

We are committed to providing [accessible customer service](#).

If you need accessible formats or communications supports, please [contact us](#).

Nous tenons à améliorer [l'accessibilité des services à la clientèle](#).

Si vous avez besoin de formats accessibles ou d'aide à la communication, veuillez [nous contacter](#).

2021 PROSPECTING REPORT: BLOOM LAKE PROPERTY

MOREL & HAULTAIN TOWNSHIPS
LARDER LAKE MINING DIVISION, ONTARIO, CANADA



PATHFINDER RESOURCES LTD.
(2650076 ONTARIO INC.)
LEVEL 9
182 ST. GEORGES TERRACE
PERTH, WA 6000

February 7th, 2022

Prepared By:

JOERG M. KLEINBOECK, P.GEO.

TABLE OF CONTENTS

| | |
|---|----|
| EXECUTIVE SUMMARY | 2 |
| 1.0 INTRODUCTION | 4 |
| 2.0 PROPERTY DETAILS | 4 |
| 2.1 Location and Access | 4 |
| 2.2 Topography and Vegetation | 4 |
| 2.3 Claims | 5 |
| 3.0 PREVIOUS WORK | 6 |
| 4.0 GEOLOGY | 9 |
| 4.1 Property Geology | 9 |
| 5.0 2021 PROSPECTING PROGRAM | 11 |
| 5.1 Description of Work | 11 |
| 6.0 CONCLUSIONS & RECOMMENDATIONS | 14 |
| 8.0 REFERENCES | 15 |

LIST OF FIGURES

| | |
|--|----|
| Figure 1: Location of the Bloom Lake Property | 5 |
| Figure 2: Tenure of the Bloom Lake Property | 8 |
| Figure 3: Property Geology (after MRD 282). | 10 |
| Figure 4: GPS tracks from the 2021 prospecting program. | 13 |

LIST OF TABLES

| | |
|---|----|
| Table 1: Claim Details of the Bloom Lake Property. | 7 |
| Table 2: 2021 Reconnaissance Prospecting Results | 12 |

LIST OF APPENDICES

| |
|---|
| Appendix I: Statement of Qualifications |
| Appendix II: Sample Descriptions |
| Appendix III: Assay Certificate |
| Appendix IV: Sample Pictures |

| |
|-------------------------|
| Map 1: Sample Locations |
|-------------------------|

EXECUTIVE SUMMARY

In the fall of 2021, JMK Exploration Consulting was engaged by Pathfinder Resources Ltd. (“Pathfinder”) to complete a Phase 2 prospecting program on their 100% owned Bloom Lake Property (“Property”).

The Property is situated approximately 140 km north-northeast of Sudbury, Ontario and approximately 14 km northeast of the Town of Gowganda, Ontario. The Property is bounded by UTM coordinates 5238900 E to 524825 E, and 5288070 N to 5290880 N (NAD83, Z17N), and is covered by National Topographic System (NTS) map sheet 41P/10 and 41P/15. The Property consists of 13 unpatented mining cell claims, covering an area of approximately 226.4 ha.

In January of 2018, Pathfinder (formerly known as Winmar Resources Ltd.) purchased a 100% interest in the Bloom Lake Property from CBLT Inc., subject to a 2% NSR.

The Property is predominantly underlain by Huronian sedimentary rocks of Proterozoic age that were deposited between 2,220 and 2,500 Ma, and overlie Algoman Granites (~2,500 Ma). The Huronian sedimentary rocks present on the Property belong to the Gowganda Formation, and include conglomerates, quartzites, sandstones, and siltstones. Both rock types have been intruded by gabbroic dykes and sills dated at 2,219 Ma, commonly referred to as Nipissing Diabase. Mineralization consisting of silver, cobalt-arsenic minerals, bornite, chalcopyrite, galena, sphalerite, and to a lesser extent gold, occurs within calcite and quartz veins and fractures hosted in the Nipissing Diabase. The mineralization present on the Property is representative of silver-arsenide veins historically mined in the Cobalt, Elk Lake, and Gowganda Mining Camps, also referred to as five-element veins (Ni-Co-As-Ag-Bi).

Historical work on the Property dates to 1907 when the Ontario Gowganda-Cobalt Consolidated Company Ltd., whose name changed in 1910 to Bishop Silver Mines of Canada Ltd., discovered a 6 to 8-inch calcite vein on the west shore of Bloom Lake, followed by numerous other veins that were prospected by trenching and pitting. By 1924, an adit was driven into the hillside along the shoreline of Bloom Lake, as well as a

50 ft deep shaft was sunk west of the adit (on current claim 221266). During the 1950's and 1960's, a group of several prospectors and junior mining companies held the claims and completed prospecting, trenching, and limited diamond drilling on the Property. In 1998, Joseph Crossley completed limited prospecting on the Property in the vicinity of the historical adit and shaft.

In 2018, Winmar Resources Ltd. completed a reconnaissance prospecting program on the Property, focusing on locating historical occurrences on the Property. A total of 33 samples were collected.

From October 2nd to 6th, 2021, a second phase of prospecting was completed that included two prospectors (David Hiltz & Joan Carmichael) that focused on areas west and south of the area sampled in 2018. The program focused on extending the strike length of surface mineralization to the west of the adit and shaft area, and to ground-truth other historical occurrences referenced on historical assessment reports. A total of 14 samples were collected from both bedrock and loose material located proximal to historical trenches and pits. Mineralization encountered during the program was associated with east to east-northeast orientated narrow calcite +/- quartz veins estimated to be up to 30 cm in width, and containing values of up to 0.73 g/t Au, 2,670 g/t Ag, 3.15% Co, 38.4% Cu, 0.28% Ni, 1.51% Zn, and 0.9% Bi. Sample 860478 returned 2,670 g/t Ag, 0.45% Co, 38.4% Cu, and 0.23% Zn. Note that grab samples are selective by nature, and values reported may not be representative of mineralized zones.

Further work on the Property is recommended. A magnetic geophysical survey should be considered, followed by additional prospecting, trenching, and geological mapping on the Property prior to any consideration for diamond drilling.

1.0 INTRODUCTION

JMK Exploration Consulting was requested by Pathfinder to complete a technical report for assessment purposes on their recently completed prospecting program on the Bloom Lake Property. From October 2nd to 6th, 2021, a second phase of reconnaissance prospecting program was completed. A total of 14 samples were collected from both bedrock and loose material located proximal to the historical trenches and pits. This report includes results from the limited prospecting program completed in 2021, and makes recommendations on future work on the Property.

2.0 PROPERTY DETAILS

2.1 Location and Access

The Property is situated approximately 140 km north-northeast of Sudbury, Ontario and approximately 14 km northeast of the Town of Gowganda, Ontario (Figure 1).

Access to the Property was by boat through Bloom Lake. An atv trail branching off of the Chown Road, located east of Long Point Lake, and north of highway 560, provides access to the Wigwam River where a boat can be used to access Bloom Lake to the north.

2.2 Topography and Vegetation

The topography of the Property is characterized by steep ridges and narrow valleys that are generally orientated north-south. Forest cover is a combination of jackpine, spruce, birch, and cedar in the areas of lower relief. Bloom Lake has an abundance water for drilling purposes.

2.3 Claims

The Property is bounded by UTM coordinates 5238900 E to 524825 E, and 5288070 N to 5290880 N (NAD83, Z17N), and is covered by National Topographic System (NTS) map sheet 41P/10 and 41P/15. The Property consists of 13 unpatented mining cell claims, covering an area of approximately 226.4 ha (Table 1, Figure 2).

The author has not sought a formal legal opinion with regard to the ownership status and NSR entitlement of the mining claims comprising the Property. The author has in all aspects of tenure relied on materials made available on the ENDM's website (<https://www.mlas.mndm.gov.on.ca>). The author expresses no opinion as to the ownership status of the Property.

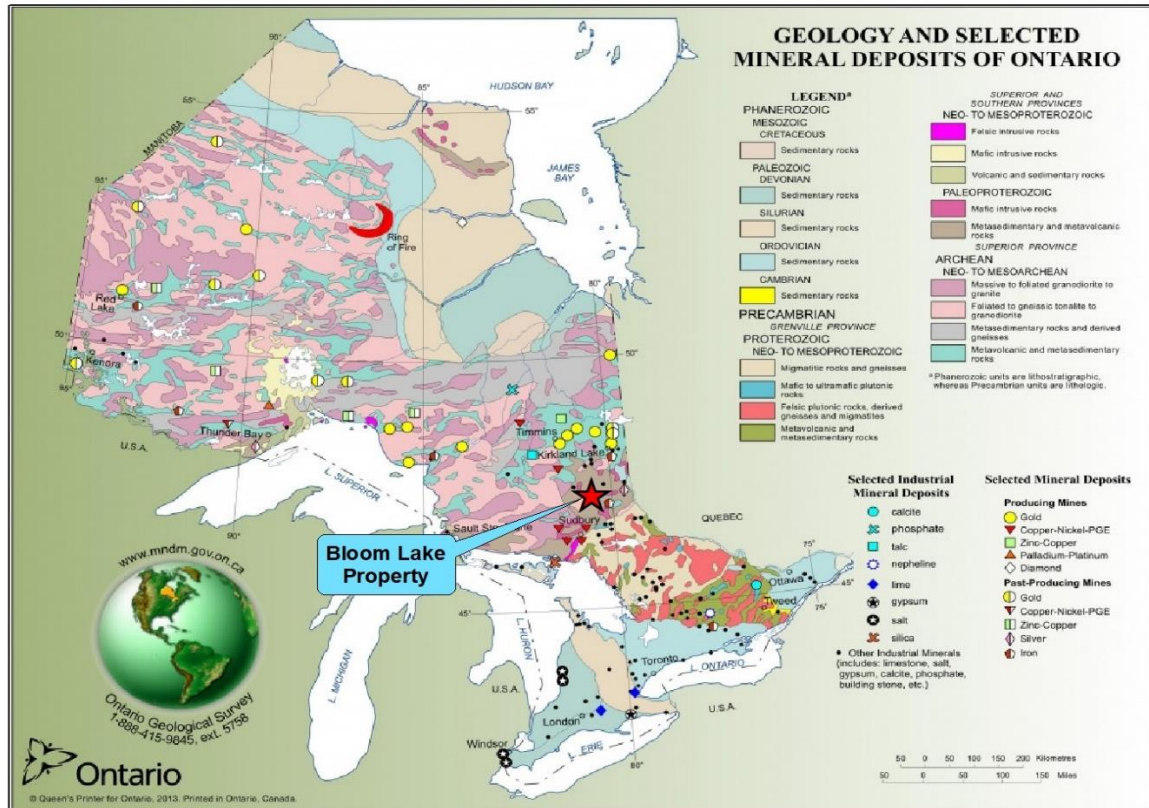


Figure 1: Location of the Bloom Lake Property

3.0 PREVIOUS WORK

A brief summary of the past exploration work completed in the area of interest that is described in this report is provided below.

Historical work on the Property dates to 1907 when the Ontario Gowganda-Cobalt Consolidated Company Ltd., whose name changed in 1910 to Bishop Silver Mines of Canada Ltd., discovered a 6 to 8-inch calcite vein on the west shore of Bloom Lake, followed by numerous other veins that were prospected by trenching and pitting. By 1924, an adit was driven into the hillside along the shoreline of Bloom Lake, as well as a 50 ft deep shaft was sunk west of the adit. During the 1950's, a group of several prospectors completed prospecting, geological mapping, and limited diamond drilling. Records are incomplete for this work, and it is suggested that the Resident Geologists office be visited in Kirkland Lake to compile all of the historical work. From 1954 to 1957, several phases of diamond drilling were completed by Pollard, Johnstone, and Barnes, the owners of the claims at the time. Several phases of diamond drilling were completed; however, the logs are incomplete. The logs that are available are often incomplete with regard to reference to a drill hole number, date, etc. Thomson (1959), the Resident Geologist for the Ontario Department of Mines at the time, states that "18 diamond drill holes (all under 50 ft in length) drilled to intersect veins gives information of negligible value". In 1963, Solid Silver Mines Ltd. held the claims and completed line cutting, prospecting, and geological mapping. Drilling was recommended, but to the authors knowledge, not completed. In 1998, Joseph Crossley completed limited prospecting on the Property in the vicinity of the historical adit and shaft. Silver and cobalt values of up to 603.0 g/t and 0.898 % respectively were obtained from historical trenches.

In 2018, Winmar Resources Ltd. completed a reconnaissance prospecting program on the Property, focusing on locating historical occurrences evaluate the Co-potential of the Property. A total of 33 samples were collected with significant results being returned including up to 0.42 g/t Au, 6.84% Co, 9.22% Cu, and 1.56% Ni.

Table 1: Claim Details of the Bloom Lake Property.

| Township / Area | Tenure ID | Anniversary Date | Work Required | Work Applied | Total Reserve |
|-----------------|-----------|------------------|---------------|--------------|---------------|
| MOREL | 251794 | 2022-03-23 | 400 | 800 | 153 |
| MOREL | 251793 | 2022-03-23 | 400 | 800 | 0 |
| MOREL | 251792 | 2022-03-23 | 400 | 800 | 0 |
| MOREL | 243759 | 2022-03-23 | 400 | 800 | 0 |
| MOREL | 221267 | 2022-03-23 | 400 | 800 | 0 |
| MOREL | 221266 | 2022-03-23 | 400 | 800 | 0 |
| HAULTAIN | 336173 | 2022-03-23 | 200 | 400 | 0 |
| HAULTAIN,MOREL | 325202 | 2022-03-23 | 200 | 400 | 0 |
| HAULTAIN,MOREL | 308044 | 2022-03-23 | 400 | 800 | 0 |
| HAULTAIN | 287807 | 2022-03-23 | 200 | 400 | 0 |
| HAULTAIN | 229223 | 2022-03-23 | 200 | 400 | 0 |
| HAULTAIN | 582714 | 2022-03-26 | 400 | 0 | 0 |
| HAULTAIN | 582713 | 2022-03-26 | 400 | 0 | 0 |

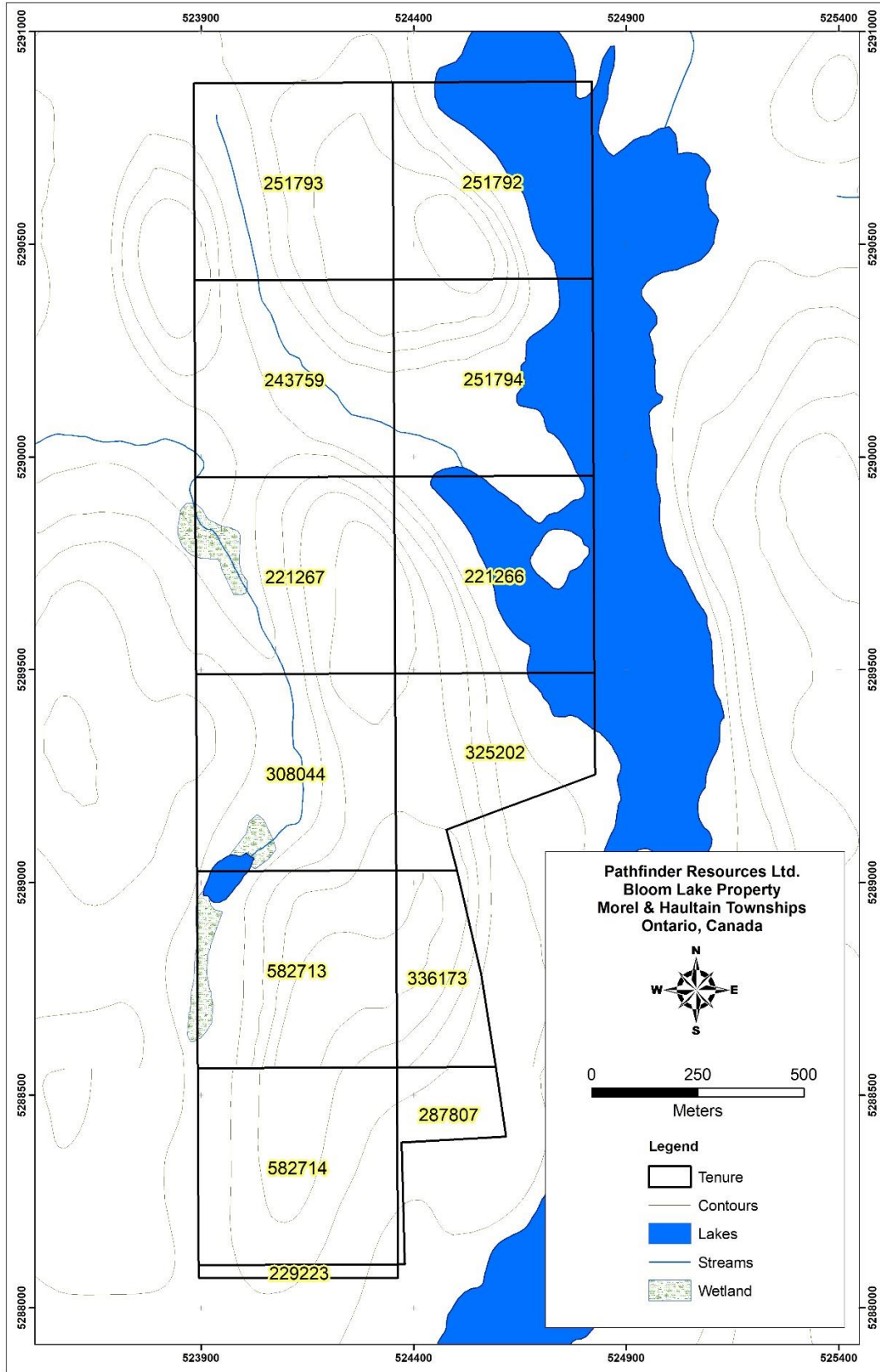


Figure 2: Tenure of the Bloom Lake Property

4.0 GEOLOGY

4.1 Property Geology

The Bloom Lake Property is predominantly underlain by Huronian sedimentary rocks of Proterozoic age that were deposited between 2,220 and 2,500 Ma, and overlie Algoman Granites (~2,500 Ma). The Huronian sedimentary rocks present on the Property belong to the Gowganda Formation, and include conglomerates, quartzites, sandstones, and siltstones. Both rock types have been intruded by gabbroic dykes and sills dated at 2,219 Ma, commonly referred to as Nipissing Diabase. On the Property, the Nipissing Diabase, as suggested in historical reports, dips approximately 20 to 30 degrees to the east, with the upper part of the sill located on the west shoreline of Bloom Lake.

Strong north-south faulting occurs on the Property, with weaker tangential fractures generally orientated east-northeast, and northeast.

Mineralization consisting of silver, cobalt-arsenic minerals, bornite, chalcopyrite, galena, sphalerite, and to a lesser extent gold, occurs within east-northeast oriented calcite and quartz veins and fractures hosted in the Nipissing Diabase. The mineralization present on the Property mineralization is representative of silver-arsenide veins historically mined in the Cobalt, Elk Lake, and Gowganda Mining Camps, also is also referred to as five-element veins (Ni-Co-As-Ag-Bi).

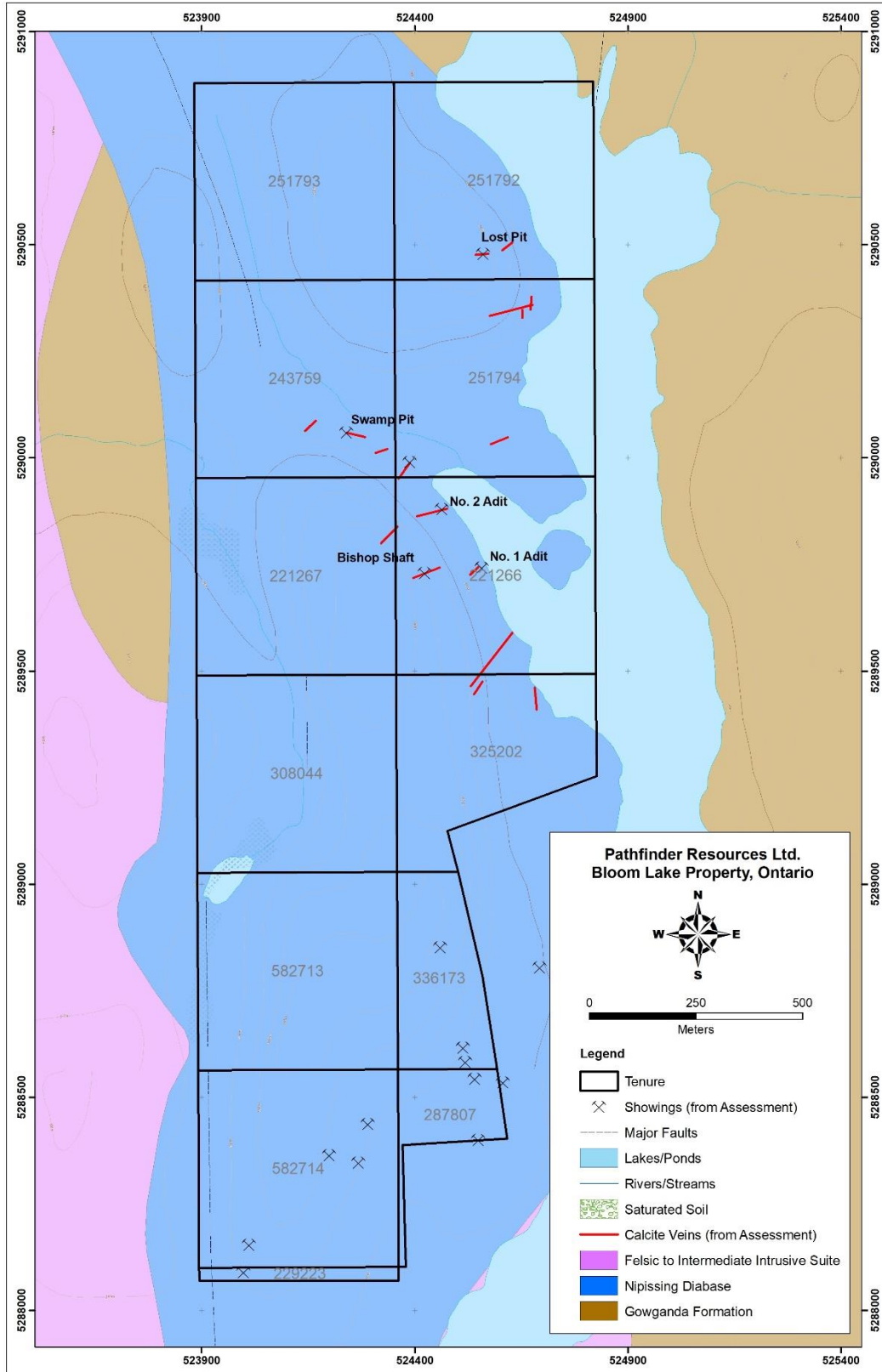


Figure 3: Property Geology (after MRD 282).

5.0 2021 PROSPECTING PROGRAM

5.1 Description of Work

From October 2nd to 6th, 2021, a second phase of prospecting was completed that included two prospectors (David Hiltz & Joan Carmichael) that focused on areas west and south of the area sampled in 2018. The program focused on extending the strike length of surface mineralization to the west of the adit and shaft area, and to ground-truth other historical occurrences referenced on historical assessment reports.

A total of 14 samples were collected from both bedrock and loose material located proximal to historical trenches and pits. Mineralization encountered during the program was associated with east to east-northeast orientated narrow calcite +/- quartz veins estimated to be up to 30 cm in width, and containing values of up to 0.73 g/t Au, 2,670 g/t Ag, 3.15% Co, 38.4% Cu, 0.28% Ni, 1.51% Zn, and 0.9% Bi, with a sample highlight (#860478) that returned 2,670 g/t Ag, 0.45% Co, 38.4% Cu, and 0.23% Zn. Due to the high Cu values in the sample, the presence of chalcocite or possibly native Cu in addition to chalcopyrite and bornite are likely present in the sample.

Selected results are provided in Table 2, and sample descriptions and assay certificates can be found in Appendices II and III respectively. Appendix IV contains photographs of samples in the field, and Map 1, located in the back pocket of this report, displays the sample locations with respect to claim tenure. Figure 4 displays the GPS tracks from the work program.

Note that grab samples are selective by nature, and values reported may not be representative of mineralized zones.

All samples were shipped to Activation Laboratories in Timmins, Ontario. Once the samples are received and dried at the laboratory, the samples are then crushed to 80% passing 10 mesh (2 mm) and then split into 250 g sub-sample size using a Jones Riffle Splitter. These sub-samples are then pulverized (using rings and pucks to 90% passing 200 mesh (0.075 mm) and homogenized prior to analysis. Gold analysis is performed using a 30 g charge by fire assay using lead collection with a silver inquart (1A2 package). The

lower detection limit is 5 ppb, and the upper detection limit is 5000 ppb for this analysis. Results for the 38 element ICP analysis (1E3 package) includes digesting 0.5 g of the sample with aqua regia for 2 hours at 95 °C. The sample is cooled and then diluted with deionized water. The samples are then analyzed using an Agilent 700 series ICP for the 38-element suite. QC for the digestion is 15% for each batch, 2 method reagent blanks, 6 in-house controls, 8 sample duplicates and 5 certified reference materials. An additional 20% QC is performed as part of the instrumental analysis to ensure quality in the areas of instrumental drift. If over limits for base metals are encountered, a sodium peroxide fusion, acid dissolution followed by ICP-OES is completed.

Table 2: 2021 Reconnaissance Prospecting Results

| Sample | Au (ppb) | Ag (ppm) | Co (ppm) | Cu (ppm) | Ni (ppm) | Pb (ppm) | Zn (ppm) | Bi (ppm) |
|--------|----------|----------|----------|---------------|----------|----------|----------|----------|
| 860469 | 18 | 2.8 | 391 | 4440 | 37 | 17 | 39 | 17 |
| 860470 | 25 | 164 | 4700 | 89200 | 878 | 20 | 16 | 630 |
| 860471 | 733 | 66.7 | 31500 | 34100 | 2840 | 84 | 15 | 9000 |
| 860472 | 9 | 1.6 | 258 | 1920 | 46 | 5 | 18 | 7 |
| 860473 | 8 | 27.8 | 340 | 21000 | 108 | 9 | 19 | 139 |
| 860474 | < 5 | 2.5 | 1490 | 212 | 278 | 36 | 108 | 11 |
| 860475 | 7 | 2.2 | 97 | 138 | 16 | 71 | 47 | 9 |
| 860476 | 12 | < 0.2 | 20 | 142 | 43 | 14 | 58 | < 2 |
| 860477 | 8 | 0.2 | 65 | 48 | 29 | 6 | 30 | < 2 |
| 860478 | 29 | 2670 | 4470 | 384000 | 436 | 32 | 2260 | < 2 |
| 860479 | 12 | 120 | 1120 | 47800 | 149 | 133 | 452 | 5 |
| 860480 | 43 | 133 | 18900 | 11700 | 2770 | 52 | 143 | 59 |
| 860481 | 92 | 446 | 13500 | 55400 | 1660 | 20 | 77 | 74 |
| 860482 | 32 | 142 | 18700 | 30600 | 2550 | 374 | 15100 | 39 |

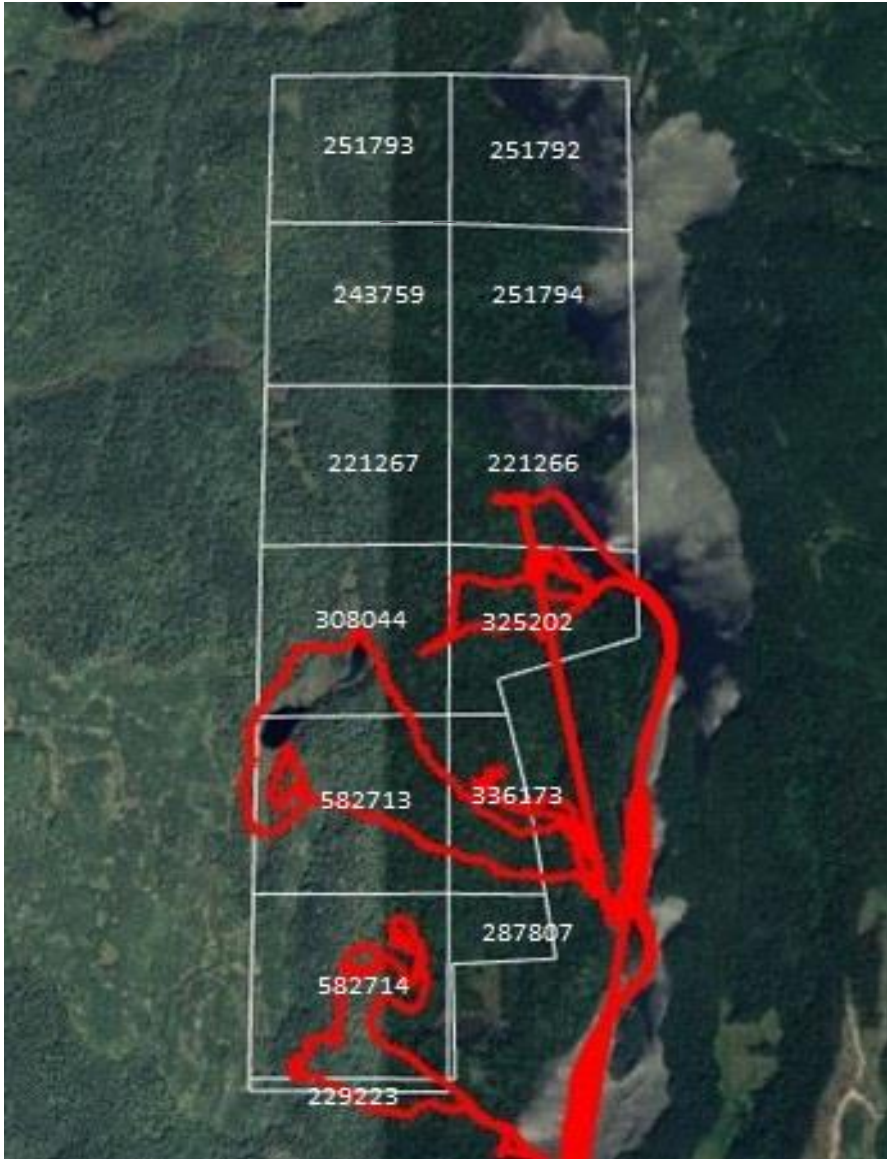


Figure 4: GPS tracks from the 2021 prospecting program.

6.0 CONCLUSIONS & RECOMMENDATIONS

A total of 14 samples were collected from numerous trenches and pits on the Property that had not been sampled in 2018. All of the samples collected were highly anomalous in Ag, Co, Cu, Ni, and to a lesser extent Pb, Zn, Bi, and Au. Mineralization is associated with narrow, east to east-northeast orientated calcite +/- quartz veins up to 30 cm in width, and are representative of silver-arsenide veins historically mined in the Cobalt, Elk Lake, and Gowganda Mining Camps, also is also referred to as five-element veins (Ni-Co-As-Ag-Bi).

Further work on the Property is recommended. A magnetic geophysical survey should be considered, followed by additional prospecting, trenching, and geological mapping on the Property prior to any consideration for diamond drilling. Significant potential for extending or discovering new veins also exists to the east of the Property where the Nipissing Diabase, although faulted, is interpreted to continue to dip under the eastern shoreline of Bloom Lake where it is obscured by overlying Huronian sedimentary rocks. The upper part of the diabase sill can be targeted by diamond drilling.

8.0 REFERENCES

Ayer, J.A. and Chartrand, J.E. 2011. Geological compilation of the Abitibi greenstone belt; Ontario Geological Survey, Miscellaneous Release—Data 282.

Burrows, A.G. 1926. Gowganda Silver Area (Fourth Report, Revised), Thirty-fifth Annual Report of the Department of Mines, Vol XXXV, Part III.

Crossley, J.D. 1998. Report on the Geology of Claim No. 1200357, Bloom Lake, Morel Township, Kirkland Lake District.

Google Earth/Maxar Technologies. 2022.

Howe, A.C.A. 1963. Geology of the Solid Silver Mines Limited Haultain and Morel Township Properties, Gowganda Silver Area, Montreal River Mining Division, Ontario.

Ministry of Northern Development and Mines; Geology of Ontario, Assessment File Research Information (AFRI) found at www.geologyontario.mndm.gov.on.ca

Sergiades, A.O. 1968. Silver Cobalt Calcite Vein Deposits of Ontario, Ontario Department of Mines.

Thompson, R. 1959. Report on Pollard Bloom Lake Group, Morel Twp. Montreal River Mining Division. Ontario Department of Mines.

Appendix I

Statement of Qualifications

Statement of Qualifications

I, Joerg Martin Kleinboeck of 147 Lakeside Drive, North Bay, Ontario, do hereby certify that:

I am a graduate of Laurentian University, Sudbury, Ontario with a B.Sc. Geology, 2000, and have been practising my profession as a geologist since.

I am a member with the Association of Professional Geoscientists of Ontario (#1411).

I hold no interests in the securities of Pathfinder Resources Ltd.



The image shows a handwritten signature in cursive script, which appears to read 'Joerg M. Kleinboeck'. To the right of the signature is a circular professional seal. The seal contains a stylized flower or star symbol in the center. The text around the inner border of the seal reads 'PROFESSIONAL GEOSCIENTIST'. Below the symbol, it says 'JOERG M. KLEINBOECK' and 'PRACTISING MEMBER'. At the bottom of the seal, it says '1411' and 'ONTARIO'.

Joerg Martin Kleinboeck
JMK Exploration Consulting
February 7th, 2022
North Bay, Ontario

Appendix II

Sample Descriptions

| Property | Date | Sample | Easting | Northing | Rock Type | Mineralization |
|------------|-----------|--------|---------|----------|-------------------|---|
| Bloom Lake | 3/10/2021 | 860469 | 524462 | 5289431 | Nipissing Diabase | 2-3% chalcopyrite, cobalt bloom, and malachite |
| Bloom Lake | 3/10/2021 | 860470 | 524566 | 5289423 | Nipissing Diabase | 2% bornite, chalcopyrite, malachite |
| Bloom Lake | 3/10/2021 | 860471 | 524570 | 5289422 | Nipissing Diabase | cobalt bloom along weathered surfaces |
| Bloom Lake | 3/10/2021 | 860472 | 524591 | 5289450 | Nipissing Diabase | 2-3% chalcopyrite, cobalt bloom, and malachite |
| Bloom Lake | 3/10/2021 | 860473 | 524595 | 5289448 | Nipissing Diabase | 2-3% chalcopyrite, cobalt bloom, and malachite |
| Bloom Lake | 3/10/2021 | 860474 | 524564 | 5289443 | Nipissing Diabase | cobalt bloom along weathered surfaces |
| Bloom Lake | 3/10/2021 | 860475 | 524564 | 5289443 | Nipissing Diabase | 2-3% chalcopyrite |
| Bloom Lake | 5/10/2021 | 860476 | 524251 | 5288430 | Nipissing Diabase | no visible mineralization |
| Bloom Lake | 5/10/2021 | 860477 | 524434 | 5288824 | Nipissing Diabase | no visible mineralization |
| Bloom Lake | 6/10/2021 | 860478 | 524477 | 5289626 | Nipissing Diabase | 1% bornite, chalcopyrite, and chalcocite? |
| Bloom Lake | 6/10/2021 | 860479 | 524476 | 5289625 | Nipissing Diabase | 1% bornite and chalcopyrite |
| Bloom Lake | 6/10/2021 | 860480 | 524477 | 5289628 | Nipissing Diabase | 1% chalcopyrite, cobalt bloom |
| Bloom Lake | 6/10/2021 | 860481 | 524474 | 5289615 | Nipissing Diabase | 2-3% bornite, chalcopyrite, along with cobalt bloom |
| Bloom Lake | 6/10/2021 | 860482 | 524480 | 5289627 | Nipissing Diabase | 2-3% bornite, chalcopyrite, along with cobalt bloom |
| Bloom Lake | | | 524011 | 5288140 | | |
| Bloom Lake | | | 524031 | 5288188 | | |
| Bloom Lake | | | 524150 | 5288363 | | |
| Bloom Lake | | | 524449 | 5288835 | | |
| Bloom Lake | | | 524452 | 5288831 | | |
| Bloom Lake | | | 524453 | 5288828 | | |
| Bloom Lake | | | 524562 | 5289431 | | |

Appendix III

Assay Certificate



Report No.: A21-19102
 Report Date: 10-Jan-22
 Date Submitted: 12-Oct-21
 Your Reference: Bloom Lake

JMK Exploration Consulting
 147 Lakeside Dr.
 North Bay ON P1A 3E1
 Canada

ATTN: Joerg Kleinboeck

CERTIFICATE OF ANALYSIS

14 Core samples were submitted for analysis.

| The following analytical package(s) were requested: | | Testing Date: |
|---|---------------------------------|---------------------|
| 1A2-Timmins | QOP AA-Au (Au - Fire Assay AA) | 2021-10-27 17:41:11 |
| 1E3-Timmins | QOP AquaGeo (Aqua Regia ICPOES) | 2021-12-16 12:01:57 |

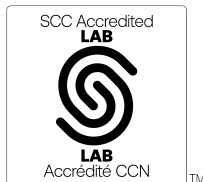
REPORT **A21-19102**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3.

Values which exceed the upper limit should be assayed for accurate numbers.



LabID: 709

ACTIVATION LABORATORIES LTD.
 1752 Riverside Drive, Timmins, Ontario, Canada, P4R 1N1
 TELEPHONE +705 264-0123 or +1.888.228.5227 FAX +1.905.648.9613
 E-MAIL Timmins@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

Emmanuel Esemé , Ph.D.
 Quality Control Coordinator

Results

Activation Laboratories Ltd.

Report: A21-19102

| Analyte Symbol | Au | Ag | Cd | Cu | Mn | Mo | Ni | Pb | Zn | Al | As | B | Ba | Be | Bi | Ca | Co | Cr | Fe | Ga | Hg | K | La |
|----------------|-------|--------|--------|---------|--------|--------|--------|--------|---------|--------|---------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|
| Unit Symbol | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | % | ppm | ppm | % | ppm |
| Lower Limit | 5 | 0.2 | 0.5 | 1 | 5 | 1 | 1 | 2 | 2 | 0.01 | 2 | 10 | 10 | 0.5 | 2 | 0.01 | 1 | 1 | 0.01 | 10 | 1 | 0.01 | 10 |
| Method Code | FA-AA | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| 860469 | 18 | 2.8 | < 0.5 | 4440 | 596 | 2 | 37 | 17 | 39 | 1.49 | 414 | < 10 | 15 | 0.9 | 17 | 3.49 | 391 | 2 | 4.76 | < 10 | < 1 | 0.06 | 31 |
| 860470 | 25 | > 100 | < 0.5 | > 10000 | 1160 | 102 | 878 | 20 | 16 | 1.22 | 8460 | < 10 | < 10 | < 0.5 | 630 | 4.30 | 4700 | < 1 | 5.38 | < 10 | < 1 | < 0.01 | 21 |
| 860471 | 733 | 66.7 | < 0.5 | > 10000 | 1180 | 332 | 2840 | 84 | 15 | 0.81 | > 10000 | 19 | < 10 | < 0.5 | 9000 | 4.40 | > 10000 | < 1 | 4.16 | < 10 | 1 | < 0.01 | 25 |
| 860472 | 9 | 1.6 | < 0.5 | 1920 | 517 | 5 | 46 | 5 | 18 | 1.15 | 373 | < 10 | 12 | < 0.5 | 7 | 2.98 | 258 | 2 | 4.11 | < 10 | < 1 | 0.04 | 15 |
| 860473 | 8 | 27.8 | < 0.5 | > 10000 | 557 | 33 | 108 | 9 | 19 | 1.46 | 993 | < 10 | 11 | < 0.5 | 139 | 1.18 | 340 | 2 | 5.19 | < 10 | < 1 | 0.01 | 17 |
| 860474 | < 5 | 2.5 | < 0.5 | 212 | 651 | 14 | 278 | 36 | 108 | 3.78 | 1800 | < 10 | < 10 | 0.8 | 11 | 0.71 | 1490 | 15 | 8.98 | 20 | < 1 | < 0.01 | < 10 |
| 860475 | 7 | 2.2 | < 0.5 | 138 | 623 | 21 | 16 | 71 | 47 | 1.02 | 138 | < 10 | 18 | < 0.5 | 9 | 2.35 | 97 | 1 | 4.80 | < 10 | < 1 | 0.10 | 15 |
| 860476 | 12 | < 0.2 | < 0.5 | 142 | 419 | < 1 | 43 | 14 | 58 | 2.42 | 5 | < 10 | 47 | < 0.5 | < 2 | 2.21 | 20 | 42 | 3.23 | < 10 | < 1 | 0.30 | < 10 |
| 860477 | 8 | 0.2 | < 0.5 | 48 | 1560 | < 1 | 29 | 6 | 30 | 1.91 | 73 | < 10 | 16 | < 0.5 | < 2 | 5.28 | 65 | 1 | 5.66 | 10 | < 1 | 0.10 | 22 |
| 860478 | 29 | > 100 | 2.4 | > 10000 | 550 | 126 | 436 | 32 | 2260 | 0.22 | 7900 | < 10 | < 10 | < 0.5 | < 2 | 4.89 | 4470 | < 1 | 5.47 | < 10 | < 1 | < 0.01 | < 10 |
| 860479 | 12 | > 100 | < 0.5 | > 10000 | 582 | 76 | 149 | 133 | 452 | 1.23 | 1850 | < 10 | < 10 | < 0.5 | 5 | 3.79 | 1120 | < 1 | 5.65 | < 10 | < 1 | 0.03 | 41 |
| 860480 | 43 | > 100 | < 0.5 | > 10000 | 1330 | 125 | 2770 | 52 | 143 | 1.05 | > 10000 | 14 | < 10 | 0.5 | 59 | 8.36 | > 10000 | < 1 | 3.06 | < 10 | < 1 | < 0.01 | 40 |
| 860481 | 92 | > 100 | < 0.5 | > 10000 | 1040 | 95 | 1660 | 20 | 77 | 1.08 | > 10000 | < 10 | < 10 | 0.5 | 74 | 7.62 | > 10000 | < 1 | 3.67 | < 10 | < 1 | 0.01 | 33 |
| 860482 | 32 | > 100 | 16.9 | > 10000 | 1060 | 103 | 2550 | 374 | > 10000 | 0.68 | > 10000 | 12 | < 10 | 0.5 | 39 | 8.40 | > 10000 | < 1 | 3.41 | < 10 | < 1 | < 0.01 | 22 |

| Analyte Symbol | Mg | Na | P | S | Sb | Sc | Sr | Ti | Th | Te | Tl | U | V | W | Y | Zr |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Unit Symbol | % | % | % | % | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.01 | 0.001 | 0.001 | 0.01 | 2 | 1 | 1 | 0.01 | 20 | 1 | 2 | 10 | 1 | 10 | 1 | 1 |
| Method Code | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| 860469 | 1.35 | 0.079 | 0.060 | 0.42 | 2 | 15 | 15 | 0.21 | < 20 | 2 | < 2 | < 10 | 123 | < 10 | 27 | 23 |
| 860470 | 1.34 | 0.045 | 0.110 | 1.80 | 16 | 17 | 14 | 0.05 | < 20 | 2 | 14 | < 10 | 80 | < 10 | 26 | 15 |
| 860471 | 0.88 | 0.037 | 0.058 | 2.05 | 148 | 11 | 16 | 0.03 | < 20 | < 1 | 90 | < 10 | 67 | < 10 | 26 | 18 |
| 860472 | 1.05 | 0.064 | 0.044 | 0.23 | < 2 | 11 | 10 | 0.05 | < 20 | < 1 | < 2 | < 10 | 47 | < 10 | 16 | 9 |
| 860473 | 1.44 | 0.079 | 0.043 | 1.07 | < 2 | 14 | 5 | 0.09 | < 20 | < 1 | < 2 | < 10 | 107 | < 10 | 17 | 28 |
| 860474 | 4.31 | 0.043 | 0.024 | 0.07 | 4 | 19 | 3 | 0.07 | < 20 | < 1 | 4 | < 10 | 235 | < 10 | 5 | 13 |
| 860475 | 0.80 | 0.073 | 0.053 | 0.11 | < 2 | 11 | 14 | 0.22 | < 20 | < 1 | < 2 | < 10 | 294 | < 10 | 20 | 22 |
| 860476 | 1.13 | 0.281 | 0.023 | 0.08 | < 2 | 6 | 31 | 0.08 | < 20 | 1 | < 2 | < 10 | 108 | < 10 | 4 | 6 |
| 860477 | 1.96 | 0.082 | 0.037 | 0.03 | 2 | 18 | 24 | 0.12 | < 20 | < 1 | < 2 | < 10 | 300 | < 10 | 24 | 16 |
| 860478 | 0.27 | 0.015 | 0.098 | 1.49 | 13 | 5 | 16 | < 0.01 | < 20 | 10 | 13 | < 10 | 47 | < 10 | 13 | 2 |
| 860479 | 1.18 | 0.053 | 0.070 | 2.31 | 3 | 14 | 18 | 0.15 | < 20 | 2 | 3 | < 10 | 200 | < 10 | 29 | 40 |
| 860480 | 1.10 | 0.041 | 0.051 | 1.13 | 9 | 13 | 24 | 0.04 | < 20 | < 1 | 58 | < 10 | 149 | < 10 | 38 | 19 |
| 860481 | 1.09 | 0.041 | 0.046 | 1.08 | 7 | 13 | 24 | 0.09 | < 20 | < 1 | 38 | < 10 | 200 | < 10 | 33 | 25 |
| 860482 | 0.71 | 0.037 | 0.038 | 2.39 | 12 | 10 | 24 | 0.03 | < 20 | < 1 | 52 | < 10 | 87 | < 10 | 28 | 27 |

| Analyte Symbol | Au | Ag | Cd | Cu | Mn | Mo | Ni | Pb | Zn | Al | As | B | Ba | Be | Bi | Ca | Co | Cr | Fe | Ga | Hg | K | La |
|------------------------------|-------|--------|--------|--------|--------|--------|--------|----------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Unit Symbol | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | % | ppm | ppm | % | ppm |
| Lower Limit | 5 | 0.2 | 0.5 | 1 | 5 | 1 | 1 | 2 | 2 | 0.01 | 2 | 10 | 10 | 0.5 | 2 | 0.01 | 1 | 1 | 0.01 | 10 | 1 | 0.01 | 10 |
| Method Code | FA-AA | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| OREAS 134b (AQUA REGIA) Meas | | > 100 | 547 | 1240 | | | | > 5000 | > 10000 | | 219 | | | | | | 93 | | 11.0 | | | | |
| OREAS 134b (AQUA REGIA) Cert | | 204 | 563 | 1360 | | | | 133000 | 177000 | | 221 | | | | | | 110 | | 12.25 | | | | |
| OREAS 134b (AQUA REGIA) Meas | | > 100 | 546 | 1240 | | | | > 5000 | > 10000 | | 216 | | | | | | 92 | | 10.8 | | | | |
| OREAS 134b (AQUA REGIA) Cert | | 204 | 563 | 1360 | | | | 133000 | 177000 | | 221 | | | | | | 110 | | 12.25 | | | | |
| OREAS 134b (AQUA REGIA) Meas | | > 100 | 521 | 1200 | | | | > 5000 | > 10000 | | 207 | | | | | | 90 | | 10.6 | | | | |
| OREAS 134b (AQUA REGIA) Cert | | 204 | 563 | 1360 | | | | 133000 | 177000 | | 221 | | | | | | 110 | | 12.25 | | | | |
| OREAS 134b (AQUA REGIA) Meas | | > 100 | 519 | 1190 | | | | > 5000 | > 10000 | | 212 | | | | | | 91 | | 10.6 | | | | |
| OREAS 134b (AQUA REGIA) Cert | | 204 | 563 | 1360 | | | | 133000 | 177000 | | 221 | | | | | | 110 | | 12.25 | | | | |
| OREAS 133a (Aqua Regia) Meas | | 95.0 | 278 | 303 | | | | > 5000 | > 10000 | | 130 | | < 10 | | | | 20 | | 7.26 | | | | |
| OREAS 133a (Aqua Regia) Cert | | 97 | 297 | 324 | | | | 48600.00 | 106000.00 | | 140 | | 59 | | | | 23 | | 7.92 | | | | |
| OREAS 133a (Aqua Regia) Meas | | 93.5 | 278 | 291 | | | | > 5000 | > 10000 | | 131 | | < 10 | | | | 19 | | 7.18 | | | | |
| OREAS 133a (Aqua Regia) Cert | | 97 | 297 | 324 | | | | 48600.00 | 106000.00 | | 140 | | 59 | | | | 23 | | 7.92 | | | | |
| OREAS 133a (Aqua Regia) Meas | | 95.0 | 278 | 302 | | | | > 5000 | > 10000 | | 130 | | < 10 | | | | 20 | | 7.27 | | | | |
| OREAS 133a (Aqua Regia) Cert | | 97 | 297 | 324 | | | | 48600.00 | 106000.00 | | 140 | | 59 | | | | 23 | | 7.92 | | | | |
| OREAS 133a (Aqua Regia) Meas | | 91.1 | 284 | 271 | | | | > 5000 | > 10000 | | 129 | | < 10 | | | | 20 | | 6.77 | | | | |
| OREAS 133a (Aqua Regia) Cert | | 97 | 297 | 324 | | | | 48600.00 | 106000.00 | | 140 | | 59 | | | | 23 | | 7.92 | | | | |
| OREAS 922 (AQUA REGIA) Meas | | 1.0 | < 0.5 | 2300 | 787 | < 1 | 32 | 58 | 259 | 2.83 | 5 | | 72 | 0.6 | 11 | 0.39 | 18 | 44 | 5.46 | < 10 | | 0.43 | 36 |
| OREAS 922 (AQUA REGIA) Cert | | 0.851 | 0.28 | 2176 | 730 | 0.69 | 34.3 | 60 | 256 | 2.72 | 6.12 | | 70 | 0.65 | 10.3 | 0.324 | 19.4 | 40.7 | 5.05 | 7.62 | | 0.376 | 32.5 |
| OREAS 922 (AQUA REGIA) Meas | | 0.9 | < 0.5 | 2240 | 773 | < 1 | 39 | 59 | 256 | 2.76 | 5 | | 69 | 0.6 | 8 | 0.38 | 18 | 44 | 5.33 | < 10 | | 0.40 | 35 |
| OREAS 922 (AQUA REGIA) Cert | | 0.851 | 0.28 | 2176 | 730 | 0.69 | 34.3 | 60 | 256 | 2.72 | 6.12 | | 70 | 0.65 | 10.3 | 0.324 | 19.4 | 40.7 | 5.05 | 7.62 | | 0.376 | 32.5 |
| OREAS 923 (AQUA REGIA) Meas | | 1.6 | < 0.5 | 4450 | 880 | < 1 | 32 | 81 | 327 | 2.83 | 7 | | 58 | 0.5 | 17 | 0.38 | 21 | 40 | 6.19 | < 10 | | 0.35 | 32 |
| OREAS 923 (AQUA REGIA) Cert | | 1.62 | 0.40 | 4248 | 850 | 0.84 | 32.7 | 81 | 335 | 2.80 | 7.07 | | 54 | 0.61 | 21.8 | 0.326 | 22.2 | 39.4 | 5.91 | 8.01 | | 0.322 | 30.0 |

| Analyte Symbol | Au | Ag | Cd | Cu | Mn | Mo | Ni | Pb | Zn | Al | As | B | Ba | Be | Bi | Ca | Co | Cr | Fe | Ga | Hg | K | La |
|-------------------------------|---------|--------|--------|---------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Unit Symbol | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | % | ppm | ppm | % | ppm |
| Lower Limit | 5 | 0.2 | 0.5 | 1 | 5 | 1 | 1 | 2 | 2 | 0.01 | 2 | 10 | 10 | 0.5 | 2 | 0.01 | 1 | 1 | 0.01 | 10 | 1 | 0.01 | 10 |
| Method Code | FA-AA | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| Cert | | | | | | | | | | | | | | | | | | | | | | | |
| OREAS 923 (AQUA REGIA) Meas | | 1.5 | < 0.5 | 4410 | 877 | < 1 | 34 | 82 | 330 | 2.78 | 6 | | 57 | 0.5 | 16 | 0.38 | 20 | 43 | 6.12 | < 10 | | 0.34 | 32 |
| OREAS 923 (AQUA REGIA) Cert | | 1.62 | 0.40 | 4248 | 850 | 0.84 | 32.7 | 81 | 335 | 2.80 | 7.07 | | 54 | 0.61 | 21.8 | 0.326 | 22.2 | 39.4 | 5.91 | 8.01 | | 0.322 | 30.0 |
| OREAS 907 (Aqua Regia) Meas | | 1.4 | < 0.5 | 6370 | 338 | 5 | 7 | 34 | 141 | 1.08 | 36 | | 212 | 0.8 | 20 | 0.28 | 43 | 8 | 8.29 | 10 | | 0.32 | 37 |
| OREAS 907 (Aqua Regia) Cert | | 1.30 | 0.540 | 6370 | 330 | 5.64 | 4.74 | 34.1 | 139 | 0.945 | 37.0 | | 225 | 0.870 | 22.3 | 0.280 | 43.7 | 8.59 | 8.18 | 14.7 | | 0.286 | 36.1 |
| OREAS 907 (Aqua Regia) Meas | | 1.3 | < 0.5 | 6660 | 348 | 5 | 7 | 33 | 144 | 1.05 | 36 | | 210 | 0.8 | 20 | 0.29 | 45 | 11 | 8.62 | 10 | | 0.30 | 37 |
| OREAS 907 (Aqua Regia) Cert | | 1.30 | 0.540 | 6370 | 330 | 5.64 | 4.74 | 34.1 | 139 | 0.945 | 37.0 | | 225 | 0.870 | 22.3 | 0.280 | 43.7 | 8.59 | 8.18 | 14.7 | | 0.286 | 36.1 |
| Oreas 621 (Aqua Regia) Meas | | 74.4 | 279 | 3850 | 548 | 12 | 25 | > 5000 | > 10000 | 1.69 | 77 | | | < 0.5 | 2 | 1.70 | 28 | 31 | 3.63 | < 10 | 4 | 0.33 | 19 |
| Oreas 621 (Aqua Regia) Cert | | 68.0 | 278 | 3660 | 520 | 13.3 | 25.8 | 13600 | 51700 | 1.60 | 75.0 | | | 0.530 | 3.85 | 1.65 | 27.9 | 31.3 | 3.43 | 9.29 | 3.93 | 0.333 | 19.4 |
| Oreas 621 (Aqua Regia) Meas | | 72.2 | 284 | 3700 | 532 | 11 | 24 | > 5000 | > 10000 | 1.62 | 79 | | | < 0.5 | < 2 | 1.65 | 28 | 32 | 3.53 | < 10 | 4 | 0.31 | 19 |
| Oreas 621 (Aqua Regia) Cert | | 68.0 | 278 | 3660 | 520 | 13.3 | 25.8 | 13600 | 51700 | 1.60 | 75.0 | | | 0.530 | 3.85 | 1.65 | 27.9 | 31.3 | 3.43 | 9.29 | 3.93 | 0.333 | 19.4 |
| Oreas 621 (Aqua Regia) Meas | | 75.7 | 284 | 3880 | 550 | 12 | 25 | > 5000 | > 10000 | 1.71 | 75 | | | < 0.5 | < 2 | 1.70 | 29 | 32 | 3.68 | < 10 | 4 | 0.33 | 20 |
| Oreas 621 (Aqua Regia) Cert | | 68.0 | 278 | 3660 | 520 | 13.3 | 25.8 | 13600 | 51700 | 1.60 | 75.0 | | | 0.530 | 3.85 | 1.65 | 27.9 | 31.3 | 3.43 | 9.29 | 3.93 | 0.333 | 19.4 |
| OREAS 239 (Fire Assay) Meas | 3630 | | | | | | | | | | | | | | | | | | | | | | |
| OREAS 239 (Fire Assay) Cert | 3550 | | | | | | | | | | | | | | | | | | | | | | |
| OREAS 263 (Aqua Regia) Meas | | 0.2 | < 0.5 | 96 | 529 | < 1 | 73 | 36 | 130 | 1.69 | 28 | | 173 | 1.1 | 2 | 1.11 | 30 | 52 | 4.07 | < 10 | < 1 | 0.33 | |
| OREAS 263 (Aqua Regia) Cert | | 0.285 | 0.270 | 87.0 | 490 | 0.570 | 72.0 | 34.0 | 127 | 1.29 | 30.8 | | 175 | 1.22 | 0.570 | 1.03 | 31.0 | 48.0 | 3.68 | 4.92 | 0.170 | 0.288 | |
| OREAS 130 (Aqua Regia) Meas | | 6.5 | 27.9 | 228 | 1570 | 7 | 34 | 1240 | > 10000 | 1.11 | 201 | | | | 5 | 1.60 | 25 | 23 | 7.19 | < 10 | < 1 | 0.49 | 23 |
| OREAS 130 (Aqua Regia) Cert | | 6.27 | 28.8 | 226 | 1630 | 8.25 | 35.2 | 1300 | 16900 | 1.10 | 205 | | | 3.05 | 1.81 | 27.1 | 23.2 | 7.27 | 4.78 | 0.670 | 0.500 | 26.4 | |
| Oreas 623 (Aqua Regia) Meas | | 17.0 | 46.1 | > 10000 | 502 | 5 | 15 | 2120 | 8660 | 1.57 | 62 | | | < 0.5 | 6 | 0.95 | 186 | 15 | 11.5 | < 10 | < 1 | 0.15 | 15 |
| Oreas 623 (Aqua Regia) Cert | | 20.4 | 52.0 | 17200 | 570 | 8.38 | 15.6 | 2520 | 10100 | 1.80 | 76.0 | | | 0.370 | 16.9 | 1.09 | 216 | 19.4 | 13.0 | 11.9 | 0.830 | 0.175 | 17.9 |
| Oreas E1336 (Fire Assay) Meas | 529 | | | | | | | | | | | | | | | | | | | | | | |
| Oreas E1336 (Fire Assay) Cert | 510.000 | | | | | | | | | | | | | | | | | | | | | | |
| 860473 Orig | | 29.0 | < 0.5 | > 10000 | 566 | 33 | 110 | 9 | 19 | 1.47 | 994 | < 10 | 12 | < 0.5 | 144 | 1.20 | 343 | 2 | 5.30 | < 10 | < 1 | 0.01 | 17 |
| 860473 Dup | | 26.6 | < 0.5 | > 10000 | 548 | 33 | 106 | 9 | 20 | 1.45 | 993 | < 10 | 11 | < 0.5 | 134 | 1.16 | 337 | 2 | 5.08 | < 10 | < 1 | 0.01 | 16 |
| Method Blank | 6 | | | | | | | | | | | | | | | | | | | | | | |
| Method Blank | < 5 | | | | | | | | | | | | | | | | | | | | | | |
| Method Blank | | 0.3 | < 0.5 | < 1 | < 5 | < 1 | < 1 | < 2 | < 2 | < 0.01 | < 2 | < 10 | < 10 | < 0.5 | < 2 | < 0.01 | < 1 | < 1 | < 0.01 | < 10 | < 1 | < 0.01 | < 10 |
| Method Blank | | < 0.2 | < 0.5 | < 1 | < 5 | < 1 | < 1 | < 2 | < 2 | < 0.01 | < 2 | < 10 | < 10 | < 0.5 | < 2 | < 0.01 | < 1 | < 1 | < 0.01 | < 10 | < 1 | < 0.01 | < 10 |
| Method Blank | | < 0.2 | < 0.5 | < 1 | < 5 | < 1 | < 1 | < 2 | < 2 | < 0.01 | < 2 | < 10 | < 10 | < 0.5 | < 2 | < 0.01 | < 1 | < 1 | < 0.01 | < 10 | < 1 | < 0.01 | < 10 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Analyte Symbol | Au | Ag | Cd | Cu | Mn | Mo | Ni | Pb | Zn | Al | As | B | Ba | Be | Bi | Ca | Co | Cr | Fe | Ga | Hg | K | La |
| Unit Symbol | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | % | ppm | ppm | % | ppm |
| Lower Limit | 5 | 0.2 | 0.5 | 1 | 5 | 1 | 1 | 2 | 2 | 0.01 | 2 | 10 | 10 | 0.5 | 2 | 0.01 | 1 | 1 | 0.01 | 10 | 1 | 0.01 | 10 |
| Method Code | FA-AA | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| Method Blank | | < 0.2 | < 0.5 | 2 | < 5 | < 1 | < 1 | < 2 | < 2 | < 0.01 | < 2 | < 10 | < 10 | < 0.5 | < 2 | < 0.01 | < 1 | < 1 | < 0.01 | < 10 | < 1 | < 0.01 | < 10 |

| Analyte Symbol | Mg | Na | P | S | Sb | Sc | Sr | Ti | Th | Te | Tl | U | V | W | Y | Zr |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Unit Symbol | % | % | % | % | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.01 | 0.001 | 0.001 | 0.01 | 2 | 1 | 1 | 0.01 | 20 | 1 | 2 | 10 | 1 | 10 | 1 | 1 |
| Method Code | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| OREAS 134b (AQUA REGIA) Meas | | | | 18.0 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Cert | | | | 19.31 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Meas | | | | 18.3 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Cert | | | | 19.31 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Meas | | | | 16.5 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Cert | | | | 19.31 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Meas | | | | 17.0 | | | | | | | | | | | | |
| OREAS 134b (AQUA REGIA) Cert | | | | 19.31 | | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Meas | | | | 10.9 | 132 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Cert | | | | 10.7 | 147 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Meas | | | | 9.61 | 130 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Cert | | | | 10.7 | 147 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Meas | | | | 10.7 | 133 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Cert | | | | 10.7 | 147 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Meas | | | | 8.23 | 125 | | | | | | | | | | | |
| OREAS 133a (Aqua Regia) Cert | | | | 10.7 | 147 | | | | | | | | | | | |
| OREAS 922 (AQUA REGIA) Meas | 1.35 | 0.033 | 0.063 | 0.38 | 3 | 3 | 15 | < 20 | | < 2 | < 10 | 33 | < 10 | 17 | 23 | |
| OREAS 922 (AQUA REGIA) Cert | 1.33 | 0.021 | 0.063 | 0.386 | 0.57 | 3.15 | 15.0 | 14.5 | | 0.14 | 1.98 | 29.4 | 1.12 | 16.0 | 22.3 | |
| OREAS 922 (AQUA REGIA) Meas | 1.34 | 0.033 | 0.062 | 0.39 | 3 | 3 | 15 | < 20 | | < 2 | < 10 | 32 | < 10 | 17 | 24 | |
| OREAS 922 (AQUA REGIA) Cert | 1.33 | 0.021 | 0.063 | 0.386 | 0.57 | 3.15 | 15.0 | 14.5 | | 0.14 | 1.98 | 29.4 | 1.12 | 16.0 | 22.3 | |
| OREAS 923 (AQUA REGIA) Meas | 1.41 | | 0.059 | 0.66 | 4 | 3 | 14 | < 20 | | < 2 | < 10 | 32 | < 10 | 15 | 24 | |
| OREAS 923 (AQUA REGIA) Meas | 1.43 | | 0.061 | 0.684 | 0.58 | 3.09 | 13.6 | 14.3 | | 0.12 | 1.80 | 30.6 | 1.96 | 14.3 | 22.5 | |

| Analyte Symbol | Mg | Na | P | S | Sb | Sc | Sr | Ti | Th | Te | Tl | U | V | W | Y | Zr |
|-------------------------------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Unit Symbol | % | % | % | % | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.01 | 0.001 | 0.001 | 0.01 | 2 | 1 | 1 | 0.01 | 20 | 1 | 2 | 10 | 1 | 10 | 1 | 1 |
| Method Code | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| Cert | | | | | | | | | | | | | | | | |
| OREAS 923 (AQUA REGIA) Meas | 1.39 | | 0.059 | 0.66 | 3 | 3 | 14 | | < 20 | | < 2 | < 10 | 32 | < 10 | 15 | 27 |
| OREAS 923 (AQUA REGIA) Cert | 1.43 | | 0.061 | 0.684 | 0.58 | 3.09 | 13.6 | | 14.3 | | 0.12 | 1.80 | 30.6 | 1.96 | 14.3 | 22.5 |
| OREAS 907 (Aqua Regia) Meas | 0.22 | 0.115 | 0.023 | 0.07 | 7 | 2 | 12 | 0.02 | < 20 | < 1 | < 2 | < 10 | 6 | < 10 | 6 | 23 |
| OREAS 907 (Aqua Regia) Cert | 0.221 | 0.0860 | 0.0240 | 0.0660 | 2.28 | 2.16 | 11.7 | 0.0170 | 8.04 | 0.230 | 0.120 | 2.15 | 5.12 | 0.980 | 6.52 | 43.7 |
| OREAS 907 (Aqua Regia) Meas | 0.23 | 0.118 | 0.024 | 0.07 | 6 | 2 | 12 | 0.02 | < 20 | < 1 | < 2 | < 10 | 6 | < 10 | 6 | 25 |
| OREAS 907 (Aqua Regia) Cert | 0.221 | 0.0860 | 0.0240 | 0.0660 | 2.28 | 2.16 | 11.7 | 0.0170 | 8.04 | 0.230 | 0.120 | 2.15 | 5.12 | 0.980 | 6.52 | 43.7 |
| Oreas 621 (Aqua Regia) Meas | 0.45 | 0.166 | 0.034 | 4.82 | 118 | 2 | 18 | | < 20 | | < 2 | < 10 | 11 | < 10 | 7 | 47 |
| Oreas 621 (Aqua Regia) Cert | 0.436 | 0.160 | 0.0335 | 4.50 | 107 | 2.20 | 18.9 | | 5.91 | | 0.770 | 1.63 | 10.9 | 1.00 | 6.87 | 55.0 |
| Oreas 621 (Aqua Regia) Meas | 0.44 | 0.171 | 0.033 | 4.62 | 122 | 2 | 17 | | < 20 | | < 2 | < 10 | 11 | < 10 | 7 | 45 |
| Oreas 621 (Aqua Regia) Cert | 0.436 | 0.160 | 0.0335 | 4.50 | 107 | 2.20 | 18.9 | | 5.91 | | 0.770 | 1.63 | 10.9 | 1.00 | 6.87 | 55.0 |
| Oreas 621 (Aqua Regia) Meas | 0.45 | 0.167 | 0.034 | 4.82 | 121 | 2 | 18 | | < 20 | | < 2 | < 10 | 12 | < 10 | 7 | 46 |
| Oreas 621 (Aqua Regia) Cert | 0.436 | 0.160 | 0.0335 | 4.50 | 107 | 2.20 | 18.9 | | 5.91 | | 0.770 | 1.63 | 10.9 | 1.00 | 6.87 | 55.0 |
| OREAS 239 (Fire Assay) Meas | | | | | | | | | | | | | | | | |
| OREAS 239 (Fire Assay) Cert | | | | | | | | | | | | | | | | |
| OREAS 263 (Aqua Regia) Meas | 0.63 | 0.103 | 0.042 | 0.13 | 10 | 4 | 18 | | < 20 | < 1 | < 2 | < 10 | 25 | | 12 | |
| OREAS 263 (Aqua Regia) Cert | 0.593 | 0.0790 | 0.0410 | 0.126 | 7.37 | 3.52 | 16.9 | | 10.6 | 0.210 | 0.530 | 1.28 | 22.8 | | 12.0 | |
| OREAS 130 (Aqua Regia) Meas | 0.88 | | 0.081 | 6.04 | 8 | 3 | 20 | 0.03 | < 20 | < 1 | 2 | < 10 | 34 | < 10 | 11 | 18 |
| OREAS 130 (Aqua Regia) Cert | 0.892 | | 0.0860 | 6.02 | 4.69 | 3.42 | 23.2 | 0.0270 | 10.3 | 0.170 | 5.92 | 8.36 | 33.1 | 1.40 | 13.0 | 19.0 |
| Oreas 623 (Aqua Regia) Meas | 0.98 | 0.072 | 0.041 | 8.04 | 21 | 4 | 12 | | < 20 | < 1 | < 2 | < 10 | 15 | < 10 | 6 | 40 |
| Oreas 623 (Aqua Regia) Cert | 1.11 | 0.0680 | 0.0400 | 8.75 | 20.2 | 4.63 | 14.2 | | 4.72 | 0.570 | 0.260 | 1.43 | 15.8 | 2.62 | 7.43 | 50.0 |
| Oreas E1336 (Fire Assay) Meas | | | | | | | | | | | | | | | | |
| Oreas E1336 (Fire Assay) Cert | | | | | | | | | | | | | | | | |
| 860473 Orig | 1.47 | 0.069 | 0.043 | 1.07 | 2 | 15 | 5 | 0.09 | < 20 | < 1 | < 2 | < 10 | 108 | < 10 | 17 | 30 |
| 860473 Dup | 1.41 | 0.090 | 0.043 | 1.07 | < 2 | 14 | 5 | 0.09 | < 20 | < 1 | < 2 | < 10 | 106 | < 10 | 17 | 26 |
| Method Blank | | | | | | | | | | | | | | | | |
| Method Blank | | | | | | | | | | | | | | | | |
| Method Blank | < 0.01 | 0.011 | < 0.001 | < 0.01 | < 2 | < 1 | < 1 | < 0.01 | < 20 | < 1 | < 2 | < 10 | < 1 | < 10 | < 1 | < 1 |
| Method Blank | < 0.01 | 0.011 | < 0.001 | < 0.01 | < 2 | < 1 | < 1 | < 0.01 | < 20 | < 1 | < 2 | < 10 | < 1 | < 10 | < 1 | < 1 |
| Method Blank | < 0.01 | 0.012 | < 0.001 | < 0.01 | < 2 | < 1 | < 1 | < 0.01 | < 20 | < 1 | < 2 | < 10 | < 1 | < 10 | < 1 | < 1 |

| | | | | | | | | | | | | | | | | |
|----------------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Analyte Symbol | Mg | Na | P | S | Sb | Sc | Sr | Ti | Th | Te | Tl | U | V | W | Y | Zr |
| Unit Symbol | % | % | % | % | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Lower Limit | 0.01 | 0.001 | 0.001 | 0.01 | 2 | 1 | 1 | 0.01 | 20 | 1 | 2 | 10 | 1 | 10 | 1 | 1 |
| Method Code | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP | AR-ICP |
| Method Blank | < 0.01 | 0.013 | < 0.001 | < 0.01 | < 2 | < 1 | < 1 | < 0.01 | < 20 | < 1 | < 2 | < 10 | < 1 | < 10 | < 1 | < 1 |



Report No.: A21-19102-Final2
Report Date: 21-Jan-22
Date Submitted: 12-Oct-21
Your Reference: Bloom Lake

JMK Exploration Consulting
147 Lakeside Dr.
North Bay ON P1A 3E1
Canada

ATTN: Joerg Kleinboeck

CERTIFICATE OF ANALYSIS

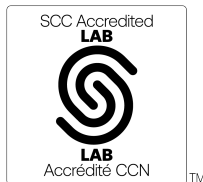
14 Core samples were submitted for analysis.

Table with 2 columns: Analytical package(s) requested, Testing Date. Row 1: 8-AR Timmins, QOP Assay (Code 8-Assays), 2022-01-20 08:34:53

REPORT A21-19102-Final2

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:



LabID: 709

ACTIVATION LABORATORIES LTD.
1752 Riverside Drive, Timmins, Ontario, Canada, P4R 1N1
TELEPHONE +705 264-0123 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Timmins@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

Handwritten signature of Emmanuel Eseme

Emmanuel Eseme, Ph.D.
Quality Control Coordinator

| Analyte Symbol | Ag | Co | Cu | Zn |
|----------------|---------|---------|---------|---------|
| Unit Symbol | ppm | % | % | % |
| Lower Limit | 3 | 0.003 | 0.001 | 0.001 |
| Method Code | ICP-OES | ICP-OES | ICP-OES | ICP-OES |
| 860470 | 164 | | 8.92 | |
| 860471 | | 3.15 | 3.41 | |
| 860473 | | | 2.10 | |
| 860478 | 2670 | | 38.4 | |
| 860479 | 120 | | 4.78 | |
| 860480 | 133 | 1.89 | 1.17 | |
| 860481 | 446 | 1.35 | 5.54 | |
| 860482 | 142 | 1.87 | 3.06 | 1.51 |

| Analyte Symbol | Ag | Co | Cu | Zn |
|------------------------------|---------|---------|---------|---------|
| Unit Symbol | ppm | % | % | % |
| Lower Limit | 3 | 0.003 | 0.001 | 0.001 |
| Method Code | ICP-OES | ICP-OES | ICP-OES | ICP-OES |
| PTM-1a Meas | 131 | 2.05 | 24.8 | |
| PTM-1a Cert | 135 | 2.05 | 24.96 | |
| OREAS 14P Meas | | 0.074 | 0.963 | |
| OREAS 14P Cert | | 0.0750 | 0.997 | |
| OREAS 134b (AQUA REGIA) Meas | 204 | 0.011 | 0.131 | 17.5 |
| OREAS 134b (AQUA REGIA) Cert | 204 | 0.011 | 0.136 | 17.7 |
| MP-1b Meas | 53 | | 3.09 | 17.1 |
| MP-1b Cert | 47 | | 3.07 | 16.7 |
| OREAS 13b (4-Acid) Meas | < 3 | 0.005 | 0.242 | 0.006 |
| OREAS 13b (4-Acid) Cert | 0.86 | | 0.2327 | 0.01 |
| CZN-4 Meas | 54 | 0.009 | 0.403 | 53.5 |
| CZN-4 Cert | 51 | 0.009 | 0.403 | 55.07 |
| Copper Shot Meas | | | 100 | |
| Copper Shot Cert | | | 99.999 | |
| Copper Shot Meas | | | 87.1 | |
| Copper Shot Cert | | | 99.999 | |
| PTC-1b Meas | 57 | 0.313 | 7.84 | 0.208 |
| PTC-1b Cert | 53 | 0.325 | 7.97 | 0.2083 |
| CCU-1e Meas | 205 | 0.033 | 23.0 | 3.02 |
| CCU-1e Cert | 205 | 0.0301 | 22.9 | 3.02 |
| OREAS 97 (AR Assay) Meas | | | 6.60 | |
| OREAS 97 (AR Assay) Cert | | | 6.28 | |
| 860473 Orig | | | 2.11 | |
| 860473 Dup | | | 2.09 | |
| Method Blank | < 3 | < 0.003 | < 0.001 | < 0.001 |

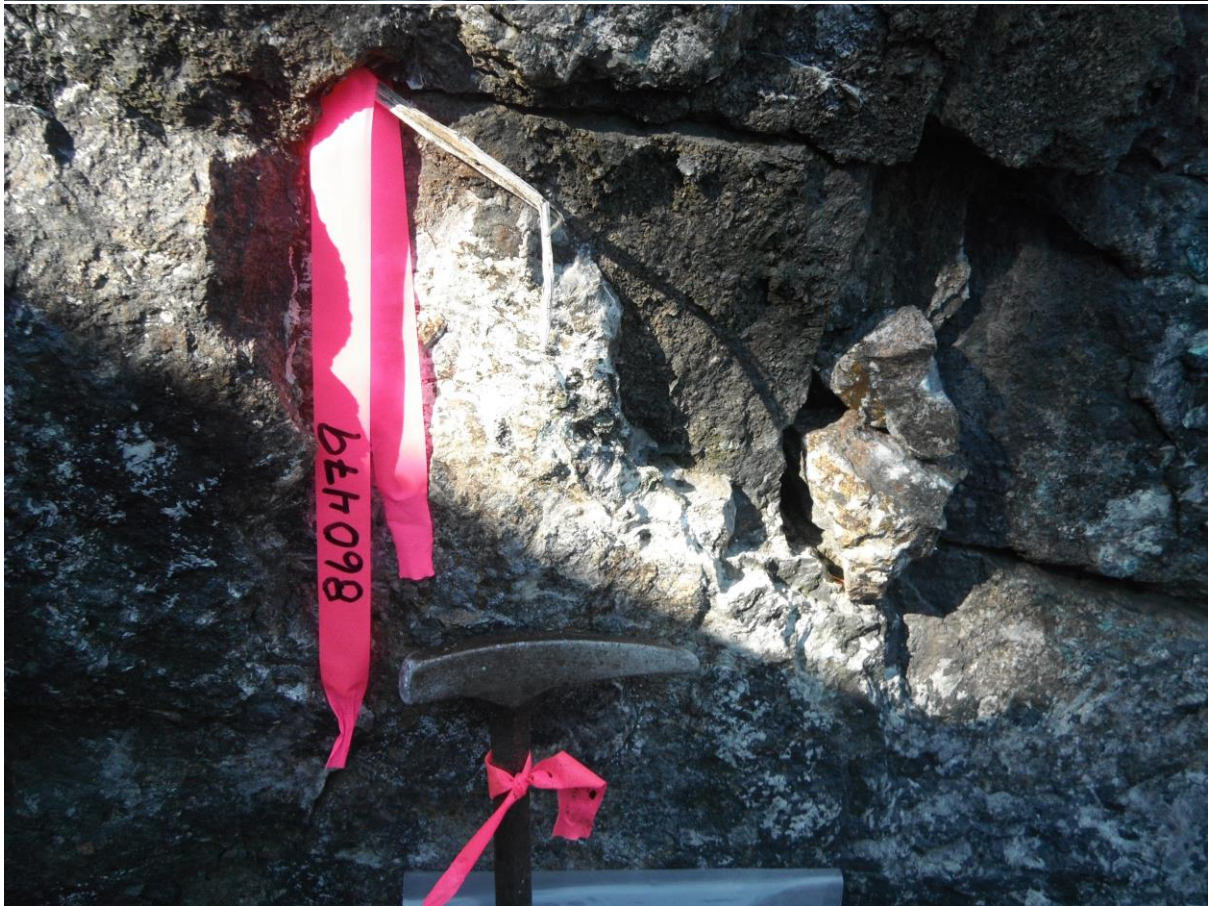
Appendix IV

Sample Pictures









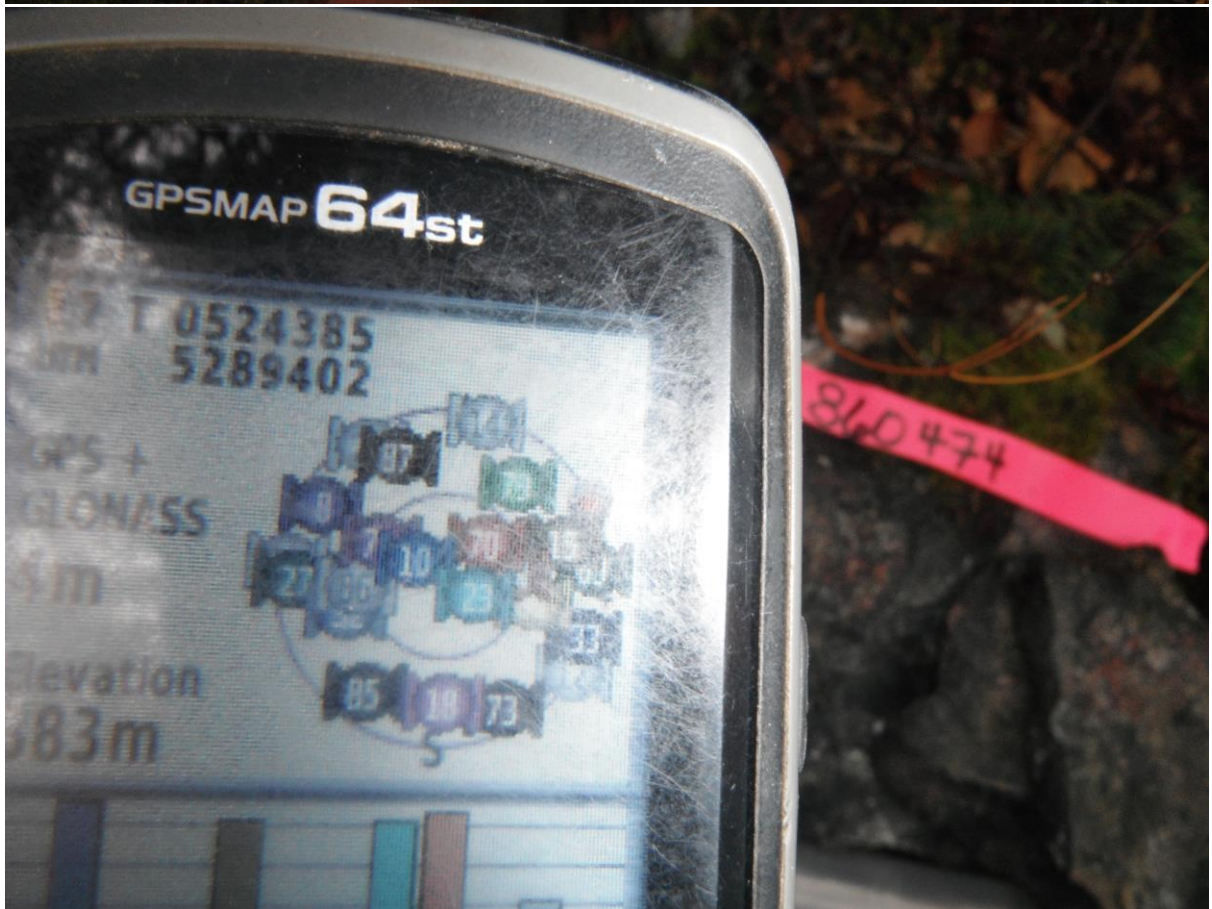


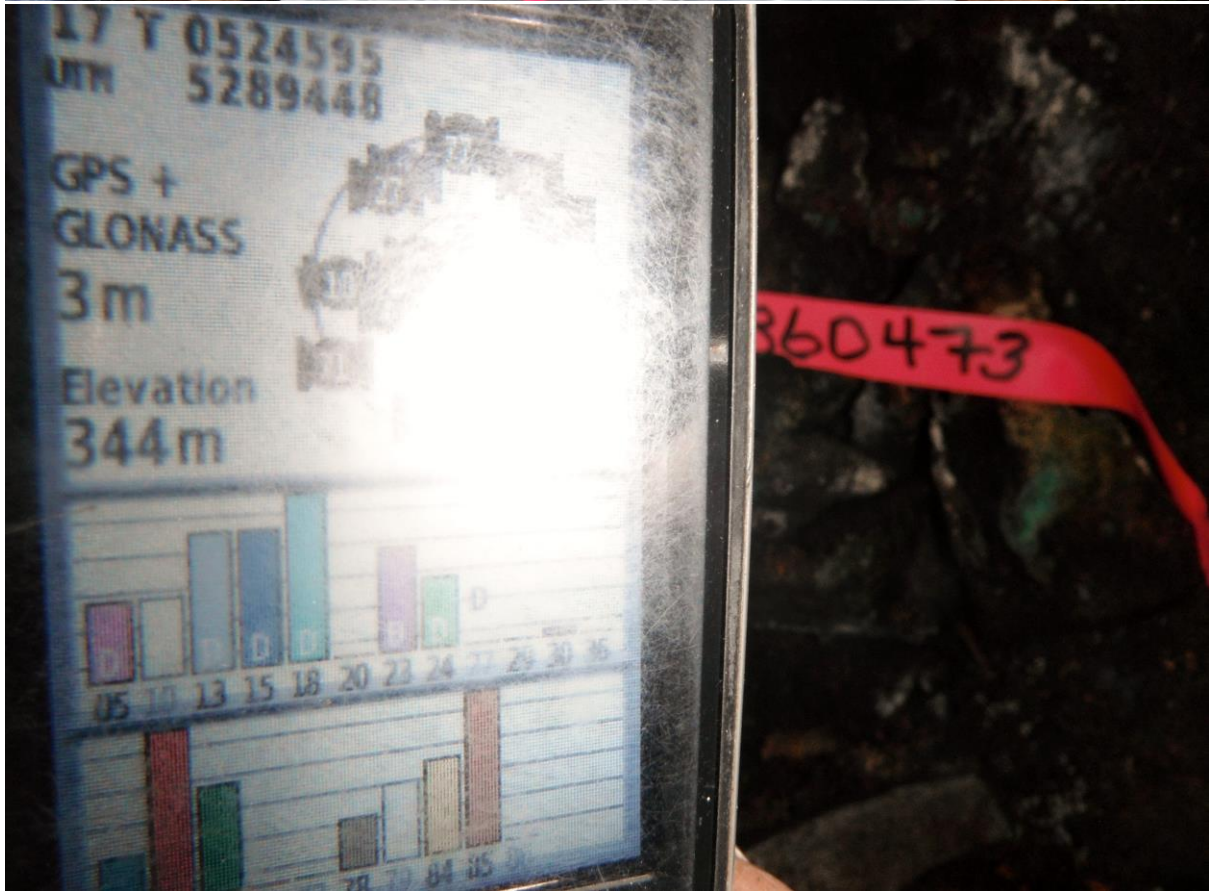










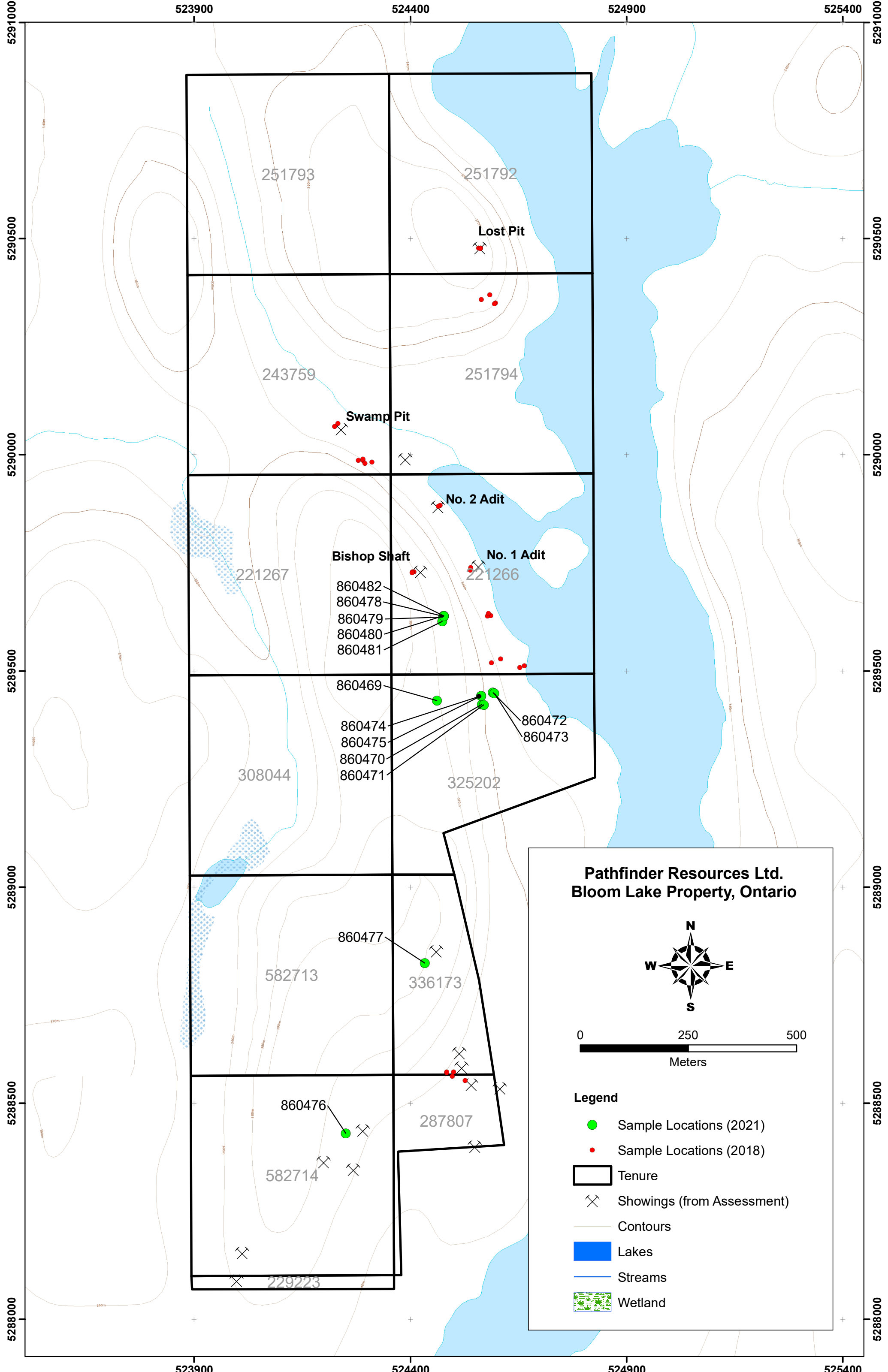




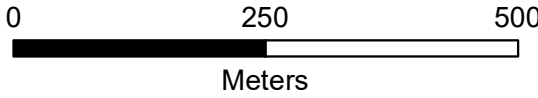
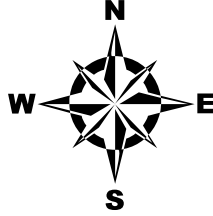




MAPS



**Pathfinder Resources Ltd.
Bloom Lake Property, Ontario**



Legend

- Sample Locations (2021)
- Sample Locations (2018)
- Tenure
- X Showings (from Assessment)
- Contours
- Lakes
- Streams
- Wetland

Property: Bloom Lake

Date: October 02 2021

Personnel: David Hiltz

Description of Daily Work: Travelled from Shining Tree to Bloom Lake Property. Sunny day .

Used quad to access the lake & had to fix washed out road & cleared brush to the edge of Bloom Lake.

Property: Bloom Lake

Date: October 03 2021

Personnel: David Hiltz, Joan Hiltz

Description of Daily Work: Travelled from Shining Tree to the property. Partly cloudy day.

Used the quad then the boat to access the property. Located areas of interests & showings.

Locating a 5m x 3m x 10m depth shaft. UTM 524562/5289431. I took samples of the shaft area.

Samples # 860469, 860470, 860471. Located several trenches & pits on strike 260` west from the shaft.

Trenches & Pits : UTM 524579/5289438. Sample # 860472. Also locating a small pit 2m x 4m x 1m deep UTM 524385/5289402. Sample # 860474. Traversed area for other showings locating calcite vein. UTM 524564/5289443. Sample # 860475.

Property Bloom Lake

Date: October 04 2021

Personnel: David Hiltz, Joan Hiltz

Description of Daily Work: Travelled from Shining Tree to the property. Cloudy day

Used the quad then the boat to access the property. Traversing a grid 100 m apart east & west, working north locating trenches & pits exposing Calcite no visible minerals. UTMS 524011/5288140,

524031/5288188, 524150/5288363.

Property: Bloom Lake

Date: October 05 2021

Personnel: David Hiltz, Joan Hiltz

Description of Daily Work: Travelled from Shining Tree to the property. Partly cloudy day.

Used the quad then the boat to access the property. Traversing east & west working north & locating large pits. UTM 524253/5288437. Sample # 860476. Also located deep pit with a 8cm vein of Calcite & other trenches in the area. Sample # 860477.

Property: Bloom Lake

Date: October 06 2021

Personnel : David Hiltz, Joan Hiltz

Description of Daily Work: Travelled from Shining Tree to the property. Sunny day.

Used the quad then the boat to access the property. Locating a large trench with a 30 cm Calcite vein with Cobalt Bloom, Bornite & Copper staining. Vein running 200` west. Sampling of the vein & sampling north & south walls of the trench. General location for sampling UTM 524477/5289626. Samples # 860478 - # 860482