

2013 Assessment Report for Sugarloaf Resources Inc.
Licenses 09712, 09725, 09722, 09713, 09723 & 09726

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Renewal Date: June 4, 2013

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1.0 Summary

A group of 6 licences referred to as the Sugarloaf northern block, lie in the basalts of the Diamond Brook Formation in the Cobequid Highlands of Nova Scotia, a formation which is thought to be part of an epithermal gold system.

The 2013 work program focused on a stream sediment sampling program. 47 stream sediments were sluiced, bagged, dried and sieved to different size fractions. The five finest fractions were analyzed by portable handheld XRF for gold indicators and then subsequently hand panned. Panned concentrates were observed thru a binocular microscope and gold grains were counted, with additional notes recorded about other heavy minerals observed.

Gold was visually observed thru panning in 10 of the 47 stream sediment samples. Observed gold grains did not correlate well with gold indicators in stream sediment portable XRF results.

3 rock samples and two -140 mesh sieve fractions were also sent to Dalhousie University Minerals Engineering Centre for fire assay for gold, platinum, palladium and rhodium. All samples were below detection limits.

Observed gold grains occurred in two geographical groupings on the property. One grouping was along the Waugh River, while the second was in and around Sutherland Brook. These areas should be followed up with more field work, including rock sampling in the next work program.

2.0 Introduction

The Sugarloaf northern block is composed of licenses 09712, 09725, 09722, 09713, 09723, and 09726 which are located in the Cobequid Highlands area of Nova Scotia and are the basis of this report. Assessment work was completed on all licences except licence 09726 as licence 09726 was renewed on credits

Since 1986-87, when Au anomalies were detected in the Northern Nova Scotia Regional Stream Sediment sampling program (OFR 89-007), companies have been trying to source the Au anomalies. The 2013 Sugarloaf work program was focused on this as well.

Prospecting on the northern block consisted of stream sediment collection and assaying of some previously collected rock samples (and two sluice samples) at Dalhousie Minerals Engineering Center. Samples sent to Dal were assayed for gold (Au), platinum (Pt), Palladium (Pd) and rhodium (Rh).

Analyses of the remaining sluice samples were completed using an Olympus Innovx portable DP-6000 X-ray fluorescence analyzer as well as panning for heavy minerals. The XRF was used to analyze for Au indicators; arsenic (As), antimony (Sb), lead (Pb) and zinc (Zn), as suggested by MacHattie, 2011. XRF results at this point remain uncorrected due to the lack of a known set of assayed reference samples to analyze and generate XRF correction factors. Due to this, results must be evaluated for anomalies rather than assuming absolute values.

3.0 Location and Access

The licenses are located in Colchester County, Nova Scotia. Access to the property is gained by taking Exit 11 off Highway 104 and proceeding north on Highway #4. Head east at Junction 246, which merges with Hwy 256 in West New Annan, continuing east out of West New Annan the western most licences can be accessed via several roads heading south. Access to the eastern licences is more easily gained by continuing east on Hwy 256 and turning south at junction 311. The eastern licences can be accessed by several access roads south of Hwy 311. See Figure 1 on the following page for precise licence locations.

Sugarloaf Licences Location Map

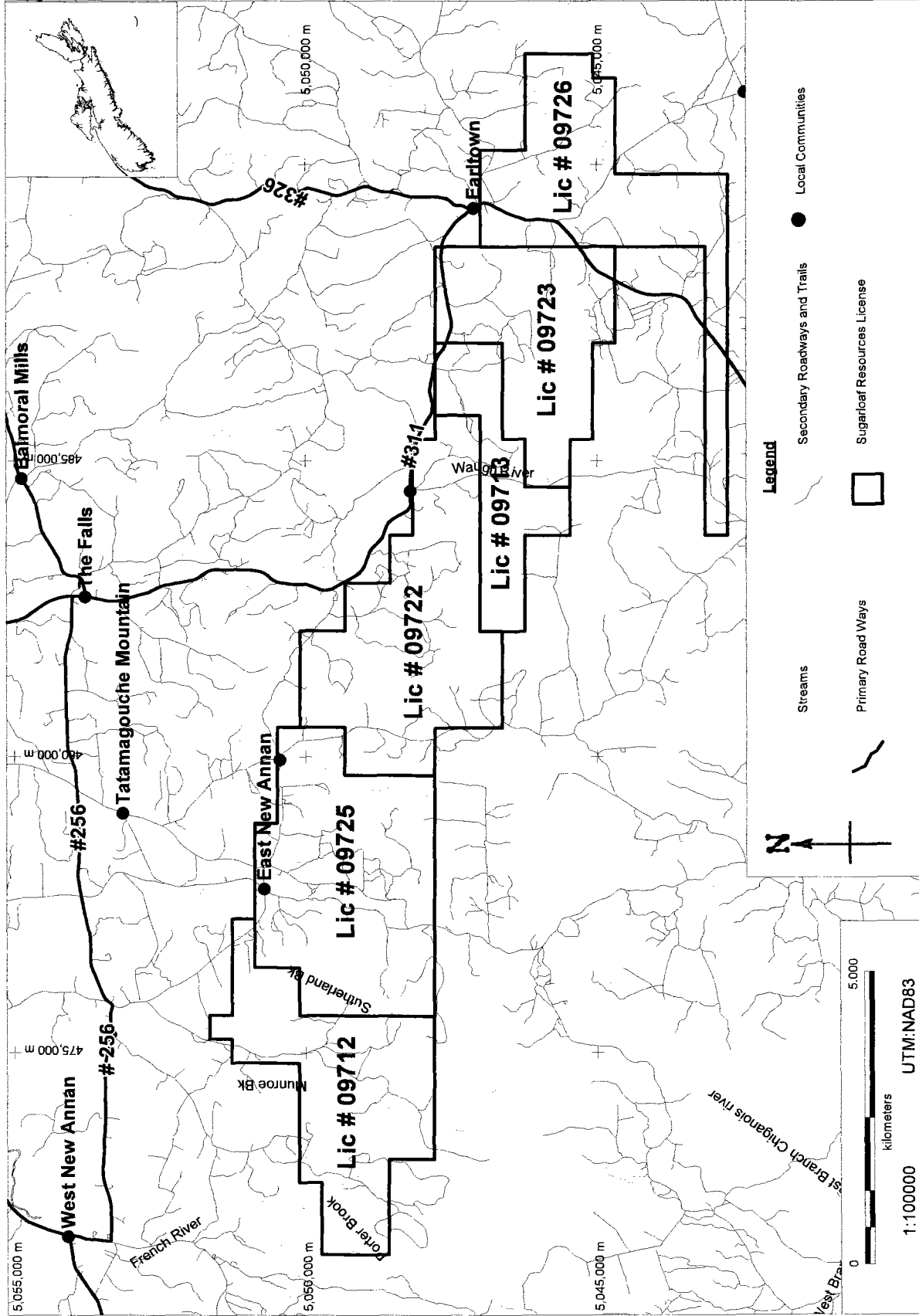


Figure 1

4.0 License Tabulation

Table 4.0.1

License #	NTS Map Sheet	Tract	Claims	Anniversary Date
09712	11E/11B	76	ABCD EFGH JKLM NOPQ	May 4th, 2013
09712	11E/11B	77	AB GH JKLM NOPQ	May 4th, 2013
09712	11E/11B	78	JK PQ	May 4th, 2013
09712	11E/11B	91	AB	May 4th, 2013
09712	11E/11B	92	ABCD FGH	May 4th, 2013
09712	11E/11B	93	ABCD EFGH JK PQ	May 4th, 2013
09712	11E/11B	94	LM NO	May 4th, 2013
09712	11E/11B	99	ABCD	May 4th, 2013
09712	11E/11B	100	AB H	May 4th, 2013
09725	11E/11B	73	CD EF LM NO	May 11th, 2013
09725	11E/11B	74	ABCD EFGH JKLM NOPQ	May 11th, 2013
09725	11E/11B	75	ABCD EFGH JKLM NOPQ	May 11th, 2013
09725	11E/11B	94	ABCD EFGH JK PQ	May 11th, 2013
09725	11E/11B	95	ABCD EFGH JKLM NOPQ	May 11th, 2013
09725	11E/11B	96	ABCD EFGH JKLM	May 11th, 2013
09722	11E/11B	73	AB GH JK PQ	May 11th, 2013
09722	11E/11A	61	EFGH JKLM NOPQ	May 11th, 2013
09722	11E/11A	62	JKLM NOPQ	May 11th, 2013
09722	11E/11A	63	JKLM NOPQ	May 11th, 2013
09722	11E/11A	64	MN	May 11th, 2013
09722	11E/11A	82	ABCD	May 11th, 2013
09722	11E/11A	83	ABCD EFGH LM NO	May 11th, 2013
09722	11E/11A	84	ABCD EFGH JKLM NOPQ	May 11th, 2013
09722	11E/11A	85	ABCD EFGH	May 11th, 2013
09713	11E/11A	58	MN NO	May 4th, 2013
09713	11E/11A	62	ABCD EFGH	May 4th, 2013
09713	11E/11A	63	ABCD EFGH	May 4th, 2013
09713	11E/11A	64	EFGH JKL OPQ	May 4th, 2013
09723	11E/11A	56	ABCD EFGH JKLM NOPQ	May 11th, 2013
09723	11E/11A	57	EFGH JKLM NOPQ	May 11th, 2013
09723	11E/11A	58	JKPQ	May 11th, 2013
09723	11E/11A	64	ABCD	May 11th, 2013
09723	11E/11A	65	ABCD EFGH JKLM NOPQ	May 11th, 2013
09726	11E/11A	31	NOP	May 11th, 2013

09726	11E/11A	32	NOPQ	May 11th, 2013
09726	11E/11A	33	NOPQ	May 11th, 2013
09726	11E/11A	34	NOPQ	May 11th, 2013
09726	11E/11A	42	BCD EFG KLM NOP	May 11th, 2013
09726	11E/11A	54	BCD EFGH JKLM NOPQ	May 11th, 2013
09726	11E/11A	55	ABCD EFGH JKLM NOPQ	May 11th, 2013
09726	11E/11A	66	ABCD EFGH	May 11th, 2013

5.0 Previous Work

Several exploration programs have been conducted in the Cobequids over the years for both base and precious metals as well as for nuclear fuels. Past work was briefly reviewed in conjunction with the 2013 work program, but a thorough compilation of historic work should be undertaken.

During the late 1970's Gulf Minerals Canada Ltd. carried out an extensive exploration program for Uranium and base metals in the Cobequid Highlands. Gulf's program included geological mapping, soil and rock sampling, trenching, and drilling. Gulf also carried out ground and airborne gamma ray spectrometry surveys as well as VLF-EM- magnetometer (Downey, 1978). Unfortunately, Gulf's work was focused to the south and west of the Sugarloaf northern block of licenses.

In 1989 NS Mines and Energy conducted a regional stream sediment fines and heavy metal concentrates survey over northern Nova Scotia. Several Au anomalies were reported in the Cobequid Highlands (Mills, 1989).

In 1990 Seabright conducted a regional exploration program focused on epithermal and/or structurally controlled gold mineralization in the Cobequids. Seabright collected 77 stream sediment samples, 196 soil samples and 57 rock samples. Several of which showed positive Au anomalies using -200 mesh, hence reinforcing anomalies discovered by Mills in 1989.

In 1994 Ecum Secum Enterprises also attempted to source the Au anomalies of Mills, 1989 and Seabright. 30 stream sediment and 33 rock samples were collected. Ecum Secum obtained their best results in alteration zones in rhyolite and cherty sediments along the contact of the Byers Brook Formation and the overlying Diamond Brook Formation (Black, 1994).

In 2004 Cobequid Gold Corporation Ltd. (CGC) once again attempted to source the Au anomalies by prospecting brooks and silt sampling. CGC analyzed the -60 mesh fraction as opposed to the -200 mesh fraction by Seabright and was unable to reproduce Au anomalies.

Sugarloaf Resources Licences Regional Geology

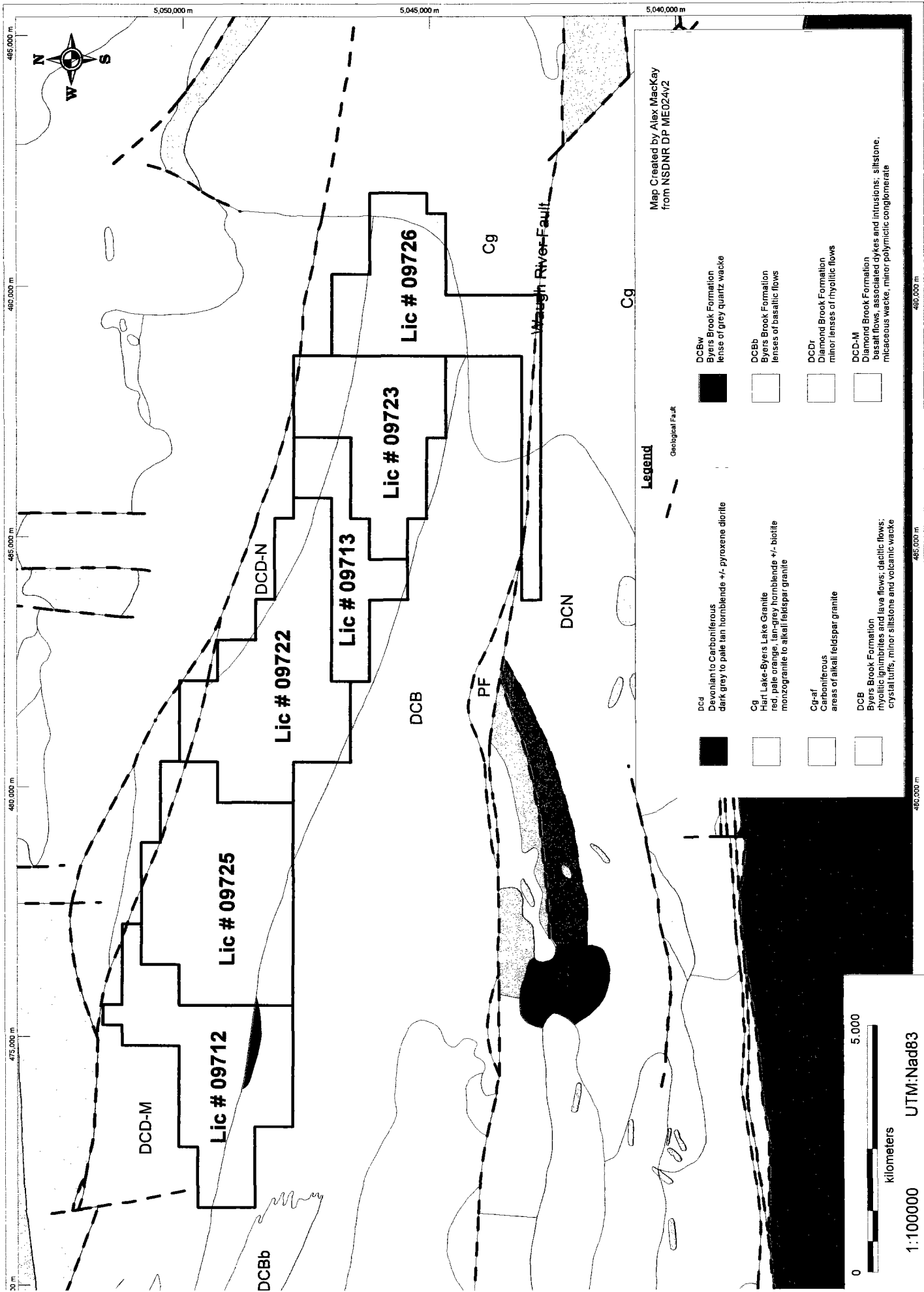


Figure 2

6.0 Local and Regional Geology

Regional geology of the area is dominated by four Late Devonian-Early Carboniferous mafic-felsic volcanic and plutonic units as shown in figure 2. This suite of rocks is bound to the north by unconformably overlying late Carboniferous sediments of the Cumberland Basin and to the south by the Rockland Brook fault (RBF) (MacHattie, 2010a). From west to east the units are: the Folly Lake gabbro-diorite (DCd), the Hart Lake-Byers Lake granite (Cg), the Byers Brook Formation (DCB) and the Diamond Brook Formation (DCD-M).

The Sugarloaf northern block geology is largely that of the Diamond Brook Formation. See Figure 2.

7.0 Work Performed

Work performed included stream sediment sample collection, prospecting and 5 sample analysis at Dalhousie Minerals Engineering Centre.

The main work program was to collect heavy mineral concentrates from stream sediments using a Keene Engineering A52 sluice box. In total, 38 sluice samples were collected. Set up procedure included setting sluice box in the river in the vicinity of a natural trap, such as large boulders, gravel bars or rock ledges. Material from the trap was shoveled into two gallon buckets and passed through the sluice. Approximately 100lbs (5 buckets x 20lbs/bucket) of material was fed through a ¼" screen emptying directly into the sluice. +¼" material was inspected for mineralization and discarded. Upon completion, the sluice box was carefully removed from the river and the concentrated heavy minerals were collected in a plastic sample bag, which was then tagged and transported back to the lab for further processing.

The first step back at the lab was to dry the samples. This was done by putting the samples in an enclosed air tight drying room with a dehumidifier. Samples generally took 3-4 days to dry completely. When the sample was dry, the sample was classified by size fraction. This was accomplished using a Ro-tap testing sieve shaker. Sieve sizes are available in table 2.

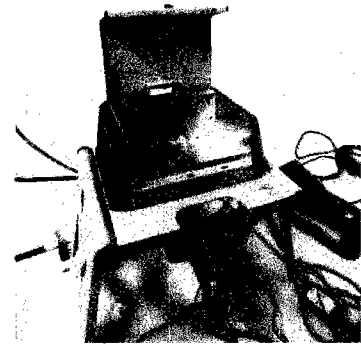
Table 2. Sieve sizes used.

Size	Tyler Equivalent	US Sieve #
1.7mm	10 mesh	No. 12
1.00mm	16 mesh	No. 18
355µm	42 mesh	No. 45
250µm	60 mesh	No. 60
180µm	80 mesh	No. 80
104 µm	150 mesh	No. 140



The No. 12 and 18 sieves were used primarily to remove the coarsest material. These fractions were inspected and retained for later analysis. Material from finer size fractions was collected with some material being put into 3.5cm diameter plastic vials. Vials were fitted with a thin plastic cover retained by a rubber band (see figure 3). The vials were then analyzed with an Olympus Innovx DP-6000 portable XRF fitted to an Innovx test stand. The analyzer was set to export epithermal gold indicators Zn, As, Pb and Sb. Results can be seen in maps 2-5 in Appendix D.

Upon completion of XRF analyses the five finest fractions (-18,-45,-60,-80,-140) were inspected for visible gold grains. As there was not enough material from each sample fraction to utilize the Wilfley Table, each sample was carefully hand panned. The resulting heavy minerals were inspected under a binocular microscope for visible gold grains. Any visible gold was subjected to a 'smear test' which involved crushing and smearing gold grains on the bottom of a hard plastic pan using a dental pick under the microscope. Notes regarding other heavy minerals such as Fe-oxides and sulfides were also recorded and tabulated (See Appendix A-Stream Sediment Table of Results).



Additionally one day of prospecting was completed on Licence 09712 by Rob Krienke, Neil Downey and Jim Michaelis. During the field visit a rock sample was collected and sent into Dalhousie Minerals Engineering Center for analysis. Additionally, two other rock samples collected in 2013, as well as the -140 mesh sieve material from two sluice samples collected in 2013 that hosted gold in the -80 mesh sieve were also sent in for analysis. Samples were analyzed for Au, Pt, Pd, and Rh.

Rock sample collection followed Sugarloaf Resources rock sampling protocol which is as follows. Samples are collected from sites displaying interesting features such as faulting, rusty gossan, sulfide mineralization, or where atypical textures are observed. Additionally rocks displaying the typical rock type in the area are also collected. Approximately, 1-2kg of material is collected from each site and is stored for future reference. Notes and GPS locations are recorded at the time of collection. GPS locations are recorded with a Garmin 60CSX GPS receiver.

8.0 Results Discussion

Gold was visibly confirmed through hand panning in the 10 of the 47 sluice samples, and was usually found in the -80 or -140 mesh. Two geographical groupings of confirmed visible gold results were observed in the 2013 work program. Samples SL-13-1, 4, 5, 7 all showed gold and were all collected along the Waugh River. The second grouping of three samples with visible gold occurred in Sutherland Brook and other nearby tributaries, these were samples SL-12-242, SL-13-019 & SL-13-20.

Several other minerals observed were also noted in hopes of finding some correlation with the Au results. Other minerals included arsenopyrite, specular hematite, hematite, pyrite, as well as some notes on light and dark coloured minerals observed in the panned results. No correlation trends were observed. The full table of results from the panning is located in Appendix A-Stream Sediment Table of Results.

XRFing of sluice sample fractions did not produce any strong correlations with visible gold results observed in hand panning. See Stream Sediment XRF Table of Results in Appendix A for tabulated XRF results; see Appendix B, Maps 1-5 for stream sample locations with plotted XRF results for gold indicators

The five samples (3 rock and 2 sluice) sent to Dalhousie Minerals Engineering Centre all showed below detection limits for Au, Pt, Pd and Rh. See Appendix A-Table of Rock Descriptions and Signed Assay Sheets for Results. Assayed results are also plotted on Map 6 in Appendix B.

9.0 Conclusions and Recommendations

Observed gold clusters seem to occur around the contact between the Byers Brook and Diamond Brook Formation. Therefore, at least qualitatively, the 2013 Sugarloaf work program concurs with past work efforts that this contact is the most probable source of the Cobequid gold anomalies.

Further work should include prospecting and rock sampling around the grouping of visible gold results observed in the 2013 work program.

10.0 References

Black D.L. 1994: Work Report on the French River Claim Group EL# 01452; Ecum Secum Enterprises; Nova Scotia Dept of Mines and Energy; Assessment Report 95-071

Donahoe, H.V., Wallace, P.I. 1982 Geological Map of the Cobequid Highlands, Nova Scotia, Nova Scotia Dept. of Mines and Energy; Map 82-7

Downey, N. 1978: Cobequid Project, exploration program 1977-78 on parts of 11E/11A, B, C and D; Gulf minerals Exploration Limited; Nova Scotia Department of Mines; Assessment Report ME 11E/11B 54-D-16(02).

Hogg, D. 1990: 1990 Exploration Program on General Licenses 15248, 15258, 15259, 15260, 15261 and 15516 Nuttby Mountain Colchester County, Nova Scotia NTS:11E/11; Seabright Explorations Incorporated; Nova Scotia Dept. of Mines and Energy; Assessment Report 90-165

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Mills, R.F. 1989, Geochemical Analyses of Bulk Stream Sediment Samples From Northern Nova Scotia; Nova Scotia Department of Mines and Energy, Open File Release 89-007

MacHattie, T.G. and O'Reilly, G.A. 2009a: Timing of Iron Oxide-Copper-Gold (IOCG) Mineralization and Alteration along the Cobequid Chedabucto Fault Zone ; *in* Mineral Resources Branch, Report of Activities 2008; Nova Scotia Department of Natural Resources, Report ME 2009-1, p. 63-69.

MacHattie, T.G. and O'Reilly, G.A. 2009b: Field and Geochemical Evidence for Contemporaneous Mafic Magmatism and Iron Oxide-Copper-Gold (IOCG) Mineralization and Alteration along the Cobequid-Chedabucto Fault Zone; *in* Mineral Resources Branch, Report of Activities 2008; Nova Scotia Department of Natural Resources, Report ME 2009-1, p. 71-83.

MacHattie, T.G., 2010a: Magmatism, Alteration and Polymetallic mineralization in Late Devonian to Early Carboniferous Felsic Volcanic and Plutonic Rocks of the Eastern Cobequid Highlands; *in* Mineral Resources Branch, report of Activities 2009; Nova Scotia Department of Natural Resources, Report ME 2010-1, p. 65-75.

MacHattie, T.G., 2010b: Nature of Rare Earth Element Mineralization in the Northeastern Cobequid Highlands; *in* Mineral Resources Branch, Geology Matters 2010: Program with Abstracts; Nova Scotia Department of Natural Resources, Report ME 2010-2, p. 2.

MacHattie, T.G., 2011: Volcanic Stratigraphy and nature of Epithermal-style Gold mineralization in Upper Devonian-Lower carboniferous Rocks of the Northeastern Cobequid Highlands, Nova Scotia; *in* Mineral Resources Branch, Geology Matters 2011: Program with Abstracts; Nova Scotia Department of Natural Resources, Report ME 2011-2, p. 14.

11.0 Statement of Qualifications

Lindsay John Allen
Elk Exploration Ltd
11 River Rd, Terence Bay River, NS
B3T 1X2

Prospector ID #760

25 years Prospecting Experience
Completed DNR Basic Prospecting Course 1986
Completed DNR Advanced Prospecting Course 1987
DNR Due Diligence Course
Red Cross Emergency First Aid/CPR
Boulder Buster Certification
Inexperienced Miner
Level 2 Handheld XRF Certification

Assayed Samples Table

Pg1 of 1

Sample #	Sample Type	X_UTMNAD83	Y_UTMNAD83	Au (ppm)	Pd (ppm)	Pt (ppm)	Rh (ppm)	Sample Description
SL-13-011	-140 Mesh Sluice	487469	5047093	<0.005	<0.005	<0.005	<0.005	n/a
SL-13-007	-140 Mesh Sluice	486257	5046708	<0.005	<0.005	<0.005	<0.005	n/a
SL-12-24-R	Rock	473137	5048338	<0.005	<0.005	<0.005	<0.005	dark grey basalt, mylonitized and fractured
SL-12-100-R	Rock	477596	5049627	<0.005	<0.005	<0.005	<0.005	Grey to buff silicified felsic pyroclastic sub-rounded to angular rhyolitic fragments. Supported by a rhyolitic matrix. Fragments having quartz eyes and feldspar phenocrysts with fine disseminated pyrite. Matrix has fine disseminated pyrite, pyrite micro-veining and blebs. Total sulphides
SL-12-99-R	Rock	482262	5047621	<0.005	<0.005	<0.005	<0.005	dark grey basalt

Au Analysis - Sample Preparation of Rocks and Core

Samples undergo multiple stage crushing (minus 8.0 mm) with jaw crushers. Samples may be crushed to <3mm using a cone crusher. Crushed samples are riffle split to 900-1100 grams, then pulverized with a ring and puck pulverizer (TM Engineering Max2) to approximately 100% passing 0.15 mm or 75% passing 0.075mm. Equipment is cleaned with jets of air and silica sand between samples.

Fire Assay Procedure – Gold

Sample Decomposition: Fire Assay Fusion

Analytical Method: Atomic Absorption Spectroscopy (AAS), Inductively Coupled
Plasma Optical Emission Spectroscopy (ICPOES)

A prepared sample is fused with a neutral lead oxide flux inquartered with 4 mg of gold-free silver and then cupelled to yield a precious metal bead. The bead is digested for one hour in 1.0ml of dilute nitric acid. Hydrochloric acid (1.0ml) is then added and the solution is digested for an additional hour. The digested solution is then cooled, diluted to 6.0 ml with double distilled water, mixed and then analyzed by AAS or ICPOES.

Certified reference samples from CANMET, West Coast Minerals, or Rocklabs are analyzed with each batch. In addition, duplicate check analysis and method blank analysis are also run with the samples. A CRM sample is inserted with every batch of 20 samples.

Au detection limit is 0.005 ppm, or 5 ppb, on a 30g sample.

22-May-13

Sugarloaf Resources
549 Washmill Lake Drive, Suite 513
Halifax, NS
B3S 0E6
Atten: Rob Krienke

minerals.engineering.dal.ca
Tel: 902.494.3955
Fax: 902.494.3506
Email: mec@dal.ca

Re: Results of analysis on submitted samples. Au analysis using
30-50g fire assay, lead collection, AAS or ICP OES finish.

Sample	mg/kg			
	Au	Pd	Pt	Rh
SL-13-011	<0.005	<0.005	<0.005	<0.005
SL-13-007	<0.005	<0.005	<0.005	<0.005
SL-12-24-R	<0.005	<0.005	<0.005	<0.005
SL-12-100-R	<0.005	<0.005	<0.005	<0.005
SL-12-99-R	<0.005	<0.005	<0.005	<0.005
SL-12-99-R Dup.	<0.005	<0.005	<0.005	<0.005

QC Reference Samples:	Au (mg/kg)	
	Measured	Certified
OXi96	1.795	1.802 ± 0.012
SK62	4.052	4.075 ± 0.045

Digitally signed by
Daniel Chevalier
Date: 2013.06.03
13:25:51 -03'00'



Daniel Chevalier
Manager, Minerals Engineering Centre

Stream Sediment XRF Table
Pg1 of 2

sample	X_NAD83	Y_NAD83	Zn +45	As +45	Sb +45	Pb +45	Zn +60	As +60	Sb +60	Pb +60	Zn +80	As +80	Sb +80	Pb +80	Zn -80	As -80	Sb -80	Pb -80	Zn -140	As -140	Sb -140	Pb -140	
SL-12-211	480522	5046787	6	-32	50	244	5	24	36	206	6	29	26	172	10	-22	21	199	3	-27	35	169	
SL-12-212	481164	5046902	6	-1	14	110	8	-3	14	87	2	10	18	89	-4	4	21	69	4	-12	21	89	
SL-12-213	481290	5046894	4	8	23	152	2.1	21	17	60	1.6	-13	12	61	9	-10	10	87	6	-30	27	160	
SL-12-214	481233	5046974	5	-7	28	192	8	-7	21	124	3.3	-13	14	73	4	-34	23	95	2	29	28	133	
SL-12-215	481232	5047068	1	-5	28	147	2	9	19	94	3.2	-11	17	82	4	3	13	85	0	-28	44	183	
SL-12-216	481252	5047120	22	0	27	175	3	-31	28	169	2	-4	30	154	7	-19	20	122	3	-15	23	158	
SL-12-217	481245	5047207	1	25	22	176	4	-17	19	109	6	-11	17	109	-3	40	33	130	7	28	28	171	
SL-12-240	475872	5049236	0	-40	36	321	7	-12	18	251	10	19	20	264	5	-2	26	271	8	-20	24	241	
SL-12-241	475226	5049656	2	-21	28	176	2	8	29	145	4	-42	20	94	3	10	21	116	3	7	38	186	
SL-12-242	475088	5049658	4	39	25	92	5	16	26	103	2	13	20	76	5	61	19	91	4	22	29	117	
SL-12-243	475058	5049766	7	-5	23	159	1	5	18	79	3	-24	7	65	4	-5	12	74	4	-2	27	123	
SL-13-1	486413	5047329	3	-3	18	60	3	21	27	79	3	-2	18	64	5	-5	25	88	8	-10	26	98	
SL-13-2	486376	5047200	5	18	20	372	4	-4	18	69	3	-17	16	106	7	-1	17	129	4	23	41	147	
SL-13-3	486371	5047039	5	4	49	68	6	18	30	59	6	3	19	58	6	16	35	79	-1	13	39	88	
SL-13-4	486345	5047005	2	13	22	143	6	-5	14	61	1	-5	33	90	7	49	26	76	4	-13	26	96	
SL-13-005	486343	5046995	4	26	30	73	6	16	15	45	2	44	16	53	0	-12	21	93	6	-19	20	44	
SL-13-6	486329	5046856	2	12	25	90	4	-20	14	57	2	0	15	81	3	-14	16	137	6	6	28	171	
SL-13-007	486257	5046708	2	5	16	63	3	0	15	49	2	-8	17	35	2	26	15	72	8	-22	20	151	
SL-13-8	487644	5047369	6	-13	150	87	10	23	64	62	9	2	93	77	8	-1	80	76	-4	32	498	84	
SL-13-9	487658	5047275	8	-17	20	79	1	-35	20	54	4	-39	16	46	2	16	23	62	3	0	26	83	
SL-13-10	487619	5047193	3	-52	35	78	7	12	19	47	3	21	25	30	3	1	26	31	5	13	99	74	
SL-13-11	487469	5047093	5	3	20	104	3	-34	19	71	0	-14	20	50	2	-4	15	59	5	11	23	79	
SL-13-012	481308	5048239	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	-8	30	33	128
SL-13-013	481518	5047981	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD
SL-13-014	481475	5047868	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD
SL-13-015	482208	5047910	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	4	-5	19	114
SL-13-016	481873	5048997	1	-21	15	144	5	0	24	104	1	6	19	119	-1	5	20	108	1	8	39	120	
SL-13-017	481899	5049234	6	-36	24	120	1	-14	22	122	7	-23	10	103	5	19	14	84	3	-10	23	130	
SL-13-18	481906	5049031	0	-40	15	59	5	8	10	49	7	-11	9	59	6	-4	12	64	3	20	28	117	
SL-13-019	475920	5050091	1	1	21	93	4	-11	14	65	5	65	15	74	0	52	18	73	11	-7	22	133	
SL-13-020	476330	5050037	0	-30	25	209	2	-2	25	185	1	5	29	138	4	-4	25	140	6	-19	44	179	
SL-13-21	476380	5050114	3	-20	18	140	1	-20	17	78	3	20	23	100	4	5	12	82	4	13	26	130	
SL-13-022	475890	5048898	8	33	46	321	14	-20	29	274	8	-56	28	188	5	-29	33	198	0	24	33	196	
SL-13-023	475832	5048826	3	-9	54	337	4	-7	49	255	7	5	33	210	4	-8	38	221	8	7	62	275	
SL-13-024	475764	5048816	9	-2	50	259	8	-6	56	274	0	12	40	173	11	-28	34	170	2	-11	72	253	
SL-13-025	475783	5048801	10	-21	37	360	5	29	33	335	4	-15	37	266	3	-3	32	259	9	-22	49	320	
SL-13-026	476154	5048717	19	5	41	461	9	30	44	419	16	-16	38	439	16	8	42	456	16	20	39	414	
SL-13-027	479240	5049409	4	30	8	101	-3	-6	21	93	1	-49	17	74	2	12	17	85	2	9	26	108	
SL-13-028	479695	5049333	7	24	21	139	-2	6	27	131	4	5	16	107	1	-31	20	86	-1	-19	24	126	
SL-13-029	479758	5049329	5	2	17	40	5	-5	12	40	7	12	12	39	4	-3	17	36	4	-16	26	58	
SL-13-030	479482	5049178	6	15	24	139	3	-1	24	112	11	0	11	99	4	3	19	100	9	-15	30	135	
SL-13-31	479405	5049259	3	0	16	92	1	-34	16	80	3	10	10	71	1	-6	21	68	11	-17	18	93	
SL-13-32	485935	5046373	9	21	18	58	4	17	19	32	0	-9	30	51	6	-13	29	47	3	-13	42	69	

Stream Sediment XRF Table

Pg2 of 2

sample	X_NAD83	Y_NAD83	Zn +45	As +45	Sb +45	Pb +45	Zn +60	As +60	Sb +60	Pb +60	Zn +80	As +80	Sb +80	Pb +80	Zn -80	As -80	Sb -80	Pb -80	Zn -140	As -140	Sb -140	Pb -140
SL-13-33	486164	5046440	8	16	15	68	5	-16	18	49	4	4	19	47	7	-39	18	63	14	60	34	85
SL-13-34	486181	5046384	4	-4	11	33	2	28	8	30	1	1	14	26	9	-17	17	30	5	-17	44	42
SL-13-35	486190	5046168	2	-20	29	112	4	5	15	109	-2	-21	22	81	10	5	26	133	5	7	44	117
SL-13-36	486560	5046050	12	-21	244	120	18	-26	243	155	7	9	66	69	10	-30	96	87	11	15	154	131

Stream Sediment Table of Results
Pg 2 of 7

Sample Number	Easting	Northing	Licence #	Fractions (US Mesh)			Other Materials Noted						Gold			
				-18 to +45	-45 to +60	-80 to +140	Arsenopyrite (AsPy)	Iron (Fe)			Black Sand		Light Colour Minerals (v/m-very minor, m-minor, avg-average)	# Units	Size (mm)	Description
								Specular Hematite	Regular Hematite	Pyrite (FeS)	%	% Magnetic				
SL-12-240	475872	5049236	09725	X			0	n	n	n	10%	60%	negligible, mostly quartz	0		
SL-12-240	475872	5049236		X			0	Y	Y	n	15%	70%	negligible, mostly quartz	0		
SL-12-240	475872	5049236			X		0	n	Y	n	40%	85%	negligible, mostly quartz	0		
SL-12-240	475872	5049236				X	0	n	Y	n	70%	60%	negligible, mostly quartz	0		
SL-12-240	475872	5049236					0	Y	Y	n	90%	90%	negligible, mostly quartz	0		
SL-12-241	475226	5049656	09712	X			1	Y	Y	n	5%	70%	negligible, mostly quartz minor epidote	0		
SL-12-241	475226	5049656		X			0	n	Y	n	30%	70%	mostly quartz	0		
SL-12-241	475226	5049656			X		1	n	Y	n	60%	80%	mostly quartz	0		
SL-12-241	475226	5049656				X	0	n	Y	n	70%	90%	mostly quartz	0		
SL-12-242	475088	5049658	09712	X			2	n	Y	n	5%	70%	mostly quartz	0		
SL-12-242	475088	5049658		X			1	n	Y	n	15%	60%	garnet	0		
SL-12-242	475088	5049658			X		0	n	Y	n	25%	70%	mostly quartz	1	0.1	Nugget: very rounded
SL-12-242	475088	5049658				X	0	n	Y	n	80%	80%	mostly quartz	0		
SL-12-243	475058	5049766	09712	X			0	Y	Y	n	40%	90%	mostly quartz	0		
SL-12-243	475058	5049766		X			0	Y	Y	Y	20%	60%	garnet & muscovite	0		
SL-12-243	475058	5049766			X		0	Y	Y	n	40%	75%	muscovite	0		
SL-12-243	475058	5049766				X	0	Y	Y	n	50%	90%	mostly quartz	0		
SL-12-243	475058	5049766					0	Y	Y	n	35%	90%	mostly quartz	0		
SL-13-1	486413	5047329	09713	X			0	Y	Y	n	65%	60%	garnet	0		
SL-13-1	486413	5047329		X			0	Y	Y	n	70%	85%	garnet	0		
SL-13-1	486413	5047329			X		0	n	Y	n	75%	75%	garnet & muscovite	0		
SL-13-1	486413	5047329				X	0	n	Y	n	65%	80%	garnet	0		
SL-13-1	486413	5047329					0	n	Y	n	90%	95%	negligible	1	0.05	Flake
SL-13-2	486376	5047200	09713	X			0	Y	Y	n	25%	60%	garnet	0		
SL-13-2	486376	5047200		X			0	Y	Y	n	50%	50%	garnet	0		
SL-13-2	486376	5047200			X		0	Y	Y	n	80%	70%	garnet	0		
SL-13-2	486376	5047200				X	0	n	Y	n	80%	95%	negligible	0		
SL-13-2	486376	5047200					0	n	Y	n	80%	95%	negligible	0		
SL-13-3	486371	5047039	09713	X			0	n	Y	n	25%	60%	negligible	0		
SL-13-3	486371	5047039		X			0	n	Y	n	50%	70%	negligible	0		
SL-13-3	486371	5047039			X		0	n	Y	n	30%	80%	negligible	0		
SL-13-3	486371	5047039				X	0	n	Y	n	25%	90%	negligible	0		
SL-13-3	486371	5047039					0	n	Y	n	50%	95%	negligible	0		

Sample Number	Easting	Northing	Licence #	Fractions (US Mesh)			Other Materials Noted						Gold			
				-18 to +45	-45 to +60	-80 to +80	Arsenopyrite (AsPy)	Iron (Fe)			Black Sand		Light Colour Minerals (v/m-very minor, m-minor, avg-average)	# Units	Size (mm)	Description
								Specular Hematite	Regular Hematite	Iron Pyrite (FeS)	%	% Magnetic				
SL-13-4	486345	5047005	09713	X			0	Y	Y	n	25%	80%	garnet	0		
SL-13-4	486345	5047005			X		0	n	Y	n	35%	85%	garnet	0		
SL-13-4	486345	5047005				X	0	Y	Y	n	45%	85%	negligible	0		
SL-13-4	486345	5047005					0	Y	Y	n	65%	90%	negligible	0		
SL-13-4	486345	5047005				X	0	Y	Y	n	60%	95%	negligible	1	0.05	Flake
SL-13-005	486343	5046995	09713	X			0	Y	Y	Y	60%	80%	garnet	0		
SL-13-005	486343	5046995			X		0	Y	Y	n	65%	90%	garnet	0		
SL-13-005	486343	5046995				X	0	Y	Y	Y	75%	85%	garnet	0		
SL-13-005	486343	5046995					0	Y	Y	n	80%	90%	garnet	1	0.02 x 0.1	Nugget: somewhat rounded
SL-13-005	486343	5046995				X	0	Y	Y	n	70%	95%	garnet	0		
SL-13-6	486329	5046856	09713	X			1	n	Y	n	30%	65%	negligible	0		
SL-13-6	486329	5046856			X		0	n	Y	Y	45%	75%	garnet	1	0.02 x 0.3	Flake: somewhat rounded
SL-13-6	486329	5046856				X	0	Y	Y	Y	70%	85%	negligible	0		
SL-13-6	486329	5046856					0	Y	Y	Y	75%	85%	negligible	0		
SL-13-6	486329	5046856				X	0	Y	Y	n	75%	95%	negligible	0		
SL-13-007	486257	5046708	09713	X			0	Y	Y	n	50%	70%	garnet	0		
SL-13-007	486257	5046708			X		0	Y	Y	Y	60%	75%	garnet	0		
SL-13-007	486257	5046708				X	0	Y	Y	Y	70%	90%	garnet	0		
SL-13-007	486257	5046708					0	Y	Y	n	80%	95%	negligible	1	0.15 x 0.75	Nugget: well rounded
SL-13-8	487644	5047369	09723	X			0	n	Y	n	20%	60%	negligible	0		
SL-13-8	487644	5047369			X		0	n	Y	n	30%	70%	negligible	0		
SL-13-8	487644	5047369				X	0	n	Y	n	25%	80%	negligible	0		
SL-13-8	487644	5047369					0	Y	Y	n	70%	85%	negligible	0		
SL-13-8	487644	5047369				X	0	Y	Y	n	70%	90%	garnet	0		
SL-13-9	487658	5047275	09723	X			0	Y	Y	Y	40%	60%	negligible	0		
SL-13-9	487658	5047275			X		0	Y	Y	n	40%	80%	garnet	0		
SL-13-9	487658	5047275				X	0	Y	Y	Y	70%	95%	garnet	0		
SL-13-9	487658	5047275					0	Y	Y	n	60%	95%	negligible	0		
SL-13-9	487658	5047275				X	0	Y	Y	n	40%	95%	negligible	0		
SL-13-10	487619	5047193	09723	X			0	n	Y	n	25%	70%	negligible	0		
SL-13-10	487619	5047193			X		0	Y	Y	Y	30%	75%	negligible	0		
SL-13-10	487619	5047193				X	0	n	Y	n	30%	60%	negligible	0		
SL-13-10	487619	5047193					0	n	Y	n	60%	85%	negligible	0		
SL-13-10	487619	5047193				X	0	n	Y	n	70%	95%	negligible	0		

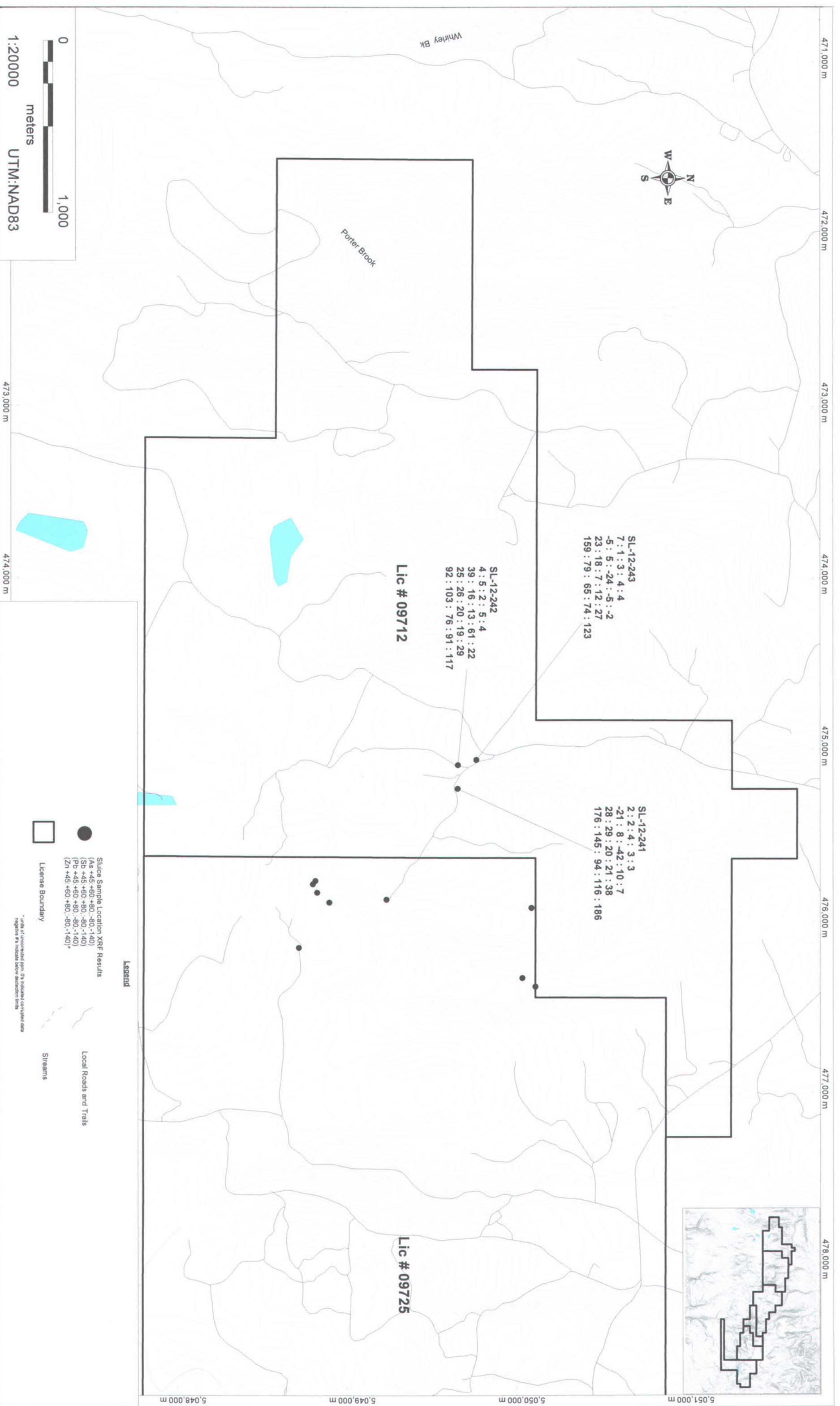
Stream Sediment Table of Results
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Sample Number	Easting	Northing	Licence #	Fractions (US Mesh)			Other Materials Noted				Gold					
				-18 to +45	-45 to +60	-80 to +140	Iron (Fe)		Black Sand		Light Colour Minerals (v/m-very minor, m-minor, avg-average)	# Units	Size (mm)	Description		
							Specular Hematite	Regular Hematite	Iron Pyrite (FeS)	% Magnetic						
SL-13-18	481906	5049031	09722	X				n	Y	n	50%	60%	negligible	0		
SL-13-18	481906	5049031			X			Y	Y	n	50%	80%	garnet	0		
SL-13-18	481906	5049031				X		Y	Y	n	90%	80%	garnet	0		
SL-13-18	481906	5049031					X	Y	Y	n	75%	95%	garnet	0		
SL-13-019	475920	5050091	09725	X				n	Y	n	50%	50%	negligible	0		
SL-13-019	475920	5050091			X			Y	Y	n	50%	80%	garnet & epidote	0		
SL-13-019	475920	5050091				X		n	Y	n	60%	80%	negligible	0		
SL-13-019	475920	5050091					X	n	Y	n	80%	90%	negligible	0		
SL-13-019	475920	5050091						n	Y	n	85%	95%	negligible	2	N: 0.05, F: 0.1 x 0.05	Nugget & Flake both well rounded
SL-13-020	476330	5050037	09725	X				n	Y	n	60%	70%	negligible	0		
SL-13-020	476330	5050037			X			n	Y	n	70%	80%	negligible	0		
SL-13-020	476330	5050037				X		n	Y	n	60%	70%	negligible	0		
SL-13-020	476330	5050037					X	n	Y	n	80%	95%	garnet	0		
SL-13-020	476330	5050037						n	Y	n	70%	90%	negligible	1	0.02	Nugget
SL-13-21	476380	5050114	09725	X				n	Y	n	60%	75%	negligible	0		
SL-13-21	476380	5050114			X			n	Y	n	50%	80%	epidote	0		
SL-13-21	476380	5050114				X		Y	Y	n	65%	80%	epidote	0		
SL-13-21	476380	5050114					X	n	Y	n	80%	90%	negligible	0		
SL-13-21	476380	5050114						n	Y	n	70%	95%	negligible	0		
SL-13-022	475890	5048898	09725	X				Y	Y	n	60%	70%	epidote	0		
SL-13-022	475890	5048898			X			Y	Y	n	70%	75%	epidote	0		
SL-13-022	475890	5048898				X		n	Y	n	60%	80%	garnet & epidote	0		
SL-13-022	475890	5048898					X	n	Y	n	90%	95%	garnet	0		
SL-13-022	475890	5048898						Y	Y	n	85%	95%	garnet	0		
SL-13-023	475832	5048826	09725	X				Y	Y	n	50%	60%	negligible	0		
SL-13-023	475832	5048826			X			Y	Y	n	60%	75%	garnet	0		
SL-13-023	475832	5048826				X		Y	Y	n	70%	80%	garnet	0		
SL-13-023	475832	5048826					X	Y	Y	n	60%	95%	garnet	0		
SL-13-023	475832	5048826						Y	Y	n	50%	95%	garnet	0		
SL-13-024	475764	5048816	09725	X				Y	Y	n	55%	75%	negligible	0		
SL-13-024	475764	5048816			X			Y	Y	n	60%	80%	garnet	0		
SL-13-024	475764	5048816				X		Y	Y	n	75%	80%	garnet	0		
SL-13-024	475764	5048816					X	Y	Y	n	70%	90%	garnet	0		
SL-13-024	475764	5048816						Y	Y	n	60%	95%	garnet	0		

Stream Sediment Table of Results
Pg 6 of 7

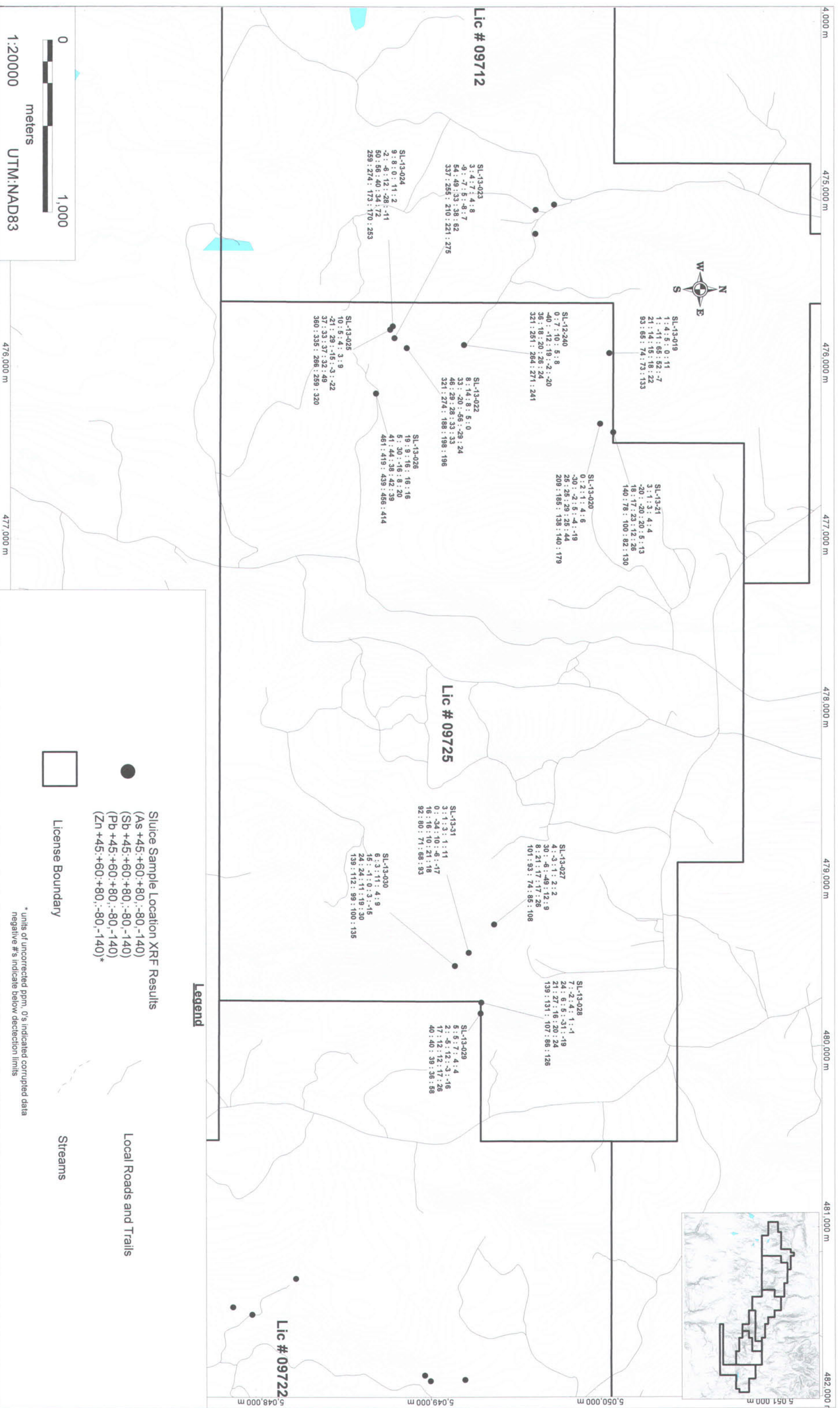
Sample Number	Easting	Northing	Licence #	Fractions (US Mesh)			Other Materials Noted										Gold	
				-18 to +45	-45 to +60	-80 to +80	Arseno-pyrite (AsPy)	Iron (Fe)			Black Sand		Light Colour Minerals (v/m-very minor, m-minor, avg-average)	# Units	Size (mm)	Description		
								Specular Hematite	Regular Hematite	Iron Pyrite (FeS)	%	% Magnetic						
SL-13-025	475783	5048801	09725	X			0	Y	Y	n	60%	80%	garnet & epidote	0				
SL-13-025	475783	5048801			X		0	Y	Y	n	60%	80%	garnet & epidote	0				
SL-13-025	475783	5048801				X	0	Y	Y	n	65%	85%	garnet	0				
SL-13-025	475783	5048801					0	Y	Y	n	80%	95%	garnet	0				
SL-13-025	475783	5048801					0	Y	Y	n	60%	95%	garnet	0				
SL-13-026	476154	5048717	09725	X			0	n	Y	n	50%	90%	negligible	0				
SL-13-026	476154	5048717			X		0	Y	Y	n	50%	90%	negligible	0				
SL-13-026	476154	5048717				X	0	n	Y	n	50%	90%	negligible	0				
SL-13-026	476154	5048717					0	n	Y	n	65%	95%	negligible	0				
SL-13-026	476154	5048717				X	0	Y	Y	n	70%	95%	garnet	0				
SL-13-027	479240	5049409	09725	X			0	n	Y	n	65%	90%	negligible	0				
SL-13-027	479240	5049409			X		0	n	Y	n	70%	90%	garnet	0				
SL-13-027	479240	5049409				X	0	n	Y	n	65%	95%	negligible	0				
SL-13-027	479240	5049409					0	n	Y	n	85%	90%	negligible	0				
SL-13-027	479240	5049409					0	n	Y	n	75%	90%	negligible	0				
SL-13-028	479695	5049333	09725	X			0	n	Y	n	70%	90%	negligible	0				
SL-13-028	479695	5049333			X		0	n	Y	n	75%	90%	negligible	0				
SL-13-028	479695	5049333				X	0	n	Y	n	80%	90%	negligible	0				
SL-13-028	479695	5049333					0	n	Y	n	85%	90%	negligible	0				
SL-13-028	479695	5049333					0	n	Y	n	80%	90%	negligible	0				
SL-13-029	479758	5049329	09725	X			0	n	Y	n	70%	90%	negligible	0				
SL-13-029	479758	5049329					0	n	Y	n	75%	90%	negligible	0				
SL-13-029	479758	5049329				X	0	Y	Y	n	60%	90%	negligible	0				
SL-13-029	479758	5049329					0	Y	Y	n	85%	90%	garnet	0				
SL-13-029	479758	5049329				X	0	Y	Y	n	85%	95%	garnet	0				
SL-13-030	479482	5049178	09725	X			0	n	Y	n	70%	70%	negligible	0				
SL-13-030	479482	5049178			X		0	n	Y	n	60%	85%	negligible	0				
SL-13-030	479482	5049178				X	0	n	Y	n	65%	85%	garnet	0				
SL-13-030	479482	5049178					0	Y	Y	n	85%	95%	garnet	1	0.2 x 0.1	Nugget: somewhat rounded		
SL-13-030	479482	5049178					0	n	Y	n	60%	95%	garnet	0				
SL-13-31	479405	5049259	09725	X			0	n	Y	n	75%	80%	negligible	0				
SL-13-31	479405	5049259			X		0	n	Y	n	75%	90%	negligible	0				
SL-13-31	479405	5049259				X	0	n	Y	n	70%	90%	negligible	0				
SL-13-31	479405	5049259					0	n	Y	n	60%	90%	negligible	0				
SL-13-31	479405	5049259				X	0	n	Y	n	70%	95%	negligible	0				

Licence 09712 Au Indicators XRF Results on Sluice Samples



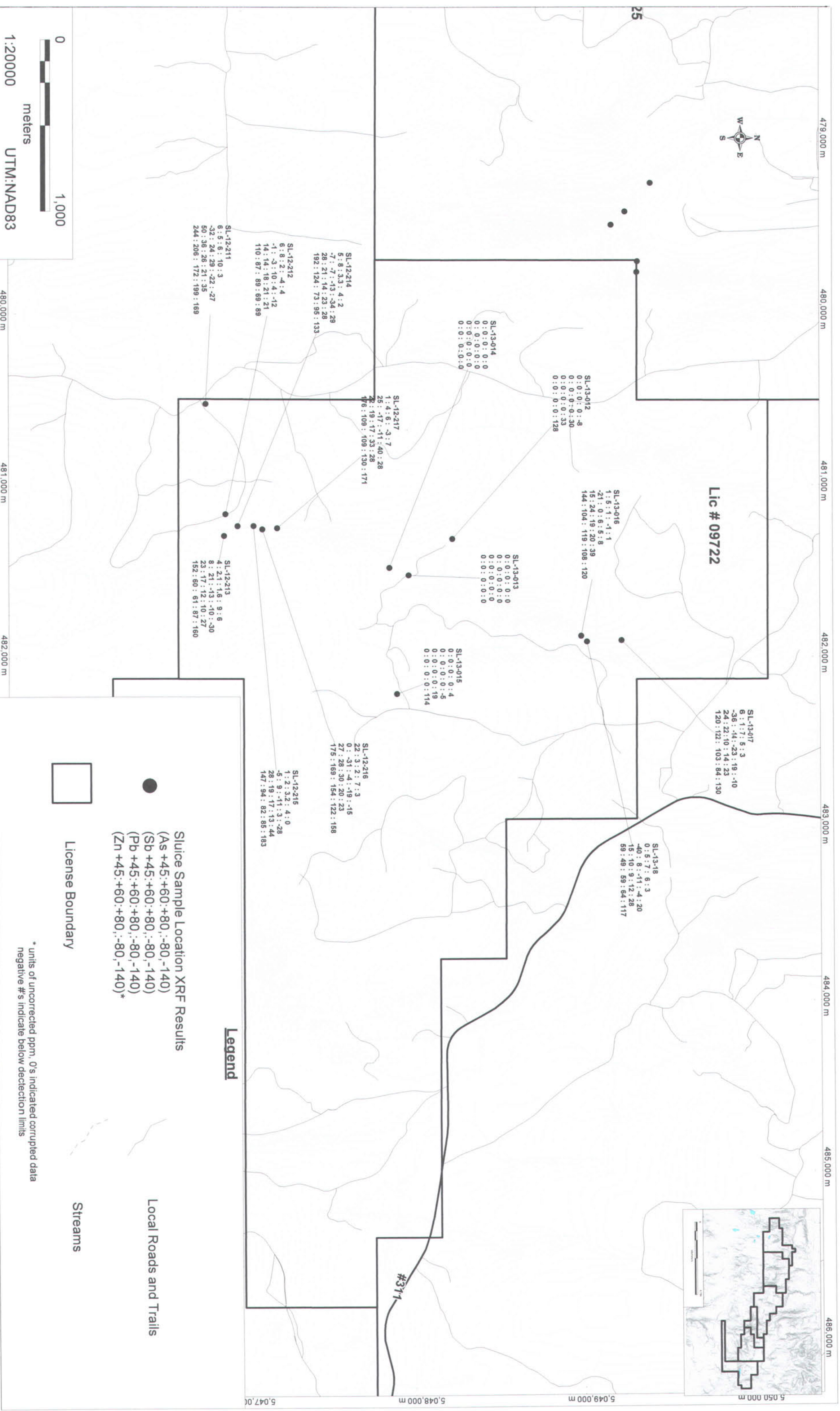
Map 1

Licence 09725 Au Indicators XRF Results on Sluice Samples



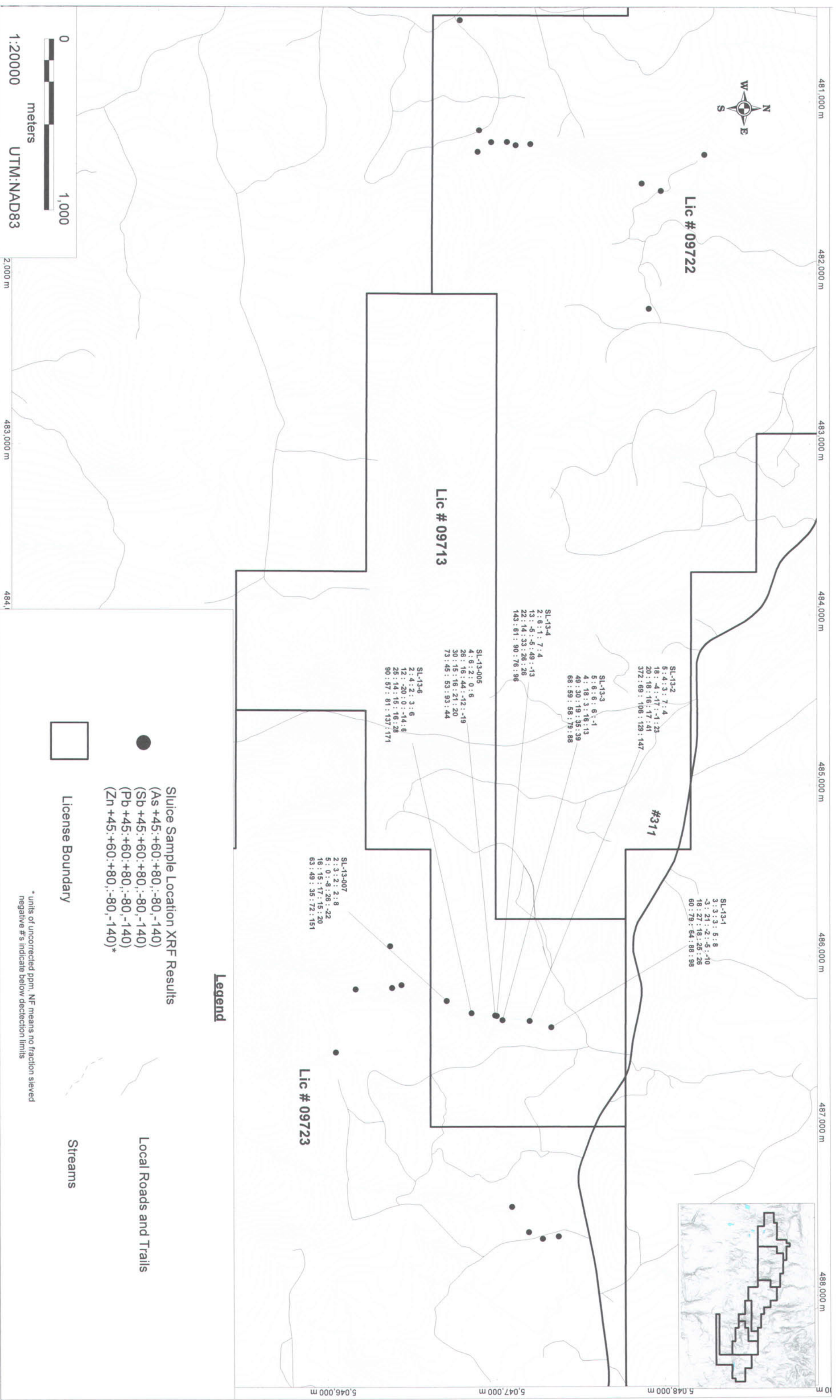
Map 2

Licence 09722 Au Indicators XRF Results on Sluice Samples



Map 3

Licence 09713 Au Indicators XRF Results on Sluice Samples



Legend

Sluice Sample Location XRF Results

(As +45:+60:+80,.-80,-140)
 (Sb +45:+60:+80,.-80,-140)
 (Pb +45:+60:+80,.-80,-140)
 (Zn +45:+60:+80,.-80,-140)*

License Boundary

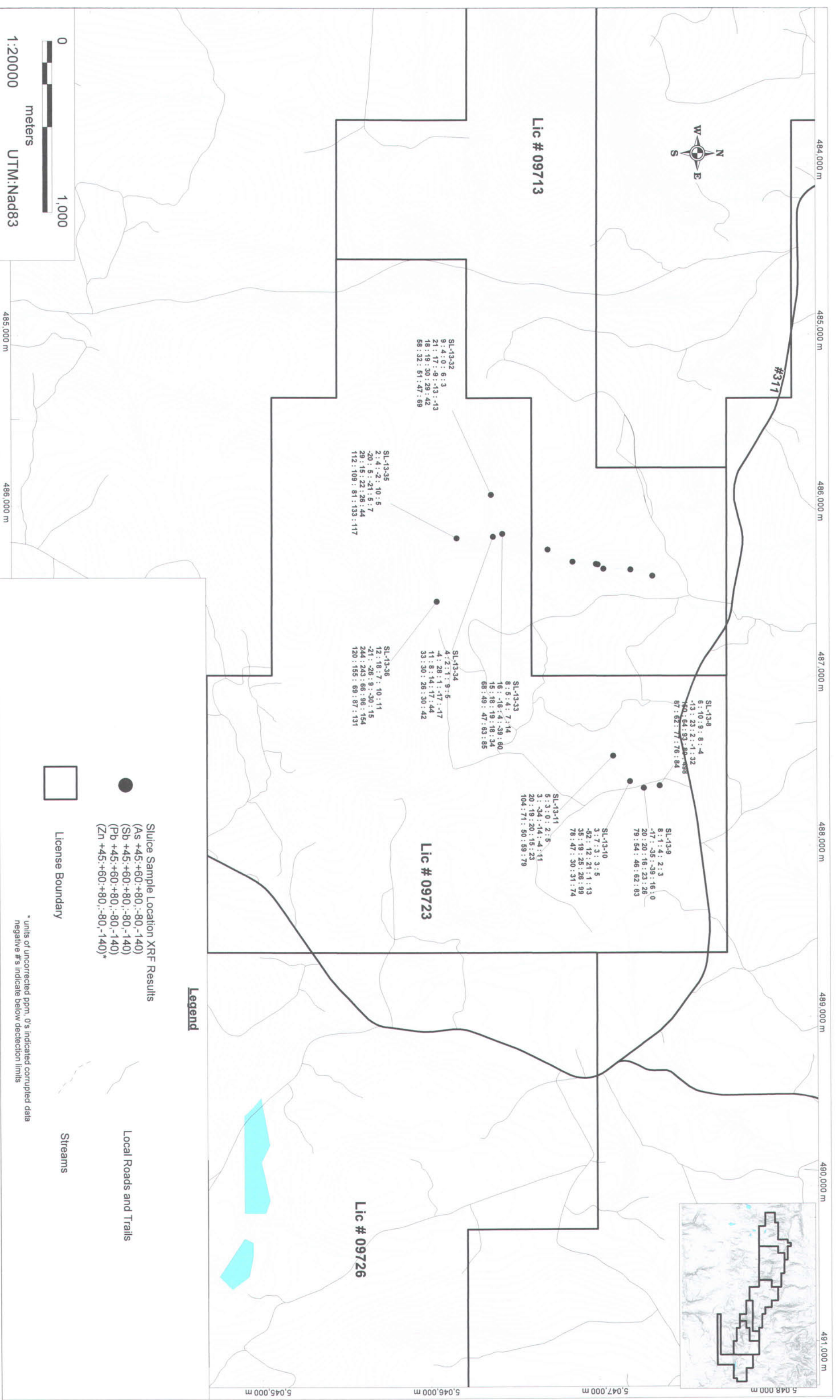
Local Roads and Trails

Streams

* units of uncorrected ppm, NF means no fraction sieved
 negative #'s indicate below detection limits

Map 4

Licence 09723 Au Indicators XRF Results on Sluice Samples



Legend

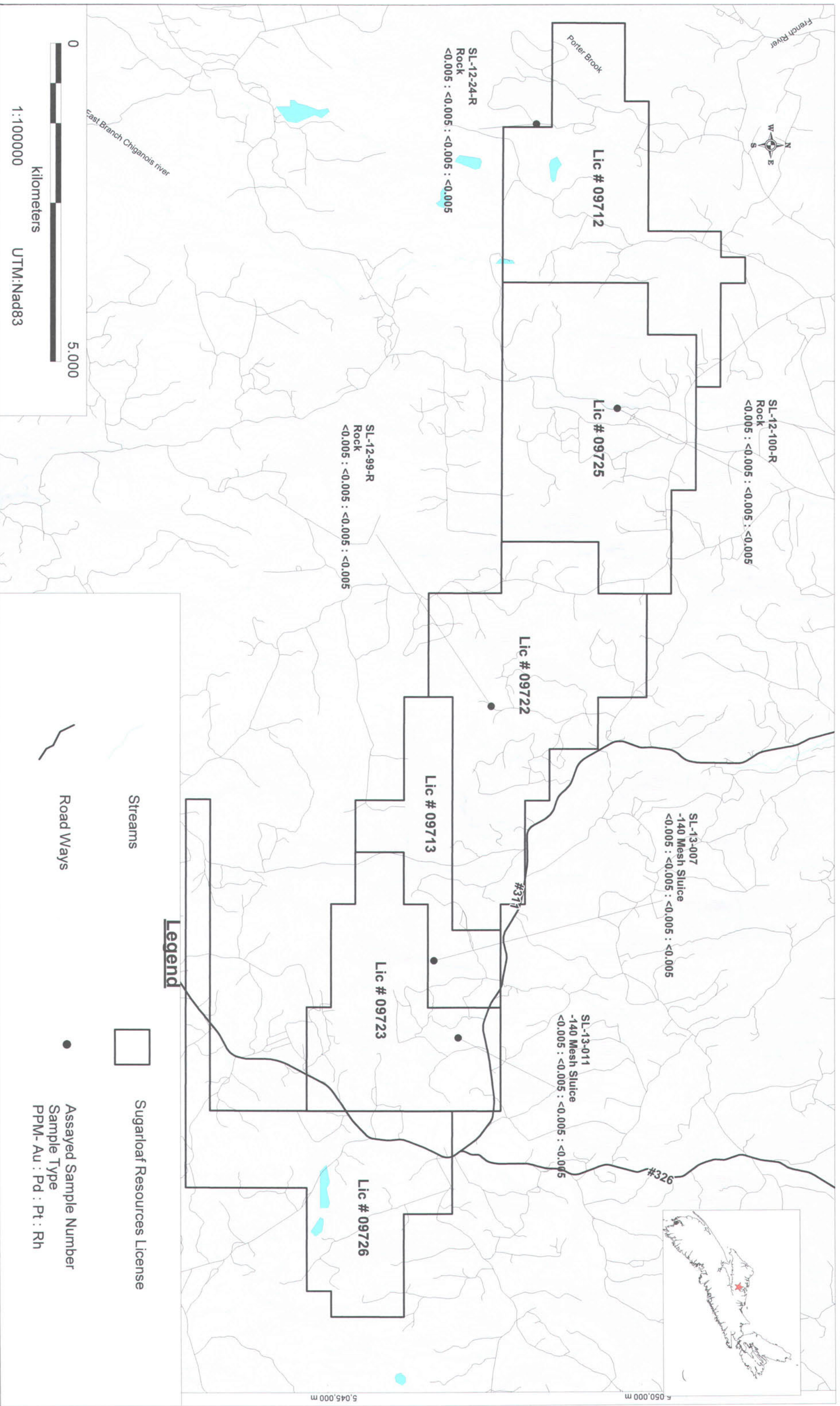
- Sluice Sample Location XRF Results
- (As +45:+60:+80,-80,-140)
- (Sb +45:+60:+80,-80,-140)
- (Pb +45:+60:+80,-80,-140)
- (Zn +45:+60:+80,-80,-140)*
- License Boundary
- Local Roads and Trails
- Streams



Map 5

* units of uncorrected ppm, 0's indicated corrupted data
negative #'s indicate below detection limits

Sugarloaf Assayed Samples Location Map



Map 6

APPENDIX C

XRF Analyzer Specs and Theory

DELTA
Dynamic XRF



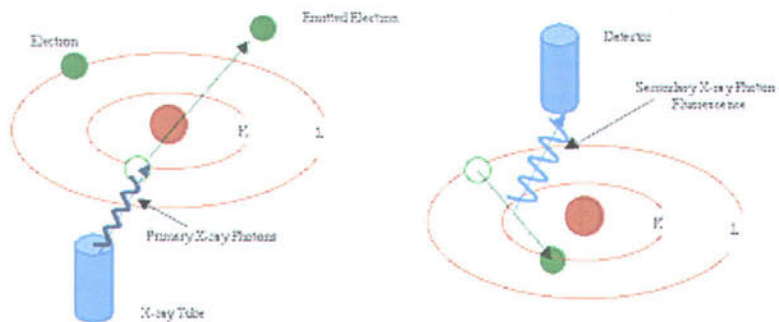
X-Ray Fluorescence (XRF) Spectrometry

BASIC THEORY

Although more popularly known for its diagnostic use in the medical field, the use of x-rays forms the basis of many other powerful measurement techniques, including X-ray Fluorescence (XRF) Spectrometry.

XRF Spectrometry is used to identify elements in a substance and quantify the amount of those elements present to ultimately determine the elemental composition of a material. An element is identified by its characteristic X-ray emission wavelength (λ) or energy (E). The amount of an element present is quantified by measuring the intensity (I) of its characteristic emission.

All atoms have a fixed number of electrons (negatively charged particles) arranged in orbitals around the nucleus. Energy Dispersive (ED) XRF and Wavelength Dispersive (WD) XRF Spectrometry typically utilize activity in the first three electron orbitals, the K, L, and M lines, where K is closest to the nucleus.



In XRF Spectrometry, high-energy primary X-ray photons are emitted from a source (X-ray tube) and strike the sample. The primary photons from the X-ray tube have enough energy to knock electrons out of the innermost, K or L, orbitals. When this occurs, the atoms become ions, which are unstable. An electron from an outer orbital, L or M, will move into the newly vacant space at the inner orbital to regain stability. As the electron from the outer orbital moves into the inner orbital space, it emits an energy known as a secondary X-ray photon. This phenomenon is called fluorescence. The secondary X-ray produced is characteristic of a specific element. The energy (E) of the emitted fluorescent X-ray photon is determined by the difference in energies between the initial and final orbitals of the individual transitions.

This is described by the formula

$$E=hc\lambda^{-1}$$

where h is Planck's constant; c is the velocity of light; and λ is the characteristic wavelength of the photon.

Energies are inversely proportional to the wavelengths; they are characteristic for each element. For example the $K\alpha$ energy for Iron (Fe) is about 6.4keV. Typical spectra for EDXRF Spectrometry appear as a plot of Energy (E) versus the Intensity (I).

Elemental Analysis

XRF Spectrometry is the choice of many analysts for elemental analysis. XRF Spectrometry easily and quickly identifies and quantifies elements over a wide dynamic concentration range, from PPM levels up to virtually 100% by weight. XRF Spectrometry does not destroy the sample and requires little, if any, sample preparation. It has a very fast overall analysis turnaround time. These factors lead to a significant reduction in the per sample analytical cost when compared to other elemental analysis techniques.

Aqueous elemental analysis instrument techniques typically require destructive and time-consuming specimen preparation, often using concentrated acids or other hazardous materials. Not only is the sample destroyed, waste streams are generated during the analysis process that need to be disposed of, many of which are hazardous. These aqueous elemental analysis techniques often take twenty minutes to several hours for sample preparation and analysis time. All of these factors lead to a relatively high cost per sample. However, if PPB and lower elemental concentrations are the primary measurement need, aqueous instrument elemental analysis techniques are necessary.

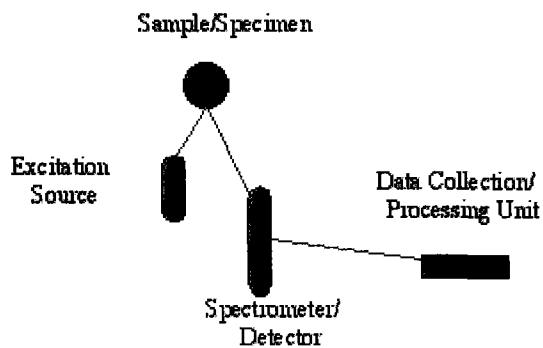
All elemental analysis techniques experience interferences, both chemical and physical in nature, and must be corrected or compensated for in order to achieve adequate analytical results. Most aqueous instrument techniques for elemental analysis suffer from interferences that are corrected for by extensive and complex sample preparation techniques, instrumentation modifications or enhancements, and by mathematical corrections in the system's software. In XRF Spectrometry, the primary interference is from other specific elements in a substance that can influence (matrix effects) the analysis of the element(s) of interest. However, these interferences are well known and documented; and, instrumentation advancements and mathematical corrections in the system's software easily and quickly correct for them. In certain cases, the geometry of the sample can affect XRF analysis, but this is easily compensated for by selecting the optimum sampling area, grinding or polishing the sample, or by pressing a pellet or making glass beads.

Quantitative elemental analysis for XRF Spectrometry is typically performed using Empirical Methods (calibration curves using standards similar in property to the unknown) or Fundamental Parameters (FP). FP is frequently preferred because it allows elemental analysis to be performed without standards or calibration curves. This enables the analyst to use the system immediately, without having to spend additional time setting up individual calibration curves for the various elements and materials of interest. The capabilities of modern computers allow the use of this non-standard mathematical analysis, FP, accompanied by stored libraries of known materials, to

determine not only the elemental composition of an unknown material quickly and easily, but even to identify the unknown material itself.

Spectrometers

Innov-X Systems utilizes the EDXRF Spectrometer technique for its mechanical simplicity and excellent adaptation to portable field use. An EDXRF system typically has three major components: an excitation source, a spectrometer/detector, and a data collection/processing unit. The ease of use, rapid analysis time, lower initial purchase price and substantially lower long-term maintenance costs of EDXRF Spectrometers have led to having more systems in use today worldwide than WDXRF Spectrometer systems. Handheld, field portable EDXRF units can be taken directly to the sample as opposed to bringing the sample to the analyzer and configuring it to fit in an analysis chamber. Innov-X Systems portable, handheld EDXRF units solve real 21 st century application problems: solving crimes, analyzing alloys, exposing pollution, preserving history, searching for WMD's, conserving art treasures, and a myriad of other elemental field-oriented analyses.



The Deltas' Cutting-edge features include:

- Exceptional speed and sample throughput due to state-of-the-art electronics, a floating point processor, and redesigned analytical geometry
- Ruggedized, weather and dustproof industrialized LEXAN housing – no PDA or movable screen – provides superior reliability
- Significant improvement in LODs and light element analysis resulting from the DELTA's unique 4W, 200 μ A (max) x-ray tube



- Advanced integrated technology including an accelerometer, barometer, true hot-swap battery capabilities, and other innovations
- Icon-driven UI via bright, Blanview™ color touchscreen
 - brightens in sunlight – easy to read in all environments
- Available with fully integrated camera and X-ray spot collimation
 - crisp accurate sample images that can be archived into memory
 - small spot collimation for focusing the beam to a 3mm diameter spot.

Innov-X has reinvented on-site analysis with the DELTA line; a new breed of handheld XRF. We've redesigned our analyzers from the ground up to create instruments that are both analytically superior AND rugged enough for virtually any environment. The DELTA analyzers

feature the very latest in large area silicon drift detector technology, and unique 4W, 200 μ A (max) x-ray tubes for maximized accuracy and precision.

DELTA analyzers are also fully industrialized tools, and offer unsurpassed testing speed; yielding significantly increased productivity and throughput for operators. Take hundreds more tests per day with the DELTA analyzer. Smart on the inside. Tough on the outside. **No compromises.**

The DELTA line of analyzers feature our signature upgradeability. Customers may purchase a value-leading **Classic** model and upgrade to the analytically best **Premium** model at any time as analytical needs change - all with the same hardware platform and intuitive, friendly user interface.

The Innov-X Handheld XRF for elemental analysis meets EPA Method 6200 for metals in soil, NIOSH Method 7702 for lead in air filters, and OSHA Methods OSHA1 and OSS1 for lead in air filters and dust wipes. The 8 RCRA Metals and Priority Pollutant Metals are easily monitored on-site with the Innov-X Handheld XRF.

The Innov-X Systems Materials Testing & Mining Analyzers include standard hardware and accessories. Capabilities available include Fundamental Parameters, Empirical Analysis, linear or quadratic calibration modes, LEAP for Light Element Analysis, and Single or Multi element analysis capability.

Form 10 - Statement of Assessment Work Expenditure
(pursuant to the *Mineral Resources Act*, S.N.S. 1990, c. 18, s. 43(1))

(Complete as necessary to substantiate the total claimed.)

Re: Licence No. 09712 Date of issue May 4, 2011

Type of Work		Amount Spent
1.	Prospecting _____ 3 _____ days	\$1,775
2.	Geological mapping _____ days	
3.	Trenching/stripping/refilling _____ m ² / _____ m ³	
4.	Assaying & whole rock analysis _____ 1 _____ #	\$50
5.	Other laboratory _____ 15 _____ #	\$2,825
6.	Grid: (a) Line cutting (b) Picket setting (c) Flagging _____ km _____ km _____ km	
7.	Geophysical surveys Airborne: (a) EM/VLF (b) Mag or Grad (c) Radiometric (d) Combination (e) Other _____ _____ km _____ km _____ km _____ km	
8.	Geophysical surveys Ground: (a) EM/VLF (b) Seismic soundings (c) Magnetic/telluric (d) IP/resistivity (e) Gravity (f) Other _____ _____ km _____ # _____ km _____ km _____ km	
9.	Geochemical surveys (a) Lake, stream, spring (i) Water (ii) Sediments (b) (i) Rock (ii) Core (iii) Chips (c) (i) Soil (ii) Overburden (d) Gas (e) Biogeochemistry (f) Sample collection (g) Other _____ _____ samples 21 samples _____ samples _____ samples _____ samples _____ samples _____ samples _____ samples 5 days \$2,050	
10.	Drilling: (a) Diamond (# holes/m) (b) Percussion (# holes/m) (c) Rotary (# holes/m) (d) Auger (# holes/m) (e) Reverse circulation (# holes/m) (f) Logging, supervision, etc. (g) Sealing (# holes) _____ / _____ m _____ / _____ m _____ / _____ m _____ / _____ m _____ / _____ m _____ days _____ #	
11.	Other (describe) Hotel, Mileage, Food, Chainsaw, ATV	\$960
	Subtotal	\$7,660
Overhead costs		
12.	Secretarial services	
13.	Drafting services	
14.	Office expenses (rent, heat, light, etc.) 10%	\$766
15.	Field supplies	\$80
16.	Compensation paid to landowners	
17.	Legal fees	
18.	Other (describe)	
	Subtotal	\$846
	Grand total	\$8,506

Form 10 - Statement of Assessment Work Expenditure
(pursuant to the *Mineral Resources Act*, S.N.S. 1990, c. 18, s. 43(1))

(Complete as necessary to substantiate the total claimed.)

Re: Licence No. 09713 Date of issue May 4, 2011

Type of Work		Amount Spent
1.	Prospecting	_____ days
2.	Geological mapping	_____ days
3.	Trenching/stripping/refilling	_____ m ² / _____ m ³
4.	Assaying & whole rock analysis	_____ 1 # \$50
5.	Other laboratory	_____ 35 # \$5,225
6.	Grid:	
	(a) Line cutting	_____ km
	(b) Picket setting	_____ km
	(c) Flagging	_____ km
7.	Geophysical surveys	
	Airborne:	
	(a) EM/VLF	_____ km
	(b) Mag or Grad	_____ km
	(c) Radiometric	_____ km
	(d) Combination	_____ km
	(e) Other _____	_____ km
8.	Geophysical surveys	
	Ground:	
	(a) EM/VLF	_____ km
	(b) Seismic soundings	_____ #
	(c) Magnetic/telluric	_____ km
	(d) IP/resistivity	_____ km
	(e) Gravity	_____ km
	(f) Other _____	_____ km
9.	Geochemical surveys	
	(a) Lake, stream, spring	
	(i) Water	_____ samples
	(ii) Sediments	_____ 49 samples
	(b) (i) Rock	_____ samples
	(ii) Core	_____ samples
	(iii) Chips	_____ samples
	(c) (i) Soil	_____ samples
	(ii) Overburden	_____ samples
	(d) Gas	_____ samples
	(e) Biogeochemistry	_____ samples
	(f) Sample collection	_____ 8 days
	(g) Other _____	_____ \$3,175
10.	Drilling:	
	(a) Diamond (# holes/m)	_____ / _____ m
	(b) Percussion (# holes/m)	_____ / _____ m
	(c) Rotary (# holes/m)	_____ / _____ m
	(d) Auger (# holes/m)	_____ / _____ m
	(e) Reverse circulation (# holes/m)	_____ / _____ m
	(f) Logging, supervision, etc.	_____ days
	(g) Sealing (# holes)	_____ #
11.	Other (describe)	
	Hotel, Mileage, Food, Chainsaw, ATV	\$1,185
	Subtotal	\$9,635
Overhead costs		
12.	Secretarial services	
13.	Drafting services	
14.	Office expenses (rent, heat, light, etc.)	10% \$964
15.	Field supplies	\$220
16.	Compensation paid to landowners	
17.	Legal fees	
18.	Other (describe)	
	Subtotal	\$1,184
	Grand total	\$10,819

Form 10 - Statement of Assessment Work Expenditure
(pursuant to the *Mineral Resources Act*, S.N.S. 1990, c. 18, s. 43(1))

(Complete as necessary to substantiate the total claimed.)

Re: Licence No. 09722 Date of issue May 11, 2011

Type of Work		Amount Spent
1.	Prospecting _____ days	
2.	Geological mapping _____ days	
3.	Trenching/stripping/refilling _____ m ² / _____ m ³	
4.	Assaying & whole rock analysis _____ 1 #	\$50
5.	Other laboratory _____ 70 #	\$10,450
6.	Grid: (a) Line cutting _____ km (b) Picket setting _____ km (c) Flagging _____ km	
7.	Geophysical surveys Airborne: (a) EM/VLF _____ km (b) Mag or Grad _____ km (c) Radiometric _____ km (d) Combination _____ km (e) Other _____ km	
8.	Geophysical surveys Ground: (a) EM/VLF _____ km (b) Seismic soundings _____ # (c) Magnetic/telluric _____ km (d) IP/resistivity _____ km (e) Gravity _____ km (f) Other _____ km	
9.	Geochemical surveys (a) Lake, stream, spring (i) Water _____ samples (ii) Sediments 98 samples (b) (i) Rock _____ samples (ii) Core _____ samples (iii) Chips _____ samples (c) (i) Soil _____ samples (ii) Overburden _____ samples (d) Gas _____ samples (e) Biogeochemistry _____ samples (f) Sample collection 16 days (g) Other _____	\$6,350
10.	Drilling: (a) Diamond (# holes/m) _____ / _____ m (b) Percussion (# holes/m) _____ / _____ m (c) Rotary (# holes/m) _____ / _____ m (d) Auger (# holes/m) _____ / _____ m (e) Reverse circulation (# holes/m) _____ / _____ m (f) Logging, supervision, etc. _____ days (g) Sealing (# holes) _____ #	
11.	Other (describe) Hotel, Mileage, Food, Chainsaw, ATV	\$2,040
	Subtotal	\$18,890
Overhead costs		
12.	Secretarial services	
13.	Drafting services	
14.	Office expenses (rent, heat, light, etc.)	\$1,889
15.	Field supplies	\$310
16.	Compensation paid to landowners	
17.	Legal fees	
18.	Other (describe)	
	Subtotal	\$2,199
	Grand total	\$21,089

Form 10 - Statement of Assessment Work Expenditure
(pursuant to the *Mineral Resources Act*, S.N.S. 1990, c. 18, s. 43(1))

(Complete as necessary to substantiate the total claimed.)

Re: Licence No. 09723 Date of issue May 11, 2011

Type of Work		Amount Spent
1.	Prospecting _____ days	
2.	Geological mapping _____ days	
3.	Trenching/stripping/refilling _____ m ² / _____ m ³	
4.	Assaying & whole rock analysis _____ 1 #	\$50
5.	Other laboratory _____ 45 #	\$6,938
6.	Grid: (a) Line cutting (b) Picket setting (c) Flagging	_____ km _____ km _____ km
7.	Geophysical surveys Airborne: (a) EM/VLF (b) Mag or Grad (c) Radiometric (d) Combination (e) Other _____	_____ km _____ km _____ km _____ km _____ km
8.	Geophysical surveys Ground: (a) EM/VLF (b) Seismic soundings (c) Magnetic/telluric (d) IP/resistivity (e) Gravity (f) Other _____	_____ km _____ # _____ km _____ km _____ km
9.	Geochemical surveys (a) Lake, stream, spring (i) Water (ii) Sediments (b) (i) Rock (ii) Core (iii) Chips (c) (i) Soil (ii) Overburden (d) Gas (e) Biogeochemistry (f) Sample collection (g) Other _____	_____ samples 63 samples _____ samples _____ samples _____ samples _____ samples _____ samples 10.5 days _____ samples
10.	Drilling: (a) Diamond (# holes/m) (b) Percussion (# holes/m) (c) Rotary (# holes/m) (d) Auger (# holes/m) (e) Reverse circulation (# holes/m) (f) Logging, supervision, etc. (g) Sealing (# holes)	_____ / _____ m _____ / _____ m _____ / _____ m _____ / _____ m _____ / _____ m _____ days _____ #
11.	Other (describe) Hotel, Mileage, Food, Chainsaw, ATV	\$1,550
	Subtotal	\$12,738
Overhead costs		
12.	Secretarial services	
13.	Drafting services	
14.	Office expenses (rent, heat, light, etc.)	\$1,274
15.	Field supplies	\$260
16.	Compensation paid to landowners	
17.	Legal fees	
18.	Other (describe)	
	Subtotal	\$1,534
	Grand total	\$14,272

Form 10 - Statement of Assessment Work Expenditure
(pursuant to the *Mineral Resources Act*, S.N.S. 1990, c. 18, s. 43(1))

(Complete as necessary to substantiate the total claimed.)

Re: Licence No. 09725 Date of issue May 11, 2011

Type of Work		Amount Spent
1.	Prospecting _____ days	
2.	Geological mapping _____ days	
3.	Trenching/stripping/refilling _____ m ² / _____ m ³	
4.	Assaying & whole rock analysis _____ 1 _____ #	\$50
5.	Other laboratory _____ 70 _____ #	\$10,450
6.	Grid: (a) Line cutting _____ km (b) Picket setting _____ km (c) Flagging _____ km	
7.	Geophysical surveys Airborne: (a) EM/VLF _____ km (b) Mag or Grad _____ km (c) Radiometric _____ km (d) Combination _____ km (e) Other _____ km	
8.	Geophysical surveys Ground: (a) EM/VLF _____ km (b) Seismic soundings _____ # (c) Magnetic/telluric _____ km (d) IP/resistivity _____ km (e) Gravity _____ km (f) Other _____ km	
9.	Geochemical surveys (a) Lake, stream, spring (i) Water _____ samples (ii) Sediments 98 samples (b) (i) Rock _____ samples (ii) Core _____ samples (iii) Chips _____ samples (c) (i) Soil _____ samples (ii) Overburden _____ samples (d) Gas _____ samples (e) Biogeochemistry _____ samples (f) Sample collection 18 days (g) Other _____	\$7,100
10.	Drilling: (a) Diamond (# holes/m) _____ / _____ m (b) Percussion (# holes/m) _____ / _____ m (c) Rotary (# holes/m) _____ / _____ m (d) Auger (# holes/m) _____ / _____ m (e) Reverse circulation (# holes/m) _____ / _____ m (f) Logging, supervision, etc. _____ days (g) Sealing (# holes) _____ #	
11.	Other (describe) Hotel, Mileage, Food, Chainsaw, ATV	\$2,285
	Subtotal	\$19,885
Overhead costs		
12.	Secretarial services	
13.	Drafting services	
14.	Office expenses (rent, heat, light, etc.)	\$1,989
15.	Field supplies	\$315
16.	Compensation paid to landowners	
17.	Legal fees	
18.	Other (describe)	
	Subtotal	\$2,304
	Grand total	\$22,189

Registrar of Mineral and Petroleum Titles
Mineral Resources Branch
3rd Floor, Founders Square
1701 Hollis Street
P.O. Box 698
Halifax, Nova Scotia
B3J 2T9

June 6, 2013

Dear Mr. John MacNeil:

Re: Dates worked on Exploration Licences 09712 & 09713

As per our phone conversation yesterday, here are the details of the 2013 work day corrections to the Form 10's submitted on June 3, 2013:

- Licence 09712
 - Alex MacKay: April 4, 5 should be April 14, 15

- Licence 09713
 - Alex MacKay: April 5, 17 should be April 15, 17
 - Lindsay Allen: April 4, 9 should be April 9, 14
 - Rob Krienke: April 4, 9 should be April 9, 14

Sincerely,



Robert Krienke
President
Sugarloaf Resources Inc.

DNRMP JUN06'13 14:20