

TS 83K1, 2; 83F15, 16

**MAIDEN Li-K-B-Br-Ca-Mg-Na RESOURCE ESTIMATE REPORT ON  
LITHIUM-ENRICHED FORMATION WATER, FOX CREEK  
PROPERTY, SWAN HILLS AREA, WEST-CENTRAL ALBERTA**

**Prepared for:**  
**Channel Resources Ltd.**  
910-475 West Georgia St,  
Vancouver, British Columbia, Canada  
V6B 4M9

**Prepared by:**  
**APEX Geoscience Ltd. <sup>1</sup>**  
Suite 200, 9797 – 45<sup>th</sup> Avenue  
Edmonton, Alberta, Canada  
T6E 5V8

and

**Hydrogeological Consultants Ltd. <sup>2</sup>**  
17740 – 118 Avenue  
Edmonton, Alberta, Canada  
T5S 2W3

<sup>1</sup> Roy Eccles, M.Sc., P. Geol.

<sup>1</sup> Michael Dufresne, M.Sc., P. Geol.

<sup>1</sup> Kyle McMillan, M.Sc., Geol. I.T.

<sup>2</sup> Jim Touw, B.Sc., P. Geol.

<sup>2</sup> Roger John Clissold, M.Sc., P. Geol.

March 25<sup>th</sup>, 2012  
Edmonton, Alberta, Canada

**Maiden Li-K-B-Br-Ca-Mg-Na Resource Estimate Report on Lithium-Enriched  
Formation Water, Fox Creek Property, Swan Hills Area, West-Central Alberta:  
Permits 9308110427 to 9308110429 AND 9309030461**

**Table of Content**

1.0 Summary .....	1
2.0 Introduction .....	6
3.0 Reliance on Other Experts .....	7
4.0 Property Description and Location .....	7
5.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography .....	11
6.0 History .....	12
7.0 Geological Setting and Mineralization .....	17
7.1 Beaverhill Lake Aquifer System .....	17
7.2 Precambrian Basement.....	18
7.3 Phanerozoic Strata .....	18
7.4 Quaternary Geology.....	23
7.5 Structural History .....	23
8.0 Deposit Types .....	24
8.1 Conventional Solution Mining of Formation Water Brines for Potash.....	26
8.2 Mining Oilfield Formation Water (Using Lithium as an Example) .....	26
9.0 Exploration .....	28
10.0 Drilling .....	31
11.0 Sample Preparation, Analyses and Security .....	31
12.0 Data Verification .....	32
13.0 Mineral Processing and Metallurgical Testing .....	32
13.1 Overview .....	32
13.2 Preliminary Metallurgical Testing at the Fox Creek Property .....	34
14.0 Mineral Resource Estimate .....	35
14.1 Total In-Place Mineral Resource Estimate .....	36
14.1.1 Average Brine Grade used in the Resource Estimate .....	36
14.1.2 Resources for Hydrogeological Characterization of the Beaverhill Lake Aquifer System .....	36
14.1.3 Total In-Place Formation Water Volume used in the Resource Estimate ....	37
14.1.4 Inferred Mineral Resource Estimate .....	39
14.2 Discussion: Hypothetical Recoverability of Brine .....	41
14.2.1 Hydraulic Parameters .....	41
14.2.2 Available Drawdown .....	42
14.2.3 Hypothetical Diversion Model and Recoverability .....	44
15.0 Adjacent Properties .....	46
16.0 Other Relevant Data and Information.....	46
17.0 Interpretation and Conclusions.....	46
18.0 Recommendations .....	51
19.0 References .....	53
Certificates of Authors .....	59

## **Tables**

<b>Table 1.1.</b> Total inferred in-place resource estimate for selected elements within the Beaverhill Lake aquifer system of Channel Resources Ltd. Fox Creek Property.....	3
<b>Table 1.2.</b> Hypothetical mineral and end product resources that could be expected to be recovered over 20 years based on a range of calculated effective transmissivities (permeability x aquifer thickness) as determined from publicly available data. ....	5
<b>Table 4.1.</b> Industrial and Metallic Mineral Permit descriptions.....	7
<b>Table 5.1.</b> Climate data for the area of the Property (1971-2000).....	12
<b>Table 6.1.</b> Representative chemical compositions from the Beaverhill Lake (Swan Hills) and Woodbend (Leduc) groups. Chemical concentrations in mg/L unless otherwise indicated (after Hitchon <i>et al.</i> , 1995).....	16
<b>Table 7.1.</b> Regional stratigraphy of the Fox Creek area.....	19
<b>Table 9.1.</b> Summary results from 2009 sampling of formation waters.....	29
<b>Table 14.1.</b> Statistical summary of the samples used to calculate the average grade used in this mineral resource estimate.....	36
<b>Table 14.2.</b> Total resources in place of selected elements within the Beaverhill Lake aquifer system beneath Channel's Fox Creek Property .....	40
<b>Table 14.3.</b> Hypothetical volumes of formation water that could be expected to be recovered over 20 years based on a range of calculated effective transmissivities (permeability x aquifer thickness) determined from publicly available data.....	45
<b>Table 17.1</b> Total inferred in-place resource estimate for selected elements within the Beaverhill Lake aquifer system of Channel Resources Ltd. Fox Creek Property.....	48
<b>Table 17.2.</b> Hypothetical mineral and end product resources that could be expected to be recovered over 20 years based on a range of calculated effective transmissivities (permeability x aquifer thickness) as determined from publicly available data. ....	50

## **Figures**

<b>Figure 4.1</b> Location of Channel's Fox Creek Property.....	9
-----------------------------------------------------------------	---

<b>Figure 4.2</b> Fox Creek Property showing Channel's exploration permits.....	10
<b>Figure 6.1</b> Map of Devonian geologic elements and historic wells within the Devonian strata of the Property.....	14
<b>Figure 6.2</b> Devonian aquifers and historic Li tests from Devonian formation water.....	15
<b>Figure 7.1</b> Regional geology of the Swan Hills area.....	20
<b>Figure 7.2</b> Basement geology of the Swan Hills area.....	21
<b>Figure 7.3</b> Shaded magnetic relief map of the Swan Hills area. ....	25
<b>Figure 9.1</b> Locations and Li-analysis results of Channel's 2009 and 2010 water sample.....	30
<b>Figure 14.1</b> Thickness contour maps of the Beaverhill Lake Group and Leduc Formation, Woodbend Group.....	38
<b>Figure 14.2</b> Modeled 100% drawdown within the Fox Creek Property (blue polygon; HCL, 2011).....	43

## **Appendices**

<b>Appendix 1.</b> Metallic and Industrial Mineral Permit agreements for Channel's Fox Creek property.....	end
<b>Appendix 2.</b> Assay certificates for Channel's 2009 water samples and 2010 bulk sample recoverability.....	end
<b>Appendix 3.</b> Saline Formation Water Availability - Fox Creek Lithium/Potash Project.....	end

# 1.0 Summary

APEX Geoscience, Ltd. (APEX) of Edmonton, Alberta was retained in 2011-2012 by Channel Resources, Ltd. (Channel) of Vancouver, British Columbia, to calculate a mineral resource estimate for dissolved lithium (lithium) and other associated elements including potassium (K), boron (B), bromine (Br), calcium (Ca), magnesium (Mg) and sodium (Na) in saline oil field formation waters of the Beaverhill Lake aquifer system underlying their Fox Creek Property. This report is written for Channel as a National Instrument 43-101 Technical Report (NI 43-101) that describes a maiden resource estimate for its Fox Creek Property, as defined by the Canadian Securities Administration. Prior to this report, there is no known mineral resource for Channel's Property as defined by CIM Definition Standards on Mineral Resources and Ore Reserves dated November 27, 2010. To assist in Beaverhill Lake aquifer system characterization, APEX commissioned Hydrogeological Consultants Ltd. (HCL) of Edmonton, Alberta during 2011 to assess the total brine in place and other hydrogeological aspects of the Beaverhill Lake aquifer system.

The Fox Creek Property is located in west central Alberta, 20 km southeast of the town of Fox Creek, 60 km west of the town of Whitecourt and 215 km northwest of Edmonton. The Property consists of four Industrial and Metallic Mineral Permits, which form a contiguous package of land totalling 36,864 hectares (91,093 acres). In February 2009, Channel entered into an exclusive option agreement with Polaris Capital Ltd., for the acquisition of a 100% interest in the Property for a total of \$50,000 and 5 million Channel shares over five years. The acquisition is subject to a 2% gross sales proceeds (GSP) royalty, which can be purchased at any time by Channel following full exercise of the purchase option, at Channel's discretion, for consideration of CDN\$2,000,000.

Channel's Fox Creek mineral permits cover a large portion of an oil and gas field hosted in the Devonian aged Beaverhill Lake carbonate reef complex at a depth of about 3,200 m below surface. Based on a search of the Alberta Energy and Resources Conservation Board (ERCB) well database using GeoSCOUT™, a total of 81 oil and gas wells have been drilled within the boundaries of the Property to a depth where they have intersected at least Devonian aged rocks. Currently, a total of 45 wells are considered active wells with another 30 that are suspended but could be reinstated to producing.

Spatially associated with the oil and gas pools is a saline formation water aquifer with elevated concentrations of Li, K, B, Br, Ca, Mg and Na. The formation waters are co-produced with petroleum products prior to being removed as a waste product. Anomalous concentrations of these elements were confirmed by 2009-2010 sampling by Channel at well heads. Also during 2010, a 1,500 litre formation water sample split (from a bulk 2,000 litre sample) was tested by Hazen Research, Inc. for recovery of elements of interest. The results indicate that significant amounts of the desired elements can be extracted from the Beaverhill Lake brine (up to 98% for lithium, 88% for bromine, 100% for boron, and 40% potassium).