

# GEOCHEMICAL / GEOLOGICAL REPORT

on the

## **WOLF PROJECT**

Yukon Territory

WOLF 1-42	YC83707-748
WOLF 43-110	YD89953-90020
WOLF 111-230	YD97071-190
CU 1-8	YF01861-868

NTS # 115N/01

Easting: 540000 Northing: 6990000  
UTM Zone 7N, NAD83

Whitehorse Mining District

For  
White Gold Corporation

WORK PERFORMED: September 15, 2016

By  
Adam Fage  
GroundTruth Exploration Inc.  
Box 70, Dawson, Yukon  
Y0B 1G0

March 27, 2017

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## **1.0 Introduction and Summary**

### **1.1 Introduction:**

From September 15<sup>th</sup> 2016, White Gold Corporation hired GroundTruth Exploration Inc. to complete a grid soil sampling and geological mapping program on the Wolf project. The program consisted of 333 soil samples collected along grid traverses at 25m sample spacing infilling previously sampled lines in the main zone of the Wolf project. One day of Geological mapping was also completed. The goal of the work was to confirm the main trend of mineralization identified in previous surveys. This soil program returned anomalous gold in soil results including maximum values of: 235.6ppb Au.

## **2.0 Terms of Reference and Source Material**

### **2.1 Terms, Definitions and Units**

All geographic coordinates for sample locations and property scale references are reported in the NAD83 datum and projected to Universal Transverse Mercator (UTM) Zone 7. Distances are reported in metric units, including metres (m) and kilometres (km). Any monetary references in this report are reported in Canadian dollars (CAD). Directional references are reported relative to True North. Standard elemental abbreviations are utilized when referring to analytical results, including Gold (Au), Copper (Cu). Unit abbreviations for analytical results are indicated where appropriate, including: parts per million (ppm), parts per billion (ppb), grams per tonne (g/t) and percent (%).

### **2.2 Source Documents**

This report incorporates data from multiple sources including regional geochemical, geological and geophysical studies conducted by the Geological Survey of Canada and Yukon Geological Survey, available in public Open Files. Private Company data that is available in the public domain has also been utilized to create this report.

## **3.0 Property Location and Description**

### **3.1 Property Location**

The Wolf project is located in West-Central Yukon within the Whitehorse Mining District on NTS mapsheets 15N/01.

The Wolf property is situated East of the White River and is approximately 120km Southwest of Dawson City. The Wolf property is geographically centered at 540000E, 6990000N.

The Wolf Project is comprised of 238 quartz claims covering an area of approximately 4,730 hectares. The claims constituting the Wolf project are owned 100% by White Gold Corp.

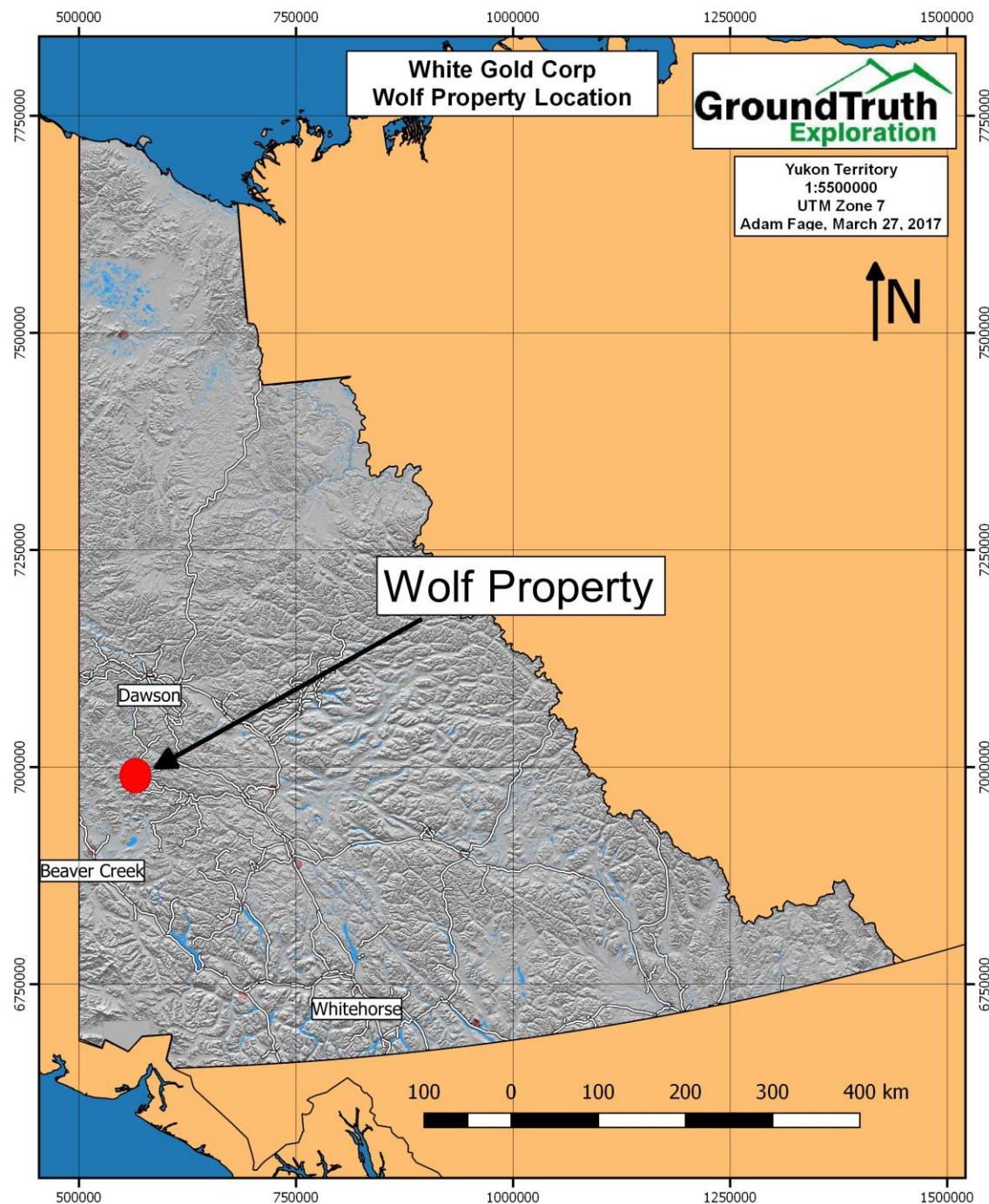


Figure 1: Wolf Property Location Map

### 3.2 Access

Access to the Wolf property is restricted to helicopter based in Dawson City 120 km to the North of the Wolf Property. Dawson City is accessed by year-round highway approximately 540 km North from Whitehorse, Yukon. Daily flight service is also available from Whitehorse to Dawson City.

### 3.3 Climate, Physiography and Infrastructure

The Wolf Project area has a subarctic continental climate with a summer mean of 10 degrees Celsius and winter mean temperature of -23 degrees Celsius. Summer temperatures can reach up to +35°C and winter temperatures can drop to -50°C.

The Wolf Project is located between the White River and the Yukon River. Elevations on the project range from 2700ft near the White river at the West end of the property to 4700ft at the East end of the property. The property is mostly unglaciated, with a mix of White Spruce, Sub-alpine Fir, Birch and Poplar on the South, East and West aspects and Black Spruce on the North facing slopes. Discontinuous permafrost occurs throughout the property on the Northerly aspects. Bedrock exposure is fairly prevalent in the higher elevations.

### 3.4 Land Tenure

The Wolf Project is comprised of 238 contiguous quartz claims covering an area of approximately 4,730 hectares. The claims constituting the Wolf project are owned 100 % by White Gold Corporation.

#### **Wolf Property: List of Claims (as of March 27, 2017)**

Claim Name	Grant Number	Expiry	Status	# Claims
WOLF 1-42	YC83707-748	8-Sep-18	Active	18
WOLF 43-110	YD89953-90020	28-Sep-19	Active	14
WOLF 111-230	YD97071-190	29-Sep-19	Active	10
Cu 1-8	YF01861-868	11-Feb-20	Active	136

Total: 238

(See figure 2: Claim Map)

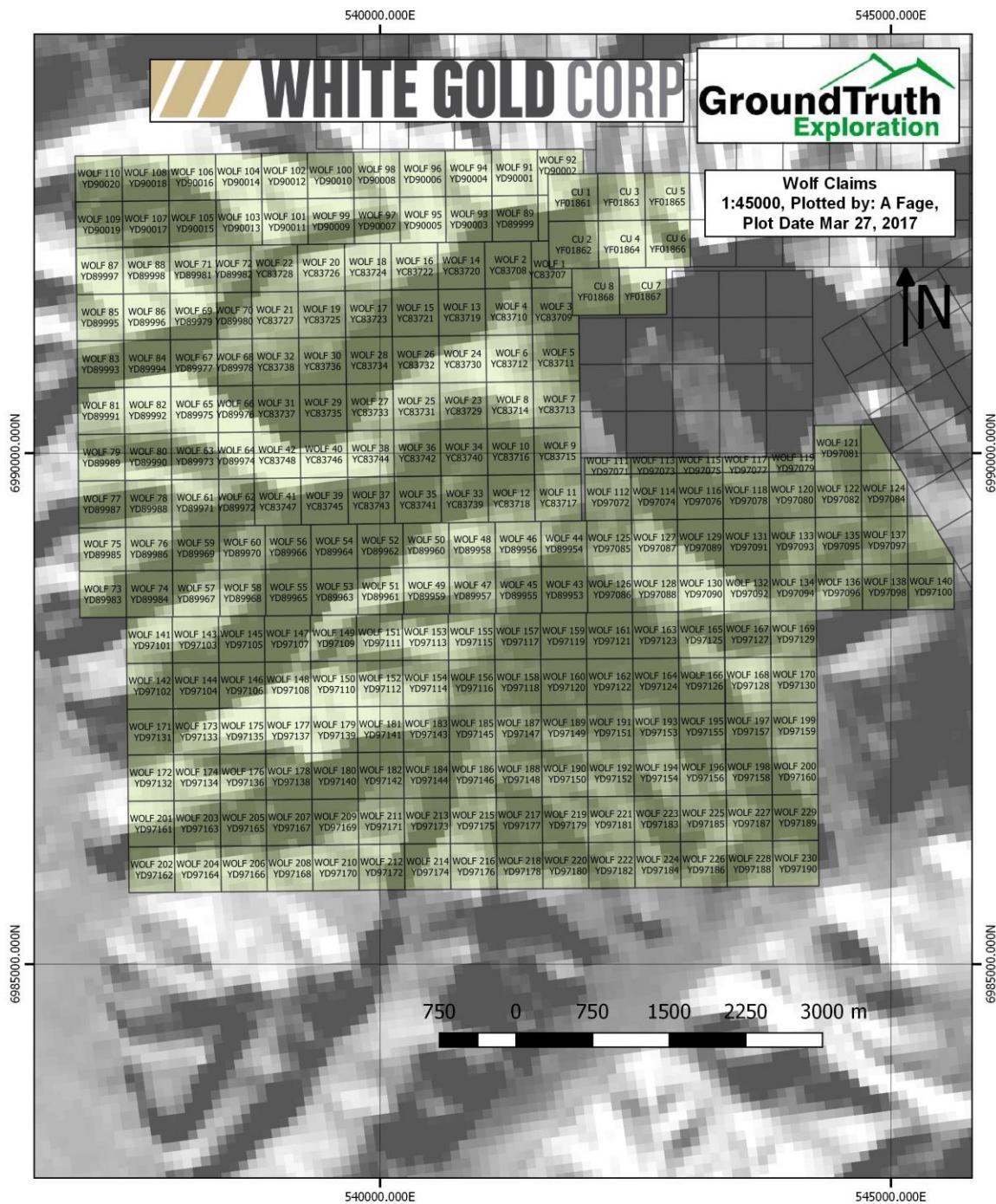


Figure 2: Wolf Property Claim Map

## **4.0 Exploration History**

First staking was of the Aires claims by Quintana Minerals in 1969. Quintana carried out soil sampling, geological mapping and bulldozer trenching in 1970. That work identified porphyry style mineralization on the claims but the results apparently did not warrant further follow-up. About the same time the Libra claims were staked to the west and in 1970 an airborne magnetometer survey was flown on those claims. Parts of the area were re-staked in 1975 and again in 1994 but there is no record of work at that time. Deltango Gold Ltd. Staked the property in 1999 and completed silt, pan concentrate, soil, and rock geochemical sampling. Shawn Ryan staked the Wolf property in 2009, these claims are still in good standing; work completed includes reconnaissance and grid soil sampling and an airborne magnetic survey.

## **5.0 Regional Geology**

The Wolf property is located within the Yukon-Tanana Terrane and is underlain primarily by a pluton of the Cretaceous Dawson Range Batholith intruding metamorphic rocks of the Permian Klondike schists and Sulphur Creek orthogneiss. Andesite to basalt flows of the Late Cretaceous Carmacks Group overlie the younger lithologies in the Northern portion of the property (Figure 3).

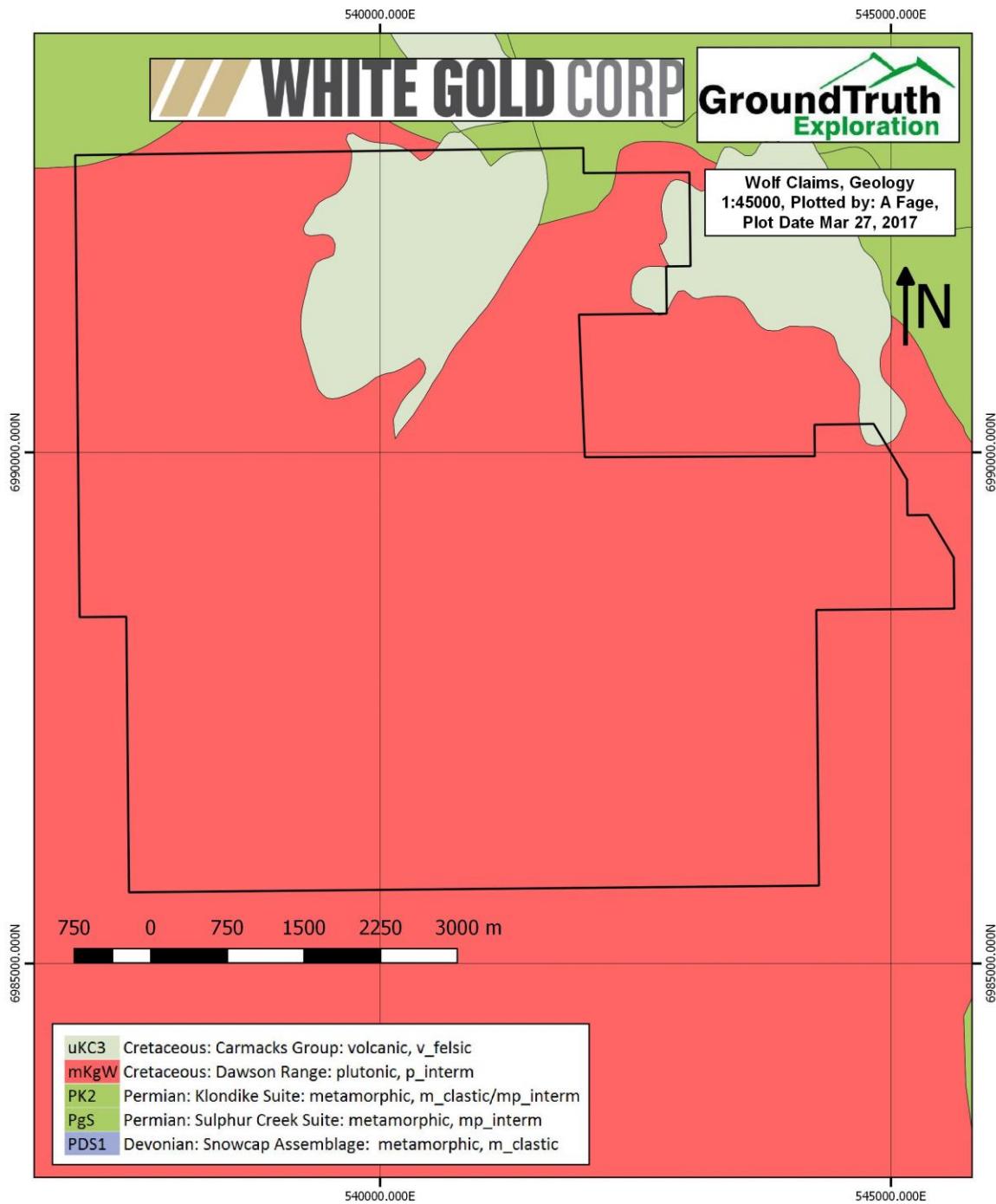


Figure 3: Regional Geology

## 6.0 2016 Exploration Field Program

### 6.1 Field Program Summary

This report summarizes the results of the geochemical soil sampling program conducted on the Wolf property during September of 2016. Soil sampling was contracted to Ground Truth Exploration Inc. of Dawson, YT. Soil Sampling was conducted on September 15, 2016. 333 soil samples were collected on this survey. The soil sampling program was designed as an infill grid on previously collected samples in order to confirm and better constrain previously defined trends.

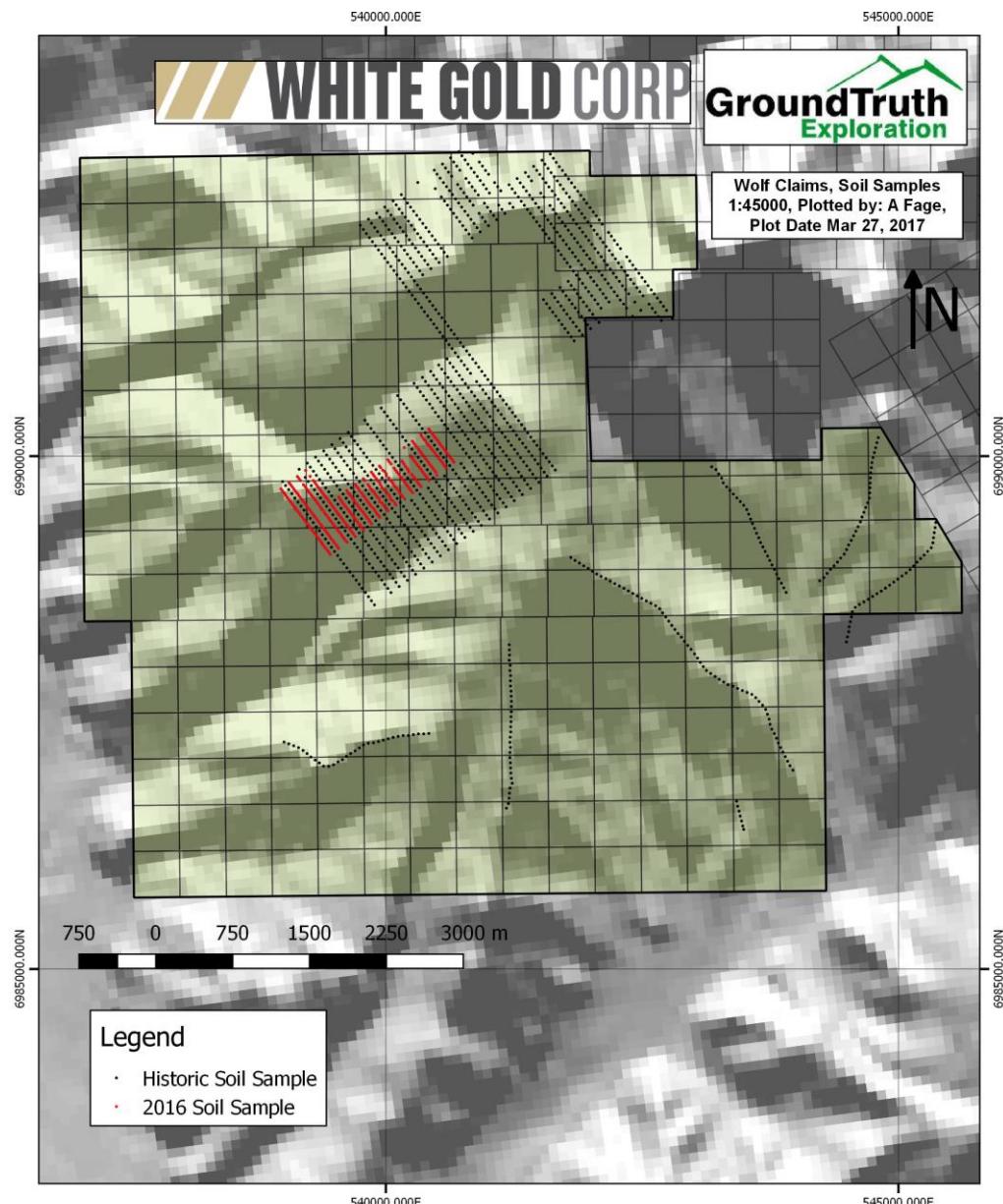


Figure 4: Location of 2016 soil samples

## 6.2 Sampling Protocol and Data Handling Procedures

### Personnel

The survey was conducted by the following GroundTruth Exploration personnel:

1. Yoann Voyer	Foreman Soil Sampler
2. Mark Severinsen	Soil Sampler
3. Jack Tafaro	Soil Sampler
4. Nick Mackay	Soil Sampler
5. Nathan Watkinson	Soil Sampler
6. Ross Reed	Soil Sampler
7. Simon Cash	Soil Sampler
8. Brian Hyde	Soil Sampler
9. Dan Brown Hozjan	Soil Sampler
10. Grace Bisaro	Soil Sampler

All sampling traverses are pre-planned, with pre -specified sampling intervals, typically 50m. Field technicians navigate to sample site using handheld GPS units. The soil sampler arrives at each sample site, identifies the most appropriate location to collect the sample and lays out a sheet of plastic (12"x20" ore bag). The soil sample is taken using an Eijkelcamp brand hand auger at a depth of between 20cm and 110cm.

Samplers strive to consistently collect C-Horizon sample material. Where necessary (rocky or frozen ground) a prospector's pick ('mattock') is used to obtain the sample. The soil is laid out on the sheet of plastic in the order it was recovered from the sample hole. Standardized photos are taken of the sample site- across slope, 5m from sample hole with auger inserted. With the necessary amount of soil (400-500 grams) has been collected, the deepest soil is taken and placed in a bag labeled with the 3-letter project and tagged with a unique barcode ID tag containing a unique 7 digit sample identification number. An aluminum metal tag inscribed with the sample identification number is attached to a rock or branch in a visible area at the sample site along with a length of pink flagging tape.

A field duplicate sample is taken once for every 25 samples. Both samples are given unique Sample identification number. The data for both samples is recorded and a note is made indicating the duplicate and its corresponding sample identification number.

The GPS location of the sample site is recorded with a Garmin GPSMap 60cx or 76cx GPS device in UTM NAD 83 format, and the waypoint is labeled with the project name and the sample identification number.

A weather-proof handheld device equipped with a barcode scanner is used in the field to record the descriptive attributes of the sample collected. this includes: sample identification number (scanned into device at sample site), soil colour, soil horizon, slope, sample depth, ground and tree vegetation and sample quality and any other relevant information. As well, the GPS coordinates are entered into the handheld device as a secondary backup in case of GPS failure.

Each night in the field, the GPS and data collection devices are downloaded to a laptop computer. The data is verified and mapped on a sampler-by-sampler basis in proprietary database auditing and mapping software. At the end of each day, the crew boss inspects all samples for size and consistency as a quality check. Each sampler then

repackages all samples for shipping- barcode scanning them as they are placed into a rice bag which is sealed with a barcoded security zip tie. Samples are shipped from the field to the lab on a regular basis, tracked by the unique ID on each security seal.

A backup of the sample data is made, copied onto a USB memory stick and kept in a separate location from the laptop computer until job completion. Where possible, a backup is also sent via e-mail.

### 6.3 Sample Preparation and Analysis

Samples were processed by Bureau Veritas Labs in Vancouver with Aqua Regia digestion and analyzed with ICP-MS for 36 elements (1DX-15 gram method). Samples are Dried at 60°C, sieved at -80 mesh.

### 6.4 Results

Maps of geochemical results are shown below. Thematic color maps are defined by 80<sup>th</sup>, 90<sup>th</sup>, 95<sup>th</sup>, 98<sup>th</sup>, and 99<sup>th</sup> percentile divisions for each element within the property.

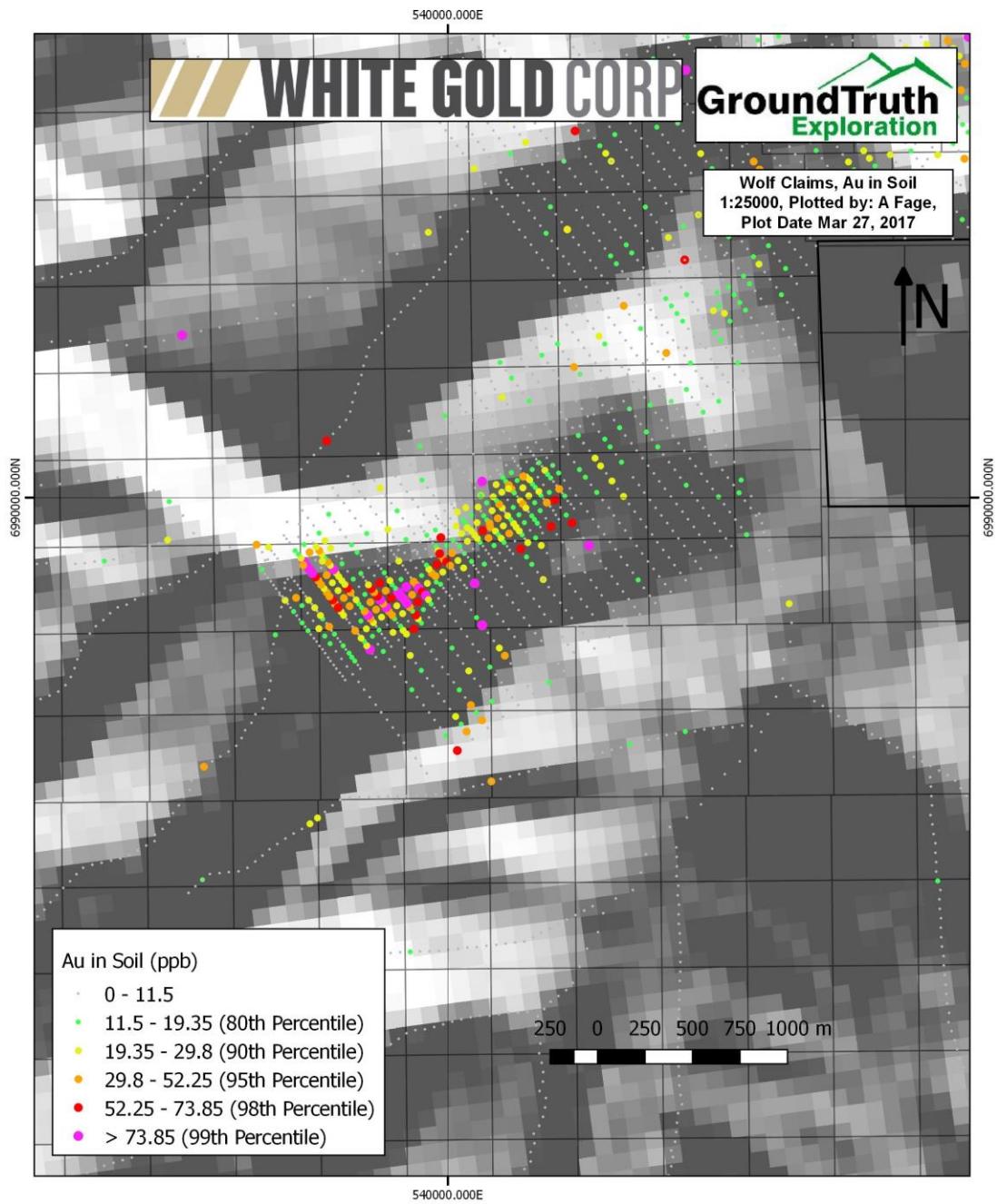


Figure 5: Au in soil

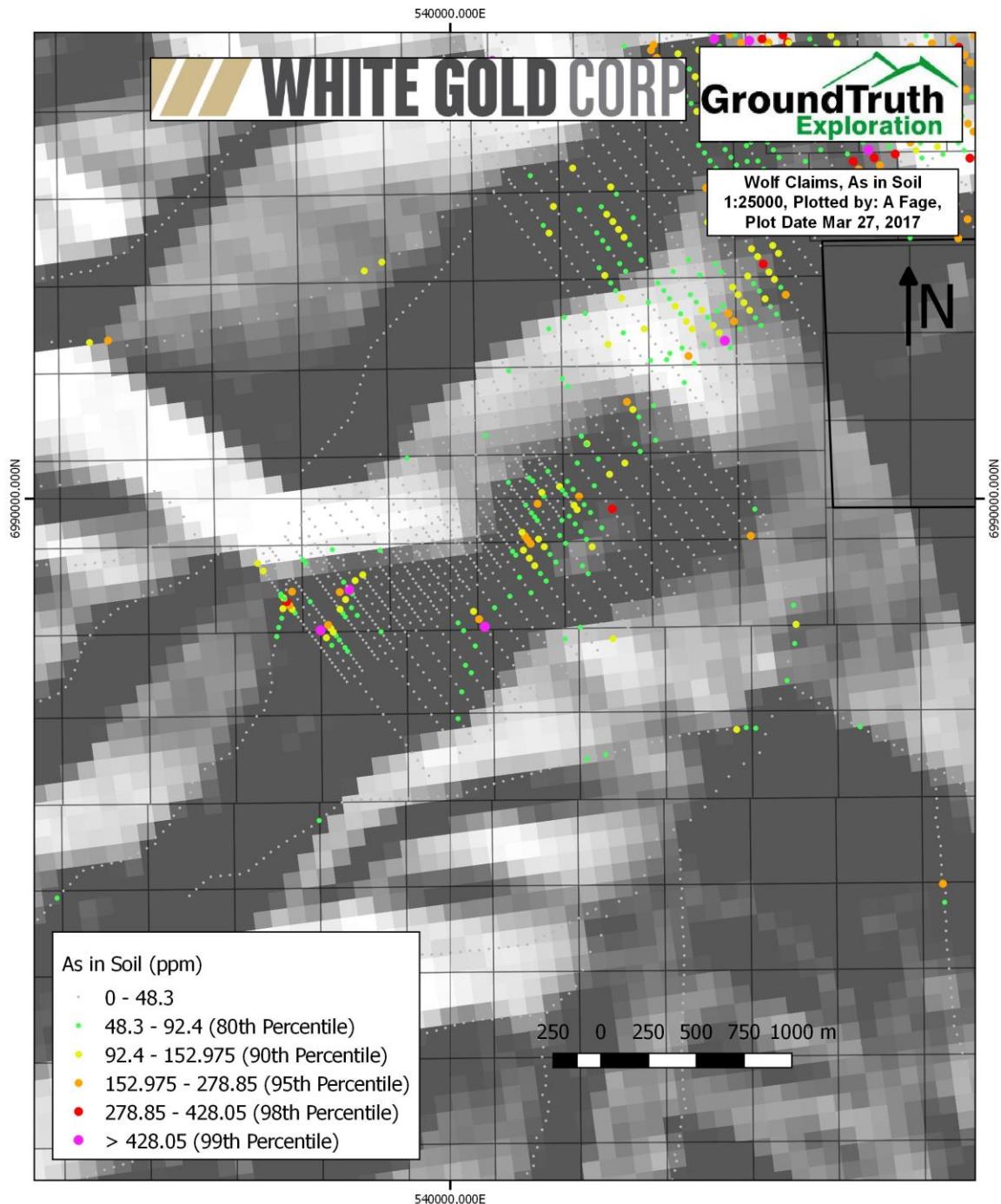


Figure 6: As in soil

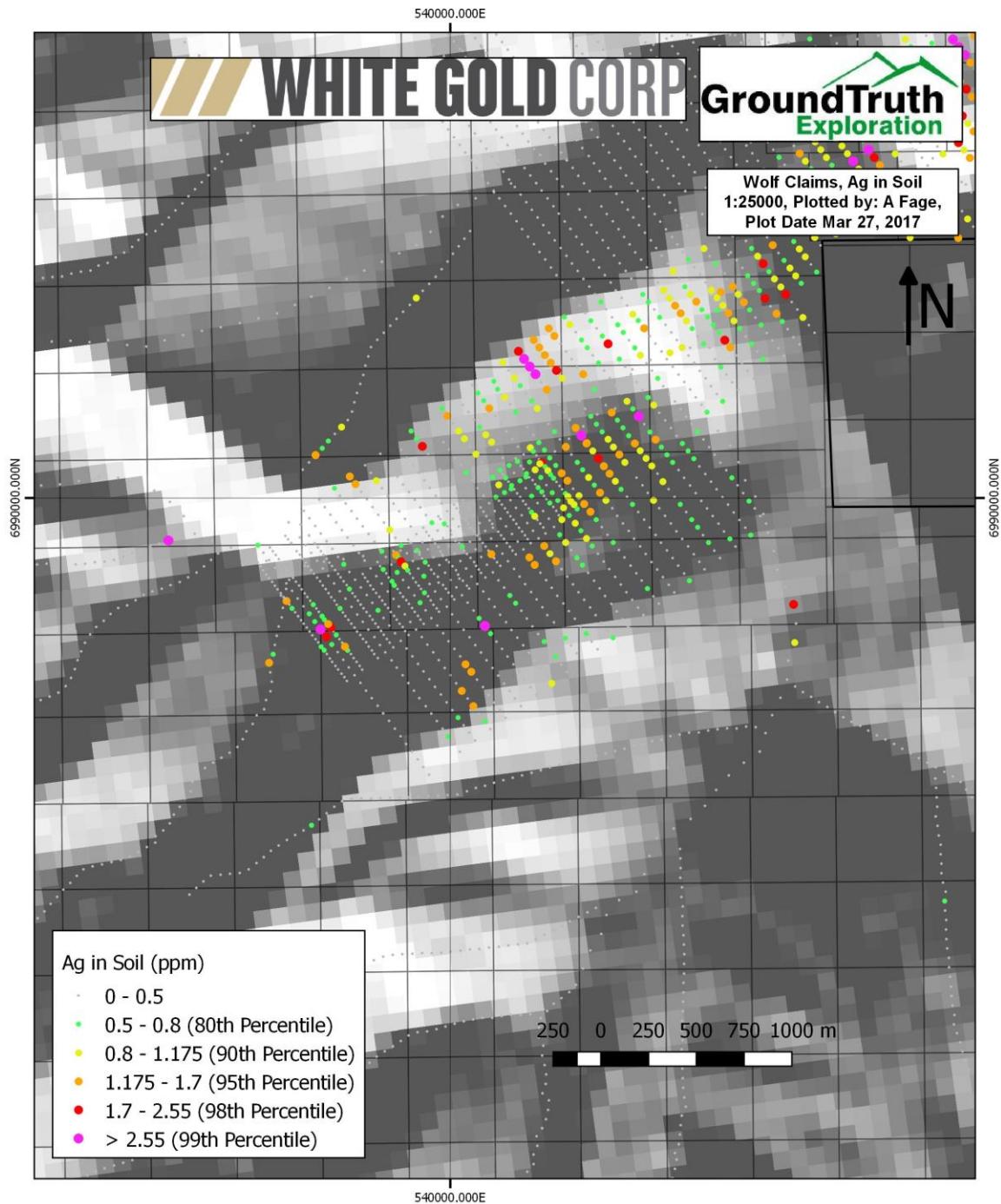


Figure 7: Ag in Soil

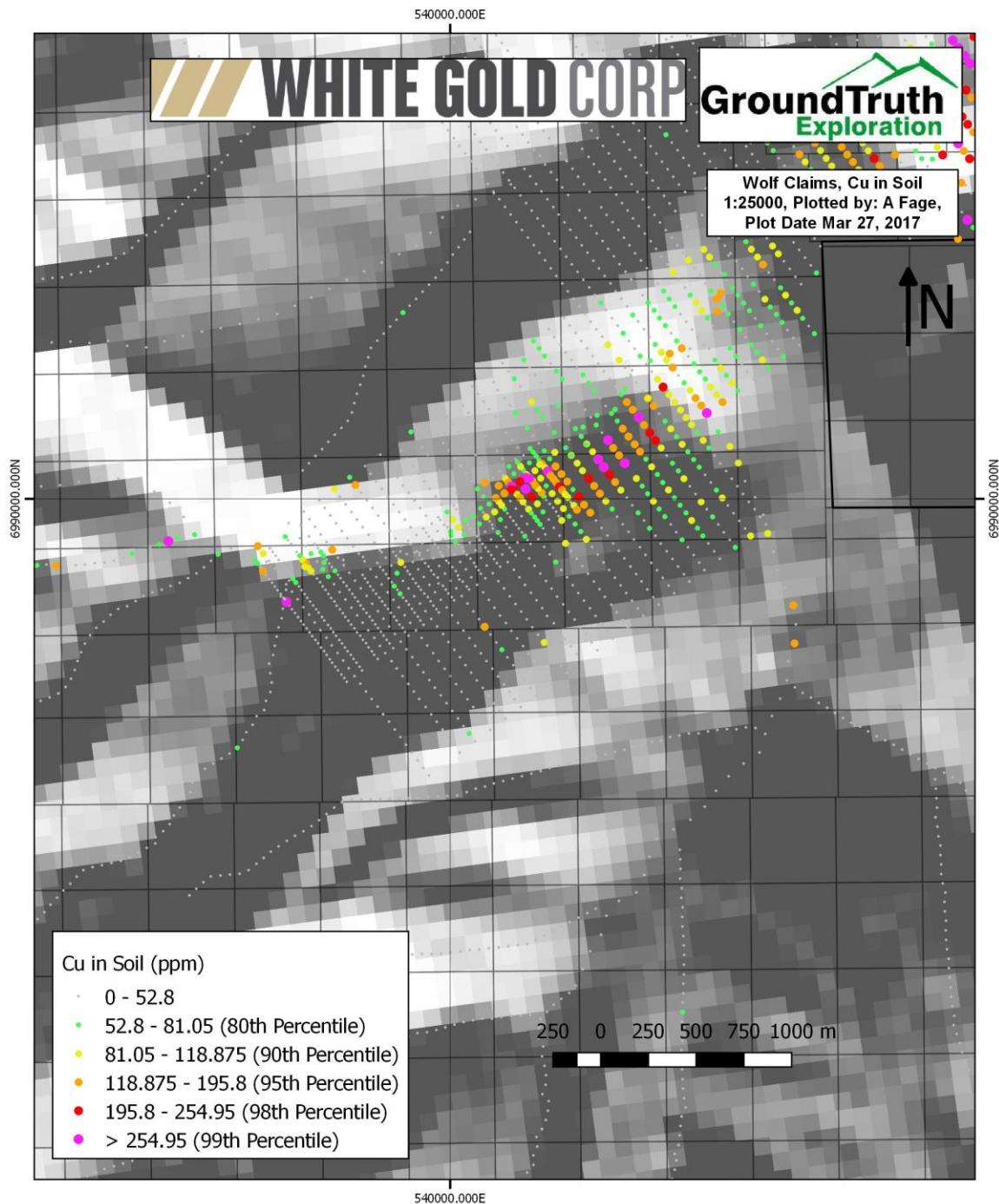


Figure 8: Cu in soil

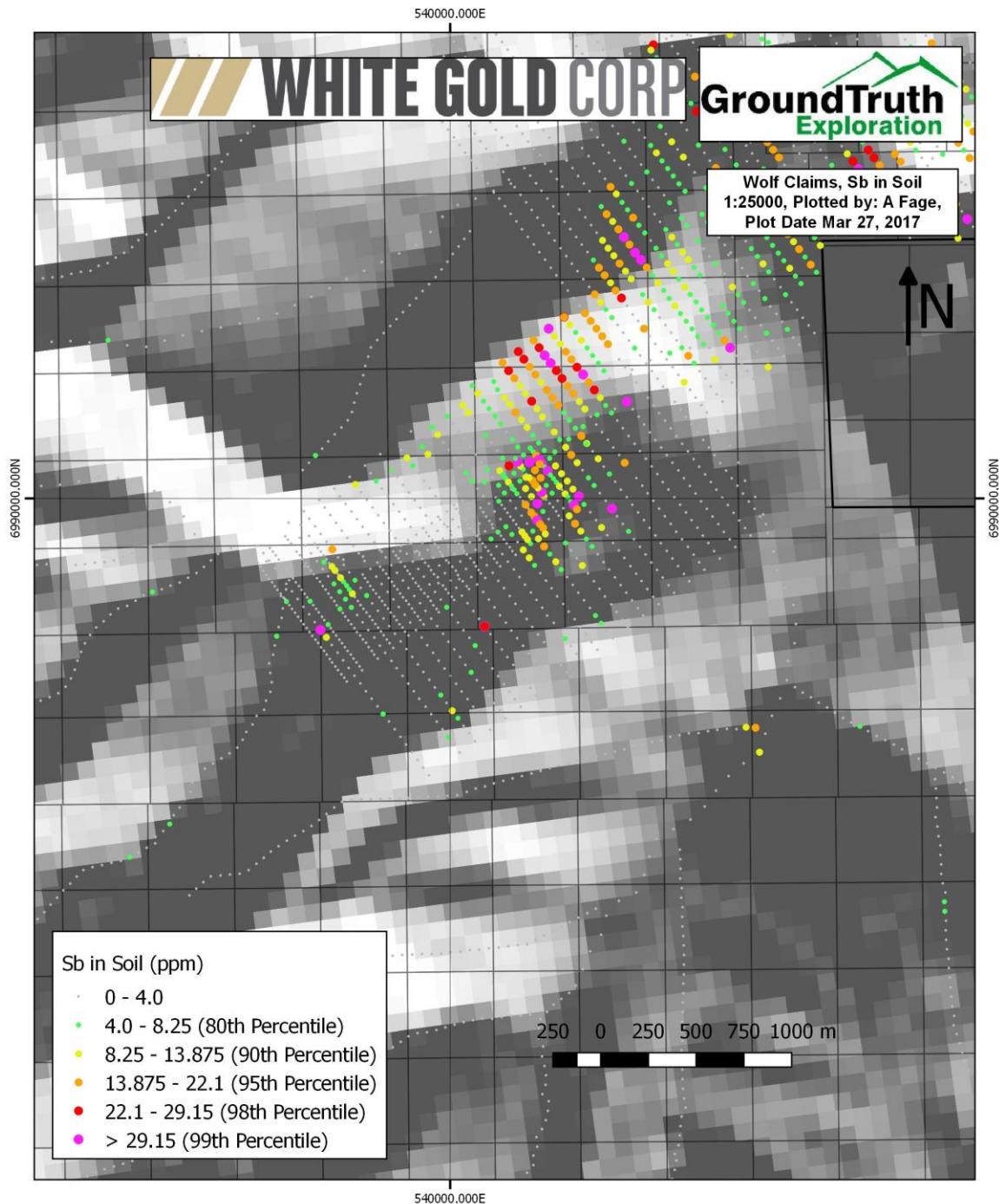


Figure 9: Sb in soil

## 6.5 Geological Mapping

Geological Mapping activities focused on follow-up prospecting of existing gold in soil anomalies. A total of 8 rock grab samples collected, but did not return any significant results. The soil anomaly appears to be associated with a strongly altered felsic volcanic unit with, locally, strongly disseminated pyrite (up to 5%). Based on the geochemical signature and regional geology the mineralization is likely related to adjacent Cretaceous aged intrusions.

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*Figure 10: Location of 2016 rock samples*

## 6.6 Interpretation

Gold values in soil up to 235.6 ppb were observed in 2016 sampling. From combined historic and 2016 sampling, 30 samples in the survey (3913) had observed values over 73 ppb Au (99<sup>th</sup> percentile). Using Gold in soil values as the primary pathfinder, a linear, NorthEast trending, likely structurally controlled target has been identified. This target is hosted within the Carmacks volcanics proximal to the Dawson Range Batholith.

## 6.7 Recommendations

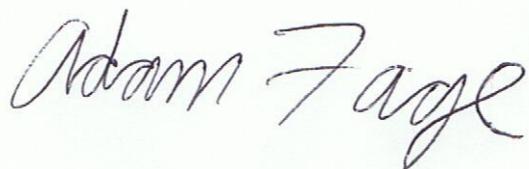
1. GT Probe sampling to obtain samples of mineralization beneath the main gold in soil anomaly at the Wolf Property.
2. An IP Resistivity crossing the trend of the main soil anomaly at Wolf. Assuming that the target is structurally controlled, this will pinpoint the surface trace and identify the dip of the structure.
3. Geological mapping over target areas to refine property geology and geological model for Wolf property deposit models.

## 7.0 Statement of Qualifications

I, Adam Fage have continuously been involved in Mineral Exploration since 2004. I graduated from Dalhousie University with an Honors Bachelor of Science (Earth Science) in 2008. I graduated from Lakehead University with a Master's of Science (Geology) in 2011. I am a member, in good standing, of the Association of Professional Geoscientists of Ontario, Registration number 2256.

Dated this 27<sup>th</sup> day of March, 2017.

Respectfully submitted  
Adam Fage

A handwritten signature in black ink that reads "Adam Fage". The signature is fluid and cursive, with "Adam" on top and "Fage" below it, both written in a single continuous line.

## Appendix I: Statement of Work Expenditures

<b>Wolf Project - 2 Day Soil Sampling + Geologic Mapping/Prospecting</b>		
Shawn Ryan		
Box 213, Dawson City, YT Y0B 1G0		
867-336-4219		
September 15th & 27th		
<b>GEOLOGIC MAPPING/PROJECT MANAGEMENT</b>		
<b>Geologist/Project Management</b>	<b>Amount</b>	<b>Description</b>
Wages	\$ 1,430.00	1 day Senior Geo @\$880, 1 day Junior @\$550, Sept 27
Field Equipment/Electronics	\$ 160.00	
Sampling Supplies	\$ 12.00	
Program Prep, Mobe/Demobe Rate, Expediting	\$ -	
Reporting/Data Interpretation/Data Management	\$ 2,200.00	
<b>Total Geologist/Project Management</b>	<b>\$ 3,802.00</b>	
<b>GEOCHEMICAL SURVEYS</b>		
<b>Soil/Till Survey</b>	<b>Amount</b>	<b>Description</b>
Wages	\$ 4,070.00	10 man days on September 15
Soil Survey Equipment	\$ 690.00	
Program Prep, Mobe/Demobe Rate, Expediting	\$ 250.00	
Additional Supplies and Support	\$ 1,055.00	
Sampling Supplies	\$ 855.00	
Transportation Support	\$ 44.00	
<b>Total Soil/Till Surveys</b>	<b>\$ 6,964.00</b>	
<b>LABORATORY ANALYSIS</b>		
<b>Soil/Till Samples</b>	<b>Amount</b>	<b>Description</b>
Prep	\$ 861.84	342 soil samples, 8 rock samples
Sample Disposal	\$ 324.90	
Sample Analysis	\$ 3,751.74	
<b>Total Soil Sample Analysis</b>	<b>\$ 4,938.48</b>	
<b>LOGISTICAL SUPPORT</b>		
<b>Helicopter</b>	<b>Amount</b>	<b>Description</b>
ASTAR B2 and/or Jet Ranger (3hr minimum)	\$ 7,266.00	3.2 hours on Sept 15, 0.9 hours on Sept 27
<b>Fixed Wing</b>	<b>Amount</b>	<b>Description</b>
Islander, 206, Skyvan, etc.	\$ 1,481.04	2 flights on Sept 14 and 1 on Sept 16
<b>Total Logistical Support</b>	<b>\$ 8,747.04</b>	
<b>OTHER/MISC</b>		
Sampling Shipping	\$ 110.00	
<b>Total Other/Misc</b>	<b>\$ 110.00</b>	
<b>Total Project Expenditures</b>	<b>\$ 32,008.00</b>	

**Appendix II:        Claim List**

<b>Claim</b>	<b>Grant</b>	<b>OWNER</b>	<b>Expiry</b>	<b>District</b>
COAL 123	YE82123	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 124	YE82124	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 125	YE82125	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 126	YE82126	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 127	YE82127	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 128	YE82128	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 155	YE82155	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 156	YE82156	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 157	YE82157	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 158	YE82158	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 159	YE82159	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 160	YE82160	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 161	YE82161	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 162	YE82162	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 163	YE82163	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 164	YE82164	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 165	YE82165	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 166	YE82166	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 197	YE82197	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 198	YE82198	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 199	YE82199	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 200	YE82200	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 201	YE82201	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 202	YE82202	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 229	YE82229	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 230	YE82230	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 231	YE82231	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 232	YE82232	Shawn Ryan - 100%	3/21/2018	Dawson
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COAL 238	YE82238	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 239	YE82239	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 240	YE82240	Shawn Ryan - 100%	3/21/2018	Dawson
COAL 271	YE82271	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 273	YE82273	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 274	YE82274	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 275	YE82275	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 276	YE82276	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 278	YE82278	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 280	YE82280	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 282	YE82282	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 284	YE82284	Shawn Ryan - 100%	9/21/2017	Dawson
COAL 286	YE82286	Shawn Ryan - 100%	9/21/2017	Dawson

COAL 303	YE82303	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 304	YE82304	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 305	YE82305	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 306	YE82306	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 307	YE82307	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 308	YE82308	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 310	YE82310	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 311	YE82311	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 312	YE82312	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 313	YE82313	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 349	YE82349	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 350	YE82350	Shawn Ryan - 100%	9/21/2017 Dawson
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COAL 358	YE82358	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 359	YE82359	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 360	YE82360	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 377	YE82377	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 378	YE82378	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 379	YE82379	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 380	YE82380	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 382	YE82382	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 384	YE82384	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 385	YE82385	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 387	YE82387	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 390	YE82390	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 391	YE82391	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 392	YE82392	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 393	YE82393	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 410	YE82410	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 411	YE82411	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 412	YE82412	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 428	YE82428	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 443	YE82443	Shawn Ryan - 100%	3/21/2018 Dawson
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COAL 539	YE82539	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 540	YE82540	Shawn Ryan - 100%	9/21/2017 Dawson
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COAL 559	YE82559	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 560	YE82560	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 561	YE82561	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 562	YE82562	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 577	YE82577	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 578	YE82578	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 579	YE82579	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 580	YE82580	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 595	YE82595	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 596	YE82596	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 597	YE82597	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 598	YE82598	Shawn Ryan - 100%	9/21/2017 Dawson
COAL 667	YE82667	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 668	YE82668	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 669	YE82669	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 670	YE82670	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 671	YE82671	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 672	YE82672	Shawn Ryan - 100%	3/21/2018 Dawson

COAL 673	YE82673	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 674	YE82674	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 675	YE82675	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 676	YE82676	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 677	YE82677	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 678	YE82678	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 679	YE82679	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 680	YE82680	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 681	YE82681	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 682	YE82682	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 683	YE82683	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 684	YE82684	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 685	YE82685	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 686	YE82686	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 687	YE82687	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 688	YE82688	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 689	YE82689	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 690	YE82690	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 691	YE82691	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 693	YE82693	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 695	YE82695	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 697	YE82697	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 699	YE82699	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 701	YE82701	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 703	YE82703	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 704	YE82704	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 705	YE82705	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 706	YE82706	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 707	YE82707	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 708	YE82708	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 709	YE82709	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 710	YE82710	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 711	YE82711	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 712	YE82712	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 713	YE82713	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 714	YE82714	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 715	YE82715	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 716	YE82716	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 717	YE82717	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 718	YE82718	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 719	YE82719	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 720	YE82720	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 721	YE82721	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 722	YE82722	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 723	YE82723	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 724	YE82724	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 725	YE82725	Shawn Ryan - 100%	3/21/2018 Dawson

COAL 726	YE82726	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 739	YE82739	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 740	YE82740	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 741	YE82741	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 742	YE82742	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 743	YE82743	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 744	YE82744	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 745	YE82745	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 746	YE82746	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 747	YE82747	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 748	YE82748	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 749	YE82749	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 750	YE82750	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 751	YE82751	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 752	YE82752	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 753	YE82753	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 754	YE82754	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 755	YE82755	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 756	YE82756	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 757	YE82757	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 758	YE82758	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 759	YE82759	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 760	YE82760	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 761	YE82761	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 762	YE82762	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 803	YE82803	Shawn Ryan - 100%	3/21/2018 Dawson
COAL 804	YE82804	Shawn Ryan - 70%, Cathy Wood - 30%	3/21/2018 Dawson
FM 1	YC60800	Shawn Ryan - 100%	5/28/2017 Dawson
FM 2	YC60801	Shawn Ryan - 100%	5/28/2017 Dawson
FM 3	YC60802	Shawn Ryan - 100%	5/28/2017 Dawson
FM 4	YC60803	Shawn Ryan - 100%	5/28/2017 Dawson
FM 5	YC60804	Shawn Ryan - 100%	5/28/2017 Dawson
FM 6	YC60805	Shawn Ryan - 100%	5/28/2017 Dawson
FM 7	YC60806	Shawn Ryan - 100%	5/28/2017 Dawson
FM 8	YC60807	Shawn Ryan - 100%	5/28/2017 Dawson
FM 9	YC60808	Shawn Ryan - 100%	5/28/2017 Dawson
FM 10	YC60809	Shawn Ryan - 100%	5/28/2017 Dawson
FM 11	YC60810	Shawn Ryan - 100%	5/28/2017 Dawson
FM 12	YC60811	Shawn Ryan - 100%	5/28/2017 Dawson
FM 13	YC60812	Shawn Ryan - 100%	5/28/2017 Dawson
FM 14	YC60813	Shawn Ryan - 100%	5/28/2017 Dawson
FM 15	YC60814	Shawn Ryan - 100%	5/28/2017 Dawson
FM 16	YC60815	Shawn Ryan - 100%	5/28/2017 Dawson
FM 17	YC60816	Shawn Ryan - 100%	5/28/2017 Dawson
FM 18	YC60817	Shawn Ryan - 100%	5/28/2017 Dawson
FM 19	YC60818	Shawn Ryan - 100%	5/28/2017 Dawson
FM 20	YC60819	Shawn Ryan - 100%	5/28/2017 Dawson

FM 21	YC60820	Shawn Ryan - 100%	5/28/2017 Dawson
FM 22	YC60821	Shawn Ryan - 100%	5/28/2017 Dawson
FM 23	YC60822	Shawn Ryan - 100%	5/28/2017 Dawson
FM 24	YC60823	Shawn Ryan - 100%	5/28/2017 Dawson
FM 25	YC60824	Shawn Ryan - 100%	5/28/2017 Dawson
FM 26	YC60825	Shawn Ryan - 100%	5/28/2017 Dawson
FM 27	YC60826	Shawn Ryan - 100%	5/28/2017 Dawson
FM 28	YC60827	Shawn Ryan - 100%	5/28/2017 Dawson
FM 29	YC60828	Shawn Ryan - 100%	5/28/2017 Dawson
FM 30	YC60829	Shawn Ryan - 100%	5/28/2017 Dawson
FM 31	YC60830	Shawn Ryan - 100%	5/28/2017 Dawson
FM 32	YC60831	Shawn Ryan - 100%	5/28/2017 Dawson
FM 33	YC60832	Shawn Ryan - 100%	5/28/2017 Dawson
FM 34	YC60833	Shawn Ryan - 100%	5/28/2017 Dawson
FM 35	YC60834	Shawn Ryan - 100%	5/28/2017 Dawson
FM 36	YC60835	Shawn Ryan - 100%	5/28/2017 Dawson
FM 37	YC60836	Shawn Ryan - 100%	5/28/2017 Dawson
FM 38	YC60837	Shawn Ryan - 100%	5/28/2017 Dawson
FM 39	YC60838	Shawn Ryan - 100%	5/28/2017 Dawson
FM 40	YC60839	Shawn Ryan - 100%	5/28/2017 Dawson
FM 41	YC60840	Shawn Ryan - 100%	5/28/2017 Dawson
FM 42	YC60841	Shawn Ryan - 100%	5/28/2017 Dawson
FM 43	YC60842	Shawn Ryan - 100%	5/28/2017 Dawson
FM 44	YC60843	Shawn Ryan - 100%	5/28/2017 Dawson
FM 45	YC60844	Shawn Ryan - 100%	5/28/2017 Dawson
FM 46	YC60845	Shawn Ryan - 100%	5/28/2017 Dawson
FM 47	YC60846	Shawn Ryan - 100%	5/28/2017 Dawson
FM 48	YC60847	Shawn Ryan - 100%	5/28/2017 Dawson
FM 49	YC60848	Shawn Ryan - 100%	5/28/2017 Dawson
FM 50	YC60849	Shawn Ryan - 100%	5/28/2017 Dawson
FM 51	YC60850	Shawn Ryan - 100%	5/28/2017 Dawson
FM 52	YC60851	Shawn Ryan - 100%	5/28/2017 Dawson
FM 53	YC60852	Shawn Ryan - 100%	5/28/2017 Dawson
FM 54	YC60853	Shawn Ryan - 100%	5/28/2017 Dawson
FM 55	YC60854	Shawn Ryan - 100%	5/28/2017 Dawson
FM 56	YC60855	Shawn Ryan - 100%	5/28/2017 Dawson
FM 57	YC60856	Shawn Ryan - 100%	5/28/2017 Dawson
FM 58	YC60857	Shawn Ryan - 100%	5/28/2017 Dawson
FM 59	YC60858	Shawn Ryan - 100%	5/28/2017 Dawson
FM 60	YC60859	Shawn Ryan - 100%	5/28/2017 Dawson
FM 61	YC60860	Shawn Ryan - 100%	5/28/2017 Dawson
FM 62	YC60861	Shawn Ryan - 100%	5/28/2017 Dawson
FM 63	YC60862	Shawn Ryan - 100%	5/28/2017 Dawson
FM 64	YC60863	Shawn Ryan - 100%	5/28/2017 Dawson
FM 65	YC60864	Shawn Ryan - 100%	5/28/2017 Dawson
FM 66	YC60865	Shawn Ryan - 100%	5/28/2017 Dawson
FM 67	YC60866	Shawn Ryan - 100%	5/28/2017 Dawson

FM 68	YC60867	Shawn Ryan - 100%	5/28/2017 Dawson
FM 69	YC60868	Shawn Ryan - 100%	5/28/2017 Dawson
FM 70	YC60869	Shawn Ryan - 100%	5/28/2017 Dawson
FM 71	YC60870	Shawn Ryan - 100%	5/28/2017 Dawson
FM 72	YC60871	Shawn Ryan - 100%	5/28/2017 Dawson
FM 73	YC60872	Shawn Ryan - 100%	5/28/2017 Dawson
FM 74	YC60873	Shawn Ryan - 100%	5/28/2017 Dawson
FM 75	YC60874	Shawn Ryan - 100%	5/28/2017 Dawson
FM 76	YC60875	Shawn Ryan - 100%	5/28/2017 Dawson
FM 77	YC60876	Shawn Ryan - 100%	5/28/2017 Dawson
FM 78	YC60877	Shawn Ryan - 100%	5/28/2017 Dawson
FM 79	YC60878	Shawn Ryan - 100%	5/28/2017 Dawson
FM 80	YC60879	Shawn Ryan - 100%	5/28/2017 Dawson
FM 81	YC60880	Shawn Ryan - 100%	5/28/2017 Dawson
FM 82	YC60881	Shawn Ryan - 100%	5/28/2017 Dawson
FM 83	YC60882	Shawn Ryan - 100%	5/28/2017 Dawson
FM 84	YC60883	Shawn Ryan - 100%	5/28/2017 Dawson
FM 85	YC60884	Shawn Ryan - 100%	5/28/2017 Dawson
FM 86	YC60885	Shawn Ryan - 100%	5/28/2017 Dawson
FM 87	YC60886	Shawn Ryan - 100%	5/28/2017 Dawson
FM 88	YC60887	Shawn Ryan - 100%	5/28/2017 Dawson
FM 89	YC60888	Shawn Ryan - 100%	5/28/2017 Dawson
FM 90	YC60889	Shawn Ryan - 100%	5/28/2017 Dawson
FM 91	YC60890	Shawn Ryan - 100%	5/28/2017 Dawson
FM 92	YC60891	Shawn Ryan - 100%	5/28/2017 Dawson
FM 93	YC60892	Shawn Ryan - 100%	5/28/2017 Dawson
FM 94	YC60893	Shawn Ryan - 100%	5/28/2017 Dawson
FM 95	YC60894	Shawn Ryan - 100%	5/28/2017 Dawson
FM 96	YC60895	Shawn Ryan - 100%	5/28/2017 Dawson
FM 97	YC60896	Shawn Ryan - 100%	5/28/2017 Dawson
FM 98	YC60897	Shawn Ryan - 100%	5/28/2017 Dawson
FM 99	YC60898	Shawn Ryan - 100%	5/28/2017 Dawson
FM 100	YC60899	Shawn Ryan - 100%	5/28/2017 Dawson
FM 101	YC60900	Shawn Ryan - 100%	5/28/2017 Dawson
FM 102	YC60901	Shawn Ryan - 100%	5/28/2017 Dawson
FM 103	YC60902	Shawn Ryan - 100%	5/28/2017 Dawson
FM 104	YC60903	Shawn Ryan - 100%	5/28/2017 Dawson
FM 105	YC60904	Shawn Ryan - 100%	5/28/2017 Dawson
FM 106	YC60905	Shawn Ryan - 100%	5/28/2017 Dawson
FM 107	YC60906	Shawn Ryan - 100%	5/28/2017 Dawson
FM 108	YC60907	Shawn Ryan - 100%	5/28/2017 Dawson
FM 109	YC60908	Shawn Ryan - 100%	5/28/2017 Dawson
FM 110	YC60909	Shawn Ryan - 100%	5/28/2017 Dawson
FM 111	YC60910	Shawn Ryan - 100%	5/28/2017 Dawson
FM 112	YC60911	Shawn Ryan - 100%	5/28/2017 Dawson
FM 113	YC60912	Shawn Ryan - 100%	5/28/2017 Dawson
FM 114	YC60913	Shawn Ryan - 100%	5/28/2017 Dawson

FM 115	YC60914	Shawn Ryan - 100%	5/28/2017 Dawson
FM 116	YC60915	Shawn Ryan - 100%	5/28/2017 Dawson
FM 117	YC60916	Shawn Ryan - 100%	5/28/2017 Dawson
FM 118	YC60917	Shawn Ryan - 100%	5/28/2017 Dawson
FM 119	YC60918	Shawn Ryan - 100%	5/28/2017 Dawson
FM 120	YC60919	Shawn Ryan - 100%	5/28/2017 Dawson
FM 121	YC60920	Shawn Ryan - 100%	5/28/2017 Dawson
FM 122	YC60921	Shawn Ryan - 100%	5/28/2017 Dawson
FM 123	YC60922	Shawn Ryan - 100%	5/28/2017 Dawson
FM 124	YC60923	Shawn Ryan - 100%	5/28/2017 Dawson
FM 125	YC60924	Shawn Ryan - 100%	5/28/2017 Dawson
FM 126	YC60925	Shawn Ryan - 100%	5/28/2017 Dawson
FM 127	YC60926	Shawn Ryan - 100%	5/28/2017 Dawson
FM 128	YC60927	Shawn Ryan - 100%	5/28/2017 Dawson
FM 129	YC60928	Shawn Ryan - 100%	5/28/2017 Dawson
FM 130	YC60929	Shawn Ryan - 100%	5/28/2017 Dawson
FM 131	YC60930	Shawn Ryan - 100%	5/28/2017 Dawson
FM 132	YC60931	Shawn Ryan - 100%	5/28/2017 Dawson
FM 133	YC60932	Shawn Ryan - 100%	5/28/2017 Dawson
FM 134	YC60933	Shawn Ryan - 100%	5/28/2017 Dawson
FM 135	YC60934	Shawn Ryan - 100%	5/28/2017 Dawson
FM 136	YC60935	Shawn Ryan - 100%	5/28/2017 Dawson
FM 137	YC60936	Shawn Ryan - 100%	5/28/2017 Dawson
FM 139	YC60938	Shawn Ryan - 100%	5/28/2017 Dawson
FM 141	YC60940	Shawn Ryan - 100%	5/28/2017 Dawson
FM 143	YC60942	Shawn Ryan - 100%	5/28/2017 Dawson
FM 145	YC60944	Shawn Ryan - 100%	5/28/2017 Dawson
FM 147	YC60946	Shawn Ryan - 100%	5/28/2017 Dawson
FM 149	YC60948	Shawn Ryan - 100%	5/28/2017 Dawson
FM 151	YC60950	Shawn Ryan - 100%	5/28/2017 Dawson
FM 153	YC60952	Shawn Ryan - 100%	5/28/2017 Dawson
FM 155	YC60954	Shawn Ryan - 100%	5/28/2017 Dawson
FM 157	YC60956	Shawn Ryan - 100%	5/28/2017 Dawson
FM 158	YC60957	Shawn Ryan - 100%	5/28/2017 Dawson
FM 159	YC60958	Shawn Ryan - 100%	5/28/2017 Dawson
FM 160	YC60959	Shawn Ryan - 100%	5/28/2017 Dawson
FM 161	YC60960	Shawn Ryan - 100%	5/28/2017 Dawson
FM 162	YC60961	Shawn Ryan - 100%	5/28/2017 Dawson
FM 163	YC60962	Shawn Ryan - 100%	5/28/2017 Dawson
FM 164	YC60963	Shawn Ryan - 100%	5/28/2017 Dawson
FM 165	YC60964	Shawn Ryan - 100%	5/28/2017 Dawson
FM 166	YC60965	Shawn Ryan - 100%	5/28/2017 Dawson
FM 167	YC60966	Shawn Ryan - 100%	5/28/2017 Dawson
FM 168	YC60967	Shawn Ryan - 100%	5/28/2017 Dawson
FM 169	YC60968	Shawn Ryan - 100%	5/28/2017 Dawson
FM 170	YC60969	Shawn Ryan - 100%	5/28/2017 Dawson
FM 171	YC60970	Shawn Ryan - 100%	5/28/2017 Dawson

FM 172	YC60971	Shawn Ryan - 100%	5/28/2017 Dawson
FM 173	YC60972	Shawn Ryan - 100%	5/28/2017 Dawson
FM 174	YC60973	Shawn Ryan - 100%	5/28/2017 Dawson
FM 175	YC60974	Shawn Ryan - 70%, Cathy Wood - 30%	5/28/2017 Dawson
FM 176	YC60975	Shawn Ryan - 100%	5/28/2017 Dawson
Og 1	YC25491	Shawn Ryan - 100%	3/20/2020 Dawson
Og 2	YC25492	Shawn Ryan - 100%	3/20/2020 Dawson
Og 3	YC25493	Shawn Ryan - 100%	3/20/2020 Dawson
Og 4	YC25494	Shawn Ryan - 100%	3/20/2020 Dawson
Og 5	YC25495	Shawn Ryan - 100%	3/20/2020 Dawson
Og 6	YC25496	Shawn Ryan - 100%	3/20/2020 Dawson
Og 7	YC25497	Shawn Ryan - 100%	3/20/2020 Dawson
Og 8	YC25498	Shawn Ryan - 100%	3/20/2020 Dawson
Og 9	YC25499	Shawn Ryan - 100%	3/20/2020 Dawson
Og 10	YC25500	Shawn Ryan - 100%	3/20/2020 Dawson
Og 11	YC25501	Shawn Ryan - 100%	3/20/2020 Dawson
Og 12	YC25502	Shawn Ryan - 100%	3/20/2020 Dawson
OG 13	YC43582	Shawn Ryan - 100%	3/20/2017 Dawson
OG 14	YC43583	Shawn Ryan - 100%	3/20/2017 Dawson
OG 15	YC43584	Shawn Ryan - 100%	3/20/2017 Dawson
OG 16	YC43585	Shawn Ryan - 100%	3/20/2017 Dawson
OG 17	YC43586	Shawn Ryan - 100%	3/20/2017 Dawson
OG 18	YC43587	Shawn Ryan - 100%	3/20/2017 Dawson
OG 19	YC43588	Shawn Ryan - 100%	3/20/2017 Dawson
OG 20	YC43589	Shawn Ryan - 100%	3/20/2017 Dawson
OG 21	YC43590	Shawn Ryan - 100%	3/20/2017 Dawson
OG 22	YC43591	Shawn Ryan - 100%	3/20/2017 Dawson
OG 23	YC43592	Shawn Ryan - 100%	3/20/2017 Dawson
OG 24	YC43593	Shawn Ryan - 100%	3/20/2017 Dawson
OG 25	YC43594	Shawn Ryan - 100%	3/20/2017 Dawson
OG 26	YC43595	Shawn Ryan - 100%	3/20/2017 Dawson
OG 27	YC43596	Shawn Ryan - 100%	3/20/2017 Dawson
OG 28	YC43597	Shawn Ryan - 100%	3/20/2017 Dawson
OG 29	YC43598	Shawn Ryan - 100%	3/20/2017 Dawson
OG 30	YC43599	Shawn Ryan - 100%	3/20/2017 Dawson
Og 31	YC44737	Shawn Ryan - 100%	3/23/2017 Dawson
Og 32	YC44738	Shawn Ryan - 100%	3/23/2017 Dawson
Og 33	YC44739	Shawn Ryan - 100%	3/23/2017 Dawson
Og 34	YC44740	Shawn Ryan - 100%	3/23/2017 Dawson
Og 35	YC44741	Shawn Ryan - 100%	3/23/2017 Dawson
Og 36	YC44742	Shawn Ryan - 100%	3/23/2017 Dawson
Oz 1	YC35959	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 2	YC35960	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 3	YC35961	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 4	YC35962	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 5	YC35963	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 6	YC35964	Shawn Ryan - 100%	6/2/2019 Dawson

Oz 7	YC35965	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 8	YC35966	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 9	YC35967	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 10	YC35968	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 11	YC35969	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 12	YC35970	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 13	YC35971	Shawn Ryan - 100%	6/2/2019 Dawson
Oz 14	YC35972	Shawn Ryan - 100%	6/2/2019 Dawson
OZ 15	YD130445	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 16	YD130446	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 17	YD130447	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 18	YD130448	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 19	YD130449	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 20	YD130450	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 21	YD130451	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 22	YD130452	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 23	YD130453	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 24	YD130454	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 25	YD130455	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 26	YD130456	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 27	YD130457	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 28	YD130458	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 29	YD130459	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 30	YD130460	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 31	YD130461	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 32	YD130462	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 33	YD130463	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 34	YD130464	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 35	YD130465	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 36	YD130466	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 37	YD130467	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 38	YD130468	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 39	YD130469	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 40	YD130470	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 41	YD130471	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 42	YD130472	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 43	YD130473	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 44	YD130474	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 45	YD130475	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 46	YD130476	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 47	YD130477	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 48	YD130478	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 49	YD130479	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 50	YD130480	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 51	YD130481	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 52	YD130482	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 53	YD130483	Shawn Ryan - 100%	3/9/2019 Dawson

OZ 54	YD130484	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 55	YD130485	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 56	YD130486	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 57	YD130487	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 58	YD130488	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 59	YD130489	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 60	YD130490	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 61	YD130491	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 62	YD130492	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 63	YD130493	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 64	YD130494	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 65	YD130495	Shawn Ryan - 100%	3/9/2019 Dawson
OZ 66	YD130496	Shawn Ryan - 100%	3/9/2019 Dawson
UG 1	YC43600	Shawn Ryan - 100%	3/23/2017 Dawson
UG 2	YC43601	Shawn Ryan - 100%	3/23/2017 Dawson
UG 3	YC43602	Shawn Ryan - 100%	3/23/2017 Dawson
UG 4	YC43603	Shawn Ryan - 100%	3/23/2017 Dawson
UG 5	YC43604	Shawn Ryan - 100%	3/23/2017 Dawson
UG 6	YC43605	Shawn Ryan - 100%	3/23/2017 Dawson
UG 7	YC43606	Shawn Ryan - 100%	3/23/2017 Dawson
UG 8	YC43607	Shawn Ryan - 100%	3/23/2017 Dawson
UG 9	YC43608	Shawn Ryan - 100%	3/23/2017 Dawson
UG 10	YC43609	Shawn Ryan - 100%	3/23/2017 Dawson
UG 11	YC43610	Shawn Ryan - 100%	3/23/2017 Dawson
UG 12	YC43611	Shawn Ryan - 100%	3/23/2017 Dawson
UG 13	YC43612	Shawn Ryan - 100%	3/23/2017 Dawson
UG 14	YC43613	Shawn Ryan - 100%	3/23/2017 Dawson
UG 15	YC43614	Shawn Ryan - 100%	3/23/2017 Dawson
UG 16	YC43615	Shawn Ryan - 100%	3/23/2017 Dawson
UG 17	YC43616	Shawn Ryan - 100%	3/23/2017 Dawson
UG 18	YC43617	Shawn Ryan - 100%	3/23/2017 Dawson

**Appendix III:**                   **Soil Sample Data**



sample_id	depth	horizon	site_veget	ground_cov	quality	note1	note2	mo_ppm	cu_ppm	pb_ppm	zn_ppm	ag_ppm	ni_ppm	co_ppm
1457273	20	C	Birch Forest	Leaf Cover	Good			2.5	16.2	22.3	57	0.3	16.5	7.6
1457274	20	B	Birch Forest	Leaf Cover	Good	Fine	Small Sample	2.5	18.4	16.8	52	0.4	16.1	7.4
1457275	20	B	Birch Forest	Leaf Cover	Good	Fine	Small Sample	2.2	21.3	19.1	53	0.5	14.4	7.9
1457276	20	B	Birch Forest	Leaf Cover	Good	Rocky Sample		1.8	35.9	19.8	73	0.3	19.4	12.6
1457277	40	B	Birch Forest	Leaf Cover	Good			1.6	24.7	13	48	0.2	20.1	7.8
1457278	40	B	Birch Forest	Leaf Cover	Good			4.8	31.4	16.7	49	0.4	18.7	9.2
1457279	40	B	Birch Forest	Leaf Cover	Good			3	31.6	26.3	73	0.8	11.9	6.1
1457280	40	B	Birch Forest	Leaf Cover	Good			0.8	17.6	16.7	57	0.1	13.9	6.8
1457281	40	B	Birch Forest	Sphagnum Moss < 30cm	Good			1.5	16.2	43.7	64	0.4	22.3	9.8
1457282	30	B	Birch Forest	Sphagnum Moss < 30cm	Good			1.4	27.7	17.3	56	0.7	31.8	12.8
1457283	60	B	Black Spruce	Thin Moss Cover	Good			0.8	37	26.1	57	0.2	36.2	10.9
1457283	60	B	Black Spruce	Thin Moss Cover	Good			0.8	37.3	26	58	0.2	36.7	10.6
1457284	20	B	Black Spruce	Sphagnum Moss < 30cm	Poor			1.3	31.4	14.1	49	0.2	20.2	6.9
1456001	40	C	Birch Forest	Thin Moss Cover	Good	Clay	Coarse	10.2	58.4	36.4	61	0.9	23	11.3
1456001	40	C	Birch Forest	Thin Moss Cover	Good	Clay	Coarse	9.7	58	35.1	63	0.9	22.5	11.5
1456002	40	C	Dwarf Birch	Thin Moss Cover	Good	Clay	Coarse	8.8	69.1	32.9	63	0.7	25.2	11.4
1456003	50	C	Dwarf Birch	Thin Moss Cover	Good	Clay	Coarse	4.9	63.7	26.9	62	0.2	23.3	11.5
1456004	30	C	Dwarf Birch	Thin Moss Cover	Good	Clay	Coarse	3.8	62.3	23.1	61	0.4	24.4	12.8
1456005	40	C	Dwarf Birch	Sphagnum Moss < 30cm	Good	Clay	Coarse	4.8	159.5	27.7	75	2.2	27.1	10.8
1456006	30	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	3.6	100	29.3	66	0.8	26.8	12.4
1456007	40	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	9.7	324.6	30.8	74	0.9	11.7	7.9
1456008	40	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	3.6	128.6	25.8	61	0.6	18.2	9.6
1456009	40	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	3.1	148.2	20.7	64	0.6	21.7	8.7
1456010	40	C	Black Spruce	Burnt Moss	Good	Clay	Coarse	5.8	189.5	22.6	71	0.4	16.1	8.6
1456011	50	C	Birch Forest	Leaf Cover	Excellent	Clay	Coarse	10.7	198.6	37.2	76	0.4	12.7	9.1
1456012	30	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	6.5	136.5	26.7	70	0.5	20.5	12.1
1456013	40	C	Birch Forest	Leaf Cover	Good	Clay	Coarse	4.2	88.9	21.2	76	0.7	20.1	10.6
1456014	40	C	Birch Forest	Leaf Cover	Good	Clay	Coarse	6.2	87	17.5	68	1	16.6	13.1
1456015	30	B	Birch Forest	Leaf Cover	Good	Clay	Rocky Terrain	6.1	48.5	15.6	49	0.9	10.4	7.5
1456016	40	B	Birch Forest	Leaf Cover	Good	Clay	Rocky Terrain	13.9	96.8	19.8	69	1	15.6	8.1
1456017	30	B	Birch Forest	Leaf Cover	Good	Clay	Rocky Terrain	12.5	123.4	30.6	83	0.8	15.9	10.8
1456018	30	B	Birch Forest	Leaf Cover	Good	Clay	Rocky Terrain	5.4	93.3	24.2	65	1	12.9	13.7
1456019	30	B	Birch Forest	Leaf Cover	Poor	Clay	Rocky Terrain	4	37.3	23.9	64	0.3	14.4	8.5
1456020	30	B	Black Spruce	Leaf Cover	Good	Clay	Rocky Terrain	3.1	39	19	57	0.3	11.9	6.4
1456021	30	B	Birch Forest	Sphagnum Moss < 30cm	Good	Clay	Coarse	2.4	25.1	22.8	43	0.5	7.9	15.9
1456022	30	B	Dwarf Birch	Thin Moss Cover	Good	Clay	Rocky Terrain	3.7	36.9	18.9	66	0.7	17.7	13.7
1456023	30	B	Dwarf Birch	Leaf Cover	Good	Clay	Rocky Terrain	3.6	52.1	26.5	61	0.3	13.7	6.5
1456024	30	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	3.5	64.2	34	65	0.2	11.8	8.1
1456025	30	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	3.5	61.4	33.5	64	0.2	11.4	7.7
1456026	30	B	Dwarf Birch	Thin Moss Cover	Good	Clay	Coarse	5.8	163.4	29	58	0.8	13.6	12.9
1456027	40	B	Dwarf Birch	Bare Soil	Good	Clay	Coarse	3.5	98.2	24.1	53	0.7	18.2	8.7
1456028	30	C	Dwarf Birch	Thin Moss Cover	Good	Clay	Coarse	6.2	183.6	37.3	56	0.3	11.1	9.2
1456029	40	C	Dwarf Birch	Thin Moss Cover	Good	Clay	Coarse	6.6	188.5	26.9	57	0.5	20.1	14.2
1456030	50	C	Dwarf Birch	Bare Soil	Excellent	Clay	Coarse	10.5	315.1	21.8	44	0.3	7.3	8.6
1456031	30	C	Dwarf Birch	Bare Soil	Good	Clay	Coarse	2.5	82.1	12.4	34	0.7	9.5	4.7
1456032	30	C	Dwarf Birch	Grass Cover	Good	Clay	Coarse	2.9	71.5	20.2	63	0.3	23.8	12.3
1456033	40	C	Dwarf Birch	Grass Cover	Excellent	Clay	Coarse	3.7	85.1	30.1	68	0.4	25.6	10.2
1456034	40	C	Dwarf Birch	Grass Cover	Good	Clay	Coarse	8.8	59.2	26.4	65	0.6	21	10.1
1456035	40	C	Dwarf Birch	Leaf Cover	Good	Clay	Coarse	7.6	33	25.5	56	0.3	22.3	9.3
1456252	80	C	Birch Forest	Leaf Cover	Good	Sandy		5.1	45.9	23.7	53	0.8	24.5	9.5
1456253	60	C	Dwarf Birch	Thin Moss Cover	Excellent			4.4	40.2	18.9	52	0.2	18.7	7.2
1456254	100	C	Dwarf Birch	Thin Moss Cover	Good	Sandy		9.4	87	25.1	64	0.6	23.3	9.5













































sample_id	project_id	utm_zone	utm_eastin	utm_northi	elevation_	longitude	latitude	sample_dat	technician	colour	texture	moisture	site_slope
1455150	WLF	07N	539353	6989682	938	-140.2221449	63.03459687	9/15/2016	Mark Severinsen MS01	Light Brown	Gravel	Dry	Flat
1455151	WLF	07N	539337	6989702	928	-140.2224564	63.03477809	9/15/2016	Mark Severinsen MS01	Reddish Yellow	Silt	Dry	Subtle Slope
1455152	WLF	07N	539323	6989722	922	-140.2227283	63.0349591	9/15/2016	Mark Severinsen MS01	Chocolate Brown	Silt	Wet	Subtle Slope
1455153	WLF	07N	539307	6989742	917	-140.2230397	63.03514032	9/15/2016	Mark Severinsen MS01	Dark Brown	Silt	Wet	Steep
1455154	WLF	07N	539291	6989763	904	-140.223351	63.03533052	9/15/2016	Mark Severinsen MS01	Chocolate Brown	Sand	Damp	Pronounced Slope
1455155	WLF	07N	539261	6989804	890	-140.2239341	63.03570173	9/15/2016	Mark Severinsen MS01	Dark Brown	Silt	Damp	Steep
1455156	WLF	07N	539261	6989804	890	-140.2239341	63.03570173	9/15/2016	Mark Severinsen MS01	Dark Brown	Silt	Damp	Steep
1455157	WLF	07N	539217	6989862	867	-140.2247899	63.03622701	9/15/2016	Mark Severinsen MS01	Dark Brown	Silt	Wet	Steep
1457251	WLF	07N	539702	6989723	961	-140.2152374	63.03492675	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Subtle Slope
1457252	WLF	07N	539716	6989702	962	-140.2149658	63.03473675	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Subtle Slope
1457253	WLF	07N	539730	6989687	960	-140.2146927	63.0346006	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Subtle Slope
1457254	WLF	07N	539742	6989667	957	-140.2144604	63.0344198	9/15/2016	Nathan Watkinson NW01	Light Brown	Silt	Damp	Subtle Slope
1457255	WLF	07N	539763	6989644	952	-140.2140509	63.03421108	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Subtle Slope
1457256	WLF	07N	539777	6989622	940	-140.2137796	63.03401211	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Subtle Slope
1457257	WLF	07N	539789	6989605	947	-140.2135465	63.03385823	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Pronounced Slope
1457258	WLF	07N	539805	6989581	936	-140.2132361	63.03364108	9/15/2016	Nathan Watkinson NW01	Grey	Silt	Damp	Pronounced Slope
1457259	WLF	07N	539820	6989559	929	-140.2129495	63.0334442	9/15/2016	Nathan Watkinson NW01	Light Brown	Silt	Damp	Pronounced Slope
1457260	WLF	07N	539835	6989541	924	-140.2126529	63.03327881	9/15/2016	Nathan Watkinson NW01	Light Brown	Sand	Damp	Pronounced Slope
1457261	WLF	07N	539847	6989524	916	-140.2124198	63.03312493	9/15/2016	Nathan Watkinson NW01	Light Brown	Sand	Damp	Pronounced Slope
1457262	WLF	07N	539865	6989504	914	-140.212069	63.03294346	9/15/2016	Nathan Watkinson NW01	Light Brown	Silt	Damp	Pronounced Slope
1457263	WLF	07N	539884	6989486	910	-140.2116978	63.03277983	9/15/2016	Nathan Watkinson NW01	Light Brown	Sand	Damp	Pronounced Slope
1457264	WLF	07N	539898	6989464	906	-140.2114265	63.03258085	9/15/2016	Nathan Watkinson NW01	Light Brown	Sand	Damp	Pronounced Slope
1457265	WLF	07N	539912	6989441	909	-140.2111554	63.0323729	9/15/2016	Nathan Watkinson NW01	Light Brown	Sand	Damp	Pronounced Slope
1457266	WLF	07N	539929	6989422	907	-140.210824	63.03220051	9/15/2016	Nathan Watkinson NW01	Light Brown	Silt	Damp	Subtle Slope
1457267	WLF	07N	539941	6989405	903	-140.210591	63.03204663	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Subtle Slope
1457268	WLF	07N	540021	6989469	924	-140.2089945	63.03261216	9/15/2016	Nathan Watkinson NW01	Light Brown	Silt	Damp	Pronounced Slope
1457269	WLF	07N	540009	6989486	927	-140.2092275	63.03276605	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Pronounced Slope
1457270	WLF	07N	539991	6989505	929	-140.2095786	63.03293855	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Pronounced Slope
1457271	WLF	07N	539977	6989525	942	-140.2098504	63.03311959	9/15/2016	Nathan Watkinson NW01	Dark Brown	Silt	Damp	Pronounced Slope
1457272	WLF	07N	539962	6989545	947	-140.210142	63.03330073	9/15/2016	Nathan Watkinson NW01	Light Brown	Sand	Damp	Subtle Slope

sample_id	depth	horizon	site_veget	ground_cov	quality	note1	note2	mo_ppm	cu_ppm	pb_ppm	zn_ppm	ag_ppm	ni_ppm	co_ppm
1455150	60	C	Poplar	Thin Moss Cover	Excellent	Coarse	Sandy	1	14.3	23	23	0.05	6.8	3.9
1455151	50	C	Black Spruce	Reindeer Moss	Good	Coarse	Sandy	4.3	72.9	12.8	32	0.3	11.6	8.7
1455152	50	B	Black Spruce	Reindeer Moss	Good	Mud	Partially Frozen	2.1	79.4	10.5	42	0.3	13.3	7.9
1455153	60	B	Black Spruce	Reindeer Moss	Poor	Frozen	Mud	1.4	46.3	7.3	32	0.3	8.5	4.8
1455154	40	B	Dwarf Birch	Reindeer Moss	Good	Partially Frozen	Wet Soil	8.3	36.2	12.4	58	0.05	22.6	14.2
1455155	70	B	Dwarf Birch	Reindeer Moss	Good	Organic 25%	Fine	0.8	10.6	1.4	8	0.1	3.1	1.1
1455155	70	B	Dwarf Birch	Reindeer Moss	Good	Organic 25%	Fine	0.8	10	1.4	8	0.1	2.8	1
1455157	60	B	Dwarf Birch	Reindeer Moss	Poor	Partially Frozen	Wet Soil	2.4	29	10.6	31	0.2	9.8	4.8
1457251	50	B	Birch Forest	Reindeer Moss	Good	Fine		0.8	24.8	12.8	63	0.2	23.9	10.9
1457252	30	B	Birch Forest	Sphagnum Moss < 30cm	Good	Fine		1.3	41.1	46.3	83	1.2	27.9	12.9
1457253	40	B	Birch Forest	Thin Moss Cover	Good	Fine		1.5	17.7	25.4	74	0.7	9.3	6.1
1457254	50	B	Black Spruce	Sphagnum Moss < 30cm	Good			1.8	92	21.3	63	2.1	21.4	8.4
1457255	40	B	Black Spruce	Reindeer Moss	Good	Small Sample		2.8	39.5	23.2	92	1	22.3	22.8
1457256	40	B	Black Spruce	Reindeer Moss	Good	Small Sample		2.3	18.8	22.6	82	0.6	17.8	10.1
1457257	40	B	Birch Forest	Leaf Cover	Good	Small Sample		2.2	28.3	45.3	79	0.3	18.1	9.1
1457258	40	C	Birch Forest	Leaf Cover	Poor	Small Sample		3	23.3	33.4	61	0.3	16.3	8.9
1457259	60	C	Birch Forest	Leaf Cover	Good			3	18.2	24.8	62	0.3	19.8	10.4
1457260	50	C	Birch Forest	Leaf Cover	Poor			4.7	18.9	28	64	0.3	17.5	8.3
1457261	60	C	Birch Forest	Leaf Cover	Good			3.9	18.3	36.3	59	0.3	9.9	6.8
1457262	40	C	Birch Forest	Leaf Cover	Poor	Small Sample		2.9	31.3	25.6	67	0.6	16.3	12.6
1457263	40	C	Birch Forest	Leaf Cover	Good			1.6	20.1	30.1	61	0.2	11.5	8.3
1457264	40	C	Birch Forest	Leaf Cover	Good			1.3	24.5	25.2	74	0.2	9.2	10.9
1457265	60	C	Birch Forest	Leaf Cover	Excellent			1	18.9	14.3	54	0.1	12.5	10.5
1457266	40	B	Birch Forest	Leaf Cover	Good			1.4	23.9	18.3	52	0.2	17	16.3
1457267	60	B	Black Spruce	Leaf Cover	Good			1.4	25.7	20.8	54	0.1	14.8	9.4
1457268	60	C	Black Spruce	Thin Moss Cover	Poor			0.7	18.7	10.2	44	0.05	22.9	10.1
1457269	50	B	Black Spruce	Leaf Cover	Excellent			1	15.7	13.4	43	0.1	19.5	8.5
1457270	30	B	Black Spruce	Leaf Cover	Good			1.1	21.4	17.3	49	0.2	17.1	9.7
1457271	70	B	Black Spruce	Leaf Cover	Good			1.5	25.1	18.1	65	0.3	19.7	12.9
1457272	30	C	Black Spruce	Leaf Cover	Poor	Small Sample		1.8	26.4	25.3	70	0.2	19.6	10.6

sample_id	mn_ppm	fe_pct	as_ppm	u_ppm	au_ppb	th_ppm	sr_ppm	cd_ppm	sb_ppm	v_ppm	bi_ppm	ca_pct	p_pct	la_ppm	cr_ppm	mg_pct	ti_pct	ba_ppm
1455150	109	1.07	13	1.4	15	6.1	12	0.05	2.9	25	0.5	0.18	0.025	9	13	0.33	0.042	49
1455151	159	3.4	21.8	2.1	29.8	7.8	59	0.05	2.4	80	0.4	0.28	0.051	29	39	1.06	0.161	120
1455152	119	3.01	20.4	2.7	34.3	3.5	37	0.2	1	76	0.4	0.23	0.072	17	36	0.78	0.121	140
1455153	86	2.16	15.9	2.6	22.7	1.7	32	0.2	0.6	58	0.3	0.18	0.065	14	27	0.6	0.099	103
1455154	359	2.89	12.5	2.2	5.6	7.1	48	0.2	0.5	77	0.4	0.4	0.086	15	35	0.71	0.129	99
1455155	17	0.73	1.2	1	4	0.05	10	0.05	0.1	10	0.05	0.14	0.046	3	8	0.03	0.012	25
1455155	16	0.7	1.2	0.9	2.9	0.05	10	0.05	0.1	10	0.05	0.14	0.04	3	8	0.03	0.011	23
1455157	160	1.85	8.8	2.7	1.9	1.9	17	0.1	0.4	48	0.4	0.21	0.054	7	22	0.31	0.062	59
1457251	386	3.15	12.4	0.9	7.5	5	39	0.2	0.4	78	0.4	0.37	0.031	14	45	0.6	0.106	167
1457252	296	3.35	17.6	0.8	11	5.4	31	0.5	0.7	79	0.5	0.24	0.021	9	45	0.58	0.101	152
1457253	752	2.23	8.2	0.4	3.9	1.9	19	0.7	0.3	68	0.3	0.2	0.058	7	21	0.24	0.075	121
1457254	353	2.72	13.1	0.8	21.5	3.5	26	0.5	0.5	69	0.4	0.27	0.049	8	32	0.48	0.078	154
1457255	1450	3.73	11.2	0.7	4.5	3.3	30	1.1	0.6	88	0.4	0.26	0.054	9	41	0.41	0.081	152
1457256	579	3.06	11.7	0.4	3.5	2.3	26	0.8	0.4	77	0.3	0.31	0.099	7	32	0.5	0.083	168
1457257	384	2.83	16.2	0.9	5.5	4.3	38	0.3	0.7	66	0.7	0.43	0.068	10	31	0.51	0.071	145
1457258	355	2.49	12.7	1.1	7.8	3.9	38	0.5	0.7	64	0.5	0.38	0.043	12	30	0.49	0.084	135
1457259	388	2.92	11.2	0.9	34.8	3.9	28	0.3	0.5	69	0.3	0.38	0.028	8	38	0.56	0.086	103
1457260	350	3.02	14.7	1.5	33.7	3.2	48	0.5	0.8	67	0.4	0.41	0.053	10	35	0.57	0.097	95
1457261	228	2.93	19.2	2	85.9	5.8	50	0.4	1.2	70	0.8	0.36	0.067	11	33	0.72	0.13	83
1457262	440	3.06	17.1	2	63.5	3.7	41	1	0.8	70	0.6	0.38	0.089	11	32	0.58	0.097	123
1457263	261	2.59	25	2.5	220.3	5.6	71	0.4	1.5	62	1	0.4	0.063	14	28	0.6	0.099	94
1457264	333	4.86	23.4	1.7	28.6	6.6	65	0.2	1.4	137	1.5	0.27	0.053	11	31	1.42	0.363	160
1457265	396	3.61	14.6	1	14.2	4.8	44	0.2	0.8	94	1.1	0.47	0.067	9	28	0.92	0.216	164
1457266	657	2.95	12.7	1.8	4.3	4	37	0.3	0.6	74	1	0.39	0.049	13	30	0.61	0.138	148
1457267	328	3	16	1.5	5.7	5.1	41	0.4	0.7	79	1.3	0.5	0.047	12	30	0.74	0.166	154
1457268	353	2.86	8.9	0.9	3.5	3.9	29	0.05	0.4	73	0.3	0.45	0.029	11	40	0.69	0.145	118
1457269	259	2.91	9.7	0.7	7.9	2.9	27	0.1	0.5	70	0.4	0.36	0.033	9	35	0.63	0.122	96
1457270	261	2.67	13	1.3	7.1	3.5	34	0.3	0.7	66	0.9	0.32	0.036	13	30	0.53	0.131	116
1457271	412	3.26	15.2	1.1	4.6	3.4	29	0.3	0.7	78	1.4	0.26	0.027	11	35	0.61	0.133	119
1457272	240	3.52	20.2	1.4	16.7	4.2	26	0.3	0.9	85	1.5	0.22	0.032	10	37	0.69	0.146	92

sample_id	b_ppm	al_pct	na_pct	k_pct	w_ppm	hg_ppm	tl_ppm	sc_ppm	s_pct	se_ppm	ga_ppm	te_ppm	sample_typ	analysis_m	shipment_i	job_number
1455150	0.5	0.92	0.008	0.04	0.05	0.005	0.1	2.4	0.025	0.25	2	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1455151	1	2.1	0.052	0.21	0.1	0.02	0.4	7.4	0.22	0.6	6	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1455152	1	1.91	0.026	0.13	0.2	0.03	0.3	5.7	0.11	0.5	7	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1455153	0.5	1.25	0.024	0.13	0.2	0.03	0.3	4.1	0.1	0.25	5	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1455154	1	1.57	0.025	0.1	1.8	0.02	0.2	4.8	0.025	0.25	6	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1455155	0.5	0.37	0.025	0.02	0.05	0.02	0.05	0.7	0.05	0.25	0.5	0.1	REP	AQ201	WLF2016-10-14	WHI16000373
1455155	0.5	0.37	0.024	0.02	0.05	0.02	0.05	0.6	0.05	0.25	0.5	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1455157	0.5	0.89	0.017	0.04	0.2	0.03	0.1	2.5	0.025	0.5	4	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457251	1	2.6	0.018	0.03	0.2	0.02	0.1	10.1	0.025	0.25	7	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457252	0.5	2.86	0.014	0.03	0.2	0.05	0.2	6.1	0.025	0.25	7	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457253	0.5	1.3	0.015	0.03	0.05	0.02	0.3	3.1	0.025	0.25	8	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457254	1	2.14	0.014	0.04	0.2	0.03	0.1	4.4	0.025	0.25	7	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457255	0.5	2.54	0.012	0.04	0.1	0.02	0.3	4.5	0.025	0.25	9	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457256	1	1.9	0.012	0.05	0.1	0.02	0.1	3.5	0.025	0.25	7	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457257	0.5	2.03	0.011	0.03	0.2	0.02	0.2	4	0.025	0.25	6	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457258	1	1.7	0.017	0.03	0.2	0.02	0.2	4.4	0.025	0.25	5	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457259	0.5	1.92	0.02	0.03	0.1	0.02	0.1	4	0.025	0.25	5	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457260	1	2.08	0.018	0.06	0.3	0.01	0.3	3.7	0.025	0.25	6	0.2	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457261	0.5	1.75	0.018	0.08	0.5	0.01	0.3	5.4	0.025	0.9	6	0.8	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457262	2	2.02	0.015	0.07	0.4	0.03	0.2	4.8	0.025	0.7	7	0.3	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457263	1	1.75	0.02	0.09	1.8	0.01	0.2	5	0.025	0.5	6	0.8	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457264	1	2.75	0.028	0.58	0.4	0.005	1.3	7	0.13	0.25	10	0.5	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457265	1	2.59	0.021	0.32	0.3	0.01	0.5	4.8	0.025	0.25	8	0.4	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457266	1	1.94	0.021	0.07	0.3	0.02	0.3	5	0.025	0.6	7	0.2	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457267	1	1.95	0.02	0.16	0.9	0.01	0.3	4.7	0.025	0.25	7	0.2	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457268	1	1.8	0.029	0.05	0.2	0.02	0.1	5.5	0.025	0.25	6	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457269	1	2.03	0.02	0.04	0.1	0.01	0.2	3.6	0.025	0.25	6	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457270	1	1.78	0.022	0.05	0.2	0.03	0.2	4	0.025	0.25	7	0.1	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457271	2	2.2	0.015	0.07	0.2	0.01	0.2	4.5	0.025	0.25	7	0.3	SOIL	AQ201	WLF2016-10-14	WHI16000373
1457272	1	2.4	0.014	0.05	0.3	0.02	0.2	5.3	0.025	0.25	8	0.9	SOIL	AQ201	WLF2016-10-14	WHI16000373