

## **2014 ASSESSMENT REPORT**

Property Comprising the Following Claim:

### **Duncan Fr 4 Claim**

Located in the:  
Keno Hill Area  
Mayo Mining District  
Yukon Territory, Canada  
N.T.S. 105M/14

UTM NAD 83 Z8: 482,300 East  
UTM NAD 83 Z8: 7,084,200 North

### **PREPARED FOR:**

Alexco Keno Hill Mining Corp.  
1150-200 Granville Street  
Vancouver, B.C. V6C 1S4

and

### **PREPARED BY:**

Al McOnie

Alexco Resource Corp.  
1150-200 Granville St.  
Vancouver, B.C. V6C 1S4

**DATES WORK PERFORMED :** September 10, 2014

**DATE OF REPORT:** September 11, 2014

## **TABLE OF CONTENTS**

|     |                           |    |
|-----|---------------------------|----|
| 1.0 | SUMMARY .....             | 4  |
| 2.0 | INTRODUCTION .....        | 4  |
| 3.0 | LOCATION AND ACCESS ..... | 4  |
| 4.0 | CLAIM STATUS .....        | 5  |
| 5.0 | REGIONAL GEOLOGY .....    | 7  |
| 6.0 | PROPERTY GEOLOGY.....     | 7  |
| 7.0 | CONCLUSIONS .....         | 10 |
| 8.0 | LIST OF REFERENCES .....  | 10 |

## **LIST OF FIGURES**

|           |  |   |
|-----------|--|---|
| Figure 1: | Yukon Location map .....                       | 5 |
| Figure 2: | Location of Claim .....                        | 6 |
| Figure 3: | Outcrop Geology of the Duncan Fr 4 Claim ..... | 8 |
| Figure 4: | Geological Legend .....                        | 9 |

## **LIST OF APPENDICES**

Appendix 1: List of Claims

Appendix 2: Personnel

Appendix 3: Statement of Expenditures

Appendix 4: Statement of Qualifications

## **1.0 SUMMARY**

On September 10 2014, surface geological mapping was undertaken on the Duncan Fr 4 claim. This confirmed the area to be underlain by the Sourdough Hill Member of the Keno Hill Quartzite that overlies the Basal Quartzite Member of the Keno Hill Quartzite, the host to the majority of the high grade silver (- lead – zinc) mineralization of the Keno Hill district.

## **2.0 INTRODUCTION**

This report summarizes surface geologic mapping conducted on the Duncan Fr 4 claim on 10 September 2014.

Planning, field work, and reporting of this work were performed by Alexco Resource Corp. staff.

The work was conducted as part of a broader program of re-mapping the Keno Hill district, an exercise that has developed a revised stratigraphy for the mineral hosting sequence.

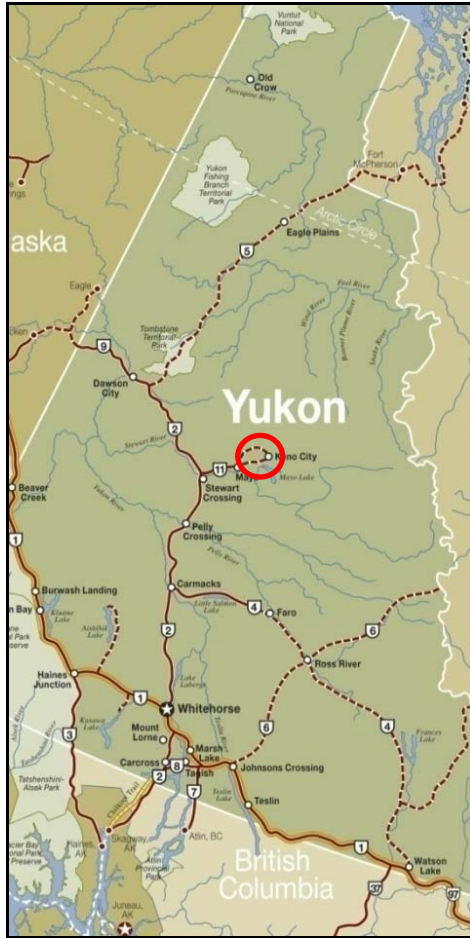
## **3.0 LOCATION AND ACCESS**

The Duncan Fr 4 quartz claim on which assessment work has been undertaken is held under the name of Alexco Exploration Canada Corp. 100%. The claim is located in the Keno Hill district, Mayo Mining District approximately 350 km north of Whitehorse (Figure 1). The area is covered by NTS map sheet 105M/14. The reference datum used is UTM NAD83 Zone 8, unless otherwise noted.

The claim is located at between 840m and 865m elevation in the Duncan Creek valley and on the western slopes of the Gustavus Range. On the valley floor the vegetation is generally thick scrubby willow while the slopes are relatively open spruce forest.

Access to the claim is on foot from an old placer mining vehicle track from Duncan Creek Road.

The base of operations for Alexco is the abandoned company town of Elsa which contains camp and office facilities.

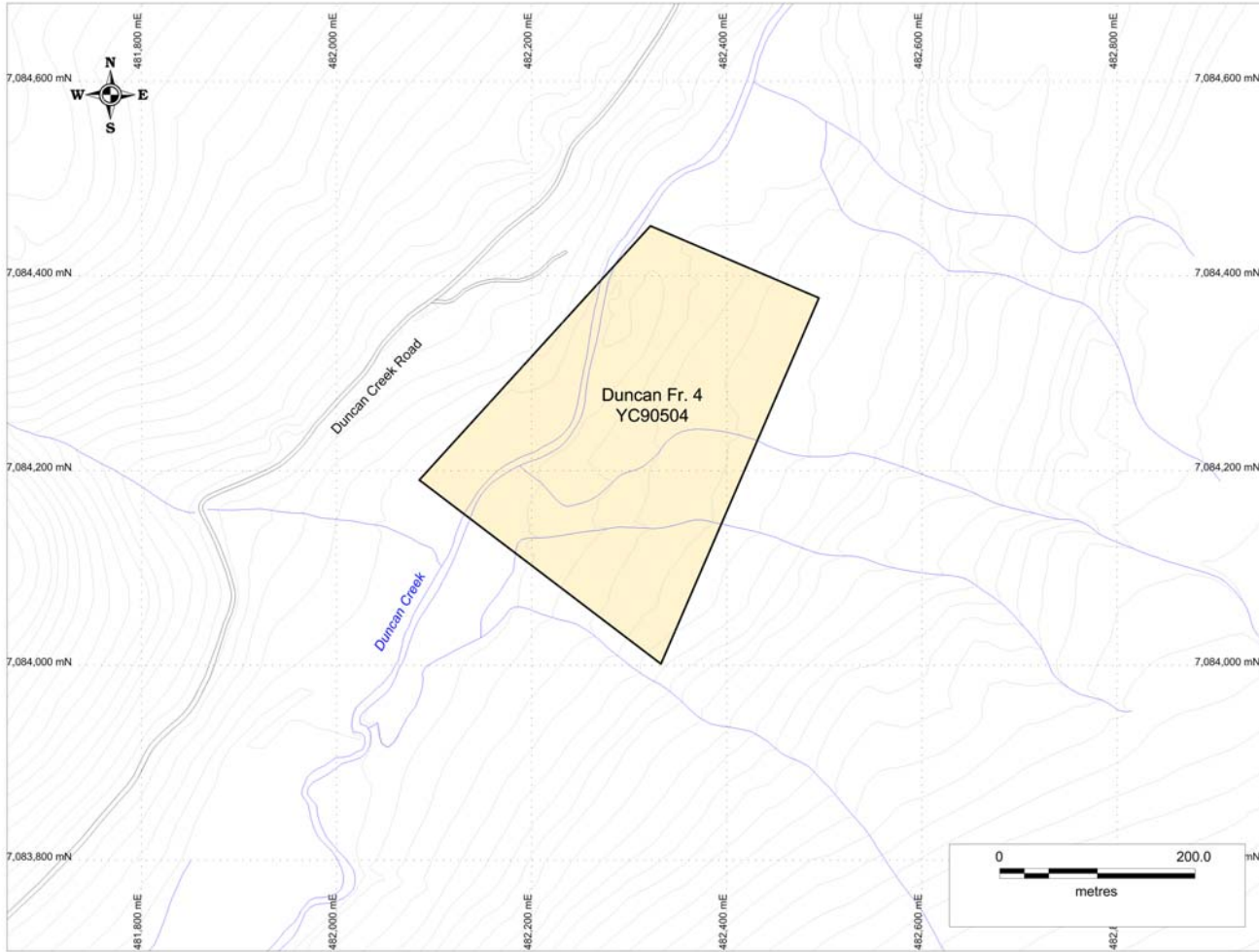


**Figure 1 General Location of the Claim Block**

#### **4.0 CLAIM STATUS**

The Duncan Fr 4 claim is active having been staked on 13 September 2013, and prior to the current work had an expiry date of 13 September 2014 (Appendix 1).

The location of the quartz claim is shown in Figure 2. A list of personnel and cost statement related to the application of Certificates of Work are included as Appendices 2 and 3.



**Figure 2 Location of the Claim**

## **5.0 REGIONAL GEOLOGY**

The claim is situated within the western part of the Selwyn Basin in an area dominated by deformed and metamorphosed sediments accumulated at the edge of the Neoproterozoic to Paleozoic continental margin. During the Jurassic and Cretaceous, the area was subjected to compressional tectonic forces producing imbricate thrust sheets and widespread folding. In the mid-Cretaceous, renewed tectonism resulted in extensive brittle deformation and the emplacement of intrusive plutons.

The rock unit underlying the claim forms part of the Mississippian Keno Hill Formation, host to most of the past producing ore bodies in the Keno Hill district.

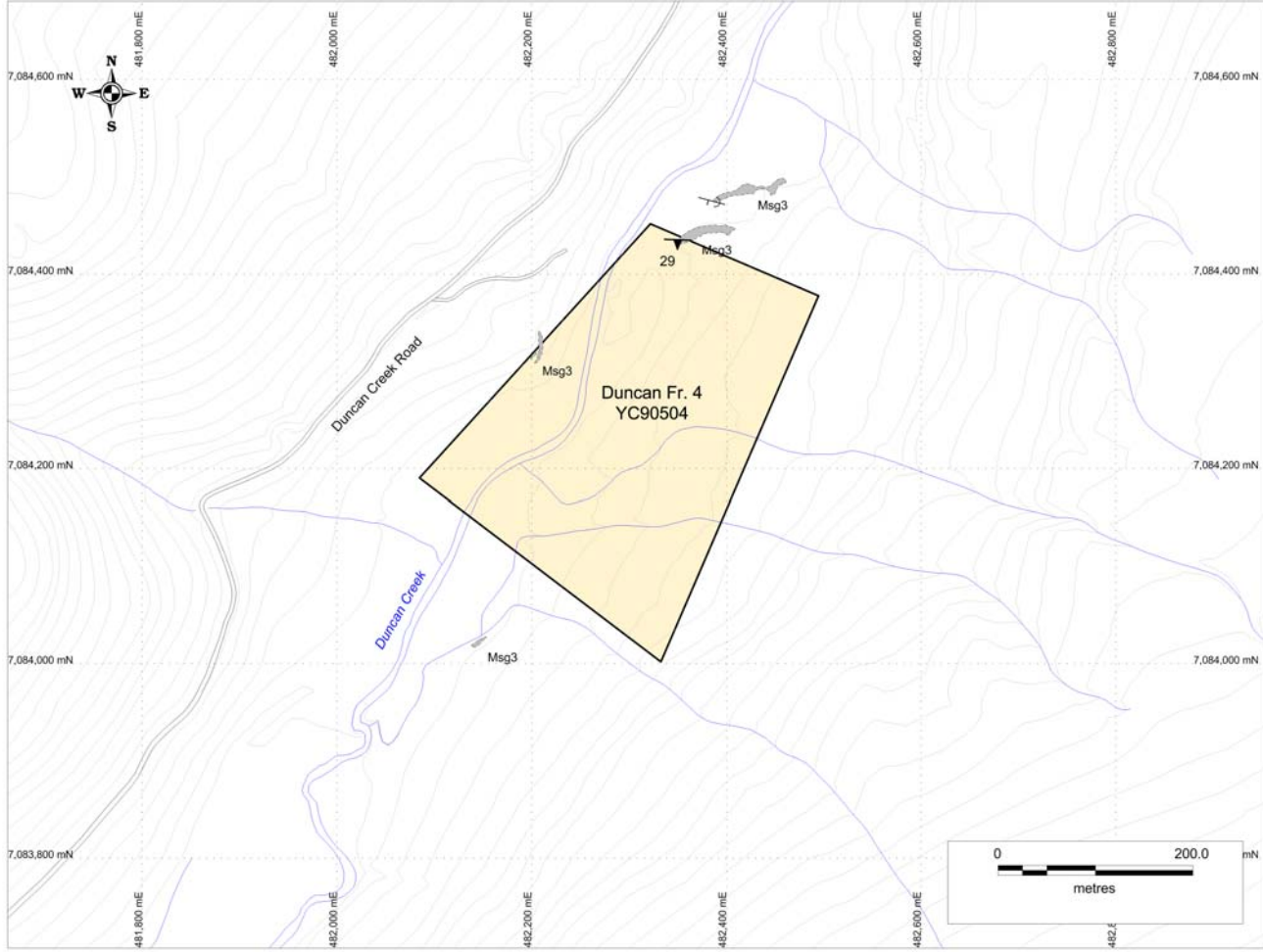
## **6.0 PROPERTY GEOLOGY**

The claim is significantly covered by Quaternary fluvio-glacial alluvium or colluvium and there is very little outcrop. The base of Duncan Creek has been historically placer mined, and is covered with residual piles of tailings and pits. The underlying rock that is exposed, occurs as ribs along the side of the stream bed and is correlated with the dark grey to black graphitic schist and light creamy green limy metasediments that form the uppermost unit of the Sourdough Hill Member of the Keno Hill Quartzite Formation (Figure 3).

The attitude of the dominant S1 foliation of  $092^{\circ}/29^{\circ}\text{SW}$ , and F1 fold axes at  $105^{\circ}/00^{\circ}$  are consistent with the general attitudes found in this part of the sequence in this area.

The eastern side of the claim is covered by a thick bench of cobbly Quaternary fluvio-glacial alluvium.

The stratigraphic position of the claim area is shown highlighted in Figure 4.



**Figure 3 Hardrock Outcrop Geology of the Duncan Fr 4 Claim**



LEGEND

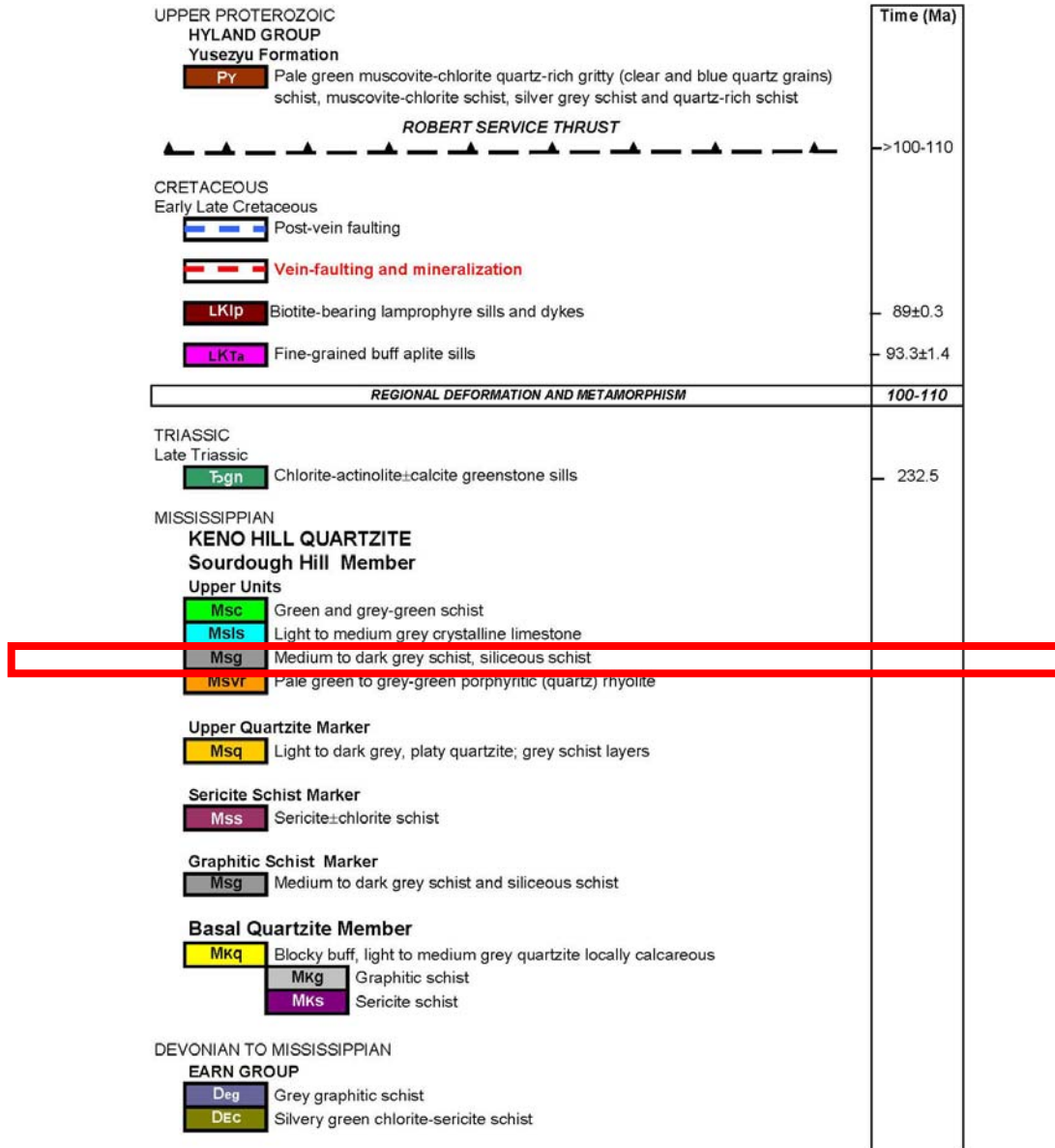


Figure 4 Stratigraphic Position of the Duncan Fr 4 Claim (after McOnie & Read, 2010)

## **7.0 CONCLUSIONS**

The results from the surface geological mapping demonstrates that this claim lies stratigraphically within the upper part of the Keno Hill Quartzite Formation, and is therefore prospective for the discovery of mineralization or features associated with that.

## **8.0 LIST OF REFERENCES**

McOnie, A., and Read P.B. 2010.  
*Stratigraphy, Structure and Exploration Opportunities Sourdough, Galena and part of Keno Hills, Keno Hill Mining Camp, Central Yukon.*  
Internal Report Alexco Resource Corp.

## APPENDIX 1

### LIST OF CLAIMS

| Claim        | Quartz Claim | Grant   | Owner                                  | Staking Date | Recorded Date | Expiry Date |
|--------------|--------------|---------|--|--------------|---------------|-------------|
| Duncan Fr. 4 | 301,541,674  | YC90504 | Alexco Exploration Canada Corp. - 100% | 13/09/2013   | 13/09/2013    | 13/09/2014  |

## **APPENDIX 2**

### **LIST OF PERSONNEL**

Al McOnie  
694 SH 2, RD1  
Katikati  
New Zealand  
3177

## APPENDIX 3

### STATEMENT OF EXPENDITURES

| <b>COST STATEMENT – Alexco Keno Hill Mining Corp</b> |                  |                  |                    |              |                    |                  |
|--|------------------|------------------|--------------------|--------------|--------------------|------------------|
| <b>CLAIM NAME</b>                                    | <b>GRANT NO.</b> | <b>GEOLOGIST</b> | <b>CAMP-OFFICE</b> | <b>TRUCK</b> | <b>PREP/REPORT</b> | <b>EST TOTAL</b> |
| Duncan Fr. 4   | YC90504          | \$ 400.00        | \$ 90.00           | \$ 50.00     | \$ 200.00          | \$ 740.00        |

## APPENDIX 4

### STATEMENT OF QUALIFICATIONS

**Al McOnie**

I, Alan McOnie of 694 SH2, RD1, Katikati, New Zealand  
DO HEREBY CERTIFY:

- 1 THAT, I am a VP Exploration and Qualified Person with Alexco Resource Corp., 1150-200 Granville Street, Vancouver, BC, V6C 1S4.
- 2 THAT, I have practiced my profession with various mining companies in the Canada, New Zealand, Australia, United States, Mexico, and China for over 35 years.
- 3 THAT, I am graduate in geology holding a BSc (Hons) from the University of Otago, New Zealand and a MSc from the University of Toronto, Canada.
- 4 THAT, I am a member of the Society of Economic Geologists.
- 5 THAT, I am a Fellow of the Australasian Institute of Mining and Metallurgy.
- 6 THAT, this report is based on work which I personally managed during the year 2014.
- 7 THAT, I have no interest in the property described herein, nor do I expect to receive any such interest.

DATED at Elsa, Yukon this 11th day of September, 2014.



---

Al McOnie