

# 2010 Prospecting and Sampling Program

On

2.46929

# Frontline Gold's Shabumeni Project

Red Lake Mining Division

Goodall and Skinner Townships
Shabumeni Lake and Little Shabumeni Lake Areas

52 N/02 & 07

Prepared By:





#### **Abstract**

Between September 14<sup>th</sup> and September 29<sup>th</sup>, 2010 a prospecting and sampling program was carried out on Frontline Gold's Shabumeni Project by employees of Frontline Gold Inc. of Bedford, Nova Scotia with the help of one local prospector. Clark Exploration Consulting of Thunder Bay, Ontario was contracted by Frontline Gold Inc. of Bedford, Nova Scotia, to write and submit the assessment report on the 2010 Shabumeni Project prospecting and sampling program.

The Shabumeni Project is located approximately 80 kilometres east-northeast of the town of Red Lake, Ontario. The Project consists of 5 separate claim blocks (properties) each consisting of contiguous, unpatented mining claims for a grand total of 349 units covering 5,584 hectares. The properties are known as Confederation Lake (9 units), Shabumeni Lake (256 units), Shabumeni River (15 units), Skinner (39 units) and Woman River (30 units).

The focus of the 2010 exploration program was to follow up on prospective kimberlite targets identified by Jilbey in 2003 as well as on previously unknown mineral occurrences located in the 2007 exploration program on the Shabumeni Lake property. Prospecting was also carried out on the Woman River and Skinner properties in an attempt to locate new gold showings.

In the 2010 work program the Kimberlite targets were prospected but did not turn up any prospective float or outcrop with mafic-intermediate metavolcanics being located within 20 meters of both W19 and W20. While historical pits and trenches were located (along with old drillcore) 21 sample were taken with only one exceeding 100 ppb Au (sample 194047 at 580 ppb Au).

Sampling on the Skinner property returned the best results of the program with 3 samples assaying in the multi-gram range. Sample 194182 assayed 19.71 g/t Au, sample 194200 assayed 13.59 g/t Au and sample 194180 ran 6.83 g/t Au. Sample 194183 assayed at 900 ppb Au. The prospecting program revealed a series of historical trenches, with the two highest values coming from rusty quartz veins containing chalcopyrite and arsenopyrite in the same trench on the NE portion of claim 4254145.

A total of 6 samples were taken on the Woman River property on the first day. While good mineralization was noted in the form of chalcopyrite and arsenopyrite, no significant gold values were obtained with only 2 samples registering gold values just over detection limit.

While the 2010 surface program was successful in locating prospective mineralization, only a few samples off of the Skinner property contained significant gold values. It is the belief of the author that the Skinner and Shabumeni Lake properties remain highly prospective for gold mineralization, and that the Woman River claim block remains underexplored. Various recommendations are made for each property.

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#### 1.0 Introduction

Between September 14<sup>th</sup> and September 29<sup>th</sup>, 2010 a prospecting and sampling program was carried out on Frontline Gold's Shabumeni Project by employees of Frontline Gold Inc. of Bedford, Nova Scotia with the help of one local prospector. Clark Exploration Consulting of Thunder Bay, Ontario was contracted by Frontline Gold Inc. of Bedford, Nova Scotia, to write and submit the assessment report on the 2010 Shabumeni Project prospecting and sampling program.

The focus of the 2010 exploration program was to follow up on prospective kimberlite targets identified by Jilbey in 2003 and the previously unknown mineral occurrences located in the 2007 exploration program on the Shabumeni Lake property. Prospecting was also carried out on the Woman River and Skinner properties.

# 2.0 Property Description

The Shabumeni Lake Project is located approximately 80 km east-northeast of Red Lake, Ontario (Fig. 1).

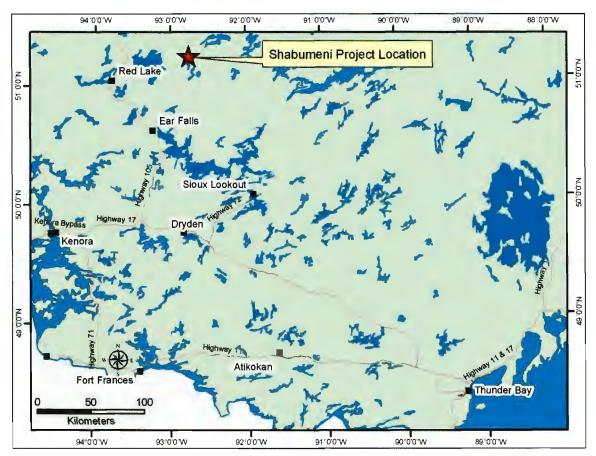


Figure 1: Shabumeni Project location map.

The Shabumeni Project consists of 5 separate claim blocks (properties) each consisting of contiguous, unpatented mining claims for a grand total of 349 units covering 5,584 hectares. The properties are known as Confederation Lake (9 units), Shabumeni Lake (256 units), Shabumeni River (15 units), Skinner (39 units) and Woman River (30 units) (Table 1, Fig. 2).

Table 1: Frontline Gold claim details.

Project	Township /Area	Claim Number	Recording Date	Claim Due Date	Percent Option	Work Required	Total Applied	Total Reserve
Confederation Lake	GOODALL	<u>1248644</u>	2002-Apr-08	2013-Apr-08	100%	\$3,600	\$32,400	\$21,602
Shabumeni Lake	SHABUMENI LAKE AREA	1247895	2003-Jul-28	2015-Jul-28	100%	\$2,400	\$24,000	\$3,101
Shabumeni Lake	SHABUMENI LAKE AREA	1248661	2002-Apr-08	2011-Apr-08	100%	\$6,400	\$44,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	1248663	2002-Apr-08	2011-Apr-08	100%	\$6,400	\$44,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	1248665	2002-Apr-08	2011-Apr-08	100%	\$6,000	\$42,000	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	<u>1248666</u>	2002-Apr-08	2011-Apr-08	100%	\$1,200	\$8,400	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	1248667	2002-Apr-08	2011-Apr-08	100%	\$6,000	\$42,000	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4207408	2006-Sep-26	2011-Sep-26	100%	\$6,000	\$18,000	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4211605	2006-Jul-27	2011-Jan-27	100%	\$6,400	\$12,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	<u>4211606</u>	2006-Jul-27	2011-Jul-27	100%	\$6,400	\$19,200	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4211607	2006-Jul-27	2011-Jul-27	100%	\$6,400	\$19,200	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219831	2007-May-31	2011-May-31	100%	\$800	\$1,600	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	<u>4219846</u>	2007-May-31	2011-May-31	100%	\$6,400	\$12,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219848	2007-May-31	2011-May-31	100%	\$6,400	\$12,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219849	2007-May-31	2011-May-31	100%	\$6,400	\$12,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219850	2007-May-31	2011-May-31	100%	\$6,400	\$12,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219855	2007-May-31	2011-May-31	100%	\$1,600	\$3,200	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219856	2007-May-31	2011-Feb-28	100%	\$6,400	\$6,400	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219876	2007-May-31	2011-Feb-28	100%	\$4,800	\$4,800	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219879	2007-May-31	2011-Feb-28	100%	\$2,680	\$10,120	\$0
Shabumeni Lake	SHABUMENI LAKE AREA	4219898	2007-May-31	2011-Feb-28	100%	\$2,400	\$2,400	\$0

Project	Township /Area	Claim Number	Recording Date	Claim Due Date	Percent Option	Work Required	Total Applied	Total Reserve
Shabumeni Lake	SHABUMENI LAKE AREA	4222413	2007-Aug-23	2011-Feb-23	100%	\$6,400	\$6,400	\$0
Shabumeni River	LITTLE SHABUMENI LAKE AREA	1248641	2002-Apr-08	2011-Apr-08	100%	\$4,792	\$46,408	\$0
Skinner	SKINNER	4219847	2007-May-31	2011-May-31	100%	\$6,400	\$3,200	\$0
Skinner	SKINNER	4254144	2010-Apr-12	2012-Apr-12	100%	\$6,400	\$0	\$0
Skinner	SKINNER	4254145	2010-Apr-12	2012-Apr-12	100%	\$6,400	\$0	\$0
Woman River	GOODALL	1248647	2002-Apr-08	2010-Dec-08	100%	\$1,445	\$40,555	\$0
Woman River	GOODALL	1248648	2002-Apr-08	2011-Apr-08	100%	\$6,000	\$42,000	\$0

## Each property can be accessed by:

Confederation Lake: Float or ski equipped plane, boat Shabumeni Lake: Float or ski equipped plane, +/- boat

Shabumeni River: Float or ski equipped plane

Skinner: Logging road

Women River: Float or ski equipped plane, boat

Exploration crews can be accommodated at the fishing resorts that are accessible via secondary roads leading northeast off highway 105 at Ear Falls. Some of these resorts provide flight services and boat rentals.

Lakes cover approximately 10-35% of the properties. Topography is generally gentle with elevations ranging from 400 to 440 meters above sea level. A mixed forest of mostly spruce, balsam, poplar and birch covers the claims, with swampy vegetation in low-lying areas and local areas of forest blow-down.

Temperatures range from highs of  $35^{\circ}$  C in summer to lows of  $-30^{\circ}$  C in winter, with snow cover between November and May. The best season for exploration is between June and October, although in lake covered or swampy areas exploration activities such as geophysical surveys and diamond drilling might best be conducted after winter freeze up.

The Red Lake district, population 4,700, is located at the end of Highway #105 which is 175 km north of Kenora on the Trans-Canada highway. The town is serviced by regular air flights from Thunder Bay and Winnipeg, 7 days a week. The local population includes skilled tradesmen and experienced underground miners. All necessary supplies are available locally or in Winnipeg and Thunder Bay.

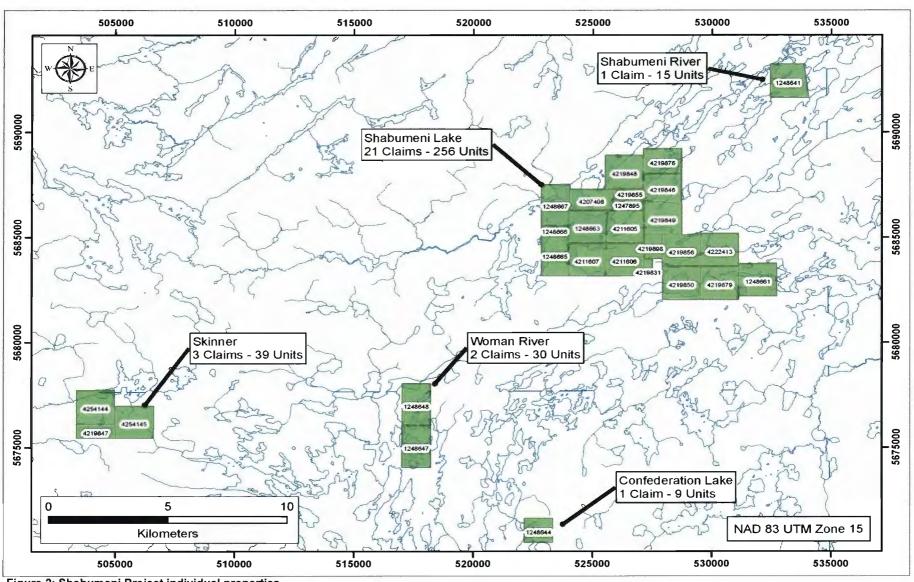


Figure 2: Shabumeni Project individual properties.

# 3.0 Geological Setting

## 3.1 Regional Geology

The Shabumeni Properties lie within the Archean Birch-Uchi Greenstone Belt of the western Uchi Subprovince of NW Ontario (Fig. 3). This belt records a stratigraphic history that spanned approximately 290 Ma, involving repeated episodes of rifting, and associated depositional and magmatic phases. Unconformity-bounded sequences of mafic to felsic volcanic strata and primarily clastic sedimentary strata accumulated between ca. 2992 Ma and 2700 Ma upon a complex extensional architecture, which largely formed the template upon which later compressional structures were superimposed.

Supracrustal strata in the belt have been subdivided into 3 volcano-sedimentary mega-cycles (Stott & Corfu 1992, Thurston 1985) each comprising variably mafic to felsic volcanic strata and subordinate clastic sedimentary strata. From oldest to youngest these mega-cycles are comprise the following assemblages:

- The Balmer Assemblage (2987 Ma) is primarily an Fe-tholeiitic sequence of mafic volcanic strata, with minor interbeds of banded iron formation. The distribution of this assemblage is restricted to the extreme western edge of the Birch-Uchi Belt immediately adjacent to the Trout Lake Batholith.
- The Woman Assemblage (2858 Ma) is also primarily an Fe-tholeiitic sequence of mafic volcanic strata, with minor interbeds of banded chemical sediments and pyritic siltstones and shales. This assemblage is unconformable or paraconformable on the Balmer assemblage and occurs along the western edge of the Birch-Uchi Belt stratigraphically above the Balmer Assemblage.
- The Confederation Lake Assemblage (2750-2700Ma) is by far the most aerially
  extensive assemblage in the belt. It is comprises an assemblage of intermediate
  to felsic flows and pyroclastic strata, which are unconformably overlain by
  conglomeratic to argillaceous rift-related sediments. The Confederation Lake
  Assemblage also has minor interbeds or banded iron formation.

See Table 2 below for the table of lithologies relating to the Birch-Uchi Greenstone Belt.

At least 3 phases of regional deformation affected the area resulting in the widespread development of folds, axial planar fabrics, and ductile shear zones. D1 deformation involved NW-SE shortening, the development of NE to N-striking folds and faults. Evidence for this D1 event is best preserved in the southern part of the belt in the Confederation Lakes area. D2 deformation involved NE-SW to N-S shortening and the development of ~E-W to WNWESE striking regional folds, faults and fabrics. This event is manifested to varying degrees throughout the belt from the Casummit Lake area in the north to the Slate Lake area in the south. D3 deformation appears to have involved renewed E-W shortening and is restricted to the northern part of the belt in the

Mink Lake/Casummit Lake area. This shortening event resulted in the buckling of the regional S2 foliation into N-S folds. This event was accompanied by N-S striking S3 crenulation cleavage and ENE plunging F3 fold development.

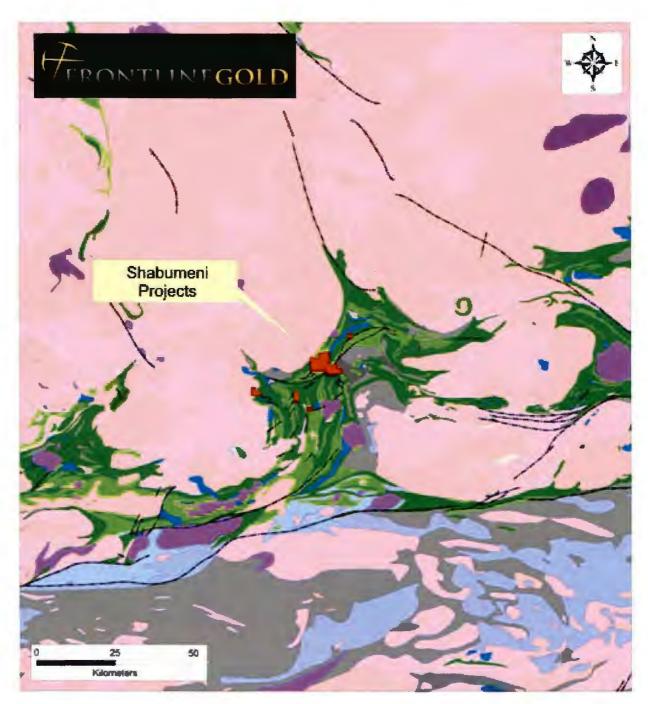


Figure 3: Regional geology of the Birch-Uchi Greenstone Belt showing the locations of the 5 individual properties making up the Shabumeni Project (highlighted in red) (Kleinboeck and Clark, 2007).

Table 2: Table of Lithologies (after Johns, 1979)

Phanerozoic

Cenozoic

Quaternary

Recent

Swamp, stream, and lacustrine deposits

Pleistocene

Till, clay, sand, and gravel

## Unconformity

#### Precambrian

Early Precambrian

Felsic to Intermediate Intrusive Rocks

Hornblende and biotite diorite, syenodiorite, hornblende and biotite trondhjemite, quartz diorite, hornblende and biotite quartz monzonite to granodiorite, and pink pegmatite

#### Intrusive Contact

Metamorphosed Felsic to Intermediate Intrusive Rocks

Quartz-feldspar porphyry, feldspar porphyry, mafic feldspar porphyry, and felsite

#### Intrusive Contact

Metamorphosed Mafic and Ultramafic Rocks

Gabbro, diorite, quartz diorite, quartz gabbro, porphyritic gabbro, serpentinized peridotite, serpentinized dunite, and pyroxenite

#### Intrusive Contact

Metasediments

**Chemical Metasediments** 

Oxide- and sulphide-facies iron formation

Clastic Metasediments

Wacke, slate, argillite, arenites, arkose, conglomerate, reworked tuff, siltstone, quartz-wacke, quartz arenites

Metavolcanics

Felsic Metavolcanics

Flow tuff, lapillistone, lapilli tuff, tuff-breccia, thin bedded flow Intermediate Metavolcanics

Flow tuff, pyroclastic breccia, lapilli-tuff, tuff-breccia, spherulitic flow, amygdaloidal and porphyritic flow, autoclastic breccia, flow layered flow

Mafic Metavolcanics

Porphyritic, glomeroporphyritic, amygdaloidal, massive, and pillowed flows with pillow breccia and coarse-grained centres; pyroclastic rock, autoclastic breccia, variolitic flow, hyaloclastic breccia, hyaloclastite, carbonatized flow, lapilli tuff.

## 3.2 Property Geology

# 3.2.1 Confederation Lake Property

With not much activity having been performed on the property it has been noted that pillow basalt is located in outcrop by Gold Crest Minerals, and that massive mafic to intermediate metavolcanics have also been mapped on the property by the OGS (P0592, M2498).

#### 3.2.2 Shabumeni Lake Property

The northern portion of the property is underlain mainly by volcanic flows and pyroclastics. The northern portion of the property near the gold showings are underlain intermediate pyroclastics overlain in the southeast by mafic pillowed and massive flows and agglomerates. A narrow horizon of north trending carbonaceous argillite on the large peninsula has been the exploration target in the past. These volcanic rocks are intruded in areas by gabbroic plutons with quartz monzonite cores.

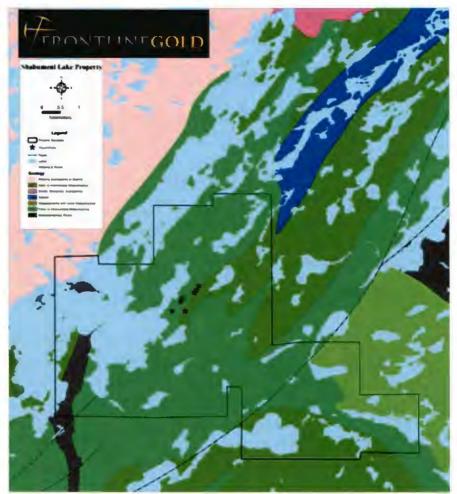


Figure 4: Property Geology of the Shabumeni Lake Property (Kleinboeck and Clark, 2007)

The southern portion of the property is reported to be underlain by dacitic to rhyodacitic tuffs with minor amounts of dacitic agglomerate and massive rhyolitic, ryhodacitic and dacitic lavas (Fig. 5). This southern section of the property covers a portion of a deformation zone that forms an easterly splay off of the regional northeast trending Swain Lake Deformation Zone. The name of Grace Lake Deformation Zone is applied to this east to southeasterly trending deformation zone (Thurston et al., 1981). Both the Swain Lake and Grace Lake Deformation Zones are considered to be strikeslip fault zones. In general, to the north and northeast of the Grace Lake Deformation Zone lies a thick sequence of predominantly clastic metasediments consisting of polymictic conglomerate, greywacke, siltstone, phyllite and magnetite iron formation. To the south of the Grace Lake Deformation Zone lies a package of metavolcanics consisting of pillow basalt, intermediate volcaniclastics and felsic volcaniclastics. There also exists the intermediate to felsic Swain East stock trending SE/NW. The Grace Lake Deformation Zone is host to three gold occurrences within the property boundary: North, South, and Bobarris (Fig. 5).

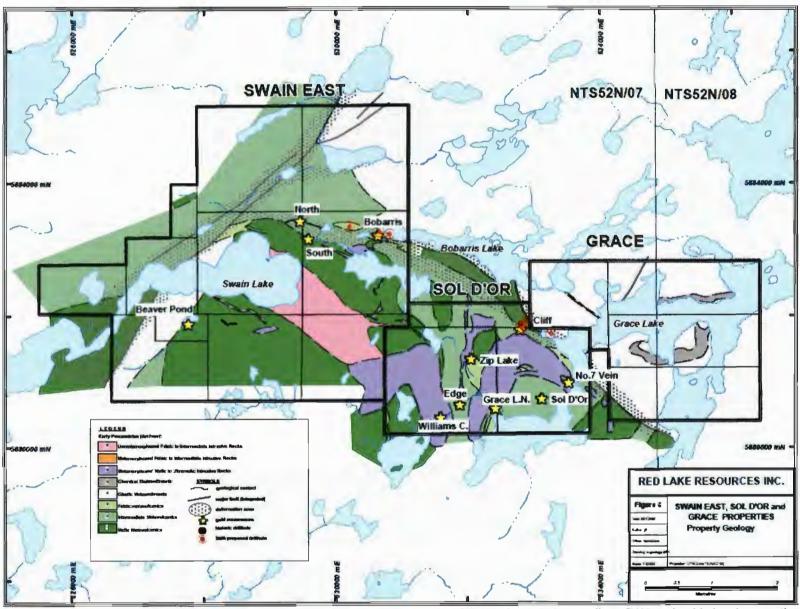


Figure 5: Map showing the location of the deformation zones (Swain Lake trending SW-NE; Grace Lake trending ~E-W) and gold showings on the southern portion of the Shabumeni Lake Property. Boundary of the Shabumeni Lake Property not shown – See Fig. 4. (Klatt et al., 2003)

## 3.2.3 Shabumeni River Property

The Shabumeni River Property is mapped as being underlain by the same lithological horizons as that which passes through the Shabumeni Lake Property. Rocks on the property trend northeasterly with intermediate to felsic metavolcanic breccia/tuff breccia (pyroclastic and/or volcaniclastic) mapped in the southeastern corner of the property along with quartz-carbonate veining containing auriferous pyrite (Stone, 1994). Stone (1998) maps this area of with quartz-carbonate veining containing auriferous pyrite as a fault zone/mylonite zone. This unit is then shown to be overlain by a thin section of pillowed mafic metavolcanics that young to the northwest. These pillowed mafic metavolcanics are overlain by a thin unit of intermediate to felsic metavolcanic tuff/lapilli tuff (pyroclastic and/or volcaniclastic) and those, in turn, are overlain by pillowed mafic metavolcanics that young to the northwest. The northwest corner of the property is mapped as a metagabbro.

## 3.2.4 Skinner Property

Thurston and Bartlett (1981) along with Stone (1998) show the property sitting on the contact between massive and pillowed mafic volcanics and a granodiorite-granite intrusion. Mapping by Fronteer in 2002 located several small outcrops on the eastern side of the property of mafic volcanics.

## 3.2.5 Woman River Property

The Woman River Property is underlain by massive and pillowed mafic metavolcanics, intermediate tuffs +/I tuff breccia +/- spherulitic flows and minor clastic metasediments (pebble/cobble conglomerates and wacke's) (Thurston, 1984).

# 4.0 Exploration History

# 4.1 Confederation Lake Property

- 1988: Gold Crest Minerals Inc. completed a geophysical and geological survey that covered a small portion of the western portion of this block as part of a larger property.
- 2003: Jilbey Gold Exploration conducted a ground magnetometer, MMI soil sampling and regional till sampling over a large area containing many claim blocks. The Woman River Property was one of the claim blocks investigated during the 2003 program.

## 4.2 Shabumeni Lake Property

The Shabumeni Lake Property can be divided into a north and south portion when examining the history of exploration.

The exploration on the **south** portion of the claims can be summarized as:

- 1966: Dome Exploration completed a series of 6 (1908 feet) drill holes that tested a electromagnetic anomaly that trends north south up the peninsula. Assays of the drilling were low but visible gold was noted in a ½ inch quartz carbonate veinlet.
- 1975-78: McIntyre Mines Limited completed magnetic, electromagnetic and geology surveys and one diamond drill hole on the peninsula area (similar area to Dome)
- 1987: Dome Exploration went back and completed one hole under the area of the reported visible gold.
- 2003: Jilbey Gold Exploration Ltd. completed airborne magnetic and electromagnetic surveys followed up by ground magnetic, soils and rock sampling and mobile metal ion (MMI) soil geochemistry.
- 2005: Jammin Rock Resources completed an airborne Electromagnetic and magnetic survey over the entire property.
- 2007: Merrex Gold Inc. completed line cutting (40km), geological mapping, prospecting, trenching, and sampling program focusing on the northern half of the property. During this program a new zone was discovered on the eastern shore of Swain Lake during a one day prospecting venture. A total of 8 samples were taken with 5 samples returning anomalous gold values, 2 of which assayed 4.12 g/t Au and 2.38 g/t.

The exploration on the **north** portion of the claims can be summarized as:

- Original trenches on quartz sulfides veins completed by unknown operators.
- 1969: Falconbridge Nickel completed an electromagnetic survey.
- 1981: Minorex Ltd. staked the northern portion of the property. Geological mapping, magnetic and VLF-EM surveys and assaying were completed and series of eight gold bearing quartz vein zones discovered.
  - Zone 1 (Main Zone): Composed of four veins with strike length of 280 feet. Veins are sub parallel in a 15 foot wide zone. Vein #3 was best vein with a 104 foot length, 1.62 feet wide averaging 0.12 ounces gold per ton and 0.28 ounces silver per ton.
  - Zone 2: Thirteen grabs assayed nil to 0.30 ounces gold per ton.
  - Zone 3: Eight samples nil to 0.02 ounces gold per ton.
  - Zone 4 (Iceberg): 2 inch to 2 foot quartz veins in a 7 foot shear. Thirteen grabs assayed nil to 0.16 ounces gold per ton.
  - Zone 5 (Snake): 3 5 inch quartz veins at the contact along a gabbro dike. Four assays range nil to 0.65 ounces gold per ton.
  - Zone 6 (Clap): Quartz veins up to 4 inches in mafic volcanics. Ten samples trace to 0.44 ounces gold per ton.
  - Zone 7: A series of 2-8 inch quartz veins in the quartz monzonite core of a gabbro intrusion. Fours grab samples assayed nil to 0.23 ounces gold per ton.
  - Zone 8: At the south end of a gabbro stock a four inch wide quartz lens assayed 0.22 ounces gold per ton.
- 1987: Marilyn Resources Inc. completed induced polarization, VLF-EM and magnetic surveys over the area defined by Minorex Ltd.. A four hole diamond drill program (~1200 feet) evaluated the two showings and the strike extensions. The program was completed concurrently and the author believed that the holes could have been better targeted if the geophysics was available before drilling.
  - JG 87-1 intersected 0.4 ounces gold per ton over 3.5 feet and 0.10 ounces gold over 3.0 feet under the Main Zone
  - JG 87-2 intersected 0.05 ounces gold per ton over 4.0 feet 50 feet north of JG 87-1
  - JG 87-3 intersected 0.03 ounces gold per ton over 4.0 feet beneath the lceberg Zone.

- JG 87-4 was forecasted to have stopped short of the anomaly.
- 1990: A. Hagar (Milestone Resources) completed 19 holes in the area of the various gold showings. These holes targeted various IP targets and the known showings. 5 holes under the Main zone, 8 beneath the Clap zone and 1 under the Snake zone.
  - Hole 1: IP target, 0.30 ounces gold per ton over 1.5 feet.
  - Hole 6: IP target, 0.04 ounces gold per ton over 4.7 feet.
  - Hole 11: IP target, 0.06 ounces gold per ton over 1.0 feet.
  - Hole 13: Main zone, 0.08 ounces gold per ton over 2.3 feet in a quartz vein.
  - Hole 14: Main zone, 0.12 and 0.10 ounces gold per ton over 1.2. and 2.0 foot quartz veins respectively.
  - Hole 15: Main zone, 0.08 ounces gold per ton over 1.5 feet in a quartz vein.
  - Hole 16: Main zone, 6.16 ounces gold per ton over 1.0 feet in a quartz vein.
  - Hole 19: Snake zone, 0.12 ounces gold per ton over 1.4 feet in a chlorite shear with 10% pyrite.
- 2003: Jilbey Gold Exploration completed surface sampling on some of the known gold showings as well as completed MMI and ground magnetic surveys to evaluate airborne magnetic anomalies for kimberlite potential.
- 2006: Merrex Gold Inc. completed surface sampling and humus sampling over some of the known gold occurrences. Two historic showings were grab sampled on the Shabumeni property. The gold results (13 grab samples) from a 70 metre strike length of the east showing included 3 samples ranging from 59 to 387 ppb, 4 samples ranging from 1308 to 2788 ppb, 3 samples ranging from 4456 to 7474 ppb and 3 samples ranging from 22184 to 30395 ppb. The gold results (6 grab samples) from the west showing ranged from 101 to 1259 ppb's. Sampling of the west showing was limited to 20 metres.
- 2007: Merrex Gold Inc. completed line cutting (40km), geological mapping, prospecting, trenching, and sampling program focusing on the northern half of the property. A total of 39 grab samples, 221 channel samples, 23 ICP, and 43 humus samples were collected during the program. The program succeeded in returning anomalous gold values from both previously known and unknown mineral occurrences on the property. Prospecting was focused on locating the historical showings, and re-sampling them, as well as to follow and expose the

quartz veins for potential mineralization along strike. The most encouraging result was 73.6 g/t Au taken from the Bullwinkle Zone.

## 4.2 Shabumeni River Property

1986: Watts, Griffis and McQuat contracted out Aerodat Limited to fly a helicopter based magnetic, electromagnetic, and VLF-EM survey. No further geophysical work was suggested, while drilling was suggested on a narrow magnetic trend along the northwest boundary and on cross-cutting structures within that area.

2003: Jilbey Gold Exploration conducted a ground magnetometer, MMI soil sampling and regional till sampling over a large area containing many claim blocks. The Shabumeni River Property was one of the claim blocks investigated during the 2003 program.

# 4.3 Skinner Property

2002: Fronteer Development Corporation investigated what is now claim 4219847 as part of a much larger block situated between the Skinner and Woman River Properties. A series of small outcroppings of mafic metavolcanic rock were mapped in the southwestern portion of the claim indicating one sample being taken returning no gold values.

2003: Jilbey Gold Exploration conducted a ground magnetometer, MMI soil sampling and regional till sampling over a large area containing many claim blocks. The Skinner Property was one of the claim blocks investigated during the 2003 program.

2008: Merrex Gold Inc. conducted a prospecting and humus sampling program on the Skinner property. While a total of 14 rock and 98 humus samples were taken, no significant values were returned.

#### 4.4 Woman River

2003: Jilbey Gold Exploration conducted a ground magnetometer, MMI soil sampling and regional till sampling over a large area containing many claim blocks. The Woman River Property was one of the claim blocks investigated during the 2003 program.

# 5.0 2010 Exploration Program

Between September 14<sup>th</sup> and September 29<sup>th</sup>, 2010 a prospecting and sampling program was carried out on Frontline Gold's Shabumeni Project by employees of Frontline Gold Inc. of Bedford, Nova Scotia with the help of one local prospector. Clark Exploration Consulting of Thunder Bay, Ontario was contracted by Frontline Gold Inc. of Bedford, Nova Scotia, to write and submit the assessment report on the 2010 Shabumeni Project prospecting and sampling program.

The focus of the 2010 exploration program was to follow up on prospective kimberlite targets identified by Jilbey in 2003 as well as on previously unknown mineral occurrences located in the 2007 exploration program on the Shabumeni Lake property. Prospecting was also carried out on the Woman River and Skinner properties in an attempt to locate new gold showings.

Sample Descriptions can be found in Appendix A along with assay values and certificates found in Appendix C. All samples were sent to Accurassy in Thunder Bay, Ontario.

A daily prospecting log can be found in Appendix B, and field maps found in Appendix D.

#### 5.1 Shabumeni Lake

As mentioned earlier, several samples were taken on the northeast shore of Swain Lake during the 2007 prospecting program. During the course of the prospecting program in 2007, only one day was spent in this area with two samples returning assay values of 4.12 g/t Au and 2.38 g/t Au and two samples returning assays of just under 0.5 g/t Au. In addition to these gold showings, there were also two untested kimberlite targets from the 2003 program by Jilbey Gold in 2003. Anomaly W19 was described as a "perfect fit/perfect model" and anomaly W20 a "very good fit, excellent model". Ground-truthing of these two targets was also a priority in the 2010 exploration program on the Shabumeni Lake Property.

In the 2010 work program the Kimberlite targets were prospected but did not turn up any prospective float or outcrop with mafic-intermediate metavolcanics being located within 20 meters of both W19 and W20. While historical pits and trenches were located (along with old drillcore) 21 sample were taken with only one exceeding 100 ppb Au (sample 194047 at 580 ppb Au).

#### 5.2 Skinner

Sampling on the Skinner property returned the best results of the program with 3 samples assaying in the multi-gram range. Sample 194182 assayed 19.71 g/t Au, sample 194200 assayed 13.59 g/t Au and sample 194180 ran 6.83 g/t Au. Sample

194183 assayed at 900 ppb Au. The prospecting program revealed a series of historical trenches, with the two highest values coming from rusty quartz veins containing chalcopyrite and arsenopyrite in the same trench on the NE portion of claim 4254145.

#### 5.3 Woman River

A total of 6 samples were taken on the Woman River property on the first day. While good mineralization was noted in the form of chalcopyrite and arsenopyrite, no significant gold values were obtained with only 2 samples registering gold values just over detection limit.

#### 6.0 Conclusions and Recommendations

While the 2010 surface program was successful in locating prospective mineralization, only a few samples off of the Skinner property contained significant gold values. It is the belief of the author that the Skinner and Shabumeni Lake properties remain highly prospective for gold mineralization, and that the Woman River claim block remains underexplored.

#### 6.1 Shabumeni Lake

Focus on the Shabumeni Lake property has been in the northern portion of the claim block. While the 2010 program explored a portion of the southern claims, this area still remains highly prospective. A series of gold showings exists along the Grace Lake Deformation Zone (Figure 5) and these should be located, hand stripped, sampled, and mapped in an attempt to determine controls on gold mineralization. As well, Red Lake Resources spotted 3 proposed drillholes near the Bobarris showing parallel to the Grace Lake Deformation Zone (Figure 5). A three phase program consisting of an in-house data compilation, field locating historical drill collars, relogging old core (if determined it came from holes close to the Grace Lake Deformation Zone) hand stripping of showings, sampling, and mapping would be followed by linecutting and ground geophysics to establish control and help define targets followed lastly by drilling. It is believed that the Grace Lake Deformation Zone is underexplored and has potential to host significant gold mineralization.

#### 6.2 Skinner

The Skinner property has not undergone significant gold exploration in recent times. This field season saw significant gold assays returned from historical trenches on the property. The Skinner property also sits within 2 kilometers of the historical Bathurst Lake Gold Mine which produced ~300 oz of Au during the late 1920's. The Skinner property sits within similar geology to the Bathurst Lake Gold Mine as well as in a favourable location for lode gold mineralization (mafic volcanics +/- mafic-ultramafic intrusives along the contact with a granitic intrusion). Due to the proximity of the Skinner Property to a logging road, a stripping and trenching program is warranted in and around the trench that returned the high gold assays from the 2010 field program. This would further delineate the extent of the gold mineralization as well as providing a better idea of controls on gold mineralization.

#### 6.3 Woman River

While the Woman River did not return any significant gold values it does sit in a favourable geological position. Because chalcopyrite was noted in the samples from the 2010 program, it is recommended that the pulps be assayed for Cu. A data compilation for the property is warranted to determine future recommendations.

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2010 Shabumeni Assessment Report

**Appendices** 

Appendix A

**Sample Descriptions** 

Number	Sample	Easting	Northing	Lithology	Mineralization
1	194026	517960	5677588	Inter volcanic, outcrop	slight
2	194027	517899	5677567	Inter volcanic, outcrop	slight
3	194028	517198	5675916	Inter volcanic, outcrop	calco pyrite
4	194029	517193	5675195	Inter volcanic, outcrop	calco, arseno
5	194030	529662	5682468	Mafic Volcanic outcrop	calco
6	194031	529805	5682368	Inter volcanic, outcrop	calco, arseno
7	194032	529849	5682377	Inter volcanic, outcrop	calco, areseno
8	194033	531058	5683547	Inter volcanic, outcrop	calco
9	194034	531074	5683528	Volcanic Shales, Outcrop	calco
10	194035	531934	5683380	Quartz Outcrop	no visible sulphides
11	194036	531921	5683374	Inter volcanic/shale outcrop	calco, arseno
12	194037	531920	5683374	Quatrz vein/Intervolcanic outcrop	calco
13	194038	531837	5683373	Quartz Outcrop	no visible sulphides
14	194039	528758	5683427	Quartz float	slight sulphides
15	194040	529303	5683460	Shale Witht quatrz stringers	calco, arseno
16	194041	518030	5677683	Inter volcanic outcrop	calco, arseno
17	194042	517345	5675933	Inter volcanic, outcrop	calco
18	194043	517345	5675928	Inter volcanic, outcrop	pyrite
19	194044	529708	5682607	Mafic Volcanic outcrop	pyrite
20	194045	531939	5683437	Inter volcanic, outcrop	calco, arseno
21	194046	528959	5683360	Inter volcanic, outcrop	calco pyrite
22	194047	530687	5682383	Quartz vein in intervolcanic OC	no visible sulphides
23_	194048	531990	5683451	Inter volcanic, outcrop	calco pyrite
24	194049	529154	5684885	Quartz vein in intervolcanic OC	no visible sulphides
25	194050	530022	5682417	Inter volcanic, outcrop	calco pyrite
26	194176	529320	5683476	Inter volcanic, outcrop, quartz stringers	calco pyrite, arseno
27	194177	529313	5683472	Quartz vein rusted	no visible sulphides
28	194178	530620	5682321	Inter volcanic, outcrop	calco pyrite, arseno
29	194179	506088	5676208	volcanic outcrop, old trench	calco pyrite
30	194180	506094	5676210	Intervolcanic quartz stringers outcrop	calco, in the volcanics
31	194181	506097	5676210	Quartz vein rusted volcanic outcrop	calco, arseno
32	194182	506226	5676565	rusted quartz vein, outcrop	arseno, calco
33	194183	506215	5676569	old trench workings inter volcanic/quartz	calco, arseno
34	194191	506098	5676210	old trench, volcanics quartz veining,	sulphides, mainly in volcanics
35	194192	505770	5675617	intervolcanic outcrop	calco pyrite
36	194200	506221	5676560	Old trech intervolcanic rusted, Quartz veining	calco, Arseno pyrite

<sup>\*</sup> UTM Coordinates are in NAD83, UTM Zone 15N

2010 Shabumeni Assessment Report

Appendix B

**Daily Log** 

### **September 14, 2010**

Regan Isenor Dan MacDonald Lloyd Quedent

Regan and Dan travelled from Toronto to Thunder Bay and Thunder Bay to landing east of Ear Falls. We met with Tom From Woman Lake Lodge who picked us and our supplies up and we headed up to Woman Lake Lodge. Lloyd took a different route up to his camp on Swain Lake, which is where he stayed for the duration of the trip.

## September 15, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Lloyd boated over from Swain and met us at the lodge. Today was spent prospecting and sampling on the northern portion of claim 1248647 and the northern portion of 1248648 of the Woman River Block.

# September 16, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

This morning we boated over from Woman Lake Lodge and met Lloyd at his camp. After two more portages we spent today prospecting the eastern-most kimberlite target (W20) on claim 1248661.

#### September 17, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

This morning we boated over from Woman Lake Lodge and met Lloyd at his camp. After two more portages we spent today prospecting the eastern-most kimberlite target (W20) on claim 1248661.

#### September 18, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. After two more portages we spent today prospecting the eastern-most kimberlite target (W20) again on claim 1248661.

#### September 19, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his carnp. After two more portages we spent today prospecting the eastern-most kimberlite target (W19) on claim 4219879.

# September 20, 2010

Regan Isenor
Dan MacDonald
Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. After two more portages we spent today prospecting the eastern-most kimberlite target (W19) again on claim 4219879.

#### **September 21, 2010**

Regan Isenor
Dan MacDonald
Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area below the small lake at the end of the first portage on 4219879.

#### September 22, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area south of the portage to the small lake on 4219879.

#### September 23, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area north of Swain Lake's eastern shore on 4219850.

#### September 24, 2010

Regan Isenor
Dan MacDonald
Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area north of Swain Lake's eastern shore on 4219856.

## September 25, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area north of Swain Lake's eastern shore on 4219856.

#### September 26, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area north of Swain Lake's eastern shore on 4219856.

#### September 27, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Boated over from Woman Lake Lodge and met Lloyd at his camp. Spent the day prospecting the area north of Swain Lake's eastern shore on 4219856. Early that

evening Tom boated us back out to the landing and Lloyd headed out from his camp. Because we were now going to focus on the Skinner Block, we moved to the Trillium Motel in Ear Falls tonight.

#### September 28, 2010

Regan Isenor Dan MacDonald Lloyd Quedent

Spent the day locating and sampling old trenches as well as prospecting on claims 4254145 and 4219847.

# **September 29, 2010**

Regan Isenor Dan MacDonald Lloyd Quedent

Spent half of the day prospecting on claims 4254145 and 4219847 of the Skinner Block. In the afternoon we travelled to Thunder Bay and out to Toronto. Lloyd went back to Sioux Lookout.

2010 Shabumeni Assessment Report

Appendix C

**Assay Certificates** 



1046 Gorham Street Thunder Bay, ON Canada P7B 5X5 Tel: (807) 626-1630 Fax: (807) 622-7571 www.accurassay.com assay@accurassay.com

#### Certificate of Analysis

Thursday, October 14, 2010

Clark Consulting 1000 Alloy Dr. Thunder Bay, ON, CAN P7A6G5 Ph#: (807) 622-3284

Ph#: (807) 622-3284 Fax#: (807) 622-4156 Email#: gjclark@tbaytel.net Date Received:

09/29/2010

Date Completed:

10/14/2010

Job #:

201044158

\_\_\_\_\_

Reference:

Frontline hold

Sample #:

36 Core

Au g/t (ppm)	Au oz/t	Au ppb	Client ID		Acc#
0.010	< 0.001	10	194026		287428
0.009	<0.001	9	194027		287429
< 0.005	< 0.001	<5	194028		287430
<0.005	< 0.001	<5	194029		287431
< 0.005	< 0.001	<5	194030		287432
<0.005	< 0.001	<5	194031		287433
<0.005	< 0.001	<5	194032		287434
< 0.005	< 0.001	<5	194033		287435
< 0.005	< 0.001	<5	194034		287436
< 0.005	< 0.001	<5	194035		287437
< 0.005	<0.001	<5	up 194035	Dup	287438
0.036	0.001	36	194036		287439
0.030	< 0.001	30	194037		287440
< 0.005	< 0.001	<5	194038		287441
< 0.005	<0.001	<5	194039		287442
0.038	0.001	38	194040		287443
< 0.005	< 0.001	<5	194041		287444
0.007	<0.001	7	194042		287445
< 0.005	<0.00]	<5	194043		287446

PROCEDURE CODES: ALP2, ALFA2

Certified Bv:

Derek Demianiuk H Bsc., Laboratory Manager

The results included on this report relate only to the items tested The Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory

AL903-0049-10/14/2010 10:16 AM



1046 Gorham Street Thunder Bay, ON Canada P7B 5X5 Tel: (807) 626-1630 Fax: (807) 622-7571 www.accurassay.com assay@accurassay.com

#### Certificate of Analysis

Thursday, October 14, 2010

Clark Consulting 1000 Alloy Dr. Thunder Bay, ON, CAN P7A6G5

Ph#: (807) 622-3284 Fax#: (807) 622-4156 Email#: gjclark@tbaytel.net Date Received:

09/29/2010

Date Completed:

10/14/2010

Job #:

201044158

Reference:

Frontline hold

Sample #: 36 Core

Au g/t (ppm)	Au oz/t	Au ppb	Client ID		Acc#
0.006	< 0.001	6	194044		287447
0.006	< 0.001	6	194045		287448
0.010	< 0.001	10	194045	Dup	287449
< 0.005	< 0.001	<5	194046		287450
0.580	0.017	580	194047		287451
< 0.005	< 0.001	<5	194048		287452
< 0.005	< 0.001	<5	194049		287453
0.006	< 0.001	6	194050		287454
0.042	0.001	42	194176		287455
< 0.005	< 0.001	<5	194177		287456
< 0.005	< 0.001	<5	194178		287457
0.007	< 0.001	7	194179		287458
6.837	0.199	6837	194180		287459
4.473	0.130	4473	194180	Dup	287460
0.028	< 0.001	28	194181		287461
19.713	0.575	19713	194182		287462
0.900	0.026	900	194183		287463
0.044	0.001	44	194191		287464
0.013	< 0.001	13	194192		287465

PROCEDURE CODES: ALP2, ALFA2

Certified Bv:

Derek Demianiuk H.Bsc., Laboratory Manager

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Fax#: (807) 622-4156 Email#: gjclark@tbaytel.net Date Received:

09/29/2010

Date Completed:

10/14/2010

Job#:

201044158

Reference:

Frontline hold

Sample #:

36 Core

Acc#		Client ID	Au ppb	Au oz/t	Au g/t (ppm)
287466	Dup	194192	7	<0.001	0.007
287467		194200	13592	0.397	13.592

PROCEDURE CODES: ALP2, ALFA2

Certified Bv:

Derek Demianiuk H Bsc., Laboratory Manager

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# **Appendix D**

# 2010 Field Maps

\* Maps can be found in map pockets following this report

Map 1: Woman River Prospecting

Map 2: Shabumeni Lake Prospecting - East Sheet

Map 3: Shabumeni Lake Prospecting - West Sheet

Map 4: Skinner Prospecting

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