

Assessment Report on the  
**2016 SOIL AND ROCK GEOCHEMICAL SURVEY**  
on the  
**FLOW PROPERTY, YUKON**

**Grant Number Claim Name**

YD09011 – YD09139    FLOW 1 – FLOW 129  
YD09159                FLOW 130  
YD09161 – YD09178    FLOW 131 – FLOW 148

WHITEHORSE MINING DISTRICT  
**Dates Worked:** June 20 – June 24, 2016

NTS Map 115N01  
UTM 544,750E and 6,994,500N (NAD 83, Zone 7)

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January 19, 2017

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## SUMMARY

The Flow Property is an early stage exploration projects. Exploration activities over the past ten years have focused on targeting gold mineralization by collecting rocks and soils for geochemical analysis. A total of 18 geochemical samples were collected over 6 man days in 2016. The 2016 geochemical survey followed-up on anomalous samples taken during previous years and aimed to identify a larger more robust soil geochemical anomaly.

The Flow Property comprise 148 quartz claims. The property is located in west-central Yukon approximately 50 kilometres (km) east of the Yukon-Alaska border and 115 km south of Dawson City, Yukon (Figure 1).

## INTRODUCTION

This report describes a reconnaissance soil geochemical survey conducted by Independence Gold Corp. (“InGold”) staff on the Flow Property. Sampling was conducted by a 2 person crew over 3 days between June 20 and June 24, 2016. The authors participated in and/or managed the field program. The Statement of Qualifications are contained within this report.

The objective of the geochemical survey was to evaluate the mineral potential of the Flow property, which is located slightly northeast and along strike from a gold-in-soil anomaly discovered by Ethos Gold Corp. (“Ethos”) in 2011 on the Wolf Property (Freeman, 2011).

## CLAIM DATA AND OWNERSHIP

Silver Quest Resources Ltd. (“Silver Quest”) acquired the FLOW claims by way of staking in 2010, enlarging their previously held Wolf Creek Property. The Flow property comprises 148 contiguous quartz claims and covers a total area of approximately 3,108 hectares (ha). The claim block centres on UTM 544,750E and 6,994,500N (NAD 83, Zone 7) on NTS map sheet 115N01. Quartz claims are registered with the Whitehorse Mining Recorder. Claim data is listed below.

**Table 1 – Flow Claim Information**

<b>Grant Number</b>	<b>Claim Name</b>	<b>Pending Registered Owner/Operator</b>
YD09011 – YD09139	FLOW 1 – FLOW 129	Independence Gold Corp.
YD09159	FLOW 130	Independence Gold Corp.
YD09161 – YD09178	FLOW 131 – FLOW 148	Independence Gold Corp.



Figure 1 – Location Map



## **PROPERTY DESCRIPTION**

### **LOCATION**

The Flow property is located in the Wolf Creek area of west-central Yukon, approximately 50 km east of the Yukon-Alaska border and 115 km south of Dawson City, Yukon. The property is south of the White River, southwest of the confluence of the White and Yukon Rivers.

### **CLIMATE AND GEOMORPHOLOGY**

The Flow property lies within the Dawson Range, an area characterized by its rolling hills. Local elevations range from 425 m to 1,555 metres (m) above sea level. The higher elevation areas of the property are above tree line and covered with blocky felsenmeer, with a thin layer of moss cover making the slopes slippery in the rain. Lower elevations support a mixture of aspen, birch and spruce forest with thick willow and birch brush.

Climate in the region is described as sub-arctic with short mild summers and long cold winters. Due to the mild summer temperatures, permafrost can be found throughout the geographic region. Locally permafrost is discontinuous, depending on slope direction, elevation and drainage patterns. Regionally, multiple freeze thaw cycles have resulted in an abundance of felsenmeer covered slopes. The Dawson Range remained unglaciated during the Pleistocene, making outcrops rare, and maintaining a soil profile that is relatively in-place. The few outcrops that are present are located along sparsely vegetated ridges and in main creek drainages.

### **INFRASTRUCTURE**

Access to the Flow property in 2016 was via an Bell 206L3 helicopter operated by Heli Dynamics of Whitehorse and based out of InGold's Independence Creek camp, approximately 35 km to the southeast. A variety of fixed-wing operators in Dawson City and Whitehorse are available for hire to transport supplies to various airstrips in the vicinity including Thistle and Independence where supplies can be subsequently mobilized by helicopter to the property. Alternatively, several barge operators are available for hire to barge supplies up the Yukon River from Whitehorse or Carmacks. A barge landing does not currently exist; however one could be built at the confluence of the White and Yukon Rivers with the appropriate permits. Supplies would subsequently need to be mobilized by helicopter to the property.

There are no maintained roads that access the Flow Property.

## **HISTORY**

### **PREVIOUS WORK**

Historical work has been conducted on claims in the area dating back to 1969. The CAD and WCK claims were originally staked in 1969 by Quintana Minerals Corporation following a regional-scale stream sediment survey. This survey identified anomalous values in gold, arsenic and antimony. Quintana continued their work in 1970 with a follow-up soil sampling, trenching and mapping program (Baker and Voordouw, 2010). These claims were subsequently allowed to lapse a couple years later.

The area was re-staked as the Eyrie claims in 1975 and as the Hope Claims in 1994. There is no public record of work performed during these years. S. Ryan staked the CU claims in 1998 and conducted rock, soil and silt sampling (Ryan, 1999). In 1999, Prime Properties staked the OHGO claims. These claims were optioned to Prospector International Resources Inc., who performed regional stream sediment sampling, which yielded anomalous gold, arsenic, copper and mercury values (Minfile 115N 021). These claims were allowed to lapse in 2001, and were later re-staked in September of 2009 by S. Ryan as the Wolf claims.

The Wolf claims were staked contiguous to the CU claims, expanding the size of S. Ryan's land package. These claims were subsequently optioned to Ethos Gold Corp ("Ethos") in November of 2012 (Freeman, 2010) and returned to S. Ryan in 2015 due to market conditions.

### **RECENT HISTORY**

Archer, Cathro & Associated (1981) Limited ("Archer Cathro") staked the WCK claims in June 2009 and optioned them to Silver Quest in December 2009. The WCK claims are now part of InGold's Wolf Creek property. Archer Cathro completed a one day soil sample survey with a crew of 3 people in August 2009 on the WCK claims. A total of 74 deep auger soil samples were taken at 50 m spaced intervals along 3 traverse lines (Smith, 2010a). Favourable results were found on the WCK claims and more work was recommended (Smith, 2010a).

In 2006, Rimfire Minerals and Northgate Minerals carried out a regional silt sampling program across various areas in the Dawson Range looking for Pogo-style intrusion-related gold targets (Roberts and Baker, 2007). During this program 4 silt samples were collected from areas that



are now covered by InGold's Flow property. InGold purchased this database from Rimfire Minerals and Northgate Minerals in 2009.

During the 2011 season Silver Quest/InGold completed a reconnaissance soil sampling program on the eastern half of the Flow property. The team collected 145 soil samples from multiple ridge and spur survey lines over 16 man days (Congdon, 2011). Results returned weakly anomalous values for gold and silver, however more detail sampling was required to identify anomalous zones.

Work was completed by Ethos on their Wolf property adjacent to the southwest corner of Flow. In December of 2011, Ethos announced the discovery of a 7.5 square km gold in soils anomaly on their Wolf project (Freeman, 2011). Work continued through 2012 with little news.

The 2012 exploration program at Flow consisted of 12 days of work for 4 soil samplers (48 man days). A total of 820 samples were collected, 227 soil samples and 593 rock samples from 2 sampling grids. The grids produced some interesting values of gold, arsenic, copper and zinc that required further work.

## **GEOLOGICAL SETTING**

### **REGIONAL GEOLOGY**

Flow is situated within the Yukon-Tanana Terrane approximately 130 km southwest of the Tintina Fault in west-central Yukon. This area is characterized by various pericratonic terranes that were accreted to the ancestral continental margin of North America in the early Jurassic. During the mid-Cretaceous the pericratonic terranes were intruded by a northwest-southeast trending plutonic suite known as the Dawson Range Plutonic Belt (Hart et al. 2004).

### **PROPERTY GEOLOGY**

The Flow property is underlain by several units of country rock schist and granitoids. The oldest unit on the property, occurring in the northeast, is Devonian to Mississippian, banded, quartzite to quartz-mica schist belonging to the Nisling Assemblage (DMq). This unit was thrust overtop of the Permian Klondike schist (PKs), which occurs west of the quartzites and typically comprises muscovite-chlorite-quartz-feldspar schist, chlorite phyllonite and locally deformed lapilli tuff. Both of these predominantly metasedimentary units are intruded by Permian and Cretaceous granitoids. Granitoids, consisting of predominately K-feldspar augen gneiss of

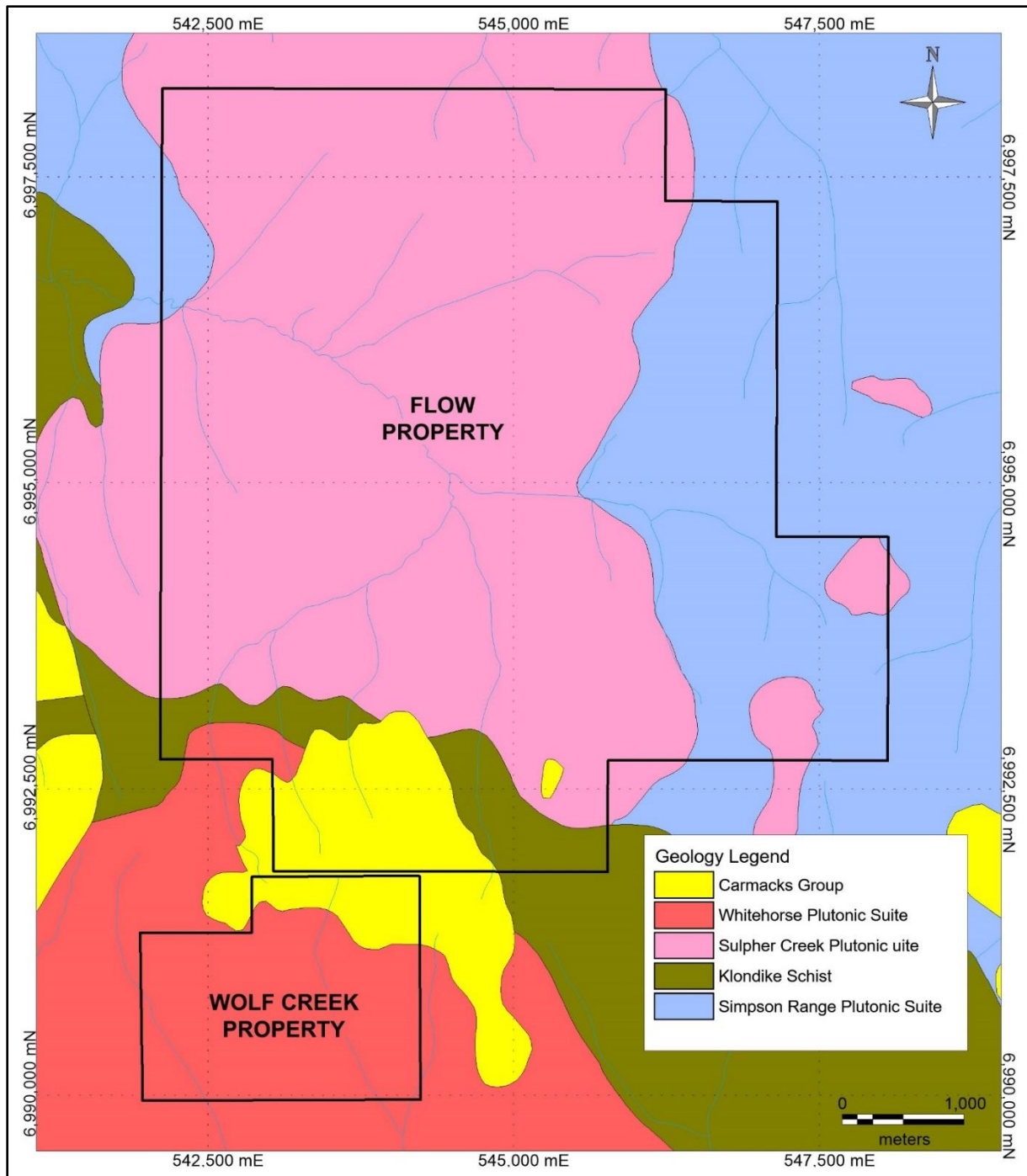


Figure 3 – Regional Geology

Permian age and belonging to the Sulphur Creek Plutonic Suite (Poga?) are the most abundant and underlie much of the central part of the Flow property. A relatively small Cretaceous intrusion (Kg), comprising pink to grey, locally porphyritic, monzogranite occurs in the northern part of the property. A second, relatively large Cretaceous intrusion (Kg) occurs at the

southwest boundary of the property and continues to the White River. The Cretaceous Carmacks Group (uKCv) overlies Permian to Jurassic rocks in the southern part of the property and consists of andesite and basalt flows and breccias (Gordey and Ryan, 2005) and (Baker and Voordouw, 2010) (Figure 3).

No mapping and only minimal prospecting was completed during the 2016 project.

## **GEOCHEMISTRY**

The 2016 exploration program at Flow consisted of 3 days of work for 2 Geologists (6 man days). A total of 18 samples were submitted from this field work and included 10 soil samples, 6 rock samples and two rock standards (Figure 4). The soil and rock samples were collected at historical soil sites to follow-up past results.

Samples were submitted to SGS Canada Inc. laboratory facility in Vancouver, an ISO 17025 certified facility. Upon arrival at the laboratory, soils samples were dried in an industrial oven to 60 degrees Celsius. The dried soil sample was then weighed and sieved through a -180 micron sieve. A 30 gram (g) sample was obtained from the sieved material for analysis. Rock samples were dried to temperatures up to 105 degrees Celsius and weighed. Rock samples were then crushed so that 75% of the sample passed through a 2 millimetre (mm) sieve. A 250 g sub-sample was taken and pulverized so that 85% of the sub-sample passed -75 micron sieve. A 30 g sample was then obtained from the sieved material for analysis. Soil and rock samples were both analysed by aqua regia digestion and inductively coupled plasma with optical emission spectroscopy (ICP-OES) analysis for 34-elements. Gold was analysed by fire assay and atomic absorption spectroscopy (FAA313). Assay certificates of analysis, laboratory certification and analytical method summaries are presented in Appendix 1 at the end of this report.

## **SOIL GEOCHEMISTRY PROCEDURE**

All samplers (InGold employees) were trained to use rigorous sampling procedures when collecting the B-horizon soil samples. Samplers began by removing a 30 centimetre (cm) by 30 cm section of moss matt or vegetative cover. Second, a soil pit of similar dimensions was hand excavated; exposing A and B soil horizon boundaries and reaching the top of the C-horizon where feasible. The depth of the pit varied from 20 cm to 40 cm, depending on horizon thicknesses and sampling conditions. Soil material (300 grams to 400 grams) was collected from the walls of the pit utilizing a clean plastic trowel. Samples were collected in standard

KRAFT soil sample bags and transported to the 2016 Independence Creek camp. At camp, all samples were dried for a minimum of 2 days in a heated tent prior to packing for shipment to the laboratory.

All sample locations were rehabilitated by back-filling the soil pit and replacing the moss mat or vegetative cover. This was done to minimize the environmental impact. Locations with permafrost or areas lacking mineral soils were not sampled. Equipment such as shovels and trowels were cleaned between samples. All sample locations were recorded using a hand-held GPS. All maps and UTM coordinates are referenced to the 1983 North American Datum (NAD 83), Zone 7. A complete description of soil type, depth, thickness of the sample, the surrounding environment and the terrain was recorded at each location.

## **ROCK GEOCHEMISTRY**

Both samplers used industry standard sampling procedures when collecting rock samples. Samples were collected in proximity to the elevated historical soil samples to try and account for the Au +/- As anomalies. Samples were placed in polyurethane bags and transported to the 2016 Independence Creek camp for packing and shipping to the laboratory. All sample locations were recorded using a hand-held GPS. All maps and UTM coordinates are referenced to the 1983 North American Datum (NAD 83), Zone 7. A complete description of rock type, lithology, alteration, mineralization and comments on the surrounding environment and the terrain were recorded at each sample site.

## **QUALITY ASSURANCE/QUALITY CONTROL**

For Quality Assurance-Quality Control (QAQC) purposes, a single blank (CDN-BL-10, purchased from CDN Resource Laboratories) and a gold-standard (CDN-GS-5R, purchased from CDN Resource Laboratories) were inserted into the single rock sample shipment. These QA/QC samples were analysed with the rest of the samples and resulting values were used to check the consistency of our sampling procedures and the analytical procedures used by SGS Canada Inc. Erroneous QAQC results were investigated and appropriate re-analysis undertaken when necessary. Internal SGS Canada Inc. blanks, duplicates, standards and spikes were also used to confirm the accuracy of the analytical methods and instruments. Quality Assurance-Quality Control (QAQC) samples for the Flow Property passed without any concerns.

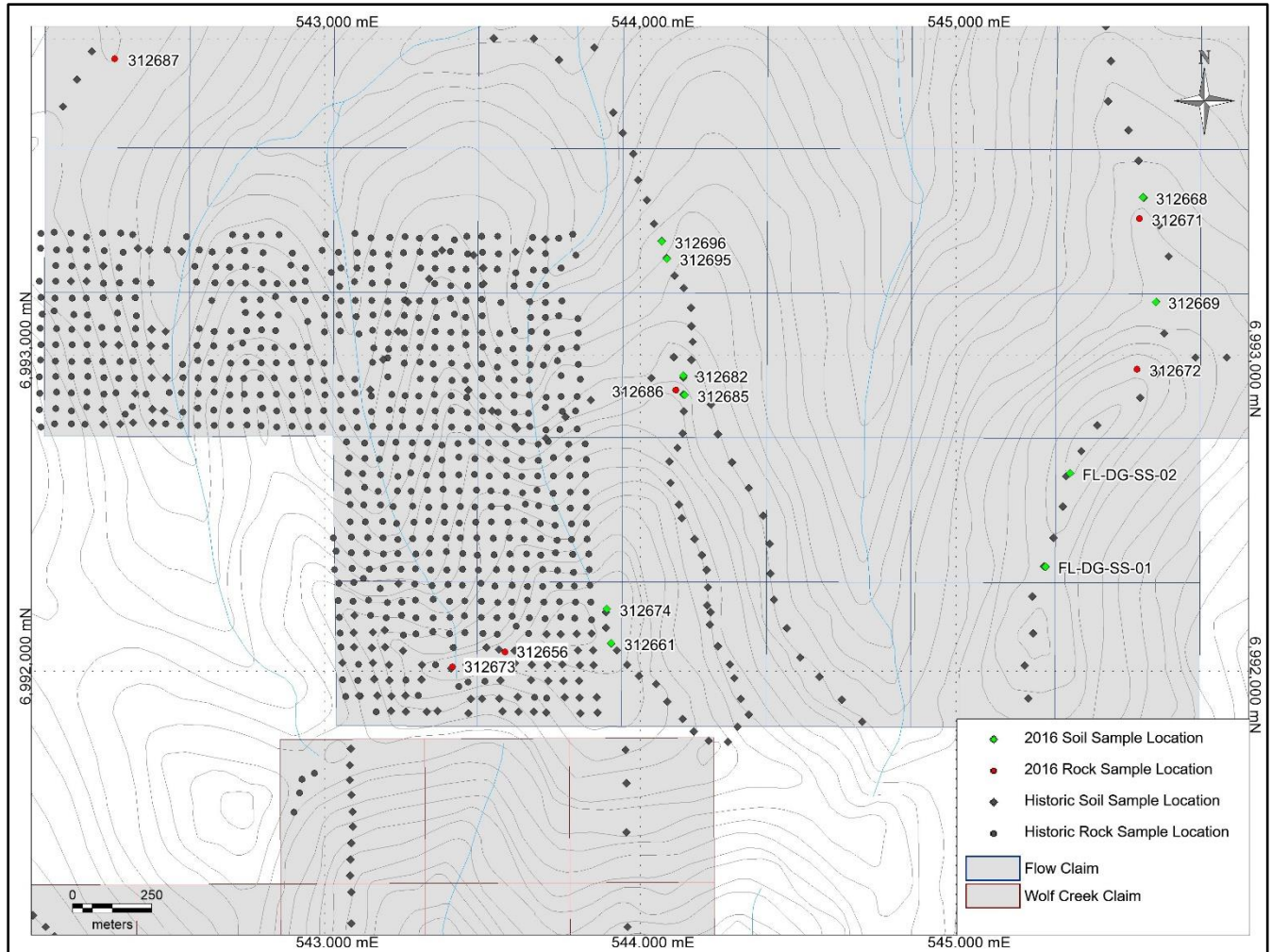


Figure 4 – Sample Locations

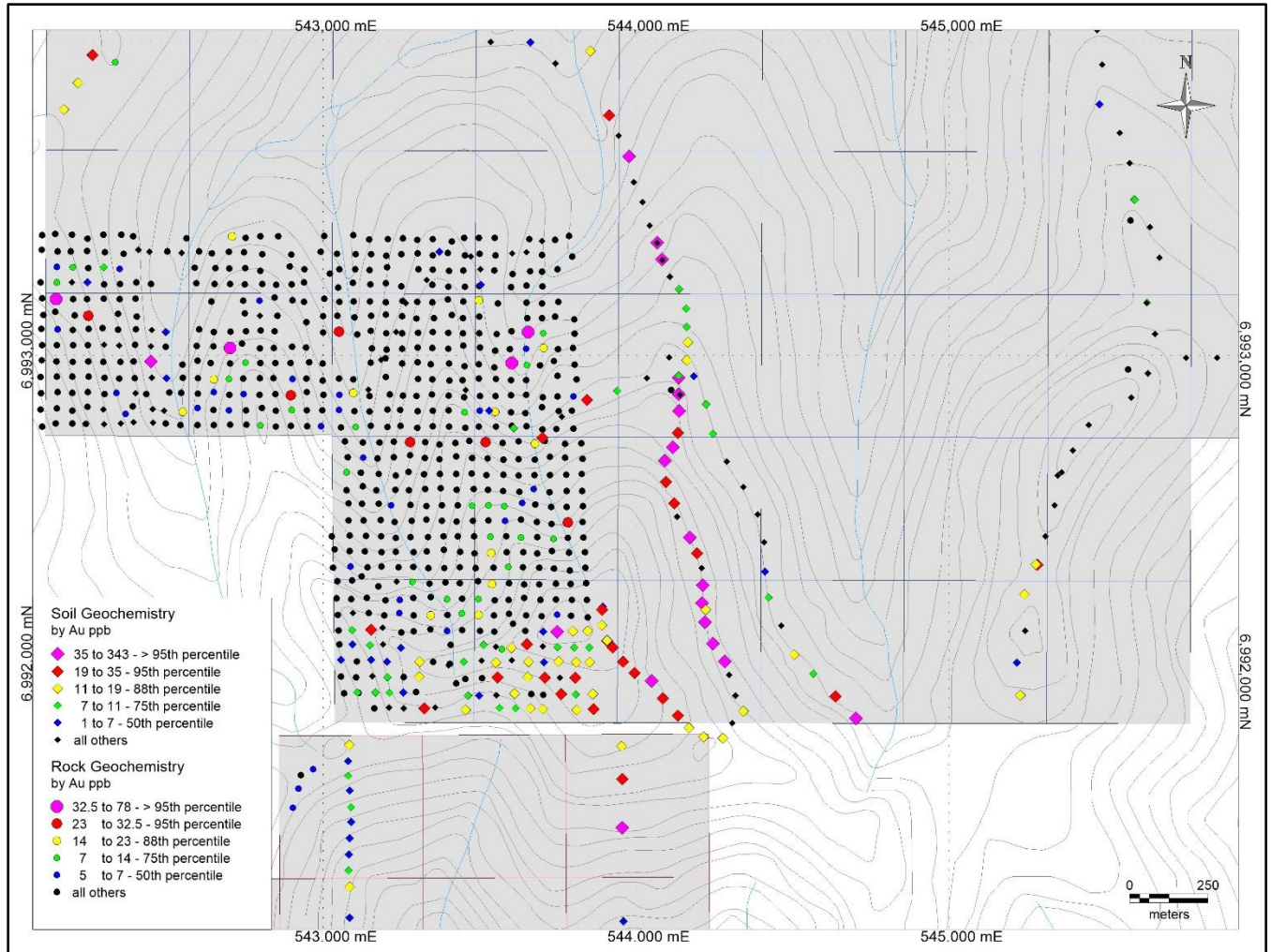


Figure 5 – Sample Gold Geochemistry

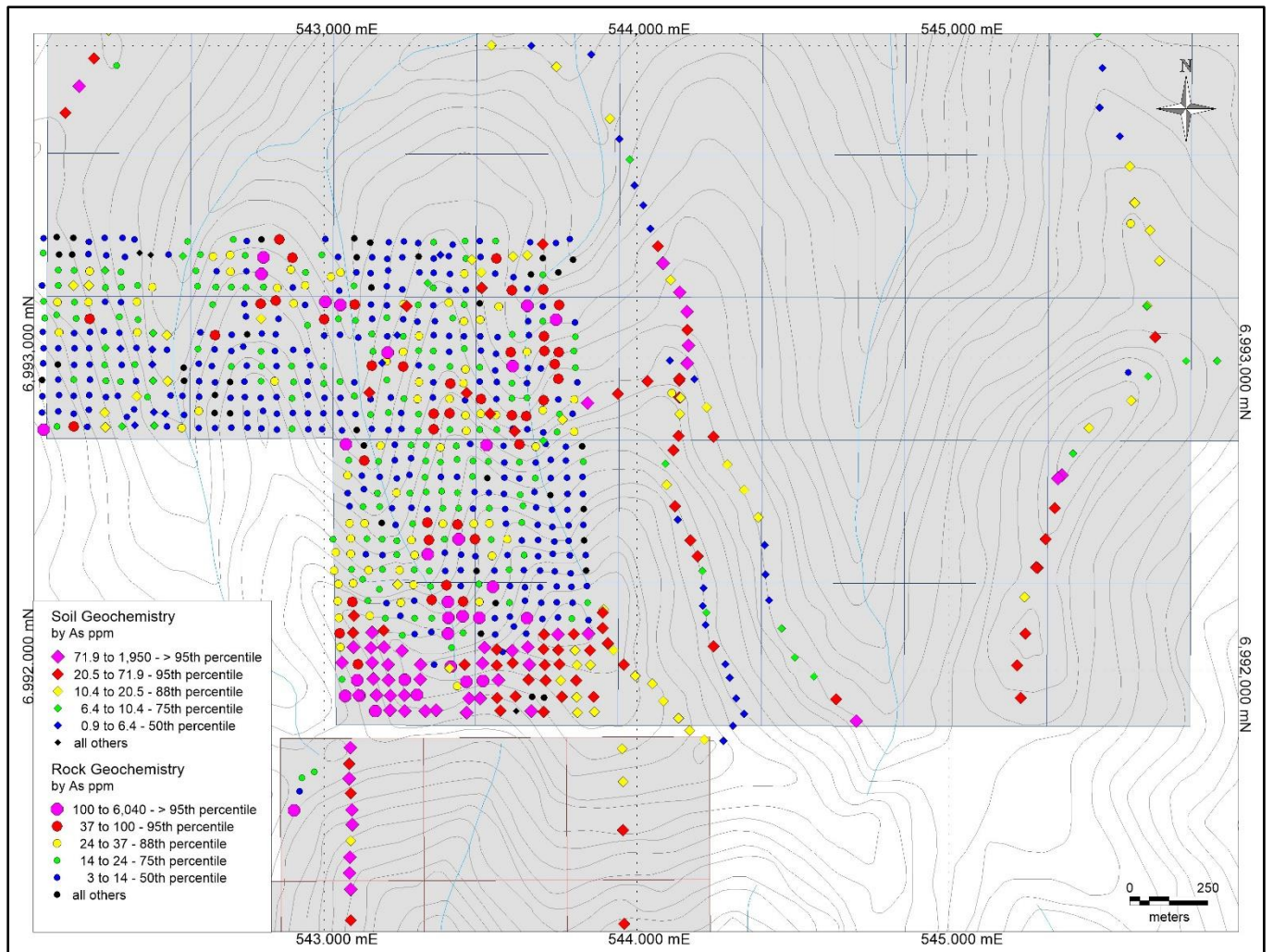


Figure 6 – Sample Arsenic Geochemistry

## DISCUSSIONS AND CONCLUSIONS

Four areas were evaluated during the three days of field work. The strategy at each of these areas included trying to find the historical soil sample site and if successful, evaluating the pit and looking for rocks that could account for the elevated Au or As results. In select cases, a follow-up soil sample was collected from the same (if discovered) or a different pit to try and repeat the anomalous result. Prospecting was carried out around these historical sites and rock samples were collected if quartz veins, sulphides or alteration was observed.

At the eastern most area, 4 soil and 2 rock samples were collected (Figure 5). Historical soil samples returned consistently weakly to moderately elevated Au and moderately elevated As, proximal to a contact between an orthogneiss and metasedimentary rocks of the Klondike assemblage. One of the soil samples (FL-DGSS-01) returned 31 ppb Au which is strongly anomalous for a soil sample. Unmineralized and unaltered chlorite schist was observed within the soil pit so this anomaly remains unexplained. This area has minimal potential based on a lack of mineralization or alteration observed over the 1,200 m soil line.

In the central area, 4 soil samples and 1 rock sample were collected along a historical soil line that returned inconsistently anomalous Au with elevated As-in-soil values. A single composite sample was collected of quartz vein material around the southernmost soil site. No anomalous soil or rock values were returned and there is no explanation for the Au and As anomalies in the historical soil samples.

In the southern most area on the Flow property, 2 soil samples and 2 rock samples were collected. Undeformed basaltic rocks were observed in this area and are representative of the Carmacks Group volcanic package. There is a weakly developed As-in-soil anomaly that extends east-west over a 650 m area. The two rock samples contain both pyrite and silvery pyrite, and were sampled from a discontinuous zone of weak sulphide mineralization observed along the east-west trending ridge. Sample 312673 reported 805 ppm As therefore some of the sulphides are mostly likely arsenopyrite. Neither of the samples reported elevated gold. Based on a general lack of B-horizon soils, the material sampled within the soil anomaly is more accurately described as talus fines. Therefore, this arsenic soil anomaly is downgraded because a portion is comprised of rock instead of soil material. The very steep topography also



exaggerates the possible source area for the anomaly which appears to be fairly limited along the ridge.

The fourth area is on the far western side of the Flow property and a single rock sample was collected. There is a single northeast-trending historical soil line with moderately elevated Au and strongly anomalous As values. The three southern most soil sites were evaluated but were not sampled due to no observed mineralization or alteration. A moderately, limonite altered quartz biotite schist with 1.5% disseminated pyrite was sampled but did not return any significant results.

## **RECOMMENDATIONS**

Multiple years of geochemical sampling have failed to identify economically viable concentrations of gold mineralization on the Flow Property. Areas with moderate arsenic soil anomalies have been locally identified but do not correlate with gold mineralization in bedrock.

The Wolf property (White Gold Corporation) is contiguous (to the southwest) with the InGold's Flow property. Historical work on this adjacent ground has outlined a series of parallel, northeast trending Au-As-Sb soil anomalies that have the potential to trend onto InGold's ground. No further work is recommended on the Company's Flow properties but the area should be evaluated annually for competitor activity.

## REFERENCES

Baker, D. and Voordouw, R. (2010), Silver Quest Resources Ltd. 2010 Geochemical Report on the Flow Property, Whitehorse Mining District, Yukon, Assessment Report

Congdon, R.J.F (2011), 2011 Soil Geochemical Survey on the Flow Property, Yukon, Yukon Geological Survey Assessment Report, Silver Quest Resources Ltd.

Freeman, G. (2010) Ethos Acquires Gold Properties in the emerging White Gold District - Dawson Range, Yukon Territory, Announces Financing; Ethos Gold Corp News Release, November 30, 2010

Freeman, G. (2011) Ethos Identifies Gold Soil Anomaly at Wolf Property, Yukon; Ethos Gold Corp News Release, December 8, 2011

Gordey, S.P. and Ryan, J.J. (2005) Geology, Stewart River Area (115 N, 115 O and part of 115 J), Yukon Territory. Geological Survey of Canada Open File 4970 1:250,000

Hart, J. R., Goldfarb, R., Lewis, L. L., and Mair, J. L. (2004) The northern Cordilleran mid-Cretaceous plutonic province: Ilmenite/magnetite-series granitoids and intrusion-related mineralization: *Resource Geology*, v. 54, p. 253-280.

Minfile 115N 021 (2012) ARIES; Yukon Geological Survey, Mineral Occurrence

Roberts, M., and Baker, D. (2007), 2006 Geological and Geochemical Report on the Rimfire-Northgate Alliance; Stewart River area, Yukon, unpublished company report, p. 53.

Ryan, S., 1999, Geochemical report on the CU property, Dawson Mining District, Assessment Report 094074.

Smith, H. (2010a), Assessment Report describing Soil Geochemical Sampling at the WCK Property, Archer, Cathro & Associates (1981) Limited.

Smith, H. (2010b), Assessment Report describing Soil Geochemical Sampling at the CAD Property, Archer, Cathro & Associates (1981) Limited.

## STATEMENT OF QUALIFICATIONS

I, David Gale, PGeo, MSc, of 3358 Passaglia Place, Coquitlam, British Columbia, hereby certify that:

I am a graduate of the Memorial University of Newfoundland having obtained the degree of Bachelor of Science in Geology in 1994 and am a graduate of Queen's University in Kingston having obtained a Master's of Science degree in Geology in 1997.

I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia (#27366).

I have been continuously employed in the mineral exploration industry in Canada since 1994.

I am currently employed as a Senior Geologist, by Independence Gold Corp. Suite 1410-650 West Georgia Street, Vancouver, British Columbia, Canada, V6B 4N8.

I am the author of the report entitled "2016 Soil and Rock Geochemical Survey on the Flow Property, Yukon".

I helped to manage, log rock chips and reviewed the geological work on site reported herein.

Dated this 19<sup>th</sup> day of January, 2017.



David Gale, PGeo, MSc

## STATEMENT OF QUALIFICATIONS

I, Kendra A. Johnston, PGeo, BSc, of Suite 206-1550 Barclay Street, Vancouver, British Columbia, hereby certify that:

I am a graduate of the University of Victoria, British Columbia having obtained the degree of Bachelor of Science in Earth and Ocean Science and Geography, 2005 and Smith School of Business at Queen's University having obtained the degree of Masters in Business Administration.

I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia (#37719).

I have been continuously employed in the mineral exploration industry in Canada since 2005.

I am currently employed as Manager, Corporate Development, by Independence Gold Corp. Suite 1020-625 Howe Street, Vancouver, British Columbia, Canada, V6C 2T6.

I am the author of the report entitled "2016 Soil and Rock Geochemical Survey on the Flow property, Yukon" dated January 19, 2017.

I managed and reviewed the geological work on site reported herein.

Dated this 19<sup>th</sup> day of January, 2017.



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Kendra A. Johnston, PGeo, MBA, BSc

## STATEMENT OF EXPENDITURES

	Quantity		Rate		Cost	
Soil/Rock Samples Collected	18		\$ 26.50		\$ 477.00	
Sample Shipping	1		\$ 300.00		\$ 300.00	
Senior Geologist Day(s)	6		\$ 500.00		\$ 3,000.00	
Camp Support Staff Day(s)	6		\$ 500.00		\$ 3,000.00	
Planning and reporting day(s)	2		\$ 500.00		\$ 1,000.00	
Camp Costs (per man day)	12		\$ 500.00		\$ 6,000.00	
Fixed Wing Flight(s)	2		\$ 3,500.00		\$ 7,000.00	
Helicopter Hour(s)	6		\$ 1,325.00		\$ 7,950.00	
Helicopter Fuel (drums)	4.5		\$ 300.00		\$ 1,350.00	
					\$ 30,077.00	
			Supervision:	12%	\$ 3,609.24	
			Total:		\$ 33,686.24	
			Claims Worked:	9	\$ 3,742.92	per claim worked
			Claims Grouped:	148	\$ 227.61	per claim grouped
Date(s) worked:	June 20 - 24, 2016					
Work done by:	Independence Gold Corp.					

**APPENDIX 1**  
**Laboratory Assay Certificates**  
**And Certification**

600-55 Metcalfe Street  
Ottawa, ON K1P 6L5  
Canada

55, rue Metcalfe, bureau 600  
Ottawa, ON K1P 6L5  
Canada

## **SCOPE OF ACCREDITATION**

**SGS Canada Inc.**  
**SGS CANADA MINERALS SERVICES**  
**3260 Production Way Suite E**  
**Burnaby, BC**  
**V5A4W4**

Accredited Laboratory No. 744

(Conforms with requirements of CAN-P-1579 , CAN-P-1587 , CAN-P-4E (ISO/IEC 17025:2005))

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**EMAIL:** valerie.kuch@sgs.com

**CLIENTS SERVED:** Mining, Exploration, Research and Industrial Clients -  
Worldwide

**FIELDS OF TESTING:** Chemical/Physical

**PROGRAM SPECIALTY AREA:** Agriculture Inputs, Food, Animal Health and Plant Protection  
(PSA-AFAP) , Mineral Analysis

**SCOPE ISSUED ON:** 2016-02-22

**ACCREDITATION VALID TO:** 2020-04-05

### **CHEMICALS AND CHEMICAL PRODUCTS**

#### **Chemicals for Agricultural Industry:**

**SPPA Potassium in Fertilizers** SPPA: Saskatchewan Potash Producers Association, Inc.  
(SPPA) Sample Preparation Procedures Standard  
Analytical Procedures & Standard Physical Testing  
Procedures For The Analysis of Potassium (K2O) and

Sodium Chloride (NaCl) in Potassium Chloride & other  
Fertilizers [K<sub>2</sub>O; NaCl; KCL]

## **METALLIC ORES AND PRODUCTS**

### **Metallic Ores:**

#### **Rocks and Ores**

**(Sediments, sands, soils, stones  
Precious Metals)**

### **Mineral Analysis Testing**

(see Note 1 concerning off site physical sample preparation)

#### **Assay, Umpire Assay Work**

#### **Mineral Assaying**

GE_AAS12E	Determination of Silver in Geological Samples by Nitric and Hydrochloric Acid (aqua regia) Digestion and Atomic-Absorption Spectroscopy (AAS) [Ag;HCl; HNO <sub>3</sub> ]
GE_AAS42E	Determination of Silver in Geological Samples by Multi-acid Digestion and Atomic-Absorption Spectroscopy (AAS) [Ag; HNO <sub>3</sub> ; HClO <sub>4</sub> ; HF and HCl]
GE_CSA06V	Determination of Total Sulphur and Carbon in Geological Samples Using Infrared (IR) Combustion [S; C; LECO]
GE_FAA313-FAA515	The Determination of Exploration Grade Gold by Lead Fusion Fire Assay and Atomic Absorption Finish [30g.; 50g.; Au; HNO <sub>3</sub> , HCl, AAS]
GE_FAI313-FAI515	Determination of Gold, Platinum and Palladium by Lead Fusion Fire Assay and Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) [Au; Pt; Pd; HNO <sub>3</sub> ; HCl]
GE_ICM14B	Determination of Fifty two (52) Elements in Geological Samples using an Aqua Regia Digestion and a Combination of Inductively Coupled Plasma Emission Spectrometry (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) [HNO <sub>3</sub> ; HCl; Al; Sb; As; Ba; Be; Bi; B; Ca; Cd; Ce; Cs; Cr; Co; Cu; Ga; Ge; Hf; In; Fe; La; Pb; Li; Lu; Mg; Mn; Hg; Mo; Ni; Nb; P; K; Rb; Sc; Se; Ag; Na; Sr; S; Ta; Te; Tb; Tl; Th; Sn; Ti; U; V; W; Y; Yb, Zn; Zr]



Standards Council of Canada Accredited Laboratory No. 744

GE_ICM40B	Determination of Forty Nine (49) Elements in Geological Samples using Multi-acid digestion and a Combination of Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) [HCl; HNO <sub>3</sub> ; HF; HClO <sub>4</sub> ; Ag; Al; As; Ba; Be; Bi; Cd; Ca; Ce; Cs; Cr; Co; Cu; Ga; Hf; In; Fe; K; La; Li; Lu; Mg; Mn; Mo; Ni; Nb; P; Pb; Rb; Sb; Sc; Se; Na; Sr; S; Ta; Te; Tb; Tl; Th; Sn; Ti; W; U; V; Yb; Y; Zn; Zr]
GE_ICM90A	Determination of Fifty-five (55) Elements in Geological Samples using Sodium Peroxide Fusion and a Combination of Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) [Na <sub>2</sub> O <sub>2</sub> ; HNO <sub>3</sub> ; C <sub>4</sub> H <sub>6</sub> O <sub>3</sub> ; Ag; Al; As; Ba; Be; Bi; Ca; Cd; Ce; Co; Cr; Cs; Cu; Dy; Er; Eu; Fe; Ga; Gd; Ge; Hf; Ho; In; K; La; Li; Lu; Mg; Mn; Mo; Nb; Nd; Ni; P; Pb; Pr; Rb; Sb; Sc; Sm; Sn; Sr; Ta; Tb; Th; Tl; Ti; Tm; U; V; W; Y; Yb, Zn; Zr]
GE_ICP14B	Determination of Thirty-Four (34) Elements in Geological Samples using Aqua Regia Digestion and Inductively Coupled Plasma Emission Spectrometry [Ag; Al; As; Ba; Be; Bi; Ca; Cd; Cr; Co; Cu; Fe; Hg; K; La; Li; Mg; Mn; Mo; Na; Ni; P; Pb; S; Sb; Sc; Sn; Sr; Ti; V; W; Y; Zn; Zr; HCl; HNO <sub>3</sub> ]
GE_ICP40B	Determination of Thirty Two (33) Elements in Geological Samples using Multi-Acid Digestion and Inductively Coupled Plasma Emission Spectrometry (ICP-OES) [HCl; HNO <sub>3</sub> ; HF; HClO <sub>4</sub> ; Ag; Al; As; Ba; Be; Bi; Cd; Ca; Cr; Co; Cu; Fe; K; La; Li; Mg; Mn; Mo; Na; Ni; P; Pb; S; Sb; Sc; Sn; Sr; Ti; W; V; Y; Zn; Zr]
GO_FAG303-FAG505	Determination of Ore Grade Gold by Lead Fusion Fire Assay and Gravimetric Finish [30g.; 50g.; Au; HNO <sub>3</sub> ; NH <sub>4</sub> OH]
GO_ICP90Q	Determination of Six (6) Elements in Mineralized Geological Samples (Ore Grade) using Sodium Peroxide Fusion and Inductively Coupled Plasma Emission Spectrometry (ICP-OES) [Na <sub>2</sub> O <sub>2</sub> ; HNO <sub>3</sub> ; C <sub>4</sub> H <sub>6</sub> O <sub>6</sub> ; Co; Cu; Pb; Mo; Ni; Zn]
GT_GC_GO_XRF76V	Preparation and Determination of Major Element Oxides, LOI by Borate Fusion and Xray Fluorescence Spectrometry [SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , MgO, CaO, Na <sub>2</sub> O, K <sub>2</sub> O, P <sub>2</sub> O <sub>5</sub> , MnO, TiO <sub>2</sub> , Cr <sub>2</sub> O <sub>3</sub> ; V <sub>2</sub> O <sub>5</sub> ; LOI; XRF]

**Notes:**

**The physical sample preparation involving accredited test methods for Minerals Analysis as listed on the scope of accreditation may be performed at SGS Canada Minerals Services - Burnaby, or at off-site**

Standards Council of Canada Accredited Laboratory No. 744

**sample preparation locations (Garson, Ontario) that are monitored regularly for quality control and quality assurance practices.**

**CAN-P-4E (ISO/IEC 17025):** General Requirements for the Competence of Testing and Calibration Laboratories (ISO/IEC 17025-2005)

**CAN-P-1579:2014:** Requirements for the Accreditation of Mineral Analysis Testing Laboratories

**CAN-P-1587:** Requirements - Accreditation of Agriculture Inputs, Food, Animal Health and Plant Protection Testing Laboratories

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Chantal Guay, ing., P. Eng.  
Vice President, Accreditation  
Services

Date: 2016-02-22

Number of Scope Listings: 14

SCC 1003-15/919

Partner File #0

Partner: