# REPORT ON THE 2010 GEOLOGICAL AND GEOCHEMICAL WORK ON THE RIVIER PROPERTY

WATSON LAKE MINING DISTRICT,

YUKON TERRITORY

NTS: 105G/16 & 105G/11

Latitude 61°30'N Longitude 131° 08' W

	Claim				Grant		Registered
	Name				Number		Owner
Rivier	1	-	18	YD58798	-	YD58815	Roger Hulstein
Rivier	20	-	40	YD58820	-	YD58837	Roger Hulstein
Rivier	45	-	62	YD58842	-	YD58859	Roger Hulstein
Rivier	67	-	112	YD58864	-	YD58909	Roger Hulstein
Rivier	97	-	108	YD61450	-	YD61461	Matt Olsen
Rivier	109		112	YD61462		VD6146E	Louis
Rivier	109		112	1001402	-	YD61465	Bissonnette

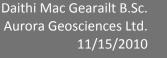
Work Conducted by:

Aurora Geosciences Ltd. for RADIUS GOLD INC.

August 18 – 28, 2010

YMIP # 10-127

Prepared by:





#### **SUMMARY:**

A ten day reconnaissance prospecting, mapping, soil, silt and rock sampling program was carried out on the Rivier property and surrounding area in August 2010. The property consists of 116 Quartz Claims, 16 of which were staked during this ten day reconnaissance program. The property is located in south-east Yukon approximately 90 kilometres south-east of Ross River in the Watson Lake mining district. Access in 2010 was by helicopter based out of Ross River, Yukon.

The Rivier project area is located in the Finlayson Lake district of the Yukon Tanana Terrane. The area is underlain by the predominant Paleozoic Finalyson Lake Assemblage (Colpron et al, 2006) comprised of a number of subterranes including the Nasina, Slide Mountain and plutonic rocks superimposed on the Nasina Subterrane. These rocks have been intruded by Cretaceous granitoid intrusions. Based on exploration models used elsewhere in the Yukon and Alaska these granitoids may be important in the formation of any gold deposits. The property is thought to lie on the boundary between arc and non arc rocks, a likely terrane suture, a similar setting to the California Mother Lode.

The 2010 exploration program located an approximate 2 km X 2.5 km coincident gold, silver, antimony, arsenic anomaly on the property. The anomaly is over and around an east – west elongated listwanite altered ultramafic body bounded by fault structures. Stream sediment samples from surrounding drainages returned a similar suite of anomalous samples. Soil and stream sediment samples from the area to the north and northeast of the property returned scattered anomalies for gold, silver, copper, lead, zinc, arsenic and antimony but no significant coincident anomaly. Rock samples returned a high gold values of 176 ppb, ten samples out of 22 collected returned >300 ppm As and up to 106 ppm Sb.

Subsequent to this program the Rivier property was surrounded by competitor claims to the north and northeast.

The geological setting and anomalous geochemical values in soil and stream sediment samples are consistent with those found in mesothermal mother lode type deposits. Further work is proposed consisting of a grid soil sampling, geological mapping, a high resolution aeromagnetic survey, ground geophysical surveys of magnetics and VLF-EM. If warranted the above work would be followed up by trenching and or diamond drilling.

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#### **INTRODUCTION:**

This report was prepared by Aurora Geosciences Ltd. at the request of Radius Gold Inc. The purpose is to describe the 2010 exploration program on the Rivier property and surrounding area in order to fulfill assessment requirements as per the Yukon Quartz Mining Act and the Yukon Mining Incentive Program (YMIP). This project (#10-127) was partly paid for by the YMIP program focused regional exploration module. The bulk of the work program consisted of soil and stream sediment geochemical sampling and reconnaissance geological mapping and prospecting carried out over 10 days by a three person crew in August. The report also describes the; location, access, history, geological setting, known mineralization and outlines a proposed exploration program to further explore the property for gold bearing mother lode type deposits.

#### LOCATION AND ACCESS:

The Rivier property is located approximately 90 kilometres southeast of Ross River and about 30 kilometres south of the Robert Campbell Highway and the old Finlayson Lake Airstrip (Figure 1). Trans North Helicopters maintains a base in Ross River and was used for this project. A staging was set up at the old Finlayson Lake air strip that is now unmaintained. There is a tote road about 4 kilometres to the southwest of the project area which could be extended if need be. This tote road has been used in the past to bring in heavy equipment to the area. During the 2010 program a group of hunters on ATVs were spotted within 2 kms of the property and indicating that the tote road is still useable.

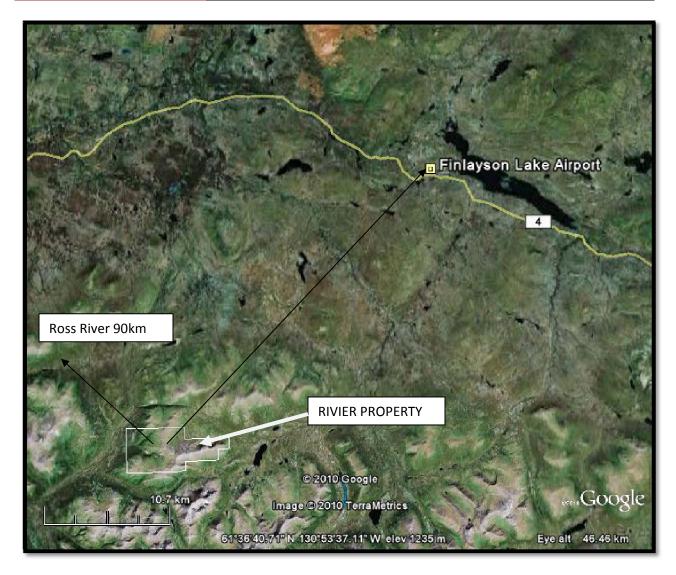


Figure 1: PROPERTY LOCATION MAP

### TOPOGRAPHY, VEGETATION AND CLIMATE:

Topography in the region is typical of a glaciated area with wide valleys and steep hillsides. Alluvium in the valleys is a combination of regional glacial till, locally derived till and locally derived colluvium and alluvium at higher elevations. Elevation ranges from 1350 m in some of the valley bottoms to 1850 m at the ridge tops and peaks located roughly in the centre of the property. Permafrost is a consideration, especially on north facing slopes, and soil sampling should be conducted with this in mind.

Rock outcrop on the property is good with concentrations along ridges, small cliffs and creek bottoms. The property is above tree line with hill slopes being grassy and mossy and covered with low lying willow. Broad valleys with southern exposure are generally covered with chest high willow making traverses slow especially during rain and light snow.

Climate is characterized by low precipitation and a wide temperature range. Winters are cold and temperatures of  $-30^{\circ}$ C to  $-45^{\circ}$ C are common. Summers are moderately cool with daily highs of  $10^{\circ}$ C to  $25^{\circ}$ C. Thunder showers and heavy fog are a common occurrence. The seasonal window for prospecting is from June to mid September.

#### **HISTORY:**

The potential for volcanogenic massive sulphide (VMS) copper-lead-zinc silver-gold deposits associated with mid-Paleozoic volcanic rocks of Yukon-Tanana Terrane in the Finlayson Lake district was demonstrated with the discovery of the Kudz Ze Kayah deposit by Cominco Ltd. in 1994. This was followed by the discovery of the Wolverine deposit in 1995 by Westmin Resources Ltd. and Atna Resources Ltd. Yukon Zinc Corporation discovered the copper-rich Ice massive sulphide deposit in 1996 and Cominco Ltd. discovered the GP4F deposit in 1998.

The area has been explored for massive sulfide deposits from the 1950's to the present. Numerous companies and individuals including Newmont, Northlake Mines Ltd., Pelly River Exploration, Chevron, Hudson Mining and Smelting, Welcome North Mines Ltd. (Potter, 1988) have explored the area. More recently Expatriate Resources (Burgert, 1997), Cominco, Pacific Bay Minerals and prospector Wade Carrell have been active in the area. Currently 4 quartz claims (Leo 1-4) immediately southeast of the Rivier property cover the Leo copper-gold prospect (Yukon MINFILE 105G 027) and are held by prospector Alex McMillan of Watson Lake.

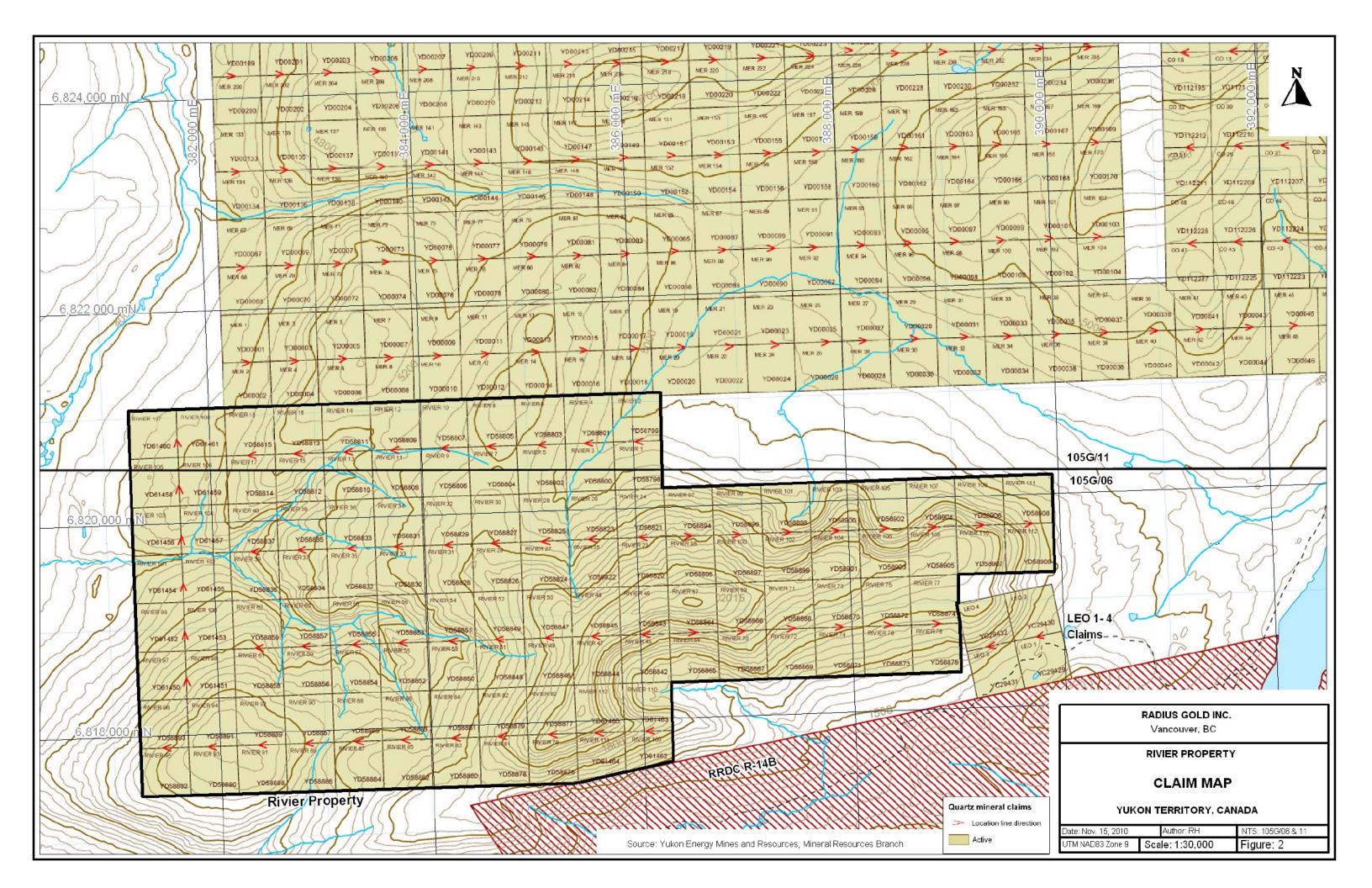
Two assessment reports by Potter (1988) and Burget (1997) cover the current Rivier claims and describe gold, arsenic, lead, copper anomalies in soil. One of two soil anomalies, South Zone, described by Potter (1988) consists of sulfide zones in listwanite that returned between  $0.5 \, \text{g/t} - 1.2 \, \text{g/t}$  Au from several rock samples. The report by Burget (1997) focus on the search for VMS mineralization in the area of the current LEO claims.

#### **CLAIM STATUS:**

The 116 claims that make up the Rivier property and are the subject of this report cover an area of approximately 2400 hectares and consist of unsurveyed contiguous two-post Yukon 'Quartz' claims (Figure 2). Most of the claims were staked April 8 and 9th, 2010 according to the Yukon Quartz Mining Act and are located in the Watson Lake Mining District. They are shown on claim sheet 105G5/6 and 105G/11 and are available for viewing at the Watson Lake Mining Recorders Office. The claims listed below (Table 1) are registered in the name of Roger Hulstein and held by Radius Gold Inc. through an option agreement. Sixteen claims held by Misters Matt Olsen and Louis Bissonnette, contract claim stakers, are in the process of being transferred to Radius Gold Inc. at the time of writing. These claims were staked during the 2010 field program, four in the southeast corner (YD61462 to YD 61465) and 12 in the northwest corner of the property (YD61450 to YD61461).

Table 1: LIST OF CLAIMS.

Claim Name			Grant Number	Registered Owner	Expiry	
Rivier	1	-	18	YD58798 - YD58815	Roger W. Hulstein - 100%	22/04/2011
Rivier	20	-	40	YD58820 - YD58837	Roger W. Hulstein - 100%	22/04/2011
Rivier	45	-	62	YD58842 - YD58859	Roger W. Hulstein - 100%	22/04/2011
Rivier	67	-	112	YD58864 - YD58909	Roger W. Hulstein - 100%	22/04/2011
Rivier	97	-	108	YD61450 - YD61461	Matt Olsen - 100%	10/09/2011
Rivier	109	-	112	YD61462 - YD61465	Louis Bissonnette - 100%	10/09/2011



#### 2010 WORK PROGRAM:

A 10 day reconnaissance exploration program was conducted on the Rivier property between August 18<sup>th</sup> 2010 and August 28<sup>th</sup> 2010. The three man crew consisted of, Daithi Mac Gearailt – geologist, Mat Olsen – prospector / soil sampler and Louis Bissonnette – prospector / soil sampler. The crew remained on the property for the duration of the program using equipment and a fly camp supplied by Aurora Geosciences Ltd. The crew and camp were flown to the property via a staging area at the old Finlayson Lake airstrip by Trans North Helicopters who maintain a base at Ross River.

The work program consisted of reconnaissance geochemical soil, silt and rock sampling, geological mapping, and the staking of an additional 16 claims. The program was hampered by 5 days of heavy rain and two days with 4 to 6 inches of snowfall.

All points on the property were accessed by foot with the exception of two days when a helicopter was used to access the ridges and hill tops directly to the north of, and outside, the property boundary. This area was both soil and silt sampled. The area north and east of the Rivier claims was staked by competitors before results of the survey were obtained.

Figure 3 is an overview map of all sample locations and should be used as a key for Sample Program Maps 1 to 4 in Appendix A which contain sample id numbers for each location.

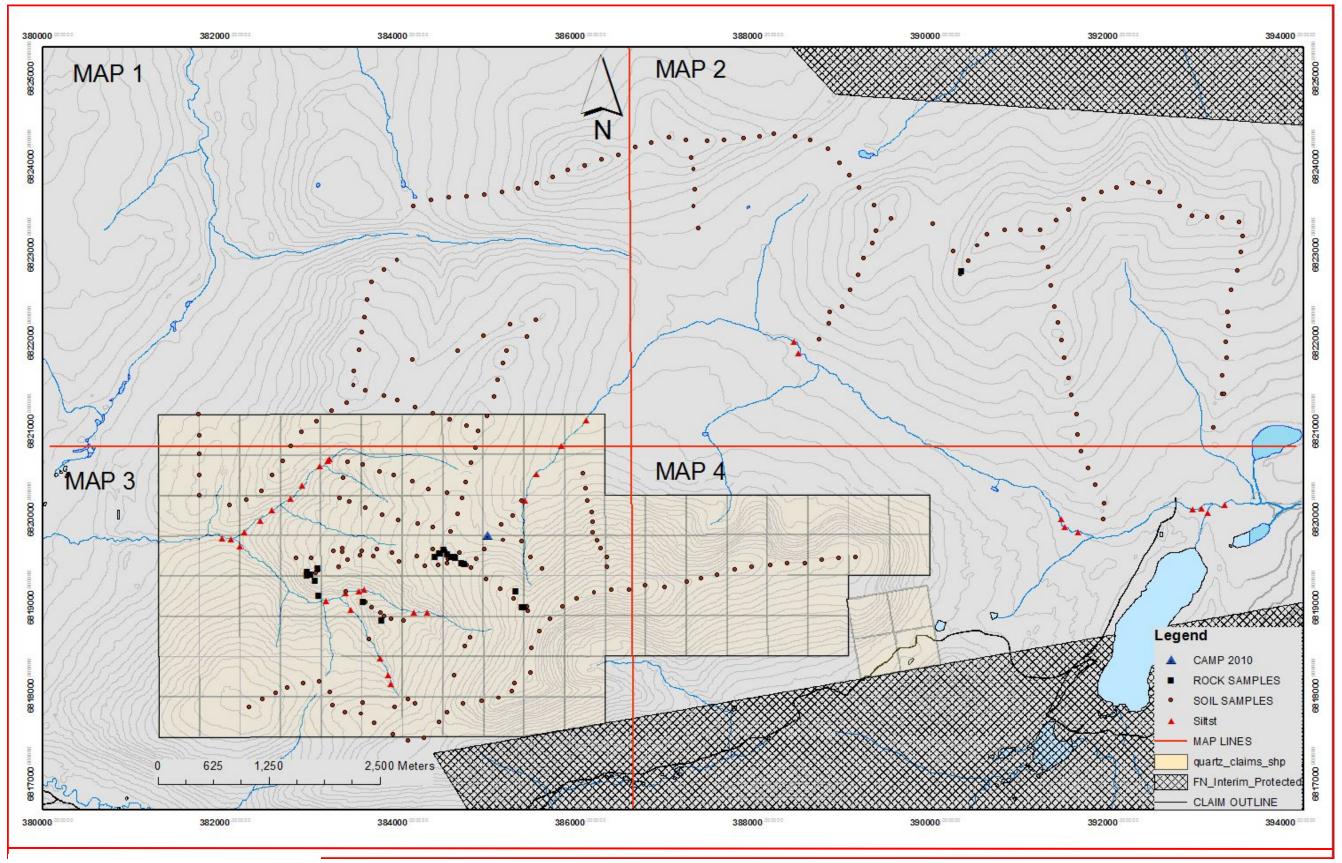


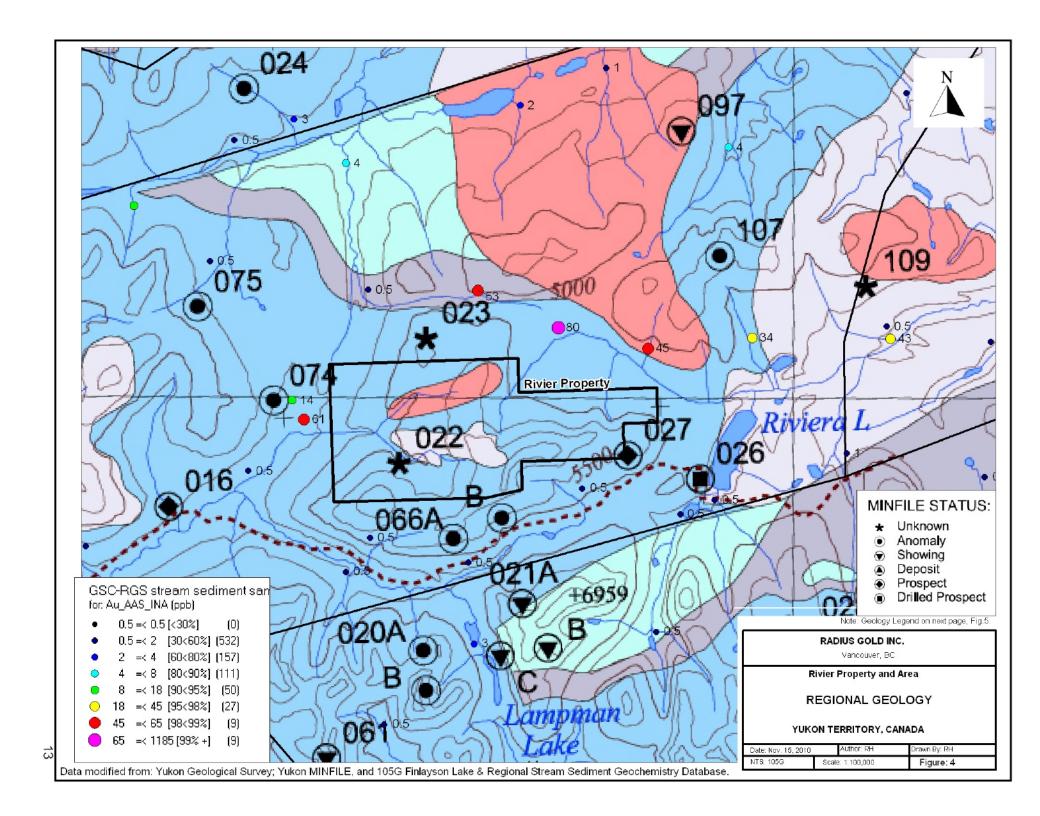
Figure 3: RIVIER SAMPLE PROGRAM 2010

#### **REGIONAL GEOLOGY:**

The Rivier project area is located in the Finlayson Lake District of the Yukon Tanana Terrane. The area is underlain by the predominant Paleozoic Finalyson Lake assemblage (Colpron et al, 2006) comprised of a number of subterranes including the Nasina, Slide Mountain and plutonic rocks superimposed on the Nasina subterrane (Figure 4). These rocks have been intruded by Cretaceous granitoid intrusions. Based on exploration models used elsewhere in the Yukon and Alaska these granitoids may be important in the formation of any gold deposits.

Major, predominantly northeast trending regional faults juxtapose the subterranes (Murphy, et al, 2006). About 10 km to the southwest of the project area, the Tintina Fault, a major regional dextral transcurrent fault with approximately 450 km of movement, offsets the Finlayson Lake District from comparable lithologies in the Dawson City – Klondike placer gold district.

Within the Rivier project area a Cretaceous granitoid pluton flanks the north side. A small granitoid pluton elongated in an east / west direction is mapped in the central area near a similar body of mafic to ultramafic rocks. The elongated pluton and ultramafic body imply an east-west structural control. A northeast trending lineament or fault structure is indicated by an alignment of topographical depressions (visible on Figure 6) that trends across the approximate center of the property.



### LEGEND GENERALIZED GEOLOGY: POST-TERRANE AMALGAMATION/ACCRETION UNITS: PLUTONIC: mKp - mid-Cretaceous post-accretion plutons SEDIMENTARY / VOLCANIC: Qs - Quaternary cover beneath which terrane boundaries cannot be extended with confidence Tvs - felsic to mafic volcanic rocks and interbedded terrestrial sediments (Tertiary) mKv - mid-Cretaceous pyroclastic intermediate to felsic caldera fill volcanic rocks, South Fork and Mt. Nansen **CRATON MARGIN:** NA - ANCESTRAL NORTH AMERICA: Lower Proterozoic to Carboniferous passive and offshelf continental margin sedimentary rocks, Devonian to Carboniferous clastic wedges and Pennsylvanian to Jurassic-Cretaceous continental margin prism TERRANES: DISPLACED CONTINENTAL MARGIN: geologic record not different from that of North America CA - CASSIAR: Upper Proterozoic to Upper Triassic passive continental margin sedimentary rocks displaced along the Tintina and Northern Rocky Mountain Trench transcurrent faults CAS - ST. CYR SUBTERRANE: Cambrian to Devonian offshelf passive continental margin sedimentary rocks between St. Cyr and Tintina transcurrent faults. Stratigraphic dissimilarity with Cassiar Terrane most marked for Silurian-Devonian strata for which St. Cyr Fault defines the abrupt northeast edge of shallow water carbonate platform. Devono-Mississippian to Triassic strata of this subterrane are like those of Cassiar Terrane elsewhere. PERICRATONIC: rocks possess elements of passive margin sedimentation but differ in stratigraphic or structural characteristics from the ancestral North American margin YTNS - NISLING SUBTERRANE: Proterozoic to lower Paleozoic(?) passive continental margin (= Nisling assemblage) YTNA - NASINA SUBTERRANE: Metamorphosed early(?) to mid-Paleozoic continental margin with superposed Late Devonian and Early Mississippian arc volcanic (= Nasina assemblage) and plutonic (YTp) rocks YTp - Plutonic rocks superposed on Nasina Subterrane YTa - AMPHIBOLITE SUBTERRANE: Amphibolite of uncertain subterrane affinity; may include Slide Mountain Terrane ACCRETED, INTERMONTANE SUPERTERRANE: SM - SLIDE MOUNTAIN: Oceanic and/or marginal basin volcanic and sedimentary rocks of Devonian to Late Triassic age including chert, argillite, sandstone, conglomerate, mafic intrusions, basalt, alpine-type ultramafic rocks, carbonate rocks and local blueschist and eclogite

Figure 5: REGIONAL GEOLOGY LEGEND

Note: Legend Accompanies Figure 4, Regional Geology Map.

#### PROPERTY GEOLOGY & FIELD MAPPING

Concurrently with geochemical sampling, reconnaissance geological mapping was carried out. Structural measurements and lithological notes were taken in the field while on soil traverse lines and recorded on handheld GPS units. These were then plotted on 1:50k topographic maps using Arc map. See Figure 6, geology map, this map is meant as a guide only and detailed mapping is highly recommended.

Outcrop at two main zones was sampled and is described in field notes as a carbonate altered ultramafic unit. The main northern zone is underlain by listwanite altered ultramafic rock with a rusty-

with varying degrees of quartz - talc - carbonate - Cr-muscovite (mariposite/fuchsite) assemblages (photos 1 and 2). Structure and faulting is complex but a distinct northeast / southwest primary S1 shear structure with a high angel dip to the northwest is evident in the north zone.



**PHOTO 1: CARBONATE ALTERED ULTRA MAFICS** 

NOTE: Photo 1 was taken near centre of property looking west. Anomalous Au in soils was obtained from area directly above this outcrop.

PHOTO 2: Cr mica (fuchsite / mariposite) altered ultramafics (listwanite) with quartz / carbonate veinlits

Large areas of serpentine felsenmeer were noted in the central core area of the Rivier property (photo 3).



PHOTO 3: SERPENTINE FELSENMEER ZONES-OUTLINED IN RED.

Float of quartz – carbonate was noted along margins of altered ultramafic felsenmeer forming a white linear streak (photo 3). Soil samples RDU-Dx23 and 24 were taken 1 m from this margin and returned anomalous Au (34.2 and 33.6 ppb), Ag (647 and 702 ppb) and As (226.6 and 216.2 ppm). Outcrop at the site was a magnetite-rich serpentinized ultramafic. Linear streaks or "sweats" of bull quartz and carbonate are common over the main ultramafic body on the property and may represent faults, shear structures and contacts.



S1 and S2 measurements plotted on the geology map were recorded at various sites while collecting soil samples.

Primary and secondary structures appear to maintain a uniformity and are relatively high angled and perpendicular with each other throughout. S1 have a general northeast / southwest orientation and dip to the northwest.

PHOTO 4: PRIMARY AND SECONDARY STRUCTURES
WITH DAITHI MAC GEARAILT FOR SCALE

S2 are perpendicular with northwest / southeast orientation and dip to the northeast.

PHOTO 5: SOUTHERN ZONE LOOKING SOURTWEST WITH PRIMARY SHEARING IN RED

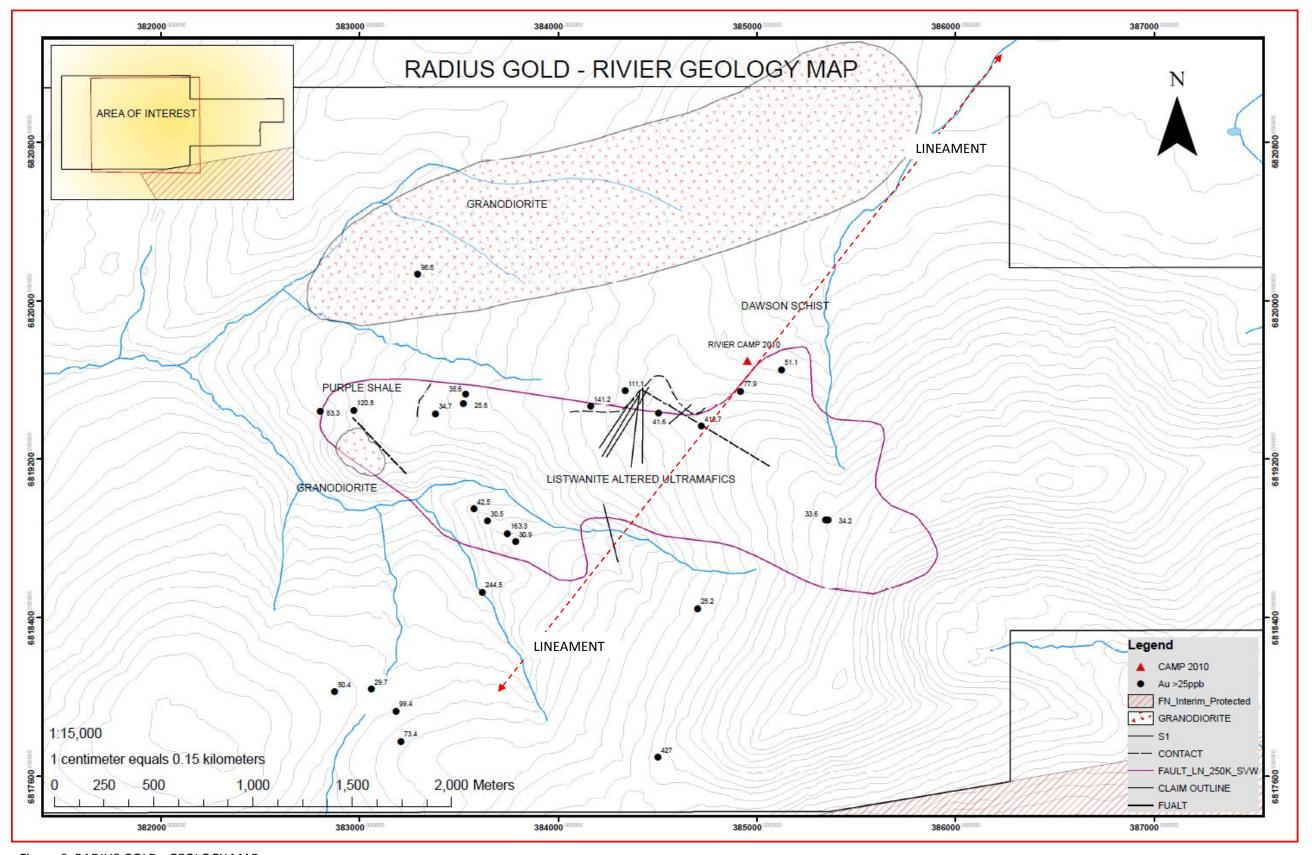


Figure 6: RADIUS GOLD - GEOLOGY MAP

### [REPORT ON THE 2010 GEOLOGICAL AND GEOCHEMICAL WORK ON THE RIVIER PROPERTY]

Figure 6, above shows a possible northeast / southwest trend to S1 structures within the main area of interest on the Rivier property. The purple geological outline is taken from the YGS geology map (www.geomaticsyukon.ca) for the area and is recorded as a fault and complements the main altered ultramafic unit previously discussed. Of course all contacts of the ultramafic unit with the surrounding country rock will be faulted. Black dots are Au in soils above 25 ppb up to 427 ppb (discussed below in more detail in 'Geochemistry'). High Au values also appear to trend in a northeast southwest direction. S2 structures are perpendicular to S1 and are coincident with two faults that were noted on the property. Lithology directly west of the main zone is composed of chloritic / seracite schist (Dawson Schist) with more carbonaceous black and purple shales and greywacke to the north. Outcrop in these areas is poor.

#### **GEOCHEMISTRY**

#### **Soil Sampling:**

An idealized soil sample traverse line was laid out and uploaded onto GPS units. This was then used as a rough guide and followed with actual sample sites being picked in the field. 267 soil samples in total were collected. An effort was made to keep samples roughly at 200 m intervals. Soil augers were used to collect samples from the C horizon. All sample sites were flagged with biodegradable flagging tape and marked with the sample ID number. All sample data was logged in the field and actual sample sites were recorded using handheld GPS units (accuracy 5-7 m). Ten samples were collected without the use of a GPS (RDU-C-006 to RDU-C-015) and were marked at the time on a 1:50,000 map in the field. This occurred as a result of a GPS failure in the field. It was felt by the sampler that he would be unable to return again to this section of the property due to time constraints and that the marked map locations would be at least represent the actual locations. These samples are the ten most southwesterly plotted samples within the Rivier claim boundary. Samples were collected in Kraft paper soil bags and each sample was given a unique sample ID number. All samples were sent to ACME Laboratories in Whitehorse for sample preparation and analysed in Vancouver by ICP-MS ultratrace. Sample descriptions, locations, analytical results and descriptive statistics are in Appendix A while Certificates of Analysis detailing the analytical procedures along with complete results are in Appendix B.

#### **Silt Samples:**

A total of 37 silt samples were collected from stream courses both on and surrounding the property. Sample site selection was done by targeting sediment traps where gravels appeared coarse, tightly packed and poorly sorted with a sand and/ or silt matrix. All sample data was logged in the field and actual sample sites were recorded using handheld GPS units (accuracy 5-7 m). Samples were collected in Kraft paper soil bags and each sample was given a unique sample ID number. All samples were sent to ACME Laboratories in Whitehorse for sample preparation and analyzed in Vancouver by ICP-MS ultratrace. Sample descriptions, locations and analytical results are in Appendix A while Certificates of Analysis detailing the analytical procedures along with complete results are in Appendix B.

#### **Rock Samples:**

A total of 22 rock samples were collected from outcrop or sub-crop sites. All sample data was logged in the field and actual sample sites were recorded using handheld GPS units (accuracy 5-7m). A duplicate of each sample was retained for reference and each sample was described and photographed back in camp. Samples were shipped in plastic, zap strapped rock sample bags supplied by the laboratory. Each sample was given a unique sample ID number. All samples were sent to ACME Laboratories in Whitehorse for sample preparation and analyzed in Vancouver by ICP-ES. Gold was analyzed by fire assay fusion followed by ICP-ES. Sample descriptions, locations and analytical results and descriptive statistics are in Appendix A while Certificates of Analysis detailing the analytical procedures along with complete results are in Appendix B.

#### **Geochemistry Results:**

Results from this initial first pass of soil sampling have highlighted two main zones with elevated Au, As and Sb, and to a lesser degree Ag, with the highest results for each being: Au- 427 ppb, Ag- 8042 ppb, As- 3390.5 ppm and Sb -124.6 ppm (Figures 15 to 22, following 'REFERENCES'). Rock samples returned a high gold value of 176 ppb, ten samples out of 22 collected returned >300 ppm As and up to 106 ppm Sb. Stream sediment samples returned values ranging from 0 ppb to 98.4 ppb Au with the two highest silt samples for gold being obtained from high up in the main watercourse draining the centre on the property. These two samples (RDU-SLT-001 +002) returned Values of Au-22.7 ppb and Au-98.4 ppb respectively and show coincident elevations in As, Sb and Ag. It would appear from this brief silt survey that dilution of geochemical signatures is rapid in the area and best results are obtained from 1<sup>st</sup> and 2<sup>nd</sup> order streams.

The lack of coincident anomalous values from soil samples in primary VMS style mineralogy such as Cu, Zn and Pb would appear to indicate the unlikelihood of a buried VMS deposit. The relationship and relative abundance Sn, Se, Mn, In, Te, Ga and Ge, which are also important pathfinder mineralogy for VMS deposits is poorly understood at this time as the sample size and distribution is too small. Co, Cd and Bi which are significant pathfinders of VMS in the area and are present but appear unrelated to the Au, Ag and As on the property with Bi only appearing elevated off the margin of a known granitic intrusion to the north. The presence of chromium mica-altered serpentinized ultramafics with coincident elevated values for Au, As, Sb and Ag coincide with listwanite – lode gold deposit model for the Canadian Cordillera. Table 1, shows a list for potential pathfinder elements for known gold in listwanite deposits.

Table 2: POTENTIAL PATHFINDER ELEMENTS FOR GOLD IN LISTWANITE (Ash and Arksey 1989)

LOCATION	STRONG POSITIVE	POSITIVE AND SPORADIC	SOURCE
	CORRELATION WITH Au	CORRELATION WITH Au	
ATLIN, BC			
YELLOW JACKET	As, Sb	Ag	
PICTOU	As, Sb	Ag, Cd, Cu, Pb, Zn	Bozek (1989)
CASSIAR, BC			
ERICKSON	As, Ba, K, B	Ag, Cu, Pb, Zn, Sb	Sketchley (1986)
WASHINGTON STATE			
MOUNT VERNON	Li	K, Na, Zn, Pb	Gresens et al (1982)
<b>EOURPEAN OPHIOLITES</b>	As, K	Sb, Ba, Bi, Ag, Cu	Buisson and Leblanc
			(1985)

From Table 2, we see that the Rivier property possesses geochemical similarities both with the Yellow Jacket and the Pictou (i.e. sporadic Cd) prospects of Atlin, BC, both typical mesothermal – mother lode type deposits.

The Rivier property is underlain by the predominant Paleozoic Finalyson Lake assemblage (Colpron, et al, 2006) comprised of a number of subterranes including the Nasina, Slide Mountain and plutonic rocks superimposed on the Nasina subterrain. The Rivier property covers or is close to the boundary line, or terrane suture, dividing arc and non arc rocks postulated by Murphy et al (2006, Figure 6). This geological setting is similar to the classic mesothermal mother lode deposits in the Sierra Nevada of California which also lie along a terrane suture marked by mafic, ultramafic rocks and Cretaceous granitoids (Boyle, 1979).

Listwanite-associated lode gold deposits are found in similar tectonic settings in British Columbia with serpentinized and carbonatized ultramafic rocks that are characteristic of tectonically disrupted ophiolite sequences in accreted oceanic terranes. This tectonic setting produces thrusting and stacking of units, favourable host rocks (serpentinite), and regional-scale reverse and normal faults to channel fluid flow. Accreted oceanic terranes of Paleozoic to Mesozoic age, containing dismembered ophiolite packages occur along the length of the Canadian Cordillera and include the Cache Creek, Slide Mountain and Bridge River terranes.

Gold mineralization at the Yellow Jacket prospect is concentrated along fault structures and is also associated with quartz veining and listwanite (quartz-carbonate-mariposite) alteration of ultramafics. The Yellow Jacket was drilled by The Homestake Mineral Development Company between 1986 and 1988 and again by Muskox Minerals Corp In 2004. Some spectacular results were reported as is typical of mother lode type deposits. Mother lode deposits in California averaged 0.30 ounces gold to the ton (Boyle, 1979).

#### **CONCLUSIONS:**

The 2010 program located an approximate 2.5 km and 2.0 km gold in soil anomaly (> 14.7 ppb - 427 ppb) centered over and around an east - west elongated listwanite altered ultramafic body. The gold in soil anomaly is coincident with anomalous values for silver, antimony and arsenic. The listwanite altered ultramafic body is bounded by faults and the property also appears to be cross cut by a strong northeast trending lineament (fault?) through the approximate center of the property.

The anomalous geochemical signature for gold, silver, antimony and arsenic in soil and stream sediment samples along with the geological setting; being centered over and around a fault bounded listwanite altered ultramafic situated on a terrane boundary points towards the potential for mesothermal mother lode type gold mineralization.

#### **RECOMMENDATIONS:**

Based on the above results and resulting conclusions from the 2010 field program further work is warranted and recommended. In particular a tight spaced detailed soil grid over the most significant anomalous soils is recommended. Samples should be spaced at 50 m intervals on 100 m line spacing in a northwest / southeast orientation. Particular attention should be paid to sampling depth with the target horizon being as close to bedrock as possible i.e. C-horizon. A grid of this size would consist of roughly 1800 samples.

Detailed mapping of faults both within and marginal to ultramafic rocks is recommended as these will be the most likely sites for the localization of alteration along with margins and contacts.

A high resolution aeromagnetic survey would be ideal but depending on budget a ground magnetic / VLF survey can produce excellent results and is recommended over the detailed soil grid area to try and delineate fault structures and contacts. Particular attention should be paid to linear magnetic lows where magnetite in the ultramafic rocks has been destroyed by carbonatization of fluids traveling along fault structures creating zones of low magnetic susceptibility.

Detailed mapping of the afore mentioned linear quartz / carbonate "sweats" with an emphasis on trying to determine if there is a direct correlation between them and high Au, As, Sb and Ag in soils. These quartz / carb horizons are ideal first pass targets and may be indicative of underlying fault structures.

It appears that the geochemical anomaly on the Rivier property is open to the south and further reconnaissance work should be done in both the areas directly south and west of the existing claim block where Yukon MINFILE occurrences and anomalous As and Au values from silts samples are also located. Additional staking may be warranted subject to results.

The eastern section of the property adjacent to the Leo claims has had little attention in recent years and should be investigated to evaluate its mineral potential.

Follow up trenching and possibly drilling is recommended if coincident geochemical and geophysical anomalies are discovered.

### **STATEMENT OF COSTS:**

The following costs were incurred during the period August 11, 2010 – December 31, 2010.

**Table 3: STATEMENT OF COSTS** 

Rivier claims and surrounding region.							
NTS: 105G/6 & 105 G/11							
Geochemistry							
	<u>No.</u>	\$/Sample	\$Subtotal				
Rock Samples	22	28.23	621.02				
Soil Samples	267	28.04	7487.96				
Stream Sediment	34	26.74	909.26				
				\$9,018.23			
Personnel							
Aurora Geosciences Ltd.	<u>Days</u>	Daily Rate	<u>Subtotal</u>				
3 person crew (mob-demob)	2	1400	2800.00				
3 person crew (field)	11	1400	15400.00				
<b>Equipment Preparation</b>			350.00				
				\$18,550.00			
Field Expenses							
Aurora Geosciences Ltd.	Days/hrs	Rate/item					
Camp Rental	13	280	3640.00				
Truck Rental	13	150	1950.00				
Food			971.16				
Field Expenses			59.90				
Gas/propane			354.75				
Helicopter (206)	8.4	1143.43	9604.79				
Bulk Jet Fuel			1200.90				
				\$17,781.50			
Report and Project Manager	<u>ment</u>						
Aurora administration			665.46				
charges R. Hulstein	1	500	500.00				
D. MacGearailt	6	500	3000.00				
	Ū	500	850.00				
Drafting & Reproduction			00.00	\$5,015.46			
				<b>φ</b> υ,υ 13.46			
GST on Expenses (Aurora)				<b>\$1,517.13</b>			
OOT OIT EXPENSES (Autora)				<del>φι,υι<i>ι</i>.13</del>			
Total Project Cost				\$51,882.32			

### STATEMENT OF QUALIFICATIONS:

I, Daithi Mac Gearailt, of: Dawson City, Yukon Territory Y0B 1G0, 867-993-6155 Do hereby certify that: I am a mineral exploration geologist with over 4 years of experience working in the Yukon and Alaska. I am a graduate of National University of Ireland-Galway (NUIG), with an honors degree in geology (B.Sc., 2007) and have been involved in geology and mineral exploration continuously since 2007. I am a member of The Yukon Chamber of Mines, The Association for Mineral Exploration British 3. Columbia, AME BC and of the Irish Association of Economic geology (IAEG). I am the author of this report on the Rivier Property located in the Watson Lake District, Yukon. The report is based on my personal examination of the ground on August 18 - 28, 2010 and on referenced sources. Daithi Mac Gearailt, B.Sc. November 15, 2010

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www.geology.gov.yk.ca/databases/download/html

• Yukon Spatial Data: Corporate Spatial Warehouse Data. Available digitally:

www.geomaticsyukon.ca

# [REPORT ON THE 2010 GEOLOGICAL AND GEOCHEMICAL WORK ON THE RIVIER PROPERTY]

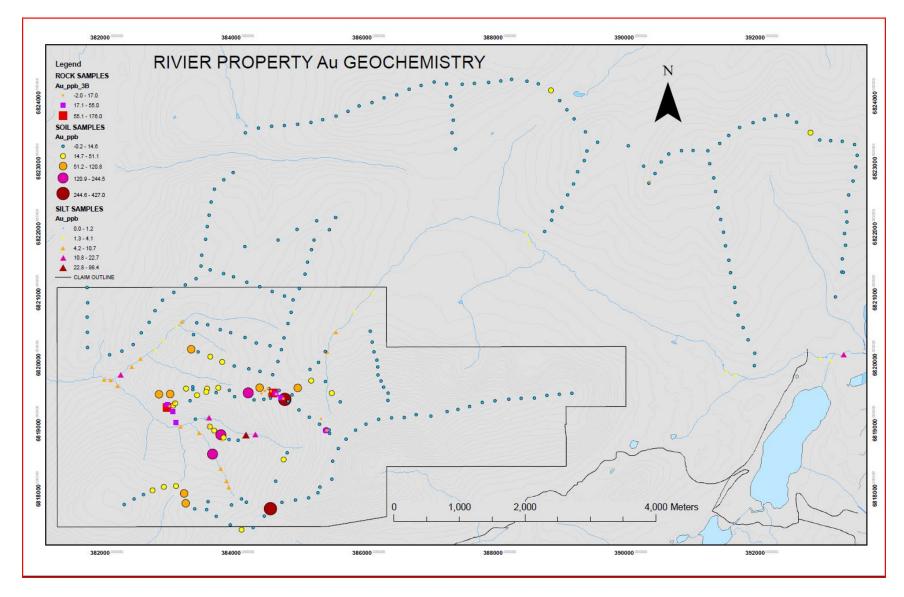


Figure 7: Au GEOCHEMISTRY

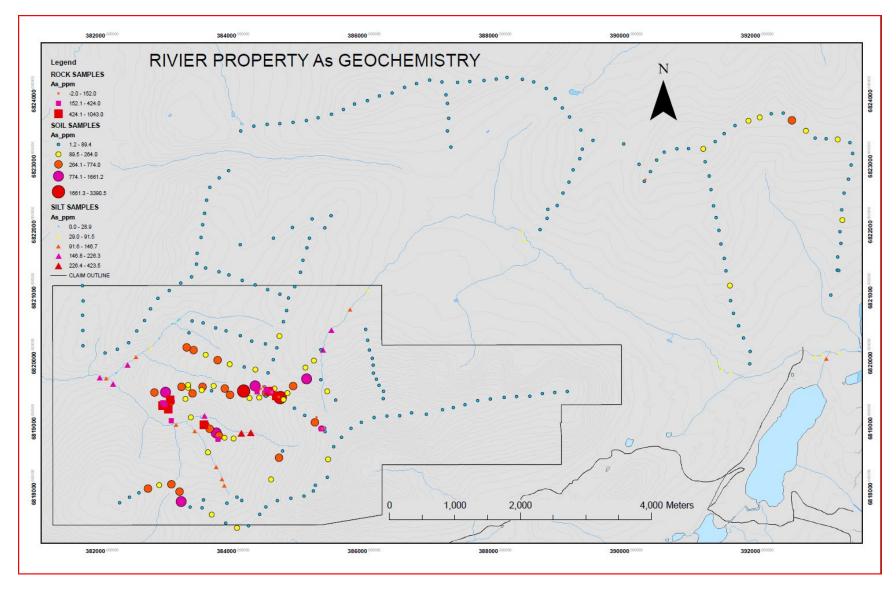


Figure 8: As GEOCHEMISTRY

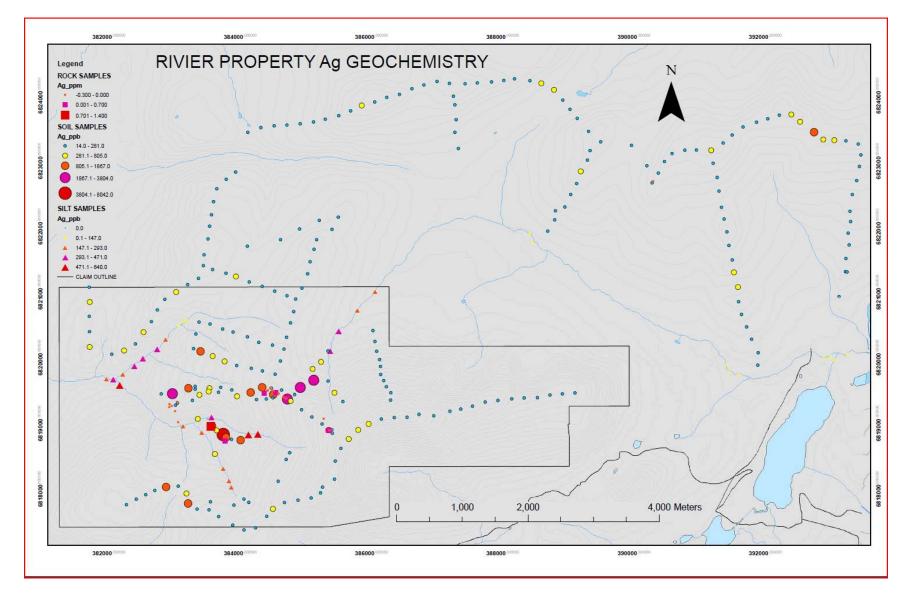


Figure 9: Ag GEOCHEMISTRY

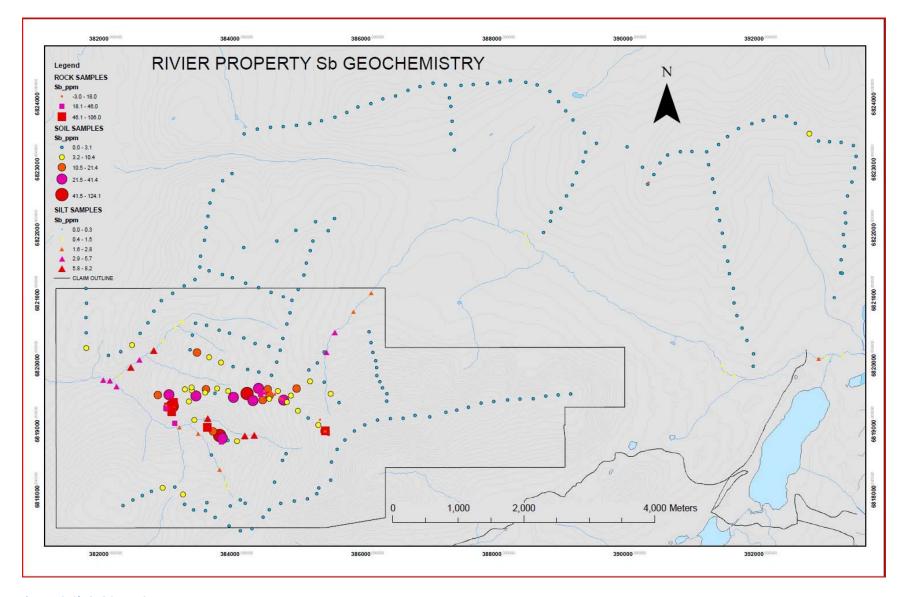


Figure 10: Sb GEOCHEMISTRY

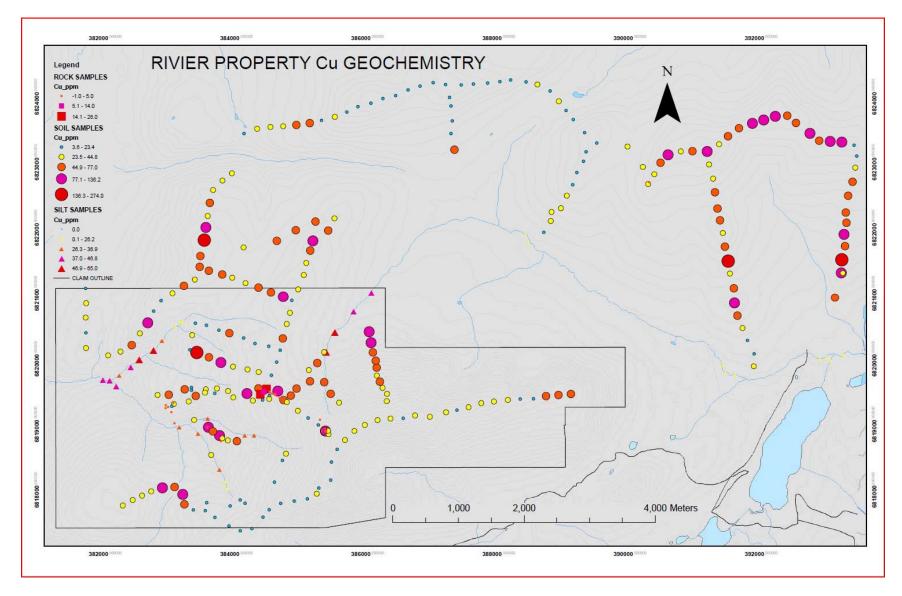


Figure 11: Cu GEOCHEMISTRY

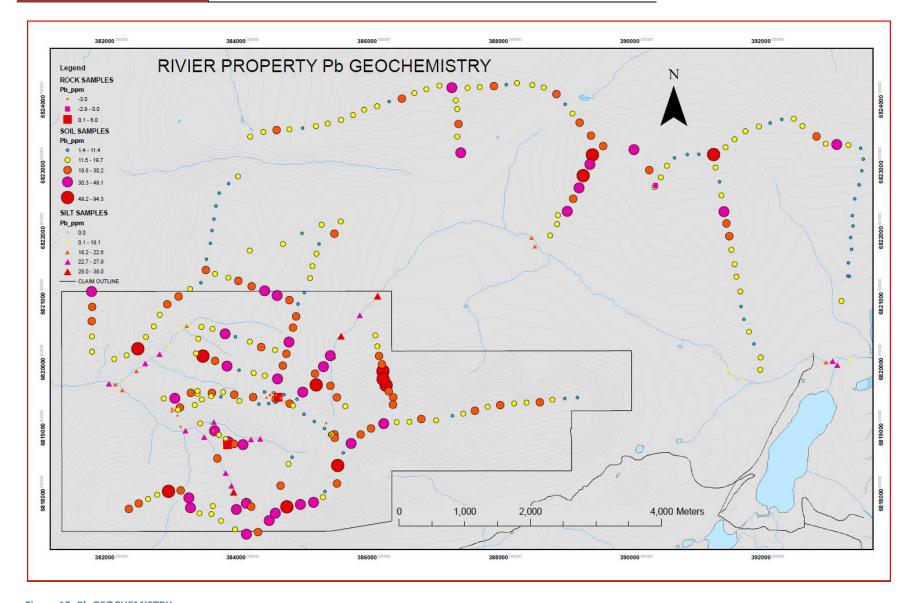


Figure 12: Pb GEOCHEMISTRY

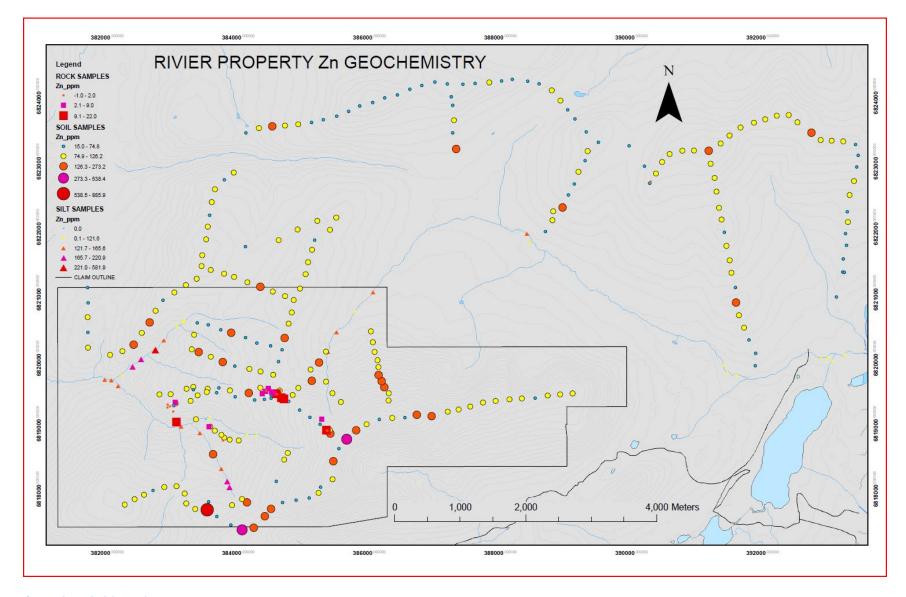


Figure 13: Zn GEOCHEMISTRY

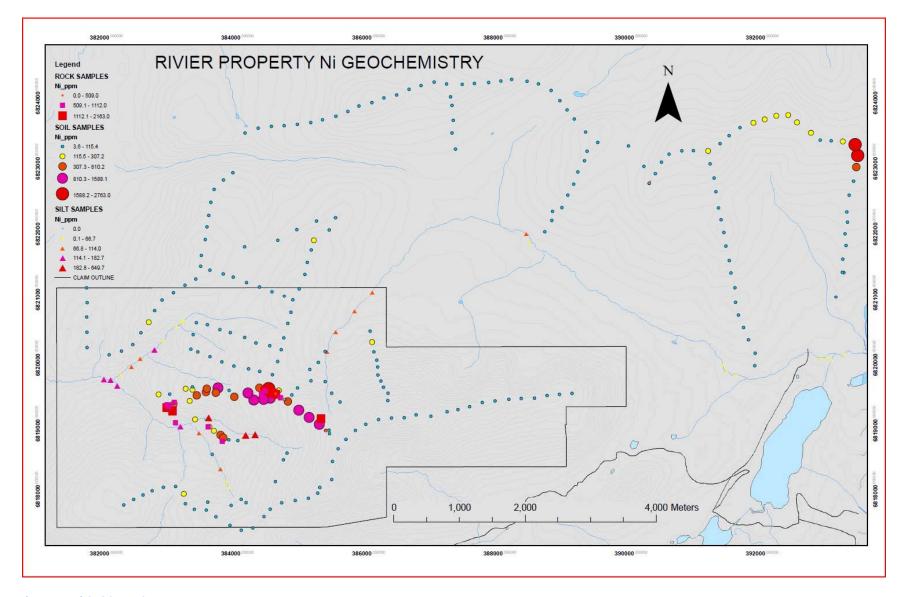


Figure 14: Ni GEOCHEMISTRY