BRITISH COLUMBIA

PROSPECTORS ASSISTANCE PROGRAM

MINISTRY OF ENERGY AND MINES

GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:	1998/99
REPORT #:	PAP 98-15
NAME:	BARBARA WELSH

BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area.
- **Refer to Program Requirements/Regulations 15 to 17, page 6.**
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT.

Name BARBARA WELSH Reference Number 98/99 P2:4

LOCATION/COMMODITIES

Project Area (as listed in Part A) SHANNON CREEK MINFILE No. if applicable 082KSW060 082KSW183

Location of Project Area NTS 82K/4 Lat 50°-05'-37" Long 117°-35'-26"

Description of Location and Access

Main Commodities Searched For Mo, Ag, Pb, Zn, Cu, Au

Known Mineral Occurrences in Project Area SHANNON 082KSW060
SLEWISKIN 183
VICTIM MOLYBDENUM #1+2 188, 189

WORK PERFORMED

1. Conventional Prospecting (area) 2380 Ha - 41 ROCK SAMPLES
2. Geological Mapping (hectares/scale) 2380 Ha - 1:20,000 SCALE
3. Geochemical (type and no. of samples) STREAM SEDIMENTS - 11 SAMPLED, 6 PANNED
4. Geophysical (type and line km) MAGNETITE DETECTED IN STREAMS + SOIL'S
5. Physical Work (type and amount)
6. Drilling (no. holes, size, depth in m, total m)
7. Other (specify)

SIGNIFICANT RESULTS

Commodities Mo Claim Name N/A

Location (show on map) Lat Long Elevation

Best assay/sample type 102 ppm

Description of mineralization, host rocks, anomalies

SIGNIFICANT RESULTS FROM ASSESSMENT REPORT #13,341 (1-10 g/t Au, HIGH Cu) COULD NOT BE DUPLICATED.
MAGNETIC ANOMALY COULD BE EXPLAINED BY HIGH MAGNETITE CONTENT

Supporting data must be submitted with this TECHNICAL REPORT

Information on this form is confidential for one year from the date of receipt subject to the provisions of the *Freedom of Information Act*.

PROSPECTING IN THE SHANNON CREEK AREA

A. Introduction

Prospecting was carried out in the Shannon Creek area, west of Slocan Lake, by Barbara and William Welsh, for a total of 43 days from June 2 to August 30, 1998. A total of 38 rock samples and 11 silt samples were collected and analyzed by I.C.P. for 30 elements plus gold. As well, several other small creeks were panned in order to detect the presence of gold and heavy minerals, and geological mapping was carried out over the area.

The selection of the Shannon Creek area for prospecting was guided by Regional Geochemical Survey data, geophysical data, the MINFILE database and geological data, all provided by the Ministry of Energy and Mines via the Internet (see Fig. 1). Initially, the MINFILE occurrences in the area were assumed to represent more conventional orebody models, like polymetallic Pb-Zn-Ag-Au veins, but subsequent field work revealed a potential porphyry environment. In fact, a porphyry molybdenum deposit is located a short distance to the east, namely Victim Molybdenum #1 and #2 (MINFILE occurrences 082KSW188 and 189, respectively), which is associated with the Wragge Creek Stock. Since hornfelsing was observed around the contact of the Wragge Creek stock, which is a multiphase intrusion, and porphyry deposits tend to occur in clusters, and in association with other styles of mineralization like epithermal veins and peripheral base metal vein deposits, it did not seem unreasonable to pursue this theory.

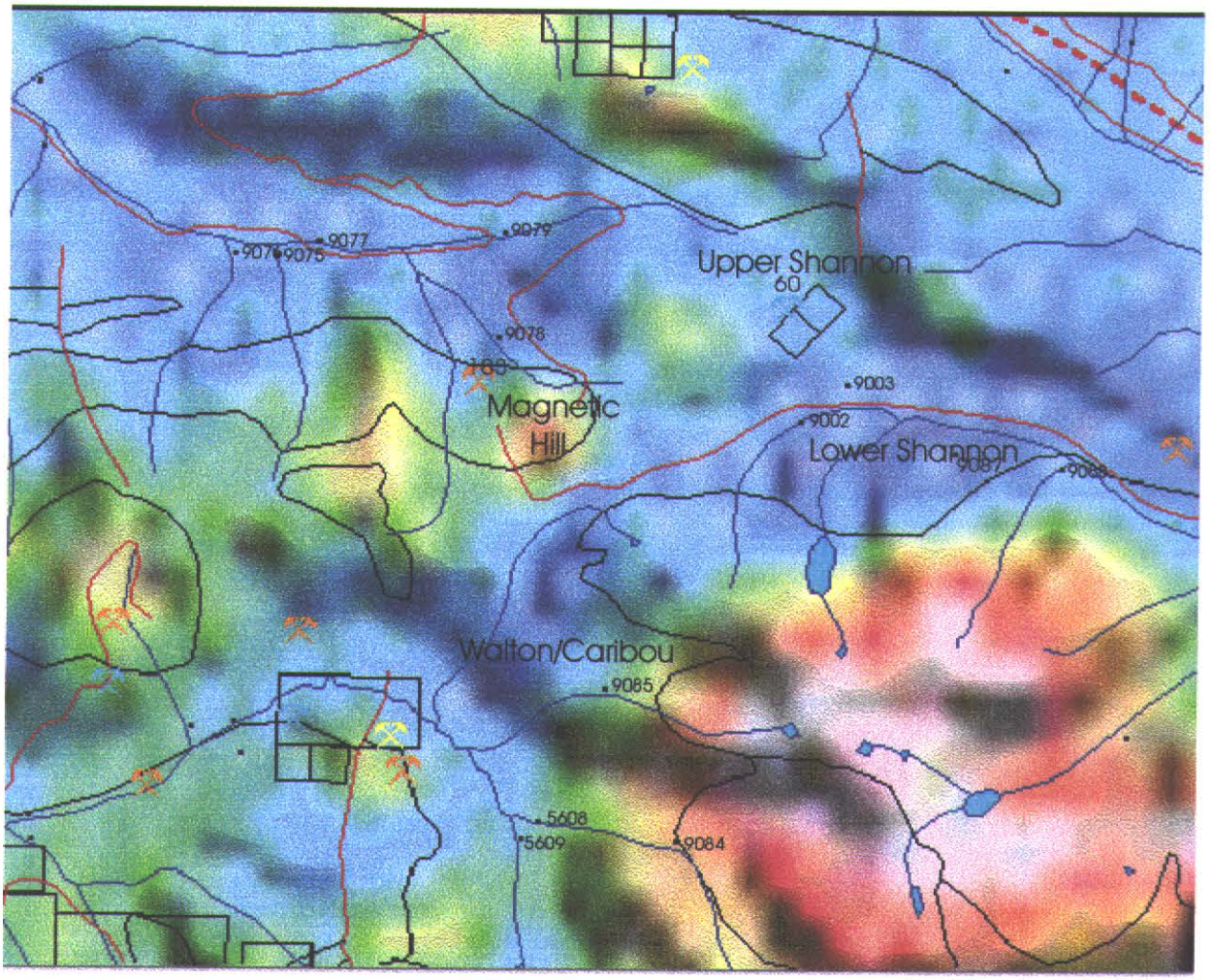
Prospecting activity was focused on three areas, outlined in the proposal:

1) Upper Shannon (MINFILE occurrence 082KSW060) to the headwaters of MacDonald Creek. This area is adjacent to an area of Rossland Group volcanic rocks and the Kusp occurrence (MINFILE 082KSW161), which is classified as a VMS deposit.
2) Magnetic Hill (MINFILE occurrence 082KSW183 – Slewiskin). This area lies within the Ruby Range stock which extends eastward across Silver Mountain. The hill was so named because of its high content of magnetite.
3) Lower Shannon, adjacent to the Wragge Creek stock in a similar environment to the Victim Molybdenite occurrence.

Later, a fourth area was added, because one sample yielded 100 ppm Mo:

4) Walton/Caribou Creek. This area is also adjacent to the Wragge Creek stock, and shows a similar geophysical response as the Victim Molybdenum occurrence.

Fig. 1 Overlay of geophysics (magnetics) and R.G.S. sample sites for the project area (pertinent R.G.S. data listed below)



MAP	ID	UTME	UTMN	FORM	ZN	CU	PB	AG	MO	AU_NA	SB_NA	AS_NA	CR_NA	MO_NA
82K04	775608	454201	5541577	TJs	52	22	2	0.1	1	2	0.1	0.9	230	2
82K04	775609	453939	5541311	TJs	110	34	5	0.2	2	4	0.3	4.5	170	3
82K04	779002	457906	5547354	TJs	80	20	7	0.1	1	2	0.4	2.1	130	1
82K04	779003	458557	5547903	TJs	375	60	300	1.6	2	28	1.9	12	89	1
82K04	779075	450355	5549661	TJs	220	38	19	0.2	4	16	4	79.1	60	6
82K04	779076	449745	5549722	TJs	152	38	21	0.8	2	5	6.8	90.7	120	3
82K04	779077	450972	5549899	TJs	132	38	6	0.1	3	7	4	45	84	3
82K04	779078	453549	5548518	TJs	110	16	6	0.2	2	2	1	5.3	58	2
82K04	779079	453628	5550023	TJs	186	56	7	0.4	7	19	4.2	31	98	6
82K04	779084	456194	5541292	EKgd	66	22	6	0.1	2	2	0.2	1.1	320	2
82K04	779085	455146	5543477	TJs	78	22	5	0.1	1	2	0.1	0.9	190	2
82K04	779087	460146	5546903	TJs	158	34	10	0.2	3	2	0.6	1.4	86	4
82K04	779088	461682	5546677	TJs	86	10	10	0.1	1	2	0.3	1.6	57	1
Mean					190.5	29.6	50.5	0.23	1.8	10.8	1.77	21.64	74.9	1.7
Std Dev					2569	39.9	601.63	1.03	2.18	37.29	16.82	171.75	75.65	2.73
Mean + (2 x Std.Dev)					n/a	109.4	1253.8	2.29	6.16	85.38	35.41	365.14	226.2	7.16
Mode					64	12	8	0.1	1	2	0.2	0.5	110	1
80th %					98	42	23	0.1	2	9	1.5	20	96	2
90th %					142	54	35	0.2	3	19	2.6	30	130	3
95th %					215	64	53	0.4	4	32	4.5	49	180	5

B. Summary of Prospecting Activity

1. Upper Shannon (MINFILE 082KSW060)

First the mine workings at the Shannon occurrence were examined, and a grab sample of the ore stockpile was collected (rock sample SH-06). The extent of the ore appears to be limited as it can be seen clearly in the bed of the creek and is about 4 feet wide. The vertical extent is also limited, because rock samples collected east and west of the adit yielded insignificant results (SH-01 and SH-02). As well, diamond drill holes drilled in 1970 (Assessment Report #2966) were fanned downward from the portal and showed that the ore pinches out between 14 and 21 feet below surface. The strike length is assumed to be limited as well because the ore does not continue in the east wall, and the adit, which was driven to the west, stops at 69 feet. However, if that is true, that length would only account for about half the amount of stockpile present, which is estimated at about 500 tons (see photo below). The face could not be examined because the portal has collapsed, and the assessment report does not mention whether the ore had pinched out. Rock samples SH-03 to 05 and SH-31, all collected at various distances north of the adit, contained insignificant metal values, although pyrite is ubiquitous.

Fig. 2. Shannon (MINFILE 082KSW060), with ore stockpile in foreground, collapsed portal in background.

Due to the rugged topography, for the most part creeks that were panned were quite scoured, and showed limited heavy minerals present. ICP results, for both rock and silt samples, are listed at the end of this section.

2. Magnetic Hill (MINFILE 082KSW183)

Rock sampling, mapping and prospecting was carried out throughout the area surrounding the Slewiskin occurrence, located in the MacDonald Creek watershed. It subsequently became known as "Magnetic Hill" because of the high content of magnetite in the soil, which is locally derived from disintegrating intrusive rocks of the Ruby Range stock, a biotite hornblende quartz diorite (see photo below):

Fig. 3. Biotite-Hornblende-Quartz Diorite of the Ruby Range stock, on Magnetic Hill.
Note the abundant magnetite collected from the soil on the end of the magnet (penny is for scale)

Assessment Report 13341, done for Tillicum Gold Mines Ltd. In 1984, produced assays from samples of quartz veins within these intrusive rocks, which ran as follows:

	Au	Cu	Ag
089108	0.295 oz./ton	184 ppm	2.8 ppm
089103	0.096 oz./ton	13 ppm	1.0 ppm
096202	0.074 oz./ton		
089106	0.048 oz./ton	6855 ppm	2.1 ppm
089109	0.032 oz./ton	32 ppm	0.1 ppm
089110	0.026 oz./ton	48,092 ppm	41.0 ppm

Another sample showed copper at 483 ppm and zinc at 12381 ppm,

An attempt was made to locate and sample these outcrops using the maps in the Assessment Report, but samples failed to reproduce these results. No anomalous numbers were obtained for gold or copper, but molybdenum was

somewhat anomalous, with values up to 28 ppm. Curiously, the ICP's in the Assessment Report reported maximum molybdenum values up to only 6 ppm. The configuration of the roads over this hill are such that it would be impossible to make a mistake about the sample locations, and outcrops are relatively scarce, so it is unlikely that different outcrops from the report were sampled.

The Assessment reports also hint that the mineralization may extend into the surrounding shales, and this was pursued, which produced the best numbers for molybdenum and gold (samples SH-07 and SH-08). Hornfelsing was observed around the intrusive contact, and disseminated sulphides were observed in all the rocks, but the ICP results are disappointing. Ten rock samples and 4 silt samples were collected to represent this area, and the results are tabulated at the end of this section. The best result is SH-25, which yielded 60 ppb gold on a resplit. The high magetite content in the diorite explains the magnetic anomaly illustrated by the magnetics map in Fig. 1, but the lack of mineralization is a mystery.

3. Lower Shannon

The area referred to as "Lower Shannon" is accessed by the hiking trail that leads to Shannon Lake, the Lower Shannon logging road off 8 km. south of the main Shannon Creek Forest Access Road, and a new logging road to the west of the hiking trail. This latter road exposes sedimentary rocks containing abundant

Fig, 4. View of Lower Shannon, looking south from the divide at Upper Shannon

pyrrhotite and pyrite, but little of economic value. Also, some small diorite plugs were seen which had previously not been mapped.

About halfway up the hiking trail, some molybenite was seen in the rocks, and the ICP showed anomalous Mo, but not ore-grade (samples SH-14, 32 and 34).

4. Walton/Caribou Creeks

The Shannon Creek road crosses the divide between the Slocan and Columbia valleys at approximately 15 km. at the point where a branch road to the north ascends a pass into MadDonald Creek. The main road, however, goes over the divide along Walton Creek where it eventually crosses Caribou Creek and joins up with the road that starts at Burton, on Upper Arrow Lake.

Fig. 5. View of Walton and Caribou Creeks with the Valhalla Range in the background.

Rock samples were collected along this stretch of road, and some significant results were obtained. Sample SH-30 contained 102 ppm Mo, but samples SH-37, 38, 39 and 40 were collected nearby, and contained little or no molybdenum. Sample SH-41 contained 155 ppb gold. It should be noted that all these samples are similar in appearance and contained similar amounts of sulphides, although SH-41 contained significantly less.

ROCK SAMPLES ICP

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	0%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	0%	0%	ppm	ppm	0%	ppm	0%	ppm	0%	0%	0%	ppm	ppb
Area 1 - Upper Shannon																														
SH - 01	6	37	7	48	0.7	7	2	258	1.88	<2	< 8	2	28	0.4	3	< 3	37	0.29	0.046	2	23	0.80	105	0.20	<3	1.11	0.02	0.18	< 2	5
SH - 03	4	7	3	31	<0.3	18	2	611	1.03	2	< 8	<2	21	0.8	< 3	< 3	4	0.13	0.049	5	16	0.32	34	<.01	<3	0.45	0.03	0.03	< 2	2
SH - 04	9	23	9	46	1.2	4	2	165	1.39	2	< 8	2	25	0.8	4	< 3	64	0.37	0.029	4	18	0.52	85	0.26	<3	0.90	0.03	0.18	<2	5
SH - 05	2	37	3	56	<0.3	15	13	509	2.86	8	< 8	< 2	74	1.1	< 3	< 3	45	0.80	0.059	2	17	1.37	27	0.20	<3	2.02	0.02	0.02	<2	1
SH - 06	2	685	17808	16033	61.0	10	11	915	3.67	19	< 8	< 2	101	287.3	12	3	38	1.32	0.064	3	18	0.79	32	0.01	<3	1.17	0.02	0.08	3	1160
SH - 31	4	39	10	85	0.6	18	9	687	4.83	<5	<10		57	2	<5	<5	44	0.53	0.068	<10	105	0.81	110	0.10		1.29	0.04		<10	5
Area 2 - Magnetic Hill																														
SH - 07	28	27	56	146	0.5	12	2	136	1.93	< 2	< 8	3	10	1.8	< 3	< 3	50	0.13	0.052	6	21	0.60	102	0.04	<3	0.72	0.02	0.33	< 2	7
SH - 08	3	29	77	76	0.4	9	9	349	2.18	< 2	< 8	< 2	36	1.0	< 3	< 3	60	0.47	0.042	1	23	0.60	80	0.10	<3	1.16	0.07	0.10	4	8
SH - 16	16	70	9	260	0.6	28	13	348	4.52	2	< 8	4	7	4.8	< 3	< 3	91	0.36	0.098	10	25	1.10	97	0.05	<3	1.27	0.03	0.43	3	4
SH - 17	4	39	10	104	0.3	20	11	761	3.46	< 2	< 8	3	110	1.9	< 3	< 3	122	2.99	0.068	12	26	1.09	53	0.04	<3	1.95	0.06	0.16	< 2	2
SH - 18	4	16	24	31	< .3	6	2	145	0.90	< 2	< 8	4	85	< .2	< 3	< 3	15	0.49	0.045	10	19	0.24	32	0.13	<3	0.49	0.03	0.13	5	1
SH - 19	7	55	7	84	0.4	19	9	304	2.79	< 2	< 8	2	44	1.9	< 3	< 3	75	0.55	0.094	5	28	0.62	155	0.13	<3	1.23	0.08	0.35	< 2	3
SH - 20	17	87	6	353	0.6	43	15	335	4.06	< 2	< 8	4	44	5.8	< 3	< 3	229	0.70	0.088	6	63	1.74	123	0.19	<3	2.84	0.18	1.18	< 2	2
SH - 25	9	45	<2	108	< .2	15	7	283	2.56	<5	<10		9	1	<5	<5	57	0.12	0.029	<10	126	0.85	125	0.08		0.93	0.03		<10	5
SH - 26	2	10	<2	46	< .2	<1	9	685	3.02	<5	<10		57	<1	<5	<5	69	0.85	0.137	<10	68	0.63	130	0.11		1.02	0.09		<10	5
SH - 27	<1	11	2	43	< .2	<1	6	448	2.08	<5	<10		34	<1	<5	<5	41	0.35	0.063	<10	104	0.49	200	0.1		1.00	0.07		<10	5
Area 3 - Lower Shannon																														
SH - 09	3	10	10	27	0.8	9	2	174	0.65	< 2	< 8	< 2	2	0.7	< 3	8	6	0.02	0.006	1	18	0.06	17	<.01	<3	0.14	0.01	0.04	2	2
SH - 10	5	55	14	126	1.1	67	8	356	4.65	< 2	< 8	9	247	0.9	< 3	< 3	51	0.14	0.084	21	65	0.67	461	0.13	<3	2.36	0.02	0.76	< 2	2
SH - 11	5	35	5	71	1.2	28	10	689	3.64	< 2	< 8	2	66	2.6	< 3	< 3	33	1.86	0.174	8	17	0.38	46	0.11	<3	0.91	0.08	0.23	< 2	4
REPEAT SH-1	7	39	8	86	1.2	31	14	650	5.08	<5	<10		64	3	<5	5	30	1.78	0.207	<10	62	0.36	50	0.09		0.76	0.06		<10	5
SH -12	3	42	7	119	1.0	51	7	222	2.57	< 2	< 8	5	12	0.4	< 3	< 3	32	0.16	0.065	8	45	0.69	274	0.09	<3	1.14	0.04	0.67	2	10
SH - 13	8	55	8	117	1.3	15	9	261	4.06	4	< 8	2	27	2.0	< 3	< 3	42	0.24	0.086	3	15	0.76	117	<.01	<3	0.89	0.04	0.12	< 2	2
SH - 14	2	14	24	54	0.5	24	5	170	1.70	< 2	< 8	3	9	< .2	< 3	< 3	22	0.08	0.035	9	28	0.47	131	0.05	<3	0.99	0.03	0.28	6	2
REPEAT SH-1	10	16	2	89	<.2	43	15	548	5.25	<5	<10		12	<1	<5	5	85	0.26	0.115	<10	234	1.56	345	0.19		2.80	0.03		<10	20
SH - 15	8	25	19	101	0.5	60	8	1025	0.87	< 2	< 8	4	293	0.6	< 3	< 3	24	7.25	0.087	9	27	0.40	171	0.07	<3	1.36	0.06	0.39	< 2	2
SH - 21	1	6	4	91	< .3	45	20	375	4.24	< 2	< 8	7	11	0.5	< 3	3	97	0.20	0.057	19	72	1.42	253	0.22	<3	2.69	0.05	1.35	< 2	1
SH - 22	2	46	7	47	< .3	23	9	186	2.63	< 2	< 8	4	6	0.2	< 3	< 3	51	0.09	0.039	13	44	0.70	160	0.13	<3	1.53	0.02	0.87	5	5
SH - 23	3	37	4	17	< .3	31	5	97	1.23	< 2	< 8	2	32	< .2	< 3	< 3	12	0.52	0.104	4	11	0.12	26	0.07	<3	0.52	0.07	0.05	< 2	1
REPEAT SH-2	<1	43	12	104	< .2	56	10	330	2.44	<5	<10		4	<1	<5	<5	48	0.21	0.084	<10	154	0.78	100	0.11		1.15	0.05		<10	5
SH - 24	3	16	< 3	63	< .3	18	3	112	0.72	< 2	< 8	3	63	1.3	< 3	< 3	6	0.49	0.083	7	18	0.06	36	0.07	<3	0.14	0.03	< .01	6	1
SH - 28	3	96	12	106	1.40	53	13	475	3.36	<5	<10		8	<1	<5	<5	109	0.13	0.022	<10	96	1.14	115	0.09		1.43	0.03		<10	5
SH - 32	47	102	14	456	1.6	69	11	155	2.11	<5	<10		41	14	<5	<5	173	0.52	0.096	<10	139	0.54	75	0.05		1.35	0.1		<10	5
SH - 33	<1	64	6	80	0.20	3	14	643	3.87	<5	<10		31	<1	<5	5	109	0.45	0.111	<10	88	0.98	145	0.15		1.54	0.08		<10	5
SH - 34	9	42	8	75	1.00	43	12	435	3.74	<5	<10		8	<1	<5	<5	42	0.2	0.085	<10	151	0.94	210	0.19		1.50	0.03		<10	5
SH - 35	2	26	6	72	< .2	10	5	506	1.67	<5	<10		29	<1	<5	<5	29	0.69	0.037	<10	142	0.47	225	0.11		0.99	0.06		<10	20

ROCK SAMPLES ICP

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
Area 4 - Walton/Caribou Creeks																														
SH - 29	<1	37	6	56	<.2	26	14	477	3.56	<5	<10		91	<1	<5	5	81	1.43	0.062	<10	103	1.37	195	0.23		3.5	0.28		<10	25
SH - 30	102	84	4	61	<.2	92	18	249	3.29	<5	<10		9	1	<5	<5	107	0.23	0.055	<10	107	0.99	55	0.1		1.05	0.04		<10	5
SH - 37	<1	29	10	73	<.2	13	7	281	2.63	<5	<10		8	<1	5	10	81	0.21	0.069	<10	91	1.14	675	0.21		1.68	0.05		<10	5
SH - 38	<1	15	10	75	<.2	10	2	221	3.09	<5	<10		6	<1	<5	10	50	0.14	0.054	<10	89	1.17	1610	0.24		1.57	0.05		<10	10
SH - 39	2	151	10	52	0.4	21	13	184	3.42	<5	<10		17	<1	<5	<5	30	0.26	0.04	<10	114	0.92	65	0.09		1.76	0.03		<10	5
SH - 40	4	8	6	15	<.2	9	4	206	0.94	<5	<10		3	<1	<5	<5	9	0.09	0.024	<10	142	0.04	30	<.01		0.21	0.02		<10	5
SH - 41	<1	44	12	55	<.2	31	28	819	4.53	<5	<10		101	<1	5	10	101	2.77	0.118	10	300	2.54	175	0.28		2.3	0.18		<10	155
STANDARD G-	1	3	< 3	40	< .3	8	4	516	1.93	< 2	< 8	6	73	< .2	< 3	< 3	40	0.61	0.095	7	75	0.57	222	0.13	< 3	0.97	0.07	0.46	2	2
RE SH - 10	5	57	14	129	1.0	68	8	357	4.73	<2	< 8	10	253	0.7	< 3	< 3	52	0.14	0.085	21	66	0.68	471	0.13	< 3	2.40	0.03	0.77	< 2	2
RE SH - 29	2	48	9	48	< .3	24	9	192	2.71	< 2	< 8	4	6	0.3	< 3	< 3	52	0.09	0.040	13	45	0.72	165	0.13	< 3	1.58	0.02	0.89	5	4
RE SH - 25	10	40	2	114	<.2	16	8	279	2.46	<5	<10		10	<1	<5	<5	62	0.13	0.027	<10	133	0.68	130	0.09		0.98	0.04		<10	60

SILT SAMPLES

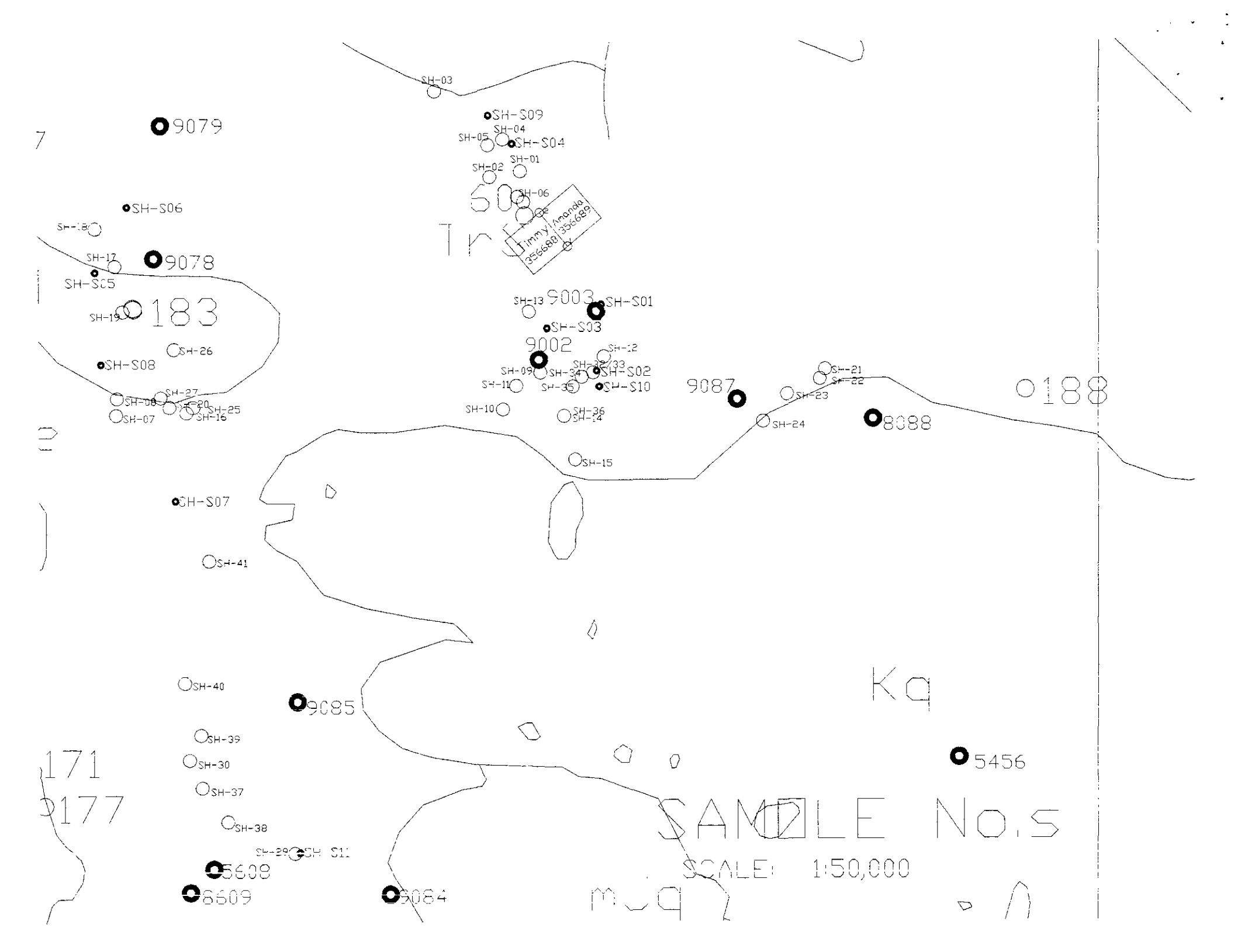
ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	0%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	0%	0%	ppm	ppm	0%	ppm	0%	ppm	0%	0%	0%	ppm	ppb
SH - S01	3	52	11	136	0.4	31	16	511	3.95	15	< 8	2	38	1.7	< 3	< 3	67	0.64	0.150	8	26	0.85	45	0.07	< 3	1.18	0.01	0.07	< 2	7
SH - S02	2	40	8	138	< .3	39	9	619	2.70	4	< 8	5	49	0.7	< 3	3	83	0.35	0.074	12	57	1.06	314	0.14	< 3	1.75	0.04	0.48	< 2	2
SH - S03	2	17	6	65	< .3	29	7	302	1.89	3	< 8	5	44	0.3	< 3	< 3	36	0.37	0.101	12	32	0.73	76	0.07	< 3	1.00	0.02	0.17	< 2	2
SH - S04	4	53	9	266	< .3	38	17	710	4.02	17	< 8	< 2	34	2.9	< 3	3	71	0.40	0.072	4	40	1.14	46	0.11	< 3	1.65	0.01	0.04	< 2	3
SH - S05	2	30	8	118	< .3	23	12	574	3.38	16	< 8	3	37	1.0	< 3	< 3	80	0.53	0.123	14	29	0.95	90	0.06	< 3	1.39	0.03	0.14	< 2	3
SH - S06	1	24	7	90	0.3	15	12	477	4.49	5	< 8	3	42	1.0	< 3	< 3	95	0.64	0.187	13	19	0.70	74	0.07	< 3	1.15	0.02	0.16	< 2	2
SH - S07	2	26	<2	80	<.2	13	15	392	4.35	<5	<10		24	1	<5	<5	66	0.39	0.077	<10	4	0.64	80	0.06		1.01	0.02		<10	<5
SH - S08	1	30	4	85	< .3	19	12	717	3.17	7	< 8	3	54	1.0	< 3	< 3	85	0.63	0.127	11	25	0.89	119	0.08	< 3	1.47	0.06	0.18	< 2	1
SH - S09	2	48	10	108	< .3	22	12	504	3.00	12	< 8	2	42	0.8	< 3	< 3	56	0.46	0.102	7	21	0.73	50	0.07	< 3	1.28	0.01	0.06	< 2	2
SH - S10	6	31	6	166	<.2	32	10	417	3.40	<5	<10		46	2	<5	<5	107	0.29	0.055	<10	33	0.77	165	0.13		1.41	0.03		<10	<5
SH - S11	<1	17	4	38	<.2	48	13	275	2.22	<5	<10		58	<1	<5	<5	44	0.69	0.166	<10	59	0.95	160	0.11		0.89	0.03		<10	<5
STANDARD G-	2	4	4	47	< .3	8	4	543	2.09	< 2	< 8	4	85	< .2	< 3	< 3	42	0.65	0.098	7	81	0.60	253	0.13	< 3	1.14	0.11	0.54	3	1
RE SH - S06	1	24	9	90	< .3	15	12	480	4.38	4	< 8	3	38	0.7	< 3	< 3	91	0.65	0.189	12	18	0.7	73	0.07	< 3	1.12	0.02	0.16	< 2	1

ROCK DESCRIPTIONS

Sample No.	Location	Description
SH-01	200m north of Shannon occurr.	Black, fine-grained, silicified volcanic (basalt), rusty along fracture surfaces, slightly pyritic
SH-02	550m east of Shannon occurr.	Mottled grey-blue and white quartz vein in black, fine-grained argillite, few sulphides present (no ICP)
SH-03	over divide, approx. 1 km down MacDonald Creek	Hyrdrothermally altered "rotten" bull quartz, black manganese in vugs
SH-04	600m NE of Shannon occurr.	Fine-grained, rusty pyritic shale
SH-05	400m west of SH-04	Blocky dark-grey, fine-grained andesite to basalt.
SH-06	ore stockpile at Shannon occurr.	Mostly quartz veins containing significant fine-grained sulphides as intergrown masses (mainly sphalerite, galena, tetrahedrite, minor chalcopyrite), some CO_3, hosted by brown argillite. Veins in creek bottom strike 226°, dip 75N, plunge 80E.
SH-07	1.2 km south of Slewiskin occurr. South of Ruby Range stock	Rusty, decayed argillite, with red and orange iron oxides on fracture surfaces, containing fine-grained, disseminated moly and pyrrhotite .
SH-08	200m north of SH-07	North end of same outcrop as SH-07, but more fractured and more oxidized (yellow)
SH-09	new logging road west of Shannon L. hiking trail	Sugary-textured quartz vein in small intrusive plug, quartz-hornblende-biotite diorite, containing disseminated sphalerite and pyrrhotite.
SH-10	top of new road (landing), 650m SW of SH-09	Rusty shale, with bands and lenses of sulphides, mostly pyrrhotite and pyrite.
SH-11	400m west of SH-09	Best sulphides seen; lenses and layers of sulphide, like "ice cream wafer" (alternating silica-sulphide rich layers), mostly pyrrhotite, hosted by rusty shale
SH-12	200m north of start of hiking trail	Rusty dark brown argillite, disseminated fine-grained sulphide throughout.
SH-13	main Shannon Creek road, 12.5km	Rusty argillite, similar to SH-12
SH-14	approx. half-way up hiking trail to Shannon Lake	Strongly altered sediments containing books of muscovite 1-3 mm, blebs of pyrite and moly
SH-15	100m north of Shannon L, adjacent to Wragge Creek stock	Large quartz vein (0.5 m wide), steeply dipping, hosted by strongly altered, contorted and sheared biotitic shale.
SH-16	200m past first branch road leading to Slewiskin occurrence	Dark brown biotite schist, rusty and pyritic
SH-17	500m north of Slewiskin occurr.	Black shales? or shear within intrusive,near contact with sediments, containing rusty quartz veinlets and fine-grained disseminated sulphides.

SH-18	500m north of SH-17	Quartz vein in granite, v. fine-grained disseminated sulphide.
SH-19	top of magnetic hill, due east of Slewiskin occurrence	Rusty dark-coloured magnetite-rich rock hosted by diorite
SH-20	near base of magnetic hill, below SH-16	Massive argillite, disseminated sulphide throughout
SH-21	Lower Shannon Road, 2 km	Biotite schist/quartz breccia containing disseminated moly
SH-22	Lower Shannon Road, 120m above SH-21	Similar to SH-22, but containing more pyrrhotite
SH-23	near intrusive contact, near top of L. Shannon road., 200m above SH-22	Altered diorite, disseminated pyrite and moly some hornfels texture near contact.
SH-24	top of clearcut, 1850m elevation Lower Shannon Road	Rusty light0-coloured granulose quartzite, containing disseminated sulphides
SH-25	Near top of first branch road on Magnetic Hill	Black, metamorphosed argillite, very fine disseminated sulphides
SH-26	top of Magnetic Hill	Red-brown porphyritic diorite, decayed and sheared, containing high magnetite content. Feldspar porphyroblasts 5-7 mm. Some pyrite, moly.
SH-27	Magnetic Hill, close to Slewiskin Occurrence	Criss-crossing quartz veins in medium-grained diorite, containing disseminated sulphides (orientation of veins same as fracture sets observed at SH-26, 235°/85S and 355°/30E.). Also contains 10-15% magnetite.
SH-28	East bank of Huss Creek, start of Hiking trail to Shannon Lake	Contact of meta-shales with felsic intrusive rock, containing small quartz veinlets 1-2 mm wide, disseminated moly.
SH-29	Upper Caribou Creek, 2km south of Walton Creek.	Siliceous metasediments containing contorted quartz veins and fine disseminated sulphides.
SH-30	22km, main Shannon road	Rusty shale, orange/yellow oxide on fracture surfaces. Good sulphide smell on breaking, disseminated sulphide throughout.
SH-31	60m north of Shannon occurr. 100m south of top claim post	Rusty, broken shales, containing fine disseminated sulphide
SH-32	11.4km, main Shannon road	Rusty, tuffaceous sediments, similar to SH-30 (strong sulphide smell on breaking)
SH-33	200m up Shannon L. hiking trail	Small intrusive body, thermally altered with books of mica, sulphides
SH-34	beside SH-33	Altered, silicified slate, adjacent to intrusive plug, small quartz veinlets < 1 mm wide along bedding planes, fine disseminated sulphides.
Sh-35	200m past SH-33 and 34	Quartz veins in slate, disseminated sulphides
SH-36	resample SH-14	

SH-37	300m south of SH-30 along Caribou Creek main Shannon road	Rusty shales, similar to SH-30, but more sheared and altered.
SH-38	main Shannon Road, 23 km	Rusty shales, but less sheared and altered. Disseminated Sulphides (Mo)
SH-39	400m north of SH-30	Highly altered rusty shales, good sulphide smell (Mo, sph)
SH-40	directly opposite SH-39, on north bank of creek	Rusty shales, good sulphide content
SH-41	17.5km, main Shannon road Along Walton Creek	Strongly sheared, mostly altered to clay, shale, few sulphides evident


SH-03
9079
SH-S09
SH-04
SH-05
SH-S04
SH-02
SH-01
SH-06
SH-S06
SH-18
SH-17
9078
SH-S05
183
SH-19
SH-26
SH-S08
SH-27
SH-08
SH-20
SH-25
SH-07
SH-16
SH-13
9003
SH-S01
SH-S03
9002
SH-12
SH-09
SH-34
SH-32/33
SH-S02
SH-11
SH-35
SH-S10
SH-10
SH-36
SH-14
9087
SH-21
SH-22
SH-23
SH-24
8088
0188
SH-15
SH-S07
SH-41
SH-40
9085
SH-39
SH-30
SH-37
SH-38
SH-29
SH-S11
5608
8609
9084
171
9177
5456
SAMPLE No.S
SCALE: 1:50,000

ROCK	GPS Coordinates		Corrected Coordinates		Sample Location
SAMPLE No.	E	N	E	N	
SH-1	457515	5549659	457705	5549490	Shannon occurrence
SH-2	457482	5549750	457365	5549425	
SH-3	456887	5550327	456725	5550400	
SH-4	457514	5549850	457514	5549850	
SH-5	457348	5549784	457348	5549784	
SH-6	457742	5549142	457742	5549142	
SH-7	453181	5546703	453120	5546740	Magnetic Hill
SH-8	453132	5546865	453130	5546930	
SH-9	457924	5547208	457924	5547208	Lower Shannon (west)
SH-10	457502	5546788	457502	5546788	
SH-11	457652	5547056	457652	5547056	
SH-12	458643	5547391	458643	5547391	
SH-13	n/a	n/a	457800	5547900	Main road, 13 km
SH-14	n/a	n/a	458190	5546715	Hiking Trail
SH-15	n/a	n/a	458315	5546220	
SH-16	453662	5546898	453910	5546760	Magnetic Hill
SH-17	453114	5548513	453115	5548430	
SH-18	452928	5548885	452890	5548855	
SH-19	453652	5548031	453200	5547915	
SH-20	453584	5546848	453720	5546825	
SH-21	461218	5547418	461140	5547240	Lower Shannon road (east)
SH-22	461009	5546967	461080	5547130	
SH-23	460430	5546789	460710	5546960	
SH-24	460772	5547160	460440	5546650	
SH-25	454204	5547174	453980	5546820	Magnetic Hill
SH-26	453762	5547555	453770	5547480	
SH-27	453593	5546853	453620	5546940	
SH-28	n/a	n/a	458520	5547210	Huss Creek
SH-29	455264	5541740	455115	5541750	upper Caribou Creek
SH-30	n/a	n/a	453935	5542820	
SH-31	n/a	n/a	457675	5549200	Shannon occurrence
SH-32	n/a	n/a	459310	5547920	Hiking trail
SH-33	n/a	n/a	458390	5547160	
SH-34	n/a	n/a	458391	5547157	
SH-35	n/a	n/a	458290	5547050	
SH-36	n/a	n/a	458190	5546715	
Maximum			*461140*	5550400	
Minimum			452890	5541750	
			8250	8650	Area=7136Ha.

ANALYSIS CERTIFICATES

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)
852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Kettle River Ventures PROJECT SHANNON File # 9802706

619 N. Fork Road R.R. #1, Lumby BC V0E 2G0 Submitted by: B. Welsh

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
B 157001	6	37	7	48	.7	7	2	258	1.88	<2	<8	<2	2	28	.4	3	<3	37	.29	.046	2	23	.80	105	.20	<3	1.11	.02	.18	<2	5
B 157002	4	7	3	31	<.3	18	2	611	1.03	2	<8	<2	<2	21	.8	<3	<3	4	.13	.049	5	16	.32	34	<.01	<3	.45	.03	.03	<2	2
B 157003	9	23	9	46	1.2	4	2	165	1.39	2	<8	<2	2	25	.8	4	<3	64	.37	.029	4	18	.52	85	.26	3	.90	.03	.18	<2	5
B 157004	2	37	3	56	<.3	15	13	509	2.86	8	<8	<2	<2	74	1.1	<3	<3	45	.80	.059	2	17	1.37	27	.20	<3	2.02	.02	.02	<2	1
B 157005	2	685	17808	16033	61.0	10	11	915	3.67	19	<8	<2	<2	101	287.3	12	3	38	1.32	.064	3	18	.79	32	.01	<3	1.17	.02	.08	3	1160
B 157006	28	27	56	146	.5	12	2	136	1.93	<2	<8	<2	3	10	1.8	<3	<3	50	.13	.052	6	21	.60	102	.04	<3	.72	.02	.33	<2	7
B 157007	3	29	77	76	.4	9	9	349	2.18	<2	<8	<2	<2	36	1.0	<3	<3	60	.47	.042	1	23	.60	80	.10	<3	1.16	.07	.10	4	8
B 157008	3	10	10	27	.8	9	2	174	.65	<2	<8	<2	<2	2	.7	<3	8	6	.02	.006	1	18	.06	17	<.01	<3	.14	.01	.04	2	2
B 157009	5	55	14	126	1.1	67	8	356	4.65	<2	<8	<2	9	247	.9	<3	<3	51	.14	.084	21	65	.67	461	.13	<3	2.36	.02	.76	<2	2
RE B 157009	5	57	14	129	1.0	68	8	357	4.73	<2	<8	<2	10	253	.7	<3	<3	52	.14	.085	21	66	.68	471	.13	<3	2.40	.03	.77	<2	2
B 157010	5	35	5	71	1.2	28	10	689	3.64	<2	<8	<2	2	66	2.6	<3	<3	33	1.86	.174	8	17	.38	46	.11	<3	.91	.08	.23	<2	4
B 157011	3	42	7	119	1.0	51	7	222	2.57	<2	<8	<2	5	12	.4	<3	<3	32	.16	.065	8	45	.69	274	.09	<3	1.14	.04	.67	2	10
B 157012	8	55	8	117	1.3	15	9	261	4.06	4	<8	<2	2	27	2.0	<3	<3	42	.24	.086	3	15	.76	117	<.01	<3	.89	.04	.12	<2	2
STANDARD C3/AU-R	25	65	37	166	5.4	38	12	793	3.43	56	27	2	22	29	23.7	18	21	81	.56	.092	18	177	.62	154	.08	19	1.94	.04	.17	16	474
STANDARD G-2	1	3	4	41	<.3	8	4	540	2.01	<2	<8	<2	4	74	<.2	<3	<3	40	.62	.097	7	79	.60	234	.12	<3	1.00	.08	.48	2	1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMTED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 7 1998 **DATE REPORT MAILED:** July 13/98 **SIGNED BY.....** D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data___ FA ___

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)
852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Kettle River Ventures PROJECT SHANNON File # 9802932

619 N. Fork Road, R.R. #1, Lumby BC V0E 2G0 Submitted by: Barbara Welsh

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
B 157013	3	52	11	136	.4	31	16	511	3.95	15	<8	<2	2	38	1.7	<3	<3	67	.64	.150	8	26	.85	45	.07	<3	1.18	.01	.07	<2	7
B 157014	2	40	8	138	<.3	39	9	619	2.70	4	<8	<2	5	49	.7	<3	3	83	.35	.074	12	57	1.06	314	.14	<3	1.75	.04	.48	<2	2
B 157015	2	17	6	65	<.3	29	7	302	1.89	3	<8	<2	5	44	.3	<3	<3	36	.37	.101	12	32	.73	76	.07	<3	1.00	.02	.17	<2	2
B 157016	4	53	9	266	<.3	38	17	710	4.02	17	<8	<2	<2	34	2.9	<3	3	71	.40	.072	4	40	1.14	46	.11	<3	1.65	.01	.04	<2	3
B 157017	2	30	8	118	<.3	23	12	574	3.38	16	<8	<2	3	37	1.0	<3	<3	80	.53	.123	14	29	.95	90	.06	<3	1.39	.03	.14	<2	3
B 157018	1	24	7	90	.3	15	12	477	4.49	5	<8	<2	3	42	1.0	<3	<3	95	.64	.187	13	19	.70	74	.07	<3	1.15	.02	.16	<2	2
RE B 157018	1	24	9	90	<.3	15	12	480	4.38	4	<8	<2	3	38	.7	<3	<3	91	.65	.189	12	18	.70	73	.07	<3	1.12	.02	.16	<2	1
B 157019	1	30	4	85	<.3	19	12	717	3.17	7	<8	<2	3	54	.9	<3	<3	85	.63	.127	11	25	.89	119	.08	<3	1.47	.06	.18	<2	1
B 157020	2	48	10	108	<.3	22	12	504	3.00	12	<8	<2	2	42	.8	<3	<3	56	.46	.102	7	21	.73	50	.07	<3	1.28	.01	.06	<2	2
STANDARD C3/AU-S	25	64	37	175	5.4	36	14	765	3.32	58	21	5	20	29	23.7	15	22	80	.54	.088	17	171	.58	150	.09	19	1.90	.04	.15	20	47
STANDARD G-2	2	4	4	47	<.3	8	4	543	2.09	<2	<8	<2	4	85	<.2	<3	<3	42	.65	.098	7	81	.60	253	.13	<3	1.14	.11	.54	3	1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMTED FOR NA K AND AL.
- SAMPLE TYPE: SILT AU* - AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 20 1998 **DATE REPORT MAILED:** July 28/98 **SIGNED BY** ..... D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data ___ FA ___

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)
852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Kettle River Ventures PROJECT SHANNON File # 9802933

619 N. Fork Road, R.R. #1, Lumby BC V0E 2G0 Submitted by: Barbara Welsh

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
B 157021	2	14	24	54	.5	24	5	170	1.70	<2	<8	<2	3	9	<.2	<3	<3	22	.08	.035	9	28	.47	131	.05	<3	.99	.03	.28	6	2
B 157022	8	25	19	101	.5	60	8	1025	.87	<2	<8	<2	4	293	.6	<3	<3	24	7.25	.087	9	27	.40	171	.07	<3	1.36	.06	.39	<2	2
B 157023	16	70	9	260	.6	28	13	348	4.52	2	<8	<2	4	7	4.8	<3	<3	91	.36	.098	10	25	1.10	97	.05	<3	1.27	.03	.43	3	4
B 157024	4	39	10	104	.3	20	11	761	3.46	<2	<8	<2	3	110	1.9	<3	<3	122	2.99	.068	12	26	1.09	53	.04	<3	1.95	.06	.16	<2	2
B 157025	4	16	24	31	<.3	6	2	145	.90	<2	<8	<2	4	85	<.2	<3	<3	15	.49	.045	10	19	.24	32	.13	<3	.49	.03	.13	5	1
B 157026	7	55	7	84	.4	19	9	304	2.79	<2	<8	<2	2	44	1.9	<3	<3	75	.55	.094	5	28	.62	155	.13	<3	1.23	.08	.35	<2	3
B 157027	17	87	6	353	.6	43	15	335	4.06	<2	<8	<2	4	44	5.8	<3	<3	229	.70	.088	6	63	1.74	123	.19	<3	2.84	.18	1.18	<2	2
B 157028	1	6	4	91	<.3	45	20	375	4.24	<2	<8	<2	7	11	.5	<3	3	97	.20	.057	19	72	1.42	253	.22	<3	2.69	.05	1.35	<2	1
B 157029	2	46	7	47	<.3	23	9	186	2.63	<2	<8	<2	4	6	.2	<3	<3	51	.09	.039	13	44	.70	160	.13	<3	1.53	.02	.87	5	5
RE B 157029	2	48	9	48	<.3	24	9	192	2.71	<2	<8	<2	4	6	.3	<3	<3	52	.09	.040	13	45	.72	165	.13	<3	1.58	.02	.89	5	4
B 157030	3	37	4	17	<.3	31	5	97	1.23	<2	<8	<2	2	32	<.2	<3	<3	12	.52	.104	4	11	.12	26	.07	<3	.52	.07	.05	<2	1
B 157031	3	16	<3	63	<.3	18	3	112	.72	<2	<8	<2	3	63	1.3	<3	<3	6	.49	.083	7	18	.06	36	.07	<3	.14	.03	<.01	6	1
STANDARD C3/AU-R	25	63	35	162	5.2	37	12	782	3.32	54	17	2	21	30	23.2	14	22	81	.56	.091	17	177	.61	155	.09	20	1.95	.04	.17	15	480
STANDARD G-2	1	3	<3	40	<.3	8	4	516	1.93	<2	<8	<2	6	73	<.2	<3	<3	40	.61	.095	7	75	.57	222	.13	<3	.97	.07	.46	2	2

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMTED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 20 1998 **DATE REPORT MAILED:** July 28/98 **SIGNED BY** C. Leong .D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data ___ FA ___

17-Aug-98

ECO-TECH LABORATORIES LTD.
10041 East Trans Canada Highway
KAMLOOPS, B.C.
V2C 6T4

Phone: 250-573-5700
Fax : 250-573-4557

ICP CERTIFICATE OF ANALYSIS AK 98-423

KETTLE RIVER VENTURES
619 NORTH FORK ROAD, RR #1
LUMBY, BC
VOE 2G0

ATTENTION: WILLIAM WELSH

No. of samples received: 12
Sample type:ROCK
PROJECT #:NONE GIVEN
SHIPMENT #:NONE GIVEN
Samples submitted by: BARBARA WELSH

Values in ppm unless otherwise reported

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
1	157034	5	<0.2	0.93	<5	125	<5	0.12	1	7	126	45	2.56	<10	0.65	283	9	0.03	15	290	<2	<5	<20	9	0.08	<10	57	<10	3	108
2	157035	5	<0.2	1.02	<5	130	5	0.85	<1	9	68	10	3.02	<10	0.63	685	2	0.09	<1	1370	<2	<5	<20	57	0.11	<10	69	<10	3	48
3	157036	5	<0.2	1.00	<5	200	<5	0.35	<1	6	104	11	2.08	<10	0.49	448	<1	0.07	<1	630	2	<5	<20	34	0.10	<10	41	<10	1	43
4	157037	5	1.4	1.43	<5	115	<5	0.13	<1	13	98	96	3.36	<10	1.14	475	3	0.03	53	220	12	<5	<20	8	0.09	<10	61	<10	1	106
5	157038	25	<0.2	3.50	<5	195	5	1.43	<1	14	103	37	3.56	<10	1.37	477	<1	0.28	28	620	6	<5	<20	91	0.23	<10	81	<10	5	66
6	157039	5	<0.2	1.05	<5	55	<5	0.23	1	18	107	84	3.29	<10	0.99	249	102	0.04	92	550	4	<5	<20	9	0.10	<10	107	<10	7	61
7	157040	5	0.6	1.29	<5	110	<5	0.53	2	9	105	39	4.83	<10	0.81	687	4	0.05	18	880	10	<5	<20	57	0.13	<10	44	<10	10	65
8	157041	5	1.6	1.35	<5	75	<5	0.52	14	11	139	102	2.11	<10	0.84	155	47	0.10	69	960	14	<5	<20	41	0.05	<10	173	<10	3	456
9	157043	5	0.2	1.54	<5	145	5	0.45	<1	14	88	64	3.87	<10	0.98	643	<1	0.08	3	1110	6	<5	<20	31	0.15	<10	109	<10	1	80
10	157044	5	1.0	1.50	<5	210	<5	0.20	<1	12	151	42	3.74	<10	0.94	435	9	0.03	43	850	8	<5	<20	8	0.19	<10	42	<10	4	75
11	157045	20	<0.2	0.99	<5	225	<5	0.69	<1	5	142	26	1.67	<10	0.47	506	2	0.08	10	370	6	<5	<20	29	0.11	<10	29	<10	8	72
12	157046	20	<0.2	2.80	<5	345	5	0.26	<1	15	234	16	5.25	<10	1.55	548	10	0.03	43	1150	2	<5	<20	12	0.19	<10	85	<10	<1	89
QC DATA:																														
Resplit:																														
1	157034	60	<0.2	0.98	<5	130	<5	0.13	<1	8	133	40	2.48	<10	0.68	279	10	0.04	16	270	2	<5	<20	10	0.09	<10	62	<10	5	114
Repeat:																														
1	157034	5	<0.2	0.93	<5	130	<5	0.12	1	8	124	45	2.60	<10	0.65	288	9	0.03	14	300	<2	<5	<20	11	0.08	<10	58	<10	3	109
Standard:																														
GEO'98		145	1.4	1.89	65	180	<5	1.78	<1	19	66	88	4.27	<10	0.98	701	<1	0.02	24	650	16	<5	<20	70	0.13	<10	84	<10	5	70

df/423
XLS/98

ECO-TECH LABORATORIES LTD.
Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

17-Aug-98

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ICP CERTIFICATE OF ANALYSIS AK 98-424

KETTLE RIVER VENTURES
619 NORTH FORK ROAD, RR #1
LUMBY, BC
V0E 2G0

ATTENTION: WILLIAM WELSH

No. of samples received: 3
Sample type:SILT
PROJECT #:NONE GIVEN
SHIPMENT #:NONE GIVEN
Samples submitted by: BARBARA WELSH

Values in ppm unless otherwise reported

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
1	SH-S07	<5	<0.2	1.01	<5	80	<5	0.39	1	15	4	26	4.35	<10	0.64	392	2	0.02	13	770	<2	<5	<20	24	0.06	<10	66	<10	<1	80
2	SH-S10	<5	<0.2	1.41	<5	165	<5	0.29	2	10	33	31	3.40	<10	0.77	417	6	0.03	32	550	6	<5	<20	46	0.13	<10	107	<10	3	168
3	SH-S11	<5	<0.2	0.89	<5	160	<5	0.69	<1	13	59	17	2.22	<10	0.95	275	<1	0.03	48	1660	4	<5	<20	58	0.11	<10	44	<10	3	38
QC DATA:																														
Repeat:																														
1	SH-S07	-	<0.2	1.03	<5	80	<5	0.38	1	17	4	26	4.29	<10	0.65	399	3	0.02	13	760	4	<5	<20	25	0.06	<10	65	<10	<1	79
2	SH-S10	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard:																														
GEO'98		-	0.8	1.88	65	170	<5	1.73	<1	19	64	90	4.22	<10	0.98	686	<1	0.03	22	640	18	<5	<20	69	0.12	<10	82	<10	6	68

df/424
XLS/98

ECO-TECH LABORATORIES LTD.
Per Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

14-Sep-98

ECO-TECH LABORATORIES LTD.
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ICP CERTIFICATE OF ANALYSIS AK 98-523

KETTLE RIVER VENTURES
619 NORTH FORK ROAD, RR #1
LUMBY, BC
VOE 2G0

ATTENTION: WILLIAM WELSH

No. of samples received:7
Sample type: ROCK
PROJECT #: NONE GIVEN
SHIPMENT #: NONE GIVEN
Samples submitted by: B. WELSH

Values in ppm unless otherwise reported

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
1	4101	5	1.2	0.76	<5	50	5	1.78	3	14	62	39	5.08	<10	0.36	650	7	0.06	31	2070	8	<5	<20	64	0.09	<10	30	<10	5	86
2	4102	5	0.8	1.15	<5	100	<5	0.21	<1	10	154	43	2.44	<10	0.78	330	<1	0.05	56	640	12	<5	<20	4	0.11	<10	48	<10	5	104
3	4103	5	<0.2	1.68	<5	575	10	0.21	<1	7	91	29	2.63	<10	1.14	281	<1	0.05	13	690	10	5	<20	8	0.21	<10	81	<10	3	73
4	4104	10	<0.2	1.57	<5	1610	10	0.14	<1	2	89	15	3.09	<10	1.17	221	<1	0.05	10	540	10	<5	<20	6	0.24	<10	50	<10	3	75
5	4105	5	0.4	1.76	<5	65	<5	0.26	<1	13	114	151	3.42	<10	0.92	184	2	0.03	21	400	10	<5	<20	17	0.08	<10	30	<10	2	52
6	4106	5	<0.2	0.21	<5	30	<5	0.09	<1	4	142	8	0.94	<10	0.04	206	4	0.02	9	240	6	<5	<20	3	<0.01	<10	9	<10	6	15
7	4107	155	<0.2	2.30	<5	175	10	2.77	<1	28	300	44	4.53	10	2.54	819	<1	0.18	31	1180	12	5	<20	101	0.28	<10	101	<10	8	55
QC DATA:																														
Resplit:																														
1	4101	5	1.4	0.70	<5	50	10	1.68	3	14	54	40	5.05	<10	0.34	619	6	0.05	29	1980	8	<5	<20	60	0.08	<10	29	<10	5	85
Repeat:																														
1	4101	5	1.2	0.76	<5	45	15	1.74	3	14	61	37	4.87	<10	0.35	612	6	0.06	30	2030	8	<5	<20	60	0.10	<10	30	<10	6	82
Standard:																														
GEO'98		145	1.2	1.79	65	155	<5	1.77	<1	20	59	80	4.03	<10	0.96	685	<1	0.02	22	660	24	<5	<20	60	0.12	<10	77	<10	5	72

df/521
XLS/98

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82K.012

82K.013

82K.002

82K.003

SHANNON CREEK PROJECT

LEGEND

SCALE: 1 : 20,000

LAYERED ROCKS

Lower Jurassic — Rossland Croup

lJe — Elise Fm. - mafic volcanics

Triassic

TrV — Slocan Group metavolcanics
augite basalt, andesite, dacite flows and tuff

TrS — Slocan sedimentary rocks
argillite, slate, phyllite, carbonate, tuffaceous seds., minor sandstone, conglomerate, sedimentary breccia

Upper Mississippian to Permian

uMM — Milford Group: argillite, limestone, quartzite

INTRUSIVE ROCKS

Cretaceous

Kq — quartz monzonite, granodiorite, quartz diorite (Wragge Creek Stock)

Middle Jurassic

mJq — minor leucosyenite and leucogranite (Ruby Range Stock)

60 — MINFILE Occurrence

sh-29 — ROCK SAMPLE

SH-87 — STREAM SEDIMENT SAMPLE

NOTE: LIMITS OF MAPPING INDICATED BY AREAS COLOURED

SCALE 1:20 000
200 0 200 400 600 800 1000 1200 1400
METRES

82K.002

Contours generated from Digital Elevation Model.
Contour interval 20 metres.
Elevations in metres above Mean Sea Level.

DIGITAL DATA AVAILABLE			
PLANIMETRY	☒	CONTOUR	☒
CADASTRAL	☐	DEM	☒

82K.00

OF BRITISH COLUMBIA
own Lands
Resource Mapping Branch

Universal Transverse Mercator Projection
North American Datum - NAD83
UTM Zone 11

Land District:
Land Title Dist.:
Latest Plan No.:
Date:

98-15 (1)

SCALE 1:20 000
200 0 200 400 600 800 1000 1200 1400
METRES