2021/feb/25	478.33	23
555878	SLOT2	2007/apr/07	2021/feb/25	207.94	10
555881	FR4U	2007/apr/07	2021/feb/25	457.39	22
592311	Z7Z4	2008/oct/01	2020/nov/25	249.64	12
619503	SPOOR O' DA GOOR	2009/aug/16	2014/nov/25	332.89	16
672628	PUUPSTER	2009/nov/22	2013/nov/22	166.52	8
672629	PUUPSTER2	2009/nov/22	2013/nov/22	145.72	7
672630	AXEL ROSE	2009/nov/22	2013/nov/22	270.53	13
672631	2007 OLYMPICS	2009/nov/22	2013/nov/22	83.27	4
672632	M_B_MDNBRKR	2009/nov/22	2013/nov/22	20.82	1
672633	GDCS	2009/nov/22	2013/nov/22	20.82	1
672634	LASTLY	2009/nov/22	2013/nov/22	20.81	1
837395	BERNIE	2010/nov/03	2014/nov/03	104.07	5
837397	NOB	2010/nov/03	2014/nov/03	41.64	2
837400	BERNIE	2010/nov/03	2014/nov/03	312.15	15
837401	DICK	2010/nov/03	2014/nov/03	83.24	4
837403	SHEET	2010/nov/03	2014/nov/03	187.36	9
837404	WANG	2010/nov/03	2014/nov/03	41.62	2
837406	WINKIE	2010/nov/03	2014/nov/03	41.62	2

4.0 Geology

4.1 Regional Geology

Regional geology in the area of the North Brenda property is shown on Figure 3. This map is a compilation of the northeast portion of GSC Map 41-1989 (J.W.H. Monger, 1989), the northwest portion of Map 1736A (D.J. Templeman-Kluit, 1989) and mapping done by G.L. Dawson and G.E. Ray (1988) which defined the geology of the Pennask Mountain area, to the southwest of the property. The information has been compiled on B.C. Ministry of Energy and Mines, Geofile 2005-3 Map by N.W.D. Massey et al, 2005.

The eastern, north-eastern, and northern parts of the property are underlain by the Pennask batholith, which is informally subdivided into the Brenda stock in the area of the Brenda porphyry Cu-Mo deposit, immediately to the south of the property. The Brenda stock, is comprised


695,000 mE
705,000 mE
715,000 mE
725,000 mE
5,540,000 mN
5,530,000 mN
5,520,000 mN
Geology
Legend
Eocene
intermediate, locally mafic and felsic,
flows and volcaniclastic rocks
Eocene
Monzonite, Syenite, Shonkinite
Late Jurassic
pink, coarse-grained, massive, felspar
megacrystic granite to quartz monzonite
Early Jurassic
grey, massive to foliated, biotite-hornblende
quartz diorite to granodiorite
Triassic to Jurassic
basic and intermediate lavas,
volcaniclastics, interbedded sediments
Late Triassic
argillite, tuffaceous siltstone, ash tuff,
calcareous argillite, limestone, conglomerate
Middle to Late Triassic
mafic tuff and flows, felsic tuff and flows,
felsic porphyry sub-volcanic intrusions
North Brenda
Property
Brenda Cu-Mo Mine
Produced 177 MT
0.169% Cu, 0.043% Mo
Elk Gold Mine
Meas & Indic Reserves (2011)
301,000 oz Au (avg 4.26 g/t)
BITTERROOT RESOURCES LTD.
Figure 3
Date:15/2/2011
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:150000
North Brenda Property
Regional Geology
& Nearby Deposits
Projection: UTM Zone 10 (NAD 83)
0
1.25
2.5
5
kilometres

predominantly of quartz diorite, whereas the much larger, Early Jurassic Pennask batholith consists predominantly of granodiorite and lesser quartz diorite. The batholith intrudes, and has locally metamorphosed, stratified volcanic and sedimentary rocks of Lower to Upper Triassic age, which underlie the central, western and south-western parts of the property. These Triassic rocks, which are mostly assigned to the Nicola Formation, make up a large pendant, roughly circular and about 13 kilometres in diameter, that is completely encompassed by plutonic rocks. Within the pendant, the Nicola Group rocks comprise a generally northeast-trending, moderately to steeply dipping, northwest-facing sequence of volcanic and sedimentary rocks (Dawson and Ray, 1988).

The Triassic lithologies include a basal sequence, located along the southeast side of the pendant, of mafic and felsic volcanic rocks, with mafic flows predominating over mafic tuffs and felsic high-level intrusions. These are succeeded, stratigraphically upward to the west, by feldspar porphyry subvolcanic intrusions and local felsic flows and tuffs. These intermediate to felsic rocks are in turn overlain by a thick sequence of argillaceous rocks. The argillaceous rocks have been divided into two members, an older calcareous argillite with limestone horizons, overlain by a thick, monotonous sequence of black argillite, tuffaceous siltstone, and tuff (Dawson and Ray, 1988). Continuing up section to the west, the fine-grained clastic rocks are overlain by massive to bedded, andesitic ash and lapilli tuff and tuffaceous siltstone.

Structural lineaments that have been interpreted as possible faults on regional scale maps commonly trend east-northeast to northeast and less commonly north to northwest. The soil sampling areas discussed in this report fall entirely within the unit mapped as black argillite, tuffaceous siltstone and tuff. Drainage patterns in this area, which possibly follow structural elements, trend northeast and northwest.

4.2 Regional Mineral Deposits

The most significant mineral deposit in the region, due to its close proximity, 500 m to the southeast of the North Brenda property, is the past-producing Brenda Mine, from which 177 million tonnes averaging 0.169% Cu and 0.043% Mo were mined between 1970 and 1990 (Figure 3). The Brenda Cu-Mo deposit lies within quartz diorite of the Brenda Stock, which is part of the much larger Pennask Batholith. It has been described as a belt of Cu-Mo mineralization extending north-easterly from the Nicola volcanic-Brenda stock contact and reaching depths of more than 300 metres below surface. Chalcopyrite and molybdenite are the principal sulphide minerals and are found almost entirely in fine, fracture-filling veinlets accompanied by minor pyrite. The Brenda deposit, unlike porphyry copper systems in general, has only weak hydrothermal alteration

and low sulphide mineral content, comprising 1.0 to 1.5% metallic mineralization (MinFile Report 92HNE047).

Another significant deposit in the region is the Nickel Plate Mine, located 55 km to the south, which produced, from 1904 to 1996, 14.6 million tonnes of skarn mineralization yielding over 2.1 million ounces of gold and 0.5 million ounces of silver. Gold and copper skarn environments have also been explored 12 kilometres southeast of the North Brenda property at the Iron Horse and Bolivar Road prospects, hosted by Nicola Group sedimentary and volcanic rocks. The best drill intersections at Bolivar were 5.8 g/t Au over 6 metres and 14.9 g/t Au over 1.52 m (MinFile 82ENW025).

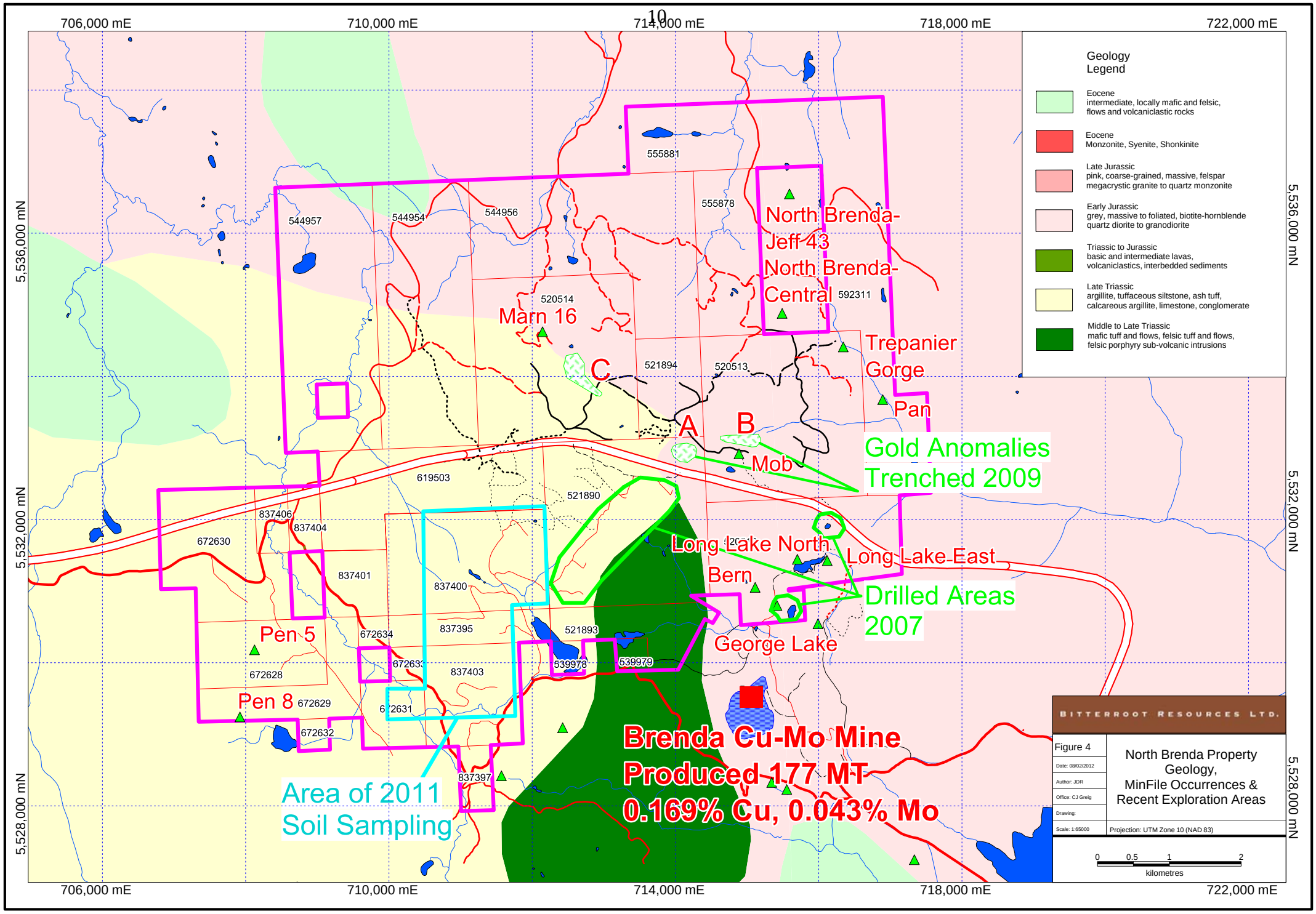
Gold-silver bearing quartz veins are also present in the area, such as at the Elk property, located 20 km southwest of the North Brenda property, where narrow veins cut Late Jurassic granite and adjacent Nicola volcanic rocks. At Elk, open pit and underground mining from 1992 to 1995 produced 51,750 ounces of gold from 18,400 tons of ore (Almaden Minerals Ltd website). The Elk deposit is subject to continuing exploration by Almaden Minerals Ltd, with measured and indicated reserves recently reported as 301,000 ounces of gold at an average grade of 4.26 grams/tonne Au (Almaden News Release, Preliminary Economic Assessment, January 2011).

Another past-producing mine, situated about 60 km to the northwest of the property, near Merritt, is the copper-iron skarn deposit at Craigmont. This mine produced 402,705 tonnes of copper from 35.3 million tonnes of skarn ore, between 1962 and 1982. Iron and magnetite were significant by-products of the processing as well as low values in silver and gold. The mineralization formed within skarnified calcareous sedimentary rocks of the Nicola Group adjacent to quartz diorite of the Guichon Creek batholith.

The historical Aspen Grove copper camp, 35 km west of North Brenda, had several small, but high grade, producers from the early 1900’s that each recovered up to a few thousand pounds of copper with some by-product silver and minor gold. Most of the ore came from altered and commonly sheared or brecciated Nicola volcanic rocks, cut locally by diorite dykes.

4.3 Local Mineral Occurrences

Ten known mineral showings recorded in the Provincial Government mineral occurrence files (MinFile) lie within the North Brenda claim group (Figure 4). These are the Marn 16, Trepanier Gorge, Pan, Mob, Long Lake North, Long Lake East, Bern, George Lake, Pen 5 and Pen 8 . As well, there are a number of showings adjacent to the southeast part of the property near the Brenda deposit and also two showings on a claim (held by others) that is enclosed by the northeast


706,000 mE
710,000 mE
714,000 mE
718,000 mE
722,000 mE
5,536,000 mN
5,532,000 mN
5,528,000 mN
Geology Legend
Eocene
intermediate, locally mafic and felsic, flows and volcaniclastic rocks
Eocene
Monzonite, Syenite, Shonkinite
Late Jurassic
pink, coarse-grained, massive, felspar megacrystic granite to quartz monzonite
Early Jurassic
grey, massive to foliated, biotite-hornblende quartz diorite to granodiorite
Triassic to Jurassic
basic and intermediate lavas, volcaniclastics, interbedded sediments
Late Triassic
argillite, tuffaceous siltstone, ash tuff, calcareous argillite, limestone, conglomerate
Middle to Late Triassic
mafic tuff and flows, felsic tuff and flows, felsic porphyry sub-volcanic intrusions
555881
555878
544957
544954
544956
North Brenda-Jeff 43
North Brenda-Central
592311
520514
Marn 16
C
521894
520513
Trepanier Gorge
Pan
A
B
Mob
Gold Anomalies Trenched 2009
619503
521890
837406
837404
672630
837401
837400
Long Lake North
Long Lake East
Bern
Drilled Areas 2007
Pen 5
672634
837395
521893
George Lake
672633
539978
539979
672628
837403
Pen 8
672629
672631
672632
837397
Area of 2011 Soil Sampling
Brenda Cu-Mo Mine
Produced 177 MT
0.169% Cu, 0.043% Mo
BITTERROOT RESOURCES LTD.
Figure 4
North Brenda Property Geology, MinFile Occurrences & Recent Exploration Areas
Date: 08/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:65000
Projection: UTM Zone 10 (NAD 83)
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kilometres

part of the North Brenda property. Most are copper-molybdenum occurrences with an additional mention of gold values at the Mob, Pen 5 and Pen 8 showings. It is uncertain whether gold values were routinely analyzed in past exploration programs at all the showings.

Four of the MinFile occurrences are located in the southeast claims along the northeast-trending Brenda mineralizing system. These showings are hosted within the Brenda Stock in the vicinity of George and Long Lakes and comprise small, localized occurrences of chalcopyrite and molybdenite. Significant work was carried out in this region during the life of the Brenda mine, including sampling and drilling, however, most of the results of the work have not been publicly released. Bitterroot drilled three diamond drill holes in the George Lake area in 2007 and intersected long intervals of weakly mineralized Brenda style Cu-Mo mineralization, such as 0.019% Mo and 0.058% Cu over 299.0 metres (Rowe, et al, 2009). Four of the other Cu-Mo MinFile occurrences, located in the northern claims, have also been subject to exploration programs, including some drilling, with limited success. Two other showings (Pen 5 and Pen 8) on the southwest part of the property consist of reconnaissance rock samples containing skarn and vein mineralization that returned anomalous values in gold, silver, copper and zinc but have not received further exploration.

5.0 Previous Work

The property area has seen a significant amount of exploration for copper and molybdenum, with much of the work occurring during the period in which the Brenda deposit was explored, developed and mined, between the mid-1950's and 1990. The main focus of exploration was in the south-eastern part of what is currently the North Brenda property, in the vicinity of George and Long Lakes, where the most significant amount of surface Cu-Mo mineralization occurs in quartz diorite of the Brenda stock (Carr 1967, Minfile 82ENW057). There, the property boundary is less than 500 metres from the north end of the Brenda open pit, and the north-northeast extension of mineralization from the Brenda orebody is evident in geochemical and IP surveys as well as in drill holes (Rowe, et al, 2009).

The North Brenda property encompasses most of the other known Cu-Mo surface showings detailed on Carr’s maps (1967) and the MinFile occurrence map (Figure 4). These additional occurrences indicate that known mineralization extends in a northerly trend for at least 3.5 kilometres from Long Lake, and while the mineralization and alteration may have a subtle expression, this was also the case for the Brenda ore deposit (Carr, 1967; Soregaroli and Whitford, 1976).

Several exploration programs within the property area, carried out by various companies, have been documented in assessment reports dating from the 1970's through to the most recent work undertaken by Bitterroot Resources Ltd. A comprehensive summary of the work, including significant results of the work, is reported by Rowe and Greig (2011) and the reader is referred to that document for details.

Whereas the earlier work focussed on Cu-Mo mineralization, later exploration was directed more toward gold-bearing mineralization, which resulted in the 2009 discovery by Bitterroot Resources of a gold-rich shear zone in granodiorite (Figure 4, Area A). Trenching revealed a 25 centimetre-wide shear, comprised of blue-green clay gouge and alteration, containing fragments of broken quartz veins and disseminated pyrite. Several samples across this zone assayed greater than 20 g/t gold; up to 39.2 g/t gold over 25 cm width (Rowe and Greig, 2011). Cross trenches have cut this east-west trending structure at intervals of 30 to 40 m, extending the known strike length to 100 metres. The 2011 sampling program described in this report was undertaken in an area located 2.3 km southwest of the gold-bearing shear discovery.

6.0 Present Program

The work program described in this report was conducted between June 17 and September 2, 2011. Work was completed under Mines Act Permit MX-4-448, Approval #10-1620561-0825. Figure 4 shows the area where work was carried out.

Ten flagged, compassed, soil lines were established in the south-central part of the property to test for the extension of a large Ag, Zn, As soil anomaly with associated Au that had been partially defined by soil sampling in 2006. A total of 268 samples were collected, at various line spacings, within an area measuring about 2.7 km by 1.5 km.

Five man-days were spent prospecting the area of the soil sample grid and nearby surrounding areas, predominantly along roads and logging trails where bedrock has been exposed locally. Fourteen rock samples were collected and analyzed, ten of which are located near the 2011 soil sampling area and are shown on accompanying maps below.

7.0 Soil Geochemical Sampling

The 2011 soil sampling program was undertaken in an area that is predominantly underlain by black argillite and tuffaceous siltstone of the Nicola Group. Narrow felsite dykes, from less than 1 m to several metres in width, have been observed locally and commonly are associated with areas of elevated geochemical values. This sampling area constitutes the westerly continuation of a soil geochemical grid that had been established in the central and eastern parts of the property in 2006. The objective of the sampling was to explore for Au targets similar to those in the area of a gold-rich shear discovered by trenching 2.3 km to the northeast, hosted by intrusive rocks adjacent to the contact with Nicola Group rocks.

Between June 17 and September 2, 2011 a total of 6 man-days of work were undertaken to collect 268 soil samples from the grid area. The sampler(s), employed by CJ Greig and Associates of Penticton, BC drove to the property from Penticton on 5 separate days to carry out the work. Flag-and-compass lines were oriented at a bearing of 090 (270) degrees. Soil lines were initially extended approximately 1.7 km west from the westernmost edge of the previously established (2006) soil grid. These preliminary lines were 400 metres apart with samples spaced at 50 metre intervals. Upon receipt of favourable analytical results part of the initially tested area was covered in more detail, with lines spaced at 100 metres and sample intervals of 50 metres. As well, two reconnaissance lines, 400 metres apart, were run westerly for 1.7 km in an area 1.2 km south of the above-described grid. These two lines were located on either side of a westerly-flowing creek from which stream sediment samples had returned high values of Zn, As, Ag and Au.

In total, 268 soil samples were collected from ten flagged, compassed lines. As well, 5 blanks were shipped and analyzed along with the property soil samples to check for consistency in the analytical values reported by the laboratory.

The soil lines were started at pre-determined UTM co-ordinates to mesh with the 2006 grid and from that point they were compassed east or west and measured with a hip chain. The lines were marked with coloured flagging and stations were marked at 50 m intervals with sample-numbered flagging. UTM co-ordinates were recorded for each station using hand-held GPS units. Samples were collected using mattocks from the "B" soil horizon and placed in Kraft paper bags marked with the sample number.

Soil samples were packed into plastic bags, placed into sacks and shipped to ALS Chemex Laboratories in North Vancouver where they were dried, sieved and the -80 mesh fraction collected for analysis. A 30 gram portion was analyzed for gold by fire assay with atomic absorption finish and a 1 gram portion was dissolved in aqua regia and analyzed for a suite of 35

elements by ICP techniques.

7.1 Soil Geochemical Results

The 2011 soil sample lines, showing sample numbers and the analytical results for five elements (As, Zn, Ag, Au and Ni) have been plotted on Figures 5-10. For each element, coloured symbols of varying sizes designate a range of values, with decreasing sizes representing strongly, moderately and weakly anomalous categories. Laboratory analytical reports showing values for all 36 elements analyzed in 2011 are attached in Appendix II.

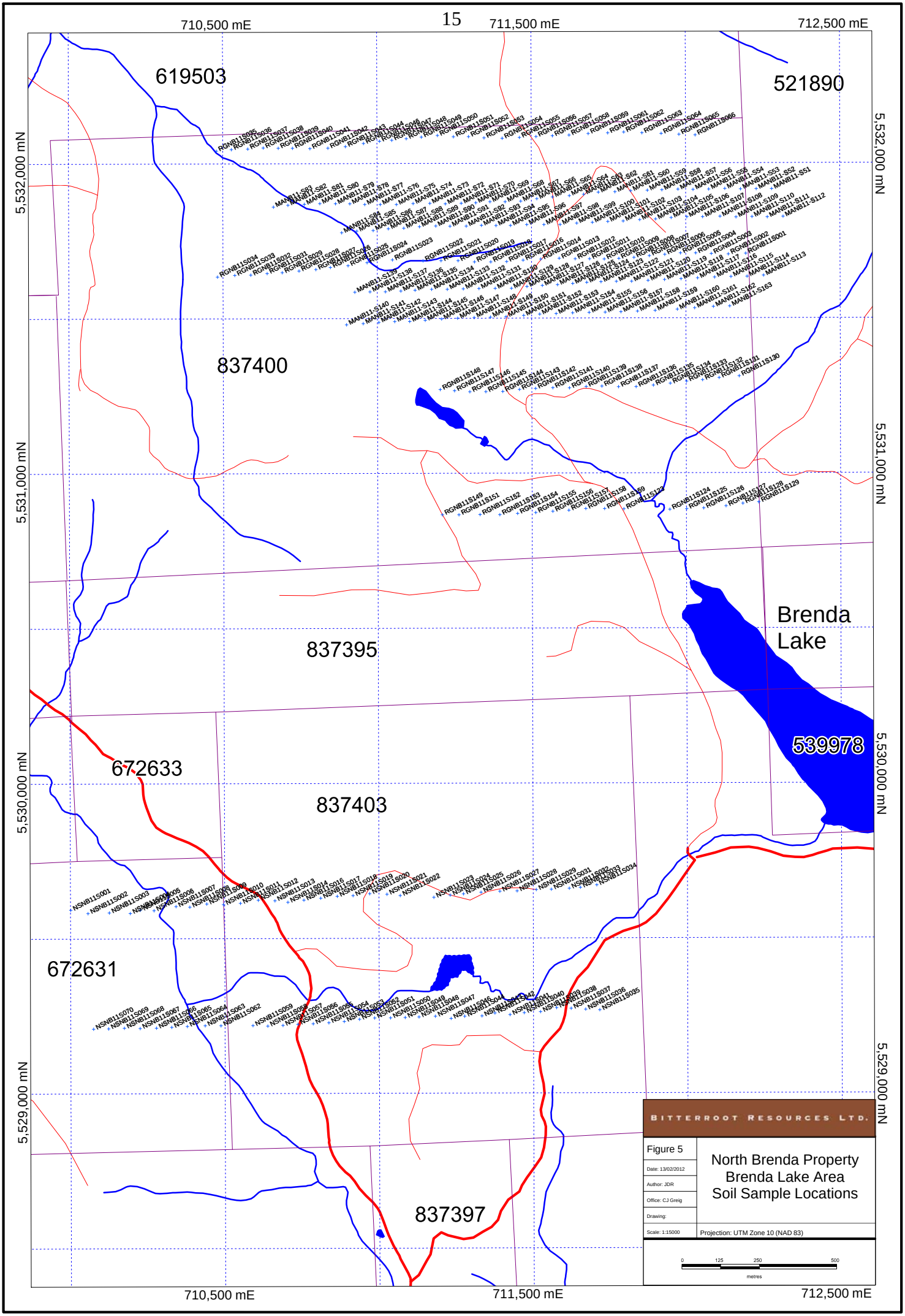
The main elements of interest are Au, Ag, As, and to a lesser extent, Zn because the known gold-rich mineral occurrence to the northeast is surrounded by soil anomalies for these elements. Other elements of interest that show some enrichment near the gold showing, and therefore may be useful “pathfinders”, are Ni, Mo and Ba. The geochemical results for Cu and Pb within the 2011 soil grid area are generally low, as they are in the area of the gold showing.

There is a pronounced large As anomaly on the six northernmost lines of the soil grid (Figure 6) measuring about 1000 m by 600 m. This anomaly is known to continue to the northeast on the 2006 sample grid and it remains un-sampled and open to expansion to the southwest and to the north. The As anomaly is strongest on the second line, near a small exposure of brecciated, limonitic felsite dyke and along the possible extension of that dyke to the northeast and southwest. Gold-bearing quartz veins have been found in close association with these dykes in other areas of the property. A rock sample (JRNB11-R3) was collected from the limonitic dyke and showed enrichment in As, Sb and Fe but other element values were generally low. Continuation of anomalous As in soils to the south of the dyke may be caused by south-easterly glacial dispersion, or possibly by additional parallel dykes or veins in that area.

Anomalous Zn in soil (Figure 7) overlaps a sizeable portion of the As anomaly so could be caused by the same mineralized features, which are perhaps located near the felsite dyke exposure. In addition, the Zn anomaly extends to the next line 200 m south of the As anomaly suggesting that either the Zn is more mobile in soil than the As or that there may be a separate zinc-bearing feature in that area.

Anomalous Ag in soil (Figure 8) is much more restricted than As and Zn, however, there is a strong correlation of Ag with As along the projected trend of the felsite dyke and also 200 m to the north, along part of the northernmost soil line, near where quartz vein fragments in the overburden have been discovered and sampled.

Anomalous Au values in soil (Figure 9) are relatively sparse but those that do occur are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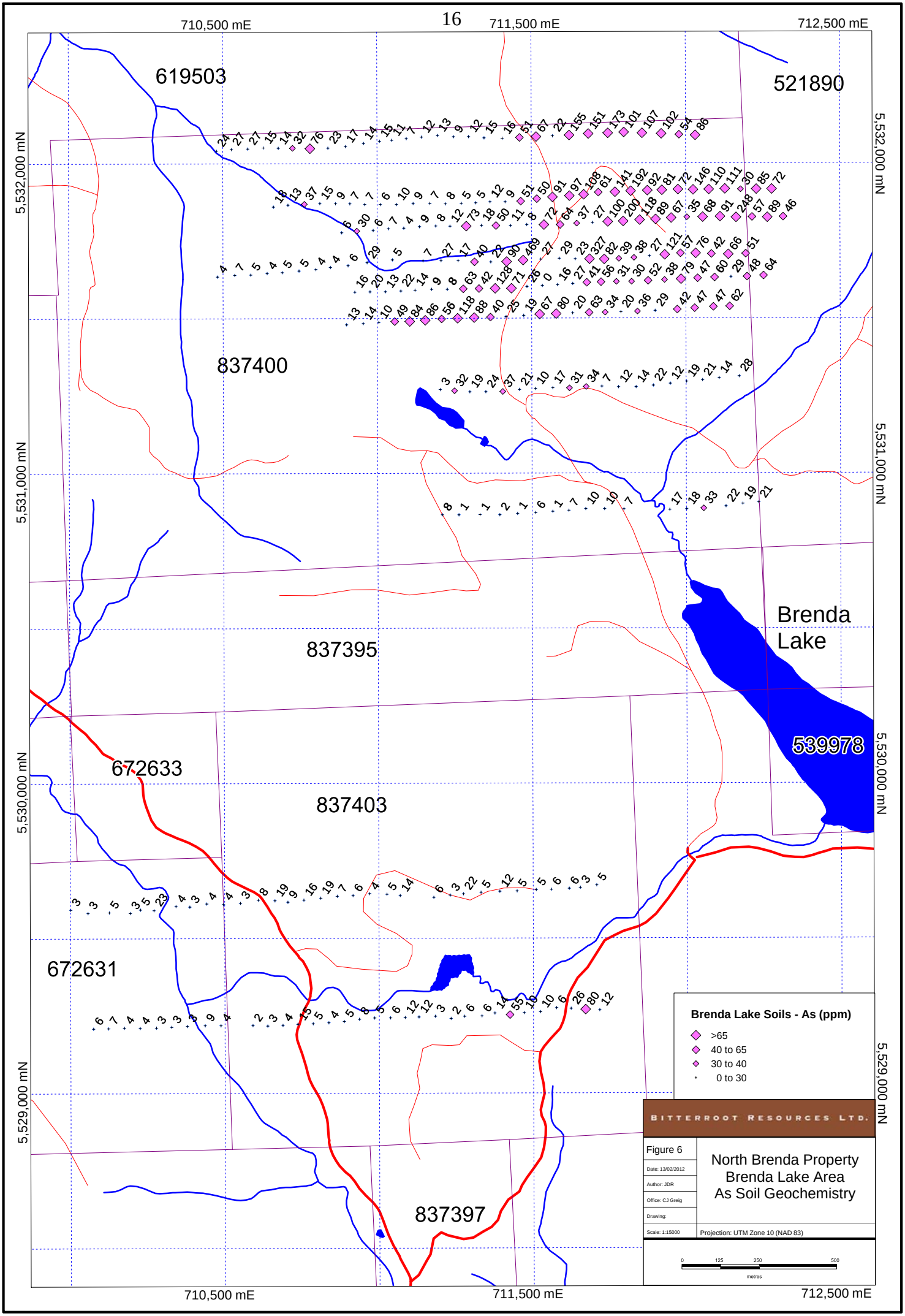
711,500 mE
712,500 mE
5,532,000 mN
5,531,000 mN
5,530,000 mN
5,529,000 mN
619503
521890
837400
837395
672633
837403
672631
837397
Brenda Lake
539978
BITTERROOT RESOURCES LTD.
Figure 5
North Brenda Property
Brenda Lake Area
Soil Sample Locations
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:15000
Projection: UTM Zone 10 (NAD 83)
0
125
250
500
metres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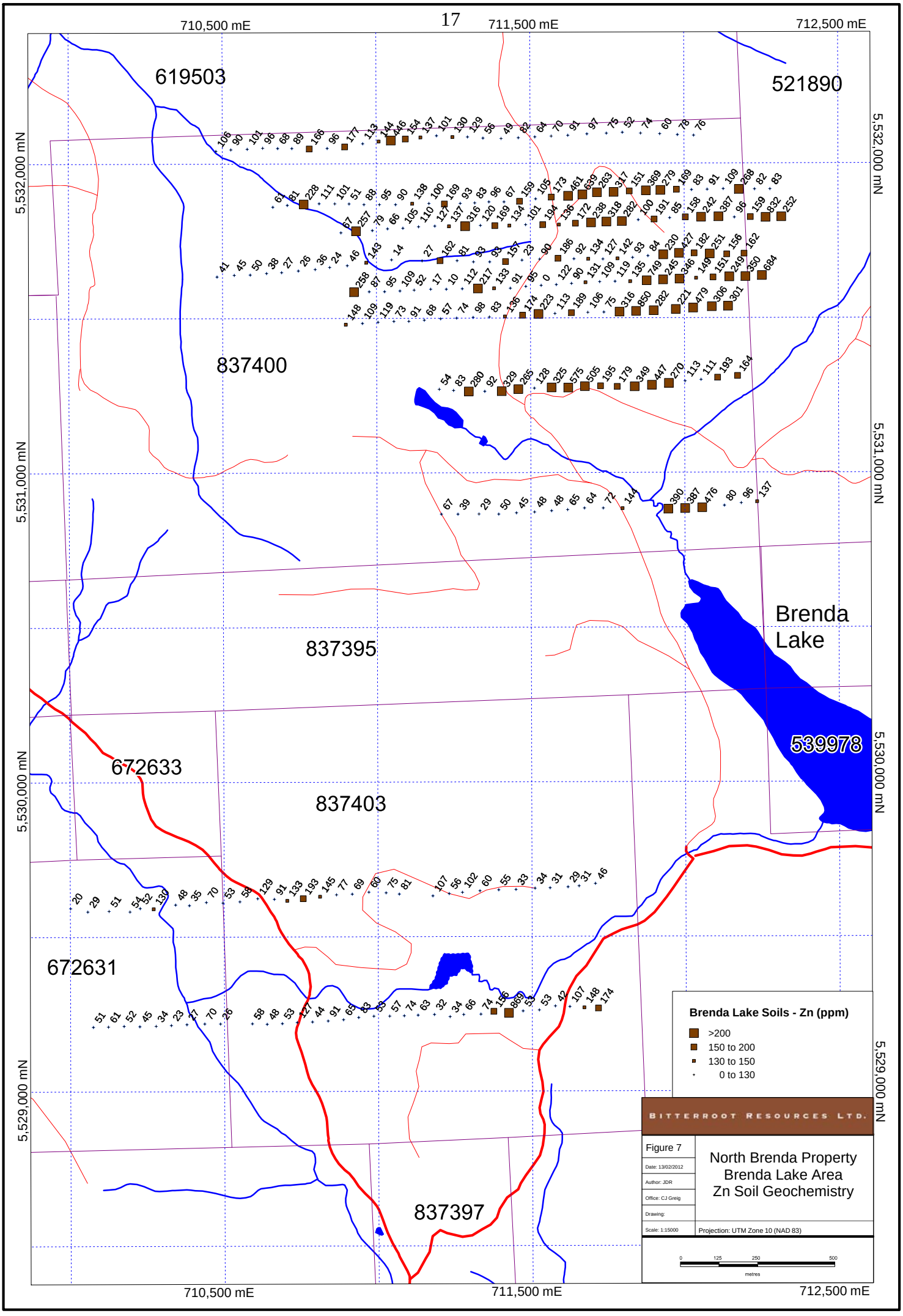
711,500 mE
712,500 mE
5,532,000 mN
5,531,000 mN
5,530,000 mN
5,529,000 mN
619503
521890
837400
837395
837403
672633
672631
837397
539978
Brenda Lake
Brenda Lake Soils - As (ppm)
>65
40 to 65
30 to 40
0 to 30
BITTERROOT RESOURCES LTD.
Figure 6
North Brenda Property
Brenda Lake Area
As Soil Geochemistry
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:15000
Projection: UTM Zone 10 (NAD 83)
0 125 250 500
metres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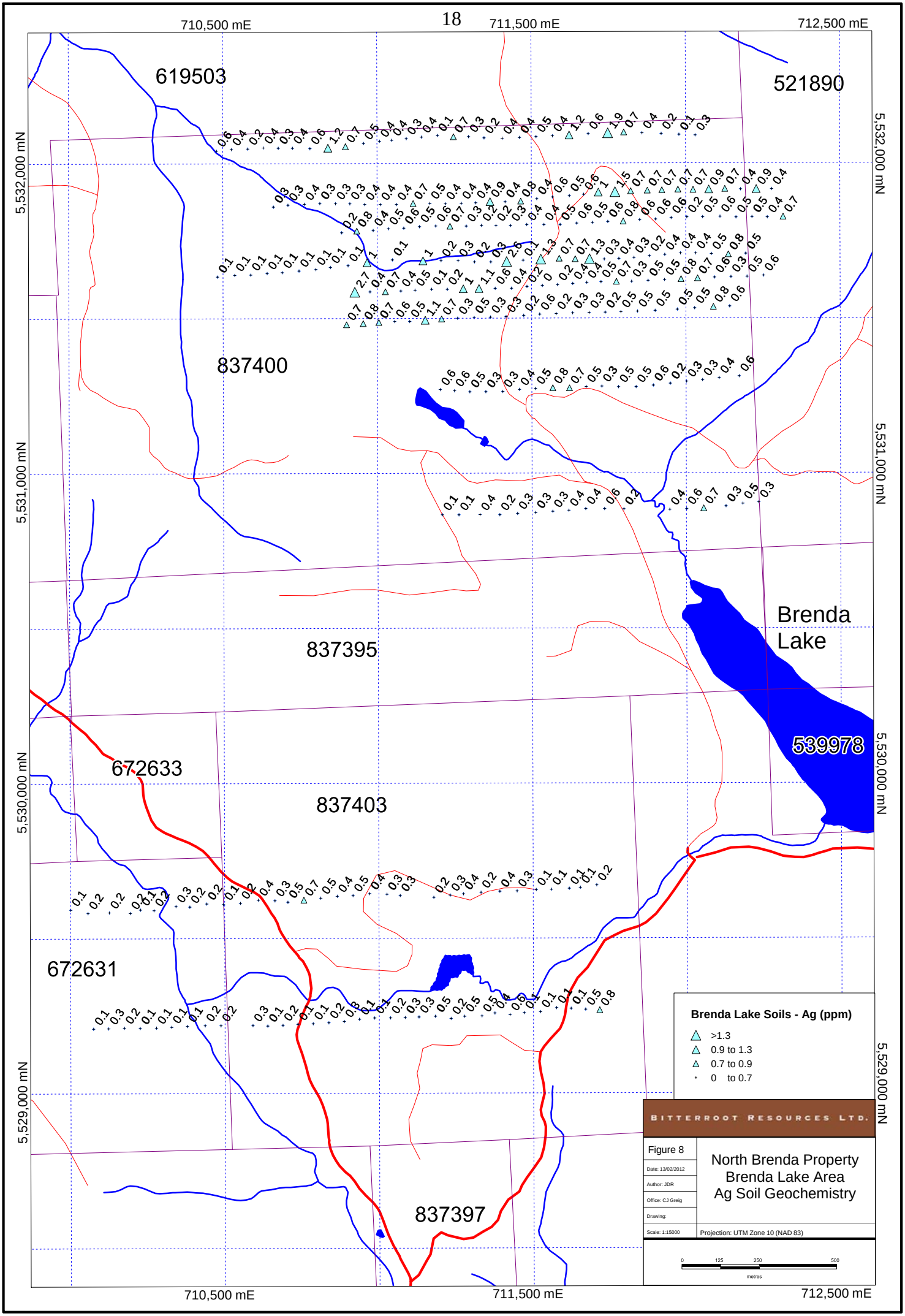
712,500 mE
5,532,000 mN
5,531,000 mN
5,530,000 mN
5,529,000 mN
619503
521890
837400
837395
837403
672633
672631
837397
539978
Brenda Lake
Brenda Lake Soils - Zn (ppm)
>200
150 to 200
130 to 150
0 to 130
BITTERROOT RESOURCES LTD.
Figure 7
North Brenda Property
Brenda Lake Area
Zn Soil Geochemistry
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:15000
Projection: UTM Zone 10 (NAD 83)
0 125 250 500
metres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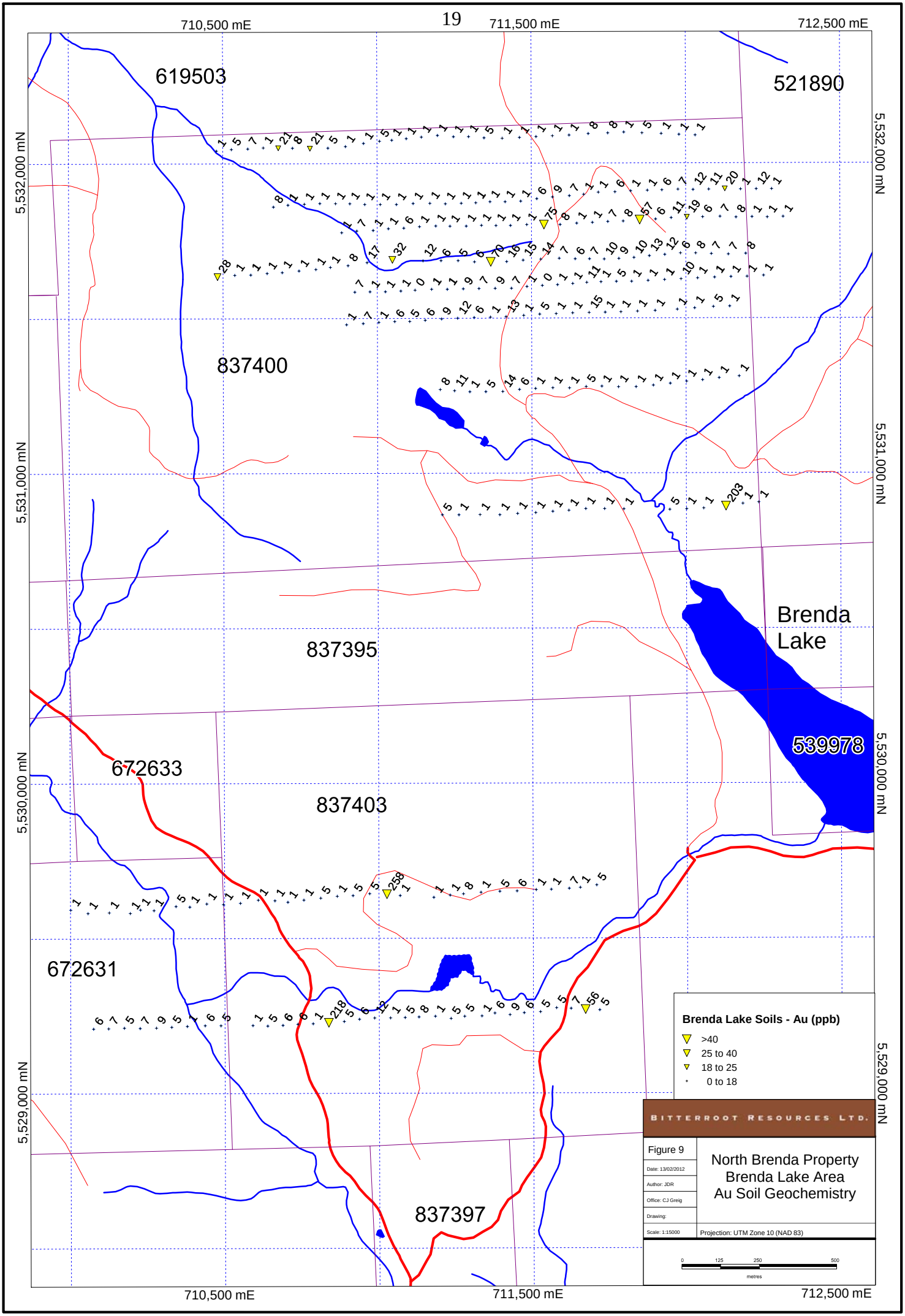
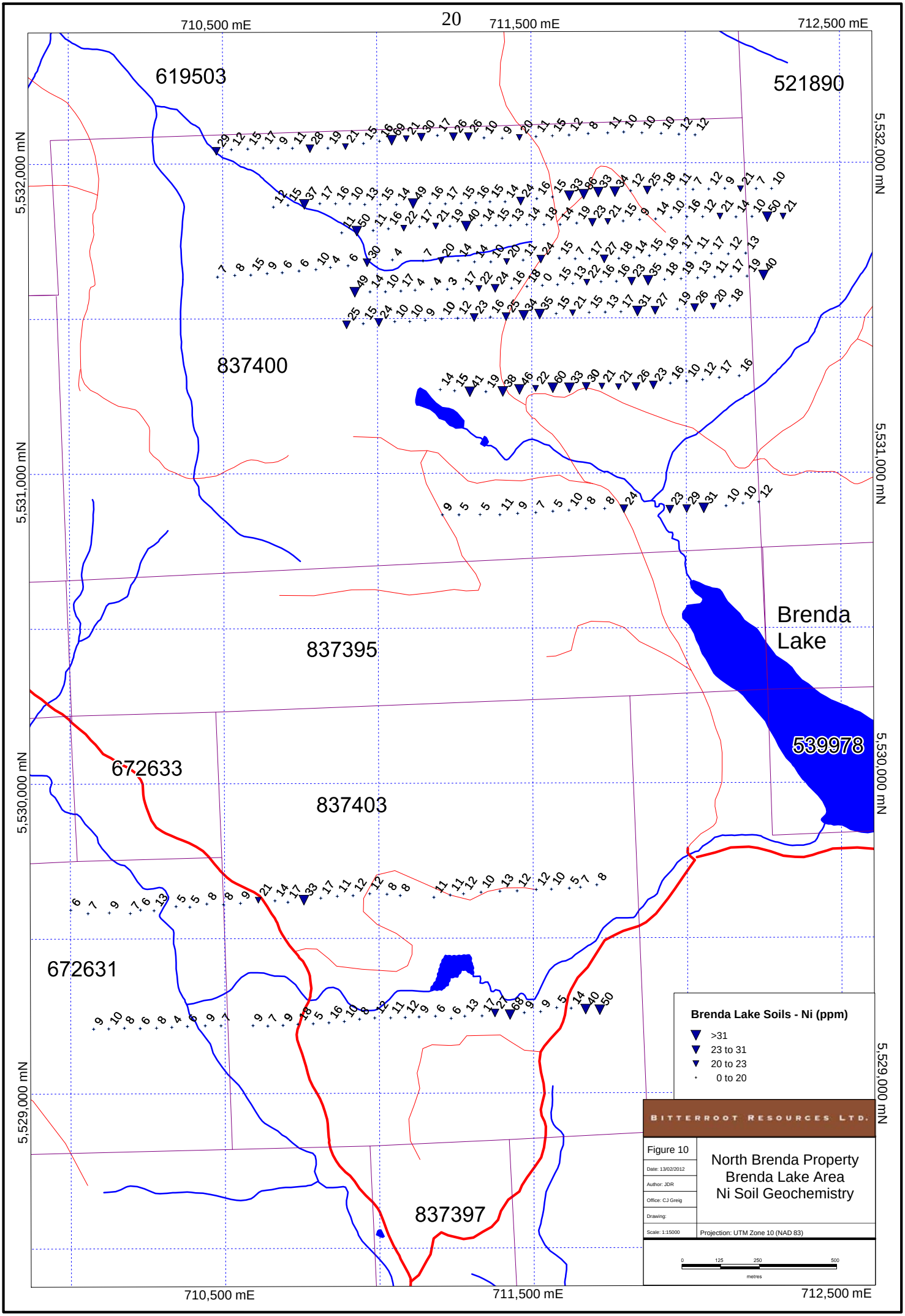
711,500 mE
712,500 mE
5,532,000 mN
5,531,000 mN
5,530,000 mN
5,529,000 mN
619503
521890
837400
837395
837403
672633
672631
837397
539978
Brenda Lake
Brenda Lake Soils - Ag (ppm)
>1.3
0.9 to 1.3
0.7 to 0.9
0 to 0.7
BITTERROOT RESOURCES LTD.
Figure 8
North Brenda Property
Brenda Lake Area
Ag Soil Geochemistry
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:15000
Projection: UTM Zone 10 (NAD 83)
0 125 250 500
metres


710,500 mE
711,500 mE
712,500 mE
5,532,000 mN
5,531,000 mN
5,530,000 mN
5,529,000 mN
619503
521890
837400
837395
837403
672633
672631
837397
539978
Brenda Lake
Brenda Lake Soils - Au (ppb)
>40
25 to 40
18 to 25
0 to 18
BITTERROOT RESOURCES LTD.
Figure 9
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:15000
North Brenda Property
Brenda Lake Area
Au Soil Geochemistry
Projection: UTM Zone 10 (NAD 83)
0
125
250
500
metres


710,500 mE
711,500 mE
712,500 mE
5,532,000 mN
5,531,000 mN
5,530,000 mN
5,529,000 mN
619503
521890
837400
837395
837403
672633
672631
837397
539978
Brenda Lake
Brenda Lake Soils - Ni (ppm)
>31
23 to 31
20 to 23
0 to 20
BITTERROOT RESOURCES LTD.
Figure 10
North Brenda Property
Brenda Lake Area
Ni Soil Geochemistry
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:15000
Projection: UTM Zone 10 (NAD 83)
0 125 250 500
metres

noticeably aligned along the east-northeast projected trend of the felsite dyke and typically occur with, or adjacent to, anomalous As and Ag values. As well, there are three isolated, but strongly anomalous gold values, located on the two reconnaissance soil lines to the southwest of Brenda Lake. One of the Au highs, 1.0 km southwest of Brenda Lake, has associated anomalous As, Zn, Ag, Ba and Ni. The other two Au highs do not have associated anomalous elements, so are likely caused by erratic gold particles in the glacial overburden, which locally consists of fluvial outwash gravel and sand.

It is noteworthy that relatively low values of 40 ppb Au or greater are considered strongly anomalous because values of this tenure occur next to a high-grade gold showing in trenches located to the northeast. That showing, which returned several values of greater than 20 g/t Au, was revealed by exploring soil values of only 65 ppb Au and 37 ppb Au.

Anomalous Ni in soil (Figure 10) shows a very strong correlation with Zn and this association has been noted in many areas of the property, regardless of the underlying rock types. It is likely that nickel mineralization occurs with sphalerite in quartz veins cutting black argillite and tuffaceous siltstone within the 2011 sampling area.

8.0 Rock Sampling

Prospecting was undertaken along roads and clear-cut logged areas within, and surrounding, the 2011 soil sampling grid. As well, some areas of previously defined anomalous soil geochemistry were examined in an attempt to define the sources of the anomalies. Bedrock exposures are very limited in the prospecting areas, so the majority of the samples collected were comprised of float cobbles within the glacial till. Glacial direction in this area is to the southeast so it is assumed that the source of any mineralized float fragments would lie to the northwest. Most of the material that was sampled contained fragments of quartz veins, hosted by black argillite or tuff, often located near siliceous, light grey to yellow, felsite dykes. Many of the samples had fine veinlets or fracture coatings of limonite and small drusy cavities in the quartz. Rock sample locations were marked in the field by a numbered length of flagging and the UTM co-ordinates of each station were recorded using a hand-held Garmin GPS unit.

Rock samples were shipped to ALS Chemex Laboratories in North Vancouver where they were crushed to -2 mm and a 250 gram split was pulverized to -75 microns. A 30 gram portion was analyzed for gold by fire assay with atomic absorption finish and a 1 gram portion was dissolved in aqua regia and analyzed for a suite of 35 elements by ICP techniques.

Table 2 lists sample descriptions and co-ordinates for 14 rock samples collected during

2011, however only 10 of the samples are located near the area of the soil grid. These 10 sample locations are shown on Figure 11. Figures 12 and 13 display the analytical results for Au and Ag. Laboratory analytical reports showing values for all 36 elements analyzed in 2011 are attached in Appendix III.

8.1 Rock Geochemical Results

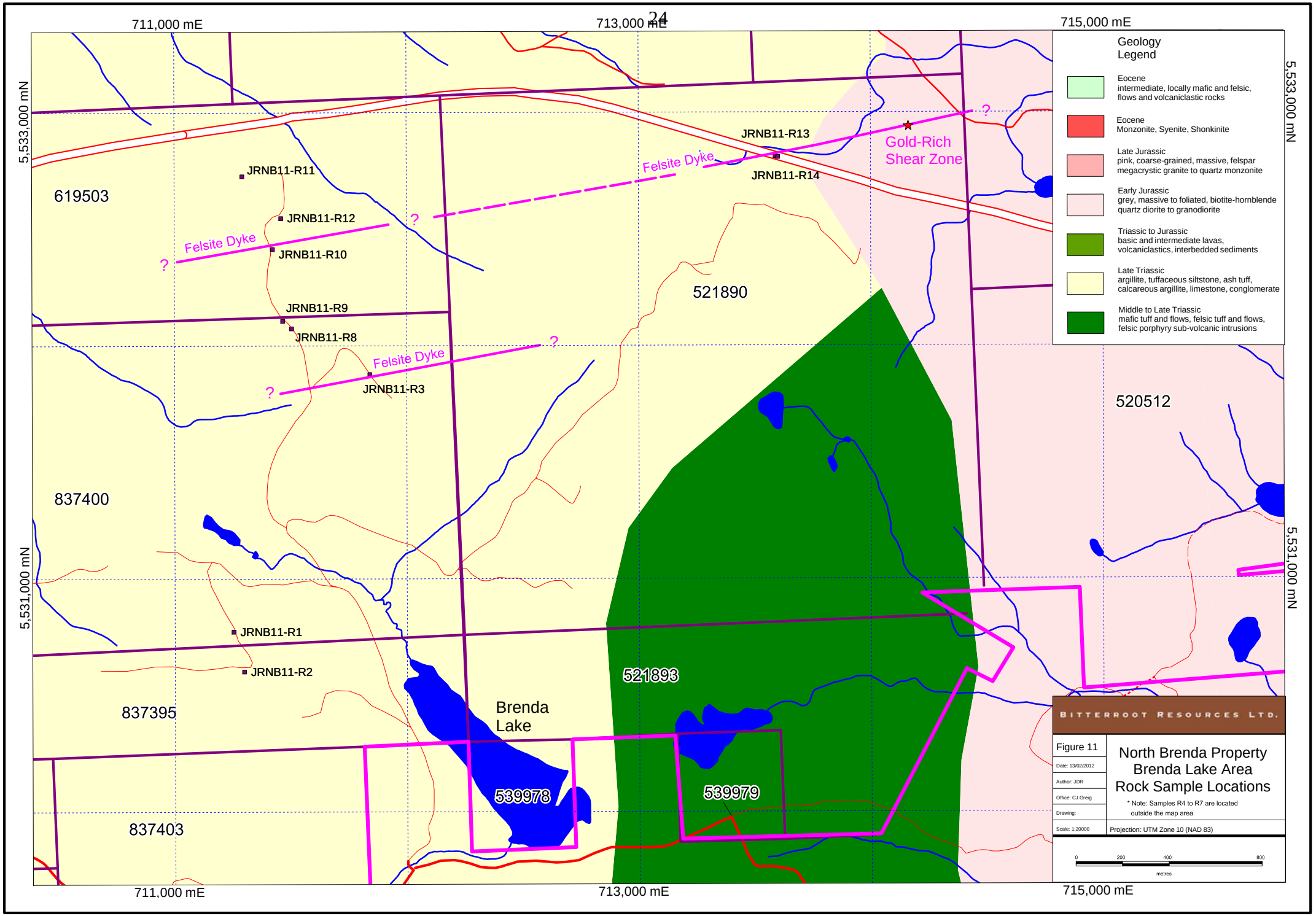
Three of the rock samples collected near the 2011 soil grid returned anomalous precious metals values. Significantly, they consisted of felsic dyke material or quartz veins located near felsite dykes. Sample JRNB11-R10 comprised glassy, pyritic quartz veinlets cutting black argillite within a few metres of a >1m-wide dyke. This sample returned 0.95 g/t Au, 4.3 g/t Ag, 612 ppm As and 247 ppm Pb. JRNB11-R12 was a grab sample from a 10 cm cobble of vuggy, limonitic quartz vein located 140 metres north of sample R10. It returned 0.22 g/t Au and 0.4 g/t Ag with elevated bismuth (5 ppm). Sample JRNB11-R13 was located 2.2 km east-northeast from R10 and was comprised of similar rock types. Subcrop of black argillite at this site contains quartz vein chips and rusty weathering, boxworked light grey to yellow siliceous dyke (?) with minor remnant pyrite specks. A grab sample of the siliceous, pyritic material returned 0.04 g/t Au and 5.2 g/t Ag with elevated values in Cu (900 ppm), As (150 ppm), Fe (12.4%), V (247 ppm), Th (50 ppm) and Bi (5 ppm).

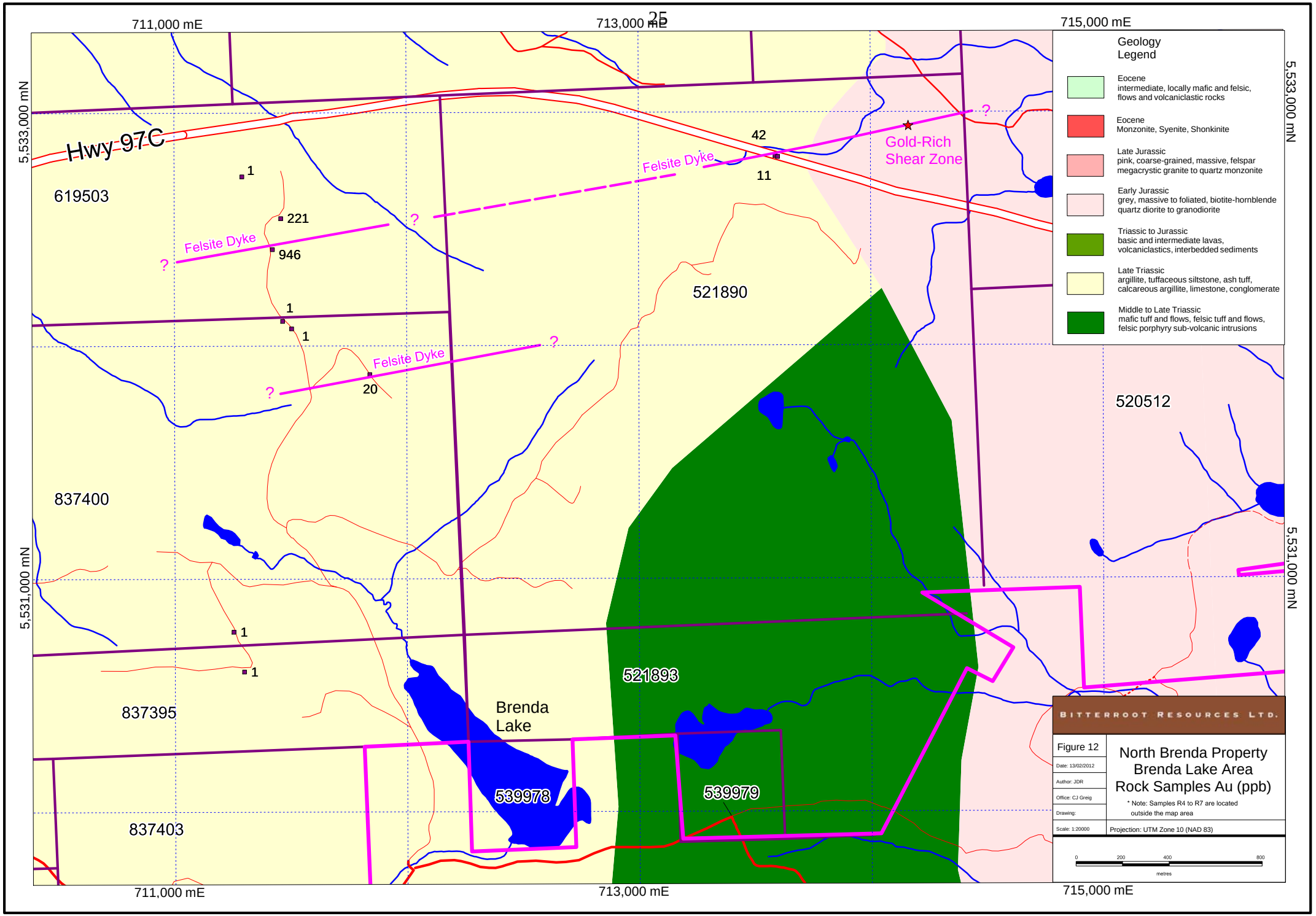
Sample JRNB11-R3 was also collected from a limonitic, fractured felsite dyke, 680 metres southeast of R10, and although precious metal values were low, it showed enrichment of As (839 ppm), Mo (25 ppm) and Sb (33 ppm). This sample site is surrounded by a large soil anomaly with elevated values of As, Zn and Ni as well as local Ag and Au highs.

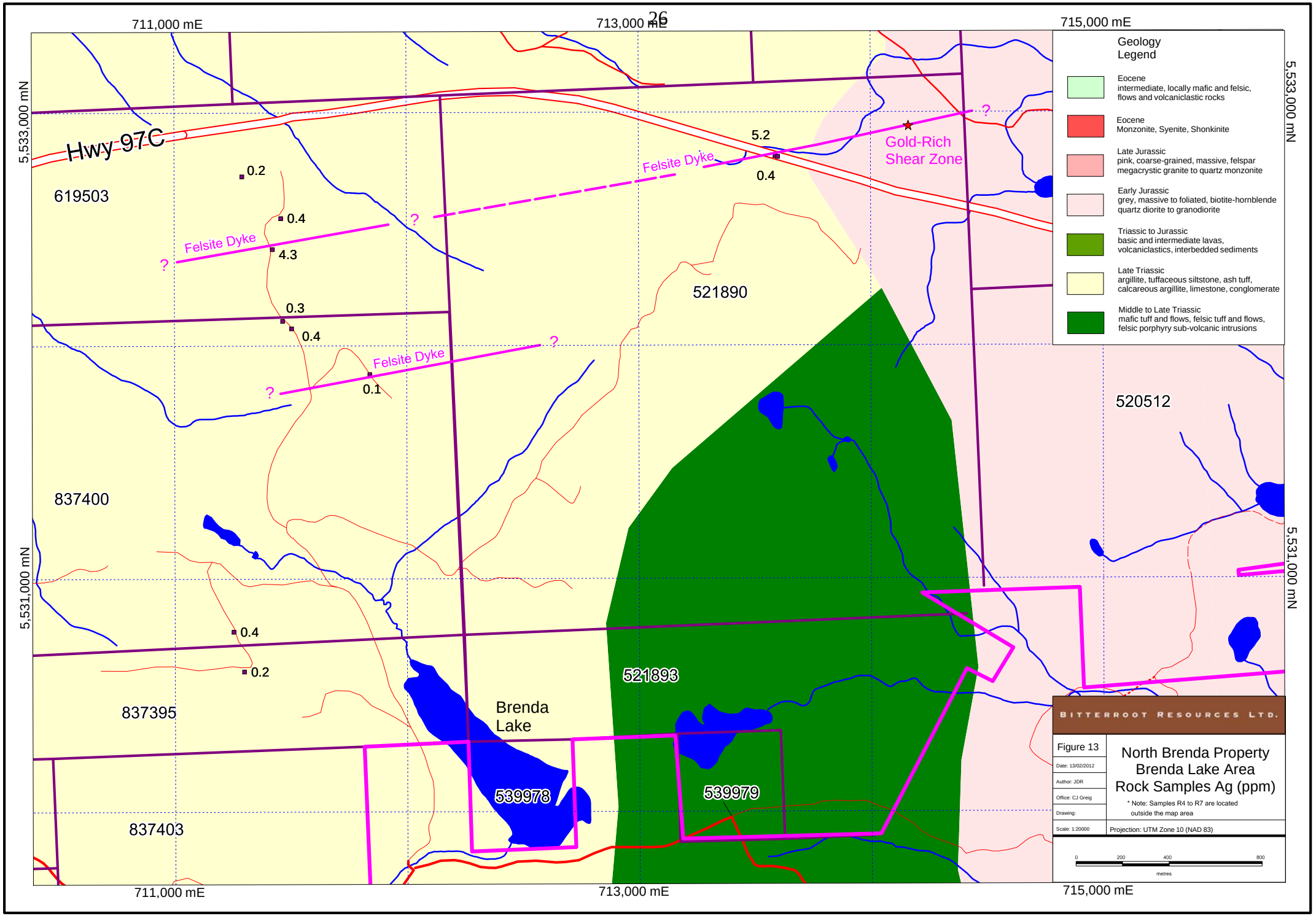
It is speculated that the felsite dykes may have east-northeast strikes although there have been no definitive measurements due to lack of good exposures. If this is the case, then the dyke located at the site of sample R10 may be the same dyke as that sampled at R13, which would put it on trend with the gold-bearing shear zone that was trenched in 2009, located 550 metres east-northeast of R13 (Figure 11). Further evaluation of felsite dykes in this area is required and especially their relationship with potential gold-bearing structures.

Table 2. Rock Sample Descriptions

Sample_Num	UTM_East	UTM_North	Au_g/t	Ag_g/t	Sample Description
JRNB11-R1	711253	5530773	0.001	0.4	Grabs, float 1-20cm, qz vn, wh, sugary, minor lim vlts, hem stain, small drusy cavs
JRNB11-R2	711298	5530602	0.001	0.2	Grabs, float 1-10cm, qz vn, wh-gy, glassy, sparse lim fracs, small vuggy cavs
JRNB11-R3	711841	5531877	0.020	0.1	Grabs, subcrop, Felsite dyke, <1m wide, lt yel-orng, bx, rusty lim mtx, nearby black arg o/c
JRNB11-R4	698690	5537545	0.001	0.2	Grab, float, 30cm dk gr diorite cut by 3 qz vlts .5-1 cm, glassy w lim fracs, local MoS2 rosettes
JRNB11-R5	698569	5537348	0.010	0.7	Grabs, subcrop, diorite (rexal volc?) in GD w sev % diss py, po, few specks cpy, no qz vns
JRNB11-R6	699251	5536632	0.001	0.7	Grab, float, 30cm orng weath FeCarb altd volc? In till, GD o/c nearby
JRNB11-R7	697209	5538784	0.001	0.7	Grabs, float, qtz-calc vlts <1cm, cut FeCarb altd meta-volc, tuffs, orng weath altn
JRNB11-R8	711505	5532074	0.001	0.4	Grabs, float, bx volcs, lt gy, clay altd, lim mtx and fracs, minor vuggy qz in mtx
JRNB11-R9	711466	5532106	0.001	0.3	Grab, float, 20cm qz vn, gy-wh, minor vuggy cavs and lim fracs
JRNB11-R10	711423	5532414	0.946	4.3	Grabs, float, silic bl arg cut by several glassy qz vlts, <1-3cm, sparse blebs of py, nearby felsite dyke >1m wide
JRNB11-R11	711292	5532727	0.001	0.2	Grabs, subcrop, 2-3cm wh, glassy qz vlts w lim and sm cavs, cuts dk gr silic volc, nearby felsite dyke 40cm wide
JRNB11-R12	711459	5532547	0.221	0.4	Grab, float, 10cm qz vn, wh, slightly vuggy, lim on fracs and vugs
JRNB11-R13	713589	5532813	0.042	5.2	Grabs, subcrop, rusty weath, silic, str boxworked felsite dyke? Abund lim, minor py, also bl arg chips in soil
JRNB11-R14	713600	5532808	0.011	0.4	Grabs, subcrop, qz vlts, 2-3cm, wh-lt gy, v minor lim, altd arg? host rx


711,000 mE
713,000 mE
715,000 mE
5,533,000 mN
5,531,000 mN
JRNB11-R11
JRNB11-R12
JRNB11-R10
JRNB11-R9
JRNB11-R8
JRNB11-R3
JRNB11-R1
JRNB11-R2
JRNB11-R13
JRNB11-R14
Felsite Dyke
Gold-Rich Shear Zone
619503
521890
520512
837400
837395
837403
521893
539978
539979
Brenda Lake
Geology Legend
Eocene intermediate, locally mafic and felsic, flows and volcaniclastic rocks
Eocene Monzonite, Syenite, Shonkinite
Late Jurassic pink, coarse-grained, massive, felspar megacrystic granite to quartz monzonite
Early Jurassic grey, massive to foliated, biotite-hornblende quartz diorite to granodiorite
Triassic to Jurassic basic and intermediate lavas, volcaniclastics, interbedded sediments
Late Triassic argillite, tuffaceous siltstone, ash tuff, calcareous argillite, limestone, conglomerate
Middle to Late Triassic mafic tuff and flows, felsic tuff and flows, felsic porphyry sub-volcanic intrusions
BITTERROOT RESOURCES LTD.
Figure 11
North Brenda Property
Brenda Lake Area
Rock Sample Locations
* Note: Samples R4 to R7 are located outside the map area
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:20000
Projection: UTM Zone 10 (NAD 83)
0 200 400 800
metres


711,000 mE
713,000 mE
715,000 mE
5,533,000 mN
5,531,000 mN
Hwy 97C
Felsite Dyke
Gold-Rich Shear Zone
619503
521890
520512
837400
837395
837403
521893
539978
539979
Brenda Lake
1
221
946
20
42
11
Geology Legend
Eocene intermediate, locally mafic and felsic, flows and volcaniclastic rocks
Eocene Monzonite, Syenite, Shonkinite
Late Jurassic pink, coarse-grained, massive, felspar megacrystic granite to quartz monzonite
Early Jurassic grey, massive to foliated, biotite-hornblende quartz diorite to granodiorite
Triassic to Jurassic basic and intermediate lavas, volcaniclastics, interbedded sediments
Late Triassic argillite, tuffaceous siltstone, ash tuff, calcareous argillite, limestone, conglomerate
Middle to Late Triassic mafic tuff and flows, felsic tuff and flows, felsic porphyry sub-volcanic intrusions
BITTERROOT RESOURCES LTD.
Figure 12
North Brenda Property
Brenda Lake Area
Rock Samples Au (ppb)
* Note: Samples R4 to R7 are located outside the map area
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:20000
Projection: UTM Zone 10 (NAD 83)
0 200 400 800
metres


711,000 mE
713,000 mE
715,000 mE
5,533,000 mN
5,531,000 mN
Hwy 97C
619503
521890
520512
837400
837395
837403
521893
539978
539979
Brenda Lake
Gold-Rich Shear Zone
Felsite Dyke
0.2
0.4
4.3
0.3
0.4
0.1
5.2
0.4
0.4
0.2
Geology Legend
Eocene
intermediate, locally mafic and felsic, flows and volcaniclastic rocks
Eocene
Monzonite, Syenite, Shonkinite
Late Jurassic
pink, coarse-grained, massive, felspar megacrystic granite to quartz monzonite
Early Jurassic
grey, massive to foliated, biotite-hornblende quartz diorite to granodiorite
Triassic to Jurassic
basic and intermediate lavas, volcaniclastics, interbedded sediments
Late Triassic
argillite, tuffaceous siltstone, ash tuff, calcareous argillite, limestone, conglomerate
Middle to Late Triassic
mafic tuff and flows, felsic tuff and flows, felsic porphyry sub-volcanic intrusions
BITTERROOT RESOURCES LTD.
Figure 13
North Brenda Property
Brenda Lake Area
Rock Samples Ag (ppm)
* Note: Samples R4 to R7 are located outside the map area
Date: 13/02/2012
Author: JDR
Office: CJ Greig
Drawing:
Scale: 1:20000
Projection: UTM Zone 10 (NAD 83)
0
200
400
800
metres

9.0 Conclusions and Recommendations for Future Work

This report documents the results of soil and rock sampling that was done between June, 2011 and September, 2011 to explore some untested areas on the North Brenda property. This work was a continuation of exploration undertaken in other areas of the property by Bitterroot Resources Ltd, from 2006 through 2010. The recommendations in this section refer to the 2011 exploration results; to review information about earlier defined targets the reader is referred to reports by O'Neill et al (2009), Rowe et al (2009) and Rowe and Greig (2011).

Previous trenching, within areas of moderately anomalous Au-in-soil values (20-65ppb), have returned some excellent gold values in bedrock, including 71.4 g/t Au over 10cm and 39.2 g/t Au over 25cm. This indicates that all Au-in-soil values on the property greater than 20ppb should be seriously evaluated, especially those with associated anomalous elements such as Ag and As.

In the area of the 2011 soil grid, recommended future work should consist of extending the soil grid to the north and southwest to trace the extent of the defined multi-element anomaly. As well, geological mapping and prospecting should be carried out in the areas of anomalous soil stations to attempt to determine the sources of the high metal values. Based upon evaluation of the geochemical targets, excavator trenching may be warranted to explore for mineralization.

Magnetometer surveying may prove useful to help define targets because there has been a noted relationship between low magnetic response and the area of gold-bearing sheared, altered granodiorite located to the northeast (Rowe and Greig, 2011). The relationship between gold-bearing quartz veins and felsite dykes should be further examined because the dykes may be related to the source of mineralizing fluids, or to specific structures that may have been channel ways for mineralizing fluids.

10.0 Bibliography

Bruaset, R.U., (1986): Summary Report on the North Brenda Project; *British Columbia Minister of Mines and Petroleum Resources*, Assessment Report 15594.

Carr, J.M., (1967): Geology of the Brenda Lake Area; *British Columbia Minister of Mines and Petroleum Resources*, Annual Report, 1967, p. 183-212.

Dawson, G.L. and Ray, G.E., (1988): Geology of the Pennask Mountain Area, 92H/16, B.C. Ministry of Energy, Mines & Petroleum Resources Open File Map 1988-7, scale 1:25,000

MinFile Number 92HNE047, Brenda Mine, *Ministry of Energy, Mines and Petroleum Resources*, online document, http://minfile.gov.bc.ca/Summary.aspx?minfilno=092HNE047

Monger, J.W.H., (1989): Geology, Hope, British Columbia, GSC Map 41-1989, scale 1:250,000

O'Neill, D., Flasha, S.T. and Greig, C.J., (2009): 2006 & 2007 Exploration Programs on the North Brenda Property; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Assessment Report 30902B, 232 pages.

Pollmer, A.R., (1982): Geological and Geochemical Report on the North Brenda Property; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Assessment Report 10131, 14 pages plus maps.

Rice, H.M.A., (1947): Geology and Mineral Deposits of the Princeton Map-Area B.C., GSC Memoir 243.

Rowe, J.D., (1992): 1991 Geochemical Report on the PEN Property; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Assessment Report 22304, 128 pages.

Rowe, J.D., Flasha, S.T. and Greig, C.J., (2009): 2007 Diamond Drilling & 2008 Geophysical and Prospecting Programs on the North Brenda Property; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Assessment Report 30902A, 176 pages.

Rowe, J.D and Greig, C.J., (2011): 2009 - 2010 Trenching, Soil and Stream Sediment Geochemistry and Magnetometer Programs on the North Brenda Property; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Assessment Report 32070, 168 pages.

Soregaroli, A.E. and Whitford, D.F., (1976): Brenda. *In* Porphyry Deposits of the Canadian Cordillera. *Edited by* A. Sutherland Brown. *Canadian Institute of Mining and Metallurgy*, Special Volume 15, p. 186-194.

Tempelman-Kluit, D.J., (1989): Geology, Penticton, British Columbia, GSC Map 1736A, scale 1:250,000

11.0 Personnel

C.J. Greig and Associates

Jeff Rowe - Geologist
Charles Greig - Geologist
Roy Greig - Soil Sampler
Nate Speijer - Soil Sampler
Mitch Aubie - Soil Sampler

12.0 Statement of Expenditures

North Brenda Cost Statement June1 - Oct 31, 2011

Exploration Work Type	Comment				Totals
Geological Consulting		**Days**	**Rate**	**Subtotal**	
J. Rowe - Geologist	Planning, Field Work, Supervision, Report	11	500	5500.00	
C. Greig - Geologist	Management, Supervision, Report	1	600	600.00	
R. Greig - Sampler	Soil Sampling	2	315	630.00	
N. Speijer - Sampler	Soil Sampling	1	315	315.00	
M. Aubie - Sampler	Soil Sampling	3	315	945.00	
					7990.00
Geochemical Analyses		**Analyses**	**Rate**	**Subtotal**	
	Soil Samples	268	28.00	7504.00	
	Rock Samples	10	33.00	330.00	
					7834.00
Transportation, Rentals	Truck	5	120.00	600.00	
					600.00
Equipment, Supplies, Freight	Field supplies			100.00	
	Sample Shipping			150.00	
					250.00
TOTAL 2011 EXPENDITURES					16674.00

APPENDIX I

Statements of Qualifications

I, Jeffrey D. Rowe, of 2537 Evergreen Drive, Penticton, British Columbia, Canada, hereby certify that:

1. I am a graduate of the University of British Columbia with a B.Sc. (Honours) (Geological Sciences, 1975) and have practiced my profession continuously from 1975 to 1999 and from 2007 to present.

2. I have been employed in the geoscience industry for over 30 years, and have explored for gold and base metals in North and South America for both senior and junior mining companies, on exploration properties as well as at a producing mine.

3. I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the technical report, the omission to disclose which makes the technical report misleading.

4. I hold options to purchase shares of Bitterroot Resources Ltd., which is the owner of the North Brenda Property.

5. I am an author of the report entitled; "2011 Soil Geochemistry Program on the North Brenda Property" dated February 20, 2012. I personally supervised and undertook the work programs reported on herein.

Dated at Penticton, British Columbia, this 20th day of February, 2012.

Respectfully submitted,

"J D Rowe"

Jeffrey D. Rowe, B.Sc.

I, Charles James Greig, of 250 Farrell St., Penticton, British Columbia, Canada, hereby certify that:

1. I am a graduate of the University of British Columbia with a B.Comm. (1981), a B.Sc. (Geological Sciences, 1985), and an M.Sc. (Geological Sciences, 1989), and have practiced my profession continuously since graduation.

2. I have been employed in the geoscience industry for over 25 years, and have explored for gold and base metals in North, Central, and South America, and Africa for both senior and junior mining companies, and have several years of experience in regional-scale government geological mapping.

3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (license #27529).

4. I am a "Qualified Person" as defined by National Instrument 43-101.

5. I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the technical report, the omission to disclose which makes the technical report misleading.

6. I own shares of Bitterroot Resources Ltd., which is the owner of the North Brenda Property.

7. I am an author of the report entitled; "2011 Soil Geochemistry Program on the North Brenda Property" dated February 20, 2012. I supervised a part of the work program reported on herein. I have been involved with exploration on behalf of Bitterroot Resources Ltd. since 1996.

8. I have read National Instrument 43-101 and Form 43-101F1 and the technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Dated at Penticton, British Columbia, this 20th day of February, 2012.

Respectfully submitted,

"C J Greig"

Charles James Greig, M.Sc. P.Geo

APPENDIX II

Soil Sample Geochemistry

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
MANB11-S51	712279	5531916	<0.005	0.4	2.24	72	<10	140	<0.5	2	0.08	0.5	4	18	24	2.22	10	<1	0.07	10	0.27	150	7	0.02	10	640	7	0.09	<2	2	37	<20	0.10	<10	<10	92	<10	83
MANB11-S52	712229	5531916	0.012	0.9	2.2	85	<10	170	<0.5	2	0.10	0.7	3	21	28	2.36	10	<1	0.11	10	0.30	123	9	0.02	7	660	8	0.14	<2	4	46	<20	0.08	<10	<10	101	<10	82
MANB11-S53	712178	5531915	<0.005	0.4	2.11	30	<10	90	<0.5	<2	0.13	1.2	8	20	24	2.31	10	1	0.04	10	0.40	239	4	0.03	21	720	7	0.04	<2	2	26	<20	0.08	<10	<10	67	<10	268
MANB11-S54	712127	5531917	0.020	0.7	2.06	111	<10	140	<0.5	2	0.10	0.7	3	15	30	2.30	10	1	0.08	10	0.28	129	12	0.03	9	580	10	0.08	<2	3	50	<20	0.08	10	<10	83	<10	109
MANB11-S55	712075	5531915	0.011	0.9	2.34	110	<10	180	<0.5	<2	0.11	<0.5	4	21	35	2.71	10	1	0.10	10	0.48	184	17	0.03	12	800	11	0.15	<2	3	59	<20	0.08	10	<10	122	<10	91
MANB11-S56	712024	5531914	0.012	0.7	2.44	146	<10	180	<0.5	<2	0.10	<0.5	2	37	39	2.78	10	<1	0.16	10	0.55	152	15	0.03	7	830	10	0.28	<2	5	64	<20	0.07	10	<10	128	<10	83
MANB11-S57	711975	5531915	0.007	0.7	2.12	72	<10	230	<0.5	<2	0.33	0.9	4	25	26	2.40	10	1	0.08	10	0.59	421	14	0.03	11	730	37	0.12	<2	3	65	<20	0.09	<10	<10	77	<10	169
MANB11-S58	711923	5531913	0.006	0.7	2.26	81	<10	180	0.5	<2	0.23	1.3	6	18	36	2.74	10	<1	0.09	10	0.41	168	25	0.03	18	600	14	0.13	<2	4	45	<20	0.11	<10	<10	79	<10	279
MANB11-S59	711876	5531912	<0.005	0.7	2.4	92	<10	220	0.6	<2	0.32	1.8	14	22	47	2.75	10	<1	0.09	10	0.65	451	11	0.03	25	1320	8	0.10	<2	4	48	<20	0.10	<10	<10	71	<10	369
MANB11-S60	711822	5531910	<0.005	0.7	3.39	192	<10	390	<0.5	2	0.18	<0.5	6	29	34	3.49	10	1	0.12	<10	1.35	297	3	0.04	12	900	9	0.15	3	10	49	<20	0.15	<10	<10	99	<10	151
MANB11-S61	711771	5531907	0.006	1.5	2.28	141	<10	260	0.6	<2	0.31	1.8	9	28	69	2.38	10	1	0.12	10	0.70	264	6	0.03	34	1170	9	0.16	2	2	74	<20	0.06	10	<10	71	<10	317
MANB11-S62	711717	5531906	<0.005	1.0	1.95	61	<10	110	0.7	<2	0.28	2.2	11	19	60	1.44	10	<1	0.05	10	0.40	222	7	0.03	33	580	7	0.05	3	1	48	<20	0.06	<10	<10	48	<10	263
MANB11-S63	711670	5531899	<0.005	0.6	2.72	108	<10	100	1.0	2	0.30	2.2	51	21	68	2.71	10	<1	0.08	10	0.42	920	12	0.03	86	860	7	0.08	<2	4	62	<20	0.09	10	<10	100	<10	639
MANB11-S64	711623	5531895	0.007	0.5	2.26	97	<10	200	<0.5	<2	0.50	1.4	7	25	37	2.69	10	1	0.14	10	0.55	426	7	0.03	33	760	10	0.22	<2	4	103	<20	0.08	<10	<10	82	<10	461
MANB11-S65	711569	5531891	0.009	0.6	2.24	91	<10	140	<0.5	<2	0.11	<0.5	4	21	28	2.27	10	<1	0.07	10	0.36	140	6	0.02	15	740	9	0.07	<2	4	53	<20	0.09	<10	<10	75	<10	173
MANB11-S66	711517	5531885	0.006	0.4	2.25	50	<10	170	<0.5	2	0.12	<0.5	6	27	30	2.78	10	<1	0.09	10	0.47	248	2	0.02	16	900	6	0.07	<2	5	53	<20	0.12	<10	<10	74	<10	105
MANB11-S67	711465	5531877	<0.005	0.8	2.42	51	<10	140	0.6	<2	0.19	<0.5	7	37	37	2.87	10	<1	0.09	10	0.50	218	3	0.03	24	950	6	0.09	<2	4	85	<20	0.10	<10	<10	75	<10	159
MANB11-S68	711415	5531876	<0.005	0.4	1.15	9	<10	110	<0.5	<2	0.54	<0.5	5	20	22	1.69	<10	<1	0.08	<10	0.25	101	2	0.02	14	820	6	0.07	<2	2	72	<20	0.07	<10	<10	47	<10	67
MANB11-S69	711366	5531876	<0.005	0.9	1.88	12	<10	130	<0.5	<2	0.11	<0.5	6	21	20	2.44	10	<1	0.06	<10	0.35	185	1	0.02	15	810	5	0.04	<2	4	20	<20	0.12	<10	<10	63	<10	96
MANB11-S70	711320	5531873	<0.005	0.4	1.8	5	<10	120	<0.5	<2	0.10	<0.5	7	19	20	2.19	10	<1	0.05	<10	0.29	168	<1	0.02	16	770	5	0.02	<2	3	14	<20	0.11	<10	<10	57	<10	83
MANB11-S71	711273	5531871	<0.005	0.4	1.63	5	<10	110	<0.5	<2	0.10	<0.5	7	18	17	2.04	10	<1	0.05	<10	0.25	266	1	0.02	15	980	6	0.03	<2	3	14	<20	0.10	<10	<10	53	<10	93
MANB11-S72	711221	5531869	<0.005	0.4	1.63	8	<10	230	<0.5	<2	0.13	<0.5	5	18	17	2.54	10	1	0.07	<10	0.41	143	1	0.03	17	1220	6	0.05	<2	4	22	<20	0.12	<10	<10	64	<10	169
MANB11-S73	711171	5531871	<0.005	0.5	1.34	7	<10	120	<0.5	2	0.11	<0.5	5	19	18	2.12	10	<1	0.06	<10	0.32	213	1	0.03	16	650	7	0.04	<2	3	17	<20	0.11	<10	<10	61	<10	100
MANB11-S74	711117	5531871	<0.005	0.7	1.62	9	<10	200	<0.5	<2	0.28	<0.5	7	21	36	2.26	10	<1	0.08	10	0.36	361	1	0.03	49	410	4	0.06	<2	4	37	<20	0.10	<10	<10	63	<10	138
MANB11-S75	711063	5531868	<0.005	0.4	1.68	10	<10	110	<0.5	3	0.11	<0.5	5	16	15	2.02	10	<1	0.04	<10	0.23	116	1	0.02	14	870	4	0.02	<2	3	15	<20	0.10	<10	<10	53	<10	90
MANB11-S76	711010	5531868	<0.005	0.4	1.75	6	<10	100	<0.5	<2	0.11	<0.5	6	18	15	2.07	10	<1	0.05	<10	0.23	145	1	0.02	15	670	5	0.01	<2	3	13	<20	0.10	<10	<10	58	<10	95
MANB11-S77	710960	5531868	<0.005	0.4	1.63	7	<10	110	<0.5	<2	0.12	<0.5	5	18	16	1.99	10	<1	0.04	<10	0.25	117	1	0.02	13	740	4	0.02	<2	3	14	<20	0.09	<10	<10	55	<10	88
MANB11-S78	710912	5531870	<0.005	0.3	1.33	7	<10	80	<0.5	<2	0.15	<0.5	4	18	13	1.88	10	<1	0.04	<10	0.22	107	1	0.02	10	830	5	0.01	2	2	14	<20	0.09	<10	<10	55	<10	51
MANB11-S79	710865	5531871	<0.005	0.3	1.86	9	<10	140	<0.5	<2	0.16	<0.5	7	18	22	1.91	10	<1	0.05	<10	0.32	134	3	0.02	16	750	7	0.02	<2	4	19	<20	0.09	<10	<10	54	<10	101
MANB11-S80	710814	5531871	<0.005	0.3	1.83	15	<10	150	<0.5	<2	0.23	<0.5	8	19	21	2.23	10	<1	0.06	10	0.30	202	2	0.03	17	970	8	0.03	<2	3	28	<20	0.09	<10	<10	58	<10	111
MANB11-S81	710764	5531869	<0.005	0.4	1.84	37	<10	280	<0.5	<2	1.80	2.7	18	25	21	2.75	10	<1	0.07	10	0.50	3390	19	0.04	37	1180	7	0.13	<2	3	106	<20	0.05	<10	<10	69	<10	228
MANB11-S82	710711	5531866	<0.005	0.3	1.68	13	<10	120	<0.5	<2	0.14	<0.5	8	20	21	2.24	10	<1	0.05	10	0.23	258	1	0.02	15	1030	7	0.04	<2	3	26	<20	0.08	<10	<10	57	<10	81
MANB11-S83	710664	5531860	0.008	0.3	1.55	18	<10	150	<0.5	<2	0.14	<0.5	8	19	23	2.27	<10	<1	0.05	10	0.23	190	2	0.02	12	800	7	0.04	2	2	32	<20	0.07	<10	<10	56	<10	61
MANB11-S84	710885	5531777	<0.005	0.2	1.82	6	<10	240	<0.5	<2	0.37	<0.5	8	21	18	1.45	10	<1	0.08	10	0.31	287	1	0.04	11	560	7	0.03	<2	3	48	<20	0.10	<10	<10	45	<10	67
MANB11-S85	710934	5531782	0.007	0.8	2.65	30	<10	270	0.7	<2	0.70	1.1	13	30	32	2.54	10	<1	0.05	10	0.52	1075	6	0.03	50	1180	7	0.09	<2	3	84	<20	0.05	<10	<10	70	<10	257
MANB11-S86	710987	5531784	<0.005	0.4	1.8	6	<10	140	<0.5	<2	0.16	<0.5	6	17	15	1.68	10	<1	0.05	10	0.22	120	1	0.02	11	810	5	0.02	<2	3	22	<20	0.10	<10	<10	46	<10	79
MANB11-S87	711036	5531789	<0.005	0.5	1.26	7	<10	150	<0.5	<2	0.26	<0.5	7	14	16	1.29	10	<1	0.04	10	0.19	147	<1	0.03	16	410	5	0.02	<2	1	32	<20	0.06	<10	<10	33	<10	66
MANB11-S88	711086	5531791	0.006	0.6	1.42	4	<10	110	<0.5	<2	0.20	<0.5	6	16	12	1.56	10	1	0.04	<10	0.25	119	<1	0.03	22	390	7	0.03	<2	2	26	<20	0.10	<10	<10	41	<10	105
MANB11-S89	711137	5531796	<0.005	0.5	2.1	9	<10	190	<0.5	<2	0.13	<0.5	9	25	27	2.60	10	1	0.08	<10	0.48	268	1	0.03	17	730	6	0.05	<2	5	25	<20	0.13	<10	<10	69	<10	110
MANB11-S90	711190	5531798	<0.005	0.6	2.14	8	<10	190	<0.5	<2	0.15	<0.5	10	25	30	2.73	10	<1	0.09	<10	0.55	325	1	0.03	21	620	8	0.05	<2	6	24	<20	0.13	<10	<10	74	<10	127
MANB11-S91	711236	5531797	<0.005	0.7	2.15	12	<10	160	<0.5	<2	0.11	<0.5	9	26	26	2.41	10	<1	0.06	<10	0.47	195	1	0.03	19	890	7	0.05	<2	5	21	<20	0.12	<10	<10	66	<10	137

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
MANB11-S92	711289	5531797	<0.005	0.3	2.13	73	<10	190	0.5	<2	0.36	<0.5	16	29	32	3.68	10	1	0.08	10	0.53	1110	2	0.03	40	960	5	0.08	<2	4	64	<20	0.10	10	<10	99	<10	316
MANB11-S93	711338	5531800	<0.005	0.2	1.91	18	<10	130	<0.5	<2	0.12	<0.5	8	26	24	2.18	10	<1	0.05	10	0.35	189	1	0.03	14	930	5	0.05	<2	4	28	<20	0.10	<10	<10	62	<10	120
MANB11-S94	711385	5531799	<0.005	0.2	1.99	50	<10	200	<0.5	<2	0.12	<0.5	6	25	23	2.62	10	1	0.09	10	0.32	157	1	0.03	15	1570	7	0.08	<2	3	47	<20	0.10	<10	<10	64	<10	169
MANB11-S95	711432	5531799	<0.005	0.3	1.77	11	<10	140	<0.5	<2	0.18	<0.5	8	17	18	1.81	10	<1	0.11	10	0.23	146	1	0.02	13	490	6	0.04	<2	2	40	<20	0.09	<10	<10	48	<10	134
MANB11-S96	711485	5531802	<0.005	0.4	1.01	8	<10	70	<0.5	<2	0.27	0.8	5	13	15	0.98	10	<1	0.03	10	0.14	79	5	0.03	14	410	5	0.04	<2	1	38	<20	0.08	<10	<10	41	<10	101
MANB11-S97	711541	5531802	0.075	0.4	1.97	72	<10	160	<0.5	<2	0.11	<0.5	5	20	20	2.42	10	<1	0.07	10	0.34	125	4	0.02	18	1020	6	0.10	<2	3	38	<20	0.09	<10	<10	68	<10	194
MANB11-S98	711593	5531802	0.008	0.5	2.2	64	<10	150	<0.5	<2	0.16	0.7	5	18	31	2.41	10	<1	0.12	10	0.35	140	8	0.02	14	930	6	0.15	<2	4	67	<20	0.07	<10	<10	85	<10	136
MANB11-S99	711647	5531806	<0.005	0.6	1.76	37	<10	170	0.5	<2	0.48	1.8	14	16	37	2.26	10	<1	0.09	10	0.29	565	12	0.03	19	790	11	0.18	2	2	97	<20	0.06	<10	<10	55	<10	172
MANB11-S100	711697	5531809	<0.005	0.5	2.82	27	<10	350	0.5	<2	0.53	0.8	11	30	57	3.12	10	1	0.20	10	1.02	427	7	0.04	23	730	9	0.27	2	7	93	<20	0.10	<10	<10	86	<10	238
MANB11-S101	711748	5531811	0.007	0.6	2.3	100	<10	230	<0.5	<2	0.36	1.1	7	28	34	2.75	10	<1	0.12	10	0.65	338	9	0.04	21	730	9	0.19	3	5	74	<20	0.09	<10	<10	81	<10	318
MANB11-S102	711797	5531813	0.008	0.8	2.03	200	<10	250	<0.5	<2	0.29	1.3	4	22	26	2.88	10	<1	0.14	10	0.48	147	11	0.04	15	890	16	0.26	2	4	64	<20	0.09	<10	<10	79	<10	282
MANB11-S103	711851	5531817	0.057	0.6	2.08	118	<10	210	<0.5	<2	0.19	0.5	4	31	30	2.79	10	1	0.19	10	0.55	211	13	0.03	9	970	12	0.26	2	4	57	<20	0.08	<10	<10	84	<10	100
MANB11-S104	711902	5531819	0.006	0.6	2.49	89	<10	280	<0.5	<2	0.54	0.7	6	22	29	2.82	10	<1	0.19	10	0.53	675	11	0.05	14	1750	14	0.12	<2	4	64	<20	0.10	<10	<10	76	<10	191
MANB11-S105	711953	5531823	0.011	0.6	2.05	67	<10	120	<0.5	<2	0.08	<0.5	5	16	22	2.11	10	<1	0.05	10	0.29	146	7	0.04	10	700	8	0.08	<2	3	21	<20	0.08	<10	<10	61	<10	85
MANB11-S106	712004	5531826	0.019	0.2	2.49	35	<10	90	<0.5	<2	0.12	0.5	7	15	26	2.47	10	1	0.05	10	0.28	240	8	0.03	16	720	10	0.06	<2	3	20	<20	0.10	<10	<10	83	<10	158
MANB11-S107	712055	5531826	0.006	0.5	2.19	68	<10	120	<0.5	<2	0.13	1	5	18	28	2.53	10	<1	0.08	10	0.37	223	15	0.03	12	650	15	0.13	<2	3	36	<20	0.07	<10	<10	140	<10	242
MANB11-S108	712111	5531827	0.007	0.6	2.47	91	<10	260	<0.5	<2	0.48	1.8	7	20	57	3.47	10	<1	0.22	10	0.51	965	17	0.04	21	1260	18	0.19	<2	6	107	<20	0.09	<10	<10	162	<10	387
MANB11-S109	712163	5531825	0.008	0.5	1.95	248	<10	210	<0.5	<2	0.09	0.7	4	16	33	2.62	10	<1	0.14	10	0.23	99	11	0.03	14	780	15	0.20	<2	3	49	<20	0.08	<10	<10	87	<10	96
MANB11-S110	712215	5531826	<0.005	0.5	2.15	57	<10	150	<0.5	<2	0.13	0.9	5	17	27	2.14	10	<1	0.08	10	0.27	108	11	0.03	10	870	8	0.11	<2	3	39	<20	0.08	<10	<10	114	<10	159
MANB11-S111	712265	5531825	<0.005	0.4	2.98	89	<10	150	0.5	<2	0.52	7.1	7	18	43	2.81	10	<1	0.11	10	0.32	469	16	0.04	50	590	11	0.15	2	4	98	<20	0.10	<10	<10	112	<10	832
MANB11-S112	712316	5531827	<0.005	0.7	2.12	46	<10	110	0.5	<2	0.19	1.4	8	29	29	2.74	10	<1	0.07	10	0.36	222	6	0.03	21	820	9	0.06	<2	3	40	<20	0.10	<10	<10	100	<10	252
MANB11-S113	712252	5531637	<0.005	0.6	3.15	64	<10	290	0.9	<2	0.20	3.8	7	40	50	5.32	10	<1	0.36	10	0.70	376	15	0.02	40	1040	8	0.09	2	10	92	<20	0.16	<10	<10	137	<10	684
MANB11-S114	712198	5531634	<0.005	0.5	2.03	48	<10	120	<0.5	<2	0.12	1.5	5	21	24	2.39	10	<1	0.08	10	0.30	167	18	0.03	19	660	13	0.11	2	3	38	<20	0.09	<10	<10	120	<10	350
MANB11-S115	712146	5531633	<0.005	0.3	2.12	29	<10	110	<0.5	<2	0.10	1.1	4	15	24	2.48	10	<1	0.06	10	0.29	196	17	0.02	17	660	13	0.09	3	2	41	<20	0.09	<10	<10	174	<10	249
MANB11-S116	712093	5531631	<0.005	0.6	1.94	60	<10	140	<0.5	<2	0.09	1.1	4	21	27	2.23	10	1	0.08	10	0.30	119	10	0.02	11	730	15	0.10	<2	4	36	<20	0.09	<10	<10	99	<10	151
MANB11-S117	712038	5531629	<0.005	0.7	2.13	47	<10	130	<0.5	<2	0.20	0.9	6	23	25	2.33	10	1	0.07	10	0.32	200	6	0.02	13	620	9	0.08	<2	3	32	<20	0.11	<10	<10	84	<10	149
MANB11-S118	711984	5531626	0.010	0.8	2.2	79	<10	160	<0.5	<2	0.15	1.6	7	21	29	2.47	10	1	0.09	10	0.38	280	10	0.02	19	810	12	0.10	<2	4	36	<20	0.10	<10	<10	91	<10	346
MANB11-S119	711931	5531624	<0.005	0.5	1.94	38	<10	120	<0.5	<2	0.11	1.5	7	19	23	2.22	10	1	0.05	10	0.29	336	6	0.02	18	680	10	0.05	<2	3	26	<20	0.09	<10	<10	67	<10	245
MANB11-S120	711878	5531621	<0.005	0.5	2.69	52	<10	140	<0.5	<2	0.28	2.2	9	23	34	2.83	10	1	0.08	10	0.46	640	10	0.03	35	780	9	0.06	3	4	38	<20	0.12	<10	<10	125	<10	749
MANB11-S121	711824	5531618	<0.005	0.3	3.1	30	<10	240	0.5	<2	0.20	<0.5	9	23	28	3.16	10	<1	0.05	10	0.59	544	5	0.03	23	690	7	0.04	<2	5	32	<20	0.14	<10	<10	77	<10	135
MANB11-S122	711775	5531618	0.005	0.7	2.36	31	<10	260	<0.5	<2	1.15	0.7	5	20	29	2.11	10	1	0.08	10	0.38	801	7	0.03	16	630	14	0.09	<2	3	49	<20	0.09	<10	<10	58	<10	119
MANB11-S123	711725	5531617	<0.005	0.5	2.52	56	<10	160	0.5	<2	0.16	0.5	7	22	31	2.69	10	1	0.08	10	0.39	356	8	0.02	16	700	10	0.09	<2	4	33	<20	0.09	<10	<10	72	<10	109
MANB11-S124	711679	5531615	0.011	0.4	2.55	41	<10	130	0.5	<2	0.10	0.5	7	36	24	3.17	10	1	0.07	10	0.46	328	15	0.02	22	760	10	0.11	10	4	35	<20	0.10	<10	<10	100	<10	131
MANB11-S125	711634	5531611	<0.005	0.4	1.9	27	<10	120	<0.5	<2	0.25	0.5	6	20	19	2.16	10	<1	0.05	10	0.27	229	5	0.02	13	590	7	0.04	<2	2	28	<20	0.09	<10	<10	61	<10	90
MANB11-S126	711584	5531608	<0.005	0.2	1.73	16	<10	100	<0.5	<2	0.25	0.5	7	20	14	2.09	10	<1	0.04	10	0.28	193	4	0.02	15	340	7	0.03	<2	2	22	<20	0.10	<10	<10	62	<10	122
MANB11-S127	711535	5531605	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
MANB11-S128	711485	5531602	<0.005	0.2	2.3	26	<10	140	<0.5	<2	0.49	0.8	7	22	19	2.38	10	1	0.05	10	0.40	323	5	0.03	18	360	8	0.04	<2	4	36	<20	0.12	<10	<10	69	<10	95
MANB11-S129	711435	5531596	0.007	0.4	1.96	71	<10	170	<0.5	<2	0.23	0.9	4	24	22	2.35	10	1	0.07	10	0.39	147	6	0.02	16	660	11	0.10	<2	4	36	<20	0.10	<10	<10	70	<10	91
MANB11-S130	711382	5531596	0.009	0.6	2.13	128	<10	190	<0.5	<2	0.13	0.8	5	33	30	2.64	10	1	0.12	10	0.49	147	12	0.02	24	610	13	0.16	<2	5	47	<20	0.08	<10	<10	105	<10	133
MANB11-S131	711329	5531596	0.007	1.1	2.08	42	<10	70	<0.5	<2	1.74	6.5	4	18	23	1.55	10	1	0.04	10	0.27	522	6	0.03	22	760	9	0.10	<2	2	77	<20	0.06	<10	10	48	<10	217
MANB11-S132	711279	5531595	0.009	1.0	2.12	63	<10	150	<0.5	<2	0.13	0.8	5	24	22	2.18	10	<1	0.05	10	0.37	136	4	0.02	17	1080	9	0.06	2	3	30	<20	0.08	<10	<10	63	<10	112

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
MANB11-S133	711227	5531594	<0.005	0.2	0.1	8	<10	30	<0.5	<2	2.48	<0.5	2	3	12	0.18	<10	1	0.07	<10	0.04	508	23	0.02	3	980	4	0.59	<2	<1	95	<20	<0.01	<10	<10	4	<10	10
MANB11-S134	711176	5531594	<0.005	<0.2	0.08	9	<10	20	<0.5	<2	2.66	<0.5	1	3	13	0.32	<10	1	0.10	<10	0.05	485	13	0.02	4	1260	4	0.56	<2	<1	98	<20	<0.01	<10	<10	4	<10	17
MANB11-S135	711122	5531591	NSS	0.5	0.56	14	<10	80	<0.5	<2	3.57	0.6	2	7	18	0.63	<10	1	0.07	<10	0.11	549	6	0.03	4	1470	13	0.35	3	<1	174	<20	0.02	<10	<10	11	<10	52
MANB11-S136	711076	5531588	<0.005	0.4	2.29	22	<10	240	<0.5	<2	0.42	<0.5	8	23	22	2.26	10	1	0.08	10	0.36	761	3	0.03	17	550	8	0.07	2	3	58	<20	0.09	<10	<10	57	<10	109
MANB11-S137	711026	5531586	<0.005	0.7	1.56	13	<10	140	<0.5	<2	0.12	<0.5	5	20	17	2.12	10	1	0.05	<10	0.30	177	3	0.02	10	1170	10	0.05	<2	3	29	<20	0.08	<10	<10	57	<10	95
MANB11-S138	710976	5531586	<0.005	0.4	2.01	20	<10	160	<0.5	<2	0.15	<0.5	6	19	28	2.45	10	1	0.09	10	0.34	295	9	0.02	14	980	11	0.08	<2	4	59	<20	0.08	<10	<10	63	<10	87
MANB11-S139	710927	5531585	0.007	2.7	2.59	16	<10	210	0.5	<2	0.20	0.9	11	42	37	2.85	10	1	0.06	10	0.70	623	4	0.02	49	1060	13	0.03	4	6	63	<20	0.09	<10	<10	75	<10	258
MANB11-S140	710900	5531480	<0.005	0.7	2.18	13	<10	120	<0.5	<2	0.20	1.3	7	38	24	2.24	10	1	0.05	<10	0.37	382	7	0.02	25	780	7	0.03	2	4	31	<20	0.08	<10	<10	108	<10	148
MANB11-S141	710954	5531484	0.007	0.8	1.92	14	<10	200	<0.5	<2	0.18	<0.5	8	18	23	2.39	10	<1	0.06	<10	0.33	590	2	0.02	15	1320	8	0.03	2	3	37	<20	0.09	<10	<10	57	<10	109
MANB11-S142	711005	5531487	<0.005	0.7	3.1	10	<10	340	<0.5	<2	0.18	<0.5	12	24	30	3.05	10	1	0.10	<10	0.90	339	3	0.03	24	730	6	0.03	<2	8	35	<20	0.14	<10	<10	90	<10	119
MANB11-S143	711056	5531490	0.006	0.6	1.94	49	<10	210	<0.5	<2	0.10	<0.5	4	19	19	2.15	10	1	0.07	10	0.33	128	4	0.02	10	1110	9	0.08	<2	3	32	<20	0.08	<10	<10	59	<10	73
MANB11-S144	711105	5531490	0.005	0.5	1.66	84	<10	290	<0.5	<2	0.37	<0.5	5	22	24	2.20	10	1	0.11	10	0.41	838	7	0.02	10	1130	10	0.14	2	3	58	<20	0.07	<10	<10	65	<10	91
MANB11-S145	711155	5531494	0.006	1.1	1.95	86	<10	230	<0.5	<2	0.14	<0.5	4	29	23	2.49	10	1	0.11	10	0.48	191	6	0.02	9	1040	23	0.18	<2	4	51	<20	0.07	<10	<10	70	<10	68
MANB11-S146	711208	5531498	0.009	0.7	1.55	56	<10	170	<0.5	<2	0.42	<0.5	3	27	26	2.23	10	1	0.11	10	0.40	110	7	0.03	10	1190	10	0.23	<2	2	76	<20	0.05	<10	<10	57	<10	57
MANB11-S147	711260	5531500	0.012	0.3	2.24	118	<10	180	<0.5	<2	0.11	<0.5	4	28	25	2.54	10	1	0.10	10	0.48	151	8	0.02	12	860	10	0.13	<2	4	40	<20	0.09	<10	<10	83	<10	74
MANB11-S148	711314	5531502	0.006	0.5	2.14	88	<10	130	<0.5	<2	0.12	<0.5	7	29	35	2.71	10	<1	0.06	10	0.45	236	8	0.02	23	690	11	0.08	2	4	31	<20	0.09	<10	<10	80	<10	98
MANB11-S149	711367	5531504	<0.005	0.3	1.84	40	<10	130	<0.5	<2	0.14	0.5	6	21	25	2.40	10	<1	0.06	<10	0.36	200	8	0.02	16	440	8	0.07	<2	3	31	<20	0.09	<10	<10	75	<10	83
MANB11-S150	711417	5531505	0.013	0.3	2.08	25	<10	100	<0.5	<2	0.12	0.7	8	23	25	2.45	10	1	0.04	<10	0.35	208	6	0.02	25	510	7	0.03	<2	3	20	<20	0.10	<10	<10	73	<10	136
MANB11-S151	711474	5531509	<0.005	0.2	3.27	19	<10	50	0.6	<2	0.17	0.8	11	15	26	2.96	10	1	0.04	10	0.42	413	10	0.03	34	810	7	0.05	<2	3	25	<20	0.11	<10	<10	75	<10	174
MANB11-S152	711526	5531513	0.005	0.6	2.49	67	<10	100	0.5	<2	0.37	1.9	9	29	37	2.66	10	<1	0.06	10	0.41	1040	9	0.02	35	770	13	0.05	<2	4	23	<20	0.08	<10	<10	85	<10	223
MANB11-S153	711580	5531515	<0.005	0.2	2.4	80	<10	120	0.5	<2	0.15	0.6	7	21	20	2.43	10	<1	0.05	10	0.30	279	3	0.02	15	730	9	0.05	<2	3	20	<20	0.11	<10	<10	68	<10	113
MANB11-S154	711633	5531517	<0.005	0.3	2.41	20	<10	80	<0.5	<2	0.16	1.2	7	24	25	2.57	10	1	0.04	<10	0.32	412	7	0.02	21	640	9	0.05	<2	3	15	<20	0.10	<10	<10	82	<10	189
MANB11-S155	711686	5531518	0.015	0.3	2.36	63	<10	90	<0.5	<2	0.18	<0.5	7	15	24	2.57	10	1	0.05	<10	0.29	547	7	0.01	15	840	8	0.06	2	3	20	<20	0.09	<10	<10	58	<10	106
MANB11-S156	711738	5531519	<0.005	0.2	2.46	34	<10	110	<0.5	<2	0.10	<0.5	6	21	23	2.55	10	<1	0.04	10	0.35	220	3	0.01	13	630	7	0.04	<2	4	17	<20	0.12	<10	<10	72	<10	75
MANB11-S157	711789	5531520	<0.005	0.5	2.43	20	<10	100	<0.5	<2	0.14	1.7	5	19	21	2.26	10	1	0.04	10	0.30	163	7	0.02	17	480	9	0.04	<2	3	23	<20	0.11	<10	<10	79	<10	316
MANB11-S158	711843	5531522	<0.005	0.5	2.75	36	<10	130	<0.5	<2	0.75	7.3	7	20	23	2.72	10	1	0.06	10	0.43	656	12	0.03	31	550	12	0.07	3	4	73	<20	0.12	<10	<10	77	<10	850
MANB11-S159	711900	5531524	<0.005	0.5	2.53	29	<10	130	<0.5	<2	0.13	1	10	22	28	2.71	10	1	0.06	10	0.42	374	3	0.01	27	680	8	0.04	<2	4	22	<20	0.12	<10	<10	78	<10	282
MANB11-S160	711972	5531528	<0.005	0.5	2.43	42	<10	140	<0.5	<2	0.11	1.6	7	21	25	2.46	10	1	0.06	10	0.32	307	3	0.01	19	910	8	0.05	<2	3	25	<20	0.10	<10	<10	69	<10	221
MANB11-S161	712028	5531532	<0.005	0.5	2.3	47	<10	110	0.5	<2	0.15	2.7	8	25	32	2.88	10	1	0.06	10	0.37	383	8	0.01	26	920	12	0.05	<2	4	25	<20	0.10	<10	<10	106	<10	479
MANB11-S162	712089	5531536	0.005	0.8	2.16	47	<10	150	<0.5	<2	0.10	1.9	5	22	31	2.46	10	<1	0.06	10	0.36	166	7	0.01	20	600	12	0.07	<2	4	34	<20	0.10	<10	<10	105	<10	306
MANB11-S163	712142	5531538	<0.005	0.6	1.97	62	<10	150	<0.5	<2	0.13	2	5	19	24	2.63	10	<1	0.07	10	0.31	183	7	0.02	18	940	9	0.07	2	4	32	<20	0.09	<10	<10	88	<10	301
NSNB11S001	710001	5529593	<0.005	<0.2	1.26	3	<10	70	<0.5	<2	0.12	<0.5	3	20	13	2.07	<10	<1	0.03	<10	0.13	181	<1	0.01	6	690	4	0.01	<2	1	13	<20	0.07	<10	<10	63	<10	20
NSNB11S002	710057	5529582	<0.005	0.2	2.33	3	<10	80	<0.5	<2	0.10	<0.5	4	19	11	2.23	10	1	0.03	<10	0.15	183	<1	0.02	7	1300	4	0.01	<2	2	14	<20	0.10	<10	<10	62	<10	29
NSNB11S003	710126	5529584	<0.005	0.2	1.85	5	<10	60	<0.5	<2	0.09	<0.5	4	18	11	2.00	10	1	0.03	<10	0.14	231	<1	0.01	9	830	4	0.01	<2	2	12	<20	0.09	<10	<10	57	<10	51
NSNB11S004	710194	5529582	<0.005	0.2	1.56	3	<10	60	<0.5	<2	0.10	<0.5	4	21	11	2.35	<10	<1	0.03	<10	0.15	331	<1	0.01	7	940	4	0.01	<2	2	12	<20	0.07	<10	<10	71	<10	54
NSNB11S005	710227	5529593	<0.005	<0.2	1.59	5	<10	50	<0.5	<2	0.08	<0.5	3	16	10	1.89	<10	<1	0.02	<10	0.12	270	1	0.01	6	930	4	0.01	<2	1	10	<20	0.07	<10	<10	57	<10	52
NSNB11S006	710271	5529591	<0.005	0.2	1.37	23	<10	130	<0.5	<2	0.59	1.9	8	21	21	2.43	<10	<1	0.04	10	0.29	950	3	0.02	13	960	6	0.08	<2	2	45	<20	0.06	<10	<10	61	<10	130
NSNB11S007	710342	5529604	0.005	0.3	1.38	4	<10	60	<0.5	<2	0.12	<0.5	3	13	9	1.47	<10	<1	0.02	<10	0.14	108	<1	0.02	5	1040	3	0.01	<2	1	14	<20	0.08	<10	<10	40	<10	48
NSNB11S008	710387	5529602	<0.005	0.2	1.6	3	<10	60	<0.5	<2	0.08	<0.5	3	15	10	1.55	<10	<1	0.02	<10	0.11	172	<1	0.01	5	940	4	0.02	<2	1	10	<20	0.08	<10	<10	44	<10	35
NSNB11S009	710442	5529612	<0.005	0.2	1.52	4	<10	80	<0.5	<2	0.13	<0.5	4	16	13	1.85	<10	<1	0.04	<10	0.14	378	<1	0.01	8	1010	6	0.01	<2	2	14	<20	0.08	<10	<10	51	<10	70
NSNB11S010	710496	5529610	<0.005	<0.2	1.51	4	<10	70	<0.5	<2	0.13	<0.5	5	21	12	2.32	<10	1	0.03	<10	0.16	243	<1	0.01	8	850	3	0.01	<2	2	13	<20	0.08	<10	<10	68	<10	53

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
NSNB11S011	710551	5529614	<0.005	0.2	1.91	3	<10	60	<0.5	<2	0.08	<0.5	5	23	14	2.27	10	<1	0.03	<10	0.14	233	<1	0.01	9	1080	4	0.01	<2	2	11	<20	0.09	<10	<10	64	<10	58
NSNB11S012	710609	5529624	<0.005	0.4	2.17	8	<10	150	<0.5	<2	0.28	<0.5	9	22	34	2.68	10	<1	0.08	10	0.34	813	1	0.02	21	620	8	0.03	<2	3	31	<20	0.10	<10	<10	72	<10	129
NSNB11S013	710663	5529622	<0.005	0.3	2.19	19	<10	110	<0.5	<2	0.16	0.5	4	13	27	3.00	10	<1	0.07	<10	0.28	464	14	0.02	14	680	8	0.07	<2	4	43	<20	0.08	<10	<10	83	<10	91
NSNB11S014	710705	5529617	<0.005	0.5	2.05	9	<10	90	<0.5	<2	0.18	1.3	7	26	23	2.56	10	<1	0.06	<10	0.38	399	4	0.02	17	540	5	0.03	<2	3	25	<20	0.11	<10	<10	82	<10	133
NSNB11S016	710807	5529630	<0.005	0.7	2.9	16	<10	120	0.7	<2	0.18	1.6	11	28	37	3.18	10	1	0.07	10	0.42	738	14	0.03	33	790	7	0.09	<2	4	39	<20	0.08	<10	<10	91	<10	193
NSNB11S017	710808	5529631	0.005	0.5	1.75	19	<10	80	<0.5	<2	0.10	0.5	6	23	18	2.60	10	1	0.04	<10	0.29	216	6	0.02	17	810	7	0.03	<2	3	18	<20	0.08	<10	<10	79	<10	145
NSNB11S018	710865	5529636	<0.005	0.4	1.69	7	<10	100	<0.5	<2	0.15	0.5	6	20	19	2.17	10	<1	0.06	<10	0.31	365	3	0.02	11	610	6	0.04	<2	2	20	<20	0.09	<10	<10	66	<10	77
NSNB11S019	710916	5529638	0.005	0.5	1.99	6	<10	100	<0.5	<2	0.13	<0.5	6	18	20	2.27	10	<1	0.05	<10	0.27	196	1	0.02	12	990	4	0.02	<2	3	15	<20	0.10	<10	<10	63	<10	69
NSNB11S020	710970	5529644	0.005	0.4	2.01	4	<10	130	<0.5	<2	0.22	<0.5	6	19	17	2.08	10	<1	0.06	10	0.30	349	<1	0.02	12	750	5	0.02	<2	3	30	<20	0.10	<10	<10	59	<10	60
NSNB11S021	711026	5529642	0.258	0.3	1.64	5	<10	60	<0.5	<2	0.11	<0.5	4	15	11	2.07	10	<1	0.03	<10	0.22	135	1	0.02	8	560	6	0.02	<2	2	11	<20	0.11	<10	<10	59	<10	75
NSNB11S022	711069	5529638	<0.005	0.3	2.12	14	<10	60	<0.5	<2	0.10	<0.5	4	15	16	2.13	10	<1	0.03	<10	0.25	132	<1	0.02	8	870	5	0.02	<2	3	11	<20	0.12	<10	<10	63	<10	81
NSNB11S023	711178	5529632	<0.005	0.2	1.67	6	<10	60	<0.5	<2	0.42	<0.5	5	18	14	1.93	10	<1	0.04	<10	0.38	161	<1	0.03	11	290	5	0.03	<2	3	32	<20	0.11	<10	<10	61	<10	107
NSNB11S024	711231	5529639	<0.005	0.3	1.58	3	<10	90	<0.5	<2	0.22	<0.5	5	20	15	2.17	<10	1	0.06	<10	0.23	184	<1	0.02	11	810	4	0.02	<2	2	18	<20	0.10	<10	<10	62	<10	56
NSNB11S025	711274	5529643	0.008	0.4	1.71	22	<10	60	<0.5	<2	0.24	<0.5	5	21	15	2.05	10	1	0.04	<10	0.36	155	1	0.03	12	820	3	0.02	<2	3	28	<20	0.11	<10	<10	62	<10	102
NSNB11S026	711331	5529648	<0.005	0.2	1.7	5	<10	120	<0.5	<2	0.31	<0.5	5	18	10	1.68	10	<1	0.08	10	0.29	332	<1	0.02	10	290	5	0.01	<2	2	31	<20	0.10	<10	<10	50	<10	60
NSNB11S027	711392	5529651	0.005	0.4	1.97	12	<10	170	<0.5	<2	0.51	0.6	6	26	19	1.80	10	<1	0.06	10	0.25	711	2	0.02	13	590	5	0.03	<2	2	44	<20	0.07	<10	<10	65	<10	55
NSNB11S028	711448	5529652	0.006	0.3	1.16	5	<10	90	<0.5	<2	0.14	<0.5	4	20	15	1.76	<10	<1	0.03	<10	0.16	105	1	0.02	12	660	5	0.01	<2	2	15	<20	0.07	<10	<10	53	<10	33
NSNB11S029	711510	5529656	<0.005	<0.2	1.46	5	<10	180	<0.5	<2	0.30	<0.5	5	27	19	2.01	<10	<1	0.11	10	0.29	258	<1	0.02	12	740	4	0.01	<2	3	29	<20	0.10	<10	<10	62	<10	34
NSNB11S030	blank		<0.005	<0.2	0.38	<2	<10	40	<0.5	<2	0.35	<0.5	3	8	6	1.56	<10	<1	0.12	20	0.19	177	<1	0.01	4	1110	7	0.01	<2	1	22	<20	0.05	<10	<10	35	<10	28
NSNB11S031	711559	5529657	<0.005	<0.2	0.95	6	<10	120	<0.5	<2	0.27	<0.5	4	27	15	1.98	<10	<1	0.07	10	0.22	223	<1	0.02	10	680	3	0.01	<2	2	24	<20	0.08	<10	<10	66	<10	31
NSNB11S032	711617	5529660	0.007	<0.2	1.15	6	<10	70	<0.5	<2	0.16	<0.5	3	19	9	1.64	10	<1	0.03	<10	0.12	105	<1	0.02	5	940	4	0.02	<2	1	16	<20	0.07	<10	<10	49	<10	29
NSNB11S033	711653	5529663	<0.005	<0.2	1.03	3	<10	80	<0.5	<2	0.17	<0.5	3	19	9	1.79	<10	<1	0.04	<10	0.14	124	<1	0.02	7	790	3	0.01	<2	1	17	<20	0.07	<10	<10	55	<10	31
NSNB11S034	711706	5529671	0.005	0.2	1.79	5	<10	80	<0.5	<2	0.11	<0.5	4	18	14	1.94	<10	<1	0.03	<10	0.18	227	1	0.02	8	860	5	0.02	<2	2	14	<20	0.09	<10	<10	55	<10	46
NSNB11S035	711715	5529268	0.005	0.8	2.77	12	<10	180	<0.5	<2	0.71	1.3	11	58	37	2.96	10	<1	0.07	10	0.68	448	2	0.10	50	480	8	0.03	<2	5	94	<20	0.15	<10	<10	96	<10	174
NSNB11S036	711612	5529272	0.056	0.5	2.58	80	<10	310	<0.5	<2	0.39	0.8	13	59	49	3.70	10	<1	0.28	10	0.85	572	4	0.05	40	600	10	0.04	<2	8	50	<20	0.13	10	<10	118	<10	148
NSNB11S037	711612	5529272	0.007	<0.2	2.14	26	<10	100	<0.5	<2	0.15	0.8	8	29	24	3.15	10	<1	0.06	10	0.34	645	2	0.02	14	920	9	0.03	2	3	19	<20	0.11	<10	<10	96	<10	107
NSNB11S038	711575	5529275	0.005	<0.2	1.67	6	<10	40	<0.5	<2	0.08	<0.5	2	16	10	2.02	10	<1	0.03	<10	0.12	73	1	0.02	5	880	7	0.02	<2	1	10	<20	0.10	<10	<10	60	<10	42
NSNB11S039	711523	5529262	0.005	<0.2	1.48	10	<10	70	<0.5	<2	0.11	<0.5	4	20	14	2.12	<10	<1	0.04	<10	0.18	169	1	0.02	9	1040	9	0.02	<2	2	15	<20	0.07	<10	<10	65	<10	53
NSNB11S040	711470	5529259	0.006	<0.2	0.74	10	<10	60	<0.5	<2	0.39	0.6	4	22	12	1.93	<10	<1	0.04	10	0.17	229	2	0.02	9	610	5	0.03	<2	2	42	<20	0.04	<10	<10	62	<10	53
NSNB11S041	711424	5529253	0.009	0.6	2.5	55	<10	100	0.7	<2	0.23	6.4	10	58	56	3.53	10	<1	0.05	10	0.57	447	14	0.03	68	880	10	0.03	8	4	75	<20	0.08	<10	<10	223	<10	869
NSNB11S042	711375	5529258	0.006	0.4	2.19	14	<10	70	<0.5	<2	0.14	0.9	9	35	31	3.13	10	<1	0.04	<10	0.37	378	4	0.03	27	550	5	0.02	<2	3	27	<20	0.12	<10	<10	94	<10	156
NSNB11S043	711333	5529249	<0.005	0.5	1.47	6	<10	80	<0.5	<2	0.12	0.5	6	23	19	2.30	10	<1	0.04	<10	0.25	225	1	0.02	17	720	5	0.02	<2	2	14	<20	0.09	<10	<10	65	<10	74
NSNB11S044	711277	5529248	0.005	0.5	1.45	6	<10	60	<0.5	<2	0.16	<0.5	5	20	15	1.98	10	<1	0.05	<10	0.27	299	1	0.02	13	720	6	0.02	2	2	14	<20	0.11	<10	<10	57	<10	66
NSNB11S046	711233	5529241	0.005	0.2	1.09	2	<10	50	<0.5	<2	0.14	<0.5	3	15	8	1.61	<10	<1	0.03	<10	0.15	119	1	0.02	6	590	5	0.02	<2	1	15	<20	0.07	<10	<10	48	<10	34
NSNB11S047	711182	5529248	<0.005	0.5	1.38	3	<10	50	<0.5	<2	0.09	<0.5	3	18	11	1.84	10	<1	0.03	<10	0.13	115	1	0.02	6	780	4	0.02	<2	2	10	<20	0.08	<10	<10	57	<10	32
NSNB11S048	711129	5529246	0.008	0.3	1.46	12	<10	80	<0.5	<2	0.12	<0.5	4	18	16	2.14	10	<1	0.03	<10	0.21	187	3	0.02	9	750	6	0.03	<2	2	14	<20	0.09	<10	<10	68	<10	63
NSNB11S049	711083	5529251	0.005	0.3	1.62	12	<10	80	<0.5	<2	0.10	<0.5	5	18	17	2.23	10	<1	0.04	<10	0.27	140	3	0.02	12	630	6	0.02	<2	2	15	<20	0.10	<10	<10	68	<10	74
NSNB11S050	710984	5529239	<0.005	0.2	1.87	6	<10	100	<0.5	<2	0.15	<0.5	5	26	13	1.98	10	<1	0.06	10	0.23	145	1	0.02	11	1020	5	0.02	<2	2	17	<20	0.10	<10	<10	57	<10	57
NSNB11S051	710984	5529239	0.012	<0.2	1.62	5	<10	80	<0.5	<2	0.15	<0.5	5	25	18	2.36	10	<1	0.06	10	0.30	148	1	0.02	12	820	4	0.02	<2	2	19	<20	0.09	<10	<10	70	<10	53
NSNB11S052	710936	5529239	0.006	<0.2	1.32	8	<10	70	<0.5	<2	0.12	<0.5	4	19	13	2.40	10	<1	0.04	<10	0.26	153	3	0.02	8	440	5	0.03	<2	2	13	<20	0.11	<10	<10	80	<10	83
NSNB11S053	710836	5529229	0.005	0.3	1.75	5	<10	90	<0.5	<2	0.13	<0.5	5	21	15	2.38	10	<1	0.04	<10	0.20	535	1	0.02	10	1210	4	0.02	<2	2	15	<20	0.09	<10	<10	71	<10	65

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
NSNB11S054	710836	5529229	0.218	0.2	1.92	4	<10	90	<0.5	<2	0.12	<0.5	7	17	23	2.33	10	<1	0.04	<10	0.24	1000	2	0.02	16	670	10	0.03	<2	3	15	<20	0.11	<10	<10	64	<10	91
NSNB11S055	710786	5529225	<0.005	<0.2	2.28	5	<10	70	<0.5	2	0.09	<0.5	4	10	11	2.27	10	<1	0.04	<10	0.18	438	1	0.02	5	860	8	0.03	<2	2	12	<20	0.12	<10	<10	52	<10	44
NSNB11S056	710638	5529221	0.006	<0.2	2	15	<10	150	<0.5	<2	0.18	0.5	10	29	64	3.21	10	<1	0.12	10	0.50	495	4	0.03	18	760	10	0.04	<2	5	22	<20	0.12	<10	<10	94	<10	127
NSNB11S057	710638	5529221	0.006	0.2	1.96	4	<10	80	<0.5	<2	0.09	<0.5	4	24	14	2.53	10	<1	0.03	10	0.19	184	1	0.02	9	860	4	0.02	<2	2	13	<20	0.09	<10	<10	77	<10	53
NSNB11S058	710638	5529221	0.005	<0.2	2.14	3	<10	50	<0.5	<2	0.09	<0.5	4	18	13	2.13	10	<1	0.03	<10	0.14	214	1	0.02	7	1010	5	0.02	<2	2	10	<20	0.09	<10	<10	60	<10	48
NSNB11S059	710596	5529230	<0.005	0.3	2.02	2	<10	80	<0.5	<2	0.12	<0.5	5	18	14	2.26	10	<1	0.04	<10	0.18	213	1	0.02	9	940	5	0.02	<2	2	14	<20	0.10	<10	<10	63	<10	58
NSNB11S060	blank		0.005	<0.2	0.4	<2	<10	40	<0.5	<2	0.37	<0.5	3	9	6	1.59	<10	<1	0.12	20	0.19	180	<1	0.02	5	1180	7	0.01	<2	1	24	<20	0.06	<10	<10	36	<10	29
NSNB11S062	710487	5529222	0.005	0.2	1.12	4	<10	70	<0.5	<2	0.12	<0.5	4	30	11	3.07	<10	<1	0.03	<10	0.15	136	<1	0.01	7	590	3	0.01	<2	1	13	<20	0.07	<10	<10	99	<10	26
NSNB11S063	710451	5529220	0.006	0.2	1.38	9	<10	100	<0.5	<2	0.39	1.3	4	24	14	1.97	10	<1	0.04	10	0.28	244	2	0.03	9	490	4	0.03	<2	2	43	<20	0.08	<10	<10	61	<10	70
NSNB11S064	710378	5529217	<0.005	<0.2	1.23	3	<10	70	<0.5	<2	0.10	<0.5	4	20	12	2.11	<10	<1	0.03	<10	0.16	130	<1	0.02	6	670	2	0.01	<2	1	14	<20	0.07	<10	<10	64	<10	27
NSNB11S065	710327	5529224	0.005	<0.2	0.96	3	<10	50	<0.5	<2	0.09	<0.5	2	15	9	1.59	<10	<1	0.03	<10	0.10	93	<1	0.02	4	830	6	0.02	<2	1	12	<20	0.06	<10	<10	47	<10	23
NSNB11S066	710222	5529197	0.009	<0.2	1.77	3	<10	60	<0.5	<2	0.10	<0.5	3	16	12	1.77	10	<1	0.03	<10	0.13	175	<1	0.02	8	920	5	0.01	<2	2	12	<20	0.09	<10	<10	48	<10	34
NSNB11S067	710221	5529197	0.007	<0.2	1.57	4	<10	60	<0.5	<2	0.12	<0.5	4	16	9	1.97	10	<1	0.03	<10	0.17	134	<1	0.03	6	840	5	0.01	<2	2	11	<20	0.09	<10	<10	53	<10	45
NSNB11S068	710174	5529212	0.005	0.2	1.32	4	<10	70	<0.5	<2	0.35	<0.5	5	17	12	2.08	10	<1	0.03	<10	0.25	384	<1	0.03	8	430	3	0.01	<2	2	22	<20	0.10	<10	<10	59	<10	52
NSNB11S069	710123	5529210	0.007	0.3	1.47	7	<10	100	<0.5	<2	0.12	<0.5	6	18	20	2.33	10	<1	0.04	<10	0.29	215	1	0.03	10	580	3	0.02	<2	2	19	<20	0.08	<10	<10	68	<10	61
NSNB11S070	710082	5529209	0.006	<0.2	1.49	6	<10	100	<0.5	<2	0.11	<0.5	5	17	19	2.19	10	<1	0.04	<10	0.25	163	1	0.03	9	430	3	0.02	<2	3	19	<20	0.08	<10	<10	62	<10	51
RGNB11S001	712196	5531714	0.008	0.5	2.28	51	<10	140	<0.5	<2	0.07	1	3	28	33	2.38	10	<1	0.09	10	0.26	122	11	0.03	13	680	8	0.12	<2	3	36	<20	0.09	<10	<10	133	<10	162
RGNB11S002	712138	5531703	0.007	0.8	2.42	66	<10	160	<0.5	<2	0.09	1.1	3	24	31	2.59	10	<1	0.09	10	0.31	133	9	0.03	12	800	10	0.14	<2	4	44	<20	0.10	<10	<10	117	<10	156
RGNB11S003	712083	5531707	0.007	0.5	2.13	42	<10	110	<0.5	<2	0.13	1.5	5	20	30	2.55	10	<1	0.08	10	0.26	386	8	0.03	17	800	8	0.09	<2	3	33	<20	0.09	<10	<10	101	<10	251
RGNB11S004	712033	5531718	0.008	0.4	2.26	76	<10	130	<0.5	<2	0.08	1.2	4	17	23	2.28	10	<1	0.07	10	0.31	210	6	0.03	11	770	9	0.07	<2	3	23	<20	0.10	<10	<10	84	<10	182
RGNB11S005	711982	5531712	0.006	0.4	2.22	57	<10	130	<0.5	<2	0.22	1.5	6	19	21	2.22	10	<1	0.05	10	0.41	225	13	0.03	17	470	7	0.04	2	3	32	<20	0.12	<10	<10	74	<10	427
RGNB11S006	711932	5531712	0.012	0.4	3.13	121	<10	200	0.5	<2	0.10	0.8	5	26	32	3.07	10	<1	0.09	10	0.47	333	8	0.03	16	710	7	0.14	2	5	43	<20	0.12	<10	<10	124	<10	230
RGNB11S007	711881	5531708	0.013	0.2	2.47	27	<10	130	<0.5	<2	0.14	<0.5	6	19	24	2.56	10	<1	0.05	10	0.39	448	3	0.03	15	830	8	0.04	<2	3	19	<20	0.12	<10	<10	64	<10	84
RGNB11S008	711832	5531695	0.010	0.3	3.06	38	<10	250	0.5	<2	0.13	<0.5	6	25	27	3.18	10	<1	0.09	10	0.66	288	5	0.03	14	630	5	0.11	<2	6	43	<20	0.12	<10	<10	81	<10	93
RGNB11S009	711783	5531692	0.009	0.4	2.76	39	<10	210	<0.5	<2	0.33	<0.5	7	24	30	2.76	10	<1	0.09	10	0.53	244	4	0.03	18	660	8	0.08	<2	4	42	<20	0.11	<10	<10	72	<10	142
RGNB11S010	711734	5531684	0.010	0.3	2.96	82	<10	200	0.5	<2	0.20	<0.5	8	25	32	3.10	10	<1	0.09	10	0.53	379	8	0.03	27	580	8	0.12	2	5	48	<20	0.10	<10	<10	87	<10	127
RGNB11S011	711688	5531691	0.007	1.3	2.6	327	<10	210	0.5	<2	0.71	1.9	6	19	33	2.51	10	<1	0.07	10	0.32	598	3	0.04	17	500	7	0.08	7	3	57	<20	0.09	<10	<10	64	<10	134
RGNB11S012	711647	5531692	0.006	0.7	1.38	23	<10	170	<0.5	<2	0.32	0.6	3	15	14	1.74	10	<1	0.04	10	0.21	103	2	0.03	7	640	4	0.05	<2	2	33	<20	0.08	<10	<10	49	<10	92
RGNB11S013	711590	5531693	0.007	0.7	1.78	29	<10	180	<0.5	<2	0.51	1.3	6	18	18	2.00	10	<1	0.06	10	0.31	357	3	0.03	15	610	7	0.08	2	2	54	<20	0.08	<10	<10	56	<10	186
RGNB11S014	711530	5531694	0.014	1.3	1.82	27	<10	120	0.5	<2	1.60	4.5	4	14	36	1.49	10	<1	0.05	10	0.17	436	2	0.04	24	910	4	0.10	2	1	78	<20	0.05	<10	<10	34	<10	90
RGNB11S016	711472	5531691	0.015	<0.2	0.4	469	<10	130	<0.5	<2	2.93	3.5	10	5	19	8.33	<10	<1	0.04	<10	0.06	2750	26	0.03	11	1480	3	0.31	2	<1	139	<20	0.01	<10	<10	84	<10	23
RGNB11S017	711422	5531681	0.016	2.6	2.28	90	<10	210	0.6	<2	1.16	1.2	4	19	35	2.32	10	<1	0.09	10	0.27	580	6	0.04	20	1560	9	0.17	<2	2	87	<20	0.04	<10	<10	63	<10	157
RGNB11S018	711368	5531682	0.070	0.3	1.43	22	<10	160	<0.5	<2	0.21	0.5	3	22	16	1.85	10	<1	0.06	10	0.31	155	1	0.03	10	560	6	0.04	<2	3	34	<20	0.09	<10	<10	55	<10	93
RGNB11S019	711315	5531682	0.006	0.2	1.78	40	<10	130	<0.5	<2	0.09	<0.5	6	29	23	2.12	<10	<1	0.05	10	0.38	141	<1	0.02	14	650	3	0.03	<2	3	26	<20	0.11	<10	<10	69	<10	93
RGNB11S020	711262	5531686	0.005	0.3	1.85	17	<10	130	<0.5	<2	0.12	<0.5	4	27	24	2.28	10	<1	0.09	10	0.40	153	<1	0.03	14	1270	6	0.03	<2	4	30	<20	0.10	<10	<10	68	<10	81
RGNB11S021	711212	5531695	0.006	0.2	2.23	27	<10	190	<0.5	<2	0.14	<0.5	7	35	27	2.76	10	<1	0.09	10	0.59	209	<1	0.03	20	710	4	0.05	<2	6	47	<20	0.12	<10	<10	84	<10	162
RGNB11S022	711158	5531691	0.012	1.0	0.93	7	<10	100	<0.5	<2	1.92	0.9	2	9	18	0.91	<10	<1	0.03	10	0.08	78	1	0.03	7	830	4	0.10	<2	1	102	<20	0.03	<10	<10	18	<10	27
RGNB11S023	711049	5531689	0.032	<0.2	0.13	5	<10	20	<0.5	<2	0.30	<0.5	3	6	11	0.13	<10	<1	0.06	<10	0.02	8	<1	<0.01	4	210	<2	<0.01	<2	<1	27	<20	0.01	<10	<10	7	<10	14
RGNB11S024	710967	5531680	0.017	1.0	2.5	29	<10	200	<0.5	<2	0.31	1	8	46	33	3.11	10	<1	0.09	10	0.90	496	3	0.03	30	940	9	0.07	<2	5	71	<20	0.07	<10	<10	100	<10	143
RGNB11S025	710901	5531676	0.008	<0.2	0.83	6	<10	60	<0.5	<2	0.12	<0.5	4	16	10	1.05	<10	<1	0.03	<10	0.08	125	<1	<0.01	6	650	2	<0.01	<2	1	13	<20	0.08	<10	<10	48	<10	46
RGNB11S026	710848	5531665	<0.005	<0.2	1.3	4	<10	90	<0.5	<2	0.13	<0.5	3	13	7	1.50	10	<1	0.03	<10	0.14	85	<1	0.02	4	490	3	0.01	<2	1	18	<20	0.09	<10	<10	41	<10	24

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RGNB11S027	710801	5531662	<0.005	<0.2	1.55	4	<10	120	<0.5	<2	0.18	<0.5	5	22	17	2.08	<10	<1	0.06	10	0.23	180	<1	0.02	10	810	3	0.01	<2	2	18	<20	0.09	<10	<10	63	<10	36
RGNB11S028	710742	5531660	<0.005	<0.2	1.58	5	<10	80	<0.5	<2	0.16	<0.5	3	16	8	2.00	10	<1	0.03	<10	0.15	80	<1	0.03	6	690	2	0.01	<2	2	18	<20	0.10	<10	<10	51	<10	26
RGNB11S029	710684	5531645	<0.005	<0.2	1.47	5	<10	90	<0.5	<2	0.13	<0.5	3	15	8	1.70	10	<1	0.03	<10	0.11	88	<1	0.02	6	1090	2	0.01	<2	1	18	<20	0.08	<10	<10	44	<10	27
RGNB11S030	blank		<0.005	<0.2	0.37	<2	<10	40	<0.5	<2	0.34	<0.5	2	8	5	1.61	<10	<1	0.11	10	0.18	166	<1	0.02	3	1120	4	<0.01	<2	1	22	<20	0.05	<10	<10	37	<10	25
RGNB11S031	710643	5531646	<0.005	<0.2	1.44	4	<10	130	<0.5	<2	0.22	<0.5	5	18	11	1.83	10	<1	0.06	10	0.21	119	<1	0.02	9	540	3	<0.01	<2	2	25	<20	0.09	<10	<10	54	<10	38
RGNB11S032	710590	5531641	<0.005	<0.2	1.42	5	<10	110	<0.5	<2	0.13	<0.5	4	17	19	1.71	<10	<1	0.04	10	0.17	100	1	0.02	15	900	10	0.01	<2	2	19	<20	0.09	<10	<10	48	<10	50
RGNB11S033	710538	5531640	<0.005	<0.2	1.09	7	<10	90	<0.5	<2	0.14	<0.5	4	19	12	1.85	<10	<1	0.03	10	0.15	151	<1	0.02	8	840	3	0.01	<2	1	21	<20	0.06	<10	<10	55	<10	45
RGNB11S034	710482	5531635	0.028	<0.2	1.14	4	<10	90	<0.5	<2	0.14	<0.5	4	21	12	2.09	<10	<1	0.03	<10	0.15	126	<1	0.02	7	980	3	0.01	<2	2	19	<20	0.07	<10	<10	63	<10	41
RGNB11S035	710483	5532032	<0.005	0.6	1.12	24	<10	110	<0.5	<2	0.58	0.5	4	26	29	1.96	<10	<1	0.05	10	0.21	400	<1	0.02	29	820	2	0.03	<2	1	43	<20	0.05	<10	<10	57	<10	106
RGNB11S036	710528	5532046	0.005	0.4	2.04	27	<10	170	<0.5	<2	0.18	<0.5	7	21	31	2.86	10	<1	0.11	10	0.43	283	<1	0.03	12	910	7	0.05	<2	4	41	<20	0.11	<10	<10	79	<10	90
RGNB11S037	710575	5532054	0.007	0.2	2.54	27	<10	240	<0.5	<2	0.25	<0.5	9	23	44	3.41	10	<1	0.25	10	0.63	304	1	0.03	15	650	8	0.06	<2	6	61	<20	0.14	<10	<10	95	<10	101
RGNB11S038	710623	5532060	<0.005	0.4	2.72	15	<10	170	<0.5	<2	0.15	<0.5	9	22	39	2.99	10	<1	0.10	10	0.57	216	<1	0.03	17	580	6	0.02	<2	5	31	<20	0.17	<10	<10	91	<10	96
RGNB11S039	710680	5532050	0.021	0.3	2.21	14	<10	80	<0.5	<2	0.09	<0.5	5	14	18	1.96	10	<1	0.05	<10	0.23	191	<1	0.03	9	1040	5	0.01	<2	3	16	<20	0.10	<10	<10	49	<10	68
RGNB11S040	710726	5532050	0.008	0.4	2.16	32	<10	170	<0.5	<2	0.14	<0.5	5	19	28	2.51	10	<1	0.09	<10	0.39	385	<1	0.03	11	790	7	0.05	<2	4	28	<20	0.11	<10	<10	66	<10	89
RGNB11S041	710780	5532045	0.021	0.6	2.58	76	<10	230	0.5	<2	0.12	<0.5	10	25	51	3.82	10	<1	0.16	10	0.58	354	4	0.04	28	720	18	0.12	<2	7	44	<20	0.10	<10	<10	101	<10	166
RGNB11S042	710841	5532050	0.005	1.2	2.02	23	<10	110	<0.5	<2	0.09	0.5	7	19	30	2.31	10	<1	0.05	10	0.27	177	1	0.03	19	570	10	0.03	<2	3	16	<20	0.10	<10	<10	59	<10	96
RGNB11S043	710895	5532044	<0.005	0.7	2.25	17	<10	90	<0.5	<2	0.09	1.1	7	21	26	2.53	10	<1	0.04	<10	0.29	193	2	0.03	21	620	7	0.02	<2	3	15	<20	0.10	<10	<10	71	<10	177
RGNB11S044	710932	5532071	<0.005	0.5	1.7	14	<10	90	<0.5	<2	0.09	0.6	5	19	20	2.23	10	<1	0.05	<10	0.28	141	2	0.02	15	610	5	0.02	<2	3	15	<20	0.10	<10	<10	69	<10	113
RGNB11S046	710991	5532080	0.005	0.4	2.01	15	<10	180	<0.5	<2	0.28	<0.5	9	18	25	2.42	10	<1	0.06	<10	0.32	375	<1	0.02	16	1150	4	0.01	<2	3	27	<20	0.08	<10	<10	62	<10	144
RGNB11S047	711048	5532075	<0.005	0.4	2.21	11	<10	100	<0.5	<2	0.36	<0.5	9	20	31	2.38	10	<1	0.04	10	0.37	397	<1	0.04	69	240	5	0.02	<2	4	36	<20	0.11	<10	<10	61	<10	446
RGNB11S048	711095	5532080	<0.005	0.3	2.76	7	<10	160	<0.5	<2	0.21	<0.5	11	22	25	3.13	10	<1	0.06	<10	0.71	250	<1	0.05	21	380	3	0.02	<2	6	24	<20	0.15	<10	<10	86	<10	154
RGNB11S049	711144	5532085	<0.005	0.4	2.63	12	<10	140	0.5	<2	0.27	<0.5	10	24	31	2.65	10	<1	0.05	10	0.40	302	<1	0.03	30	440	5	0.02	<2	4	29	<20	0.13	<10	<10	67	<10	137
RGNB11S050	711196	5532090	<0.005	<0.2	2.6	13	<10	130	<0.5	<2	0.18	<0.5	9	20	23	2.79	10	<1	0.05	<10	0.46	480	<1	0.03	17	660	8	0.02	<2	5	18	<20	0.13	<10	<10	71	<10	101
RGNB11S051	711248	5532086	<0.005	0.7	2.73	9	<10	160	<0.5	<2	0.45	<0.5	9	21	27	2.46	10	<1	0.05	10	0.48	564	<1	0.04	26	400	4	0.03	<2	4	35	<20	0.13	<10	<10	61	<10	130
RGNB11S052	711297	5532086	<0.005	0.3	3	12	<10	120	0.5	<2	0.18	<0.5	11	18	30	2.84	10	<1	0.05	10	0.40	595	<1	0.03	26	750	6	0.02	<2	5	19	<20	0.13	<10	<10	60	<10	129
RGNB11S053	711347	5532082	0.005	0.2	2.03	15	<10	100	<0.5	<2	0.08	<0.5	5	18	22	2.31	10	<1	0.06	10	0.27	145	<1	0.03	10	710	4	0.04	<2	3	16	<20	0.11	<10	<10	64	<10	56
RGNB11S054	711406	5532077	<0.005	0.4	1.68	16	<10	130	<0.5	<2	0.09	<0.5	4	16	18	1.89	10	<1	0.05	10	0.21	109	<1	0.02	9	770	4	0.04	<2	2	24	<20	0.08	<10	<10	52	<10	49
RGNB11S055	711460	5532075	<0.005	0.4	2.75	51	<10	160	<0.5	<2	0.14	<0.5	8	31	47	3.14	10	1	0.12	10	0.59	296	1	0.04	20	890	5	0.11	<2	6	60	<20	0.14	<10	<10	82	<10	82
RGNB11S056	711511	5532091	<0.005	0.5	2.51	67	<10	120	<0.5	<2	0.08	<0.5	4	29	27	2.53	10	<1	0.05	10	0.44	186	1	0.03	11	560	6	0.05	<2	5	28	<20	0.14	<10	<10	74	<10	64
RGNB11S057	711558	5532107	<0.005	0.4	2.11	22	<10	190	<0.5	<2	0.14	<0.5	6	21	23	2.07	10	<1	0.08	10	0.29	202	<1	0.02	15	760	8	0.05	<2	3	33	<20	0.10	<10	<10	57	<10	70
RGNB11S058	711629	5532113	<0.005	1.2	1.86	155	<10	260	<0.5	<2	0.14	<0.5	5	25	41	2.65	10	<1	0.17	10	0.40	305	5	0.03	12	1220	10	0.16	<2	4	53	<20	0.11	10	<10	69	<10	91
RGNB11S059	711690	5532096	0.008	0.6	2.07	151	<10	350	<0.5	<2	0.57	<0.5	3	31	29	2.41	10	<1	0.23	10	0.54	494	4	0.03	8	870	14	0.25	<2	5	81	<20	0.09	10	<10	73	<10	97
RGNB11S060	blank		<0.005	<0.2	0.37	5	<10	40	<0.5	<2	0.34	<0.5	3	8	5	1.56	<10	<1	0.11	10	0.17	158	<1	0.02	3	1140	4	<0.01	<2	1	23	<20	0.05	<10	<10	35	<10	24
RGNB11S061	711749	5532108	0.008	1.9	1.57	173	<10	150	<0.5	<2	0.12	<0.5	6	22	28	2.02	10	<1	0.08	10	0.32	186	4	0.03	11	850	17	0.06	<2	2	39	<20	0.08	10	<10	53	<10	75
RGNB11S062	711799	5532108	<0.005	0.7	1.8	101	<10	140	<0.5	<2	0.09	<0.5	3	23	21	2.17	10	<1	0.07	10	0.31	117	1	0.03	10	620	9	0.07	<2	3	30	<20	0.09	<10	<10	59	<10	52
RGNB11S063	711857	5532097	0.005	0.4	2.16	107	<10	140	<0.5	<2	0.07	0.8	3	19	23	2.32	10	<1	0.09	10	0.28	117	5	0.03	10	530	6	0.10	<2	3	37	<20	0.09	10	<10	60	<10	74
RGNB11S064	711924	5532103	<0.005	0.2	1.68	102	<10	90	<0.5	<2	0.09	<0.5	3	17	20	2.15	10	<1	0.06	<10	0.24	116	4	0.02	10	620	7	0.05	<2	2	25	<20	0.09	10	<10	65	<10	60
RGNB11S065	711977	5532100	<0.005	<0.2	2.24	54	<10	60	<0.5	<2	0.08	<0.5	4	18	16	2.31	10	<1	0.04	<10	0.27	137	2	0.02	12	460	5	0.02	<2	2	12	<20	0.12	<10	<10	68	<10	78
RGNB11S066	712026	5532091	<0.005	0.3	1.93	86	<10	140	<0.5	<2	0.10	<0.5	4	19	24	2.27	10	<1	0.06	10	0.27	177	6	0.03	12	820	8	0.05	<2	2	37	<20	0.08	<10	<10	59	<10	76
RGNB11S123	711785	5530885	<0.005	0.2	2.66	7	<10	180	0.5	<2	0.33	<0.5	11	41	39	3.08	10	<1	0.30	10	0.66	282	2	0.02	24	630	15	0.01	<2	6	53	<20	0.16	<10	<10	89	<10	144
RGNB11S124	711949	5530882	0.005	0.4	1.96	17	<10	100	<0.5	<2	0.56	6.6	5	28	23	1.60	10	<1	0.02	10	0.28	99	7	0.03	23	390	9	0.02	<2	3	77	<20	0.06	<10	<10	133	<10	390

Sample_No	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RGNB11S125	712001	5530884	<0.005	0.6	2.13	18	<10	100	<0.5	<2	0.14	1.6	7	24	25	2.26	10	<1	0.04	10	0.26	356	5	0.02	29	670	9	<0.01	2	3	37	<20	0.10	<10	<10	93	<10	387
RGNB11S126	712051	5530888	<0.005	0.7	2.27	33	<10	90	<0.5	<2	0.11	2.5	7	22	27	2.51	10	1	0.03	<10	0.26	334	6	0.01	31	860	8	<0.01	4	2	29	<20	0.09	<10	<10	89	<10	476
RGNB11S127	712132	5530893	0.203	0.3	1.59	22	<10	130	<0.5	<2	0.17	<0.5	3	22	15	2.01	10	<1	0.04	10	0.30	104	4	0.02	10	570	8	0.03	<2	3	33	<20	0.09	<10	<10	66	<10	80
RGNB11S128	712183	5530901	<0.005	0.5	1.9	19	<10	110	<0.5	<2	0.15	0.6	3	19	18	2.13	10	<1	0.05	10	0.21	115	4	0.02	10	810	7	0.02	<2	2	26	<20	0.10	<10	<10	65	<10	96
RGNB11S129	712232	5530908	<0.005	0.3	1.75	21	<10	200	<0.5	<2	0.12	0.8	4	22	16	1.85	10	<1	0.04	10	0.26	243	3	0.02	12	780	7	0.02	<2	3	29	<20	0.08	<10	<10	67	<10	137
RGNB11S130	712190	5531317	<0.005	0.6	1.55	28	<10	120	<0.5	<2	0.26	1.1	3	17	17	1.38	10	<1	0.04	10	0.19	176	4	0.02	16	680	10	0.03	<2	1	66	<20	0.07	<10	<10	52	<10	164
RGNB11S131	712105	5531311	<0.005	0.4	2.01	14	<10	190	<0.5	<2	0.31	1.3	7	24	30	2.32	10	<1	0.06	10	0.35	207	2	0.02	17	1010	9	0.01	<2	3	47	<20	0.11	<10	<10	64	<10	193
RGNB11S132	712049	5531302	<0.005	0.3	1.91	21	<10	160	<0.5	<2	0.16	0.7	5	19	22	2.02	10	<1	0.05	10	0.27	234	3	0.02	12	860	8	0.03	<2	3	31	<20	0.10	<10	<10	63	<10	111
RGNB11S133	712000	5531298	<0.005	0.3	1.74	19	<10	150	<0.5	<2	0.16	0.9	4	18	28	1.99	10	<1	0.06	10	0.24	276	5	0.02	10	950	8	0.05	<2	2	35	<20	0.07	<10	<10	65	<10	113
RGNB11S134	711949	5531289	<0.005	0.2	1.49	12	<10	70	<0.5	<2	0.37	2.9	5	18	14	1.76	10	<1	0.04	<10	0.27	446	3	0.03	16	280	10	0.01	<2	3	35	<20	0.09	<10	<10	82	<10	270
RGNB11S135	711894	5531283	<0.005	0.6	2.11	22	<10	100	<0.5	<2	0.19	3.4	8	19	27	2.25	10	<1	0.07	10	0.27	1015	8	0.02	23	720	11	0.02	3	3	32	<20	0.10	<10	<10	118	<10	447
RGNB11S136	711837	5531270	<0.005	0.5	2.28	14	<10	120	<0.5	<2	0.16	4.2	9	24	31	2.66	10	<1	0.05	10	0.31	389	5	0.02	26	900	7	0.01	<2	4	31	<20	0.11	<10	<10	91	<10	349
RGNB11S137	711781	5531270	<0.005	0.5	2.08	12	<10	100	<0.5	<2	0.12	1.3	7	21	25	2.33	10	<1	0.04	10	0.24	382	4	0.02	21	580	6	0.02	<2	3	27	<20	0.11	<10	<10	76	<10	179
RGNB11S138	711727	5531280	<0.005	0.3	2.13	7	<10	100	<0.5	<2	0.15	1	8	18	22	2.31	10	<1	0.04	10	0.26	485	3	0.02	21	760	5	<0.01	2	3	21	<20	0.12	<10	<10	67	<10	195
RGNB11S139	711676	5531279	0.005	0.5	2.37	34	<10	110	<0.5	<2	0.15	2.7	8	21	31	2.51	10	<1	0.05	10	0.35	418	7	0.02	30	640	6	0.01	3	4	29	<20	0.12	<10	<10	117	<10	505
RGNB11S140	711624	5531273	<0.005	0.7	2.74	31	<10	120	0.5	<2	0.16	3.4	9	23	37	2.85	10	<1	0.05	10	0.40	461	11	0.03	33	670	8	0.02	4	4	29	<20	0.12	<10	<10	155	<10	575
RGNB11S141	711568	5531275	<0.005	0.8	3	17	<10	90	0.5	<2	0.15	3	11	49	61	3.58	10	<1	0.03	10	0.39	424	13	0.03	60	590	9	0.02	3	5	23	<20	0.08	<10	<10	112	<10	325
RGNB11S142	711512	5531273	<0.005	0.5	2.57	10	<10	160	<0.5	<2	0.16	<0.5	8	22	25	2.56	10	<1	0.04	10	0.38	381	4	0.02	22	670	7	0.01	<2	4	23	<20	0.12	<10	<10	71	<10	128
RGNB11S143	711460	5531270	0.006	0.4	2.64	21	<10	90	0.5	<2	0.16	1.8	9	23	46	3.28	10	<1	0.04	<10	0.36	655	19	0.03	46	610	12	0.02	<2	3	23	<20	0.10	<10	<10	87	<10	265
RGNB11S144	711406	5531268	0.014	0.3	3.14	37	<10	150	0.6	<2	0.25	1.6	9	31	56	3.84	10	<1	0.10	10	0.60	664	23	0.03	38	710	14	0.12	<2	5	68	<20	0.09	<10	<10	118	<10	329
RGNB11S145	711351	5531263	0.005	0.3	2.56	24	<10	130	<0.5	<2	0.10	<0.5	4	17	29	3.06	10	<1	0.06	10	0.36	243	17	0.03	19	680	8	0.05	<2	4	32	<20	0.11	<10	<10	91	<10	92
RGNB11S146	711299	5531263	<0.005	0.5	2.48	19	<10	100	0.5	<2	0.14	1.5	7	33	34	2.74	10	<1	0.05	10	0.41	423	12	0.03	41	790	8	0.02	<2	4	29	<20	0.10	<10	<10	109	<10	280
RGNB11S147	711244	5531269	0.011	0.6	2.45	32	<10	180	0.5	<2	0.12	<0.5	4	21	24	2.94	10	<1	0.09	10	0.40	144	18	0.03	15	710	13	0.12	<2	5	50	<20	0.10	<10	<10	100	<10	83
RGNB11S148	711203	5531270	0.008	0.6	2.47	3	<10	60	<0.5	<2	0.34	<0.5	1	23	16	1.35	10	1	0.02	10	0.68	165	9	0.03	14	190	7	0.02	<2	7	61	<20	0.09	<10	<10	133	<10	54
RGNB11S149	711209	5530866	0.005	<0.2	1.51	8	<10	130	<0.5	<2	0.22	0.8	4	20	23	1.93	<10	<1	0.10	10	0.23	462	2	0.02	9	720	12	<0.01	<2	3	27	<20	0.09	<10	<10	55	<10	67
RGNB11S150	blank		<0.005	<0.2	0.38	<2	<10	40	<0.5	<2	0.33	<0.5	3	7	6	1.34	<10	<1	0.11	20	0.17	170	<1	0.02	4	940	4	<0.01	<2	1	23	<20	0.06	<10	<10	30	<10	26
RGNB11S151	711261	5530866	<0.005	<0.2	1.5	<2	<10	70	<0.5	<2	0.11	<0.5	3	13	9	1.65	10	1	0.02	<10	0.12	210	1	0.02	5	540	8	<0.01	<2	1	16	<20	0.10	<10	<10	42	<10	39
RGNB11S152	711340	5530870	<0.005	0.4	1.16	<2	<10	100	<0.5	<2	0.20	0.5	3	11	8	1.13	10	<1	0.02	10	0.11	57	1	0.02	5	310	8	0.01	<2	1	29	<20	0.08	<10	<10	28	<10	29
RGNB11S153	711397	5530864	<0.005	0.2	2.07	2	<10	100	<0.5	<2	0.14	<0.5	5	19	15	1.96	10	<1	0.04	<10	0.24	156	1	0.03	11	860	8	<0.01	2	2	16	<20	0.12	<10	<10	50	<10	50
RGNB11S154	711451	5530869	<0.005	0.3	1.95	<2	<10	90	<0.5	<2	0.12	<0.5	4	17	14	1.88	10	<1	0.04	<10	0.21	286	1	0.02	9	940	9	<0.01	<2	2	15	<20	0.11	<10	<10	45	<10	45
RGNB11S155	711507	5530878	<0.005	0.3	1.92	6	<10	80	<0.5	<2	0.09	<0.5	5	15	14	1.73	10	<1	0.03	10	0.19	159	1	0.02	7	690	13	<0.01	<2	2	13	<20	0.10	<10	<10	45	<10	48
RGNB11S156	711567	5530880	<0.005	0.3	1.29	<2	<10	60	<0.5	<2	0.14	0.5	3	11	14	1.26	10	<1	0.04	<10	0.15	119	2	0.02	5	980	22	0.01	<2	1	15	<20	0.05	<10	<10	30	<10	48
RGNB11S157	711619	5530880	<0.005	0.4	1.77	7	<10	110	<0.5	<2	0.12	<0.5	5	18	15	1.92	<10	<1	0.06	<10	0.26	226	2	0.02	10	780	23	0.03	<2	2	17	<20	0.09	<10	<10	52	<10	65
RGNB11S158	711673	5530887	<0.005	0.4	1.85	10	<10	90	<0.5	<2	0.13	0.5	4	18	15	2.06	10	<1	0.05	<10	0.20	113	3	0.03	8	1200	19	0.04	<2	2	18	<20	0.09	10	<10	55	<10	64
RGNB11S159	711735	5530885	<0.005	0.6	2.01	10	<10	110	<0.5	<2	0.17	0.5	3	16	13	2.13	10	<1	0.04	<10	0.22	103	2	0.03	8	470	14	0.04	<2	2	20	<20	0.10	<10	<10	56	<10	72

APPENDIX III

Rock Sample Geochemistry

Sample	East	North	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
Number	83Z10	83Z10	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
JRNB11-R1	711253	5530773	<0.005	0.4	0.10	36	<10	50	<0.5	<2	0.02	0.5	1	24	31	1.03	<10	<1	0.03	<10	0.02	47	1	0.01	5	90	83	<0.01	<2	<1	4	<20	<0.01	<10	<10	5	<10	42
JRNB11-R2	711298	5530602	<0.005	0.2	0.06	4	<10	10	<0.5	<2	0.02	<0.5	1	25	7	0.55	<10	<1	0.03	<10	0.01	56	90	<0.01	2	30	142	<0.01	<2	<1	1	<20	<0.01	<10	<10	5	350	151
JRNB11-R3	711841	5531877	0.020	<0.2	0.31	839	<10	90	<0.5	<2	0.02	0.5	<1	10	29	3.99	<10	<1	0.22	20	0.01	9	25	0.03	<1	700	8	0.27	33	1	72	<20	<0.01	20	<10	65	<10	34
JRNB11-R4	698690	5537545	<0.005	0.2	0.40	6	<10	50	<0.5	<2	0.42	<0.5	3	14	42	1.01	<10	<1	0.06	<10	0.19	79	192	0.08	1	470	<2	0.04	<2	1	18	<20	0.12	<10	<10	26	<10	8
JRNB11-R5	698569	5537348	0.010	0.7	2.58	<2	<10	20	<0.5	<2	2.01	<0.5	15	13	748	3.70	10	<1	0.07	<10	0.66	256	2	0.34	15	1990	3	1.28	<2	4	190	<20	0.09	<10	<10	69	<10	31
JRNB11-R6	699251	5536632	<0.005	0.7	0.07	10	<10	50	<0.5	<2	5.76	0.7	3	8	11	2.63	<10	<1	0.01	<10	0.77	953	2	0.01	13	350	5	0.01	<2	7	52	<20	<0.01	<10	<10	17	<10	94
JRNB11-R7	697209	5538784	<0.005	0.7	0.21	5	<10	690	<0.5	<2	2.02	1.0	25	2	56	10.3	<10	<1	0.11	<10	0.12	3440	22	0.02	18	200	23	0.07	<2	3	22	<20	<0.01	<10	<10	63	<10	215
JRNB11-R8	711505	5532074	<0.005	0.4	1.56	150	<10	190	<0.5	<2	0.31	<0.5	1	28	34	2.21	<10	<1	0.25	<10	0.32	162	1	0.09	3	600	2	0.04	<2	6	121	<20	0.21	<10	<10	54	<10	22
JRNB11-R9	711466	5532106	<0.005	0.3	0.15	8	<10	40	<0.5	<2	0.03	<0.5	2	12	13	0.48	<10	<1	0.04	<10	0.01	281	<1	<0.01	2	50	27	<0.01	<2	<1	7	<20	<0.01	<10	<10	4	<10	18
JRNB11-R10	711423	5532414	0.946	4.3	0.14	612	<10	30	<0.5	<2	0.03	3.5	2	12	29	0.87	<10	<1	0.05	<10	0.03	24	4	0.01	9	40	247	0.65	<2	1	6	<20	<0.01	<10	<10	6	<10	146
JRNB11-R11	711292	5532727	<0.005	0.2	0.22	32	<10	30	<0.5	<2	0.19	<0.5	1	11	10	0.89	<10	<1	0.03	<10	0.03	77	1	0.01	<1	110	2	0.01	<2	1	18	<20	0.02	<10	<10	13	<10	12
JRNB11-R12	711459	5532547	0.221	0.4	0.07	8	<10	10	<0.5	5	0.01	<0.5	2	13	14	0.41	<10	<1	0.04	<10	0.02	32	2	0.01	3	30	14	<0.01	<2	<1	2	<20	<0.01	<10	<10	5	<10	8
JRNB11-R13	713589	5532813	0.042	5.2	1.01	150	<10	320	<0.5	5	0.11	0.6	7	18	900	12.4	<10	<1	0.19	10	0.03	1165	21	0.04	25	470	20	0.51	5	5	12	50	<0.01	<10	10	247	10	140
JRNB11-R14	713600	5532808	0.011	0.4	0.08	6	<10	90	<0.5	<2	0.02	<0.5	1	12	5	0.48	<10	<1	0.04	<10	0.01	35	15	0.01	<1	40	<2	0.03	<2	<1	5	<20	<0.01	<10	<10	5	<10	4