

2013 Assessment Report

Property comprising the following Claim:

O No Fr.

Located in the:

Keno Hill Area

Mayo Mining District

Yukon Territory, Canada

N.T.S. 105M14

UTM NAD 83, Zone 8

Easting: 490,040

Northing: 7,091,580

Prepared For:

Alexco Exploration Canada Corp.

of

1150-200 Granville Street

Vancouver, B.C. V6C 1S4

Prepared By:

Jared Chipman

Alexco Resource Corp.

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Dates Work Performed: August 18th, 2013

Date of Report: December 30th, 2013

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1.0 Summary

Ten soil samples were collected from a single line transecting the O No Fr. claim on the 18th of August, 2013.

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

2.0 Introduction

This report summarizes work carried out on the O No Fr. claim for Alexco Exploration Canada Corp. Ten soil samples were collected for the purpose of exploration assessment by Alexco Resource Corp. staff on August 18th, 2013.

3.0 Location and Access

The O No Fr. 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 370 metres east on foot from the track access within Faro Gulch and is located at 490,040 East and 7,091,580 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.

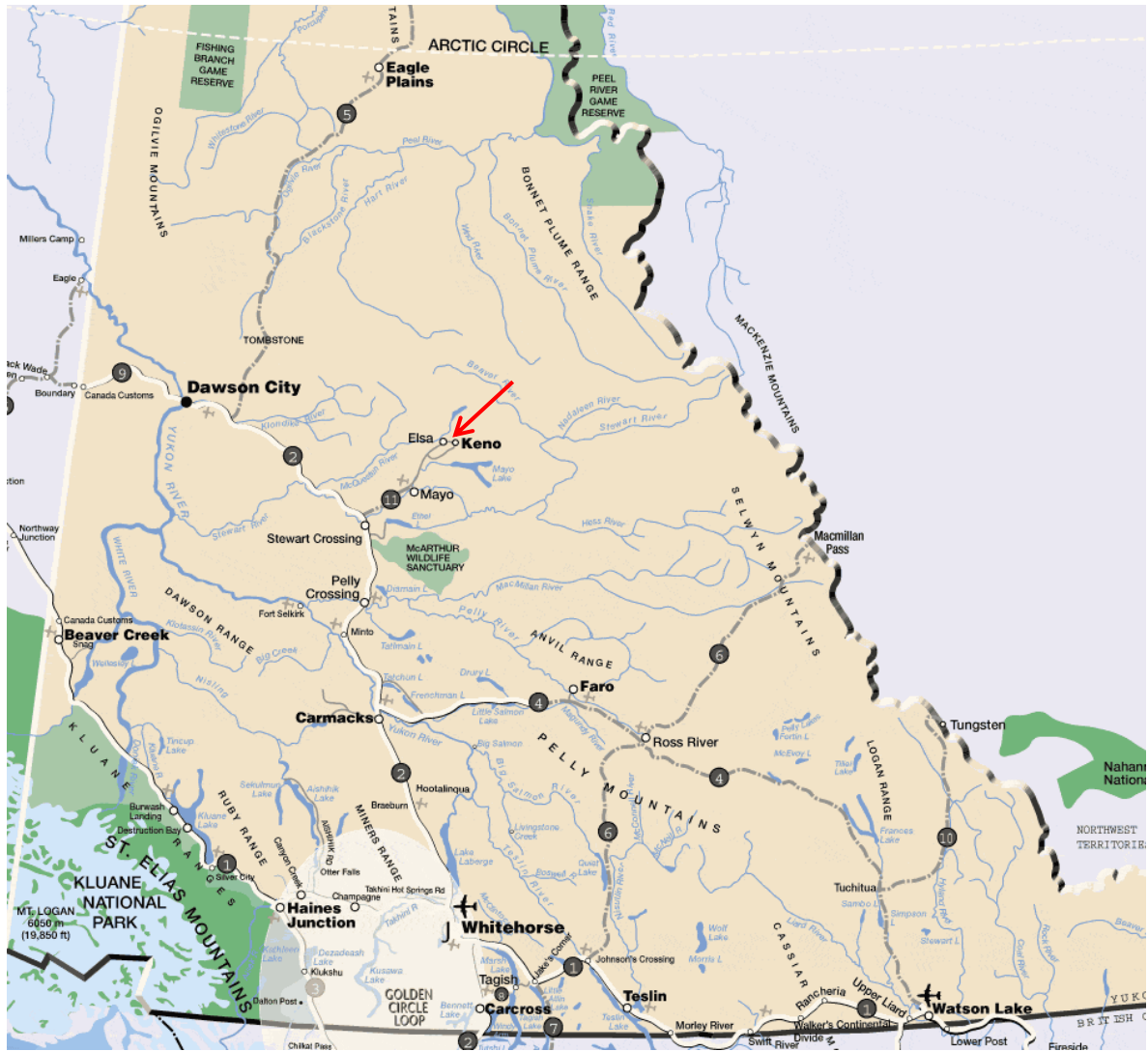


Figure 1. General location of the O No Fr. claim, Yukon Territory.

4.0 Claim Status

The O No Fr. claim is active. The claim was originally staked in August of 2007 and prior to current work had an expiry date of December 31st, 2013. Previous exploration assessment work was completed by Alexco Resource Corp. staff (Lipthoth, 2009). 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.

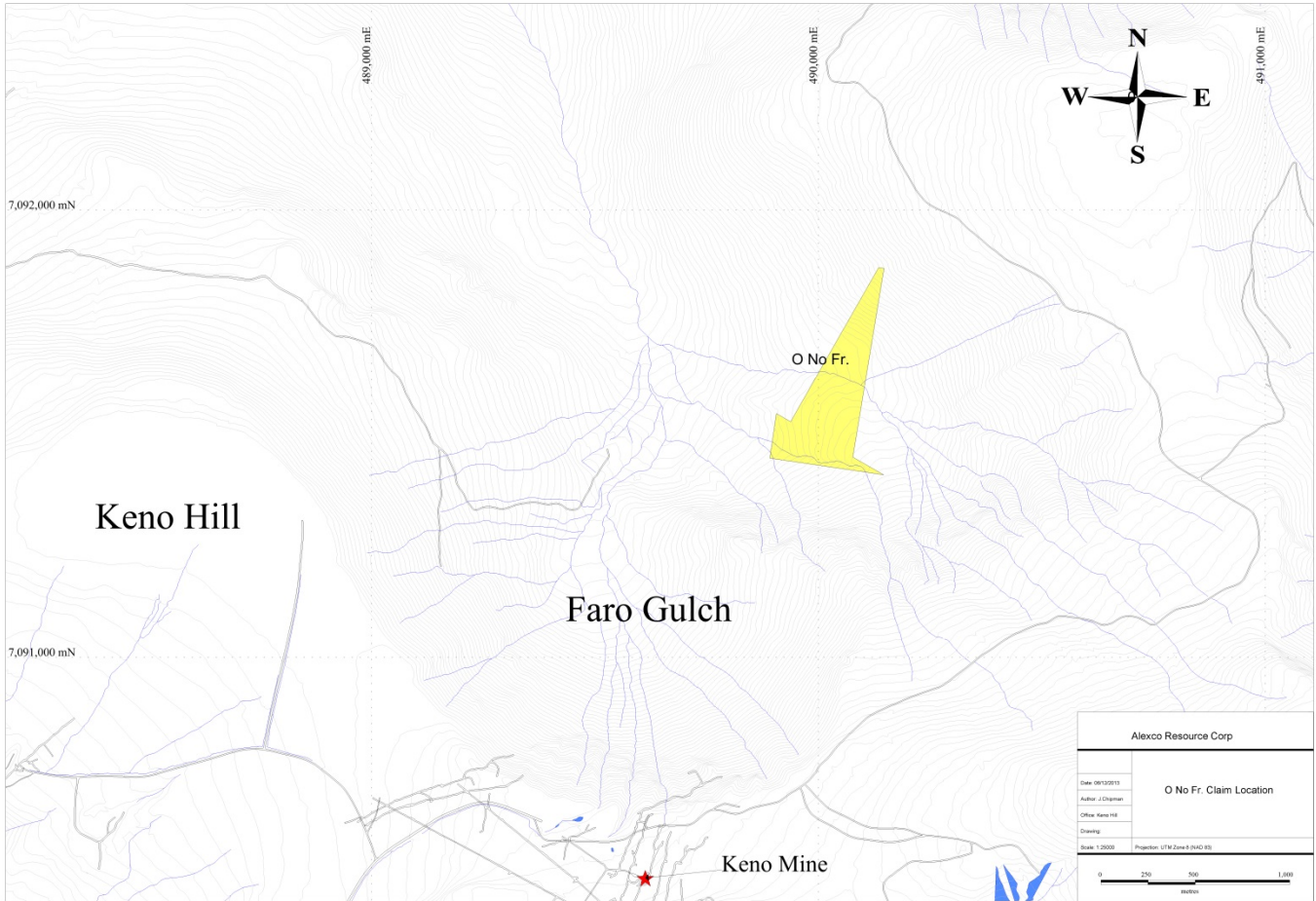


Figure 2. Location of the O No Fr. claim.

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 McOnie and Read in 2009 has shown the O No Fr. claim to be underlain by Earn Group Rocks composed of grey graphitic schist (Deg) and a silvery green chlorite-sericite schist (DEc). The Earn Group Rocks covering the claim have been intruded by a greenstone sill (Trgn) near the centre of the claim and by a fine-grained aplite dyke (LKTa) near the northern end of the claim. The claim lies approximately 730 metres north-east of the past producing Keno Mine on Keno Hill (Figure 2, 3).

A stratigraphic column for the Keno Hill area is shown in Figure 4 (McOnie and Read, 2009).

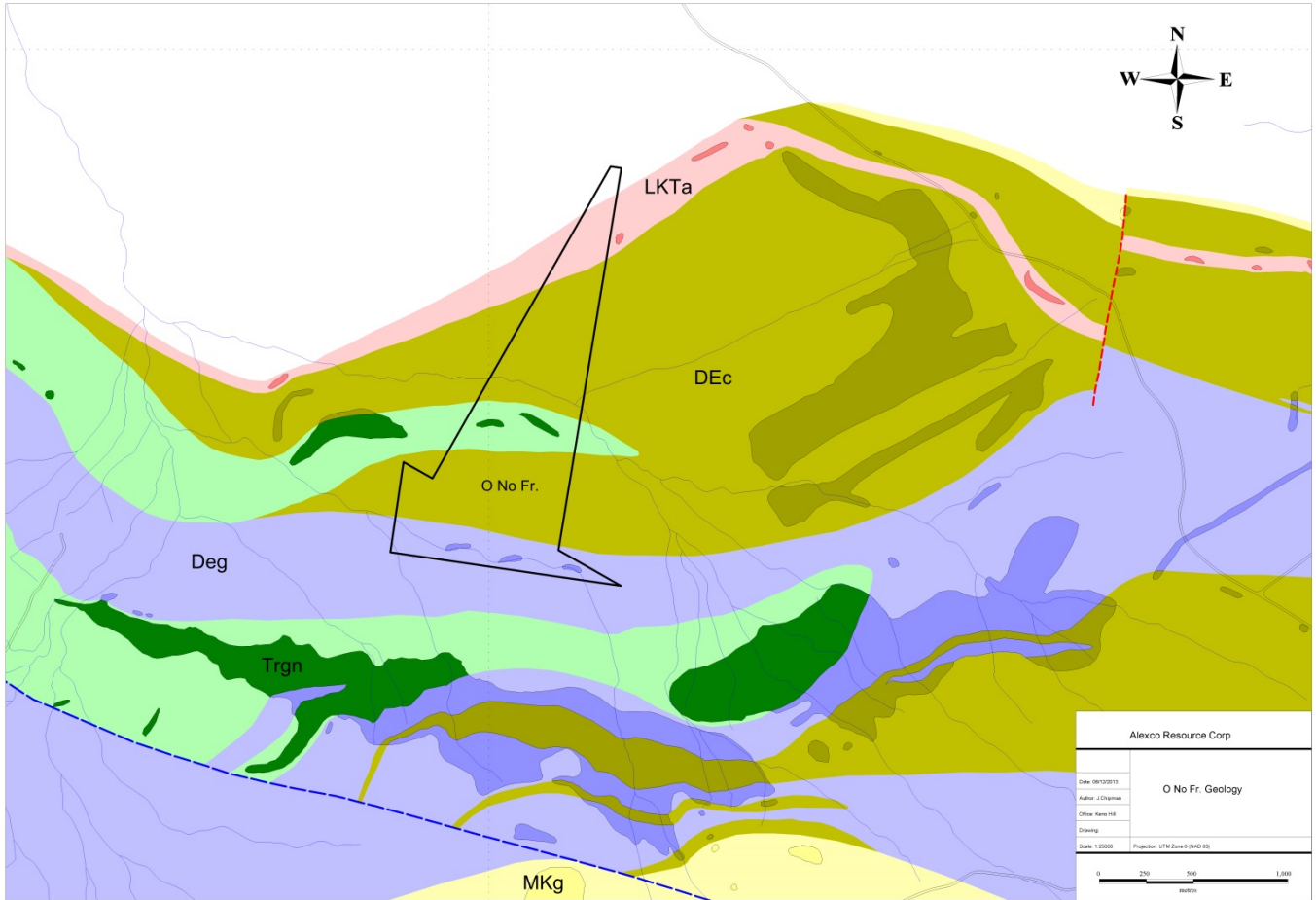


Figure 3. O No Fr. claim Geology (McOnie & Read, 2009). For legend see figure 4.

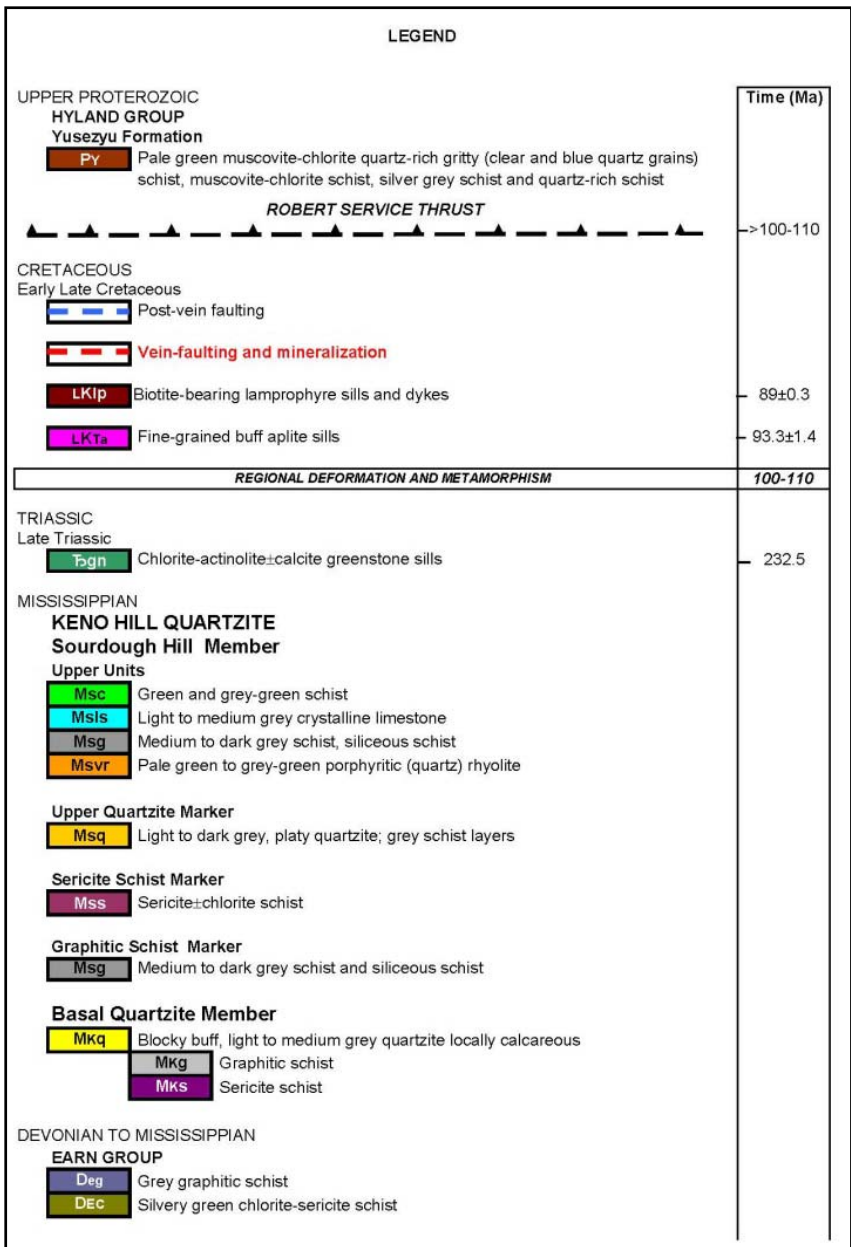


Figure 4. District Stratigraphy and legend for the Keno Hill Area (McOnie & Read, 2009).

7.0 Soil Assessment and Results

One line of soil samples was collected on the O No Fr. 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 23rd 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 (1.41 and 2.10 ppm) were returned from the ten samples taken on the claim. These two samples, E020304 and E020313, also have lead anomalies of 149 and 325 ppm along with anomalous arsenic values of 890 and 939 ppm. Three zinc anomalies (223, 270, and 274 ppm) exist along with four copper anomalies (70.9, 78.5, 79.6, and 117 ppm). Sample E020313 also returned an anomalous antimony value of 28 ppm and high manganese value of 1670 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	2.57	8.26	5.83	1.95	4.72	5.55	7.64	8.25
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	0.09	0.04	0.02	0.03	0.04	0.05	0.05
Sb_ME_MS41L_ppm	0.92	28.00	5.44	8.07	1.91	2.95	4.23	8.42
Sc_ME_MS41L_ppm	0.30	2.57	1.48	0.81	0.80	1.67	2.04	2.29
Se_ME_MS41L_ppm	0.60	2.80	1.26	0.80	0.70	0.95	1.50	2.53
Sn_ME_MS41L_ppm	0.08	0.30	0.17	0.08	0.10	0.15	0.23	0.29
Sr_ME_MS41L_ppm	8.78	19.75	12.29	3.43	10.11	11.15	14.04	15.97
Ta_ME_MS41L_ppm	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01
Te_ME_MS41L_ppm	-0.01	0.15	0.05	0.04	0.04	0.05	0.06	0.08
Th_ME_MS41L_ppm	0.07	8.78	3.13	2.89	0.55	3.19	3.89	6.90
Ti_ME_MS41L_pct	0.00	0.02	0.01	0.01	0.01	0.01	0.02	0.02
Tl_ME_MS41L_ppm	0.06	0.17	0.11	0.04	0.08	0.10	0.11	0.17
U_ME_MS41L_ppm	0.57	5.63	1.71	1.66	0.71	0.92	1.84	3.81
V_ME_MS41L_ppm	12.50	35.90	21.82	8.36	16.40	18.60	28.53	33.11
W_ME_MS41L_ppm	0.04	0.17	0.11	0.05	0.08	0.11	0.15	0.17
Y_ME_MS41L_ppm	2.33	16.15	7.39	4.24	5.09	6.88	8.67	12.64
Zn_ME_MS41L_ppm	54.30	274.00	154.21	83.35	76.15	148.50	214.13	270.40
Zr_ME_MS41L_ppm	0.09	6.44	1.44	1.88	0.33	0.84	1.61	2.54

8.0 Conclusions and Recommendations

Although the claim sits well within the Earn Group Schists (generally less favorable for mineralization) 80% of the samples were anomalous in either silver, lead, zinc, or copper. Sample E020313, the most northerly sample on the claim and closest to the aplite dyke, is anomalous in silver, lead, zinc, antimony and high in manganese. This sample is also at the base of a steep slope and material here may have undergone soil creep. These results are encouraging and follow up work is recommended in a denser grid of soil samples and or a small trenching program that should at least in part focus on the areas over the aplite sill/dyke to ascertain if the anomalous results from the soils are related to it or any geologic structures/veins possibly related to the past producing nearby Keno Mine that may extend from Keno Hill into Faro Gulch.

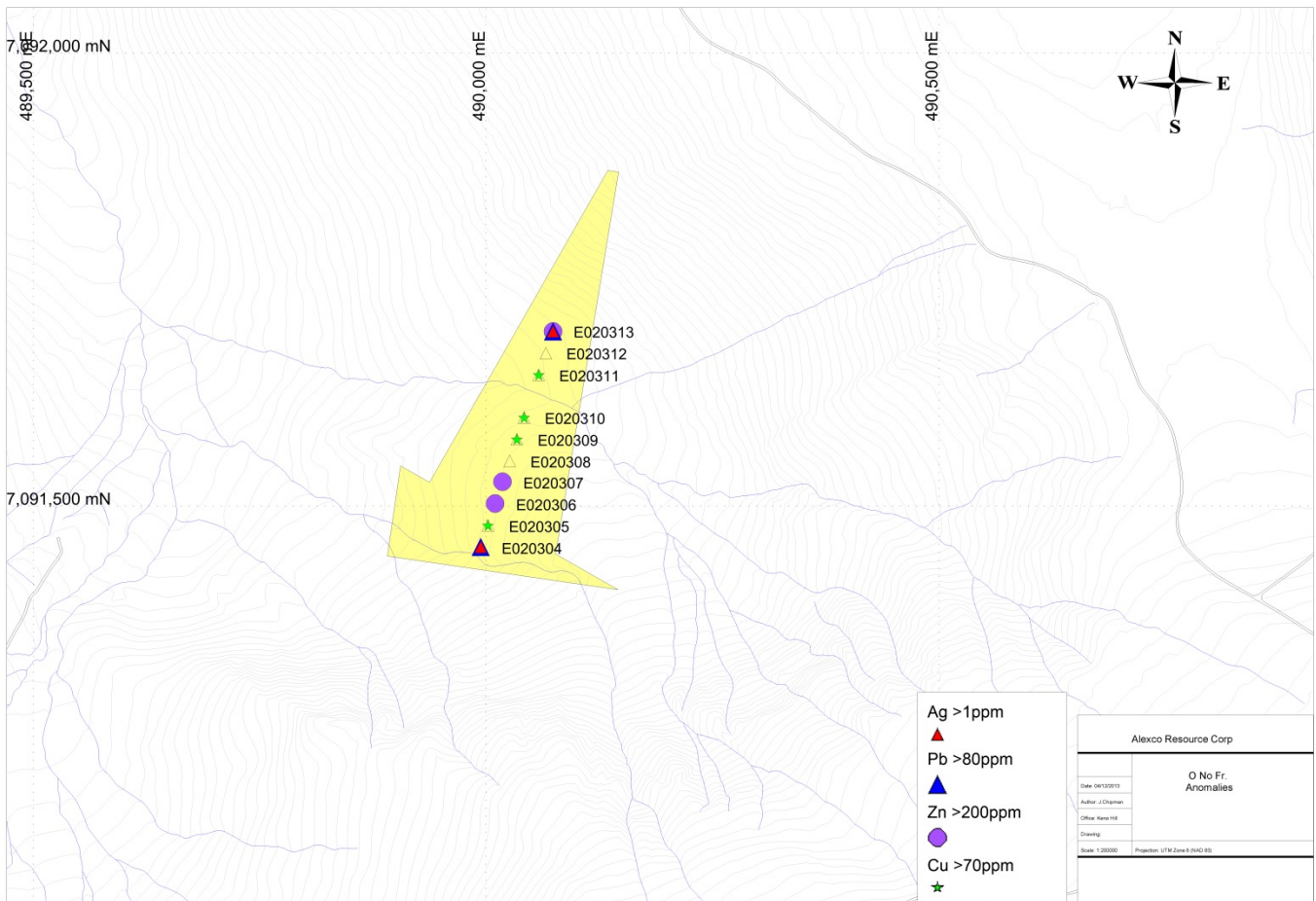


Figure 5. Highlighted symbols show anomalous silver, lead, zinc, and copper values from the 10 soil samples taken across the O No Fr. claim.

9.0 List of References

Lipthoth, R., 2009, 2009 soil geochemical assessment report for a portion of the Moraal property. YGS Assessment Report Reference 095649.

McOnie, A and P.B. Reid. 2009. Stratigraphy, Structure, and Exploration Opportunities Sourdough, Galena and part of Keno Hills, Keno Hill Mining Camp, Central Yukon. Internal Report Alexco Resource Corp.

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
185072638	YC57135	Quartz	Q	Active	O No Fr.	Alexco Exploration Canada Corp. - 100%	22-Aug-07	22-Aug-07	31-Dec-13	Mayo

Appendix 2

List of Personnel

Jared Chipman

541 Saunders Road
Deerfield, Nova Scotia
B5A 5N7

Dave Slocombe

#306 – 1685 West 13th Ave
Vancouver, BC

Margaret McLennon

1271 Southwood Drive
Ottawa, Ontario
K2C 3C4

Appendix 3

Statement of Expenditures

Claim name	Grant numb	Owner	Field Staff and Reporting	Camp Overhead	Vehicles - support	Analytical	Est. Total
O No Fr.	YC57135	Alexco Exploration Canada Corp.	\$1,030.00	\$342.00	\$110.00	\$332.00	\$1,814.00

Appendix 4

Soil Sample Descriptions

Sample Number	East	North	Claim	Depth (cm)	Horizon	Color	Silt %	Clay %	Organic %	Gravel %	Sand %	Comments
E020304	489994	7091455	O No Fr.	20	B	Orangy - Brown	50	0	10	30	10	Close to stream
E020305	490002	7091479	O No Fr.	10	B	Grey	15	5	0	50	30	Ascending slope of a valley
E020306	490010	7091503	O No Fr.	10	B	Brown	40	0	0	40	20	Ascending slope of a valley
E020307	490018	7091527	O No Fr.	20	B	Grey	55	10	0	20	15	Ascending slope of a valley
E020308	490026	7091550	O No Fr.	10	B	Brownish - Grey	45	0	5	10	40	Ascending slope of a valley
E020309	490034	7091574	O No Fr.	10	B	Brown	55	0	5	20	20	Ascending slope of a valley
E020310	490042	7091598	O No Fr.	15	B	Brown	0	10	10	10	10	3m high stack of large boulders
E020311	490058	7091645	O No Fr.	15	B	Brown	75	10	0	5	10	Ascending slope of a valley
E020312	490066	7091669	O No Fr.	20	B	Grey	70	20	0	0	10	Ascending slope of a valley
E020313	490074	7091693	O No Fr.	10	B	Brown	65	20	0	5	10	Ascending slope of a valley

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
E020304	0.26	0.01	1.41	0.96	939.00	-10.00	63.70	0.29	0.22	0.37	1.72	25.50	22.60	15.75	2.57	44.80	4.31	2.76	0.07	0.02
E020305	0.27	0.00	0.49	1.18	47.70	-10.00	49.20	0.44	0.33	0.37	1.06	32.50	20.90	16.00	1.60	78.50	5.19	2.99	0.07	0.08
E020306	0.31	0.00	0.93	1.00	46.40	-10.00	81.70	0.21	0.18	0.48	2.18	25.20	12.55	12.10	2.35	40.50	2.87	2.51	0.06	0.04
E020307	0.33	0.00	0.79	0.93	74.20	-10.00	72.70	0.26	0.26	0.44	1.06	31.10	19.75	15.90	2.54	50.70	3.93	2.49	0.06	0.03
E020308	0.25	0.16	0.70	0.88	41.30	-10.00	55.70	0.16	0.14	0.41	0.80	24.10	14.30	12.95	1.76	52.50	2.86	2.22	0.06	0.03
E020309	0.31	0.00	0.35	1.00	23.50	-10.00	117.50	0.22	0.15	0.17	0.39	19.80	11.85	16.65	2.59	117.00	2.75	3.35	0.04	0.00
E020310	0.23	0.00	0.14	0.88	22.70	-10.00	48.40	0.20	0.15	0.16	0.23	15.15	5.48	20.40	2.04	70.90	1.98	3.28	0.03	0.00
E020311	0.22	0.00	0.50	0.97	76.60	-10.00	311.00	0.24	0.28	0.21	0.50	18.70	8.16	18.80	1.60	79.60	3.18	2.76	0.05	0.02
E020312	0.21	0.01	0.86	0.83	72.20	-10.00	236.00	0.09	0.32	0.07	0.15	15.70	5.09	14.10	1.47	36.80	1.83	2.94	0.03	0.01
E020313	0.28	0.02	2.10	1.29	890.00	-10.00	294.00	0.60	0.97	0.16	0.61	24.80	9.36	20.40	2.05	33.70	2.52	3.63	0.03	0.06

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_ MS S41L_pct	Mn_ME_ MS S41L_pp	Mo_ME_ MS S41L_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
E020304	0.08	0.03	0.03	11.90	14.00	0.41	1670.00	8.20	0.00	0.21	35.70	0.16	149.00	0.00	0.00	4.67	0.00	0.05	28.00	2.57
E020305	0.15	0.03	0.03	16.50	21.40	0.78	980.00	16.60	0.01	0.03	54.70	0.21	27.70	0.00	0.00	2.57	0.00	0.09	3.13	1.53
E020306	0.07	0.02	0.04	12.50	12.70	0.53	759.00	2.30	0.00	0.11	32.60	0.18	57.00	0.00	0.00	4.88	0.00	0.04	2.76	2.05
E020307	0.06	0.02	0.04	15.20	9.90	0.36	986.00	2.90	0.00	0.25	36.80	0.15	69.90	0.00	0.00	7.90	0.00	0.04	6.25	1.82
E020308	0.07	0.01	0.04	11.65	10.30	0.48	656.00	2.63	0.01	0.20	26.70	0.17	33.70	0.00	0.00	5.32	0.00	0.05	4.58	2.26
E020309	0.07	0.02	0.04	9.57	10.00	0.37	362.00	1.97	0.00	0.34	18.45	0.10	25.70	0.01	0.00	8.25	0.00	0.03	1.90	0.67
E020310	0.07	0.01	0.03	7.44	10.90	0.30	156.50	2.15	0.00	0.24	18.15	0.08	21.30	0.00	0.00	6.85	0.00	0.03	1.79	0.30
E020311	0.04	0.02	0.02	9.77	15.80	0.34	426.00	4.53	0.00	0.34	24.90	0.07	39.80	0.00	0.00	5.78	0.00	0.03	1.94	1.19
E020312	0.05	0.01	0.02	7.28	13.40	0.33	289.00	3.64	0.00	0.16	19.85	0.06	37.70	0.00	0.00	3.86	0.00	0.02	0.92	0.37
E020313	0.14	0.07	0.04	12.25	12.30	0.36	542.00	1.79	0.01	0.57	22.70	0.07	325.00	0.00	0.00	8.26	0.00	0.03	3.17	2.01

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
E020304	1.60	0.11	14.50	-0.01	0.03	3.96	0.01	0.17	1.07	15.80	0.10	9.06	187.50	0.69	0.00	WH13163142	03/09/2013	23/09/2013
E020305	2.50	0.08	11.40	-0.01	0.04	8.78	0.00	0.06	3.61	13.30	0.04	16.15	160.50	6.44	0.00	WH13163142	03/09/2013	23/09/2013
E020306	1.20	0.10	10.90	-0.01	0.04	6.69	0.01	0.11	0.77	12.50	0.05	12.25	223.00	2.11	0.00	WH13163142	03/09/2013	23/09/2013
E020307	1.00	0.15	12.65	-0.01	0.05	3.48	0.01	0.17	0.76	18.80	0.08	6.64	274.00	0.92	0.00	WH13163142	03/09/2013	23/09/2013
E020308	0.70	0.09	9.08	-0.01	-0.01	3.67	0.01	0.11	0.69	18.40	0.07	7.11	110.50	1.39	0.00	WH13163142	03/09/2013	23/09/2013
E020309	0.90	0.24	10.15	-0.01	0.04	0.23	0.02	0.10	0.68	35.90	0.17	5.06	61.10	0.15	0.00	WH13163142	03/09/2013	23/09/2013
E020310	0.70	0.30	10.10	-0.01	0.07	0.07	0.02	0.10	0.57	32.80	0.16	2.69	54.30	0.09	0.00	WH13163142	03/09/2013	23/09/2013
E020311	2.80	0.14	19.75	-0.01	0.06	1.16	0.01	0.06	2.05	21.70	0.14	7.48	136.50	0.75	0.00	WH13163142	03/09/2013	23/09/2013
E020312	0.60	0.19	8.78	-0.01	0.15	0.35	0.01	0.07	1.22	18.20	0.12	2.33	64.70	0.21	0.00	WH13163142	03/09/2013	23/09/2013
E020313	0.60	0.29	15.55	-0.01	0.06	2.89	0.02	0.12	5.63	30.80	0.16	5.17	270.00	1.68	0.00	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