

# 2013 Assessment Report

Property comprising the following Claim:

## **K 98**

Located in the:

Keno Hill Area

Mayo Mining District

Yukon Territory, Canada

N.T.S. 105M14

UTM NAD 83, Zone 8

Easting: 489,650

Northing: 7,092,240

## **Prepared For:**

Alexco Keno Hill Mining Corp.

of

1150-200 Granville Street

Vancouver, B.C. V6C 1S4

## **Prepared By:**

Jared Chipman

Alexco Resource Corp.

1150-200 Granville Street

Vancouver, B.C. V6C 1S4

Dates Work Performed: August 18<sup>th</sup>, 2013

Date of Report: December 30<sup>th</sup>, 2013

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## 1.0 Summary

Ten soil samples were collected from a single line transecting the K 98 claim on the 18<sup>th</sup> of August, 2013.

Anomalous values were found for either silver, lead, zinc or copper in seven of the ten samples returned.

## 2.0 Introduction

This report summarizes work carried out on the K 98 claim for Alexco Keno Hill Mining Corp. Ten soil samples were collected for the purpose of exploration assessment by Alexco Resource Corp. staff on August 18<sup>th</sup>, 2013.

## 3.0 Location and Access

The K 98 claim is located in the Mayo Mining District, central Yukon approximately 350 km north of Whitehorse (Figure 1). The claim lies on the northern slopes of Keno Hill and access is from a series of old mining tracks leading from Keno City to the historic Lucky Queen Mine Shaft and into Faro Gulch. The claim is approximately 800 metres north by foot from the track access within Faro Gulch and is located at 489,650 East and 7,092,240 North (Figure 2). The base of operations for Alexco from which the work was carried out was Elsa, an abandoned mining town located 14 km west of Keno City on the Silver Trail Highway.

The claim area is covered by NTS map sheet 105M14. All coordinates are in a UTM NAD 83, Zone 8 map projection datum.

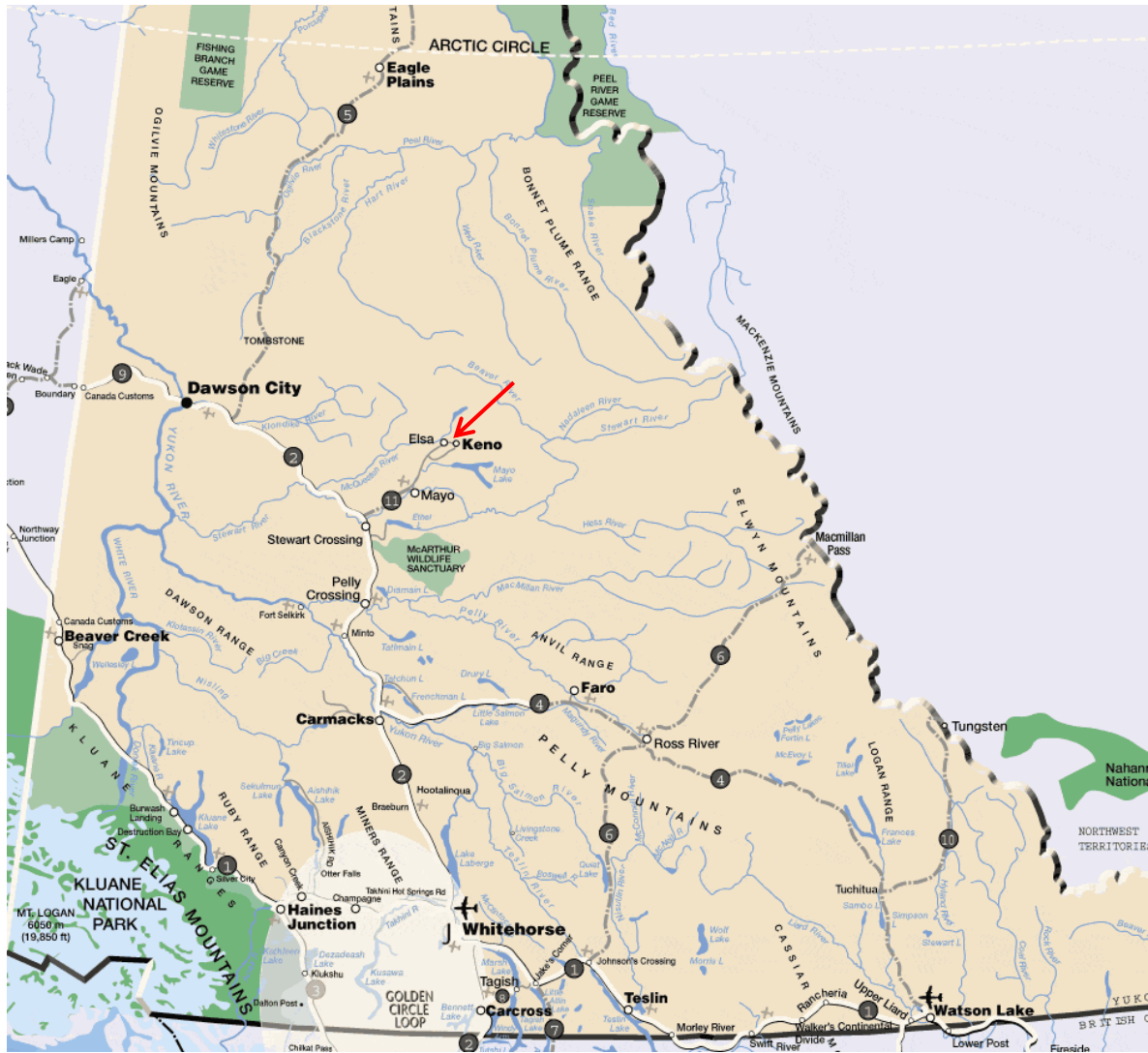


Figure 1. General location of the K 98 claim, Yukon Territory.

#### 4.0 Claim Status

The K 98 claim is active. The claim was originally staked in June of 2007 and prior to current work had an expiry date of December 15<sup>th</sup>, 2013. Previous exploration assessment work was completed by Alexco Resource Corp. staff (Anderson et al, 2008). This report is available online through the Yukon Government Energy, Mines, and Resources Branch and is referenced below.

The details for the claim can be found in Appendix 1. A list of personnel and work expenditures are included in Appendices 2 and 3 respectively.

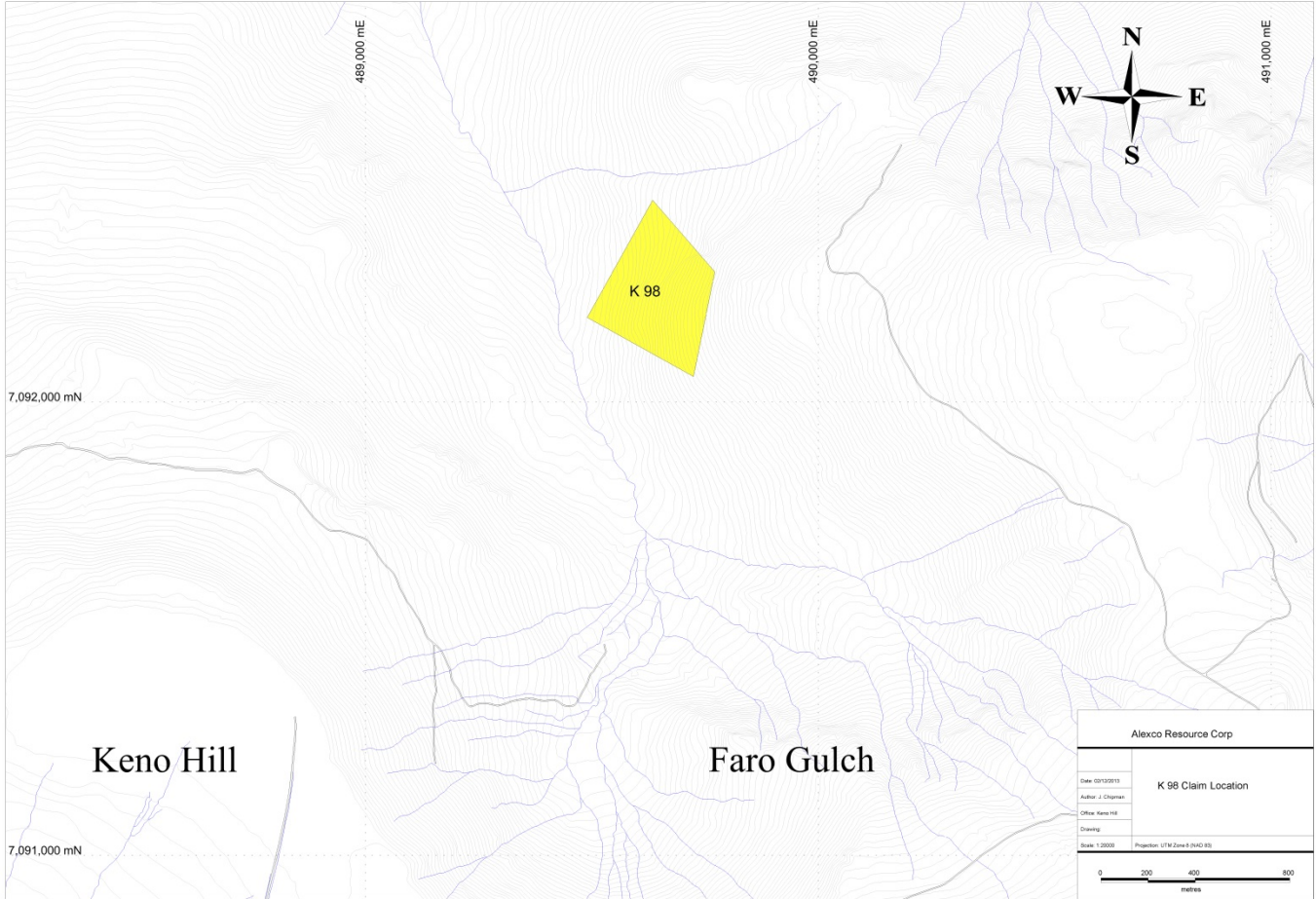


Figure 2. Location of the K 98 claim.

## 5.0 Regional Geology

The Keno Hill area containing the assessed claim is composed primarily of metasedimentary rocks deposited on the Neoproterozoic to Paleozoic continental margin located on the western margin of the Selwyn Basin (Murphy, 1997). These sediments were subject to greenschist facies regional metamorphism during the Jurassic and Cretaceous periods when compressional tectonics produced extensive folding, and imbricated thrust sheets. In the mid-Cretaceous these rocks were subject to further tectonic activity resulting in extensive brittle deformation and emplacement of igneous intrusives.

The Groups that underlie the Keno Hill area and host most of the past producing silver deposits are the Mississippian Keno Hill Quartzite, the Devonian Earn Group, and Triassic meta-gabbroic sills.

## 6.0 Local Geology

Mapping by Murphy, 1997 shows the K 98 claim to sit on the stratigraphic boundary between the Keno Hill Quartzite (MKT) and the underlying green-grey quartz-sericite-chlorite schist of the Earn Group (DMEVT). The quartzite is part of a region fold limb and is separate from those on Keno Hill to the south. The claim lies within 1.3 – 2.9 km of the past producing Sadie Ladue, Lucky Queen, Shamrock, and Keno Mines on Keno Hill.

A Map showing the geology of the K 98 claim is shown in Figure 3 with its legend shown in Figure 4.

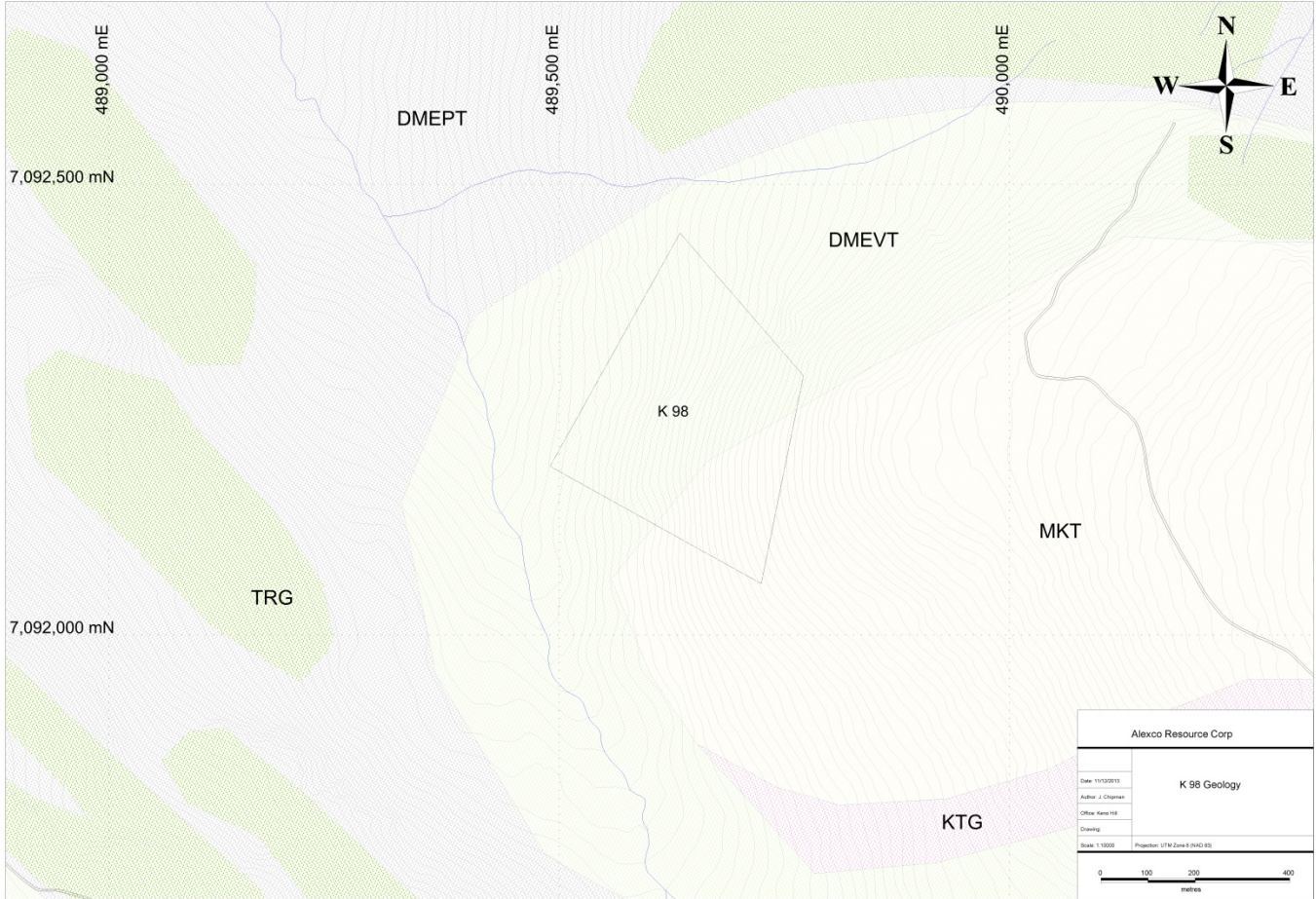
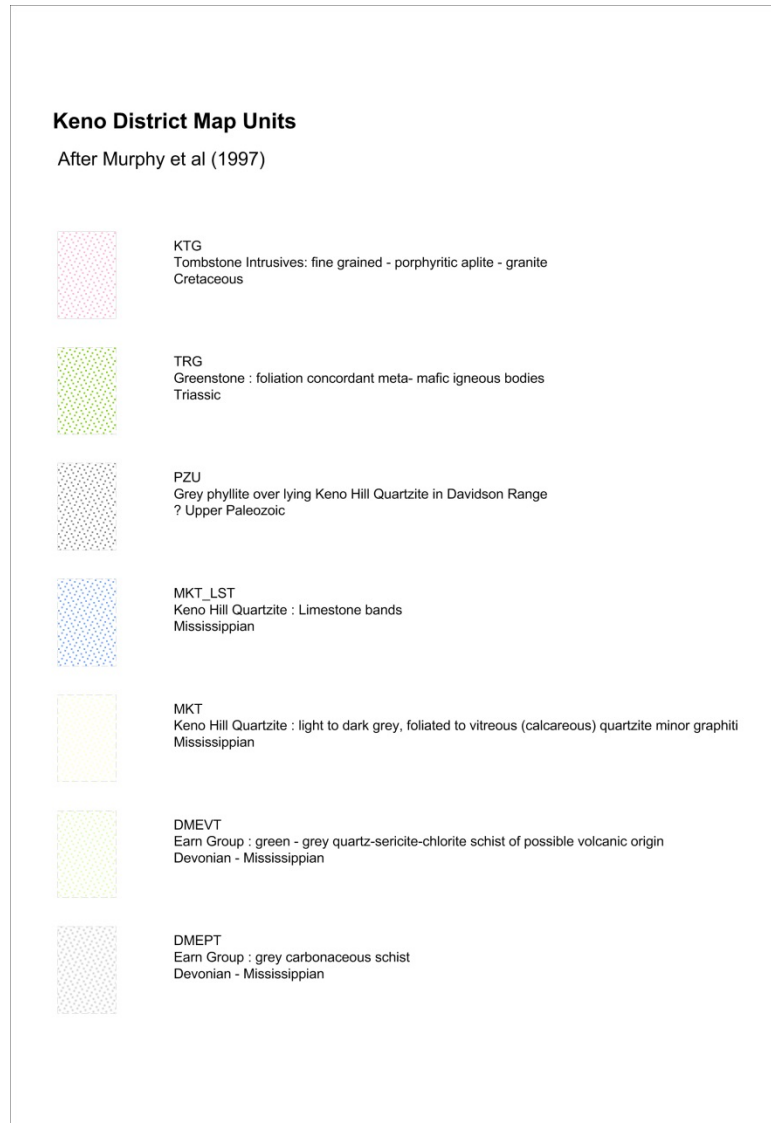


Figure 3. Geology of the K 98 claim (Murphy, 1997).



*Figure 4. Legend for Murphy, 1997 geology.*

## 7.0 Soil Assessment and Results

One line of soil samples was collected on the K 98 claim (Figure 5). In total ten samples were taken at 25 metre centers with the best attempt made to sample the more prospective “B” soil horizon. Samples were taken using a combination of shovels and or trowels and placed in paper sample bags for storage, each marked with its own sample number. All relevant data was recorded in the field then transferred to a digital format as shown in Appendix 4.

All samples were assayed for a 51 trace element analysis by Aqua regia, ICP-MS and ICP-AES by ALS Minerals Laboratory, North Vancouver, BC.

A copy of results, from certificate WH13163142 (finalized on the 23<sup>rd</sup> of September, 2013) is shown in Appendix 5.

## Results

Soil sample assay results are considered to be anomalous if the value is equal to or exceeds twice the established background level for that element. Background element values generally associated with mineralization for the Keno Hill area are:

Ag.....	0.5 ppm
Au.....	50 ppb
Pb.....	40 ppm
Zn.....	100 ppm
Cu.....	35 ppm
As.....	50 ppm
Sb.....	5 ppm

Two anomalous silver values (1.45 and 1.46 ppm) were returned from the ten samples taken on the claim. Two zinc anomalies (246 and 279 ppm) and two lead anomalies (111 and 187.5 ppm) were also returned. Four copper anomalies (157.5, 96.7, 93.4, and 93.3ppm) were returned and are all on the northern end of the claim. Sample E020371 which is anomalous in copper also carries a high manganese value of 2630 ppm. One anomalous arsenic value was returned at 216 ppm.

The location and anomalous silver, lead, zinc, and copper values are shown in Figure 5. Table 1 below shows the range of geochemical values received where maximum anomalous values are highlighted.



Pt_ME_MS41L_ppm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rb_ME_MS41L_ppm	2.53	21.70	5.81	5.71	3.14	4.22	5.37	7.51
Re_ME_MS41L_ppm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S_ME_MS41L_pct	0.02	0.16	0.07	0.05	0.03	0.05	0.07	0.14
Sb_ME_MS41L_ppm	1.38	7.64	4.25	2.16	3.09	3.60	5.49	7.50
Sc_ME_MS41L_ppm	0.23	5.53	2.21	1.67	1.05	1.91	2.82	4.33
Se_ME_MS41L_ppm	0.20	1.70	0.97	0.50	0.80	1.00	1.30	1.43
Sn_ME_MS41L_ppm	0.12	0.33	0.19	0.07	0.15	0.18	0.23	0.27
Sr_ME_MS41L_ppm	4.93	42.70	19.94	12.46	11.29	17.15	28.50	34.42
Ta_ME_MS41L_ppm	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01
Te_ME_MS41L_ppm	0.02	0.16	0.07	0.04	0.04	0.06	0.10	0.12
Th_ME_MS41L_ppm	0.14	4.15	2.07	1.42	0.98	2.13	3.23	3.67
Ti_ME_MS41L_pct	0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.02
Tl_ME_MS41L_ppm	0.06	0.20	0.09	0.04	0.07	0.08	0.10	0.14
U_ME_MS41L_ppm	0.23	1.65	0.96	0.48	0.75	0.92	1.32	1.56
V_ME_MS41L_ppm	11.30	52.10	25.58	12.79	16.30	22.75	30.13	41.12
W_ME_MS41L_ppm	0.06	0.22	0.11	0.06	0.08	0.09	0.15	0.19
Y_ME_MS41L_ppm	1.32	11.80	6.10	3.23	3.55	6.82	7.28	9.13
Zn_ME_MS41L_ppm	53.50	279.00	159.97	72.45	109.25	171.25	178.63	249.30
Zr_ME_MS41L_ppm	0.07	2.34	1.00	0.77	0.43	1.02	1.55	1.85

## 8.0 Conclusions and Recommendations

Although the claim sits well within the Earn Group schists (generally less favorable for mineralization) 70% of the samples were anomalous in either silver, lead, zinc, or copper. The sample transect was taken across steep topography where down slope soil creep has probably displaced the soil cover. The high manganese sample (E020371) was taken from medium high in organic matter and this is likely the cause. These results are encouraging and follow up work is recommended in a denser grid of soil samples and or a small trenching program to try and expose bedrock and any geologic structures or veins possibly related to the past producing nearby mines that may extend from Keno Hill into Faro Gulch.

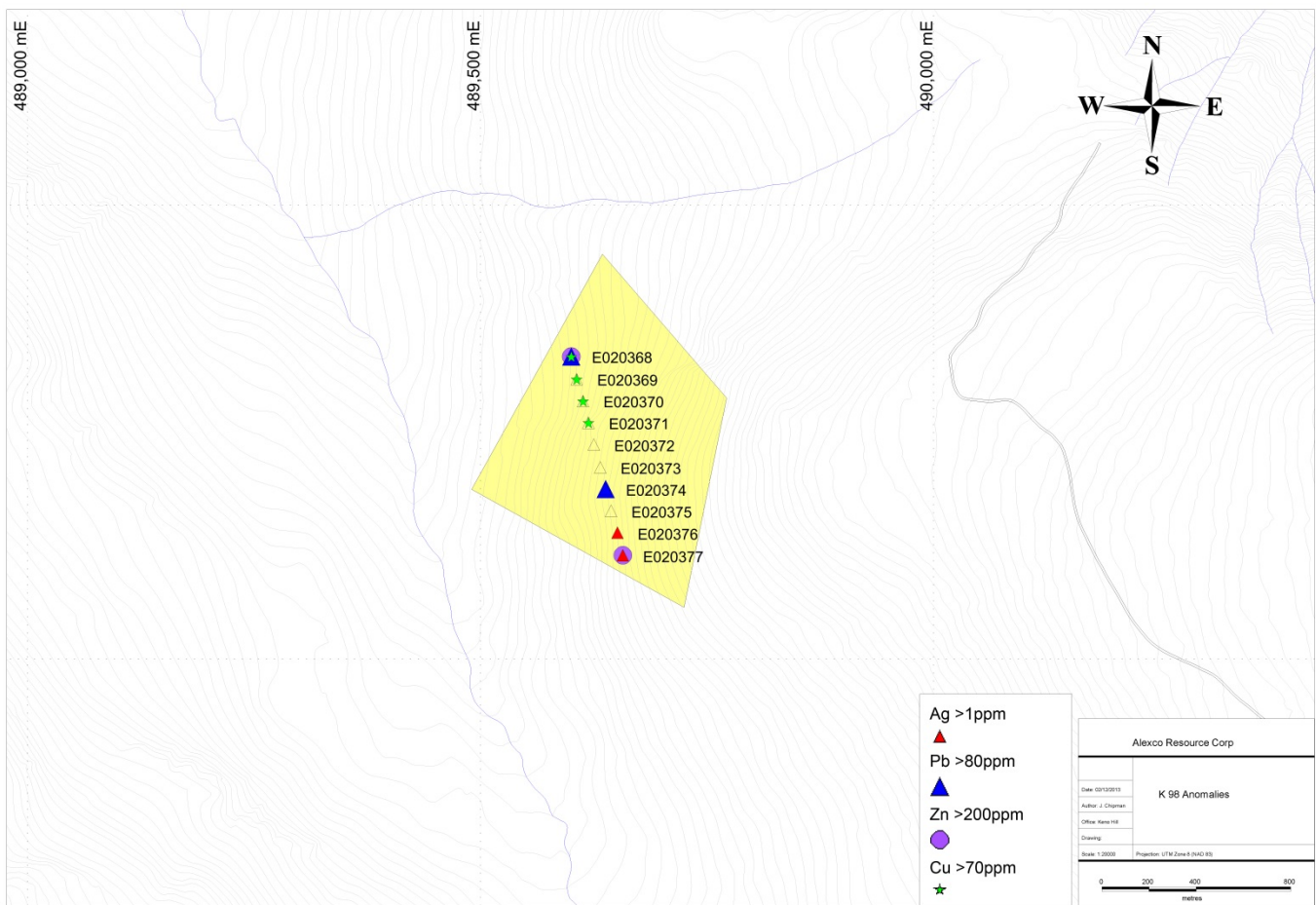


Figure 5. Highlighted symbols show anomalous silver, lead, zinc, and copper values from the 10 soil samples taken across the K 98 claim.

## 9.0 List of References

Anderson, K., Lippoth, R., Dodd, S., 2008, 2008 geological, geochemical and XRF assessment report on the Keno Hill property. YGS Assesment Report Reference 095661.

Murphy, D.C., 1997. Geology of the McQuesten River Region, Northern McQuesten and Mayo Map Areas, Yukon Territory (11P/14, 15, 16; 105M/13,14).  
Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Bulletin 6.

## Appendix 1

### List of claims

Quartz claim	Grant number	Drafting	Regulation	Tenure	Claim label	Owner	Staking date	Recorded date	Expiry date	District
184974788	YC56125	Quartz	Q	Active	K 98	Alexco Keno Hill Mining Corp. - 100%	14-Jun-07	15-Jun-07	15-Dec-13	Mayo

## Appendix 2

### List of Personnel

#### **Jared Chipman**

541 Saunders Road  
Deerfield, Nova Scotia  
B5A 5N7

#### **Annie Greenfield**

6906 Lowes Crt SW,  
Calgary, AB  
T3E 6G7

#### **Rich Benson**

73 Coburg St.  
New Westminster, BC  
V3L 2E7

### Appendix 3

#### Statement of Expenditures

Claim name	Grant numb	Owner	Field Staff and Reporting	Camp Overhead	Vehicles - support	Analytical	Est. Total
K 98	YC56125	Alexco Keno Hill Mining corp.	\$1,000.00	\$342.00	\$110.00	\$332.00	\$1,784.00

### Appendix 4

#### Soil Sample Descriptions

Sample Number	East	North	Claim	Depth (cm)	Horizon	Color	Silt %	Clay %	Organic %	Gravel %	Sand %	Comments
E020368	489600	7092333	K98	20	B	Grey	55	20	20	2	3	Slope, moss vegetation
E020369	489606	7092308	K98	25	B	Grey	40	5	15	30	10	
E020370	489613	7092284	K98	15	B	Grey	55	15	30	0	0	First good soil horizon
E020371	489619	7092260	K98	15	A-B	Brown	10	0	60	20	10	Cliff, just below moss, very organic
E020372	489625	7092236	K98	0	A-B	brown clay	10	5	20	35	30	Silt mixed in with organic material and roots
E020373	489632	7092211	K98	0	A-B	brown clay	15	5	30	30	20	Just below organics, steep bouldery
E020374	489638	7092187	K98	0	A-B	Grey - brown	20	0	50	15	15	5-10 m below away from point little to no soil
E020375	489644	7092163	K98	0	A-B	Brown - grey	5	10	15	55	15	Silty mix with organic, sample from surface.
E020376	489651	7092139	K98	0	A-B	Brown - grey	5	0	20	55	20	Sample from surface
E020377	489657	7092114	K98	0	A-B	Brown - grey	15	0	15	50	20	Steep boulder slope little soil sample from top

## Appendix 5

### Soil Sample Assays

Sample Number	Wt_WEI2 1 kg	Au_ME_M S41L ppm	Ag_ME_M S41L ppm	Al_ME_M S41L pct	As_ME_M S41L ppm	B_ME_MS 41L ppm	Ba_ME_M S41L ppm	Be_ME_M S41L ppm	Bi_ME_M S41L ppm	Ca_ME_M S41L pct	Cd_ME_M S41L ppm	Ce_ME_M S41L ppm	Co_ME_M S41L ppm	Cr_ME_M S41L ppm	Cs_ME_M S41L ppm	Cu_ME_M S41L ppm	Fe_ME_M S41L pct	Ga_ME_M S41L ppm	Ge_ME_M S41L ppm	Hf_ME_M S41L ppm
E020368	0.22	0.0052	0.88	1.28	88.5	-10	162	0.29	0.199	0.17	0.587	17.65	23.4	32.9	1.515	93.4	4.59	4.22	0.04	0.044
E020369	0.42	0.0022	0.702	0.99	47.7	-10	177	0.33	0.258	0.19	1.545	40.7	17.4	20.9	1.43	93.3	3.94	3.11	0.066	0.044
E020370	0.23	0.0037	0.698	1.34	48.8	-10	380	0.44	0.26	0.55	1.47	28	22.9	27.1	1.935	157.5	4.04	3.95	0.059	0.063
E020371	0.41	0.0014	0.162	0.83	17.05	-10	163.5	0.16	0.355	0.13	0.469	32.7	19.95	17.9	2.12	96.7	2.82	4.89	0.034	0.003
E020372	0.39	0.0038	0.871	0.72	55.6	-10	107.5	0.22	0.133	0.27	1.18	17.9	11.7	16.6	1.075	60.9	2.69	2.29	0.04	0.036
E020373	0.44	0.0007	0.11	0.26	17.65	-10	31.9	0.06	0.095	0.06	0.376	10.6	2.66	6.74	0.531	8.69	1.09	1.535	0.016	0.005
E020374	0.39	0.0014	0.395	0.28	48.9	-10	36.6	0.1	0.095	0.15	1.08	10.6	4.35	6.01	0.562	12.6	1.37	1.18	0.015	0.017
E020375	0.41	0.0144	0.987	0.57	54.7	-10	120	0.24	0.157	0.19	1.42	21.2	7.09	13.5	1.39	30.5	2.35	1.83	0.038	0.034
E020376	0.35	0.0055	1.445	0.57	50.1	-10	116.5	0.26	0.196	0.05	1.035	26.2	7.4	12.15	1.445	25.4	2.32	1.8	0.042	0.011
E020377	0.42	0.0149	1.455	0.58	216	-10	125.5	0.3	0.227	0.06	2.09	32.4	9.46	13.05	2.08	25.5	3.11	1.965	0.042	0.014

Sample Number	Hg_ME_M S41L ppm	In_ME_M S41L ppm	K_ME_MS 41L pct	La_ME_M S41L ppm	Li_ME_MS 41L ppm	Mg_ME_M MS41L pc	Mn_ME_M MS41L pp	Mo_ME_M MS41L pp	Na_ME_M S41L pct	Nb_ME_M S41L ppm	Ni_ME_M S41L ppm	P_ME_MS 41L pct	Pb_ME_M S41L ppm	Pd_ME_M S41L ppm	Pt_ME_M S41L ppm	Rb_ME_M S41L ppm	Re_ME_M S41L ppm	S_ME_MS 41L pct	Sb_ME_M S41L ppm	Sc_ME_M S41L ppm
E020368	0.049	0.038	0.02	9.36	21.8	0.38	1000	1.59	0.005	0.199	41.9	0.095	111	0.006	-0.002	3.25	-0.001	0.04	5.08	5.53
E020369	0.077	0.037	0.03	20.1	17	0.42	945	5.46	0.007	0.133	39.1	0.104	52.3	0.005	-0.002	2.68	-0.001	0.06	3.09	2.51
E020370	0.072	0.037	0.03	17.6	24.4	0.52	1230	3.77	0.005	0.206	54.1	0.096	47.7	0.008	-0.002	4.81	-0.001	0.04	3.22	4.2
E020371	0.049	0.02	0.05	11.75	8.9	0.26	2630	5.88	0.003	0.09	23.2	0.141	22.6	0.002	-0.002	21.7	-0.001	0.07	1.375	0.231
E020372	0.062	0.029	0.02	9.78	11	0.22	602	1.14	0.005	0.206	28.4	0.077	48.3	0.004	-0.002	3.62	-0.001	0.03	3.09	2.92
E020373	0.033	0.013	0.02	5.91	2.3	0.04	217	0.58	0.004	0.186	6.9	0.05	28.7	0.001	-0.002	2.53	-0.001	0.02	1.955	0.474
E020374	0.051	0.024	0.02	5.77	2.1	0.05	626	0.45	0.005	0.16	8.34	0.061	187.5	0.001	-0.002	3.1	-0.001	0.03	7.64	0.903
E020375	0.076	0.025	0.05	11.05	5	0.13	560	1.54	0.009	0.293	22.7	0.086	47.2	0.002	-0.002	5.01	-0.001	0.06	3.98	1.635
E020376	0.061	0.028	0.06	14.3	5	0.1	528	1.77	0.017	0.238	22.3	0.073	73.9	0.001	-0.002	5.49	-0.001	0.14	5.62	1.475
E020377	0.074	0.028	0.07	17.95	5.2	0.11	673	2.88	0.019	0.322	26.2	0.085	49.3	0.003	-0.002	5.93	-0.001	0.16	7.48	2.19

Sample Number	Se_ME_M S41L ppm	Sn_ME_M S41L ppm	Sr_ME_M S41L ppm	Ta_ME_M S41L ppm	Te_ME_M S41L ppm	Th_ME_M S41L ppm	Ti_ME_MS 41L pct	Tl_ME_MS 41L ppm	U_ME_MS 41L ppm	V_ME_MS 41L ppm	W_ME_M S41L ppm	Y_ME_MS 41L ppm	Zn_ME_M S41L ppm	Zr_ME_M S41L ppm	Ag_Ag_O G46 ppm	Certificate	Date Received	Date Finalized
E020368	1.3	0.17	11.05	-0.005	0.06	2.38	0.008	0.093	0.799	52.1	0.095	7.11	246	1.69	0	WH13163142	03/09/2013	23/09/2013
E020369	1.7	0.14	30.2	-0.005	0.1	3.62	0.007	0.066	1.55	27.1	0.071	8.83	175	1.8	0	WH13163142	03/09/2013	23/09/2013
E020370	1.3	0.16	33.5	-0.005	0.11	3.51	0.008	0.07	1.645	39.9	0.081	11.8	177.5	2.34	0	WH13163142	03/09/2013	23/09/2013
E020371	0.8	0.26	12	-0.005	0.16	0.135	0.006	0.091	0.734	30.9	0.075	2.11	67.2	0.07	0	WH13163142	03/09/2013	23/09/2013
E020372	0.8	0.13	12.8	-0.005	0.06	1.98	0.011	0.064	0.849	27.8	0.182	6.71	179	1.14	0	WH13163142	03/09/2013	23/09/2013
E020373	0.2	0.19	4.93	-0.005	0.02	0.172	0.012	0.068	0.234	16	0.082	1.315	53.5	0.08	0	WH13163142	03/09/2013	23/09/2013
E020374	0.2	0.12	7.36	-0.005	0.04	0.753	0.01	0.06	0.316	11.3	0.056	2.68	91	0.45	0	WH13163142	03/09/2013	23/09/2013
E020375	0.8	0.2	21.5	-0.005	0.04	1.68	0.015	0.105	1.025	18.4	0.221	7.34	164	1.06	0	WH13163142	03/09/2013	23/09/2013
E020376	1.4	0.24	23.4	-0.005	0.05	2.28	0.013	0.13	1	15.1	0.122	6.17	167.5	0.42	0	WH13163142	03/09/2013	23/09/2013
E020377	1.2	0.33	42.7	-0.005	0.09	4.15	0.015	0.197	1.42	17.2	0.158	6.92	279	0.98	0	WH13163142	03/09/2013	23/09/2013

**Appendix 6**  
**Statement of Qualifications**

Jared Chipman

I Jared Chipman do hereby certify the following:

1. That I am a professional geologist registered with the Association of Professional Geoscientists of Nova Scotia (APGNS). Member # 180
2. That I am employed as a geologist by Alexco Resource Corp.
3. That I am a graduate in geology holding a BSc (Hons) from Saint Mary's University in Nova Scotia, Canada and an MSc from Queens University in Ontario, Canada.
4. That I have been practicing geology in Canada for approximately 7 years.
5. That I am a member of the Society of Economic Geologists.
6. That I was involved in the supervision of this work conducted in August of 2013.
7. That I have no interest in the property described herein, nor do I expect to receive any such interest.

Dated at Elsa, Yukon on this \_\_\_\_\_ day of \_\_\_\_\_, 2014