# DRILLING ON THE MAPLE LEAF 1 CLAIM IN THE NORTHERN PART OF THE MAPLE LEAF-RIZZ PROPERTY

Map-staked Claims

| Claim Name | Area | Claim Number |
|---|---|---|
| **MAPLE LEAF 1** | **317.497 ha. (784.22 A.)** | **524610** |
| **MAPLE LEAF 2** | **250.580 ha. (618.93 A.)** | **524611** |
| **MAPLE LEAF 3** | **317.658 ha. (784.62 A.)** | **524612** |
| **MAPLE LEAF 3** | **234.106 ha. (578.24 A.)** | **524613** |
| **MAPLE LEAF 4** | **50.148 ha. (123.87 A.)** | **524614** |
| **RIZZ 1** | **418.972 ha. (1,034.86 A.)** | **524616** |
| **RIZZ 2** | **267.994 ha. (661.95 A.)** | **524617** |
| **LINK** | **351.524 ha. (868.26 A.)** | **539394** |
| | **2,208.479 ha. (5,454.95 A.)** | |



Owner:
**Saturn Minerals Inc.**
420-625 Howe Street
Vancouver, British Columbia, Canada
V6C 2T6

Location:
**Atlin Mining Division**
**N.T.S.: 104 K/13**
**58° 55' 14"N., 133° 49' 59" W.**
**U.T.M.: 6,531,789 N., 567,198 E.**

By:
**John Ostler; M.Sc., P.Geo.**
**Consulting Geologist**
**February 22, 2007**

PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
J. D. OSTLER

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Gold Commissioner's Office
VANCOUVER, B.C.

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# DRILLING ON THE MAPLE LEAF 1 CLAIM IN THE NORTHERN PART OF THE MAPLE LEAF-RIZZ PROPERTY

## SUMMARY

The Maple Leaf-Rizz property comprises 8 map-staked claims covering 2,208.479 hectares (5,454.97 acres), located in the Atlin Mining Division, and in the Cassiar Land District. The property is on N.T.S. map sheet 104 K/13 and on B.C. map sheets 104K 081, 091, and 092. It is owned by Saturn Minerals Inc. of Vancouver, British Columbia.

Although the boundaries of the Maple Leaf-Rizz property have not been surveyed and their exact positions have not been defined on the ground, those positions have been defined precisely on the provincial mineral tenure grid. Consequently, there is no legal uncertainty regarding the location and the area covered by the Maple Leaf-Rizz claims.

There is no private land or aboriginal homeland on or adjacent to the Maple Leaf-Rizz property. There is no plant or equipment, inventory, mine or mill structure of any value on these claims.

Elevations on the Maple Leaf area in the northern part of the property range from about 1,585 m (5,200 ft) at the eastern boundary of the MAPLE LEAF 1claim to about 609.6 m (2,000 ft) at the surface of Lake No Lake at the southwestern corner of the Maple Leaf area. Elevations on the Rizz area in the southern part of the property range from about 1,981 m (6,500 ft) on the ridge near Nelles Peak at the southern end of the Rizz area to about 755.9 m (2,480 ft) at the edge of the glacier near its northeastern corner.

Adequate fresh water for a small mining operation in the Maple Leaf area could be pumped up from the small lake in the central part of the MAPLE LEAF 1 claim. Also, it could be diverted from some of the many small streams that cascade down the slopes toward Moosetrap Creek. Freezing would be a problem in winter. Securing a water supply on the steep unstable slopes in the Rizz area would be difficult and costly.

There is no significant forest anywhere on the Maple Leaf-Rizz property. The property is remote from any established power grid; thus, power would have to be generated on site.

The Maple Leaf area occupies a steeply benched alpine slope that forms the eastern side of the Moosetrap Creek valley. The Rizz area occupies very steep unstable slopes on the knife-edge ridge that extends northward from Nelles Peak, a matterhorn-like structure. At the base of the slopes are arms of Tulsequah Glacier. Rock outcrops are common to abundant throughout the Maple Leaf-Rizz property area.

Soil profiles on most of the Maple Leaf area are immature making soil geochemical surveys less effective than they would be in areas of more mature soil profiles. Soil profiles have not developed on the unstable slopes in the Rizz area.

The climate in the Maple Leaf-Rizz property area is cold and wet most of the year. It is snow-covered from September until June during most years. During summer, evaporation from the numerous glaciers around the property area produces thick banks of ice-fog accompanied by local showers of drizzle.

There is no road access to the property area and developing it would be difficult and expensive. A road route southward to Tulsequah is hampered by steep, unstable slopes and ice crossings. One northward to Atlin is blocked by Atlin Provincial Park.

Atlin, British Columbia, a village of less than 1,000 permanent residents, is the closest settlement to the property. It has a gas station, a few restaurants, and grocery stores. Also, helicopters, float planes, and small barges can rented in the area. Services in Atlin are sufficient to support a surface exploration program. Atlin is 73 km (44.5 mi) north-northeast of the Maple Leaf-Rizz property.

The nearest regional service center to Atlin is Whitehorse, the capital of Yukon. Whitehorse has a population in excess of 40,000 and hosts many drilling, exploration and mining services. The city has a regional airport with scheduled jet service to other parts of North America and it is a major stop on the Alaska Highway. Whitehorse is 182 km (111 mi) via Jake's Corner from Atlin. Yukon Highway No.1 between Whitehorse and Jake's Corner is paved. Highway 7 from Jake's Corner southward to Atlin is mostly good gravel road. The closest sea ports to Whitehorse are Haines and Skagway, Alaska. Roads have been opened to connect the Haines area with Whitehorse.

The Maple Leaf area is located in the northern part of the property. It is underlain by Boundary-Ranges-suite schists that have undergone poly-phase deformation and at least four phases of regional metamorphism. The only marker units in the stratigraphy are felsic quartz-pyrite zones that have been bent

around semi-recumbent, easterly dipping, major folds. Originally, these zones were Paleozoic-age, rhyolitic tuffs and lapilli tuffs. They have been the focus of mineral exploration in the Maple Leaf area.

The Rizz area is located in the southern part of the property. It is underlain by mafic to intermediate volcanic flows of the Eocene-age Opposer Formation and associated Sloko-Group intrusions.

American Bullion Minerals Limited explored the area currently covered by the Maple Leaf-Rizz property during 1990 and 1991and discovered two mineralized boulder trains along the northwestern margin of the glacier that crosses the central part of the Rizz area. Lead-zinc mineralization in a thin carbonate unit was found in a scree in the property's northern part, and at the toe of a small tributary glacier in the central part of the property.

Samples from the northern boulder train in the Rizz area contained an average of: 3.77 gm/mt (0.11 oz/ton) gold, 49.7 gm/mt (1.45 oz/ton) silver, 0.5% copper, 0.19% lead, and 4.13% zinc. Float samples from the southern boulder train contained traces of gold, silver, and copper and up to 483 ppm lead, and 134 ppm zinc. Eight of the nine samples from the scree on the northern slope of the ridge that transects the Rizz area. were of chloritic schist that contained background metal contents. One laminated white marble sample contained: 3.43 gm/mt (0.1 oz/ton) gold, 560.92 gm/mt (16.36 oz/ton) silver, a trace of copper, 8.25% lead, and 7.3% zinc. One of five samples from the toe area tributary glacier on the southeastern slope of the ridge that transects the Rizz area contained: 56 ppb gold, 149 gm/mt (4.35 oz/ton) silver, 0.049% ppm copper, 1.13% lead, and 0.67% zinc.

Mineralized float was found at the base of the cliff bordering the northern flank of Rugulose Glacier beneath the 3500 zone in the Maple Leaf area. Some small massive sulphide lenses were found at the top of the cliff face in the 3300 zone, and a group of mineralized boulders was located in a bowl atop the cliff west of the 3100 zone.

Float samples taken at the base of the cliff beneath the 3500 zone averaged: 0.11 gm/mt (0.003 oz/ton) gold, 8.9 gm/mt (0.260 oz/ton) silver, 77.1 ppm copper, 0.40% lead, and 0.61% zinc. Samples from the showing atop the cliff in the 3300 zone contained an average of: 0.20 gm/mt (0.006 oz/ton) gold, 29.86 gm/mt (0.87 oz/ton) silver, 0.07% copper, 1.61% lead, and 1.85% zinc. Mineralized boulders in a bowl down-ice from, and west of the 3100 zone averaged: 1.44 gm/mt (0.042 oz/ton) gold, 85.78 gm/mt (2.5 oz/ton) silver, 0.18% copper, 3.74% lead, and 5.05% zinc.

The 3300-zone showing was described as lenses of semi-massive to disseminated sphalerite and galena with disseminated pyrite and chalcopyrite in the silicified felsic volcanic host.

Most of Saturn Minerals Inc.'s 2006 diamond-drill holes penetrated rock along the crest of the cliff just north of the reported location of the 3300-zone showing. The 3100, 3300, and Camp Zones were all tested during the 2006 drill program. No massive sulphide mineralization was found. Only traces of disseminated sphalerite, chalcopyrite, and galena were encountered in the quartz-pyrite zones.

The Moosetrap Creek area in the northwestern part of the Maple Leaf-Rizz property and the Rizz area in its southern part remain almost unexplored.

It is recommended that a program of prospecting be conducted throughout the Moosetrap Creek area to investigate the mineral potential of rhyolitic zones reported to exist there.

Also, a prospecting party should be sent to the Rizz area to investigate the two mineralized boulder trains and mineral showings areas that have been confirmed to be present in that area.

# DRILLING ON THE MAPLE LEAF 1 CLAIM IN THE NORTHERN PART OF THE MAPLE LEAF-RIZZ PROPERTY

## 1.0 INTRODUCTION

### 1.1 Property Description and Location

The Maple Leaf-Rizz property comprises two areas: the Maple Leaf, located in the northern part of the property, and the Rizz, which occupies the property's southern area. These areas are connected by a long, narrow claim, named the LINK.

The property is located among the glaciers that feed Tulsequah River in the Boundary Ranges of the Coast Mountains of northwestern British Columbia (Figures 1and 2). The Maple Leaf area occupies a steeply benched westerly facing alpine slope that forms the eastern side of the Moosetrap Creek valley. The Rizz area covers a steep ridge that divides two tributaries of Tulsequah Glacier. The LINK claim is located mostly on the ice of that glacier.

The property area comprises 8 map-staked claims covering 2,208.479 hectares (5,454.97 acres), located in the Atlin Mining Division, and in the Cassiar Land District. The Maple Leaf-Rizz property is on N.T.S. map sheet 104 K/13 and on B.C. map sheets 104K 081, 091, and 092.

Although the boundaries of the Maple Leaf-Rizz property have not been surveyed and their exact positions have not been defined on the ground, those positions have been defined precisely on the provincial mineral tenure grid. Consequently, there is no legal uncertainty regarding the location and the area covered by the Maple Leaf-Rizz claims.

The Maple Leaf-Rizz property is owned 100% by Saturn Minerals Inc. of Vancouver, British Columbia.

There is no private land or aboriginal homeland on or adjacent to the property.

There is no plant or equipment, inventory, mine or mill structure of any value on these claims.

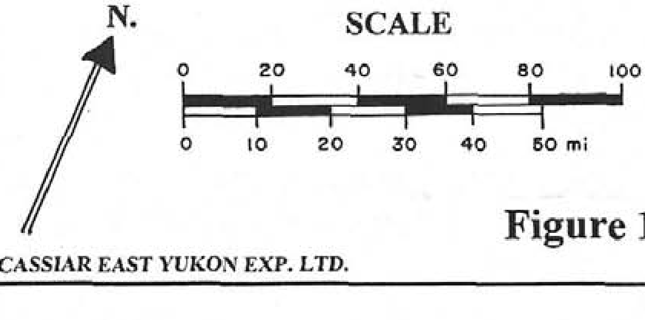




**Figure 1**

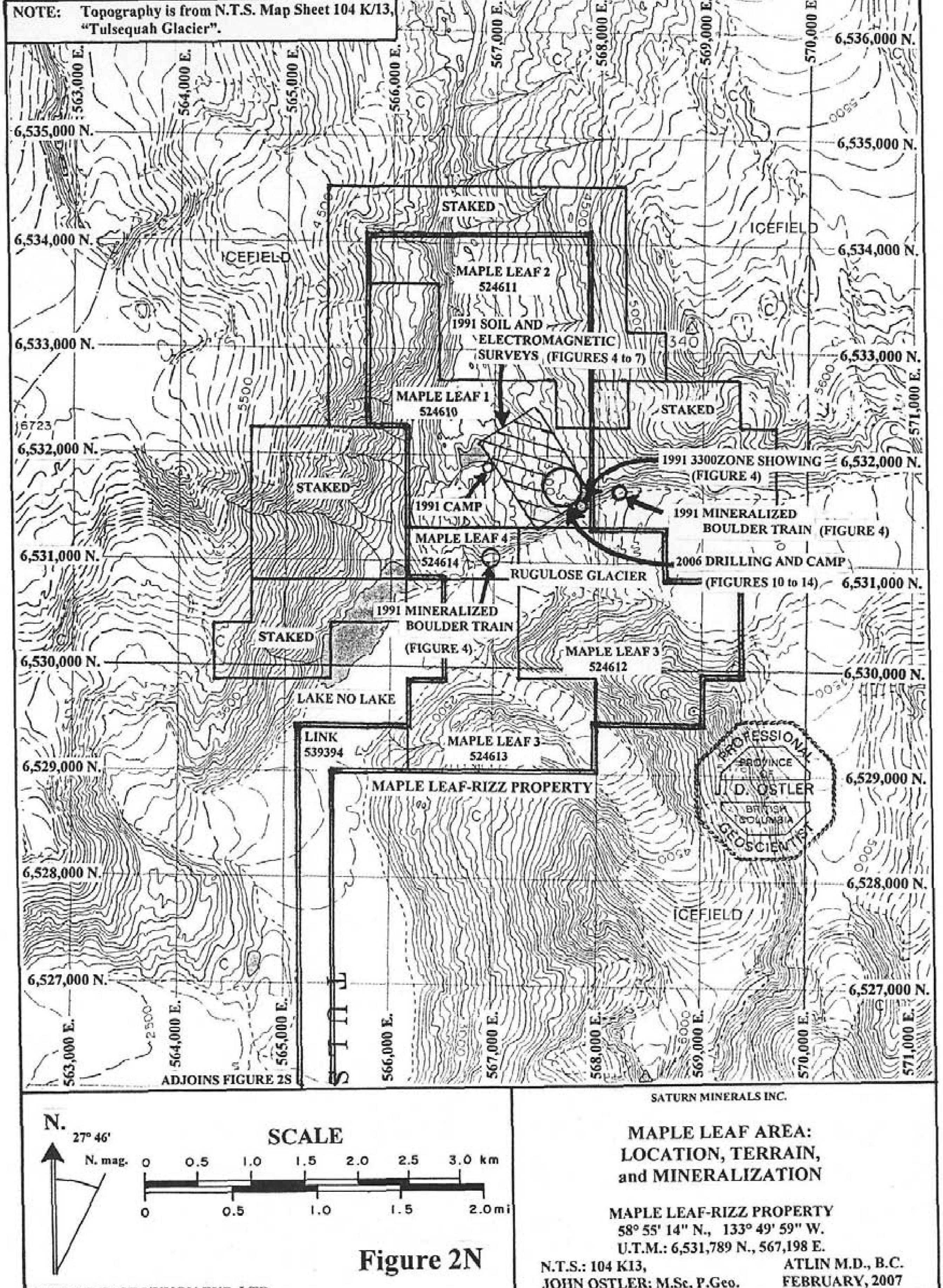
CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

## GENERAL LOCATION

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.

N.T.S.: 104 K/13,
ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo.
FEBRUARY, 2007


NOTE: Topography is from N.T.S. Map Sheet 104 K/13, "Tulsequah Glacier".
6,536,000 N.
6,535,000 N.
6,534,000 N.
6,533,000 N.
6,532,000 N.
6,531,000 N.
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563,000 E.
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568,000 E.
569,000 E.
570,000 E.
571,000 E.
STAKED
ICEFIELD
MAPLE LEAF 2
524611
1991 SOIL AND
ELECTROMAGNETIC
SURVEYS (FIGURES 4 to 7)
MAPLE LEAF 1
524610
1991 CAMP
1991 3300ZONE SHOWING
(FIGURE 4)
1991 MINERALIZED
BOULDER TRAIN (FIGURE 4)
MAPLE LEAF 4
524614
2006 DRILLING AND CAMP
(FIGURES 10 to 14)
RUGULOSE GLACIER
1991 MINERALIZED
BOULDER TRAIN
(FIGURE 4)
MAPLE LEAF 3
524612
LAKE NO LAKE
LINK
539394
MAPLE LEAF 3
524613
MAPLE LEAF-RIZZ PROPERTY
PROFESSIONAL
PROVINCE OF
J. D. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST
ADJOINS FIGURE 2S
N.
27° 46'
N. mag.
SCALE
0 0.5 1.0 1.5 2.0 2.5 3.0 km
0 0.5 1.0 1.5 2.0 mi
CASSIAR EAST YUKON EXP. LTD.
SATURN MINERALS INC.
MAPLE LEAF AREA:
LOCATION, TERRAIN,
and MINERALIZATION
MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K13,
ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo.
FEBRUARY, 2007

Figure 2N

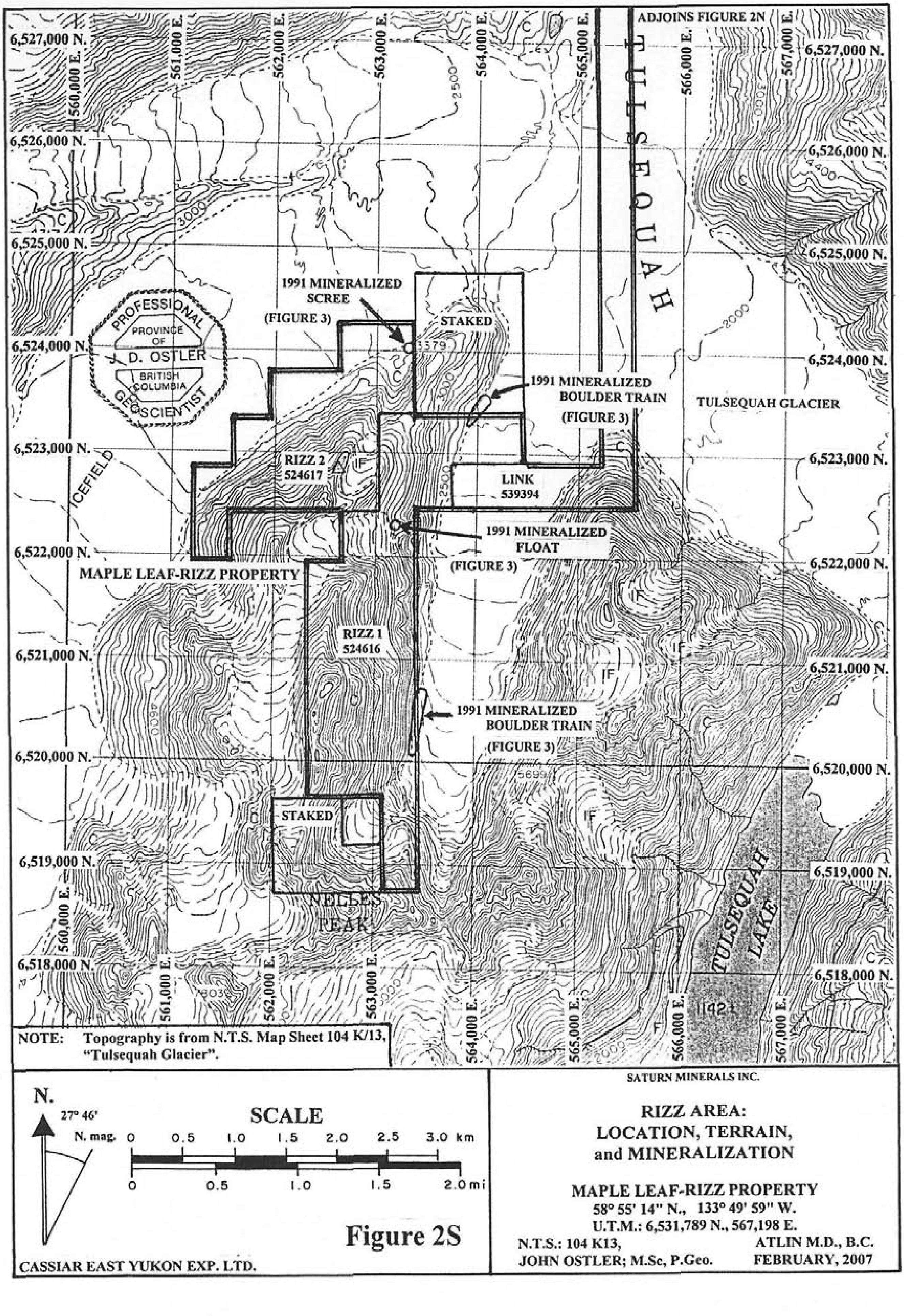



**Figure 2S**

CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

**RIZZ AREA: LOCATION, TERRAIN, and MINERALIZATION**

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

The locations of significant exploration areas within the property area are as follow (Figure 2):

**Table 1**

**LOCATIONS of SIGNIFICANT AREAS on the MAPLE LEAF-RIZZ PROPERTY**

| Center of Entity | U.T.M. Co-ordinates | Longitude and Latitude |
|---|---|---|
| Center of the Maple Leaf Area | 6,531,789N., 567,198 E. | 58° 55' 14" N. 133° 49' 59" W. |
| Center of the Rizz Area | 6,522,420 N. 563,030 E. | 58° 50' 13" N. 133° 54' 29" W. |
| Center of drilling on the Maple Leaf Area | 6,532,092 N. 567,590 E. | 58° 55' 23" N. 133° 45' 39" W. |
| Northwestern Rizz scree | 6,524,063 N. 563,320 E. | 58° 51' 06" N. 133° 54' 09" W. |
| Northern Rizz boulder train | 6,523,509 N. 563,980 E. | 58° 50' 48" N. 133° 50' 29" W. |
| Central Rizz float | 6,522,471 N. 563,180 E. | 58° 50' 15" N. 133° 54' 20" W. |
| Southern Rizz boulder train | 6,520,364 N. 563,388 E. | 58° 49' 07" N. 133° 54' 09" W. |

Tenure of the claims comprising the Maple Leaf-Rizz property are as follow:

**Table 2**

**MAP-STAKED CLAIMS**

| Claim Name | Record Number | Area: Hectares (Acres.) | Record Date | Expiry Date | Owner |
|---|---|---|---|---|---|
| MAPLE LEAF 1 | 524610 | 317.497 (784.22) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| MAPLE LEAF 2 | 524611 | 250.580 (618.93) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| MAPLE LEAF 3 | 524612 | 317.658 (784.62) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| MAPLE LEAF 3 | 524613 | 234.106 (578.24) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| MAPLE LEAF 4 | 524614 | 50.148 (123.87) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| RIZZ 1 | 524616 | 418.972 (1,034.68) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| RIZZ 2 | 524617 | 267.994 (661.95) | January 1, 2006 | January 1, 2010 | Saturn Minerals Inc. |
| LINK | 539394 | 351.524 (868.26) | August 15, 2006 | August 15, 2010 | Saturn Minerals Inc. |
| | | 2,208.479 (5,454.95) | | | |

**Note about Common Claim Names:**

**In British Columbia under the former system of locating claims on the ground, each claim was staked under a unique name and received its record number upon subsequent recording. Under the current map-staking system, claims are issued unique numbers and their names, if any, are chosen at the discretion of the applicant. Thus there is no longer any importance for claims to have unique names.**

## 1.2 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

The Maple Leaf-Rizz property is located in the Boundary Ranges of the Coast Mountains of northwestern British Columbia. The terrain of that physiographic region was described by S.S. Holland (1976) as follows:

> The Boundary Ranges ... comprise the dominantly granitic mountains along the Alaska-British Columbia boundary, extending northwestward from the Nass River.
>
> In the northern section, in particular north of the Iskut River, the Boundary Ranges are bounded by the Tagish and Tahltan Highlands. The highlands form mountainous transition belts lying between the high rugged granitic mountains along the Alaska boundary and the essentially 5,000 foot (1,524-metre) upland surface of the Yukon and Stikine Plateaus respectively.
>
> The ranges have a core of intrusive granitic rocks which are flanked along the eastern margin by sedimentary and volcanic rocks of Paleozoic and Mesozoic age. Granite is extensively exposed along the axis of the ranges. Mixed assemblages of Triassic and Jurassic greywackes and volcanic rocks predominate along the eastern contact of the batholith.
>
> The high peaks are serrate. The summit level is somewhat lower in the ranges east of the granitic contact. There are noticeable topographic differences between the erosion forms in sedimentary rocks and in granitic rocks, the sedimentary rocks tending to produce a sharp topography that is more irregular than that of the granitic ranges farther west. The ranges south of Taku River, at the head of Whiting River, and between the heads of the Sheslay, Tahltan, and Chutine Rivers, are extremely rugged. The slopes below 3,500 and 4,000 feet (1,066.8 and 1,219.2 metres) are heavily forested, and scenic features of glacial origin, such as cirques, hanging valleys, and over-steepened slopes are everywhere present.
>
> The Boundary Ranges reach their greatest heights in the granite peaks of Mount Ratz (10,290 feet, 3,136.4 metres), Mussel Peak (10,260 feet, 3,127.3 metres), Noel Peak (10,040 feet, 3,060.2 metres), and Kate's Needle (10,002 feet, 3,048.6 metres) north of the Stikine River. South and west of Bowser Lake the highest summits are Mount Jancowski (9,800 feet, 2,987 metres), and Mount Patullo (8,951 feet, 2,728.3 metres), but elsewhere in the ranges the summits range between 7,000 and 8,500 feet (2,133.6 and 2,590.8 metres) in elevation. The fact that the summits are close to the coast and that the streams draining them fall rapidly to sea-level emphasizes the great relief in the mountains.
>
> In the ranges between Stewart and Mount Foster (north of Skagway) a very high percentage of the area is under a cover of glacial ice, through which isolated peaks project as nunataks. The Taku Icefield ... is a very large icefield which extends southward from Skagway to the Taku River. From it the Meade, Eagle, and Mendenhall Glaciers and others flow westward to the sea, the Llewellyn Glacier flows eastward to Atlin Lake, and the Tulsequah Glacier flows southward to the head of Tulsequah River. Another extensive icefield lies north of Iskut River and south of the heads of Scud River and Mess Creek; other icefields lie between the Unuk and Salmon Rivers and between the heads of the Kitsault and Bear Rivers.

Timberline is an elevation of 3,500 to 4,000 feet (1,066.8 and 1,219.2 metres), and below that level the slopes are heavily forested and underbrush is dense.

The ranges have been heavily glaciated, the high peaks have matterhorn forms produced by well-developed cirque glaciation, peaks and ridges below about 6,500 feet (1,981.2 metres) are rounded and subdued by the effects of ice-sheet erosion, and the valley walls have been steepened and spurs truncated so as to produce typical U-shaped profiles. The steep topography, combined with heavy undergrowth below timberline, makes the region extremely difficult for ground travel.

During the Pleistocene the land was heavily loaded with ice, and near the coast was submerged beneath the sea. Deposits of marine origin occur at elevations up to 100 feet (30.5 metres) above present sea-level along the Taku River, and terraces and benches up to 500 feet (152.4 metres) above sea-level may be delta deposits of marine origin that indicate a submergence of 500 feet (152.4 metres). In the Alice Arm and Portland Canal areas, marine clays, deltas, and old beaches now at considerable height above sea-level indicate a maximum submergence there of 485 feet (147.8 metres) below present sea-level.

The ranges are crossed by the Taku, Whiting, Stikine, Iskut, Unuk, Bear, and Kitsault Rivers. These antecedent rivers whose valleys, incised before the Pleistocene, served as the main drainage-ways for the westward flow of glacial ice. The valleys were over-deepened by the passage through them of very large amounts of ice, with the formation of the many hanging valleys which are characteristic of the region. Cirque erosion is an important phase of the late stage of glaciation, and large well-developed cirque basins carved on the north and northeast sides of peaks and ridges are characteristic of the landscape.

A remarkable feature of the ranges between Portland Canal and the Nass River is the abundance of northeasterly trending lineaments in the granitic rocks. These are marked by Observatory Inlet and by the Kincolith, Iknouk, and Nass Rivers, as well as by numerous minor topographic features visible on aerial photographs.

...

Holland, S.S.; 1976: pp. 39-40.

Elevations on the Maple Leaf area in the northern part of the property range from about 1,585 m (5,200 ft) at the eastern boundary of the MAPLE LEAF 1claim to about 609.6 m (2,000 ft) at the surface of Lake No Lake at the southwestern corner of the Maple Leaf area (Figure 2N). Elevations on the Rizz area in the southern part of the property range from about 1,981 m (6,500 ft) on the ridge near Nelles Peak at the southern end of the Rizz area to about 755.9 m (2,480 ft) at the edge of the glacier near its northeastern corner (Figure 2S).

Adequate fresh water for a small mining operation in the Maple Leaf area could be pumped up from the small lake in the central part of the MAPLE LEAF 1 claim. Also, it could be diverted from some of the many small streams that cascade down the slopes toward Moosetrap Creek. Freezing would be a problem in winter. Securing a water supply on the steep unstable slopes in the Rizz area would be difficult and costly.

There is no significant forest anywhere on the Maple Leaf-Rizz property.

Timbers to build the platforms for the 2006 drilling in the Maple Leaf area were flown in by helicopter from a landing point at Warm Bay on the eastern shore of Atlin Lake, located about 62 km (37.8 mi) north-northeast of the property.

The property is remote from any established power grid; thus, power would have to be generated on site.

The Maple Leaf area occupies a steeply benched alpine slope that forms the eastern side of the Moosetrap Creek valley. The Rizz area occupies a very steep unstable slope on the eastern side of a knife-edge ridge that extends northward from Nelles Peak, a matterhorn-like structure. At the base of the slope is an arm of Tulsequah Glacier. Rock outcrops are common to abundant throughout the Maple Leaf-Rizz property area.

Soil profiles on most of the Maple Leaf area are immature making soil geochemical surveys less effective than they would be in areas of more mature soil profiles. Soil profiles have not developed on the unstable slopes in the Rizz area.

The closest weather station to the property-area is at Atlin, British Columbia, located 73 km (44.5 mi) north-northeast of the property area on the eastern side of the Coast Mountains (Figure 1). Atlin is at a much lower elevation than the property area. Thus, climatic statistics for Atlin can be used only as a general guide to those in the Maple Leaf-Rizz property area. Statistics for Atlin are quoted from Environment Canada as follow:

| | | | | | |
|---|---|---|---|---|---|
| Average temperature: January, | High | -11.5°C (11.3°F.) | July, | High | 18.6°C (65.5°F.) |
| | Low | -19.3°C. (-2.7°F.) | | Low | 7.5°C (45.5°F.) |

Average annual precipitation: 347.3 mm (13.67 inches) of which 192.5 mm (7.58 inches) falls as rain and 154.8 mm (6.09 inches) falls as snow.
(This translates into 155 cm or 60.9 inches of actual snowfall.)

Wettest month: October, with 40.6 mm (1.6 inches) precipitation
Driest month: April, with 8.7 mm (0.34 inches) precipitation

Snow remains on the ground in Atlin from October to May.

Note: This data were obtained from the National Climate Archive (Climate Data On Line, Canadian Climate Normals) at www.climate.weatheroffice.ec.gc.ca/climate

The climate in the Maple Leaf-Rizz property area is colder and much wetter than it is in Atlin. The property area is snow-covered from September until June during most years. During summer, evaporation from the numerous glaciers around the property area produces thick banks of ice-fog accompanied by local showers of drizzle. This makes helicopter travel in the area difficult to impossible much of the time, and can drastically increase the cost of exploration in the area.

There is no road access to the property area and developing it would be difficult and expensive. A road route southward to Tulsequah is hampered by steep, unstable slopes and ice crossings. One northward to Atlin is blocked by Atlin Provincial Park. Recent provincial governments have been most adverse to any development in the many provincial parks that they have established.

During the 2006 drill program, access to the property was from Atlin via helicopter.

Atlin, British Columbia, a village of less than 1,000 permanent residents, is the closest settlement to the property. It has a gas station, a few restaurants, and grocery stores. Also, helicopters, float planes, and small barges can rented in the area. Services in Atlin are sufficient to support a surface exploration program. Atlin is 73 km (44.5 mi) north-northeast of the Maple Leaf-Rizz property (Figure 1).

The nearest regional service center to Atlin is Whitehorse, the capital of Yukon. Whitehorse has a population in excess of 40,000 and hosts many drilling, exploration and mining services. The city has a regional airport with scheduled jet service to other parts of North America and it is a major stop on the Alaska Highway. Whitehorse is 182 km (111 mi) via Jake's Corner from Atlin. Yukon Highway No.1 between Whitehorse and Jake's Corner is paved. Highway 7 from Jake's Corner southward to Atlin is mostly good gravel road. Local rumor has it that Highway 7 will be paved soon.

The closest sea ports to Whitehorse are Haines and Skagway, Alaska. Roads have been opened to connect the Haines area with Whitehorse.

It takes a commercial jet less than 3 hours to fly from Whitehorse, Yukon to Vancouver, British Columbia or Seattle, Washington.

## 2.0 HISTORY

### 2.1 Chronology of Exploration in the Maple Leaf-Rizz Property Area

**Pre-1990** Prospecting of unknown extent was conducted in the mountains around Tulsequah Glacier. A pit was blasted into the 3500 zone at the eastern boundary of the Maple Leaf 1 (524610) claim (Figure 10).

**1990** American Bullion Minerals Limited. prospected the Rizz and Maple Leaf areas. Gold-silver-lead-zinc mineralization was discovered in a train of schist boulders and silver-lead zinc was found in marble in a scree in the northern part of the Rizz area (Figure 3). Massive and disseminated sulphide mineralization was found in boulder trains along the northern flank of Rugulose Glacier (Figure 4). Three gossanous rhyolitic zones were discovered on the slope north of the glacier: the 3100, 3300, and 3500 zones. The Glacier Light property was staked over what American Bullion named the Maple Leaf area . The Rizz claim group was staked on the Rizz area. The two claim groups were recorded on August 18 and September 8, 1990 respectively.

**1991** American Bullion's prospectors returned to the Rizz area and discovered lead-zinc-silver mineralization at the toe of a small glacier in its central part, and lead-zinc mineralization at the head of a glacier in the southern part of it (Konkin, 1991B). Rock, soil and silt sampling programs were conducted in the Maple Leaf area. Subsequently, a pulse electromagnetic survey was conducted over the 1991 Maple Leaf grid (Konkin, 1991A) (Figures 4 to 7). The 3300-zone showing comprising semi-massive and disseminated sulphide mineralization was sampled. It was located on a steep slope near the top of the cliff on the northern flank of Rugulose Glacier.

**1992 to 2006** The Glacier Light and Rizz claims lapsed.

**2006** The Maple Leaf-Rizz claim group was map-staked by Saturn Minerals Inc. of Vancouver, British Columbia. In August and September, 2006, Saturn conducted the current exploration program, a drill program of seven holes (section 5, this report) (Figures 10 to 14). A total of 1,347.1 m (4,419.6 ft) of NT drilling was done.

**2.2 Exploration in the Maple Leaf-Rizz Property Area**

During the1920s, the Polaris Taku, Tulsequah Chief, and Big Bull mines were discovered along the Taku and Tulsequah rivers. Since then, prospecting has been conducted intermittently throughout the region.

Although there is no available record of early prospecting in the areas covered by the Maple Leaf and Rizz claims, some record of early activity in the Maple Leaf area remains on the ground. An old blast pit, which in the writer's opinion, predates the 1980s is present near the 3500 zone where it crosses the eastern boundary of the MAPLE LEAF 1 (524610) claim (Figure 10).

American Bullion Minerals Limited. conducted a reconnaissance prospecting program in both the Rizz and Maple Leaf areas during August and September 1990. The Glacier Light group was staked to cover the Maple Leaf area. The Rizz group was staked over the Rizz area. Those claim groups were recorded on August 18 and on September 8 respectively.

Two mineralized boulder trains were found along the northwestern margin of the glacier that crossed the eastern part of the 1990 Rizz property (Figures 2S and 3). Lead-zinc mineralization in a thin carbonate unit was found in a scree in the property's northern part, and at the toe of a small tributary glacier in the central part of the property.

American Bullion's prospectors returned to the Rizz area for two days during July, 1991 to conduct further prospecting. Although it was not specifically stated in Konkin's (1991B) report, the northern boulder train and scree seem to have been sampled in 1990; the two southern areas were sampled during American Bullion's return to the Rizz area during 1991.

K.J. Konkin (1991B) (Figure 3) reported that 12 samples taken from the northern boulder train on the Rizz property contained an average of: 3.77 gm/mt (0.11 oz/ton) gold, 49.7 gm/mt (1.45 oz/ton) silver, 0.5% copper, 0.19% lead, and 4.13% zinc. This was an un-cut average that was skewed upward by two of the 12 samples. Sample No. 11550 contained: 27.65 gm/mt (0.806 oz/ton) gold, 425 gm/mt (12.4 oz/ton) silver, 0.068% copper, 0.55% lead, and 15.9% zinc. That sample was taken from a boulder of schist that was visually estimated to contain 30-35% sphalerite and 10-15% pyrite.

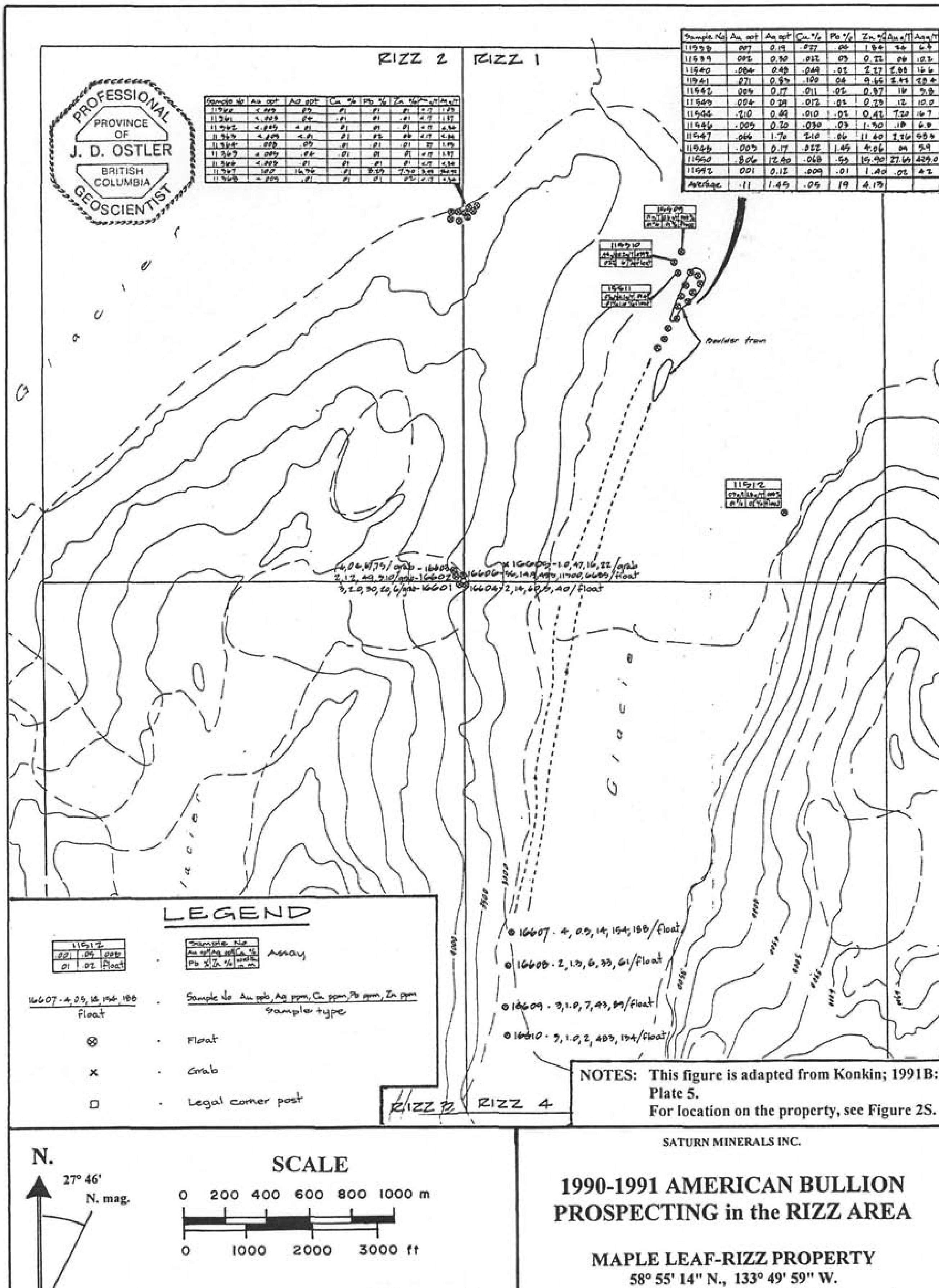



Figure 3

CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

**1990-1991 AMERICAN BULLION PROSPECTING in the RIZZ AREA**

**MAPLE LEAF-RIZZ PROPERTY**

58° 55' 14" N., 133° 49' 59" W.

U.T.M.: 6,531,789 N., 567,198 E.

N.T.S.: 104 K/13, ATLIN M.D., B.C.

JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

Four float samples were taken from a boulder train near the head of the glacier near the southern boundary of the Rizz property. They contained only traces of gold, silver, and copper. Sample No. 16610 had the highest concentrations of combined lead and zinc at 483 ppm lead, and 134 ppm zinc. No descriptions of those samples accompanied Konkin's (1991B) report.

A total of nine samples were taken from a scree located on the northern slope of the ridge that transects the Rizz area. The scree was located at the eastern boundary of the RIZZ 2 (524617) claim (Figures 2S and 3).

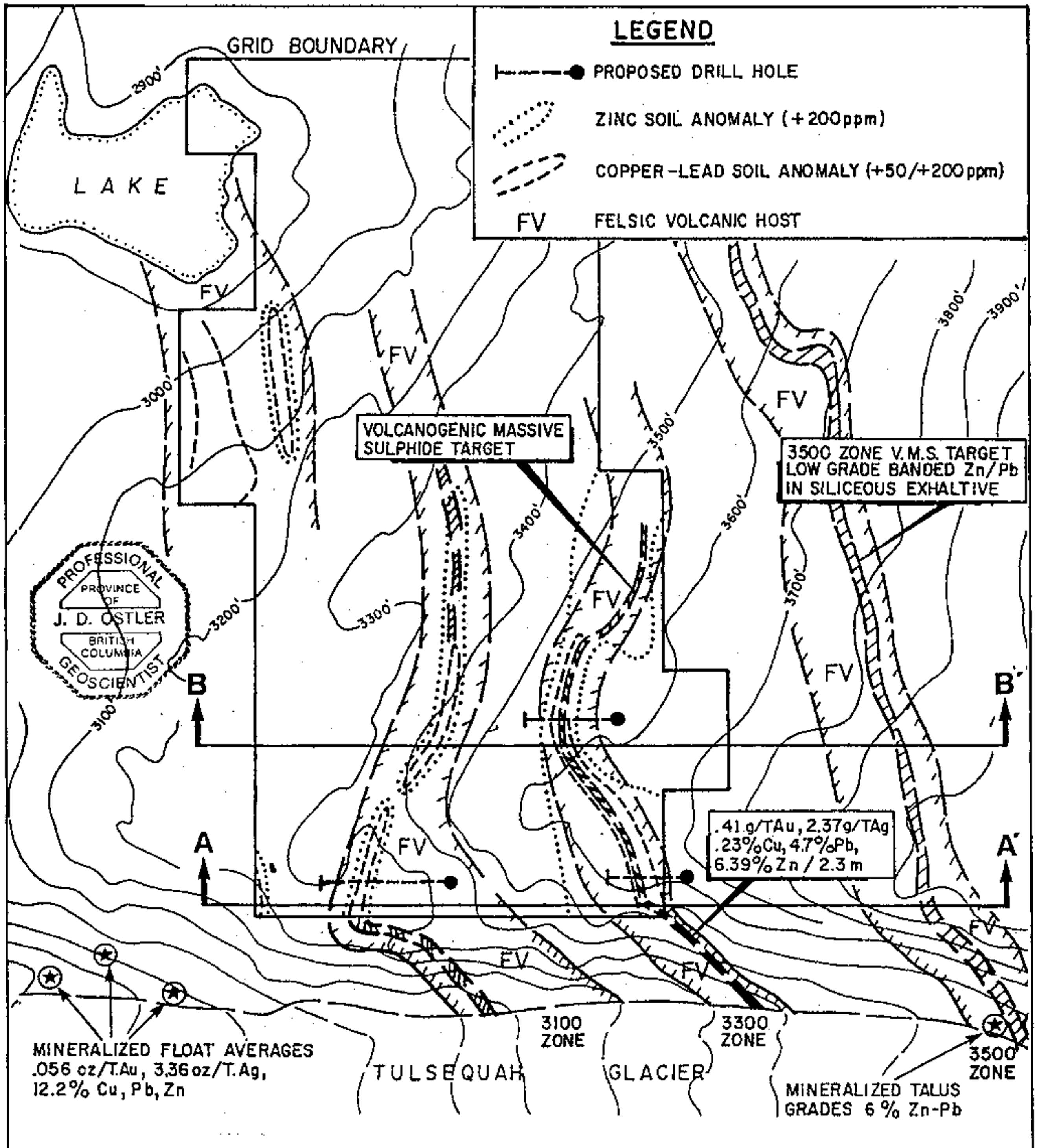
Eight of the nine samples were of chloritic schist that contained normal metal contents for such rocks. Sample No. 11367 was described as a laminated white marble. It contained: 3.43 gm/mt (0.1 oz/ton) gold, 560.92 gm/mt (16.36 oz/ton) silver, a trace of copper, 8.25% lead, and 7.3% zinc.

Five samples were taken from the toe area of a small tributary glacier on the southeastern slope of the ridge that transects the Rizz area (Figures 2S and 3). Four of those samples had only traces of economic metals; one float sample, No. 16606 contained: 56 ppb gold, 149 gm/mt (4.35 oz/ton) silver, 0.049% ppm copper, 1.13% lead, and 0.67% zinc. That sample was not described.

Focus of American Bullion's 1990-1991 work was on the Maple Leaf area. During the 1990 exploration program, prospectors identified three shallowly dipping siliceous zones that they named the 3100, 3300, and 3500 zones (Figures 4, 5N, and 5S).

Prospecting along the cliff bordering the northern flank of Rugulose Glacier resulted in the discovery of mineralized float near the foot of the cliff beneath the 3500 zone, some small massive sulphide lenses at the top of the cliff face in the 3300 zone, and a group of mineralized boulders in a bowl atop the cliff west of the 3100 zone (Figures 4 and 5S). American Bullion's crew took a total of 75 rock geochemical samples along the cliff at the northern side of Rugulose Glacier and on the slope north of it (Konkin, 1991A).

Seven float samples, Nos. 11155-11161, were taken at the base of the cliff beneath the 3500 zone. Despite American Bullion's claim on its compilation map (Figure 4) that the float contained 6% combined lead and zinc, the samples averaged: 0.11 gm/mt (0.003 oz/ton) gold, 8.9 gm/mt (0.260 oz/ton) silver, 77.1 ppm copper, 0.40% lead, and 0.61% zinc. The best sample, No. 11159 contained: 0.18 gm/mt (0.005 oz/ton) gold, 24.0 gm/mt (0.7 oz/ton) silver, 170 ppm copper, 1.23% lead, and 1.42% zinc (Figure 5S).




NOTES: This figure is adapted from Konkin; 1991A: Figure 4.
For location on the property, see Figure 2N.
For details of 1991 work in the Maple Leaf area, see Figures 5N, 5S, 6N, 6S, and 7.

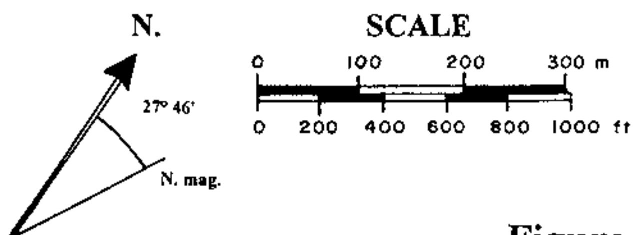



**Figure 4**

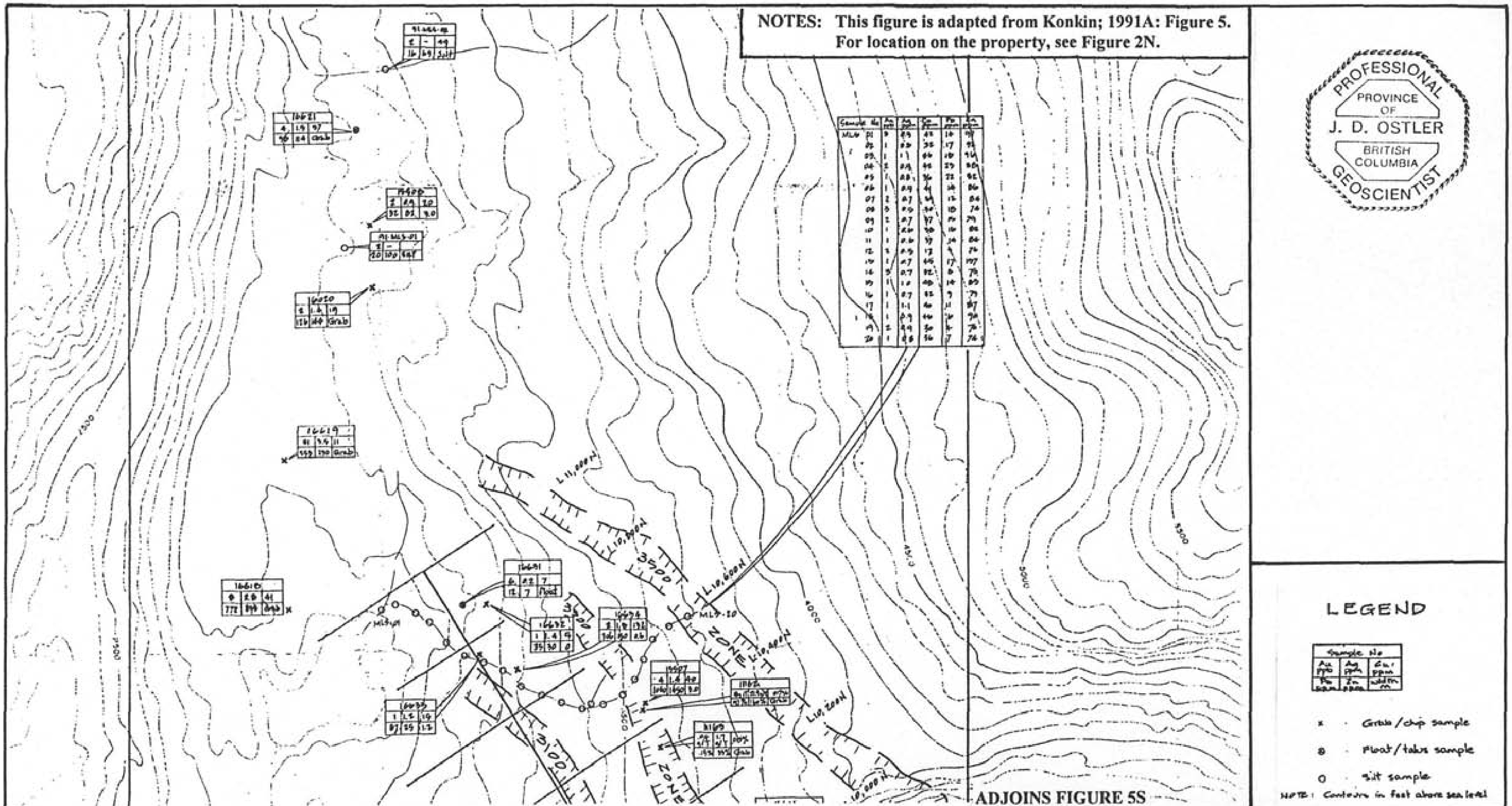
CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

**1991 AMERICAN BULLION COMPILATION of the MAPLE LEAF AREA**

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

NOTES: This figure is adapted from Konkin; 1991A: Figure 5.
For location on the property, see Figure 2N.




N.
27° 46'
N. mag.

**SCALE**

0 20 40 60 80 100 m

0 50 100 150 200 250 300 ft

CASSIAR EAST YUKON EXP. LTD.

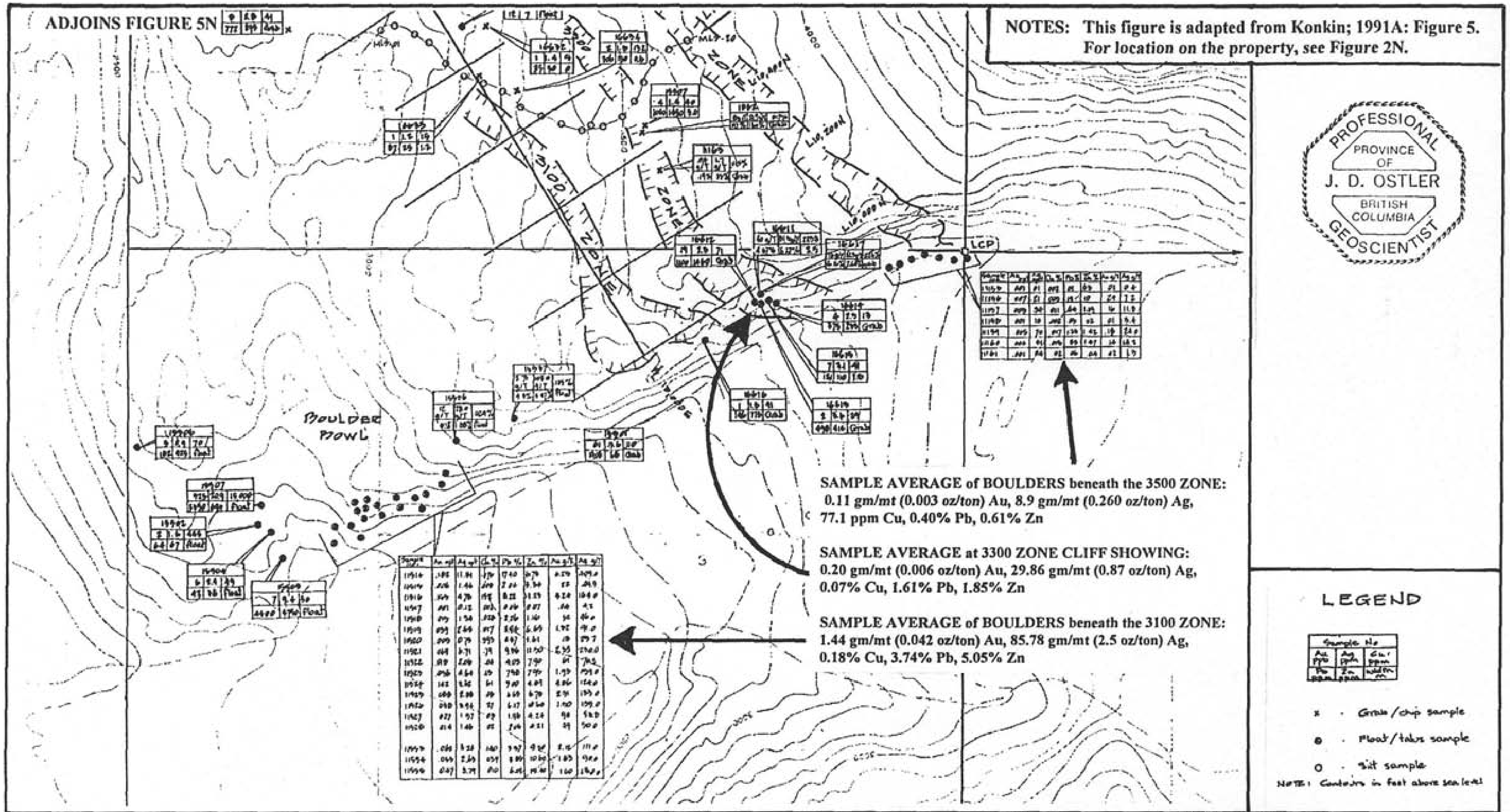
**Figure 5N**

SATURN MINERALS INC.

**1990-1991 AMERICAN BULLION ROCK SAMPLING in the NORTHERN MAPLE LEAF AREA**

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.

N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007




N.

27° 46'

N. mag.

**SCALE**

0 20 40 60 80 100 m

0 50 100 150 200 250 300 ft

CASSIAR EAST YUKON EXP. LTD.

# Figure 5S

SATURN MINERALS INC.

**1990-1991 AMERICAN BULLION ROCK SAMPLING in the SOUTHERN MAPLE LEAF AREA**

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.

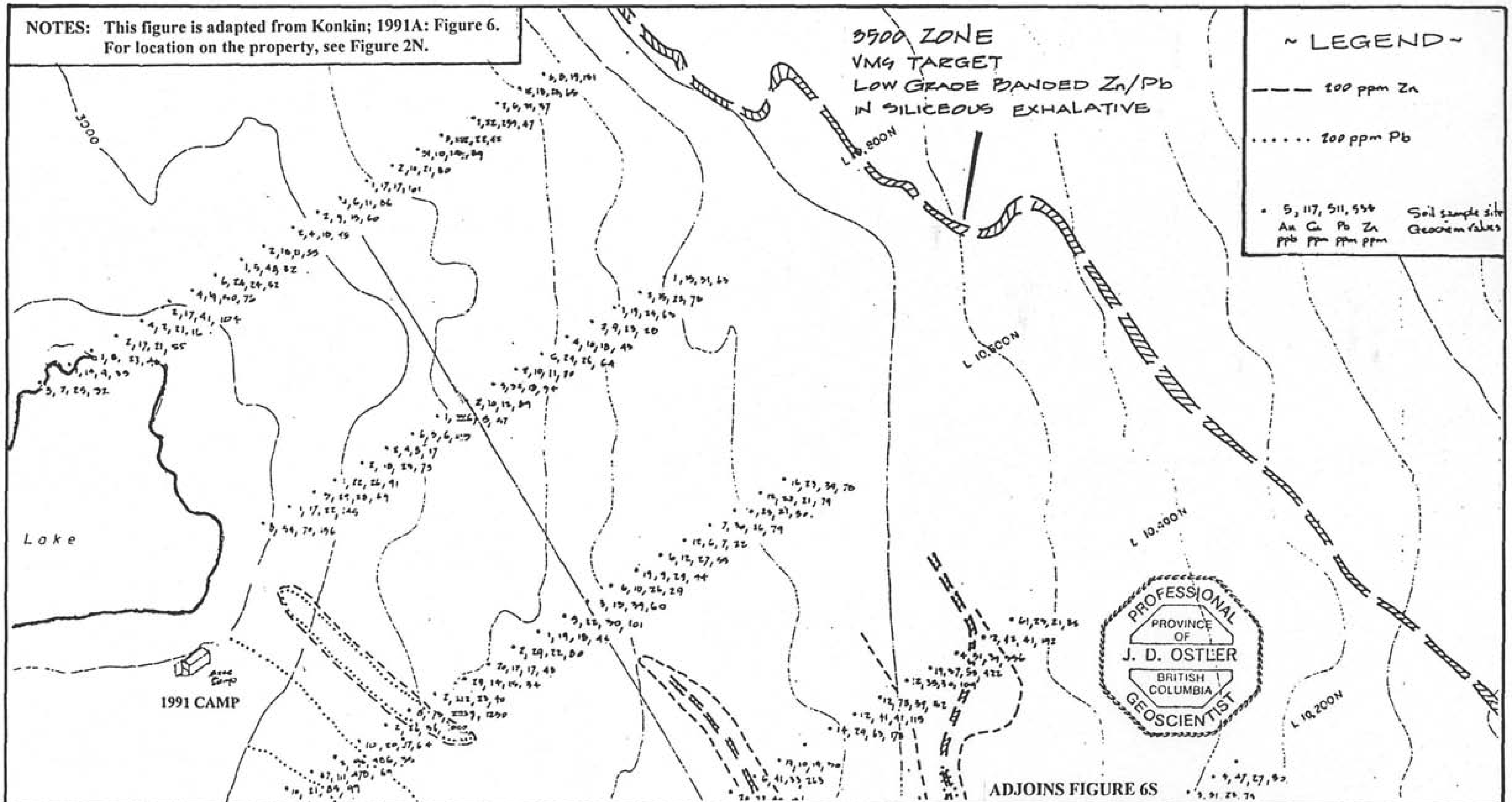
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

Mineralized boulders were discovered in a bowl down-ice from, and west of the 3100 zone (Figures 4 and 5S). The average content of 25 samples taken in that area was: 1.44 gm/mt (0.042 oz/ton) gold, 85.78 gm/mt (2.5 oz/ton) silver, 0.18% copper, 3.74% lead, and 5.05% zinc (Figure 5S). The highest grade sample, No. 11514 contained: 6.25 gm/mt (0.182 oz/ton) gold, 405 gm/mt (11.8 oz/ton) silver, 0.76% copper, 17.4% lead, and 6.73% zinc. American Bullion's assertion that samples from that area contained and average of: 1.919 gm/mt (0.056 oz/ton) gold, 115.2 gm/mt (3.36 oz/ton) silver and 12% combined copper, lead ,and zinc (Figure 4) could not be substantiated.

The only significant mineral showing found in place during the 1990-1991 exploration in the Maple Leaf area was on a steep slope near the crest of the cliff above Rugulose Glacier. There, outcrops of near the upper contact of the 3300 zone contained undisclosed amounts of semi-massive to disseminated sphalerite and galena with disseminated pyrite and chalcopyrite in the silicified felsic volcanic host. The sulphides occurred in deformed lenses (Konkin, 1991A). The extent and sizes of the mineralized lenses were not disclosed in Konkin's text. However, on the American Bullion compilation map (Figure 4), it was noted that the 3300 zone contained: 0.41 gm/mt (0.012 oz/ton) gold, 2.37 gm/mt (0.069 oz/ton) silver, 0.23% copper, 4.7% lead, and 6.39% zinc across a 2.3-m (7.5-ft) width.

A total of six rock samples, Nos. 16611 to 16615 and 16617, were taken from the 3300-zone showing area in 1991. They contained an average of: 0.20 gm/mt (0.006 oz/ton) gold, 29.86 gm/mt (0.87 oz/ton) silver, 0.07% copper, 1.61% lead, and 1.85% zinc. Four of the six samples contained only background concentrations of economic metals. The average metal content of that sample group was skewed upward by the inclusion of two high-grade samples, Nos. 16611 and 16617 (Figure 5S). The highest grade sample was No. 16617 which contained: 0.81 gm/mt (0.024 oz/ton) gold, 94.7 gm/mt (2.76 oz/ton) silver, 0.19% copper, 5.2% lead, and 5.9% zinc. Those concentrations were significantly lower than those claimed over a 2.3-m (7.5-ft) section on American Bullion's 1991 compilation map (Figure 4).

A grid was constructed across the slope northwest the cliff that flanked the glacier early in the 1991 exploration program (Figures 5N to 7). Six survey lines oriented at 060-240° were run at right angles out from a base line that was oriented at 150-330°. A total of 2.9 km (1.77 mi)of survey line and 1.05 km (0.64 mi)of base line was constructed.




N.

27° 46'

N. mag.

**SCALE**

0 50 100 150 200 250 m

0 250 500 750 ft

CASSIAR EAST YUKON EXP. LTD.

**Figure 6N**

SATURN MINERALS INC.

**1991 AMERICAN BULLION SOIL SURVEY in the NORTHERN MAPLE LEAF AREA**

MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.

N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

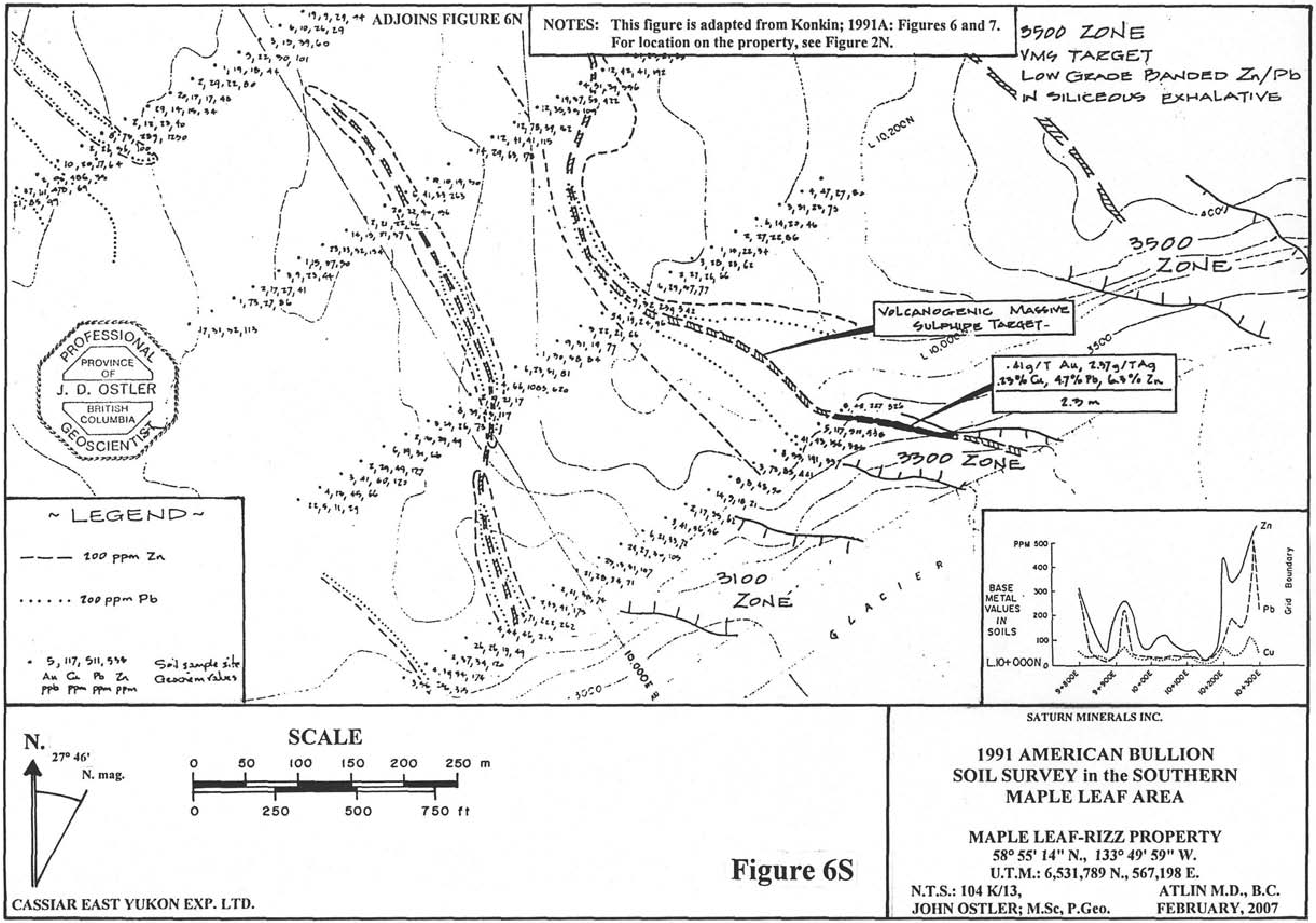
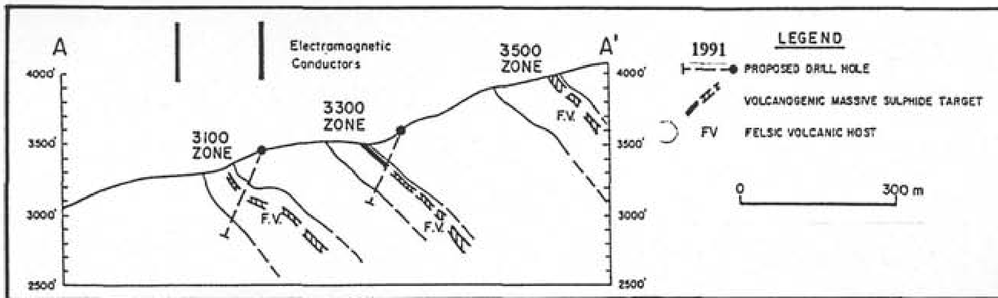
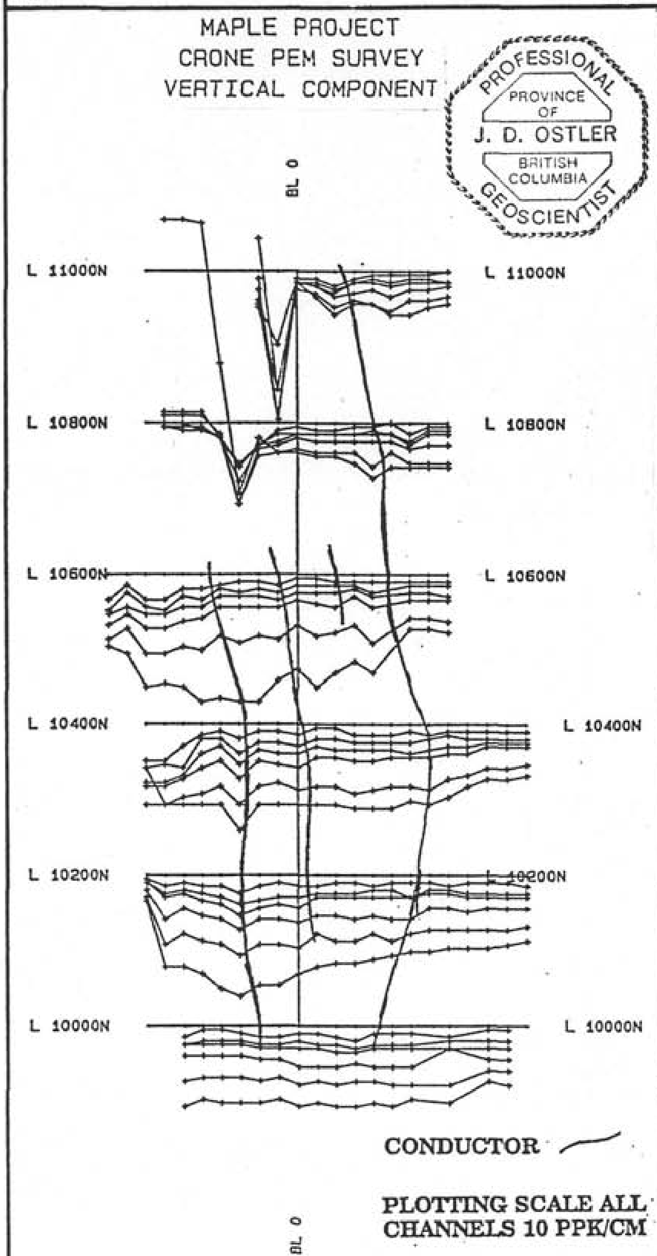
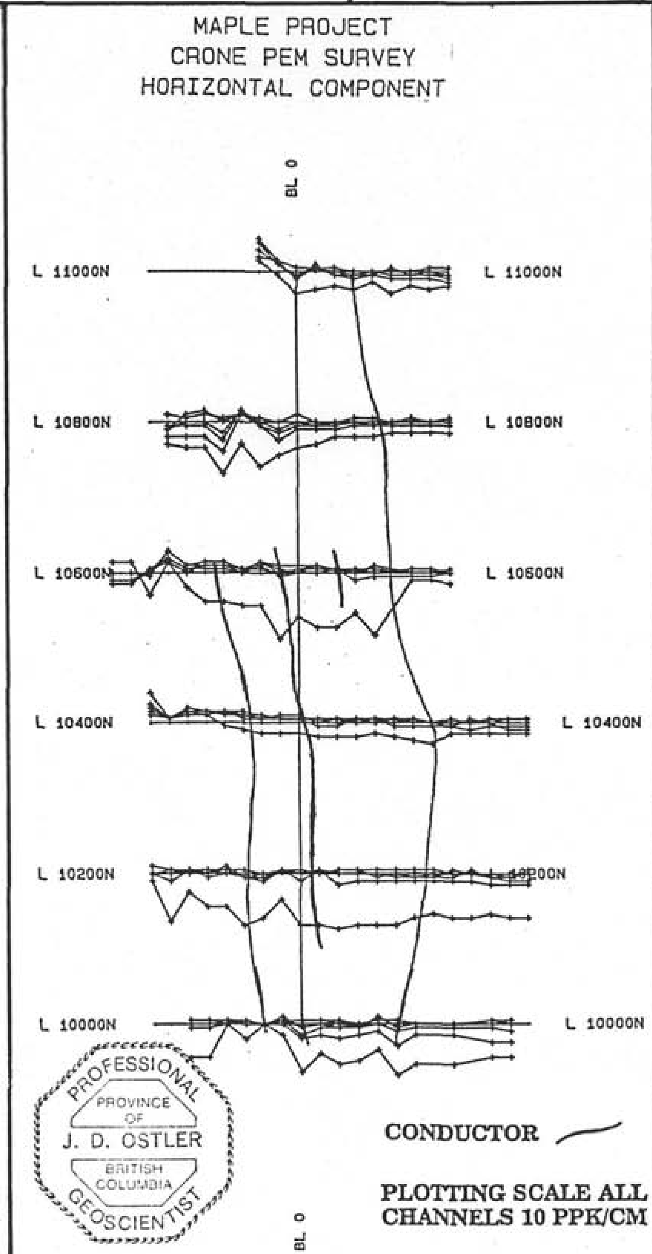

ADJOINS FIGURE 6N
NOTES: This figure is adapted from Konkin; 1991A: Figures 6 and 7.
For location on the property, see Figure 2N.
3500 ZONE
VMS TARGET
LOW GRADE BANDED Zn/Pb
IN SILICEOUS EXHALATIVE
L 10,200N
3500
ZONE
VOLCANOGENIC MASSIVE
SULPHIDE TARGET
L 10,000N
.41g/T Au, 2.37g/TAg
.13% Cu, 4.7% Pb, 6.3% Zn
2.3 m
3300 ZONE
3100
ZONE
GLACIER
10,000E
3000
PROFESSIONAL
PROVINCE OF
J. D. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST
~ LEGEND ~
200 ppm Zn
200 ppm Pb
5, 117, 511, 534
Au Cu Pb Zn
ppb ppm ppm ppm
Soil sample site
Geochem values
PPM 500
400
300
200
100
0
BASE METAL VALUES IN SOILS
L.10+000N
Zn
Pb
Cu
N.
27° 46'
N. mag.
SCALE
0 50 100 150 200 250 m
0 250 500 750 ft
CASSIAR EAST YUKON EXP. LTD.
SATURN MINERALS INC.
1991 AMERICAN BULLION
SOIL SURVEY in the SOUTHERN
MAPLE LEAF AREA
MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13,
ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo.
FEBRUARY, 2007

**Figure 6S**




NOTES:
This figure is adapted from Konkin; 1991A: Figures 9 and 10. For location on the property, see Figure 2N.



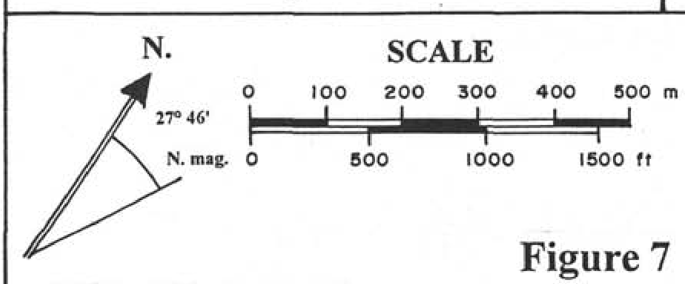




**Figure 7**

CASSIAR EAST YUKON EXP. LTD.

*SATURN MINERALS INC.*

**1991 AMERICAN BULLION**
**PULSE ELECTROMAGNETIC SURVEY**
**in the MAPLE LEAF AREA**

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

Survey lines were spaced at 200-m (656-ft) intervals along the base line; samples were taken at 25-m (82-ft) intervals along each line. A total of 124 soil samples were collected (Figures 6N and 6S).

K.J. Konkin (1991A) described the results of the 1991 soil survey in the Maple Leaf area as follows:

> ... Several coincident multi-element anomalies are present over the felsic, volcanic host unit... The multi-element anomalies coincide northwesterly lithological and structural trends on the Property. Unfortunately the grid was not extended far enough to the east to cover the projected extension of the 3500 zone mineralization.
>
> The 3100 and 3300 Zones are both reflected by a 400 meter-long (1.312f- long) copper-lead-zinc soil anomaly overlying the favourable felsic volcanic horizons. The zinc anomaly outlining the 3300 Zone is "open" beyond the limits of the sampled area.
>
> Konkin, K.J.; 1991A: p. 12.

During the 1991 exploration program, a small silt survey comprising 32 samples was conducted. The results were inconclusive.

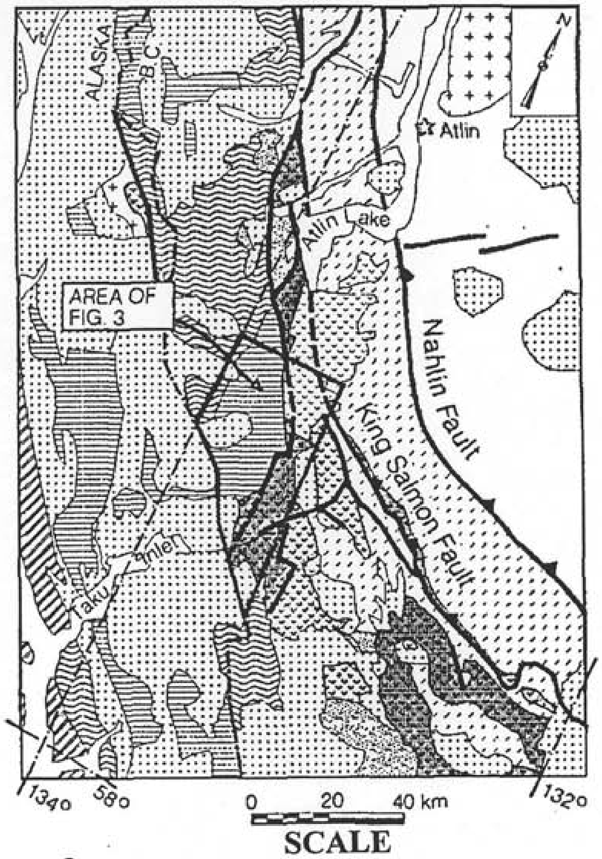
In July, 1991, Euro-Canadian Geological was commissioned by American Bullion to conduct a Crone pulse electromagnetic survey over the 1991 Maple Leaf Grid (Figure 7). K.J. Konkin (1991A) described the results of the pulse electromagnetic survey as follows:

> ... Several weak near surface (within 25 m or 82 ft) conductors were located by the survey. The conductors strike generally grid north-south. These conductors may be a response of massive sulphide, shear zones and/or graphite...
>
> Konkin, K.J.; 1991A: p. 18.

The severe changes in electromagnetic response in the northern part of the pulse electromagnetic survey co-inside with a sub-vertical fault. The other anomalies may be related to either electromagnetic differences of the rhyolitic zones and the host schists or to thrust faults (Figures 7 and 10).

At some time between 1992 and 2006, the Glacier Light and Rizz claims lapsed. During 2006, Saturn Minerals Inc. map-staked the claims comprising the current Maple Leaf-Rizz property.

In August and September, 2006, Saturn conducted the current exploration program, a drill program of seven holes (section 5, this report) (Figures 10 to 14). A total of 1,347.1 m (4,419.6 ft) of NT drilling was done.




**Post-Triassic**

- Eocene Sloko Group
- Late Cretaceous to Eocene intrusive rocks
- Jurassic intrusive rocks
- Jurassic Inklin overlap assemblage (Laberge Group)

**Triassic and older**

- Triassic intrusive rocks (Stikine Plutonic Suite)
- Stikine Terrane (undivided Mz and Pz)
- Cache Creek Terrane
- Metamorphic rocks of uncertain affinity
- Nisling Terrane
- Alexander and Taku Terranes

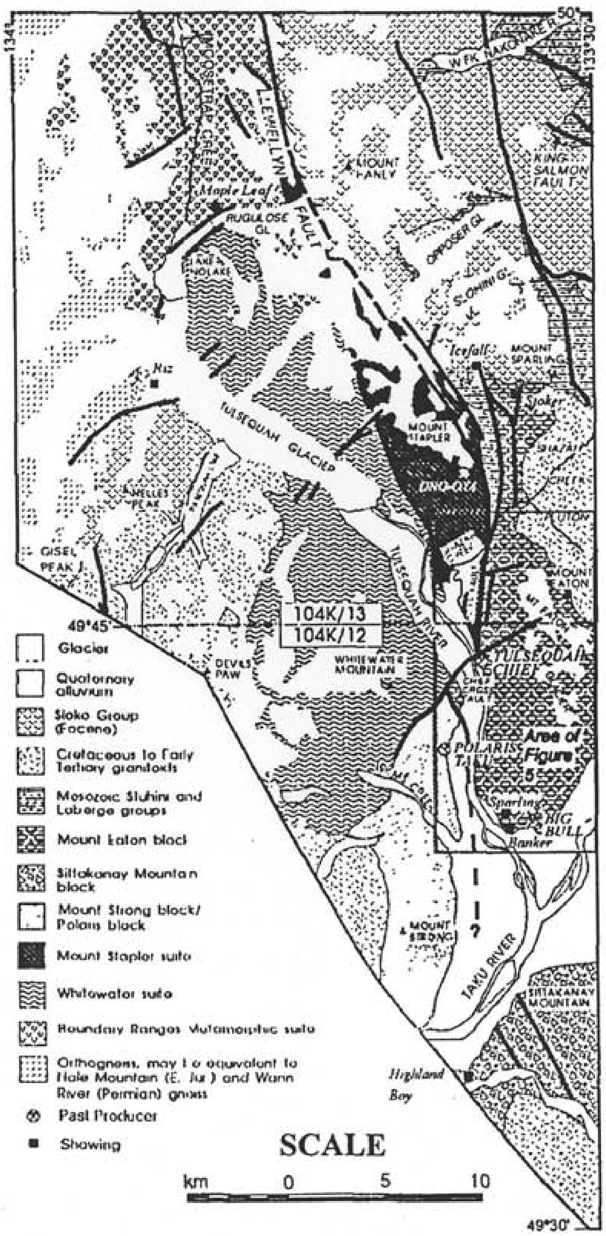



Figure 3. Simplified geological map of the Tulsequah area, showing major Mesozoic and Paleozoic lithotectonic assemblages, Late Cretaceous and Tertiary volcanic and intrusive rocks, faults (thick lines) and the locations of past-producing mines and significant showings. Geology simplified from 1993 British Columbia Geological Survey mapping, Nelson and Payne (1984), and Smith and Mihalynuk (1992).

NOTES: This figure is adapted from Mihalynuk et al.; 1994A: Figures 2 and 3.
For extent of and work on the Maple Leaf-Rizz property, see Figures 2N and 2S.
For geology, see Figures 9N and 9S.

N.

PROFESSIONAL
PROVINCE OF
J. D. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST

**Figure 8**

CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

## STRUCTURAL FEATURES of the TULSEQUAH AREA

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

NOTES: This figure is adapted from Mihalynuk et al.; 1994B: Sheet 2 of 3.
For structural features of the Tulsequah area, see Figure 8.
For extent of and work on the Maple Leaf-Rizz property, see Figures 2N and 2S.

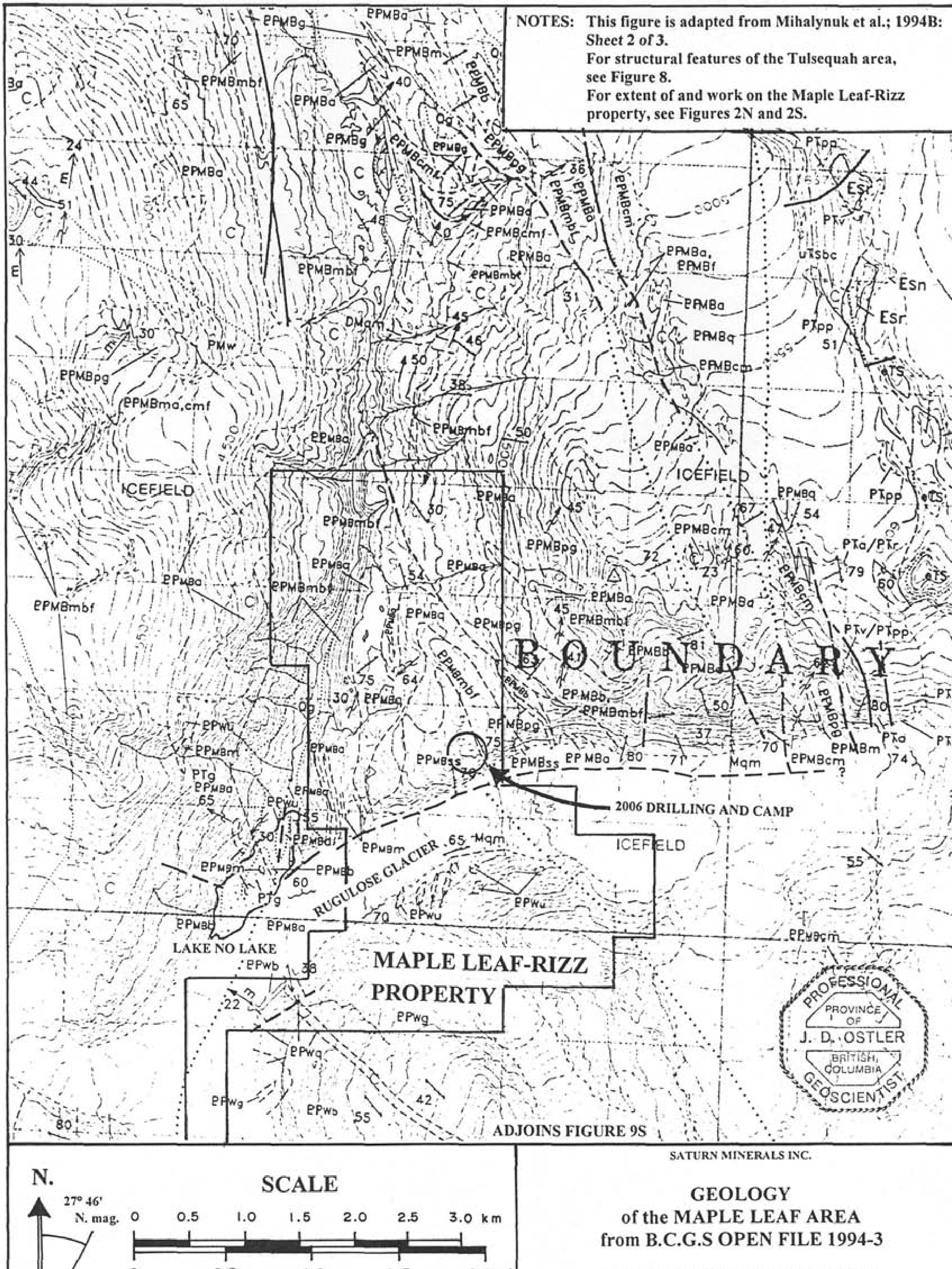



**Figure 9N**

CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

**GEOLOGY**
**of the MAPLE LEAF AREA**
**from B.C.G.S OPEN FILE 1994-3**

**MAPLE LEAF-RIZZ PROPERTY**
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

NOTES: This figure is adapted from Mihalynuk et al.; 1994B: Sheet 2 of 3.
For structural features of the Tulsequah area, see Figure 8.
For extent of and work on the Maple Leaf-Rizz property, see Figures 2N and 2S.

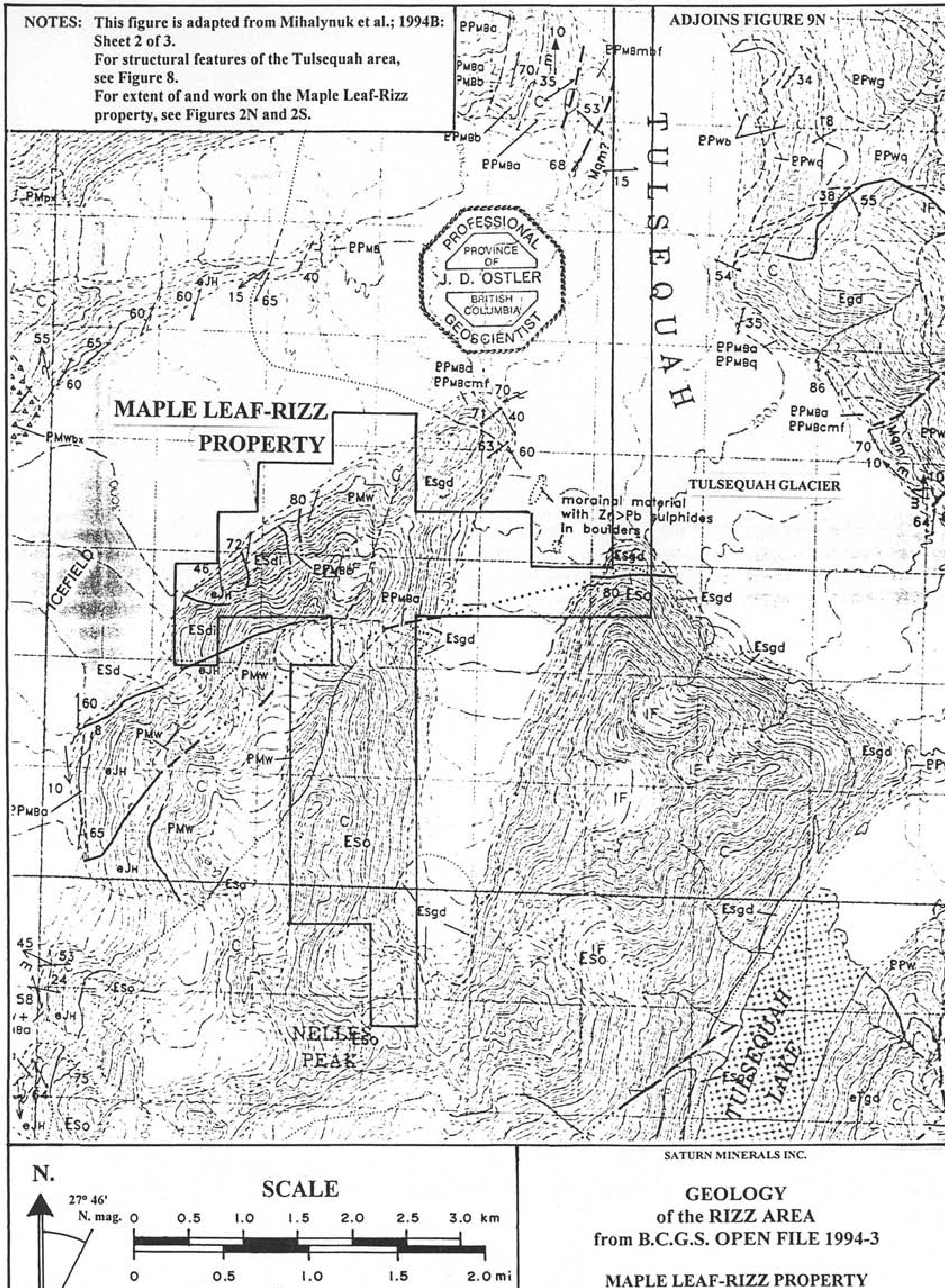



**Figure 9S**

CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

**GEOLOGY**
**of the RIZZ AREA**
**from B.C.G.S. OPEN FILE 1994-3**

MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

# Figure 9A
# Legend to Figures 9N and 9S

## LAYERED ROCKS

| | |
|---|---|
| Qg | Glacial till, moraine and proximal glacial deposits. |
| Qal | Unconsolidated outwash and alluvium. |

**SLOKO GROUP**; undivided as eTS; a bimodal volcanic package dominated by rhyolite flows and derived epiclastics (56 Ma)

| | |
|---|---|
| ESt | Trachyte flows, maroon to light green, indurated, flow-banded, K-feldspar porphyritic, locally columnar jointed. With interflow units of tuff and/or lahar-like beds. |
| ESd | Chaotic lapilli tuff to breccia and/or debris flow, fragmental components are dominantly felsic to intermediate and plagioclase-phyric. Massive, tan weathering appearance when viewed from a distance |
| ESn | Nakonake formation: interlayered brown to olive green, tabular plagioclase-porphyry flows and variegated lapilli tuff and breccia. Pronounced light and dark banded appearance when viewed from a distance. Individual basalt flows are shown by the diagonal hatching where mappable |
| ESo | Opposer formation: well-indurated, massive, black vitrophyric tuff and breccia, minor plagioclase +/- hornblende-phyric flows, probably andesitic. Massive, dark weathering appearance. Underlies many of the higher peaks in the region. |
| ESr | Rhyolitic to dacitic flows, breccia, tuff and ignimbrite (including pyroclastic dikes). Basal unit of the Sloko Group in many areas. |
| ESc | Basal conglomerate. Contains abundant clasts of foliated Paleozoic rocks. Minor rhyolite and minor basalt. |
| ESs | Tuffite and epiclastics, red and lesser green-weathering, may occur at any stratigraphic horizon. |

**MOUNT STAPLER SUITE: Paleozoic to Mesozoic foliated and weakly metamorphosed strata; displays relict primary textures; dominantly volcanic arc protoliths; probably includes Stikine Assemblage and possibly Stuhini Group lithologies; locally gradational into both Boundary Ranges and Whitewater Assemblages.**

| | |
|---|---|
| PTqm | Quartz monzonite to diorite or leucogabbro; weakly foliated to mylonitic. Restricted to area along the Llewellyn fault zone, where it may be altered or brecciated; contact relations uncertain. |
| PTgs | Massive chlorite-epidote±actinolite greenstone. Restricted to immediately west of the Llewellyn fault zone. Recrystallized and compositionally layered but poorly foliated. May be a fine-grained ± more recrystallized version of PTpp |
| PTpp | Metabasalt; may be pyroxene-phyric, chlorite amygdaloidal; massive to pillowed or pillow breccia; chlorite-epidote altered |
| PTv | Mafic to intermediate tuff, typically light to medium green with dark green chloritic (phyllitic) partings; protolith textures generally not preserved. |
| PTr | Rhyolite flows, breccia and felsic tuff, white to tan weathering; locally upgraded to quartz-sericite schist. |
| PTa | Argillite, siltstone, greywacke, phyllite; black to dark grey; massive to laminated or thinly-bedded (greywacke may be medium bedded); +/- siliceous; locally interbedded with tuff. |
| PTm | Marble; tan to locally dark grey, banded; in lenses rarely over 10m thick. |
| PTg | Graphitic quartz-rich siltstone; "grades" into unit PPMBg. |
| PTd | Metadiorite: green, phyllitic, to strongly schistose, where less foliated is distinguished by 20% equant, 3mm plagioclase porphyroblasts. |

**BOUNDARY RANGES SUITE**

| | |
|---|---|
| PPMB | UNDIVIDED BOUNDARY RANGES METAMORPHIC SUITE, predominantly PPMBa |
| PPMBa | Chlorite-actinolite schist and gneiss. Ranges from coarse amphibole-feldspar gneiss to fine-grained, massive greenstone chlorite, metabasite. |
| PPMBb | Biotite-plagioclase-quartz and biotite schist; up to 80% fine to medium-grained biotite ± garnet; also includes biotite-hornblende schist; purple-brown, compositionally-layered schist and gneiss. Foliation usually flat; metapelite |
| PPMBcm | Chlorite-muscovite schist; grey-green, usually with strong crenulation cleavage. |
| PPMBcmf | Quartz and feldspar-rich chlorite-muscovite ± garnet schist; unit consists of both primary, chlorite grade rocks or retrograde equivalent of unit PPMBmbf, with chlorite pseudomorphs after garnet; psammite. |
| PPMBq | Psammite to quartzite (may include metarhyolite); >80% quartz, ± muscovite, biotite and garnet. |
| PPMBss | Quartz ± sericite altered schist; white to yellow or orange weathering, in part bleached with 1-2% disseminated pyrite, derived primarily from PPMBq and PPMBcmf. |
| PPMBg | Graphitic schist and phyllite. |
| PPMBm | Marble; coarse, light grey lenses, generally <2 m thick. |
| PPMBmbf | Quartz and feldspar-rich muscovite-biotite ± garnet schist; garnets generally red-brown and unaltered. |
| PPMBpg | Pelitic schist with garnet; ranges from medium grey and fine-grained to coarse amphibole-feldspar-biotite rock, all with abundant, 0.5-1.5 cm red-brown garnets. |

## META-INTRUSIVE ROCKS

| | |
|---|---|
| eJH | Hale Mountain hornblende-biotite granodiorite to diorite orthogneiss; plagioclase porphyroblastic, hornblende-biotite-quartz-epidote, epidote grains (partly of igneous? origin) and surface coatings; locally with well-developed feldspar augen; Early Jurassic |
| Mqm | Quartz monzonite, hornblende and biotite; locally weakly foliated, brecciated, generally pyritic, sometimes bleached, grey to slightly green-weathering; Mesozoic, ?Triassic. |
| PMpx | Pyroxenite and miscellaneous ultramafic rocks of limited extent; Paleozoic to Mesozoic and younger. |
| MTg, MTgd | K-feldspar megacrystic orthogneiss; greenish with pink K-spar augen; interlayered with green, medium-grained amphibolite, granite (MTg) and granodiorite (MTgd); Paleozoic to Triassic. |
| PMw, PMwbx | Wann River Gneiss, hornblende-rich gneiss, well layered on a mm to m-scale, lesser biotite; locally brecciated (PMwbx) and intruded by younger leucocratic phase; Permian. |
| DMqm | Quartz monzonite orthogneiss, Devono-Mississippian. |

## INTRUSIVE ROCKS (NON-METAMORPHOSED)

| | |
|---|---|
| Tgd | Granodiorite-granite, medium to coarse-grained, fresh, massive, grey, wide-spaced jointing; probably part of a 35 Ma intrusive belt that extends into adjacent parts of southeast Alaska, Tertiary. |
| Esg, Esgd, Esdi, Esqm | Sloko intrusive suite: medium-grained granite (Esg), granodiorite to tonalite (Esgd), diorite (Esdi) and quartz monzonite (Esqm), probably comagmatic with 56 Ma Sloko Group volcanics, Eocene. |
| eTgd | Hornblende-biotite granodiorite: mainly medium grained, white to grey weathering; locally xenolith-rich with variable fine to coarse grainsize; chlorite-lined fractures common; cut by high angle faults with <1 km offset; cut by Esg; early Tertiary, possibly Paleocene. |
| eThd | Hornblende-biotite diorite, intruded by late ?comagmatic eTgd |
| JKg | Biotite granite, medium to coarse-grained, weakly chloritized to fresh; locally with wide joint spacing (up to 9 metres), previously mapped as Jura-Cretaceous, but could be as young as Tertiary. |
| TrKt | Hornblende tonalite, weakly foliated, epidote-altered, Triassic to Cretaceous? |
| PMqd | Wendy Lake intrusive complex, quartzolite to diorite, variextured, may be comagmatic with Mississippian dacite, but seems to mainly crosscut Mesozoic fabrics; possibly synkinematic. |

# Figure 9A
# Legend to Figures 9N and 9S Continued

## SYMBOLS

Geological boundaries (defined, approximate, assumed)

Intrusive contacts (defined, approximate, assumed)

Limit of Quaternary alluvium
NOTE: outcrop underlies most areas that are neither ice or alluvium covered. major areas of vegitative cover that obscure outcrop are outlined

Bedding with tops observed (inclined, vertical, overturned)

Bedding (horizontal, inclined, vertical)

Bedding with estimated dips (inclined, vertical)

Igneous flow layering (inclined, vertical)

Schistosity or gneissosity in metamorphic rocks; cleavage in sedimentary rocks; (inclined, vertical; phase indicated by number of ticks)

Joint (inclined, vertical)

Dyke (inclined, vertical)

Vein (inclined, vertical)

Anticline, antiform (defined, approximate, assumed)

Synform, syncline (defined, approximate, assumed)

Overturned anticline, syncline

Overturned antiform, synform

Fold axis of minor fold with M, Z, and S symmetry (arrow indicates plunge)

Lineations (unspecified, m = mineral, s = intersection, d = deformed clast, I = igneous inclusion, a = metamorphic aggregate, r = rodding or mullion) ss = slickenside striae

Small shear (inclined, vertical)

High angle fault (defined, approximate, assumed)

Thrust fault (defined, approximate, assumed; teeth in overlying plate)

Lineament

Macrofossil locality (and GSC Catalog No.) — C-14567

Macrofossil locality (age indeterminate) — C-23456

Microfossil locality — C-234

Isotopic age determination (Method, mineral(s) and age in Ma)
A = Ar-Ar, K = K-Ar, R = Rb-Sr, U = U-Pb
h = hornblende, b = biotite, m = muscovite, s = sericite, z = zircon, etc.

Adit, trench

## 3.0 GEOLOGICAL SETTING

### 3.1 Regional Geology

The Tulsequah area is quite rugged and remote, and consequently, very little early geological mapping has been conducted there. Mihalynuk et al., (1994A) summarized early mapping in the Tulsequah area as follows:

> Mineral exploration in the area dates back to at least 1924 with the discovery of the Tulsequah Chief deposit. However, systematic regional mapping was not begun until Kerr's investigations in 1930 and 1932 (Kerr, 1931 and 1948). In 1958 to 1960 Souther (1971) completed a 1:250,000-scale mapping of the Tulsequah area. Geological mapping since that time has been primarily restricted to company reports with limited distribution ...
>
> Mihalynuk, M.G., Smith, M.T., Hancock, K.D.
> and Dudka, S.; 1994A: p. 172.

The focus of that early work was on the area around the confluence of the Taku and Tulsequah rivers located about 23 km (14 mi) south-southeast of the southern boundary of the current Maple Leaf-Rizz property area.

A 1:1,000,000-scale compilation map of northwestern British Columbia and adjacent Alaska, Geological Survey of Canada Map 1418A, was produced by J.G. Souther, D.A Brew, and A.V. Okulitch in 1974. That map was of too broad a scale to show much detail of the geology around Rugulose Glacier, Moosetrap Creek, and Maple Leaf-Rizz property. Those rocks were added in with nearby Late Triassic-age Stuhini Group volcanics. Although that mapping was not accurate locally, it was the best that such a coarse scale would allow.

The rocks around the Maple Leaf-Rizz property were assigned to the northern part of the Stikine Terrane, named the Intermontane Belt during the 1970s. They were located between the Whitehorse Belt and the Stikine Arch.. Souther's (1974) description of the Intermontane Belt was as follows:

> The structure of Intermontane Belt is dominated by Stikine Arch, which became a relatively positive tectonic element in the late Middle Triassic, and by the Atlin Terrane, which was uplifted in the Late Jurassic. The oldest dated rocks on the Stikine Arch are Mississippian, but still older gneiss and amphibolite are exposed. Permo-Carboniferous sedimentary and volcanic rocks in the arch are tightly folded along north-south axes in contrast with the northwesterly trend of Permo-Carboniferous strata in the Atlin Terrane and with the northwesterly trend of younger rocks. Stikine arch and early, uplifted elements of the Coast Plutonic Complex influenced subsequent clastic deposition. Upper Triassic to Middle Jurassic volcanic and sedimentary rocks on the flanks of the arch and in the adjacent Whitehorse, Quesnel, and Iskut Belts are either unmetamorphosed or of low greenschist grade ...

> Early Tertiary acid to intermediate volcanic rocks in the western part of the Intermontane Belt and eastern flank of the Coast Crystalline Complex are preserved in synvolcanic graben, half graben, and cauldron subsidence structures, associated with high level pluton emplacement and ring dykes. Miocene and younger lavas and volcanic cones are confined to two distinct belts: the broad, northerly trending, Stikine Volcanic Belt mainly in the Intermontane Belt; and the Wrangell Volcanic Belt of Alaska ...
>
> Souther, J.G., Brew, D.A. and Okulitch, A.V.; 1974:
> Notes to Map 1418A.

Late Palaeozoic-age marine sediments and intercalated volcanic rocks, and Triassic-age volcanic strata formed the rocks that pre-dated the formation of the Stikine Arch in northwestern British Columbia. In the area around the Maple Leaf-Rizz property this deposition occurred in some unknown location in the palaeo-North Pacific basin from the Missippian to the Permian Period. Locally, these rocks have been assigned to the Mount Stapler suite. Subsequently, the Triassic-age Stikine assemblage, comprising basinal intermediate to mafic volcanics was deposited on the Late Paleozoic sedimentary-volcanic sequence.

These rocks were deformed and partly eroded during development of the Stikine Arch by the Inklinian Orogeny. Deformation occurred from about 200 to 189 million years ago during the Early Jurassic Period. J.R.W. Douglas (1970) described the progress of the Inklinian Orogeny as follows:

> A period of regional uplift, granitic intrusion, and locally, regional metamorphism, termed the Inklinian Orogeny occurred in the Pinchi, Omineca, and northern Coast Genticlines in latest Triassic and earliest Jurassic time. Lower Jurassic strata, commonly Sinemurian, occur along the eastern flank of the northern Coast Genticline and around Stikine Arch, resting unconformably on beds of Middle and Upper Triassic age ...
>
> Several oval, biotite-hornblende granodiorite plutons in Stikine Arch and in the Pinchi and Omineca Genticlines intrude Upper Triassic and older rocks that have undergone little or no metamorphism. They were rapidly unroofed and contributed debris to the Lower Jurassic conglomerates ...
>
> Douglas, J.R.W. ed.; 1970: p. 440.

The Stikine-Arch plutons mentioned by Douglas (previous) ranged in age from 187 to 200 million years; they were coeval with the Inklinian Orogeny.

In the area around the Maple Leaf-Rizz property, rocks were deformed into upright folds. White quartz boudins, and other metamorphic minerals that were subsequently re-crystallized, developed in the axial-plane cleavage.

From 1991 to 1993, the British Columbia Geological Survey conducted a program of detailed mapping in the area covered by N.T.S. Map Sheets 104 K/12 and K/13. M.G. Mihalynuk et al. (1994A and B) published both a discussion paper and an open file of the results of that mapping.

The study area extended from south of Taku River to north of Moosetrap Creek. The current Maple Leaf-Rizz property is located on N.T.S. Map 104 K/13 in the study area's northern part (Figures 8, 9N, and 9S). Mihalynuk's (1994A) description of the major geological elements and Paleozoic to Mesozoic-age stratigraphy in that study area was as follows:

> The Tulsequah River and Tulsequah Glacier area is one of extreme geological and structural complexity resulting from the juxtaposition and deformation of several Mesozoic to Paleozoic and older tectonostratigraphic terranes (Figure 8). Subsequent intrusion by Cretaceous-Tertiary Coast plutons and burial by Tertiary volcanic rocks complicate investigations into the nature of terranes and their plate tectonic contexts ...
>
> The southern extension of the Llewellyn fault (known locally as the Chief fault), a major tectonic boundary in northern British Columbia, divides pre-Tertiary rocks in the map area into metamorphosed rocks of presumed Paleozoic and older age, which underlie the southern and western half of the area, and weakly metamorphosed upper Paleozoic and Mesozoic rocks which underlie the eastern half (Figure 8). West of the fault, three suites of rocks are recognized, divided on the basis of lithologic associations and degree of deformation ... From west to east, corresponding with decreasing metamorphic grade and degree of deformation and variation from predominantly basinal to predominantly arc character, they are: Whitewater suite ... which refers to a distinctive package of amphibole-grade, quartz-rich graphitic schist, quartzite, metabasite and ultramafite, that may be correlative with parts of the Yukon-Tanana Terrane having continental margin affinity; the Boundary Ranges suite ... consisting of schists of volcanic and sedimentary origin; and the Mount Stapler suite, a low-grade package which shares some characteristics with both the Whitewater and Boundary Ranges suites and locally can be demonstrated to be gradational into both.
>
> East of the Llewellyn fault, Paleozoic rocks are assigned to the Stikine assemblage ..., a low-grade package of middle to upper Paleozoic volcanic arc rocks which form the basement to the Stikine arc and host the Tulsequah Chief and other volcanic massive sulphide deposits in the area ..., the Stikine assemblage is further divided into three structural stratigraphic blocks. These are separated by three large valleys (and known or suspected faults), but share important lithologic elements. Mount Eaton block lithologies are most clearly correlative with *bona fide* Stikine assemblage to the south ... More deformed, but obviously equivalent strata comprise the Sittakanay block ... Mount Strong block rocks are of more questionable affinity. They are dominantly sedimentary in character and are here interpreted to be a distal equivalent of the other blocks, but with uncertainty as to the position of the Mount Strong block with respect to the trace of the Llewellyn fault, this correlation is tentative.
>
> Mesozoic rocks include volcanic and volcanogenic rocks of the upper Triassic Stuhini Group, an arc assemblage of the Stikine Terrane, and Lower to Middle Jurassic sedimentary rocks of the Leberge Group, an overlap assemblage that straddles the Stikine and other inboard terranes (Figure 8).
>
> Mihalynuk, M.G., Smith, M.T., Hancock, K.D.
> and Dudka, S.; 1994A: pp. 172-173.

South of the Tulsequah area, there was an outpouring of marine volcanic flows, pyroclastics, and the deposition of associated sediments which became the rocks of the Early Jurassic-age Hazelton Group.

Fossils from Hazelton Group sedimentary strata date from 200 to 167 million years ago, indicating that their deposition progressed throughout and after the Inklinian Orogeny, and concluded during deposition of the Leberge Group sediments to the northeast.

Hazelton Group sedimentation was terminated by the onset of the Nassian Orogeny which lasted from about 167 to 163 million years ago. J.R.W Douglas described the Nassian Orogeny as follows:

> The Nassian Orogeny during mid-Jurassic (Bathonian) time resulted in granitic intrusion on Vancouver Island and regional uplift of the western Cordillera. Uplift of the Atlin Horst and Skeena (later re-named Stikine) Arch segmented the Whitehorse and Nechako Troughs into Tantalus and Bowser Basins and Tyaughton Trough ... In the Skeena Arch the Hazelton and older rocks were folded along northeasterly trends and were probably intruded by granitic plutons prior to deposition of the Bowser Group in the earliest Upper Jurassic. This is suggested by intrusion of the Hazelton Group by the early, more easterly phases of the Coast Plutonic Complex ...
>
> Douglas, J.R.W. ed.; 1970: p. 442.

The Nassian Orogeny deformed the pre-Jurassic-age rocks around the Maple Leaf-Rizz property area into easterly dipping sub-recumbent folds and brought about the second phase of metamorphism. During that phase, rocks were pervasively metamorphosed to middle amphibolite grade. Both the almandine and hornblende isograds were exceeded, almost all first-phase metamorphic minerals were re-crystallized, and the Boundary Ranges suite of schists was produced from Mount Stapler suite strata.

Near the end of the Nassian Orogeny there must have been significant erosion and unroofing above Stikine Terrane strata in the Tulsequah Glacier map-area. Deformation turned from ductile to brittle and metamorphism ceased. Recumbent folds were cut by eastward dipping thrust faults and garnet-biotite-hornblende schists were broken into breccias along numerous fault planes.

A major mountain-building period, the Columbian Orogeny, occurred from about 142 to 88 million years ago, from the Late Jurassic to Late Cretaceous Period. Troughs now located in eastern and central British Columbia, were deepened and filled with sediment. The Coast Mountains were created by uplift and the emplacement of the Coast Intrusive Complex, and deformation occurred throughout the terranes accreted to the western margin of proto-North America.

The Columbian Orogeny was responsible for the third phase of deformation and metamorphism seen in rocks around the Maple Leaf-Rizz property area. That deformation was characterized by open upright folds and re-crystallization of garnet-biotite schists into a muscovite-chlorite-sericite-albite-epidote mineral assemblage. Re-crystallization created only pseudomorphs of second-phase porphyroblasts and did not erase earlier schistose textures. Probably for that reason, regional mappers generally considered the third phase of metamorphism to have been a progressive, retrograde stage of the previous middle amphibolite-grade metamorphism.

The presence of post-second-phase, brittle fault breccias that pre-date formation of the third-phase muscovite-chlorite-etc. mineral suite proves that the latter suite is related to a separate metamorphic event.

The last major orogeny that occurred in the area now covered by British Columbia was the Laramide Orogeny. It occurred from about 75 to 30 million years ago, spanning Late Cretaceous to Oligocene time. J.R.W. Douglas (1970) described that event as follows:

> In the Tertiary almost all of western Canada was land. The mountain belts formed during the Columbian Orogeny were rejuvenated and new mountain belts were produced by the Laramide Orogeny, the early phase of which began in the late Upper Cretaceous and the late phase ended probably in the early Oligocene ... The structures of the Columbian and older orogens were slightly modified and some movement took place on some previously formed faults. Scattered discordant bodies ... were intruded in the western cordillera. They include small stocks and sills related to the Columbian Zwischenbirge ...
>
> Douglas, J.R.W. ed.; 1970: pp. 465-467.

This orogeny was represented in the region around the Maple Leaf-Rizz property by fracturing and the advance from below of the fourth phase of regional metamorphism. Unlike previous metamorphic phases, the fourth-phase epidote-quartz-chlorite-sericite-Fe-carbonate crystallization advanced up sub-vertical fractures and spread out into the most permeable or reactive parts of the Boundary Ranges schists. Unlike the third phase, where the fourth-phase metamorphism was pervasive, it succeeded in obliterating previous textures and produced a very fine-grained yellow-green to tan coloured rock.

The youngest rocks in the area around the Maple Leaf-Rizz property are members of the Eocene-age Sloko Group. Those rocks record bimodal volcanic effusion of mostly rhyolitic flows and associated epiclastic rocks (Mihalynuk et al.; 1994B).

Mihalynuk et al. (1994A) briefly described the Sloko Group as follows:

> Mafic to felsic Sloko Group volcanic strata rest with profound and irregular unconformity above Mesozoic and older strata. Sloko Group rocks were originally mapped as covering most of the northeast part of the map area and many of the higher peaks in the western part of the map area (104 K/12 and K/13). The distribution is borne out by our mapping but with important exceptions. Several windows through Sloko expose Mesozoic strata, diminishing the expansive blanket of Sloko Group rocks.
>
> Numerous volcanic centres, rapid facies changes and synvolcanic high-angle faulting characterize the Sloko Group, yet it is easily subdivided into regionally mappable volcanic units. On the basis of 1993 fieldwork, the group is divided into six map units not previously reported in the area: basal conglomerate; massive, well-indurated, black pyroclastics (Opposer Formation); massive tan-weathering breccias (Mount Haney Formation); distinctive interlayered flows and volcaniclastic rocks (Nakonake Formation); rhyolite domes and tuffs, and trachyte flow successions.
>
> Mihalynuk, M.G., Smith, M.T., Hancock, K.D.
> and Dudka, S.; 1994A: pp. 186-187.

Pleistocene and Recent time was one of deep erosion in the area around the Maple Leaf-Rizz property. Alpine glaciation which persists to the present carved the lower slopes into typical steep-sided 'U'-shaped glacial valleys. The higher slopes and mountain peaks have been cut into steep ridges and horns by frost shattering. Glacial erosion is still quite active in this area and many slopes are very unstable and dangerous. Rock and debris avalanches are frequent.

Mihalynuk et al. (1994A) described the regional metamorphism of the Boundary Ranges and Mount Stapler suites as follows:

> At least three phases of deformation are evident in the Boundary Ranges metamorphic suite. Phase 1 imparted compositional layering, layer-parallel foliation and intrafolial isoclinal folds of variable orientation ... It is locally difficult to recognize because it is largely coaxial to the second phase deformation. The latter is characterized by greenschist to amphibolite facies metamorphism, schistose to phyllitic foliation with regional north-northwest strike and moderate to steep east dip, and millimetre to possibly regional scale appressed isoclinal folds with axes that plunge gently and trend roughly 015°. Fold styles are highly variable, with competent units displaying metre-scale cylindrical to disharmonic folds and nearby phyllitic units tightly crenulated, sheared and refolded ... Peak metamorphism of middle amphibolite grade is associated with second phase deformation. It is thought to be mid-Jurassic, as evidence by an $Ar^{40}/Ar^{39}$- sericite plateau age of 172 Ma in the Moosetrap Creek area ... Foliated orthogneiss units do not reach amphibolite grade and may be late syn-kinematic with respect to second phase deformation.
>
> Manifestations of the third phase deformation include millimetre to decimetre-scale kink and crenelation folds with steep axial planes (locally forming a strong cleavage), and open to tight chevron folds, developed on a metre to kilometre scale. Cleavage and axial planes in both types strike 050° to 090° with steep dips, similar to the second fabric developed in the Mount Eaton block. The effects of third phase deformation are variable, locally quite strong, and are accompanied by a retrograde, greenschist (chlorite grade) facies metamorphic overprint.

> Deformation in the Mount Stapler suite is similar, but apparently represents higher crustal levels than the BRM. The highest grade rocks of this suite are middle greenschist facies.
>
> Mihalynuk, M.G., Smith, M.T., Hancock, K.D. and Dudka, S.; 1994A: pp. 186-187.

Regional and local scale faulting has been very important in the development of the current character of the geology if the Tulsequah region. Mihalynuk et al. (1994A) described its role in the development of that geology as follows:

> North to northwest-trending high-angle faults with complex movement histories are common in the map area. The largest is the regionally significant Llewellyn fault, which is mapped as far north as the southern Yukon, where it merges with the Tally Ho shear zone ... , and continues southward into the map area, where it merges with the Chief fault ... south of Shazah Creek (Figure 8). Early movement on the Llewellyn fault zone is manifested by zones of ductile sinister shear, which to the north, are pre-180 Ma. Sinistral shear zones, generally less than a few metres wide, are present in the Mount Stapler, Boundary Ranges and Mount Strong units up to several kilometres west of the main strand of the Llewellyn fault zone ... Small dextral shear zones are relatively common throughout the map area , particularly in the vicinity of the Llewellyn fault; to the north these zones postdate sinistral motion on the fault ... The main strand of the Llewellyn fault is a ductile to brittle mylonite zone up to several metres wide, which is well exposed in the extreme northern part of 104 K/13 and the adjoining map sheet to the north ... and north of Shazah Creek. In both locations, the fault zone contains sheared and comminuted intrusive rocks ranging from granodiorite to leucogabbro in composition. In some areas, the intrusive rocks form flower structures - west-vergent thrust flaps that root to the east in the near-vertical main fault. Brittle faulting postdates ductile shear but largely predates Sloko volcanism, and may be coeval with middle Jurassic movement on other regionally significant thrust faults to the east (Nahlin and King Salmon faults). Minor Eocene reactivation of the fault is indicated by areas where the Sloko Group is offset by up to several hundred metres.
>
> A few kilometres north of Shazah Creek, the fault bends southwestward and splays into several strangs. It is offset by the Chief crossfault ... to west of the Tulsequah River. The trace of the Llewellyn-Chief fault south of the Polaris-Taku mine is uncertain. The dramatic contrast in metamorphic grade across the fault zone to the north is not present in the vicinity of Mount Strong and Sittakanay Mountain, where the westward increase in metamorphic grade and deformation is relatively gradual. This may be explained by several alternatives: distributed shear along numerous small fault strands; as yet unrecognized overthrusting of the fault by higher grade rocks from the west; or gradual southward dying out of the Llewellyn fault zone. Existing data do not permit evaluation of these alternatives.
>
> Other north to northwest-trending brittle faults and ductile shear zones are common in the map area. Most are minor and located in fold hinge areas or bounding units of differing competency. West of the Tulsequah River, several such faults contain sheared serpentinite. Two relatively significant faults include the Whitewater fault, which separates the Whitewater suite from the Polaris suite, and an unnamed brittle fault in the northeastern corner of the map sheet that, to the south, downdrops the Sloko Group breccias against Mesozoic rocks, perhaps representing at least a few kilometres of syn-Sloko movement. This fault crosscuts a section of Leberge and Stuhini rocks imbricated along older northwest-trending faults ...
>
> East to northeast-trending, high-angle, brittle crossfaults with limited displacement are common in the map area. Faults with offsets significant on a 1:50,000 scale are spaced every few kilometres, and may be even more common. Both dextral and sinistral offsets are displayed ...

> The most significant crossfault in the Tulsequah area is the Chief crossfault, a structure that is interpreted to offset the Llewellyn-Chief fault system about 2 kilometres (1.2 mi) in a dextral sense ... The fault is located immediately north of the Tulsequah Chief mine, and cuts off the mine sequence to the north ...
>
> Mihalynuk, M.G., Smith, M.T., Hancock, K.D.
> and Dudka, S.; 1994A: pp. 191-192.

A table of geological events and lithological units the Tulsequah Glacier map area around the Maple Leaf-Rizz property is as follows:

Table 3

## TABLE of GEOLOGICAL EVENTS and LITHOLOGIC UNITS around the MAPLE LEAF-RIZZ PROPERTY

| Time | Formation or Event |
|---|---|
| **Recent**<br>0.01-0 m.y. | **Valley rejuvenation:**<br>Down cutting of stream gullies through till, development of soil profiles, continued alpine glaciation. |
| **Pleistocene**<br>1.6-0.01 my. | **Glacial erosion and deposition:**<br>Alpine glaciation, removal of Tertiary-age regolith, deposition of till and related sediments at lower elevations. |
| **Eocene to Pliocene**<br>55-1.6 m.y. | **Erosion of the land surface**<br>Fracturing and faulting with montmorillonite gouge |
| **Eocene**<br>55 my. | **Tensional faulting, deposition of the Sloko Group volcanics and associated porphyritic andesite feeder dykes:** |
| **Late Cretaceous to Eocene**<br>75-58 m.y. | **Laramide Orogeny:**<br>Disruption of stratigraphy by northerly trending transcurrent faults, fracturing and the development of the 4th phase of metamorphism in the Boundary Ranges schists comprising re-crystallization to epidote-chlorite-sericite-quartz-Fe-carbonate. Where pervasive, this phase obliterates previous schist textures. |
| **Late Jurassic to Late Cretaceous**<br>142-88 m.y. | **Columbian Orogeny:**<br>Deformation of Cache Creek rocks in a northeastward dipping subduction zone, accretion of Stikine assemblage rocks to North America, emplacement of the Coast Plutonic Complex:<br>deformation and 3rd phase of regional metamorphism, in the Boundary Ranges schist producing open upright folds and muscovite-chlorite-sericite-albite re-crystallization of garnet-biotite schists |
| **Middle to Late Jurassic**<br>163-142 m.y. | **Erosion and unroofing of the Stikine Terrane** |
| **Middle Jurassic (Bathonian)**<br>167-163 m.y. | **Nassian Orogeny:**<br>Recumbent eastward-dipping folds, 2nd phase of regional metamorphism, development of garnet-biotite-hornblende schists, development of the Boundary Ranges schist suite in Mount Stapler rocks, renewed movement along regional faults Late erosion, westward thrust faulting post-metamorphic faulting and brecciation |
| **Early to Middle Jurassic**<br>200-167 m.y. | **Deposition of the Hazelton Group volcanics in basins south of the Stikine Arch and Leberge Group sediments north of it.** |
| **Early Jurassic**<br>200-189 m.y. | **Inklinian Orogeny:**<br>Development of the Stikine arch, movement on regional faults, 1st phase of deformation and metamorphism of the Mount Stapler suite rocks in the Maple Leaf-Rizz property area |
| **Late Triassic (Norian)**<br>221-210 m.y. | **Deposition of the Stuhini Group:**<br>arc derived intermediate volcanics and minor associated sediments |
| **Mississippian to Permian**<br>355-251 m.y. | **Deposition of the Stikine assemblage:**<br>intermediate to mafic volcanics were deposited in a basin<br>**MINERALIZATION: Deposition of the Tulsequah Chief and Bug Bull Noranda/Kuroko massive sulphide deposits**<br>**Deposition of the Mount Stapler sediments and volcanics in an open basin.**<br>These may correlate with Cache Creek Terrane sediments located to the northeast |
| | m.y. = million years ago |

### 3.2 Regional Geophysics and Geochemistry

No regional geophysical or geochemical surveys have been conducted in the Tulsequah Glacier area.

**3.3 Property Geology**

3.3.1 Geology of the Maple Leaf Area

The Maple Leaf area is located in the northeastern part of the property area on a westerly facing terraced slope (Figures 2N and 9N). The slope is bounded to the west by Moosetrap Creek, to the northeast by the mountain ridge and to the south by a cliff that descends from the slope to the surface of Rugulose Glacier.

The rocks on the slope are an assemblage of schists hosting one or more quartzose zones. These rocks are assigned to the Boundary Ranges metamorphic suite (Mihalynuk et al., 1994A). They grade to the east and upward into the Late Paleozoic-age, metasedimentary and volcanic rocks of the Mount Stapler suite.

During Saturn Minerals Inc.'s 2006 exploration program, both surface exposures and drill cores of rocks from the Maple Leaf area were examined. No stratigraphic mapping was done, because polyphase deformation and multi-phase regional metamorphism had rendered any original stratigraphy unidentifiable in most strata. The only strata that could be used as markers were a series of felsic, quartzose zones which were more resistant to deformation than the rest of the strata.

The felsic zones are comprised of in excess of 90% quartz, with 0.5 to 5% pyrite, and minor amounts of other metamorphic minerals. They form gossanous bluffs that are more resistant to weathering than surrounding strata. There is some controversy among regional mappers as to whether these felsic zones are meta-rhyolite or meta-sandstone. Relict textures in these rocks visible in drill core are those of graded tuffs and lapilli tuffs. Coarse rounded quartz grains and conglomerate layers, both indicative of a sedimentary provenance are not visible anywhere in the drill core. The writer is convinced that these felsic zones are rhyolitic, water-laid, pyroclastic rocks. The lack of proximal felsic volcanic structures like flow domes and magmatic breccias indicates that these volcanics were quite distal to any vent area.

The provenance of the schists hosting the felsic zones is unclear. Some regional mappers believe that they were deposited as impure mudstones because of their gross mineralogy. Others believe that they may be intermediate tuffs. Probably, they are a combination of both.

At least four phases of deformation and regional metamorphism have acted upon the rocks in the Maple Leaf area. The first phase was related to the Inklinian Orogeny, which occurred from about 200 to 189 million years ago during the Early Jurassic Period. First-phase folds were typically tight and probably initially almost upright. Quartz was mobilized into milky white boudins and sinuous segregations that were aligned with the first-phase cleavage. Probably, this was accompanied by a mineral suite typical of upper greenschist to lower amphibolite grade regional metamorphism. Only the quartz segregations remain identifiable. Other first-phase metamorphic minerals have been masked and re-crystallized during subsequent events and are not discernable either in outcrop or in drill core. A detailed petrographic study would be required to accurately identify the grade and extent of the first-phase metamorphism.

The second phase of deformation and metamorphism was a result of the Nassian Orogeny. It occurred during the Bathonian Epoch of the Middle Jurassic Period, and lasted from 167 to 163 million years ago. During that event, the major structures were created and regional metamorphism reached its apex.

Throughout the Maple Leaf area, rocks attained the almandine-amphibolite grade of metamorphism, with the appearance of clear mauve almandine garnet porphyroblasts. Schists were re-crystallized into the mineral assemblage: almandine-biotite-hornblende-andesine plagioclase. This occurred at temperatures of about 450° C. and at pressures in excess of 4 kb.

Depth of burial was significant and deformation was ductile. Most local strain was accommodated by schistose strata which were complexly re-folded. The felsic, quartzose zones were folded around almost recumbent shallowly eastward-dipping folds, the major second-phase structures. Those structures were responsible for the serrate geological contacts depicted on the regional map of the in the Maple Leaf area (Figure 9N).

American Bullion's geologists and prospectors who worked in the Maple Leaf area during 1990 and 1991, wrote of the felsic, quartzose zones as if they were separate stratigraphic units (Konkin, 1991A). The writer could find no conclusive evidence to determine that the those zones were not deposited as a single rhyolitic tuff unit that subsequently was bent around several recumbent folds (Figure 10).

Late during the Nassian Orogeny, the rocks in the Maple Leaf area were brought much closer to the surface where temperature and pressure were comparitively low. Westward translation continued as axial planes of the inclined major folds were sheared by movement on thrust faults (Figures 10 to 14). Locally, almandine-amphibolite grade schists were broken into angular clasts that were surrounded by a finely comminuted, grey matrix in fault breccias.

The transition from deep burial and ductile deformation to shallow level, brittle deformation must have been rapid. The appearance of minor amounts of chlorite and epidote in pseudomorphs of biotite and hornblende were the only record seen in drill core of second-phase retrograde metamorphism. This pre-dated second-phase faulting. Also, it pre-dated what regional mappers have thought was a regional, retrograde, upper greenschist facies metamorphism.

The third phase of deformation and regional metamorphism was related to the Columbian Orogeny which lasted in various regions from the Late Jurassic Period until the Late Cretaceous Period, from 142 to 88 million years ago.

Third-phase folds in the Maple Leaf area were broad open warps that were associated with movement on northward-trending sub-vertical faults.

Third-phase metamorphism attained middle to upper greenschist facies. A mineral assemblage comprising muscovite-chlorite-sericite-albite, and minor epidote re-crystallized second-phase metamorphic minerals, locally turning schist from a mauve, dark green and grey rock to a light Lincoln green or silvery grey depending on the local predominance of either chlorite or muscovite. Third-phase re-crystallization was patchy, and within a few metres down a drill hole, one could encounter anything from almost pristine second-phase schist to almost pervasively re-crystallized third-phase schist (Figures 11 to 14). Nowhere in the 2006 drill core were second-phase mineral textures obliterated by those of the third phase. Third-phase minerals created pseudomorphs of second-phase porphyroblasts. Generally, second-phase hornblende was re-crystallized first, followed by almandine garnet, biotite and andesine plagioclase in that order.

The 2006 drill holes penetrate the upper part of the area affected by third-phase metamorphism. At elevations of about 1,100 m (3,609 ft) third-phase re-crystallization is sparse; below 975 m (3,199 ft) elevation it is well developed (Figures 11 to 14).

The fourth and last phase of regional metamorphism was associated with the Late Cretaceous to Oligocene-age Laramide Orogeny, which lasted from 75 to 30 million years ago in various regions.

No fourth-phase folding was noticed in the Maple Leaf area during the 2006 exploration program. In drill core, fourth-phase metamorphic mineralization ascended high-angle fractures and spread out through the rocks. The fourth-phase metamorphic mineral suite included epidote, chlorite, sericite, quartz, and ironcarbonate.

Fourth-phase re-crystallization is sparse at elevations above 1,000 m (3,048 ft); at 900 m (2,953 ft) elevation it is generally well developed. Below that elevation, it is almost pervasive in densely fractured areas (Figure 13).

Fourth-phase crystallization aggressively obliterated previous metamorphic textures to create a fine-grained white to yellow-green or tan coloured rock. This phase of crystallization was destructive to sulphides. Almost none are present in areas of pervasive fourth-phase metamorphic re-crystallization.

Brittle deformation and tensional faulting occurred throughout the Eocene epoch in the Maple Leaf area. Sloko Group volcanic rocks were deposited in the Rizz area a few kilometers to the southwest. Post-metamorphic porphyritic andesite dykes, probably feeder dykes of the Sloko Group volcanics developed in the Maple Leaf area.

Typically, these dykes have 1 to 5 mm long zoned plagioclase phenocrysts sparsely disseminated in a dark green, fine-grained matrix of mostly hornblende and biotite. Chill margins of these dykes are commonly about 10 cm (4 inches) thick.

The Late Tertiary Period was a time of faulting, fracturing, erosion and unroofing of the schists in the Maple Leaf area. This time was recorded by high-angle, montmorillonite-filled fractures. Commonly older healed fractures were re-broken.

### 3.3.2 Geology of the Rizz Area

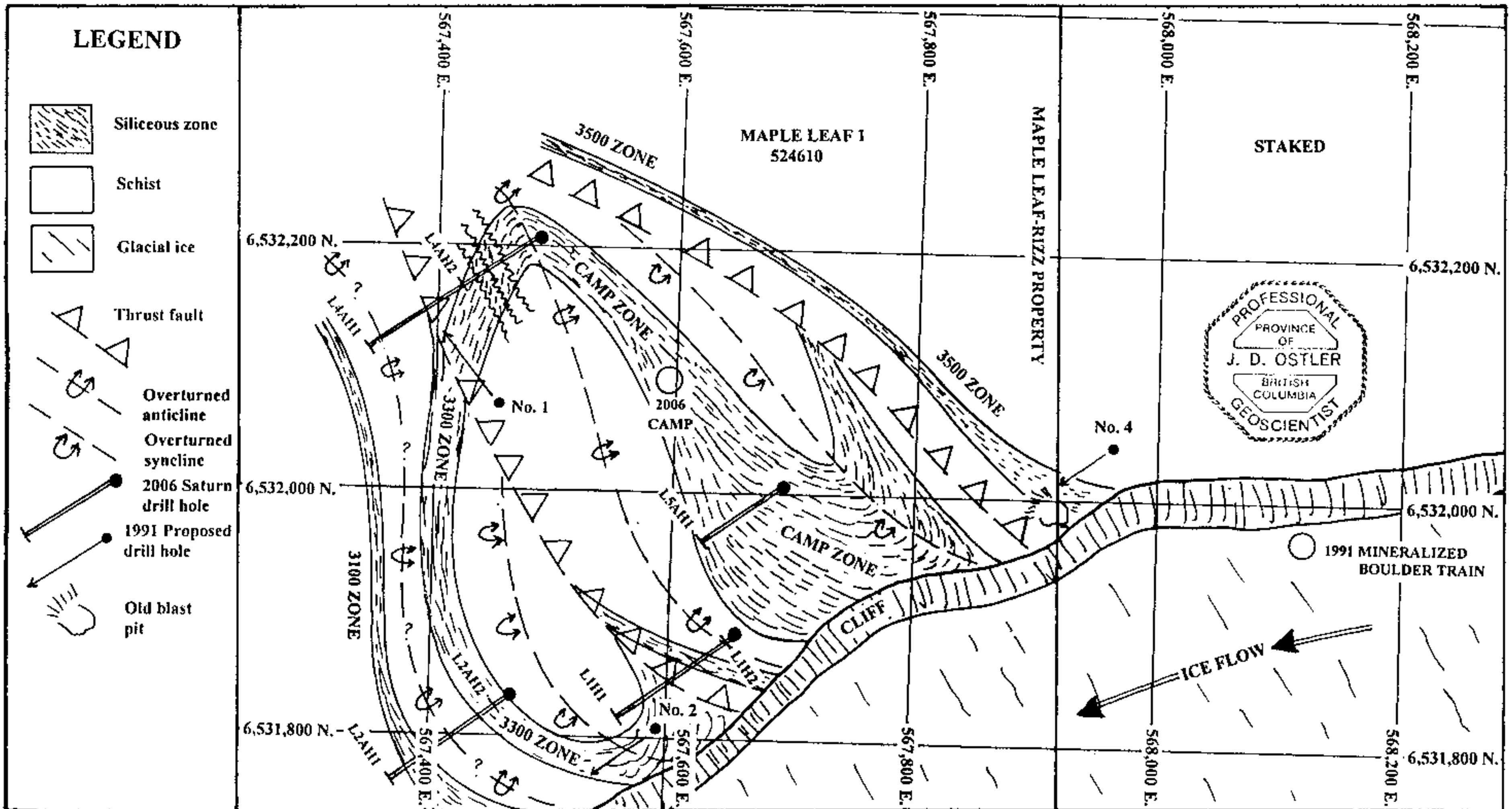
The Rizz area occupies a knife-edge ridge surrounded by arms of Tulsequah Glacier. The ridge is located in the southern part of the property area (Figures 2S and 9S).

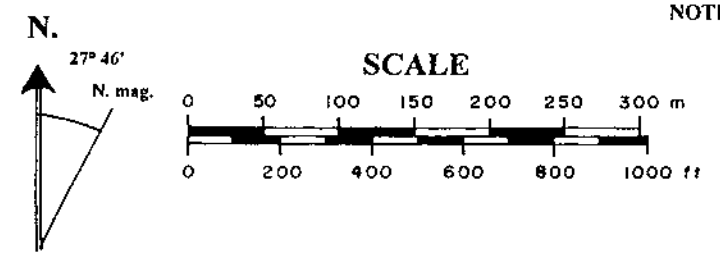
Most of the Rizz area is underlain by Opposer Formation volcanics and associated sub-volcanic intrusions. Rocks just west of the Rizz area are Mesozoic-age rocks the affinities of which have not been conclusively determined.

Mihalynuk et al. (1994A) described volcanics of the Opposer Formation volcanic rocks and associated Sloko Group intrusions as follows:

> Very well indurated, cliff-forming vitrophyric tuff and flows of the Opposer formation are characteristically massive, dark green to dark grey or black. On outcrop scale, Opposer rocks typically consist of sparse breccia fragments ranging from a few centimetres to about 20 centimetres (7.9 inches) across in a massive, black, fine-grained matrix. Matrix material often exhibits conchoidal fracture, suggesting relatively high silica content. Breccia fragments are light grey to green, often epidote altered with diffuse margins. Fragments of granitoid rocks are not uncommon. Opposer formation underlying Nelles Peak (south of the Rizz area) and many of the other high peaks in the region is nearly 2,000 metres (6,562 ft) thick. In at least three locations (Nelles Peak, the Devil's Paw, and an unnamed peak southeast of Mount Haney), the Opposer formation is intruded by granitic plutons, suggesting that its distribution coincides with regional magmatic centres ...
>
> ... Deeply incised valleys have exposed the roofs of several discrete plutons which vary compositionally from granodiorite to monzodiorite. Most are undeformed and cut Sloko volcanics with which they are probably comagmatic, and on this basis are assigned to an Eocene age ...
>
> Mihalynuk, M.G., Smith, M.T., Hancock, K.D.
> and Dudka, S.; 1994A: pp. 187-188.

The writer has not visited the Rizz area and can not elaborate on the foregoing description of the rocks exposed there.




CASSIAR EAST YUKON EXP. LTD.

NOTES: For previous work and location on the property, see Figure 2N.
For regional geology, see Figure 9N.
For details of 2006 drilling, see Figures 11 to 14.
Orientations of the 1991 drill holes recorded here from information taken from stakes on the ground. Probably, they post-date the proposed orientations in Figure 4.

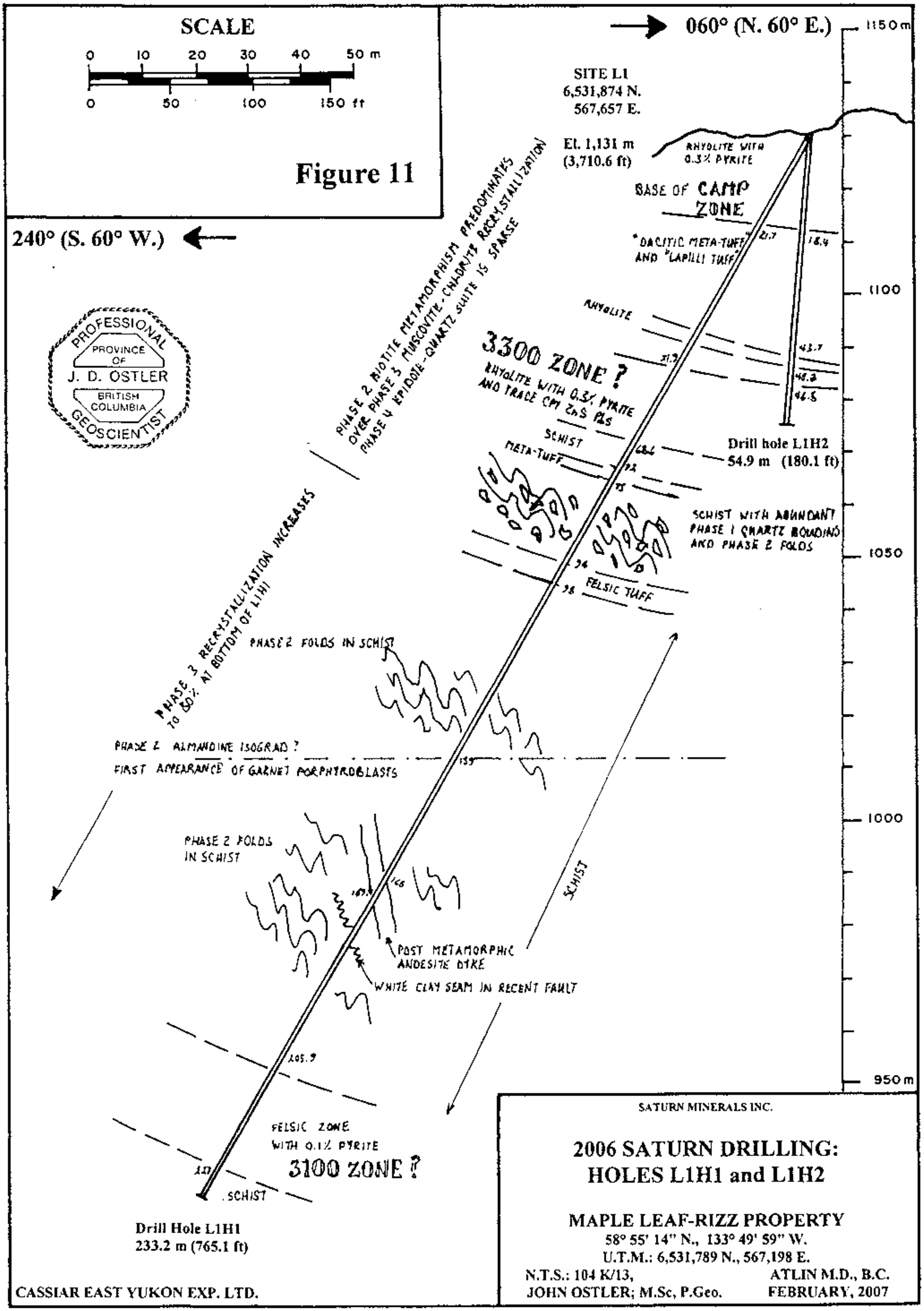
**Figure 10**

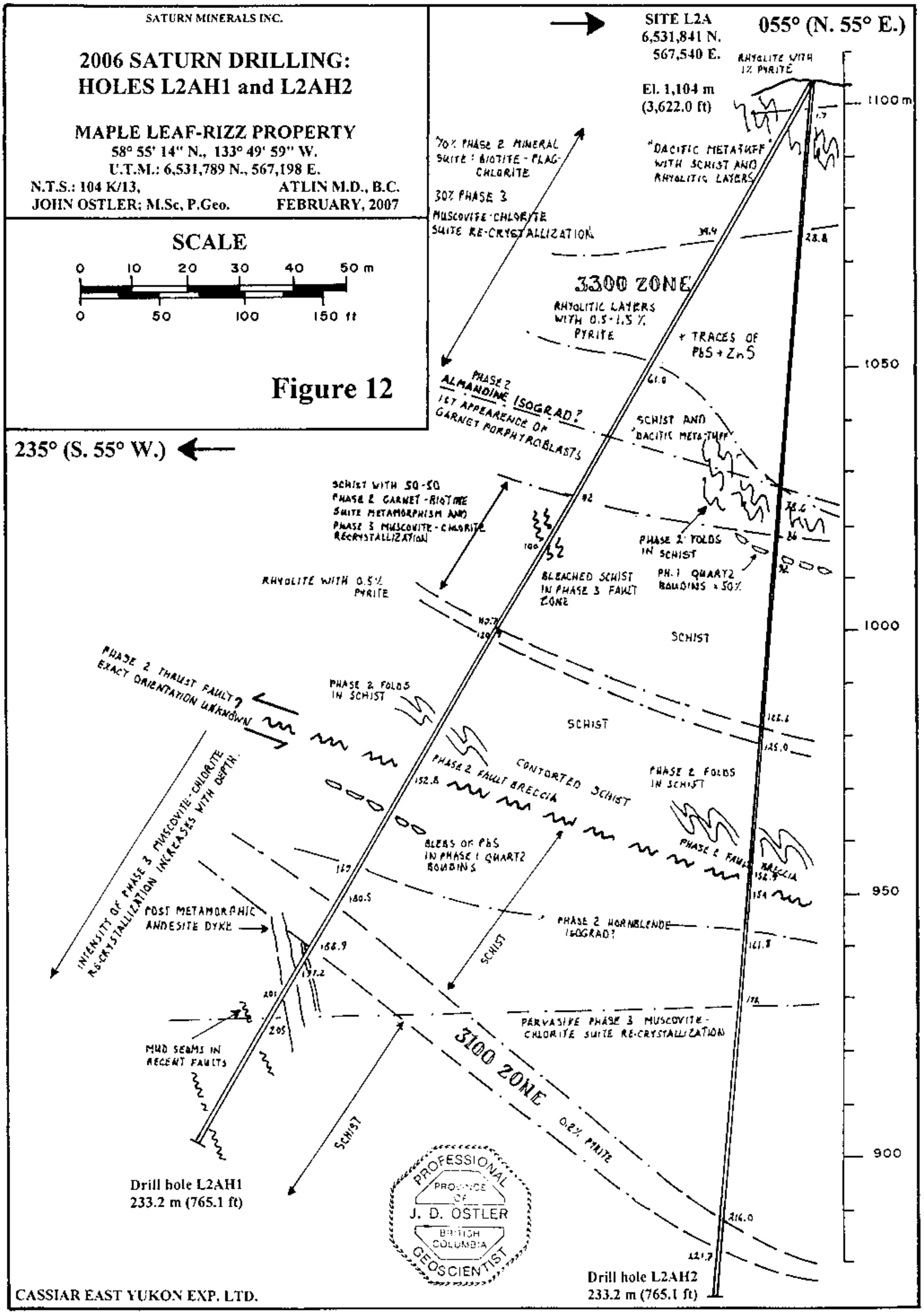
SATURN MINERALS INC.

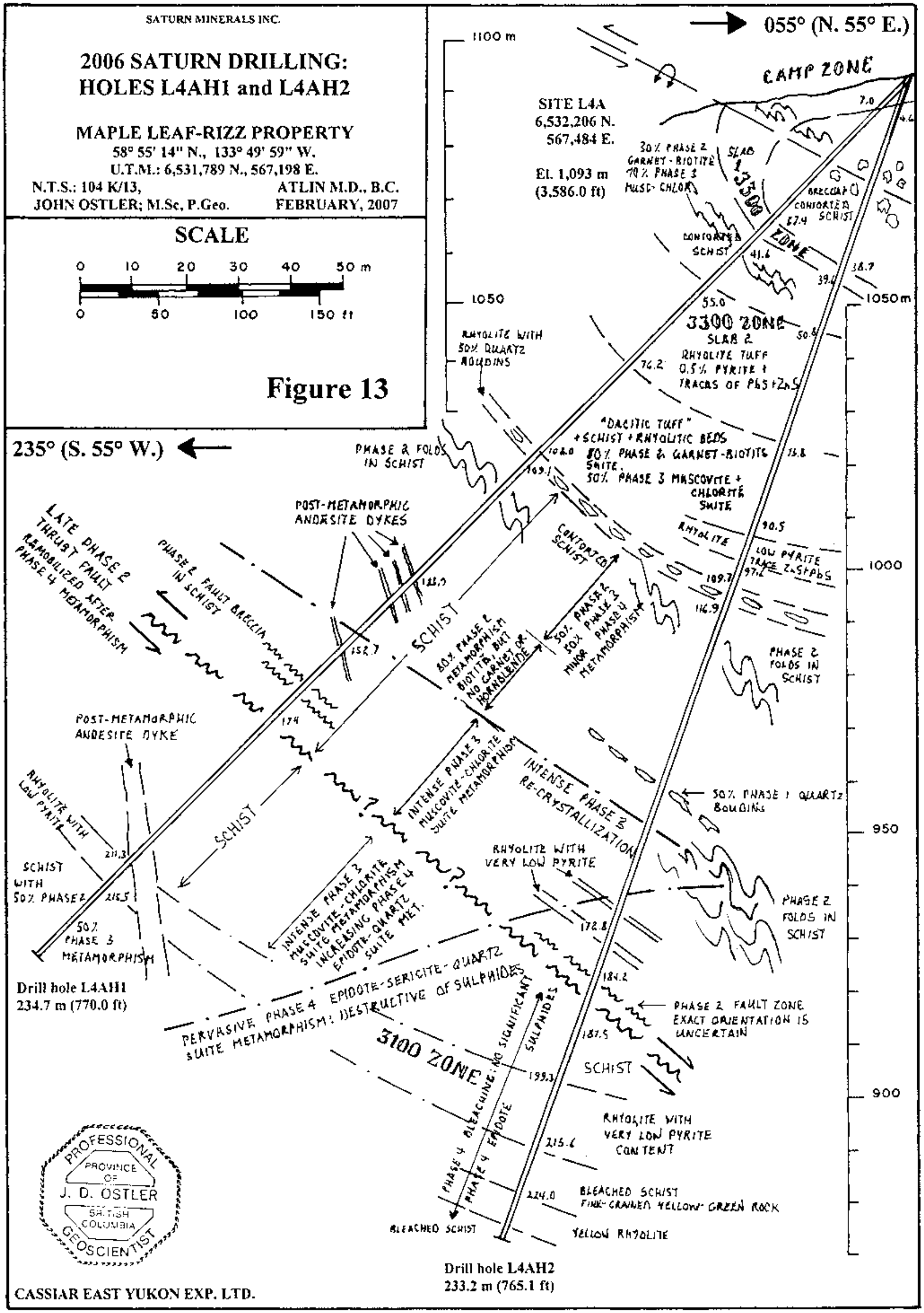
**2006 SATURN DRILLING in the MAPLE LEAF AREA**

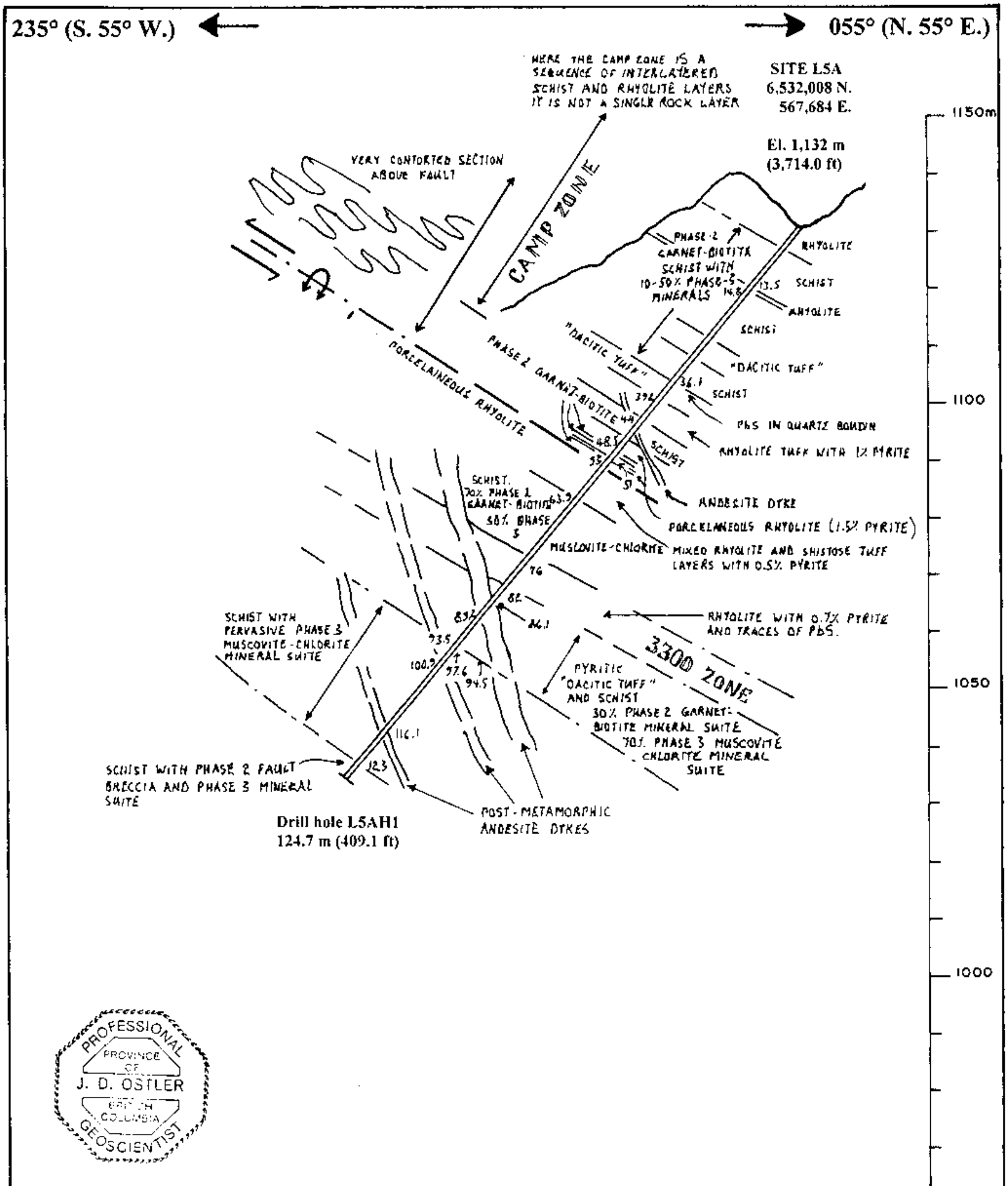
**MAPLE LEAF-RIZZ PROPERTY**

58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007


SCALE
0 10 20 30 40 50 m
0 50 100 150 ft
Figure 11
240° (S. 60° W.)
060° (N. 60° E.)
PROFESSIONAL
PROVINCE OF
J. D. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST
SITE L1
6,531,874 N.
567,657 E.
El. 1,131 m
(3,710.6 ft)
RHYOLITE WITH 0.3% PYRITE
BASE OF CAMP ZONE
"DACITIC META-TUFF" AND "LAPILLI TUFF"
21.7
18.4
RHYOLITE
3300 ZONE ?
RHYOLITE WITH 0.3% PYRITE AND TRACE CPY ZnS PbS
31.9
43.7
45.8
46.5
Drill hole L1H2
54.9 m (180.1 ft)
SCHIST
META-TUFF
68.6
SCHIST WITH ABUNDANT PHASE 1 QUARTZ BOUDINS AND PHASE 2 FOLDS
FELSIC TUFF
94
98
PHASE 2 BIOTITE METAMORPHISM PREDOMINATES OVER PHASE 3 MUSCOVITE-CHLORITE RECRYSTALLIZATION
PHASE 4 EPIDOTE-QUARTZ SUITE IS SPARSE
PHASE 3 RECRYSTALLIZATION INCREASES TO 80% AT BOTTOM OF L1H1
PHASE 2 FOLDS IN SCHIST
PHASE 2 ALMANDINE ISOGRAD ?
FIRST APPEARANCE OF GARNET PORPHYROBLASTS
135
PHASE 2 FOLDS IN SCHIST
SCHIST
POST METAMORPHIC ANDESITE DYKE
WHITE CLAY SEAM IN RECENT FAULT
205.9
FELSIC ZONE WITH 0.1% PYRITE
3100 ZONE ?
SCHIST
Drill Hole L1H1
233.2 m (765.1 ft)
1150 m
1100
1050
1000
950 m
SATURN MINERALS INC.
2006 SATURN DRILLING:
HOLES L1H1 and L1H2
MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13,
ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo.
FEBRUARY, 2007
CASSIAR EAST YUKON EXP. LTD.


SATURN MINERALS INC.
2006 SATURN DRILLING: HOLES L2AH1 and L2AH2
MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007
SCALE
0 10 20 30 40 50 m
0 50 100 150 ft
Figure 12
235° (S. 55° W.)
SITE L2A
6,531,841 N.
567,540 E.
El. 1,104 m
(3,622.0 ft)
055° (N. 55° E.)
RHYOLITE WITH 1% PYRITE
1100 m
1050
1000
950
900
"DACITIC METATUFF WITH SCHIST AND RHYOLITIC LAYERS"
70% PHASE 2 MINERAL SUITE: BIOTITE - PLAG - CHLORITE
30% PHASE 3 MUSCOVITE - CHLORITE SUITE RE-CRYSTALLIZATION
3300 ZONE
RHYOLITIC LAYERS WITH 0.5 - 1.5% PYRITE
+ TRACES OF PbS + ZnS
PHASE 2 ALMANDINE ISOGRAD?
1ST APPEARENCE OF GARNET PORPHYROBLASTS
SCHIST AND DACITIC META-TUFF
SCHIST WITH 50-50 PHASE 2 GARNET - BIOTITE SUITE METAMORPHISM AND PHASE 3 MUSCOVITE - CHLORITE RECRYSTALLIZATION
PHASE 2 FOLDS IN SCHIST
PH. 1 QUARTZ BOUDINS
RHYOLITE WITH 0.5% PYRITE
BLEACHED SCHIST IN PHASE 3 FAULT ZONE
SCHIST
PHASE 2 THRUST FAULT? EXACT ORIENTATION UNKNOWN
PHASE 2 FOLDS IN SCHIST
SCHIST
PHASE 2 FAULT BRECCIA
CONTORTED SCHIST
PHASE 2 FOLDS IN SCHIST
BLEBS OF PbS IN PHASE 1 QUARTZ BOUDINS
PHASE 2 FAULT BRECCIA
INTENSITY OF PHASE 3 MUSCOVITE - CHLORITE RE-CRYSTALLIZATION INCREASES WITH DEPTH.
POST METAMORPHIC ANDESITE DYKE
PHASE 2 HORNBLENDE ISOGRAD?
SCHIST
PERVASIVE PHASE 3 MUSCOVITE - CHLORITE SUITE RE-CRYSTALLIZATION
MUD SEAMS IN RECENT FAULTS
3100 ZONE
0.2% PYRITE
SCHIST
Drill hole L2AH1
233.2 m (765.1 ft)
Drill hole L2AH2
233.2 m (765.1 ft)
CASSIAR EAST YUKON EXP. LTD.


SATURN MINERALS INC.
2006 SATURN DRILLING: HOLES L4AH1 and L4AH2
MAPLE LEAF-RIZZ PROPERTY
58° 55' 14" N., 133° 49' 59" W.
U.T.M.: 6,531,789 N., 567,198 E.
N.T.S.: 104 K/13, ATLIN M.D., B.C.
JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007
SCALE
0 10 20 30 40 50 m
0 50 100 150 ft
Figure 13
055° (N. 55° E.)
235° (S. 55° W.)
CAMP ZONE
SITE L4A
6,532,206 N.
567,484 E.
El. 1,093 m
(3,586.0 ft)
1100 m
1050
1050m
1000
950
900
3300 ZONE
SLAB 2
RHYOLITE TUFF
0.5% PYRITE + TRACES OF PbS+ZnS
"DACITIC TUFF" + SCHIST + RHYOLITIC BEDS
CONTORTED SCHIST
PHASE 2 FOLDS IN SCHIST
POST-METAMORPHIC ANDESITE DYKES
POST-METAMORPHIC ANDESITE DYKE
LATE PHASE 2 THRUST FAULT REMOBILIZED AFTER PHASE 4 METAMORPHISM
PHASE 2 FAULT BRECCIA IN SCHIST
SCHIST
INTENSE PHASE 3 RE-CRYSTALLIZATION
RHYOLITE WITH VERY LOW PYRITE
PERVASIVE PHASE 4 EPIDOTE-SERICITE-QUARTZ SUITE METAMORPHISM; DESTRUCTIVE OF SULPHIDES
3100 ZONE
PHASE 2 FAULT ZONE EXACT ORIENTATION IS UNCERTAIN
RHYOLITE WITH VERY LOW PYRITE CONTENT
BLEACHED SCHIST FINE-GRAINED YELLOW-GREEN ROCK
YELLOW RHYOLITE
BLEACHED SCHIST
Drill hole L4AH1
234.7 m (770.0 ft)
Drill hole L4AH2
233.2 m (765.1 ft)
PROFESSIONAL
PROVINCE OF
J. D. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST
CASSIAR EAST YUKON EXP. LTD.




## SCALE

0 10 20 30 40 50 m

0 50 100 150 ft

**Figure 14**

CASSIAR EAST YUKON EXP. LTD.

SATURN MINERALS INC.

## 2006 SATURN DRILLING: HOLE L5AH1

MAPLE LEAF-RIZZ PROPERTY

58° 55' 14" N., 133° 49' 59" W.

U.T.M.: 6,531,789 N., 567,198 E.

N.T.S.: 104 K/13, ATLIN M.D., B.C.

JOHN OSTLER; M.Sc, P.Geo. FEBRUARY, 2007

## 4.0 DEPOSIT TYPE SOUGHT ON THE MAPLE LEAF-RIZZ PROPERTY

### 4.1 Noranda/Kuroko Massive Sulphide

The type of mineral exploration target sought in the Maple Leaf-Rizz property area is a Noranda/Kuroko type massive sulphide deposit.

Noranda/Kuroko massive sulphide deposits were described by Trygve Höy (1995) as follows:

**NORANDA/KUROKO MASSIVE SULPHIDE Cu-Pb-Zn G06**

***IDENTIFICATION***

SYNONYM: Polymetallic volcanogenic massive sulphide.

COMMODITIES (*BYPRODUCTS*): Cu, Pb, Zn, Ag, Au (*Cd, S, Se, Sn, barite, gypsum*)

EXAMPLES (British Columbia (MINFILE # - *Canada/ International*):
Homestake (082M025), Lara (092B001), Lynx (092B129), Myra (092F072), Price (092F073), H-W (092F330), Ecstall (103H011), Tulsequah Chief (104K011), Big Bull (104K008), Kutcho Creek (104J060), Britannia (092G003); *Kidd Creek (Ontario, Canada), Buchans (Newfoundland, Canada), Bathurst-Newcastle district (New Brunswick, Canada), Horne-Quemont (Québec, Canada), Kuroko district (Japan), Mount Lyell (Australia), Rio Tinto (Spain), Shasta King (California, USA), Lockwood (Washington, USA).*

***GEOLOGICAL CHARACTERISTICS***

CAPSULE DESCRIPTION:
One or more lenses of massive pyrite, sphalerite, galena, and chalcopyrite commonly within felsic volcanic rocks in a calcalkaline bimodal arc succession. The lenses may be zoned, with a Cu-rich base and a Pb-Zn-rich top; low-grade stockwork zones commonly underlie lenses and barite or chert layers may overlie them.

TECTONIC SETTING:
Island arc; typically in a local extensional setting or rift environment within, or perhaps behind, an oceanic or continental margin arc.

DEPOSITIONAL ENVIRONMENT / GEOLOGICAL SETTING:
Marine volcanism; commonly during a period of more felsic volcanism in an andesite (or basalt) dominated succession; locally associated with fine-grained marine sediments; also associated with faults or prominent fractures.

AGE OF MINERALIZATION:
Any age; In British Columbia typically Devonian; less commonly Permian-Mississippian, Late Triassic, Early (and Middle) Jurassic, and Cretaceous.

### *ECONOMIC FACTORS*

GRADE AND TONNAGE:

Average deposit size is 1.5 million metric tonnes (1.65 million tons) containing 1.3% Cu, 1.9% Pb, 2.0% Zn, 0.16 g/t (0.047 oz/ton) Au and 13 g/t (0.38 oz/ton) Ag ... British Columbia deposits range from less than 1 to 2 million metric tonnes (1.1 to 2.2 million tons) to more than 10 million metric tonnes (11 million tons). The largest are the H-W 10.1 million metric tonnes (11.1 million tons) with 2.0% Cu, 3.5% Zn, 0.3% Pb, 30.4 g/t (0.89 oz/ton) Ag and 2.1 g/t (0.061 oz/ton) Au ,and Kucho with a combined tonnage of 17 million metric tonnes (18.7 million tons) of 1.6% Cu, 2.3% Zn, 0.06% Pb, 29 g/t (0.85 oz/ton) Ag and 0.3 g/t (0.009 oz/ton) Au.

IMPORTANCE:

Noranda/Kuroko massive sulphide deposits are major producers of Cu, Zn, Ag, Au and Pb in Canada. Their high grade and commonly high precious metal content continue to make them attractive exploration targets.

Höy, Trygve
in:
Lefebure, D.V. and Ray, G.E. ed.; 1995, pp. 53-54.

### 4.2 Noranda/Kuroko Massive Sulphide Deposits in the Tulsequah Area

The British Columbia Mineral Inventory (MINFILE) has records of three Noranda/Kuroko massive sulphide deposits and showings in the Tulsequah area: the Tulsequah Chief mine, the Bug Bull mine, and the Ono showing. The MINFILE descriptions of those mineral occurrences are as follow:

MINFILE No. 104K 002 TULSEQUAH CHIEF (Past Producer)

Location: U.T.M.: 6,511,483 N. 580,980 E. N.T.S. 104 K/12E, K/13E

The Tulsequah Chief deposit is located on the east side of the Tulsequah River about 10 kilometres (6.1 mi) north of its junction with the Taku River.

The Tulsequah Chief was discovered in 1925 but saw limited development during the 1930s. Cominco acquired the mine in 1946. The mine produced base metals from 1951 to 1957 and was mined from the 579 and 121 metre (1,900 and 397 ft) elevations. Since the ore from the Tulsequah Chief mine and the nearby Big Bull mine (104K 008) were combined and processed together at the Polaris Taku mine (104K 003) facilities, it is not possible to give accurate values for the amount of commodities recovered from just the Tulsequah Chief ore. Recorded production figures give only the total amount of recovered commodities from the combined ore of the two mines. It is known, however, how much ore was actually mined in a given year and from which mine ... Over the life of the two mines a total of 580,256 tonnes (638,281 tons) was mined from the Tulsequah Chief and 353,314 tonnes (388,645 tons) from the Big Bull at a combined average grade of 3.77grams per tonne (0.11 oz/ton) gold, 126.5 grams per tonne (3.69 oz/ton) silver, 1.59 per cent copper, 1.54 per cent lead, and 7.0 per cent zinc.

The deposit is within volcanic rocks which have been mapped by Nelson and Payne (1984) as Late Palaeozoic Stikine. This date was recently reaffirmed by a uranium/lead date of Early Mississippian on host rhyodacite (Mortensen, Geol. Surv. Canada, unpublished data) The hanging wall is composed of dacitic tuffs which contain varying amounts of quartz fragments. Underlying this unit are more massive, often aphanitic dacitic to andesitic flows. These rocks contain much less visible quartz and feldspar. In the area of mineralization, alteration consists primarily of sericite-pyrite and locally, anastomosing zones of silica veins and pervasive silicification. The mineralization sits very high in the sequence of altered volcanic rocks. Paleozoic limestones hosting Rugosa fossils have been mapped north of the mine. It is now thought that the Pennsylvanian-Permian fossilized limestone-chert-clastic sequence lies stratigraphically above the deposit which occurs in a northeasterly striking, west dipping sequence of pre-Permian rocks located on the west limb of a north plunging anticline (Casselman, 1989). All rocks are intruded by Paleozoic diorite and dacite dykes and Tertiary rhyolite plugs, sills and dykes.

The Tulsequah Chief occurrence is a classic Kuroko-type stratiform, volcanogenic massive sulphide deposit. The deposit is located near the base of a large lenticular mass of dacite-rhyolite pyroclastics at the transition with an underlying thick sequence of andesitic pyroclastics and flows. The deposit is broken into four blocks by north striking, steeply dipping faults, some of which may have been part of synvolcanic growth faults.

The orebody consists of lenses of massive sulphides which attain a maximum thickness of 10 metres (30.5 ft) and a maximum length of 170 metres (558 ft). The lenses pinch out at a depth of 230 metres (755 ft). The main body strikes northeast and dips steeply west, and is often highly sheared. Seven separate conformable lenses have been identified within an open syncline which strikes northeast. Mineralization consists of massive lenses of pyrite and chalcopyrite and semi-massive sphalerite, galena and pyrite throughout silicified, quartz-carbonate-barite-gypsum gangue. Deformation of these lenses is intense, with at least 3 phases of deformation having effected the area.

In 1987, rehabilitation of the 5400 level by Redfern Resources was underway with the focus on extending the existing reserves along strike and to depth. A new discovery, to the northeast of the main workings, returned several well-mineralized drill intercepts. In 1987, a 6.25 metre (20.5 ft) intercept from one drill hole assayed 6.5 grams per tonne (0.18 oz/ton) gold, 222.85 grams per tonne (6.5 oz/ton) silver, 1.4 per cent copper, 2.8 per cent lead, and 8.0 per cent zinc. (Northern Miner, July 4, 1988, page 20). In 1988, drilling confirmed that mineralization called the E lens continued at least 213 metres (699 ft) down plunge from the lowest mine level. Also, the newly discovered G lens had been intersected in 6 holes over a strike length of 137 metres (449 ft). It appeared to be open in all directions (George Cross Newsletter, October 3, 1988).

Mineralization at present is contained in two lenses, the lower AB lens and the stratigraphically higher H lens. True thicknesses range from 1.5 to 7.6 metres (5 to 25 ft) in the AB lens and from 1.5 to 38.4 metres (5 to 126 ft) in the H lens. Drilling since 1987 has indicated a preliminary reserve of 7,801,060 tonnes (8,581,166 tons) grading 1.6 per cent copper, 1.2 per cent lead, 6.5 per cent zinc, 2.74 grams per tonne (0.08 oz/ton) gold, and 109.69 (3.2 oz/ton) silver (Northern Miner,-October 12, 1992, page 3). About 85 per cent of the reserve is contained in the H lens (Property File-Northwest Mining Conference (Spokane, Washington), Handout, 1991).

The Tulsequah Chief indicated geological reserve in all categories totals 8,930,000 tonnes (9,823,000 tons) grading 1.31 per cent copper, 1.24 per cent lead, 6.62 per cent zinc, 2.53 grams per tonne (0.017 oz/ton) gold and 107.56 grams per tonne (3.14 oz/ton) silver (George Cross Newsletter No.105 (June 1), 1995.

In July 1995 Redfern Resources Ltd. Reported positive results from a 1.5 million dollar feasibility study conducted by Rescan Engineering Ltd. With contributions by a team of independent consulting engineers. The study is based on an initial mineable reserve of 7.2 million tonnes (7,920,000 tons) grading 1.24 per cent copper, 1.18 per cent lead, 6.32 per cent zinc, 2.41 grams per tonne (0.07 oz/ton) gold, and 99.33 grams per tonne (2.9 oz/ton) silver, which is part of the overall geological reserve of 8.9 million tonnes (9,790,000 tons). At a production rate ranging from 800,000 to 900,000 tonnes (880,000 to 990,000 tons) per year, the mine life is estimated to be about 8.3 years. Economic analysis is based on the year-round utilization of a 160-kilometre (98 mi) access road to be built from the mine site northwards to the existing road at Atlin, British Columbia. An alternative access option contemplates the seasonal use of barges on the Taku River, from its confluence with the Tulsequah River to its outlet at the ocean near Juneau, Alaska. Revisions to the feasibility study are anticipated, but Redfern hopes to file an application for a Mine Development Certificate before the end of the year (Information Circular 1996-1, page 16).

Redfern Resources Ltd. submitted a revised Project Report for the Tulsequah Chief to the Environmental Assessment office on July 8, 1997. Reserves estimated by the company in 1996 are 7.91 million tonnes (8,701,000 tons) grading 6.35 per cent zinc, 1.27 per cent copper, 1.18 per cent lead, 100.91 grams per tonne (2.9 oz/ton) silver and 2.42 grams per tonne (0.07 oz/ton) gold, and open to depth and along strike (Information Circular 1988-1, page 20). At full production, milling 900,000 tonnes (9,900,000 tons) per year, the mine is forecast to produce 53,200 tonnes (58,520 tons) of zinc, 10,090 tonnes (11,099 tons) of copper, 9,350 tonnes (10,282 tons) of lead, 75,270 kilograms (2,419,931 troy ounces) of silver and 1,742 kilograms (56,005 troy ounces) of gold annually over a minimum mine life of 9 years. The mine will employ 260 people; the capital cost is estimated at $155 million. Redfern has established a maximum public awareness program including close contacts with the Taku River Tlingit First Nation Band. The company received approval for the mine in March 1998. Production is planned in early 2000.

Redfern received a second project approval certificate in December 2002.

In 2003, Redfern Resources Ltd., a wholly owned subsidiary of Redcorp Ventures Ltd., conducted a surface and underground drill program to locate extensions of existing resources at the Tulsequah Chief deposit. Two surface drill holes totaled 1,069 metres (3,507.2 ft) and 21 underground diamond-drill holes totaled 9,040 metres (29,659 ft). The deposit is open in several areas. Continuity is excellent in the down-dip direction but drill holes at least 800 metres (2,625 ft) long are required, therefore Redfern explored a more accessible area west of the deposit for a continuation of ore lenses across the 4400 fault. A new massive sulphide lens, with deposit average grade that is stratigraphically above the main deposit, was intersected in six holes. Nine holes cut the principal H lens, including an uncommonly thick (37 metre (121.4 ft)) intercept, and six holes cut the AB lenses. One intersection of uncertain correlation returned exceptional precious metal grades of 16.3 grams per tonne (0.48 oz/ton) gold, 511 grams per tonne (14.9 oz/ton) silver, 0.08 per cent copper, 0.7 per cent lead, and 1.2 per cent zinc over 7.6 metres (25 ft) (Exploration and Mining in BC 2003, page 6).

In 2004, Redfern conducted a major program of in-fill and step-out drilling to confirm and expand resources at the Tulsequah Chief deposit. Three drills recovered 30,444 metres (99,882 ft) of core in 54 holes and include some of the highest grades obtained over the life of the project. The 5400 level drift was extended to 160 metres (525 ft) and all drilling was conducted from three underground stations. The most important part of the deposit, the H lens, forms a steep pipe, or lens, that is about 100 metres (305 ft) long, and up to 31 metres (102 ft) in true thickness and was delineated by the current program to 800 metres (2,625 ft) below previous mining. At that level, a fault zone was encountered that caused several drill holes to be lost. Holes that were completed through the fault penetrated intense alteration and the company suggests that the H lens bends to the east toward the 5300 fault. Drilling also targeted the G zone, which is a faulted offset of the H deposit on the east side of the 5300E fault.

In 2005, Redfern Resources Ltd. Updated the resource estimate for the Tulsequah Chief deposit. Measured and indicated resources total 3.58 million tonnes (3,94 million tons) at a grade of 1.41 per cent copper, 1.32 per cent lead, and 6.73 per cent zinc, 2.73 grams per tonne (0.08 oz/ton) gold, and 100.8 grams per tonne (2.94 oz/ton) silver (Exploration and Mining in BC 2005, page 28). The figures represent an approximate 10 per cent decrease in tonnage and total metal content from the previous estimate. The inferred resource was nearly halved to 1.54 million tonnes (1.69 million tons) at 1.13 per cent copper, 1.07 per cent lead, and 5.44 per cent zinc, 2.33 grams per tonne (0.07 oz/ton)gold, and 85.1 grams per tonne (2.48 oz/ton) silver (Exploration and Mining in BC 2005, page 28). The previous year's drilling program determined that the principal H ore zone is restricted in strike length at depth, and it is also disrupted and/or displaced by the 5300 fault. Redfern began an update of the feasibility study done in 2005 but the work was halted in mid-year when it became apparent that increased capital and operating costs, combined with the downgraded resource estimate, made the project financially unattractive.

Recent increases in metal prices have inspired renewed interest in the Tulsequah Chief mine since this

MINFILE report was updated in 2005.

MINFILE No. 104K 008 BIG BULL, MANVILLE (Past Producer)

Location: U.T.M.: 6,504,063 N. 584,181 E. N.T.S. 104 K/12E

The area is underlain by Upper Triassic Stuhini Group volcanics comprised mainly of andesitic to basaltic flows, volcanic breccia and agglomerate with lapilli tuff, volcanic sandstone, greywacke and siltstone. The volcanics are intruded by a pink, biotite-hornblende quartz monzonite pluton, tentatively dated as Late Cretaceous to Early Tertiary, which is thought to be genetically related to the Eocene Sloko Group volcanics.

On the property, the Stuhini volcanic rocks are altered to chlorite-rich greenstones, which are generally massive and host lenses and disseminations of magnetite. Alteration of the magnetite to hematite has produced much jasper-like rock. The principal rock exposed in the mine workings is an andesitic volcanic. Immediately west of the mine is a fine-grained, southwest dipping phyllite which is cut by chloritic quartz veins which are hematite stained. North of the mine, the predominant rock type is andesite, which is heavily altered to chlorite and sericite and hosts very fine-grained calcite stringers.

The volcanic rocks are cut by a shear zone that strikes northwest and dips from vertical to 45 degrees southwest. Within the shear zone, but much narrower than it, is an altered zone which ranges from very narrow to up to 60 to 90 metres (197 to 295 ft) in width. The intensely altered rock is composed of quartz, light coloured mica, pyrite and possibly some talc.

The principal orebody was about 275 metres (902 ft) long with a maximum width of about 8 metres (26.2 ft) and extended 90 metres (295 ft) below the surface. Mineralization consisted of a conformable lens of pyrite, sphalerite, chalcopyrite and galena in a gangue of barite, quartz, some calcite and altered country rock.

Channel samples taken from the surface showings in 1929 assayed 2.05 grams per tonne (0.06 oz/ton) gold, 233.1 grams per tonne (6.8 oz/ton) silver, 2.8 per cent copper, 20.2 per cent zinc and 0.8 per cent lead over 8.2 metres (26.9 ft), and 6.9 grams per tonne (0.20 oz/ton) gold, 257.1 grams per tonne (7.5 oz/ton) silver, 2.0 per cent copper, 14.4 per cent zinc and 2.8 per cent lead over 1.5 metres (4.9 ft) (Minister of Mines Annual Report 1929).

From 1951 to 1956, inclusive, the combined production from the Tulsequah Chief (104K 002) and the Big Bull properties totaled 804,262 tonnes (884,688 tons) of ore. About 353,314 tonnes (388,645 tons) of ore was apparently mined from the Big Bull deposit and trucked 8 kilometres (4.9 mi) to the Polaris-Taku mine (104K 003) where it was mixed and processed with ore from the Tulsequah Chief mine (104K 002). See Tulsequah Chief (preceding) for details on Big Bull production.

The Big Bull deposit is a polymetallic volcanogenic massive sulphide body hosted by a variably altered sequence of mafic and felsic volcanic flows, sills and volcaniclastic rocks, which together form part of the upper Paleozoic Stikine assemblage. The stratigraphy at Big Bull includes a mafic footwall that is overlain by an altered felsic package which is in turn overlain by a second package of mafic rocks. The altered felsic package is the host to the massive sulphide mineralization. This overall sequence of lithologies is similar to the stratigraphy at the Tulsequah Chief deposit (104K 002), which is hosted by the same suite of felsic-mafic volcanic rocks.

Drilling at the Big Bull property in 1994 successfully demonstrated that massive sulphide mineralization remains open outside the limits of the historic workings and the 1993 drilling. Four of the 15 holes drilled in 1994 intersected ore grade material (greater than $45 NSR) over mineable widths (greater than 3 metres (9.8 ft)), and three other holes intersected ore grade over widths between 1 and 3 metres (3.1 and 9.8 ft) (Assessment Report 24,188).

MINFILE No. 104K 129 ONO (Showing)

Location: U.T.M.: 6,516,543 N. 580,313 E. N.T.S. 104 K/13E

The area is underlain by a Paleozoic to Lower Triassic volcano-sedimentary belt which extends north-northwest and consists mainly of andesitic to felsic flows, tuffs, breccia, and minor sedimentary limestone, chert and siltstone. These are intruded by a Tertiary-Cretaceous quartz monzonite pluton which is thought to be correlative with the Sloko Group volcanics. The volcano-sedimentary rocks have undergone regional greenschist metamorphism.

On the property the rocks are divided into two packages, one dominated by andesitic sediments and tuffs with prominent limestone intervals and the other dominated by felsic volcanic rocks ... volcanogenic sulphides occur in both packages.

In the south part of the property, massive rhyolite and dacite predominated with minor welded tuffs.

Massive sulphide zone, about 30 centimetres (1 ft) wide, occurs in banded and brecciated rhyolite along Shazah Creek. Sulphides consist mainly of pyrrhotite with scattered patches of chalcopyrite. In 1981, a sample returned 0.069 grams per tonne (0.002 oz/ton) gold, 1.37 grams per tonne (0.04 oz/ton) silver, 0.24 per cent copper, 0.01 per cent lead, and 0.01 per cent zinc (Assessment Report 9007).

Near the contact with the monzonitic intrusive, bedded rhyolites are heavily pyritized.

### 4.3 Mineralization on the Maple Leaf-Rizz Property

American Bullion Minerals Limited. discovered two mineralized boulder trains along the northwestern margin of the glacier that crosses the central part of the Rizz area (Figures 2S and 3). Lead-zinc mineralization in a thin carbonate unit was found in a scree in the property's northern part, and at the toe of a small tributary glacier in the central part of the property.

K.J. Konkin (1991B) (Figure 3) reported that 12 samples taken from the northern boulder train in the Rizz area contained an average of: 3.77 gm/mt (0.11 oz/ton) gold, 49.7 gm/mt (1.45 oz/ton) silver, 0.5% copper, 0.19% lead, and 4.13% zinc. This was an un-cut average that was skewed upward by two of the 12 samples. Sample No. 11550 contained: 27.65 gm/mt (0.806 oz/ton) gold, 425 gm/mt (12.4 oz/ton) silver, 0.068% copper, 0.55% lead, and 15.9% zinc. That sample was taken from a boulder of schist that was visually estimated to contain 30-35% sphalerite and 10-15% pyrite. Four float samples were taken from a boulder train near the head of the glacier in the southern part of the Rizz area. They contained only traces of gold, silver, and copper. Sample No. 16610 had the highest concentrations of combined lead and zinc at 483 ppm lead, and 134 ppm zinc (Konkin, 1991B).

A total of nine samples were taken from a scree located on the northern slope of the ridge that transects the Rizz area. The scree was located at the eastern boundary of the RIZZ 2 (524617) claim (Figures 2S and 3).

Eight of the nine samples were of chloritic schist that contained normal metal contents for such rocks. Sample No. 11367 was described as a laminated white marble. It contained: 3.43 gm/mt (0.1 oz/ton) gold, 560.92 gm/mt (16.36 oz/ton) silver, a trace of copper, 8.25% lead, and 7.3% zinc.

Five samples were taken from the toe area of a small tributary glacier on the southeastern slope of the ridge that transects the Rizz area (Figures 2S and 3). Four of those samples had only traces of economic metals; one float sample, No. 16606 contained: 56 ppb gold, 149 gm/mt (4.35 oz/ton) silver, 0.049% ppm copper, 1.13% lead, and 0.67% zinc.

Prospecting along the cliff bordering the northern flank of Rugulose Glacier resulted in the discovery of mineralized float near the foot of the cliff beneath the 3500 zone, some small massive sulphide lenses at the top of the cliff face in the 3300 zone, and a group of mineralized boulders in a bowl atop the cliff west of the 3100 zone (Figures 4 and 5S) (Konkin, 1991A).

Seven float samples, Nos. 11155-11161, were taken at the base of the cliff beneath the 3500 zone. The samples averaged: 0.11 gm/mt (0.003 oz/ton) gold, 8.9 gm/mt (0.260 oz/ton) silver, 77.1 ppm copper, 0.40% lead, and 0.61% zinc. The best sample, No. 11159 contained: 0.18 gm/mt (0.005 oz/ton) gold, 24.0 gm/mt (0.7 oz/ton) silver, 170 ppm copper, 1.23% lead, and 1.42% zinc (Figure 5S).

Mineralized boulders were discovered in a bowl down-ice from, and west of the 3100 zone (Figures 4 and 5S). The average content of 25 samples taken in that area was: 1.44 gm/mt (0.042 oz/ton) gold, 85.78 gm/mt (2.5 oz/ton) silver, 0.18% copper, 3.74% lead, and 5.05% zinc (Figure 5S). The highest grade sample, No. 11514 contained: 6.25 gm/mt (0.182 oz/ton) gold, 405 gm/mt (11.8 oz/ton) silver, 0.76% copper, 17.4% lead, and 6.73% zinc.

The only significant mineral showing found in place during the 1990-1991 exploration in the Maple Leaf area was on a steep slope near the crest of the cliff above the glacier. There, outcrops of near the upper contact of the 3300 zone contained undisclosed amounts of semi-massive to disseminated sphalerite and galena with disseminated pyrite and chalcopyrite in the silicified felsic volcanic host. The sulphides occurred in deformed lenses (Konkin, 1991A).

A total of six rock samples, Nos. 16611 to 16615 and 16617, were taken from the 3300-zone showing area in 1991. They contained an average of: 0.20 gm/mt (0.006 oz/ton) gold, 29.86 gm/mt (0.87 oz/ton) silver, 0.07% copper, 1.61% lead, and 1.85% zinc. Four of the six samples contained only background concentrations of economic metals. The average metal content of that sample group was skewed upward by the inclusion of two high-grade samples, Nos. 16611 and 16617 (Figure 5S). The highest grade sample was No. 16617 which contained: 0.81 gm/mt (0.024 oz/ton) gold, 94.7 gm/mt (2.76 oz/ton) silver, 0.19% copper, 5.2% lead, and 5.9% zinc. Those concentrations were significantly lower than those claimed over a 2.3-m (7.5-ft) section on American Bullion's 1991 compilation map (Figure 4).

Most of Saturn Minerals Inc.'s 2006 diamond-drill holes penetrated rock along the crest of the cliff just north of where Konkin (1991A) reported massive sulphide lenses near the top of the 3300 zone. The 3100, 3300, and Camp Zones were all tested. No massive sulphide mineralization was found. Only traces of disseminated sphalerite, chalcopyrite, and galena were encountered (Figures 10 to 14, Appendix 'B').

## 5.0 2006 DRILLING ON THE MAPLE LEAF 1 (524610) CLAIM

### 5.1 2006 Program Parameters

Equipment and supply assembly for Saturn Minerals's 2006 drill program commenced in Atlin, British Columbia on July 21, 2006. Mobilization and camp set-up commenced on the MAPLE LEAF 1 (524610) claim on August 5, 2006. By August 15, 2006 a diamond drill owned and operated by Kluane Drilling, of Whitehorse, Yukon was working. The writer arrived on the property on August 20, 2006 and logged core until September 15, 2006 when drilling concluded. Camp breakdown and demobilization continued until September 30, 2006. Data analysis and reporting continued intermittently until present. Air transport for supply and drill moves was provided by Discovery Helicopters of Atlin, British Columbia.

An account of the costs of the Saturn Minerals Inc. 2006 drill program on the MAPLE LEAF 1 (524610) claim and an apportionment of those costs for assessment credit to the benefit of the Maple Leaf-Rizz property form Appendix 'C' of this report.

A total of 1,347.1 m (4,419.6 ft) of NT drilling was done (Figures 10 to 14, Appendix 'B'). Locations and parameters of the 2006 drill holes were as follow:

**Table 4**

**LOCATIONS and PARAMETERS of DRILL HOLES**

| Hole No. | U.T.M. Location | Elevation (m) | (ft) | Bearing | Dip | Length (m) | (ft) |
|---|---|---|---|---|---|---|---|
| L1H1 | 6,531,874 N.<br>567,657 E. | 1,131 | 3,710.6 | 240° | -60° | 233.2 | 765.1 |
| L1H2 | 6,531,874 N.<br>567,657 E. | 1,131 | 3,710.6 | 240° | -85° | 54.9 | 180.1 |
| L2AH1 | 6,531,841 N.<br>567,540 E. | 1,104 | 3,622.0 | 235° | -60° | 233.2 | 765.1 |
| L2AH2 | 6,531,841 N.<br>567,540 E. | 1,104 | 3,622.0 | 235° | -85° | 233.2 | 765.1 |
| L4AH1 | 6,532,206 N.<br>567,484 E. | 1,093 | 3,586.0 | 235° | -45° | 234.7 | 770.0 |
| L4AH2 | 6,532,206 N.<br>567,484 E. | 1,093 | 3,586.0 | 235° | -70° | 233.2 | 765.1 |
| L5AH1 | 6,532,008 N.<br>567,684 E. | 1,132 | 3,714.0 | 235° | -50° | 124.7 | 409.1 |

Core recovery averaged in excess of 98%. Core was logged and stored at the drill sites in plywood core boxes.

Core from the 3100, 3300, and Camp zones was split with a Longyear core splitter and sampled at mostly 2-m (6.56 ft) intervals. Ninety-one samples were put in locked plastic bags and moved to a storage locker in Atlin, British Columbia whenever helicopter space was available. At the end of the program the core was trucked from Atlin to Whitehorse, Yukon and thence to Acme Analytical Laboratories Ltd. at 852 East Hastings Street in Vancouver, British Columbia where it was analyzed.

At the lab, the core samples were crushed, split and subjected to induced plasma coupling analysis for 36 elements. The methods and results of those analyses comprise Appendix 'A' of this report.

**5.2 2006 Program Results**

The 2006 drilling penetrated a series of three strataform quartz-pyrite zones hosted within schists of the Boundary Ranges suite (sections 3.1 and 3.3.1, this report).

Rock textures in the core indicated that the zones were metamorphosed rhyolite tuff and lapilli tuff. No proximal volcanic stratigraphic features such as rhyolitic domes or flow breccias that are normally associated with massive sulphide deposits were recognized. The zones were interpreted to have been deposited in locations distal to any volcanic centers.

No massive sulphide mineralization was found. Only traces of disseminated sphalerite, chalcopyrite, and galena were encountered in the drill core (Figures 10 to 14, Appendix 'B').

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

Rocks in the Maple Leaf area are a sequence of schists of the Boundary Ranges suite which grade to the east and upward into the Mississippian to Permian-age Mount Stapler suite of metasedimentary and metavolcanic rocks. These rocks were subjected to polyphase deformation and at least four distinct phases of metamorphism.

Metamorphosed rhyolite tuff and lapilli tuff are the only marker units in the stratigraphy. They are composed of in excess of 90% quartz, 0.5 to 5% pyrite, and minor amounts of other metamorphic minerals. Three of the zones: the 3100, 3300 and Camp zones were tested by drilling during Saturn Minerals Inc.'s 2006 drill program.

Rock textures in the core indicated that the zones were metamorphosed rhyolite tuff and lapilli tuff. No proximal volcanic stratigraphic features such as rhyolitic domes or flow breccias that are normally associated with massive sulphide deposits were recognized. The zones were interpreted to have been deposited in locations distal to any volcanic centers.

No massive sulphide mineralization was found. Only traces of disseminated sphalerite, chalcopyrite, and galena were encountered in the drill core.

The Moosetrap Creek area in the northwestern part of the Maple Leaf-Rizz property and the Rizz area in its southern part remain almost unexplored.

### 6.2 Recommendations

It is recommended that a program of prospecting be conducted throughout the Moosetrap Creek area to investigate the mineral potential of rhyolitic zones reported to exist there.

Also, a prospecting party should be sent to the Rizz area to investigate the two mineralized boulder trains and mineral showings areas that have been confirmed to be present in that area.

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West Vancouver, British Columbia
February 22, 2007

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## APPENDIX 'A'

## METHODS and RESULTS
## of ANALYSIS

## METHODS OF ANALYSIS

### SAMPLE PREPARATION

Drill core samples were prepared using Acme Analytical Laboratories Ltd.'s sample preparation code P150: samples were dried at 60°C. and pulverized to where 95% would pass through a 150 mesh screen. Samples were then split to produce a 15-gram pulp.

### MULTI ELEMENT ICP ANALYSIS

Samples were analyzed using Acme Analytical Laboratories Ltd.'s Group 1DX analysis: 15-gram samples were digested in 90 ml of 2-2-2 $HCl-HNO_3-H_2O$ at 95° C. for 1 hour, diluted to 300 ml and analyzed using the Induced Plasma Coupling method.

### GROUP 1DX DETECTION LIMITS

| Element | Limits (ppm) Lower Upper | Element | Limits (ppm) Lower Upper | Element | Limits (ppm) Lower Upper |
|---|---|---|---|---|---|
| Ag | 0.3 100.0 | Fe | 0.01% 40.0% | S | X 10% |
| Al | 0.01% 10.0% | Ga | X 1,000 | Sb | 3 2,000 |
| As | 2 10,000 | Hg | 1 100 | Sc | X 100 |
| Au | 2 100 | K | 0.01% 40.0% | Se | X 100 |
| B | 3 2,000 | La | 1 10,000 | Sr | 1 10,000 |
| Ba | 1 10,000 | Mg | 0.01% 30.0% | Th | 2 2,000 |
| Bi | 3 2,000 | Mn | 2 10,000 | Ti | 0.01% 10.0% |
| Ca | 0.01% 40.0% | Mo | 1 2,000 | Tl | 5 1,000 |
| Cd | 0.5 2,000 | Na | 0.01% 10.0% | U | 8 2,000 |
| Co | 1 2,000 | Ni | 1 10,000 | V | 1 10,000 |
| Cr | 1 10,000 | P | 0.001% 5% | W | 2 100 |
| Cu | 1 10,000 | Pb | 3 10,000 | Zn | 1 10,000 |

## CORRESPONDENCE OF ANALYSIS TAG NUMBERS AND DRILL-CORE INTERVALS

### DIAMOND DRILL HOLE No. L1H1

| Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number |
|---|---|---|---|---|---|
| 6 to 8 | 19701 | 18 to 20 | 19703 | 30 to 32 | 19705 |
| 12 to 14 | 19702 | 24 to 26 | 19704 | 36 to 38 | 19706 |

NOTE: Drill Hole No. L1H2 was short and repeated the same rock interval as Hole L1H. It was not sampled.

### DIAMOND DRILL HOLE No. L2AH1

| Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number |
|---|---|---|---|---|---|
| 34.4 to 36 | 19707 | 46 to 48 | 19713 | 58 to 60 | 19719 |
| 36 to 38 | 19708 | 48 to 50 | 19714 | 60 to 62 | 19720 |
| 38 to 40 | 19709 | 50 to 52 | 19715 | 62 to 64 | 19721 |
| 40 to 42 | 19710 | 52 to 54 | 19716 | 64 to 66 | 19722 |
| 42 to 44 | 19711 | 54 to 56 | 19717 | 158 to 160 | 19732 |
| 44 to 46 | 19712 | 56 to 58 | 19718 | 160 to 162 | 19733 |

### DIAMOND DRILL HOLE No. L2AH2

| Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number |
|---|---|---|---|---|---|
| 4 to 6 | 19723 | 44 to 46 | 19735 | 64 to 66 | 19745 |
| 6 to 8 | 19724 | 46 to 48 | 19736 | 66 to 68 | 19746 |
| 28 to 30 | 19725 | 48 to 50 | 19737 | 68 to 70 | 19747 |
| 30 to 32 | 19726 | 50 to 52 | 19738 | 70 to 72 | 19748 |
| 32 to 34 | 19727 | 52 to 54 | 19739 | 72 to 74 | 19749 |
| 34 to 36 | 19728 | 54 to 56 | 19740 | 74 to 76 | 19750 |
| 36 to 38 | 19729 | 56 to 58 | 19741 | 216 to 218 | 19751 |
| 38 to 40 | 19730 | 58 to 60 | 19742 | 218 to 220 | 19752 |
| 40 to 42 | 19731 | 60 to 62 | 19743 | 220 to 222 | 19753 |
| 42 to 44 | 19734 | 62 to 64 | 19744 | | |

## CORRESPONDENCE OF ANALYSIS TAG NUMBERS AND DRILL-CORE INTERVALS

### DIAMOND DRILL HOLE No. L4AH1

| Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number |
|---|---|---|---|---|---|
| 38 to 40 | 19754 | 60 to 62 | 19758 | 68 to 70 | 19762 |
| 40 to 42 | 19755 | 62 to 64 | 19759 | 70 to 72 | 19763 |
| 56 to 58 | 19756 | 64 to 66 | 19760 | 72 to 74 | 19764 |
| 58 to 60 | 19757 | 66 to 68 | 19761 | 74 to 76 | 19765 |

### DIAMOND DRILL HOLE No. L4AH2

| Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number |
|---|---|---|---|---|---|
| 50.6 to 52 | 19766 | 60 to 62 | 19771 | 70 to 72 | 19776 |
| 52 to 54 | 19767 | 62 to 64 | 19772 | 72 to 74 | 19777 |
| 54 to 56 | 19768 | 64 to 66 | 19773 | 209.5 to 212 | 19778 |
| 56 to 58 | 19769 | 66 to 68 | 19774 | 212 to 214 | 19779 |
| 58 to 60 | 19770 | 68 to 70 | 19775 | | |

### DIAMOND DRILL HOLE No. L5AH1

| Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number | Interval (m) | Analysis Tag Number |
|---|---|---|---|---|---|
| 39.7 to 42 | 19780 | 52 to 53.5 | 19784 | 62 to 63 | 19788 |
| 42 to 43.2 | 19781 | 56 to 58 | 19785 | 76 to 78 | 19789 |
| 48.5 to 50 | 19782 | 58 to 60 | 19786 | 78 to 80 | 19790 |
| 50 to 52 | 19783 | 60 to 62 | 19787 | 80 to 82 | 19791 |

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9001 Accredited Co.)

# GEOCHEMICAL ANALYSIS CERTIFICATE

## Saturn Minerals Inc. File # A606748 Page 1

901 - 1030 Burnaby St., Vancouver BC V6E 1N8 Submitted by: Mike Elson

| SAMPLE# | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Au ppb | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G-1 | .2 | 2.3 | 2.3 | 54 | <.1 | 4.0 | 4.7 | 553 | 1.88 | <.5 | 3.1 | <.5 | 4.7 | 59 | .5 | .4 | .1 | 40 |
| 19701 | 4.8 | 9.9 | 21.3 | 72 | .1 | .7 | 1.2 | 361 | 1.64 | .6 | .7 | <.5 | 9.9 | 5 | .2 | .2 | .2 | 1 |
| 19702 | 1.2 | 15.1 | 41.6 | 49 | <.1 | 2.4 | 1.6 | 190 | 1.08 | 1.8 | .7 | .6 | 11.6 | 4 | <.1 | .2 | .1 | 2 |
| 19703 | 1.3 | 11.1 | 6.9 | 54 | <.1 | .8 | 1.8 | 307 | 1.10 | .7 | .7 | <.5 | 10.7 | 4 | .1 | .2 | .1 | 1 |
| 19704 | 1.2 | 70.9 | 10.2 | 72 | .1 | 172.3 | 34.9 | 1352 | 5.28 | 2.8 | .6 | 1.1 | 3.3 | 74 | .1 | .4 | .1 | 133 |
| 19705 | .2 | 8.6 | 4.6 | 61 | <.1 | 1.3 | 2.2 | 304 | 1.27 | <.5 | 1.2 | <.5 | 12.1 | 9 | <.1 | .1 | .1 | 6 |
| 19706 | .3 | 5.2 | 7.0 | 44 | <.1 | 1.1 | 1.9 | 286 | 1.20 | <.5 | 1.0 | <.5 | 10.8 | 17 | <.1 | .1 | <.1 | 7 |
| 19707 | 2.2 | 9.5 | 7.8 | 81 | .1 | 1.7 | 1.5 | 282 | 1.06 | 1.0 | 1.6 | <.5 | 14.0 | 7 | .7 | .2 | .3 | 2 |
| 19708 | 3.9 | 7.8 | 11.5 | 47 | <.1 | 1.0 | 1.6 | 246 | .73 | 1.6 | 1.7 | <.5 | 14.2 | 8 | .3 | .1 | .1 | 1 |
| 19709 | 5.2 | 10.9 | 8.4 | 62 | .1 | 2.1 | 1.8 | 152 | 1.01 | 2.6 | 2.5 | <.5 | 14.3 | 9 | .5 | .3 | .1 | 1 |
| RE 19709 | 5.5 | 10.9 | 8.3 | 63 | .1 | 2.0 | 1.9 | 154 | 1.02 | 2.7 | 2.5 | .5 | 14.5 | 10 | .4 | .3 | .1 | 1 |
| RRE 19709 | 5.5 | 11.5 | 8.9 | 62 | .1 | 1.8 | 1.8 | 149 | .92 | 2.8 | 2.3 | 1.3 | 13.3 | 9 | .4 | .1 | .1 | 1 |
| 19710 | 4.3 | 10.4 | 6.1 | 80 | .1 | .9 | 1.5 | 140 | .89 | 1.8 | 2.2 | 1.1 | 13.2 | 8 | .8 | .1 | .1 | 2 |
| 19711 | 3.5 | 4.6 | 6.4 | 30 | .1 | 1.2 | 1.5 | 110 | .77 | 2.8 | 1.4 | .6 | 12.9 | 4 | .3 | .2 | .1 | 1 |
| 19712 | 22.4 | 3.5 | 16.3 | 36 | <.1 | 1.8 | 1.3 | 38 | .64 | 1.1 | 1.6 | <.5 | 12.5 | 6 | 1.1 | .1 | .1 | <1 |
| 19713 | 11.7 | 8.5 | 14.9 | 27 | .1 | 1.1 | 1.4 | 34 | .44 | 2.2 | 2.0 | .9 | 12.3 | 4 | .8 | .1 | .1 | <1 |
| 19714 | 8.6 | 8.5 | 10.1 | 64 | .1 | 2.6 | 2.6 | 398 | .86 | 1.7 | 2.1 | .9 | 15.4 | 20 | .5 | .1 | .1 | 2 |
| 19715 | 7.4 | 13.9 | 5.2 | 56 | .1 | 6.1 | 4.4 | 368 | 1.34 | .5 | 1.8 | <.5 | 12.0 | 19 | .1 | <.1 | .1 | 8 |
| 19716 | 5.9 | 7.6 | 6.4 | 74 | <.1 | 2.2 | 2.6 | 221 | 1.01 | 2.4 | 1.6 | 1.0 | 14.0 | 13 | .5 | .1 | .2 | 1 |
| 19717 | 8.0 | 6.2 | 11.6 | 52 | <.1 | 1.0 | 1.6 | 57 | .51 | 2.0 | 1.4 | .7 | 13.2 | 4 | 1.4 | .1 | .3 | 1 |
| 19718 | 6.9 | 8.3 | 13.1 | 53 | .1 | .9 | 1.3 | 51 | .57 | 3.8 | 2.4 | 1.0 | 13.4 | 4 | 1.1 | .2 | .1 | 1 |
| 19719 | 1.7 | 5.2 | 9.2 | 64 | .1 | .8 | 1.1 | 137 | .63 | 1.2 | 1.2 | .8 | 12.6 | 6 | .6 | .1 | .1 | 1 |
| 19720 | 3.4 | 9.5 | 12.8 | 118 | .2 | .4 | 1.5 | 534 | 1.59 | <.5 | 1.6 | <.5 | 10.5 | 26 | .7 | .1 | .2 | 1 |
| 19721 | 3.0 | 9.8 | 4.2 | 95 | .1 | .5 | 2.4 | 991 | 2.65 | .5 | .6 | <.5 | 6.2 | 13 | .1 | .1 | <.1 | 1 |
| 19722 | 2.2 | 8.7 | 3.4 | 92 | <.1 | .3 | 2.2 | 926 | 2.67 | <.5 | .6 | <.5 | 6.8 | 7 | .1 | .1 | .1 | 1 |
| 19723 | 3.9 | 13.0 | 8.3 | 61 | .3 | 3.2 | 3.3 | 276 | 1.38 | 4.0 | 2.5 | .7 | 15.8 | 4 | 1.1 | .5 | .1 | 4 |
| 19724 | 3.3 | 5.1 | 5.4 | 23 | <.1 | 1.5 | 1.7 | 235 | .69 | 1.1 | 2.2 | <.5 | 13.3 | 3 | .2 | <.1 | .1 | 1 |
| 19725 | 1.8 | 5.8 | 7.7 | 59 | <.1 | 1.0 | 1.0 | 167 | 1.28 | 1.4 | 1.3 | <.5 | 15.8 | 7 | .4 | .1 | .1 | <1 |
| 19726 | 1.9 | 4.8 | 7.7 | 50 | <.1 | 1.1 | .7 | 76 | 1.00 | 1.4 | 1.4 | <.5 | 15.6 | 7 | .4 | .1 | .1 | <1 |
| 19727 | 2.5 | 5.0 | 5.7 | 44 | <.1 | .5 | .5 | 130 | .69 | 1.6 | 1.6 | <.5 | 14.7 | 10 | .3 | .1 | .1 | <1 |
| 19728 | 5.7 | 2.9 | 10.7 | 81 | <.1 | .4 | .7 | 196 | .87 | 2.2 | 1.4 | .6 | 15.1 | 11 | .5 | .1 | .1 | <1 |
| 19729 | 1.6 | 2.2 | 2.6 | 23 | <.1 | .4 | .6 | 179 | .92 | 2.6 | 1.9 | .7 | 15.9 | 15 | .1 | .1 | .2 | <1 |
| 19730 | 9.3 | 2.0 | 7.9 | 53 | .1 | .4 | .7 | 282 | .87 | 2.2 | 2.1 | .7 | 14.7 | 15 | .2 | .1 | .2 | <1 |
| 19731 | 10.6 | 2.9 | 48.5 | 39 | .3 | .3 | .7 | 231 | .95 | 2.9 | 1.9 | <.5 | 15.0 | 13 | .2 | .2 | .4 | <1 |
| 19732 | 3.3 | 43.6 | 341.3 | 1008 | 1.8 | .4 | 2.3 | 458 | 1.38 | .5 | .7 | 5.7 | 8.3 | 9 | 4.3 | .1 | 3.4 | <1 |
| STANDARD DS7 | 20.5 | 108.0 | 71.3 | 413 | .9 | 56.3 | 9.8 | 626 | 2.41 | 47.5 | 4.9 | 99.5 | 4.4 | 71 | 6.2 | 6.1 | 4.6 | 84 |

| SAMPLE# | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | B ppm | Al % | Na % | K % | W ppm | Hg ppm | Sc ppm | Tl ppm | S % | Ga ppm | Se ppm | Sample kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G-1 | .57 | .077 | 7 | 10 | .62 | 217 | .129 | 1 | .94 | .070 | .51 | .1 | .01 | 2.3 | .4 | <.05 | 5 | <.5 | - |
| 19701 | .09 | .015 | 26 | 7 | .25 | 18 | .002 | 1 | .64 | .029 | .15 | <.1 | .01 | 1.1 | .1 | .06 | 3 | <.5 | 5.5 |
| 19702 | .04 | .012 | 28 | 6 | .21 | 12 | .002 | <1 | .43 | .006 | .14 | .1 | <.01 | .9 | <.1 | <.05 | 3 | <.5 | 5.7 |
| 19703 | .11 | .017 | 26 | 8 | .36 | 19 | .001 | 1 | .57 | .014 | .18 | <.1 | <.01 | .6 | .1 | <.05 | 2 | <.5 | 5.8 |
| 19704 | 2.67 | .073 | 9 | 380 | 3.69 | 188 | .203 | 1 | 2.89 | .023 | 2.30 | .1 | <.01 | 17.9 | .5 | .07 | 8 | <.5 | 6.3 |
| 19705 | .28 | .021 | 28 | 5 | .59 | 36 | .026 | 1 | .72 | .033 | .36 | .1 | <.01 | 1.1 | .1 | .09 | 4 | <.5 | 5.5 |
| 19706 | .37 | .013 | 30 | 7 | .78 | 46 | .012 | <1 | .80 | .019 | .27 | <.1 | <.01 | 1.0 | .1 | <.05 | 4 | <.5 | 5.6 |
| 19707 | .20 | .015 | 25 | 8 | .34 | 33 | .012 | <1 | .48 | .015 | .18 | .1 | <.01 | .6 | .1 | .23 | 3 | <.5 | 4.5 |
| 19708 | .21 | .011 | 25 | 10 | .15 | 33 | .002 | 1 | .30 | .014 | .17 | <.1 | <.01 | .3 | <.1 | .23 | 1 | <.5 | 7.0 |
| 19709 | .34 | .012 | 21 | 8 | .15 | 49 | .003 | <1 | .36 | .013 | .21 | <.1 | <.01 | .4 | .1 | .44 | 1 | <.5 | 6.1 |
| RE 19709 | .34 | .011 | 21 | 8 | .15 | 47 | .004 | <1 | .36 | .013 | .21 | <.1 | <.01 | .4 | .1 | .44 | 2 | <.5 | - |
| RRE 19709 | .34 | .011 | 20 | 8 | .15 | 28 | .003 | <1 | .29 | .008 | .14 | .1 | <.01 | .3 | <.1 | .43 | 2 | <.5 | - |
| 19710 | .35 | .011 | 22 | 10 | .10 | 48 | .005 | <1 | .34 | .014 | .17 | <.1 | <.01 | .3 | .1 | .35 | 1 | <.5 | 6.4 |
| 19711 | .12 | .011 | 16 | 8 | .05 | 27 | .001 | <1 | .21 | .008 | .14 | .1 | <.01 | .3 | <.1 | .37 | 1 | <.5 | 5.3 |
| 19712 | .10 | .010 | 17 | 12 | .01 | 98 | .001 | <1 | .13 | .008 | .15 | <.1 | <.01 | .2 | <.1 | .53 | <1 | <.5 | 5.7 |
| 19713 | .15 | .010 | 20 | 10 | <.01 | 56 | .001 | <1 | .09 | .006 | .12 | <.1 | <.01 | .2 | <.1 | .39 | <1 | <.5 | 3.7 |
| 19714 | 1.02 | .023 | 25 | 8 | .11 | 45 | .004 | 1 | .32 | .027 | .18 | .1 | <.01 | .5 | .1 | .38 | 1 | <.5 | 6.6 |
| 19715 | .86 | .034 | 26 | 7 | .38 | 64 | .036 | <1 | .83 | .037 | .39 | .1 | <.01 | .9 | .2 | .37 | 3 | <.5 | 6.3 |
| 19716 | .57 | .022 | 24 | 8 | .17 | 98 | .003 | <1 | .51 | .010 | .26 | .1 | <.01 | .6 | .1 | .31 | 2 | <.5 | 6.5 |
| 19717 | .08 | .010 | 19 | 8 | .03 | 38 | .001 | <1 | .15 | .008 | .13 | <.1 | <.01 | .2 | <.1 | .36 | 1 | <.5 | 5.7 |
| 19718 | .09 | .010 | 21 | 11 | .03 | 46 | .002 | <1 | .17 | .008 | .16 | <.1 | <.01 | .2 | <.1 | .32 | 1 | <.5 | 6.4 |
| 19719 | .16 | .013 | 24 | 8 | .08 | 35 | .001 | <1 | .23 | .015 | .13 | <.1 | <.01 | .2 | <.1 | .21 | 1 | <.5 | 5.9 |
| 19720 | .64 | .024 | 23 | 6 | .81 | 54 | .032 | 1 | .79 | .018 | .44 | .1 | <.01 | 1.4 | .2 | .23 | 3 | <.5 | 6.3 |
| 19721 | .44 | .043 | 16 | 3 | 1.22 | 66 | .092 | <1 | 1.40 | .020 | .69 | .1 | <.01 | 2.8 | .3 | .31 | 7 | <.5 | 6.3 |
| 19722 | .22 | .043 | 19 | 4 | .89 | 90 | .138 | <1 | 1.33 | .026 | .87 | .1 | <.01 | 2.7 | .4 | .37 | 7 | <.5 | 6.7 |
| 19723 | .17 | .029 | 20 | 6 | .12 | 54 | .007 | 1 | .45 | .007 | .19 | <.1 | <.01 | .6 | .2 | .51 | 2 | .6 | 4.7 |
| 19724 | .30 | .012 | 20 | 10 | .07 | 51 | .007 | <1 | .22 | .016 | .14 | .1 | <.01 | .4 | <.1 | .23 | 1 | <.5 | 5.5 |
| 19725 | .31 | .011 | 29 | 5 | .13 | 42 | .004 | 1 | .31 | .010 | .20 | <.1 | <.01 | .3 | <.1 | 1.05 | 1 | <.5 | 6.0 |
| 19726 | .24 | .008 | 25 | 7 | .05 | 41 | .001 | 1 | .23 | .008 | .17 | <.1 | <.01 | .2 | <.1 | .78 | <1 | <.5 | 4.9 |
| 19727 | .49 | .006 | 22 | 8 | .07 | 30 | .001 | 1 | .21 | .014 | .14 | <.1 | <.01 | .2 | <.1 | .47 | 1 | <.5 | 6.8 |
| 19728 | .47 | .006 | 22 | 11 | .11 | 37 | .001 | 1 | .30 | .016 | .18 | <.1 | <.01 | .2 | <.1 | .48 | 1 | <.5 | 6.1 |
| 19729 | .66 | .006 | 26 | 8 | .13 | 39 | .001 | 1 | .28 | .021 | .15 | <.1 | .01 | .2 | <.1 | .62 | 1 | <.5 | 5.2 |
| 19730 | .94 | .005 | 19 | 10 | .14 | 81 | .001 | 1 | .32 | .021 | .18 | .1 | <.01 | .3 | .1 | .56 | 1 | <.5 | 6.2 |
| 19731 | .68 | .004 | 21 | 10 | .10 | 28 | .001 | <1 | .26 | .022 | .11 | <.1 | <.01 | .3 | <.1 | .60 | 1 | <.5 | 4.7 |
| 19732 | .18 | .043 | 30 | 5 | .37 | 93 | .036 | 1 | .64 | .017 | .46 | .1 | .01 | 1.2 | .2 | .41 | 2 | 1.4 | 5.3 |
| STANDARD DS7 | .94 | .078 | 13 | 176 | 1.04 | 366 | .125 | 38 | .98 | .077 | .44 | 3.8 | .19 | 2.6 | 4.4 | .20 | 6 | 2.6 | - |

GROUP 1DX - 15 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 300 ML, ANALYSED BY ICP-MS.
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.
- SAMPLE TYPE: DRILL CORE R150 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ____ DATE RECEIVED: SEP 25 2006 DATE REPORT MAILED:.................

British Columbia Certified Assayer — Raymond Chan

ACME ANALYTICAL

# Saturn Minerals Inc.   FILE # A606748



| SAMPLE# | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Au ppb | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | B ppm | Al % | Na % | K % | W ppm | Hg ppm | Sc ppm | Tl ppm | S % | Ga ppm | Se ppm | Sample kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G-1 | .2 | 8.2 | 4.4 | 50 | <.1 | 8.8 | 5.4 | 547 | 1.92 | 1.2 | 3.2 | .6 | 4.5 | 53 | <.1 | <.1 | .1 | 40 | .48 | .074 | 6 | 9 | .61 | 206 | .125 | 2 | .96 | .057 | .50 | .1 | <.01 | 1.9 | .4 | <.05 | 5 | <.5 | - |
| 19733 | 2.3 | 110.3 | 668.3 | 1722 | 2.0 | .9 | 5.4 | 992 | 3.12 | <.5 | 1.2 | 9.0 | 10.9 | 16 | 7.3 | .4 | 3.3 | 1 | .29 | .043 | 31 | 2 | .95 | 154 | .104 | 2 | 1.52 | .018 | 1.08 | .2 | .03 | 1.9 | .8 | .93 | 5 | 2.5 | 5.40 |
| 19734 | 7.3 | 9.2 | 12.9 | 54 | <.1 | 2.1 | 1.2 | 257 | 1.12 | 2.8 | 1.5 | .9 | 16.3 | 14 | .5 | .2 | .1 | 1 | .38 | .005 | 18 | 6 | .19 | 33 | .001 | 2 | .46 | .013 | .23 | <.1 | <.01 | .3 | .1 | .56 | 1 | <.5 | 6.00 |
| 19735 | 4.9 | 5.9 | 15.9 | 37 | <.1 | 1.2 | .8 | 191 | .88 | 1.8 | 2.2 | .6 | 17.9 | 12 | .1 | .2 | .2 | 1 | .34 | .007 | 24 | 9 | .11 | 49 | .001 | 2 | .38 | .008 | .26 | <.1 | <.01 | .3 | .1 | .44 | 1 | <.5 | 6.10 |
| 19736 | 5.4 | 7.6 | 15.8 | 149 | <.1 | 1.2 | 1.4 | 214 | 1.08 | 2.5 | 2.2 | 1.5 | 15.5 | 16 | .9 | .2 | .1 | 1 | .61 | .009 | 22 | 8 | .16 | 77 | .001 | 2 | .40 | .008 | .24 | .1 | <.01 | .4 | .1 | .64 | 1 | <.5 | 5.90 |
| 19737 | 3.0 | 6.2 | 8.6 | 28 | <.1 | .7 | .7 | 232 | .72 | 1.3 | 1.8 | <.5 | 15.1 | 22 | .1 | .1 | .1 | <1 | .60 | .006 | 16 | 8 | .19 | 38 | .001 | 2 | .43 | .006 | .25 | <.1 | <.01 | .2 | .1 | .28 | 1 | <.5 | 3.90 |
| 19738 | 4.6 | 6.7 | 5.5 | 29 | <.1 | 1.3 | .8 | 265 | .83 | 1.6 | 2.1 | .9 | 17.9 | 20 | <.1 | .1 | .1 | <1 | .90 | .008 | 30 | 8 | .22 | 48 | .001 | 2 | .51 | .016 | .29 | .1 | <.01 | .3 | .1 | .31 | 1 | <.5 | 6.40 |
| 19739 | 10.2 | 8.5 | 7.4 | 50 | <.1 | 1.2 | 1.2 | 280 | .93 | 1.8 | 2.3 | .5 | 17.8 | 22 | .3 | .2 | .1 | <1 | .94 | .009 | 25 | 8 | .23 | 50 | .001 | 1 | .43 | .011 | .27 | .1 | <.01 | .3 | .1 | .47 | 1 | <.5 | 5.10 |
| 19740 | 12.3 | 8.3 | 26.1 | 88 | .1 | 1.0 | 1.0 | 170 | .97 | 2.3 | 2.5 | 1.6 | 15.4 | 17 | .8 | .1 | .1 | <1 | .88 | .006 | 26 | 9 | .09 | 44 | .001 | 1 | .30 | .011 | .19 | <.1 | <.01 | .3 | <.1 | .48 | 1 | <.5 | 4.50 |
| 19741 | 5.6 | 2.6 | 4.2 | 24 | <.1 | 1.1 | 1.0 | 110 | .77 | .8 | 2.4 | .9 | 16.6 | 10 | .1 | .1 | .1 | 1 | .46 | .010 | 30 | 9 | .10 | 49 | .001 | 1 | .28 | .020 | .21 | <.1 | <.01 | .3 | <.1 | .35 | 1 | <.5 | 5.00 |
| 19742 | 5.1 | 4.6 | 24.7 | 51 | <.1 | .6 | 1.0 | 346 | .92 | .8 | 2.6 | <.5 | 17.0 | 25 | .4 | .1 | .2 | <1 | 1.27 | .008 | 34 | 8 | .22 | 86 | .002 | 2 | .43 | .017 | .27 | .3 | <.01 | .4 | .1 | .45 | 1 | <.5 | 5.00 |
| 19743 | 3.7 | 13.0 | 11.8 | 91 | <.1 | 1.2 | .7 | 57 | .75 | 1.4 | 1.8 | 1.3 | 15.3 | 8 | 1.9 | .2 | .1 | <1 | .23 | .007 | 26 | 12 | .03 | 65 | .001 | 1 | .22 | .044 | .19 | .1 | <.01 | .2 | <.1 | .57 | <1 | <.5 | 5.50 |
| 19744 | 5.2 | 10.4 | 19.3 | 44 | .2 | .9 | .9 | 92 | .83 | 1.9 | 1.5 | .9 | 16.5 | 12 | .5 | .1 | .1 | <1 | .31 | .007 | 31 | 9 | .07 | 236 | .001 | 1 | .29 | .041 | .18 | <.1 | <.01 | .3 | <.1 | .50 | 1 | <.5 | 5.20 |
| 19745 | 4.6 | 22.8 | 8.3 | 122 | .2 | 8.9 | 13.0 | 845 | 3.05 | 4.4 | 2.1 | .6 | 9.4 | 33 | .7 | .2 | .1 | 64 | .90 | .075 | 14 | 8 | .90 | 110 | .090 | 2 | 1.37 | .013 | .62 | <.1 | <.01 | 4.5 | .3 | .60 | 4 | <.5 | 6.20 |
| 19746 | 6.7 | 2.6 | 10.9 | 54 | <.1 | .8 | 1.4 | 95 | .41 | 1.5 | 2.4 | .8 | 15.2 | 8 | 1.9 | .2 | .1 | 1 | .31 | .011 | 22 | 10 | .05 | 60 | .001 | 1 | .20 | .012 | .20 | <.1 | <.01 | .3 | <.1 | .20 | 1 | <.5 | 4.50 |
| 19747 | 6.4 | 8.0 | 32.1 | 82 | <.1 | 2.2 | 3.2 | 306 | 1.17 | 1.4 | 2.1 | .6 | 11.9 | 16 | 1.9 | .1 | .1 | 15 | .55 | .021 | 16 | 9 | .34 | 69 | .016 | <1 | .63 | .015 | .32 | <.1 | <.01 | 1.1 | .1 | .19 | 2 | <.5 | 5.70 |
| 19748 | 2.8 | 35.4 | 6.9 | 83 | .2 | 4.4 | 10.2 | 588 | 3.06 | 1.5 | 1.4 | 1.1 | 12.5 | 18 | .3 | .2 | .1 | 57 | .60 | .050 | 19 | 8 | .83 | 90 | .107 | <1 | 1.35 | .027 | .65 | .1 | <.01 | 3.5 | .3 | .77 | 4 | .5 | 5.90 |
| 19749 | 2.4 | 4.9 | 4.6 | 28 | <.1 | .6 | .7 | 159 | .94 | 1.2 | 1.5 | <.5 | 17.2 | 12 | .2 | .1 | .1 | 1 | .48 | .006 | 28 | 9 | .15 | 59 | .001 | 1 | .40 | .042 | .19 | <.1 | <.01 | .4 | .1 | .39 | 2 | <.5 | 4.80 |
| 19750 | 3.6 | 5.3 | 6.3 | 29 | <.1 | .8 | .9 | 151 | 1.00 | 1.7 | 2.0 | <.5 | 16.1 | 10 | .2 | .1 | .1 | 2 | .47 | .006 | 27 | 10 | .11 | 43 | .002 | 1 | .35 | .039 | .19 | <.1 | <.01 | .4 | <.1 | .49 | 1 | <.5 | 5.40 |
| 19751 | 3.1 | 15.7 | 13.6 | 8 | .1 | .6 | .4 | 208 | .56 | 1.9 | .5 | 1.8 | 8.9 | 21 | <.1 | .1 | <.1 | <1 | .44 | .011 | 20 | 7 | .02 | 67 | .001 | 1 | .19 | .060 | .14 | <.1 | <.01 | .6 | .1 | .46 | 1 | <.5 | 5.20 |
| 19752 | 7.3 | 12.1 | 123.8 | 296 | .4 | .6 | 1.4 | 352 | .52 | 2.1 | .4 | 1.4 | 9.6 | 19 | .9 | .3 | .2 | 1 | .36 | .024 | 20 | 5 | .05 | 70 | .002 | 2 | .35 | .026 | .25 | <.1 | <.01 | .7 | .1 | .39 | 1 | <.5 | 4.10 |
| 19753 | 9.7 | 70.2 | 51.1 | 102 | .5 | .8 | 1.6 | 288 | 1.12 | 3.8 | .3 | 2.2 | 7.8 | 20 | .4 | .3 | .3 | <1 | .24 | .023 | 18 | 4 | .05 | 100 | .001 | 2 | .32 | .020 | .23 | <.1 | <.01 | .6 | .1 | 1.03 | 1 | <.5 | 5.50 |
| 19754 | 2.1 | 37.5 | 60.3 | 638 | .1 | .8 | 1.4 | 306 | 1.99 | 5.7 | .4 | 1.0 | 9.6 | 16 | 1.8 | .2 | .1 | <1 | .12 | .011 | 16 | 7 | .10 | 49 | .002 | <1 | .28 | .036 | .22 | <.1 | <.01 | .3 | .1 | 2.06 | 1 | <.5 | 6.80 |
| 19755 | 1.9 | 11.1 | 47.8 | 253 | <.1 | .5 | 1.2 | 285 | 1.59 | 3.2 | .4 | <.5 | 8.0 | 17 | .7 | .2 | .2 | <1 | .16 | .011 | 14 | 6 | .11 | 37 | .001 | <1 | .24 | .028 | .18 | <.1 | <.01 | .3 | <.1 | 1.60 | 1 | <.5 | 5.50 |
| 19756 | 2.3 | 6.7 | 10.5 | 81 | <.1 | .9 | 1.5 | 510 | 2.23 | 5.1 | .6 | <.5 | 8.1 | 16 | .1 | .2 | .1 | <1 | .27 | .012 | 13 | 6 | .17 | 36 | .002 | 1 | .31 | .034 | .18 | <.1 | <.01 | .4 | <.1 | 2.20 | 1 | <.5 | 4.00 |
| 19757 | 2.3 | 16.9 | 64.7 | 626 | .2 | .6 | 1.3 | 772 | 1.67 | 4.3 | .7 | <.5 | 9.6 | 16 | 1.9 | .3 | .1 | <1 | .32 | .008 | 15 | 6 | .17 | 38 | .001 | 1 | .31 | .024 | .22 | <.1 | <.01 | .3 | .1 | 1.58 | 1 | <.5 | 6.20 |
| 19758 | 2.9 | 15.4 | 21.0 | 888 | .1 | .6 | 1.5 | 639 | 2.77 | 5.7 | .8 | 1.1 | 10.4 | 12 | 3.0 | .2 | .1 | <1 | .19 | .009 | 18 | 5 | .23 | 40 | .004 | <1 | .40 | .019 | .25 | .1 | <.01 | .5 | .1 | 2.72 | 2 | <.5 | 5.20 |
| 19759 | 3.2 | 7.8 | 5.9 | 102 | <.1 | .5 | 1.7 | 647 | 1.48 | 2.8 | .9 | <.5 | 9.4 | 14 | .2 | .1 | .1 | 1 | .21 | .009 | 18 | 6 | .23 | 57 | .002 | 1 | .38 | .015 | .22 | <.1 | <.01 | .6 | .1 | 1.10 | 2 | <.5 | 6.10 |
| 19760 | 1.4 | 8.3 | 5.2 | 105 | <.1 | .5 | 1.5 | 938 | 1.27 | 3.2 | 1.3 | .8 | 9.4 | 7 | .3 | .1 | <.1 | 1 | .08 | .010 | 18 | 6 | .26 | 35 | .002 | <1 | .50 | .021 | .18 | <.1 | <.01 | .9 | <.1 | .37 | 3 | <.5 | 5.40 |
| 19761 | 2.7 | 7.0 | 14.2 | 159 | <.1 | .6 | 1.2 | 521 | .90 | 3.1 | 1.4 | .7 | 10.9 | 9 | .5 | .1 | .1 | <1 | .12 | .011 | 21 | 6 | .26 | 38 | .007 | <1 | .43 | .029 | .25 | <.1 | <.01 | .6 | .1 | .42 | 2 | <.5 | 6.10 |
| RE 19761 | 2.7 | 7.3 | 14.5 | 159 | <.1 | .5 | 1.3 | 515 | .91 | 3.2 | 1.4 | .8 | 10.2 | 10 | .5 | .2 | .1 | <1 | .12 | .011 | 22 | 6 | .26 | 40 | .008 | <1 | .45 | .029 | .26 | .1 | <.01 | .6 | .1 | .43 | 2 | <.5 | - |
| RRE 19761 | 2.7 | 7.0 | 14.4 | 159 | <.1 | .6 | 1.4 | 509 | .91 | 3.0 | 1.4 | .7 | 10.9 | 9 | .5 | .2 | .1 | <1 | .12 | .011 | 21 | 6 | .26 | 34 | .008 | <1 | .43 | .028 | .22 | .1 | <.01 | .6 | .1 | .43 | 2 | <.5 | - |
| 19762 | 5.8 | 9.6 | 5.6 | 75 | .1 | .3 | 1.4 | 993 | 1.40 | 1.6 | 1.6 | <.5 | 11.2 | 13 | .1 | .2 | .1 | 1 | .17 | .011 | 24 | 6 | .51 | 34 | .026 | <1 | .74 | .020 | .39 | .1 | <.01 | .8 | .3 | .33 | 4 | <.5 | 6.10 |
| 19763 | 5.9 | 9.4 | 3.2 | 56 | .3 | .6 | 1.3 | 617 | 1.16 | 2.1 | 1.6 | <.5 | 10.9 | 7 | .1 | .1 | .1 | 1 | .09 | .011 | 24 | 6 | .23 | 23 | .007 | <1 | .47 | .010 | .25 | .1 | <.01 | .7 | .1 | .39 | 3 | <.5 | 5.00 |
| 19764 | 5.5 | 8.2 | 2.7 | 24 | .1 | .5 | 1.3 | 227 | .81 | 3.4 | 1.5 | <.5 | 11.1 | 9 | <.1 | .1 | .1 | <1 | .16 | .013 | 24 | 7 | .11 | 23 | .005 | <1 | .34 | .015 | .27 | .1 | <.01 | .9 | .1 | .37 | 2 | <.5 | 5.50 |
| STANDARD DS7 | 20.3 | 105.6 | 67.6 | 410 | .9 | 56.4 | 9.7 | 624 | 2.39 | 47.5 | 4.7 | 79.6 | 4.3 | 68 | 6.2 | 6.0 | 4.4 | 83 | .91 | .077 | 11 | 174 | 1.04 | 368 | .121 | 39 | .97 | .075 | .43 | 3.7 | .19 | 2.5 | 4.2 | .20 | 4 | 3.6 | - |

Sample type: DRILL CORE R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Data ___ FA ___

Saturn Minerals Inc. FILE # A606748 

| SAMPLE# | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Au ppb | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | B ppm | Al % | Na % | K % | W ppm | Hg ppm | Sc ppm | Tl ppm | S % | Ga ppm | Se ppm | Sample kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G-1 | .2 | 2.0 | 3.2 | 51 | <.1 | 4.1 | 4.7 | 553 | 1.99 | <.5 | 3.3 | 1.8 | 5.1 | 66 | <.1 | <.1 | .1 | 41 | .55 | .078 | 8 | 10 | .61 | 220 | .128 | 1 | 1.04 | .088 | .51 | .1 | <.01 | 2.1 | .4 | <.05 | 5 | <.5 | - |
| 19765 | 2.4 | 5.8 | 3.4 | 24 | <.1 | 1.0 | 1.2 | 208 | 1.04 | .7 | 2.1 | <.5 | 16.6 | 17 | .1 | .1 | .1 | 1 | .22 | .011 | 30 | 10 | .19 | 11 | .006 | 1 | .45 | .016 | .27 | .1 | <.01 | .9 | .1 | .10 | 3 | <.5 | 5.5 |
| 19766 | 3.6 | 26.4 | 8.6 | 164 | <.1 | .9 | 1.7 | 1085 | 2.63 | 4.9 | .5 | 2.0 | 5.5 | 14 | .3 | .2 | .3 | <1 | .13 | .023 | 15 | 6 | .64 | 77 | .028 | 1 | .83 | .028 | .48 | .1 | <.01 | 1.4 | .3 | 1.78 | 3 | <.5 | 3.3 |
| 19767 | 2.4 | 10.3 | 26.6 | 114 | .1 | 1.0 | 1.5 | 417 | 1.47 | 4.6 | .5 | .7 | 11.4 | 12 | .3 | .2 | .2 | <1 | .17 | .009 | 19 | 6 | .08 | 31 | .002 | 1 | .23 | .020 | .19 | <.1 | <.01 | .2 | .1 | 1.48 | 1 | <.5 | 4.5 |
| 19768 | 2.6 | 7.8 | 8.2 | 73 | <.1 | .7 | 1.4 | 664 | 2.10 | 5.0 | .5 | .8 | 9.4 | 20 | .2 | .2 | .1 | <1 | .29 | .011 | 18 | 9 | .15 | 46 | .001 | 2 | .29 | .026 | .21 | .1 | <.01 | .3 | .1 | 2.09 | 1 | <.5 | 6.3 |
| 19769 | 2.5 | 7.6 | 8.1 | 78 | <.1 | .8 | 1.6 | 649 | 2.14 | 5.1 | .6 | <.5 | 9.5 | 19 | .2 | .2 | .1 | <1 | .30 | .011 | 18 | 8 | .15 | 48 | .001 | 2 | .32 | .032 | .24 | .1 | <.01 | .3 | .1 | 2.08 | 1 | <.5 | 7.0 |
| 19770 | 2.7 | 10.5 | 21.5 | 253 | .1 | 1.1 | 1.4 | 462 | 1.38 | 4.5 | .6 | .7 | 10.8 | 13 | .8 | .1 | .1 | <1 | .16 | .006 | 20 | 9 | .10 | 37 | .001 | 1 | .25 | .022 | .21 | <.1 | <.01 | .2 | .1 | 1.30 | 1 | <.5 | 3.7 |
| 19771 | 3.8 | 16.3 | 9.7 | 510 | .1 | .6 | 1.4 | 823 | 1.51 | 5.6 | 1.3 | 1.3 | 10.3 | 13 | 1.6 | .1 | .3 | <1 | .16 | .008 | 21 | 5 | .20 | 37 | .002 | 1 | .38 | .015 | .24 | .1 | <.01 | .4 | .1 | 1.26 | 1 | <.5 | 5.3 |
| 19772 | 3.2 | 25.0 | 32.6 | 632 | .2 | .9 | 2.0 | 752 | 1.53 | 4.3 | 1.6 | 1.2 | 11.1 | 17 | 2.1 | .1 | .2 | 1 | .17 | .016 | 23 | 7 | .29 | 53 | .003 | 1 | .49 | .014 | .28 | .1 | <.01 | .8 | .1 | 1.17 | 2 | <.5 | 4.7 |
| 19773 | 3.0 | 37.9 | 252.1 | 815 | .6 | .5 | 1.5 | 1583 | 1.66 | 3.7 | 1.5 | 1.1 | 9.6 | 25 | 2.9 | .4 | .2 | 1 | .32 | .012 | 20 | 5 | .52 | 50 | .002 | <1 | .60 | .015 | .20 | .1 | <.01 | 1.1 | .1 | .56 | 4 | <.5 | 5.7 |
| 19774 | 5.2 | 10.2 | 5.2 | 76 | .2 | .8 | 1.3 | 1278 | 1.46 | 16.0 | 2.2 | .7 | 10.8 | 16 | .1 | .2 | .1 | <1 | .22 | .011 | 26 | 9 | .37 | 26 | .002 | <1 | .53 | .010 | .23 | .1 | <.01 | .8 | .1 | .21 | 3 | <.5 | 8.1 |
| 19775 | 2.7 | 5.2 | 4.9 | 51 | .4 | .6 | 1.4 | 588 | 1.05 | 2.9 | 1.4 | .8 | 9.9 | 10 | .1 | .2 | .1 | <1 | .11 | .013 | 20 | 7 | .11 | 19 | .001 | 1 | .24 | .010 | .22 | .1 | <.01 | .5 | .1 | .54 | 1 | <.5 | 6.1 |
| 19776 | 5.2 | 18.5 | 3.8 | 33 | .4 | 1.1 | 1.7 | 399 | 1.45 | 4.8 | 2.3 | 1.2 | 14.8 | 7 | .1 | .3 | .1 | <1 | .10 | .009 | 23 | 9 | .18 | 14 | .001 | <1 | .29 | .008 | .22 | <.1 | <.01 | .7 | .1 | .52 | 2 | <.5 | 6.0 |
| 19777 | 6.5 | 12.7 | 3.9 | 35 | .4 | 1.0 | 2.0 | 401 | 1.39 | 5.0 | 2.1 | 1.2 | 12.8 | 13 | .1 | .3 | .1 | <1 | .18 | .010 | 25 | 8 | .20 | 18 | .001 | 1 | .34 | .008 | .24 | .1 | <.01 | .6 | .1 | .55 | 2 | <.5 | 4.5 |
| 19778 | 16.8 | 14.4 | 25.3 | 29 | .2 | 1.0 | 1.0 | 43 | .97 | 10.6 | 2.2 | 2.2 | 12.9 | 12 | .7 | .1 | .1 | <1 | .23 | .005 | 17 | 13 | .03 | 81 | .001 | 1 | .24 | .012 | .23 | .1 | <.01 | .2 | .1 | .82 | 1 | <.5 | 7.7 |
| 19779 | 5.0 | 10.8 | 7.1 | 56 | .2 | .7 | .7 | 115 | .79 | 1.9 | 2.7 | <.5 | 17.9 | 16 | .3 | .1 | .1 | <1 | .50 | .008 | 20 | 8 | .15 | 57 | .003 | 1 | .50 | .016 | .26 | .1 | <.01 | .2 | .1 | .50 | 2 | <.5 | 5.9 |
| 19780 | 3.1 | 10.6 | 11.6 | 125 | .3 | 1.2 | 1.4 | 812 | 1.32 | 3.8 | 1.2 | .9 | 10.2 | 16 | .5 | .2 | .1 | 1 | .38 | .008 | 20 | 8 | .28 | 28 | .002 | 1 | .37 | .010 | .21 | .1 | <.01 | .6 | .1 | .69 | 2 | <.5 | 6.5 |
| 19781 | 3.1 | 6.8 | 7.3 | 26 | .1 | 1.2 | 1.9 | 1014 | 1.00 | 1.8 | 1.1 | .8 | 10.1 | 25 | <.1 | .2 | .1 | <1 | .82 | .007 | 17 | 7 | .36 | 21 | .001 | 1 | .25 | .010 | .19 | .1 | <.01 | .4 | .1 | .37 | 1 | <.5 | 2.0 |
| 19782 | 6.4 | 7.1 | 7.7 | 72 | .4 | 1.0 | 1.2 | 509 | 1.05 | 1.7 | 1.5 | .6 | 11.4 | 12 | .2 | .2 | .2 | 1 | .23 | .009 | 23 | 10 | .24 | 25 | .002 | <1 | .44 | .010 | .21 | <.1 | <.01 | .6 | .1 | .33 | 2 | <.5 | 4.8 |
| 19783 | 3.3 | 6.7 | 11.1 | 121 | .4 | .8 | 1.5 | 658 | 1.73 | 2.3 | 1.3 | .8 | 9.7 | 6 | .2 | .2 | .1 | 1 | .09 | .013 | 17 | 6 | .33 | 23 | .002 | <1 | .66 | .009 | .20 | <.1 | <.01 | 1.6 | .1 | .37 | 4 | <.5 | 6.0 |
| 19784 | 2.0 | 7.5 | 3.1 | 56 | .5 | .7 | 1.9 | 374 | 1.91 | 2.8 | 2.1 | 3.2 | 8.1 | 11 | <.1 | .3 | .1 | <1 | .22 | .021 | 17 | 7 | .40 | 17 | .004 | 1 | .80 | .012 | .24 | <.1 | <.01 | 2.2 | .1 | .44 | 5 | <.5 | 5.6 |
| 19785 | 2.5 | 4.9 | 4.8 | 59 | <.1 | .6 | 1.4 | 371 | .99 | 2.6 | 1.5 | .5 | 12.1 | 15 | .2 | .2 | .1 | 1 | .35 | .016 | 24 | 5 | .24 | 23 | .001 | 1 | .46 | .006 | .23 | .1 | <.01 | .8 | .1 | .17 | 2 | <.5 | 4.1 |
| 19786 | 2.1 | 4.1 | 3.3 | 37 | <.1 | .7 | 1.1 | 274 | 1.30 | 3.8 | 2.1 | .5 | 11.8 | 7 | <.1 | .2 | .1 | 1 | .11 | .012 | 20 | 7 | .25 | 13 | .002 | <1 | .50 | .007 | .21 | <.1 | <.01 | .8 | .1 | .18 | 3 | <.5 | 5.7 |
| 19787 | 3.6 | 8.0 | 4.8 | 48 | .1 | .5 | 1.5 | 348 | 1.39 | 4.6 | 3.3 | 1.3 | 16.5 | 5 | .1 | .2 | .1 | 1 | .11 | .009 | 24 | 4 | .28 | 9 | .004 | 1 | .48 | .008 | .20 | .1 | <.01 | 1.0 | <.1 | .23 | 4 | <.5 | 5.8 |
| 19788 | 3.5 | 10.2 | 6.0 | 63 | .2 | .7 | 2.2 | 809 | 1.40 | 1.8 | 2.4 | 1.6 | 14.2 | 11 | .1 | .2 | .1 | <1 | .21 | .009 | 22 | 7 | .25 | 14 | .002 | 1 | .39 | .008 | .18 | .1 | <.01 | .6 | .1 | .44 | 3 | <.5 | 2.6 |
| 19789 | .9 | 13.3 | 1.8 | 39 | <.1 | .6 | .8 | 547 | 1.69 | 17.7 | 2.3 | .8 | 11.2 | 25 | .1 | .3 | <.1 | 1 | .37 | .011 | 13 | 6 | .30 | 30 | .001 | 1 | .22 | .008 | .20 | .1 | <.01 | .8 | <.1 | .76 | 1 | <.5 | 6.0 |
| RE 19789 | .9 | 12.5 | 2.0 | 37 | <.1 | .5 | .9 | 537 | 1.65 | 16.8 | 2.6 | <.5 | 12.0 | 25 | .1 | .3 | <.1 | 1 | .36 | .010 | 13 | 6 | .29 | 29 | .001 | 1 | .21 | .008 | .19 | <.1 | <.01 | .8 | <.1 | .75 | 1 | <.5 | - |
| RRE 19789 | 1.9 | 13.6 | 2.1 | 40 | <.1 | 1.1 | .8 | 539 | 1.76 | 19.4 | 2.7 | .7 | 11.8 | 25 | .1 | .3 | <.1 | 1 | .36 | .010 | 15 | 9 | .30 | 43 | .001 | 2 | .30 | .012 | .29 | .1 | <.01 | .7 | .1 | .79 | 1 | <.5 | - |
| 19790 | 2.7 | 12.8 | 2.3 | 55 | <.1 | .5 | 1.0 | 490 | 1.83 | 5.4 | 1.3 | .6 | 8.5 | 41 | .1 | .1 | <.1 | 1 | .46 | .011 | 9 | 6 | .35 | 30 | .001 | <1 | .17 | .010 | .16 | .1 | <.01 | 1.0 | <.1 | .97 | 1 | <.5 | 3.7 |
| 19791 | 2.5 | 9.8 | 2.0 | 51 | <.1 | .9 | .8 | 567 | 1.66 | 11.0 | 1.6 | <.5 | 9.2 | 17 | .1 | .2 | <.1 | <1 | .22 | .012 | 17 | 10 | .28 | 24 | .001 | 1 | .23 | .007 | .19 | .1 | <.01 | .9 | <.1 | .41 | 1 | <.5 | 6.1 |
| STANDARD DS7 | 20.1 | 106.7 | 67.0 | 422 | .9 | 55.9 | 9.5 | 630 | 2.45 | 47.9 | 4.7 | 73.7 | 4.3 | 70 | 6.3 | 6.1 | 4.5 | 83 | .95 | .076 | 12 | 175 | 1.07 | 361 | .124 | 39 | .99 | .076 | .44 | 4.0 | .19 | 2.5 | 4.0 | .21 | 5 | 3.6 | - |

Sample type: DRILL CORE R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Data FA ____

## APPENDIX 'B'

## 2006 DRILL LOGS

**Appendix 'B'**
**DDH L1H1, Drill Log Summary**

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L1H1 | 6,531,874 N.<br>567,657 E. | 1,131 3,710.6 | 240° | -60° | 233.2 765.1 |

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | Depth to (m) | Depth from (ft) | Depth to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.5 | 0 | 4.9 | Casing driven through glacial till.<br>NOTE: Holes L1H1 and L1H2 were drilled from the same location. | | | | | | |
| 1.5 | 21.7 | 4.9 | 71.2 | Felsic Tuff, Basal Part of the CAMP ZONE:<br>The least disturbed parts of this unit have layers up to 1 cm thick, most of which seem to be graded. It appears that the bases of the laminae generally are more mafic, now composed of a light green mix of chlorite, sericite, muscovite and green biotite, with traces of pyrite. The "mafic" bands grade up into equally thick quartz-feldspar "glass" layers. These may be subaqueous tuff layers. Boundaries between quartz-rich "glass" bands and overlying mica-rich bands are sharp. Bed tops can not be determined. Bands are 70° to core axis. Near surface much of the core is oxidized from light green-grey to tan brown<br>**Traces of fine-grained ZnS are present in some layers.**<br>1st phase of deformation: caused mineral coarsening and segregation of quartz into bands and boudins up to 20 cm thick. Pyrite-chlorite segregations accompany quartz boudins.<br>2nd phase of deformation: Near surface, manganese oxide, hematite and orange limonite fill narrow fractures. Recovery >98% | 19701<br>6-8 m | <0.5 | 0.1 | 9.9 | 21.3 | 72 |
| | | | | | 19702<br>12-14 m | 0.6 | <0.1 | 15.1 | 41.6 | 49 |
| | | | | | 19703<br>18-20 m | <0.5 | <0.1 | 11.1 | 6.9 | 54 |
| contains at: | | | | -quartz boudins with minor pyrite | | | | | | |
| 2.5 | 2.7 | 8.2 | 8.9 | -early low-angle kink folds | | | | | | |
| 13.7 | 14.0 | 44.9 | 45.9 | -contorted, remobilized quartz-rich section | | | | | | |
| 16.3 | 17.0 | 53.5 | 55.8 | -contorted, remobilized quartz-rich section | | | | | | |
| 18.1 | 21.1 | 59.4 | 69.3 | BOTTOM OF THE CAMP ZONE | | | | | | |

## Appendix 'B'
## DDH L1H1, Drill Log Summary
## continued

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 21.7 | 25.5 | 71.2 | 83.7 | "Dacitic" Meta-tuff composed of dark green bands of: chlorite, biotite, muscovite, and sericite alternating with white plagioclase, calcite, and quartz-rich bands. Layers are at 70° to core axis. This unit is pervasively crenulated around an early cleavage at 45° to the core axis. Rare but conspicuous 2 cm long knots of mica may have been volcanic bombs.<br>Gradational contact at base of this unit. | 19704<br>24-26 m | 1.1 | 0.1 | 70.9 | 10.2 | 72 |
| 25.5 | 35.5 | 83.7 | 116.5 | Felsic Meta-tuff like at 1.5 to 21.7 m.<br>Layers are at 75° to core axis. | 19705<br>30-32 m | <0.5 | <0.1 | 8.6 | 4.6 | 61 |
| contains at | | | | | | | | | | |
| 31.0 | 31.4 | 101.7 | 103.0 | -quartz boudins cut by late, narrow, hematitic fractures | | | | | | |
| 31.8 | 32.2 | 104.3 | 105.6 | -contorted, remobilized section | | | | | | |
| 34.0 | 35.0 | 111.5 | 114.8 | -contorted, remobilized section with 2-5 cm thick quartz segregations | | | | | | |
| 35.2 | 35.5 | 115.5 | 116.5 | -very fine-grained remobilized grey layer with minute black phenocrysts | | | | | | |
| 35.5 | 39.7 | 116.5 | 130.2 | "Dacitic" Crystal Meta-tuff:<br>0.2 to 0.4 cm plagioclase phenocrysts, some which are broken, in a light green chloritic matrix. Layers are at 70° to the core axis. 5% of this unit is quartz and sericite segregations and boudins. Hematite and orange limonite fill late hairline fractures.<br>Box 9: Recovery >99% | 19706<br>36-38 m | <0.5 | <0.1 | 5.2 | 7.0 | 44 |
| 39.7 | 42.4 | 130.2 | 139.1 | Contorted, remobilized section with white quartz boudins in a green chloritic matrix + a few small red hematite and black Mn-oxide crystals. | | | | | | |
| 42.4 | 46.4 | 139.1 | 152.2 | Felsic Meta-tuff: white cm thick quartz-rich bands.<br>Box 11: recovery >99° | | | | | | |
| 46.4 | 51.9 | 152.2 | 170.3 | Banded "Dacitic" Meta-tuff: cm-scale layers of varying amounts of chlorite, green biotite, muscovite, and plagioclase.<br>Box 13: recovery >98% | | | | | | |
| contains at | | | | | | | | | | |
| 50.8 | 51.9 | 166.7 | 170.3 | -white quarts boudins and segregations with wisps of chlorite | | | | | | |

## APPENDIX 'B'
## DDH L1H1, Drill Log Summary
## continued

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 51.9 | 52.2 | 170.3 | 171.3 | Sealed Fault?: very fine-grained chloritic unit with contacts at 70° to core axis | | | | | | |
| 52.2 | 68.6 | 171.3 | 225.1 | 3300 ZONE:<br>Severely contorted version of the banded "Dacitic" Meta-tuff at 42.4 to 46.4 m. Many of the more quartz-rich areas have a blue-grey colour. Chloritic areas commonly have wisps of late very dark green biotite and muscovite. Dusting of minute orange-red hematite and limonite crystals occur in oxidized areas along fractures. Pyrite content <<0.1%. | | | | | | |
| contains at 57.6 | | 189.0 | | | | | | | | |
| 61.0 | 65.0 | 200.1 | 213.2 | **-Minute segregations of pyrite + CPY are associated with epidote-bearing quartz segregations.**<br>-CORE IS CONTAMINATED BY LANDING-RING COPPER<br>BOTTOM OF THE 3300 ZONE | | | | | | |
| 68.6 | 70.4 | 225.1 | 231.0 | Mildly contorted biotite-muscovite-chlorite-plagioclase schist that may have been a "Dacitic" Meta-crystal tuff. Metamorphic textures are becoming pervasive.<br>Box 17: Recovery >99% | | | | | | |
| 70.4 | 72.0 | 231.0 | 236.2 | Severely contorted banded, green and white "Dacitic" Meta-tuff like at 52.2 to 68.6 m. | | | | | | |
| 72.0 | 75.0 | 236.2 | 246.1 | Felsic "Meta-tuff" with no visible sulphides. The pseudo granular texture of this unit may be metamorphic, or it may reflect cm long felsic glass bombs. Probably it's metamorphic. Layers are at 70° to the core axis. | | | | | | |
| 75.0 | 79.9 | 246.1 | 262.2 | Severely contorted banded green and white "Dacitic" Meta-tuff like at 42.4 to 46.4 m. | | | | | | |
| 79.9 | 85.3 | 262.2 | 280.0 | Very fine-grained chloritic-micaceous rock that becomes progressively more remobilized and quartz boudined beneath 80 m. | | | | | | |
| contains at 82.5 | 85.8 | 270.7 | 281.5 | -a remobilized section with a tan blush | | | | | | |

## APPENDIX 'B'
## DDH L1H1, Drill Log Summary
## continued

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| | | |
|---|---|---|
| 85.3 88.3 | 280.0 289.7 | Variably remobilized Felsic "Meta-tuff" with lots of white quartz boudins. Layers range from 20° to 70° to the core axis (a fold zone). Traces of pyrite are associated with some of the quartz boudins.<br>Box 21: Recovery >99% | |
| 88.3 94.5<br>contains at<br>93.8 | 289.7 310.0<br><br>307.7 | Contorted chlorite-muscovite layered schist gradually contains more quartz-rich layers beneath 90.7 m.<br><br>**-traces of CPY and pyrite occur in a fracture filling at 50° to the core axis.** | |
| 94.5 98.7 | 310.0 323.8 | "Rhyolitic to Dacitic" Tuff and Crystal-Tuff with recognizable graded beds a few cm thick, (tops are upright), mostly broken plagioclase phenocrysts are up to 3 mm long. The matrix is chloritic. Layers are 10-45° to the core axis with lots of small-amplitude early folds. There is a trace of pyrite in most late fractures, some are oxidized py to hematite giving the local area a faint pink blush.<br>Box 23: Recovery >99% | |
| 98.7 101.8 | 323.8 334.0 | Contorted chloritic schist with lots of small kink folds. | |
| 101.8 105.2 | 334.0 345.1 | Very fine-grained, chlorite-biotite schist containing a few late hairline quartz-filled fractures. Layers are at 45° to the core axis. | |
| 105.2 119.7 | 345.1 392.7 | Finely layered chlorite-biotite schist with white plagioclase-rich partings. Layers are gently folded and mostly at 45-60° to the core axis. Orange-brown limonitic coatings occur on late fractures. Quartz segregations and boudins comprise 1-2% of this unit. Areas around quartz boudins have traces of pyrite and wisps of pale-green epidote. | |

## Appendix 'B'
## DDH L1H1, Drill Log Summary
## continued

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 119.7 | 128.4 | 392.7 | 421.3 | Contorted chlorite-muscovite-biotite-rich schist with 10% quartz-rich layers, quartz lenses and boudins. 3-mm to 1 cm long epidote segregations commonly are associated with quartz lenses. Some late hairline fractures, especially those around quartz bodies contain orange-brown limonite.<br>Box 30: recovery>98% | | | | | | |
| 128.4 | 136.5 | 421.3 | 392.2 | This is a far less remobilized version of the above rock unit. Quartz bodies above have been derived from quartz-rich layers of "Felsic Tuff". Here, they are at 35-60° to the core axis. Some of these layers are associated with layers that may have been either crystal tuff or lapilli tuff. About 30 of the section is disrupted by minor folding. Some of the quartz-rich layers have a faint red cast. | | | | | | |
| 136.5 | 141.1 | 392.2 | 462.6 | Muscovite-chlorite rich schist where the muscovite and chlorite have been coarsened at the expense of biotite and plagioclase. This seems to be a retrograde stage of the metamorphism that is present in the hole above. Quartz segregations are common. There are more than one generation of these.<br>Box 33: recovery>99%<br>**-THE RED CAST IN THE QUARTZ IS ALMANDINE GARNET. THIS IS RELATED TO THE BIOTITE METAMORPHISM AND IT PREDATES THE MUSCOVITE-CHLORITE EVENT** (That made my day.) | | | | | | |
| 141.1 | 164.4 | 462.6 | 539.4 | Severely contorted layers of silvery white muscovite, biotite, quartz, and plagioclase (perhaps metamorphic albite). There is no average layer attitude here. Epidote is common in and around quartz segregations. Pyrite content = >0.5% in some layers. | | | | | | |
| 164.4 | 165.1 | 539.4 | 541.7 | Active faults full of rubble and swelling, green clay, probably montmorillonite. | | | | | | |
| 165.1 | 169.4 | 541.7 | 555.8 | Andesitic Dyke: fine-grained dark green rock with sparse, small biotite and plagioclase phenocrysts. Probably, this is related to the Tertiary-age Sloko volcanic rocks exposed in the Rizz area. | | | | | | |
| 169.4 | 175.1 | 555.8 | 574.5 | Contorted layers of contorted quartz-chlorite schist containing 2% quartz boudins. This unit is pale green. | | | | | | |

## Appendix 'B'
## DDH L1H1, Drill Log Summary
## continued

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 175.1 | 177.5 | 574.5 | 582.3 | Re-opened Fault Zone: Pervasively remobilized, light, grey-green quartz-chlorite schist containing recent fractures filled with white clay.<br>Box 41: recovery >96% | | | | | | |
| 177.5 | 205.9 | 582.3 | 675.5 | Biotite-garnet-plagioclase-chlorite-quartz schist: complexly folded with 5% quartz lenses. Chevron folds have 3 cm amplitudes. Pyrite = 1%. In some layers, biotite is being replaced by muscovite-retrograde phase of metamorphism.<br>Box 48: recovery>99% | | | | | | |
| 205.9 | 227.0 | 675.5 | 744.8 | 3100 ZONE:<br>Light grey very siliceous schist, mostly quartz-feldspar-muscovite-chlorite-sericite. Minor folds are common. Average layer attitude is 50° to core axis. There are no sulphides here. | | | | | | |
| contains at | | | | | | | | | | |
| 206.8 | 207.5 | 678.5 | 680.8 | -fractures filled with light green clay, probably montmorillonite. | | | | | | |
| 219.0 | 220.0 | 718.5 | 721.8 | -fractures filled with light green clay, probably montmorillonite.<br>BOTTOM OF THE 3100 ZONE | | | | | | |
| 227.0 | 230.1 | 744.8 | 754.9 | Purple-green garnet-chlorite schist with 10% quartz boudins and segregations. | | | | | | |
| 230.1 | 233.2 | 754.9 | 765.1 | Fine-grained green chloritic rock with sparse 1-2 mm black-green biotite phenocrysts Tertiary-age Sloko volcanic equivalent dyke. | | | | | | |
| 233.2 | | 765.1 | | END OF HOLE | | | | | | |

## Appendix 'B'
## DDH L1H2, Drill Log Summary

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L1H2 | 6,531,874 N.<br>567,657 E. | 1,131 3,710.6 | 240° | -85° | 54.9 180.1 |

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.2 | 0 | 3.9 | Casing driven through glacial till.<br>NOTE: Holes L1H1 and L1H2 were drilled from the same location. | | | | | | |
| 1.2 | 18.4 | 4.9 | 60.4 | Felsic Tuff, Basal Part of the CAMP ZONE:<br>Fine-grained felsic tuff deposited in 1-cm thick layers, most of which seem to be graded. This rock is the same as that at the top of Hole L1H1. The two holes are right beside each other here. Layers are 35-40° to the core axis. Near surface much of the core is oxidized from light green-grey to tan brown, probably due to the oxidation of pyrite. Unweathered rock is comprised of quartz, plagioclase, green biotite, and minor chlorite. Quartz boudins are rare.<br>BOTTOM OF THE CAMP ZONE | | | | | | |
| 18.4 | 19.5 | 60.4 | 64.0 | Epidote and quartz-rich remobilized and boudinaged section.<br>Box 5: recovery >95% | | | | | | |
| 19.5 | 25.8 | 64.0 | 84.6 | Banded "Dacitic Meta-tuff": chlorite-plagioclase-biotite. This unit hosts lots of minor folds. | | | | | | |
| 25.8 | 35.5 | 84.6 | 116.5 | Dark green biotite-chlorite schist.<br>Box 8: recovery >98% | | | | | | |
| 35.5 | 39.8 | 116.5 | 130.6 | Remobilized section like at 18.4-19.5 m. Here there is much more chlorite than epidote associated with the quartz segregations. | | | | | | |
| 39.8 | 39.9 | 130.6 | 130.9 | Thick white quartz segregation. | | | | | | |

## Appendix 'B'
## DDH L1H2, Drill Log Summary
## continued

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | Depth to (m) | Depth from (ft) | Depth to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 39.9 | 43.2 | 130.9 | 141.7 | Dacitic Meta-tuff: Graded beds of felsic tuff and lapilli tuff with 1-cm bombs at the bases of some "beds" grading up to silica-rich "ash". Original beds seem to be upright here. Layering is at 30° to the core axis. | | | | | | |
| 43.2 | 43.7 | 141.7 | 143.4 | Milky, white quartz segregation with minor amounts of chlorite and epidote, and traces of pyrite. | | | | | | |
| 43.7 | 45.2 | 143.4 | 148.3 | 3300 ZONE:<br>Fine-grained quartz-rich, pink to green layers of felsic "Meta-tuff". The pink colour in the quartz-rich layers may be due to the presence of almandine garnet. Pyrite content = <0.1%. No other sulphides are present. | | | | | | |
| 45.2 | 46.5 | 148.3 | 152.6 | Folded chlorite-plagioclase-muscovite layers with 2% pink quartz segregations. General layering is at 30° to the core axis. | | | | | | |
| 46.5 | 54.9 | 152.6 | 180.1 | Felsic "Meta-tuff": white cm thick quartz-rich bands with lots of minor folds. Late fractures are stained with rusty red-orange limonite. Fractures occur at 1-m intervals at 50-70° to the core axis. Pyrite content = <0.1%. No other sulphides are present.<br>Box 11: recovery >99° | | | | | | |
| 54.9 | | 180.1 | | END OF HOLE | | | | | | |

## Appendix 'B'
## DDH L2AH1, Drill Log Summary

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L2AH1 | 6,531,841 N.<br>567,540 E. | 1,104 3,622 | 235° | -60° | 233.2 765.1 |

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.4 | 0 | 4.6 | Casing driven through glacial till and rubble.<br>NOTE: Holes L2AH1 and L2AH2 were drilled from the same location. | | | | | | |
| 1.4 | 6.4 | 4.6 | 21.0 | Contorted felsic "Meta-tuff and Lapilli Tuff: felsic bombs are up to 1 cm long. They are comprised of mostly quartz with varying amounts of plagioclase, brown biotite, and chlorite. Pyrite content = <0.1%. Metamorphic quartz segregations make up about 5% of this unit. Original bed tops can not be discerned with any certainty.<br>Box 2: recovery >98% | | | | | | |
| 6.4 | 10.7 | 21.0 | 35.1 | Felsic "Meta-tuff" layers about 2 cm thick at 30-60° to the core axis. Dark green chloritic bases grade up to quartzose tops. Pyrite occurs on hairline fractures with dark purple-black Mn oxide. Pyrite content = < 0.1%. No other sulphides are visible. | | | | | | |
| 10.7 | 34.6 | 35.1 | 113.5 | Banded "Meta-tuff and Lapilli Tuff" like at 1.4 to 6.4 m. Early metamorphic minerals are: plagioclase, biotite, chlorite, almandine garnet and quartz. These are variably replaced by muscovite and epidote, changing a dark green, white and mauve schistose rock to a light green one. Pyrite content ranges up to 0.5%. | | | | | | |

## Appendix 'B'
## DDH L2AH1, Drill Log Summary
## continued

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 34.6 | 61.0 | 113.5 | 200.1 | 3300 ZONE: | 19707 | <0.5 | 0.1 | 9.5 | 7.8 | 81 |
| | | | | Very fine-grained, felsic "Meta-tuff" in 1-cm thick laminae. This unit is 90% quartz, 0.5-1.5% pyrite, with minor amounts of chlorite, muscovite and almandine garnet. No other sulphides are visible. This unit looks a lot like the base of the Camp Zone encountered near the tops of holes L1H1 and L1H2. In weathered areas near fractures, the rock is orange-brown with limonite and purple black with Mn oxide. Despite some minor folding, laminae generally are 60-70° to the core axis. | 56-58 m | | | | | |
| | | | | | 19708 | <0.5 | <0.1 | 7.8 | 11.5 | 47 |
| | | | | | 58-60 m | | | | | |
| | | | | | 19709 | <0.5 | 0.1 | 10.9 | 8.4 | 62 |
| containing at | | | | | 60-62 m | | | | | |
| 37.8 | 38.1 | 124.0 | 125.0 | -quartz boudin with segregations and vein fillings of pyrite and chlorite. | 19710 | 1.1 | 0.1 | 10.4 | 6.1 | 80 |
| 39.0 | 39.2 | 128.0 | 128.6 | -pyritic interbeds in the tuff sequence | 62-64 m | | | | | |
| 40.3 | 40.7 | 132.2 | 133.5 | -quartz boudins surrounded by 5 cm thick chlorite-muscovite selveges | 19711 | 0.6 | 0.1 | 4.6 | 6.4 | 30 |
| by 42.0 | | by 137.8 | | -late muscovite is much more common than early biotite or chlorite | 64-66 m | | | | | |
| 41.8 | 42.3 | 137.1 | 138.8 | -milky white quartz boudin | 19712 | <0.5 | <0.1 | 3.5 | 16.3 | 36 |
| 47.2 | 47.5 | 154.9 | 155.8 | MIS-LATCH: CORE IS CONTAMINATED WITH LANDING RING COPPER | 66-68 m | | | | | |
| 50.2 | 53.1 | 164.7 | 174.2 | -muscovite-chlorite-biotite rich section | 19713 | 0.9 | 0.1 | 8.5 | 14.9 | 27 |
| | | | | Box 11: recovery = >98% | 68-70 m | | | | | |
| | | | | BOTTOM OF 3300 ZONE | 19714 | 0.9 | 0.1 | 8.5 | 10.9 | 64 |
| | | | | | 70-72 m | | | | | |
| | | | | | 19715 | <0.5 | 0.1 | 13.9 | 5.2 | 56 |
| | | | | | 72-74 m | | | | | |
| | | | | | 19716 | 1.0 | 0.1 | 7.6 | 6.4 | 74 |
| | | | | | 74-76 m | | | | | |
| | | | | | 19717 | 0.7 | <0.1 | 6.2 | 11.6 | 52 |
| | | | | | 56-58 m | | | | | |
| | | | | | 19718 | 1.0 | 0.1 | 8.3 | 13.1 | 53 |
| | | | | | 58-60 m | | | | | |
| | | | | | 19719 | 0.8 | 0.1 | 5.2 | 9.2 | 64 |
| | | | | | 60-62 m | | | | | |

**Appendix 'B'**
**DDH L2AH1, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | Depth to (m) | Depth from (ft) | Depth to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 61.0 | 92.0 | 200.1 | 301.8 | Banded "Meta-tuff and Lapilli Tuff" like at 10.7 to 34.6 m. Early metamorphic minerals are: plagioclase, green biotite, chlorite, almandine garnet and quartz. These are variably replaced by muscovite and epidote, changing a dark green, white and mauve schistose rock to a light green one. Layers are at 75° to core axis. Pyrite content declines from about 0.5% at 61.0 m to 0.1% by 68.0 m. | 19720 60-62 m | <0.5 | 0.2 | 9.5 | 12.8 | 118 |
| | | | | | 19721 62-64 m | <0.5 | 0.1 | 9.8 | 4.2 | 95 |
| contains at by 77.5 | | 254.3 | | -wine red almandine garnet porphyroblasts up to 1 cm across are sparsely disseminated throughout the core | 19722 64-66 m | <0.5 | < 0.1 | 8.7 | 3.4 | 92 |
| 84.6 | 84.8 | 277.6 | 278.2 | -white quartz boudin | | | | | | |
| 84.7 | 86.5 | 277.9 | 283.8 | -light green bleached section due to late muscovite-chlorite-epidote metamorphism | | | | | | |
| 87.0 | 88.0 | 285.4 | 288.7 | -white quartz boudins associated with pyrite blebs up to 2 cm long. Total pyrite content here is 0.2%<br>Box 18: recovery = >98% | | | | | | |
| 92.0 | 109.7 | 301.8 | 359.9 | Purple-green garnet-biotite-chlorite schist with 10% white quartz lenses and montmorillonite-filled fractures. Bleached sections are common. | | | | | | |
| contains at 100.2 | 102.3 | 328.7 | 335.6 | -grey-green bleached section with poor recovery (Boxes 24-25: recovery = 70%) | | | | | | |
| by 102.3 | | 335.6 | | -this unit becomes very contorted | | | | | | |
| 109.7 | 118.0 | 359.9 | 387.1 | Finely laminated, grey-green biotite-chlorite-muscovite schist "Meta-tuff"? Laminations are at 80° to the core axis. Muscovite is most common around white quartz boudins that form about 5% of this unit. | | | | | | |
| 118.0 | 119.7 | 387.1 | 392.7 | Purple, dark green and white garnet-biotite-chlorite-plagioclase-quartz schist. Pyrite content = 0.2%. No other sulphides are visible. This unit is very contorted. | | | | | | |
| 119.7 | 120.9 | 392.7 | 396.7 | Fine-grained quartz-rich layers with 0.5% pyrite concentrated along interbeds and on thin fractures. This unit looks the same as much of the 3300 Zone encountered from 34.6 to 61.0 m in this hole. | | | | | | |
| 120.9 | 135.9 | 396.7 | 445.9 | Variably contorted schistose layers that may have been Meta-tuff and Lapilli Tuff. Plagioclase, green-brown biotite, almandine garnet, with minor late muscovite and chlorite comprise most of the rock. Quartz boudins make up about 3% of it. Pyrite content = 0.3% at the top of this unit but declines to about 0.1% a few metres down. No other sulphides are visible. Layers are at about 70° to the core axis in less contorted sections. | | | | | | |
| containing at 127.5 | | 418.3 | | -massive pyrite in a narrow vein that cuts through a quartz boudin at 90° to its long axis and is oriented at 45° to the core axis. | | | | | | |

**Appendix 'B'**
**DDH L2AH1, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 135.9 | 139.0 | 445.9 | 456.0 | Garnet-biotite schist with 1 cm almandine porphyroblasts disseminated throughout. 2nd-phase metamorphic mineral growth has masked all earlier rock textures.<br>Box 35: recovery >98% | | | | | | |
| 139.0 | 152.4 | 456.0 | 500.0 | Garnet and biotite content gradually declines and quartz content rises as "felsic" layers become more common. Early layering can only be discerned in the most siliceous layers. Pyrite content = 0.1% | | | | | | |
| 152.4 | 152.8 | 500.0 | 501.3 | Early fault breccia: Siliceous "Meta-tuff" clasts in a quartz-rich matrix | | | | | | |
| 152.8 | 164.6 | 501.3 | 540.0 | Grey, mauve and green schist containing plagioclase, chlorite, green biotite, almandine garnet with 3% quartz segregations. Muscovite is variably present. Pyrite content =<0.1%. It is most common around quartz segregations. | 19732<br>158-160 m | 5.7 | 1.8 | 43.6 | 341.3 | 1008 |
| contains at<br>160.0 | 162.0 | 524.9 | 531.5 | **- small blebs of PbS and ZnS associated with quartz segregations**<br>Box 40: recovery 100% (the core comes out of the tube in 2-3 m sections) | 19733<br>160-162 m | 9.0 | 2.0 | 110.3 | 668.3 | 1722 |
| 164.6 | 169.0 | 540.0 | 554.5 | Light silvery green schist containing quartz, plagioclase, chlorite, muscovite with minor garnet and biotite.<br>**THE 3RD-PHASE MUSCOVITE-CHLORITE RICH METAMORPHISM SEEMS TO BE A PHASE DURING WHICH BIOTITE THEN GARNET ARE REPLACED.** | | | | | | |
| 169.0 | 181.3 | 554.5 | 594.8 | Plagioclase-garnet-biotite schist with small (1-3 mm) black hornblende laths. **HORNBLENDE ISOGRAD**<br>This has been variably replaced by 3rd-phase muscovite and chlorite. Pyrite content = 0.3% concentrated around quartz boudins which make up about 2% of this unit | | | | | | |
| 181.3 | 189.6 | 594.8 | 622.0 | Rock gradually becomes lighter and more quartzose. Muscovite and chlorite has replaced most 2nd-phase metamorphic minerals. Pyrite is almost absent. The base of this unit is a layer of massive fine-grained light grey-green rock containing about 0.3% pyrite.<br>Box 44: recovery >99% | | | | | | |

## Appendix 'B'
## DDH L2AH1, Drill Log Summary
## continued

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 189.6 | 197.2 | 622.0 | 647.0 | Mauve, dark green and grey garnet-biotite schist containing <0.1% pyrite | | | | | | |
| contains at | | | | | | | | | | |
| 189.8 | 189.9 | 622.7 | 623.0 | -7 cm thick, fine-grained, post-metamorphic andesitic dyke (probably a feeder to the Tertiary-age Sloko volcanics in the Rizz area) | | | | | | |
| 193.6 | 196.5 | 635.2 | 644.7 | -light green muscovite-sericite zone where biotite and garnet are almost completely replaced | | | | | | |
| 196.5 | 197.2 | 644.7 | 647.0 | -contact alteration producing mild hornfelsing in garnet-biotite schist. This section is almost 60% garnet. Box 48: recovery >99% | | | | | | |
| 197.2 | 201.7 | 647.0 | 661.7 | Post-metamorphic porphyritic andesite dyke with contacts at 10-45° to the core axis. Zoned plagioclase phenocrysts mostly less than 0.8 cm long are suspended in a dark green matrix of hornblende and biotite. Chill zones are about 10 cm thick and look like the narrow andesitic dyke at 189.8 to 189.9 m. (probably a feeder to the Tertiary-age Sloko volcanics in the Rizz area) | | | | | | |
| 201.7 | 233.2 | 661.7 | 765.1 | Mauve, dark green and grey 2nd-phase garnet-biotite schist containing <0.1% pyrite, beneath a 10 cm-thick contact alteration zone. 3rd-phase muscovite-chlorite development fades in and out throughout this section. | | | | | | |
| contains at | | | | | | | | | | |
| 210.3 | 210.9 | 690.0 | 691.9 | -Open Fault: black mud seam with chips of biotite-garnet schist | | | | | | |
| 208.9 | 212.8 | 685.4 | 698.2 | -significant muscovite-chlorite alteration if garnet-biotite schist | | | | | | |
| 225.1 | 231.6 | 738.5 | 759.8 | -significant muscovite-chlorite alteration if garnet-biotite schist | | | | | | |
| 228.6 | 229.6 | 750.0 | 753.3 | -green montmorillonite-filled mud seam | | | | | | |
| 233.2 | | 765.1 | | END OF HOLE | | | | | | |

**Appendix 'B'**
**DDH L2AH2, Drill Log Summary**

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L2AH2 | 6,531,841 N.<br>567,540 E. | 1,104 3,622 | 235° | -85° | 233.2 765.1 |

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.2 | 0 | 3.9 | Casing driven through glacial till and rubble.<br>NOTE: Holes L2AH1 and L2AH2 were drilled from the same location. | | | | | | |
| 1.2 | 4.3 | 3.9 | 14.1 | Contorted felsic "Meta-tuff and Lapilli Tuff: felsic bombs are up to 1 cm long. They are comprised of mostly quartz with varying amounts of plagioclase, brown biotite, and chlorite. Pyrite content = <0.1%. Metamorphic quartz segregations make up about 5% of this unit. Original bed tops can not be discerned with any certainty. Weathered patches have orange-brown limonite and brick-red hematite.<br>Box 1: recovery >90% | | | | | | |
| 4.3 | 8.5 | 14.1 | 27.9 | Felsic "Meta-tuff" layers about 2 cm thick at 10-70° to the core axis. Dark green chloritic bases grade up to quartzose tops. Pyrite occurs on hairline fractures with dark purple-black Mn oxide. Pyrite content = up to 1% concentrated in pyritic interbeds. No other sulphides are visible. | 19723<br>4-6 m<br>19724<br>6-8 m | 7.0<br><br><0.5 | 0.3<br><br><0.1 | 13.0<br><br>5.1 | 8.3<br><br>5.4 | 61<br><br>23 |
| 8.5<br><br>contains at<br>16.5 | 28.6<br><br><br>16.8 | 27.9<br><br><br>54.1 | 93.8<br><br><br>55.1 | Banded "Meta-tuff and Lapilli Tuff" like at 1.2 to 4.3 m. Early metamorphic minerals are: plagioclase, biotite, chlorite, almandine garnet and quartz. These are variably replaced by muscovite and epidote changing a dark green, white and mauve schistose rock to a light green one. Pyrite content = 0.1%.<br>-quartz-rich "felsic" section with purple-black Mn oxide in weathered fractures<br>Box 8: recovery >99% | | | | | | |

**Appendix 'B'**
**DDH L2AH2, Drill Log Summary**
**continued**

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | Depth to (m) | Depth from (ft) | Depth to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 28.6 | 75.8 | 93.8 | 248.7 | 3300 ZONE:<br>Fine-grained, quartz-rich "Felsic Meta-tuff" with a few more schistose interbeds. Pyrite content = 0.5 to 1.5%. No other sulphides are visible. Pyrite is concentrated in this pyritic interbeds. Laminae are at 60° to the core axis. Weathered sections are light orange due to limonite, muscovite-sericite rich sections are light green.<br>Box 8: recovery >99%, Box 19: recovery >99%<br>BOTTOM OF 3300 ZONE | 19725 28-30 m | <0.5 | <0.1 | 5.8 | 5.8 | 59 |
| | | | | | 19726 30-32 m | <0.5 | <0.1 | 4.8 | 4.8 | 50 |
| | | | | | 19727 32-34 m | <0.5 | < 0.1 | 5.0 | 5.0 | 44 |
| | | | | | 19728 34-36 m | 0.6 | <0.1 | 2.9 | 10.7 | 81 |
| | | | | | 19729 36-38 m | 0.7 | <0.1 | 2.2 | 2.6 | 53 |
| | | | | | 19730 38-40 m | 0.7 | 0.1 | 2.0 | 7.9 | 23 |
| | | | | | 19731 40-42 m | <0.5 | 0.3 | 2.9 | 2.9 | 39 |
| | | | | | 19734 42-44 m | 0.9 | <0.1 | 9.2 | 12.9 | 54 |
| | | | | | 19735 44-46 m | 0.6 | <0.1 | 5.9 | 15.9 | 37 |
| | | | | | 19736 46-48 m | 1.5 | <0.1 | 7.6 | 15.8 | 139 |
| | | | | | 19737 48-50 m | <0.5 | <0.1 | 6.2 | 8.6 | 28 |
| | | | | | 19738 50-52 m | 0.9 | <0.1 | 6.7 | 5.5 | 29 |
| | | | | | 19739 52-54 m | 0.5 | <0.1 | 8.5 | 7.4 | 50 |
| | | | | | 19740 | 1.6 | 0.1 | 8.3 | 26.1 | 88 |

**Appendix 'B'**
**DDH L2AH2, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 54-56 m | | | | | |
| | | | | | 19741 | 0.9 | <0.1 | 2.6 | 4.2 | 21 |
| | | | | | 56-58 m | | | | | |
| | | | | | 19742 | <0.5 | <0.1 | 4.6 | 24.7 | 51 |
| | | | | | 58-60 m | | | | | |
| | | | | | 19743 | 1.3 | <0.1 | 13.0 | 11.8 | 91 |
| | | | | | 60-62 m | | | | | |
| | | | | | 19744 | 0.9 | 0.2 | 10.4 | 19.3 | 44 |
| | | | | | 62-64 m | | | | | |
| | | | | | 19745 | 0.6 | 0.2 | 22.8 | 8.3 | 122 |
| | | | | | 64-66 m | | | | | |
| | | | | | 19746 | 0.8 | <0.1 | 2.6 | 10.9 | 54 |
| | | | | | 66-68 m | | | | | |
| | | | | | 19747 | 0.6 | <0.1 | 8.0 | 32.1 | 82 |
| | | | | | 68-70 m | | | | | |
| | | | | | 19748 | 1.1 | 0.2 | 35.4 | 6.9 | 83 |
| | | | | | 70-72 m | | | | | |
| | | | | | 19749 | <0.5 | <0.1 | 4.9 | 4.6 | 28 |
| | | | | | 72-74 m | | | | | |
| | | | | | 19750 | <0.5 | <0.1 | 5.3 | 6.3 | 29 |
| | | | | | 74-76 m | | | | | |

**Appendix 'B'**
**DDH L2AH2, Drill Log Summary**
**continued**

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| | | | |
|---|---|---|---|
| 75.8 85.5<br><br><br><br><br>containing at<br>81.0 82.7<br>83.8 | 248.7 280.5<br><br><br><br><br><br>265.7 271.3<br>274.9 | Variably contorted layers of schist of varying quartz content. Un-contorted layers generally are at 65° to the core axis. About half of this unit has predominantly 2nd-phase garnet-biotite-plagioclase-chlorite mineral suite giving the rock a dark green-mauve-gray colour. The rest has mostly the 3rd-phase light green metamorphic mineral suite, mostly muscovite-chlorite-sericite-epidote. This unit contains about 3% white quartz segregations, which are about all that remains of the 1st-phase metamorphism. Pyrite content = 0.2% concentrated around quartz boudins. No other sulphides are visible.<br>-pyritic section containing about 0.4% PY<br>-3 cm long pyrite bleb in a quartz boudin | |
| 85.5 86.8 | 280.5 284.8 | Folded, light grey "Felsic Meta-tuff" : quartz > 90%, pyrite = 0.7%. This looks like 3300 Zone rock. | |
| 86.8 87.7 | 284.8 287.7 | Biotite-garnet schist disrupted by 60% white quartz segregations. | |
| 87.7 93.3 | 287.7 306.1 | Schist containing both 2nd and 3rd-phase metamorphic mineral suites. Layers are at 45° to the core axis. Here, 3rd-phase metamorphism has spread both along fractures and as replacements In favourable areas.<br>Box 22: recovery >99% | |
| 93.3 94.6 | 306.1 310.4 | Quartz segregations containing chlorite and pyrite stringers. | |
| 94.6 123.6<br>contains at<br>by 98.0 | 310.4 405.5<br><br>321.5 | Schist containing both 2nd and 3rd-phase metamorphic mineral suites. Pyrite content = 0.1 to 0.2%, concentrated around quartz boudins and in late veinlets.<br>-3rd-phase muscovite-chlorite-sericite becomes pervasive imparting a light green faded look to the rock. | |

## Appendix 'B'
## DDH L2AH2, Drill Log Summary
## continued

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| 123.6 | 125.0 | 405.5 | 410.1 | Light grey "Felsic Meta-tuff" : quartz > 90%, pyrite = 0.5%. This unit is re-crystallized to the point where no early or per-metamorphic textures are left. | | | | | | |
| 125.0 | 152.9 | 410.1 | 501.6 | Schist containing both 2nd and 3rd-phase metamorphic mineral suites. Pyrite content = 0.1 to 0.2%, concentrated around quartz boudins and in late veinlets. | | | | | | |
| 152.9 | 154.0 | 501.6 | 505.2 | Faulted 2nd-phase fold: Light grey-green chloritic breccia with lots of later montmorillonite seams and cream-coloured ptigmatic sericitic veins. This zone has a complex history: the breccia is 2nd-phase, the sericitic veins are 3rd phase, and the montmorillonite filled fractures are recent (post-metamorphic). | | | | | | |
| 154.0 | 172.0 | 505.2 | 564.3 | Garnet-biotite-chlorite-plagioclase 2nd-phase schist with garnet porphyroblasts up to 1 cm across. | | | | | | |
| by | | | | | | | | | | |
| 161.5 | | 529.6 | | -black hornblende laths up to 0.7 cm long (**HORNBLENDE ISOGRAD**) | | | | | | |
| 170.7 | | 560.0 | | -pyrrhotite occurs with pyrite near a quartz segregation (metamorphic de-sulphidation of pyrite?). Temperatures must have exceeded 350° C. here during the 2nd phase of metamorphism. | | | | | | |
| 172.0 | 175.3 | 564.3 | 575.1 | Fine-grained quartz-rich layers with 0.5% pyrite concentrated along interbeds and on thin fractures. Box 48: recovery >99% | | | | | | |
| 172.0 | 202.0 | 564.3 | 662.7 | PERVASIVE 3RD-PHASE METAMORPHISM Light grey-green schist with almost pervasive 3rd-phase muscovite-chlorite-sericite-epidote mineral assemblage. | | | | | | |
| 202.0 | 216.0 | 662.7 | 708.7 | Silvery grey 3rd-phase muscovite, albite?, quartz, chlorite schist. All of the 2nd-phase garnet, biotite and hornblende have been replaced. Pyrite content = 0.1%. | | | | | | |
| contains at | | | | | | | | | | |
| 205.6 | 206.7 | 674.5 | 678.1 | -70% quartz boudins | | | | | | |

**Appendix 'B'**
**DDH L2AH2, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | Depth to (m) | Depth from (ft) | Depth to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 216.0 | 221.7 | 708.7 | 727.4 | 3100 ZONE:<br>Fine-grained quartz-rich laminae with pyrite, muscovite, and chlorite in interbeds. Pyrite content = 0.2%. No other sulphides are visible.<br>BOTTOM OF 3100 ZONE | 19751<br>216-218 m | 1.8 | 0.1 | 15.7 | 13.6 | 8 |
| | | | | | 19752<br>218-220 m | 1.4 | 0.4 | 12.1 | 123.8 | 296 |
| | | | | | 19753<br>220-222 m | 2.2 | 0.5 | 70.2 | 51.1 | 102 |
| 221.7 | 233.2 | 727.4 | 765.1 | Schist containing both 2nd and 3rd-phase metamorphic mineral suites. Pyrite content = 0.1 to 0.2%, concentrated around quartz boudins and in late veinlets. **Epidote in late fractures post-dates the 3rd-phase minerals. This may be a 4th phase of metamorphism.** | | | | | | |
| 233.2 | | 765.1 | | END OF HOLE | | | | | | |

**Appendix 'B'**
**DDH L4AH1, Drill Log Summary**

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L4AH1 | 6,532,206 N.<br>567,484 E. | 1,093 3,586 | 235° | -45° | 234.7 770.0 |

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.4 | 0 | 4.6 | Casing driven through rubble.<br>NOTE: Holes L4AH1 and L4AH2 were drilled from the same location. | | | | | | |
| 1.4 | 7.0 | 4.6 | 23.0 | CAMP ZONE (lower part):<br>Felsic "Meta-tuff and Lapilli Tuff: Fine-grained quartz-rich layers (<90% quartz) alternating with layers that contain at least 25% chlorite and biotite. Pyrite content = 0.5% concentrated in the chloritic layers. No other sulphides are visible. Layers are at 80° to the core axis.<br>Box 2: recovery >98%<br>BOTTOM OF CAMP ZONE | | | | | | |
| 7.0<br>contains at 27.0 | 37.4 | 23.0<br>88.6 | 122.7 | Contorted and boudinaged "Meta-tuff" with pervasive light grey-green 3rd-phase muscovite, chlorite, albite, sericite metamorphic mineral assemblage that almost entirely overprints 2nd-phase garnet, hornblende, biotite plagioclase assemblage. Pyrite content <0.1%.<br>-late fracture with light green montmorillonite on open surfaces | | | | | | |
| | | | | Note: the drill is penetrating the 3300 ZONE just beneath a 2nd-phase fold nose. The nose is broken through by thrust faulting and the zone is exposed in outcrop as a series of discordant, fault-bounded slabs. | | | | | | |
| 37.4 | 41.6 | 122.7 | 136.5 | 3300 ZONE, SLAB 1:<br>Light grey, fine-grained, quartz-rich "Felsic Meta-tuff" in cm thick layers with Pyritic and chloritic interbeds. Pyrite content = 0.5 %. Laminae are at 70° to the core axis. **Traces of PbS accompany pyrite in chloritic interbeds.**<br>Box 10: recovery >99%<br>BOTTOM OF 3300 ZONE, SLAB 1 | 19754 38-40 m<br>19755 40-42 m | 1.0<br><0.5 | 0.1<br><0.1 | 37.5<br>11.1 | 60.3<br>47.8 | 638<br>253 |

**Appendix 'B'**
**DDH L4AH1, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 41.6 | 55.0 | 136.5 | 180.5 | Phase 2 garnet-biotite-plagioclase schist that has been 70% recrystallized to the 3rd-phase muscovite, sericite, chlorite mineral assemblage, thus fading a mauve-dark green and grey rock to a light green one through most of this section. | | | | | | |
| contains at 41.6 | 44.2 | 136.5 | 145.0 | -Phase 2 fault breccia in schist, matrix is a fine-grained grey rock | | | | | | |
| 55.0 | 76.2 | 180.5 | 250.0 | 3300 ZONE, SLAB 2:<br>Light grey, fine-grained, quartz-rich "Felsic Meta-tuff" in cm thick layers (>80% quartz) with Pyritic and chloritic interbeds. Pyrite content = 0.5 %. Laminae are at 60-80° to the core axis. **Traces of fine-grained PbS and ZnS accompany pyrite in chloritic interbeds.** These core boxes are quite heavy.<br>Box 14: recovery >99%<br>BOTTOM OF 3300 ZONE, SLAB 2 | 19756 56-58 m | <0.5 | <0.1 | 6.7 | 10.5 | 81 |
| | | | | | 19757 58-60 m | <0.5 | 0.2 | 16.9 | 64.7 | 626 |
| | | | | | 19758 60-62 m | 1.1 | 0.1 | 15.4 | 21.0 | 888 |
| | | | | | 19759 62-64 m | <0.5 | <0.1 | 7.8 | 5.9 | 102 |
| | | | | | 19760 64-66 m | 0.8 | <0.1 | 8.3 | 5.2 | 105 |
| | | | | | 19761 66-68 m | 0.7 | <0.1 | 7.0 | 14.2 | 159 |
| | | | | | 19762 68-70 m | <0.5 | 0.1 | 9.6 | 5.6 | 75 |
| | | | | | 19763 70-72 m | <0.5 | 0.3 | 9.4 | 3.2 | 56 |
| | | | | | 19764 72-74 m | <0.5 | 0.1 | 8.2 | 2.7 | 24 |
| | | | | | 19765 74-76 m | 1.8 | <0.1 | 5.8 | 3.4 | 24 |
| 76.2 | 108.0 | 250.0 | 354.3 | Quartz and pyrite content of the felsic "Meta-tuff" gradually declines. Layers are 70-90° to the core axis. Pyrite content drops to about 0.1%. There are no other visible sulphides in this unit. Post-3rd-phase fractures are lined with chlorite | | | | | | |

## Appendix 'B'
## DDH L4AH1, Drill Log Summary
## continued

Note: All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 108.0 | 109.1 | 354.3 | 357.9 | Numerous white quartz boudins in 2nd-phase garnet-biotite schist | | | | | | |
| 109.1 | 120.4 | 357.9 | 395.0 | Phase 2 garnet-biotite-plagioclase schist that has been variably recrystallized to the 3rd-phase muscovite, sericite, chlorite mineral assemblage, thus fading a mauve-dark green and grey rock to a light green one through most of this section.<br>Box 26: recovery >98% | | | | | | |
| containing at 112.0 | 114.3 | 367.5 | 375.0 | -pervasive bleaching and chloritization due to 3rd-phase re-crystallization<br>Box 27: recovery =85% | | | | | | |
| 118.0 | 120.4 | 387.1 | 395.0 | -pervasive bleaching and chloritization due to 3rd-phase re-crystallization<br>Box 28: recovery >98% | | | | | | |
| 120.4 | 133.9 | 395.0 | 439.3 | Contorted schist with pervasive 3rd-phase muscovite, sericite, chlorite mineral assemblage. Pyrite content = <0.1%. | | | | | | |
| 133.9 | 134.9 | 439.3 | 442.6 | Post-metamorphic andesitic dyke: zoned 2-mm long plagioclase phenocrysts are sparsely disseminated in a dark green matrix of mostly hornblende and biotite. Sharp contacts with narrow 3-cm chill zones are at 45° to the core axis. | | | | | | |
| 134.9 | 136.8 | 442.6 | 448.8 | Contorted schist with pervasive 3rd-phase muscovite, sericite, chlorite mineral assemblage. Pyrite content = <0.1%. Like at 133.9 to 134.2 m. | | | | | | |
| 136.8 | 137.2 | 448.8 | 450.1 | Ground core in a narrow andesitic dyke. | | | | | | |
| 137.2 | 138.1 | 450.1 | 453.1 | Schist with pervasive 3rd-phase muscovite, sericite, chlorite mineral assemblage. Pyrite content = <0.1%. | | | | | | |
| 138.1 | 138.7 | 453.1 | 455.1 | Fine-grained post-metamorphic andesitic dyke. | | | | | | |

**Appendix 'B'**
**DDH L4AH1, Drill Log Summary**
**continued**

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| | | | |
|---|---|---|---|
| 138.7 152.7<br><br>by<br>148.4 | 455.1 501.0<br><br><br>486.9 | Phase 2 garnet-biotite-plagioclase schist that has been variably recrystallized to the 3rd-phase muscovite, sericite, chlorite mineral assemblage, thus fading a mauve-dark green and grey rock to a light green one through most of this section.<br>-3rd-phase re-crystallization has turned the rock into a fine-grained layered sequence of chlorite and relict biotite<br>Box 35: recovery >98° | |
| 152.7 153.2 | 501.0 502.6 | Post-metamorphic porphyritic andesite dyke like at 133.9 to 134.9 m. | |
| 153.2 161.0 | 502.6 528.2 | Phase 2 garnet-biotite-plagioclase schist that has been almost pervasively recrystallized to the 3rd-phase muscovite, sericite, chlorite, epidote mineral assemblage, thus fading a mauve-dark green and grey rock to a light green one through most of this section. **TAN SERICITE, EPIDOTE, AND QUARTZ OCCURS IN HEALED FRACTURES THAT POST-DATE THE 3RD PHASE OF METAMORPHISM.** | |
| 161.0 161.1 | 528.2 528.5 | 2nd-phase fault breccia: schist clasts in a light grey fine-grained matrix. This breccia has been faded mostly to light grey-green by 3rd-phase re-crystallization. | |
| 161.0 178.1<br><br>contains at<br>165.3 165.8<br><br><br>174.0 174.9<br>177.0 177.2 | 528.5 584.3<br><br><br>542.3 544.0<br><br><br>570.9 573.8<br>580.7 581.4 | Phase 2 garnet-biotite-plagioclase schist that has been almost pervasively recrystallized to the 3rd-phase muscovite, sericite, chlorite, epidote mineral assemblage, thus fading a mauve-dark green and grey rock to a light green one through this section. Pyrite content = <0.1%. 4th-phase cream coloured sericite, epidote, quartz fill narrow fractures that run at high angles to the core axis.<br>-2nd-phase fault breccia: schist clasts in a light grey fine-grained matrix. This breccia has been faded mostly to light grey-green by 3rd-phase re-crystallization.<br>-recent fracture oriented at 35° to the core axis, filled with montmorillonite<br>-narrow post-metamorphic andesitic dyke at 35° to the core axis | |
| 178.1 188.4<br><br>containing at<br>180.7 180.8 | 584.3 618.1<br><br><br>592.8 593.2 | Phase 2 garnet-biotite-plagioclase schist about 30% recrystallized to the 3rd-phase muscovite, sericite, chlorite, epidote mineral assemblage, that variably fades a mauve-dark green and grey rock to a light green one through most of this section. Pyrite content = <0.1%.<br>-fault with brown mud seam | |

## Appendix 'B'
## DDH L4AH1, Drill Log Summary
## continued

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 188.4 | 204.6 | 618.1 | 671.3 | "Meta-tuff and Lapilli Tuff": cm-thick alternating quartz-rich and schist layers at 40-60° to the core axis. 3rd-phase metamorphism has turned this unit to light green. Quartz segregations = 3%. Pyrite content is low. Box 48: recovery >98% | | | | | | |
| 204.6 | 210.3 | 671.3 | 690.0 | Post-metamorphic porphyritic andesite dyke with some hematite overgrowths on some of the phenocrysts (Phase 4 oxidation?). Chill zones are 10 cm thick, oriented at 45° to the core axis. | | | | | | |
| 210.3 | 215.7 | 690.0 | 707.7 | 3100 ZONE:<br>Light grey, fine-grained, quartzose layers with minor chlorite and muscovite oriented at 70° to the core axis. Pyrite content = 0.3% concentrated mostly in thin inter-layers. **Traces of PbS occur with the pyrite.**<br>BOTTOM OF 3100 ZONE | | | | | | |
| 215.7 | 233.1 | 707.7 | 764.8 | Schist and "Meta-tuff": quartz and pyrite content gradually decline to those of normal schist. Laminae are at 45° to the core axis. Pyrite content declines to 0.1%. No other sulphides are visible. | | | | | | |
| 233.1 | 234.7 | 764.8 | 770.0 | Phase 2 garnet-biotite-plagioclase schist partly recrystallized to the 3rd-phase muscovite, sericite, chlorite, epidote mineral assemblage, that variably fades a mauve-dark green and grey rock to a light green one through this section. Pyrite content = <0.1%. | | | | | | |
| 234.7 | | 770.0 | | END OF HOLE | | | | | | |

## Appendix 'B'
## DDH L4AH2, Drill Log Summary

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L4AH2 | 6,532,206 N.<br>567,484 E. | 1,093 3,586 | 235° | -70° | 233.2 765.1 |

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2.0 | 0 | 6.6 | Casing driven through rubble.<br>NOTE: Holes L4AH1 and L4AH2 were drilled from the same location. | | | | | | |
| 2.0 | 4.6 | 6.6 | 15.1 | CAMP ZONE (lower part):<br>Felsic "Meta-tuff and Lapilli Tuff: Fine-grained quartz-rich layers (<90% quartz) alternating with layers that contain at least 25% chlorite and biotite. Pyrite content = 0.5% concentrated in the chloritic layers. Traces of PbS, 2-mm crystals associated with pyrite. Layers are at 65° to the core axis.<br>Box 3: recovery >97%<br>BOTTOM OF CAMP ZONE | | | | | | |
| 4.6 | 9.5 | 15.1 | 31.2 | Light grey-green "Meta-tuff" with pervasive light grey-green 3rd-phase muscovite, chlorite, albite, sericite metamorphic mineral assemblage that almost entirely overprints 2nd-phase garnet, hornblende, biotite plagioclase assemblage. Pyrite content <0.1%.<br>-late fracture with light green montmorillonite on open surfaces | | | | | | |
| 9.5 | 15.1 | 31.2 | 49.5 | 2nd-phase biotite-plagioclase schist almost 90% recrystallized to 3rd-phase muscovite-chlorite-sericite-albite Mineral assemblage. 2nd-phase textures are pseudomorphed and most of the rock is turned to pale green. | | | | | | |

## Appendix 'B'
## DDH L4AH2, Drill Log Summary
## continued

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 15.1 | 38.7 | 49.5 | 127.0 | Post $2^{nd}$-phase fault breccia in mostly garnet-biotite schist that subsequently has been recrystallized to $3^{rd}$-phase muscovite-chlorite-sericite-albite mineral assemblage. The matrix is a light grey fine-grained rock. **IT APPEARS THAT THE LARGE $2^{ND}$-PHASE FOLDS POST-DATE THE HEIGHT OF $2^{ND}$-PHASE METAMORPHISM AND PREDATES THE $3^{RD}$ PHASE.** $4^{th}$-phase epidote replaces $3^{rd}$-phase minerals in the matrix. | | | | | | |
| contains at | | | | | | | | | | |
| 22.4 | 23.2 | 73.5 | 79.4 | -post-metamorphic andesite dyke: small zoned plagioclase phenocrysts sparsely disseminated in a fine-grained dark green, hornblende biotite matrix. Contacts are at 70° to the core axis. | | | | | | |
| 26.9 | 27.8 | 88.3 | 91.2 | -porphyritic andesite dyke | | | | | | |
| 29.4 | 29.8 | 96.5 | 97.8 | -green montmorillonite in recent fractures | | | | | | |
| | | | | Box 7: recovery >97% | | | | | | |
| 38.7 | 39.8 | 127.0 | 130.6 | 3300 ZONE, SLAB 1:<br>Contorted and remobilized quartzose layers with laminae almost at high angles to almost parallel with the core axis. This is a very fine-grained light grey rock with about 0.3% pyrite. **Traces of very fine-grained ZnS and PbS occur with the pyrite.**<br>BOTTOM OF 3300 ZONE, SLAB 1<br>Box 11: recovery >98% (drilling was very slow through this section) | | | | | | |
| 39.8 | 50.8 | 130.6 | 166.7 | Phase 2 garnet-biotite-plagioclase schist that has been 70% recrystallized to the $3^{rd}$-phase muscovite, sericite, chlorite mineral assemblage, thus fading a mauve-dark green and grey rock to a light green one through most of this section. $1^{st}$-phase quartz segregations = 1% of the rock. Layers are from 30 to 70° to the core axis.<br>Pyrite content = <0.1%<br>Box 13: recovery <99% | | | | | | |

**Appendix 'B'**
**DDH L4AH2, Drill Log Summary**
**continued**

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 50.8 | 73.8 | 166.7 | 232.3 | 3300 ZONE, SLAB 2:<br>Light grey, fine-grained, quartz-rich "Felsic Meta-tuff" in cm thick layers (>80% quartz) with muscovite and chlorite in interbeds. 4th-phase epidote colours some laminae yellow-green. Pyrite content = 1-2 %. Laminae are at 70° to the core axis. **Traces of fine-grained PbS, ZnS, and chalcopyrite accompany pyrite in chloritic interbeds.** These core boxes are quite heavy.<br>Box 13: recovery >99%<br>BOTTOM OF 3300 ZONE, SLAB 2 | 19766<br>50.6-52 m | <0.5 | <0.1 | 26.4 | 6.8 | 164 |
| | | | | | 19767<br>52-54 m | 2.0 | 0.1 | 10.3 | 26.6 | 114 |
| | | | | | 19768<br>54-56 m | 0.7 | <0.1 | 7.8 | 8.2 | 73 |
| | | | | | 19769<br>56-58 m | 0.8 | <0.1 | 7.6 | 8.1 | 78 |
| | | | | | 19770<br>58-60 m | <0.5 | 0.1 | 10.5 | 21.5 | 253 |
| | | | | | 19771<br>60-62 m | 0.7 | 0.1 | 16.3 | 9.7 | 510 |
| | | | | | 19772<br>62-64 m | 1.3 | 0.2 | 25.0 | 32.6 | 632 |
| | | | | | 19773<br>64-66 m | 1.2 | 0.6 | 37.9 | 252.1 | 815 |
| | | | | | 19774<br>66-68 m | 0.7 | 0.2 | 10.2 | 5.2 | 76 |
| | | | | | 19775<br>68-70 m | 0.8 | 0.4 | 5.2 | 4.9 | 51 |
| | | | | | 19776<br>70-72 m | 1.2 | 0.4 | 18.5 | 3.8 | 33 |
| | | | | | 19777<br>72-74 m | 1.2 | 0.4 | 12.7 | 3.9 | 35 |
| 73.8 | 90.5 | 232.3 | 296.9 | "Meta-tuff" with 2nd-phase garnet-biotite mineral assemblage 85% re-crystallized to 3rd-phase muscovite, chlorite, sericite, albite assemblage. 4th-phase yellow-green epidote, quartz and tan sericite, and Fe carbonate fill narrow fractures. 1st-phase quartz segregations = 0.5% of the rock. Pyrite content = 0.1%.<br>Box 22: recovery >98%. | | | | | | |
| 90.5 | 97.6 | 296.9 | 320.2 | Quartzose layers like 3300 ZONE, SLAB 2 with laminae almost at 70° to the core axis. This is a very fine-grained light grey rock with about 0.1% pyrite. **Traces of very fine-grained ZnS and PbS occur with the pyrite.** | | | | | | |

**Appendix 'B'**
**DDH L4AH2, Drill Log Summary**
**continued**

**Note: All ICP results from this drill hole are recorded in Appendix 'A'.**

| | | | | | |
|---|---|---|---|---|---|
| 97.6 | 109.7 | 320.2 | 359.9 | "Meta-tuff" with 2nd-phase garnet-biotite mineral assemblage 85% re-crystallized to 3rd-phase muscovite, chlorite, sericite, albite assemblage. 4th-phase yellow-green epidote, quartz and tan sericite, and Fe carbonate fill narrow fractures. 1st-phase quartz segregations = 0.5% of the rock. Pyrite content = 0.1%. | |
| 109.7 | 116.9 | 359.9 | 383.5 | Contorted and remobilized quartzose layers containing a few small wisps of pyrite. **Traces of very fine-grained PbS occur with the pyrite.** | |
| 116.9 | 172.8 | 383.5 | 566.9 | 2nd-phase biotite-garnet-plagioclase schist that has been re-crystallized to the light green 3rd-phase muscovite-chlorite-sericite-albite mineral assemblage. This unit is about 50% contorted. Un-contorted layers are at 45-80° to the core axis. Pyrite content = 0.1 to 0.2% throughout this unit. | |
| contains at | | | | | |
| 122.0 | 128.6 | 400.3 | 421.9 | -1st-phase quartz segregations = 6% of rock, Box 30: recovery >99%. | |
| 135.0 | 150.0 | 442.9 | 492.1 | -3rd-phase metamorphism is less pervasive here and only the 2nd-phase garnet is replaced leaving the rock a dark green colour. **DURING 3RD-PHASE RE-CRYSTALLIZATION, 2ND-PHASE GARNET IS REPLACED BEFORE THE BIOTITE.** | |
| 142.7 | 143.8 | 468.2 | 471.9 | -1st-phase quartz segregations = 80% of the rock in a contorted chloritic layer | |
| by 165.0 | | 541.3 | | -4th -phase epidote- sericite-quartz-Fe-carbonate mineral assemblage spreads out from fractures to become almost pervasive. This re-crystallization turns the rock to a light yellow-green and tan colour. | |
| by 170.0 | | 557.7 | | -4th-phase re-crystallization becomes almost pervasive. It is oxidizing and destructive of sulphides. | |
| 172.8 | 181.0 | 566.9 | 593.8 | 1st-phase quartz segregations in a fine-grained green rock with 50% 3rd-phase mineral assemblage and 50% 4th-phase mineral assemblage. Pyrite is almost absent. | |
| 181.0 | 183.2 | 593.8 | 601.0 | 2nd-phase schist clasts in fine-grained matrix (Late 2nd-phase breccia) 4th-phase epidote- sericite-quartz-Fe-carbonate mineral assemblage. No sulphides are visible. | |
| 183.2 | 184.2 | 601.0 | 604.3 | Felsic "Meta-tuff" layer at 80° to the core axis. Quartz content .90%. Pyrite content <<0.1%. | |

**Appendix 'B'**
**DDH L4AH2, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 184.2 | 199.3 | 604.3 | 653.9 | Variably contorted 2[nd]-phase schist that has been re-crystallized 40% to the 3[rd]-phase mineral assemblage and 60% to the 4[th]-phase mineral assemblage. Trace pyrite; no other sulphides are visible. | | | | | | |
| contains at | | | | | | | | | | |
| 187.0 | 187.5 | 613.5 | 615.2 | -late 2[nd]-phase fault breccia that has been recently re-broken and is partly replaced with light green montmorillonite gouge | | | | | | |
| 193.7 | 194.8 | 635.5 | 639.1 | -felsic "Meta-tuff" layer at 60° to the core axis. Quartz content .90%. Pyrite content <<0.1%. No other sulphides are visible.<br>Box 43: recovery >98%. | | | | | | |
| 199.3 | 213.6 | 653.9 | 700.8 | 3100 ZONE:<br>Fine-grained quartz-rich laminae with 4[th]-phase epidote- sericite-Fe-carbonate-chlorite mineral assemblage in inter-layers. Pyrite content = <<0.1%. No other sulphides are visible. Layers are at 0-45° to the core axis.<br>BOTTOM OF 3100 ZONE | 19778<br>209.5-212 m<br>19779<br>212-214 m | 2.2<br><br><0.5 | 0.2<br><br>0.2 | 14.4<br><br>10.8 | 25.3<br><br>7.1 | 29<br><br>56 |
| 213.6 | 224.0 | 700.8 | 734.9 | Heavily bleached and re-crystallized schist. Pervasive 4[th]-phase epidote- sericite-Fe-carbonate-chlorite re-crystallization has succeeded in almost eradicating the 2[nd]-phase mineral texture. | | | | | | |
| 224.0 | 229.7 | 734.9 | 753.6 | Fine-grained quartz-rich laminae with 4[th]-phase epidote- sericite-Fe-carbonate-chlorite mineral assemblage in inter-layers like in the 3100 Zone above. Pyrite content = 0.3%. **Traces of PbS occur with pyrite.** | | | | | | |
| 229.7 | 233.2 | 753.6 | 765.1 | Mixed schist and felsic layers with lots of 1[st]-phase quartz boudins. Pervasive 4[th]-phase epidote- sericite-Fe-carbonate-chlorite mineralization turn the rock to a yellow-green colour. | | | | | | |
| 233.2 | | 765.1 | | END OF HOLE | | | | | | |

**Appendix 'B'**
**DDH L5AH1, Drill Log Summary**

| Hole No. | U.T.M. Location | Elevation (m) (ft) | Bearing | Dip | Length (m) (ft) |
|---|---|---|---|---|---|
| L5AH1 | 6,532,008 N.<br>567,684 E. | 1,132 3,714 | 235° | -50° | 124.7 409.1 |

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2.7 | 0 | 8.9 | Casing driven through rubble. | | | | | | |
| 2.7 | 5.8 | 8.9 | 19.0 | CAMP ZONE:<br>NOTE; THE CAMP ZONE IS NOT A SINGLE ZONE, IT IS COMPRISED OF A SERIES OF THIN QUARTZOSE ZONES SEPARATED BY THIN SCHIST UNITS<br>Very contorted felsic "Meta-tuff" with limonite and hematite in narrow fractures. Pyrite content = 1%.<br>Box 2: recovery >99% | | | | | | |
| 5.8 | 36.1 | 19.0 | 118.4 | Very contorted, 2nd-phase, mauve, dark green and grey garnet-biotite-plagioclase schist. Pyrite content = 0.2%. About 20% of this rock unit is affected by the 3rd-phase muscovite-chlorite albite mineral assemblage that locally turns the rock Lincoln green.<br>Box 5: recovery >99% | | | | | | |
| contains at 13.5 | 14.8 | 44.3 | 48.6 | -8 cm thick quartz segregation in a felsic "Meta-tuff" layer. Pyrite content = 0.5% | | | | | | |
| by 28.0 | | 91.9 | | -quartz content rises to more than 80% then gradually declines to 60% | | | | | | |
| 36.1 | 36.3 | 118.4 | 119.1 | **0.5 cm bleb of PbS in a quartz segregation** | | | | | | |
| 36.3 | 39.2 | 119.1 | 128.6 | Contorted assemblage of felsic "Meta-tuff" and schist layers. 3rd-phase metamorphism is minor here.<br>Box 8: recovery >99% | | | | | | |
| 39.2 | 44.0 | 128.6 | 144.4 | Felsic "Meta-tuff": light grey, quartz-rich layers with 1% pyrite mostly in interbeds at 80° to the core axis. | 19780<br>39.7-42 m | 0.9 | 0.3 | 10.6 | 11.6 | 125 |
| | | | | | 19781<br>42-44 m | 0.8 | 0.1 | 6.8 | 7.3 | 26 |

**Appendix 'B'**
**DDH L5AH1, Drill Log Summary**
**continued**

**Note:** All ICP results from this drill hole are recorded in Appendix 'A'.

| Depth from (m) | Depth to (m) | Depth from (ft) | Depth to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 44.0<br>containing at<br>46.9 | 48.5<br><br>47.2 | 144.4<br><br>153.9 | 159.1<br><br>154.9 | 2$^{nd}$-phase garnet-biotite-plagioclase-chlorite schist with 40% 3$^{rd}$-phase muscovite-sericite-chlorite-albite mineral suite. 7-8% quartz boudins. Pyrite content = 0.2% concentrated around quartz boudins. No other sulphides are visible.<br>Box 12: recovery >98%<br>-post-metamorphic andesitic dyke that has been subsequently broken up | | | | | | |
| 48.5 | 51.0 | 159.1 | 167.3 | Light grey "Felsic Meta-tuff" : quartz > 90%, pyrite = 1.5% mostly in inter-layers. | 19782<br>48.5-50 m | 0.6 | 0.4 | 7.1 | 7.7 | 72 |
| | | | | | 19783<br>50-52 m | 0.8 | 0.4 | 6.7 | 11.1 | 121 |
| 51.0<br>containing at<br>57.0 | 62.9<br><br>58.0 | 167.3<br><br>187.0 | 206.4<br><br>190.3 | Mostly light grey "Felsic Meta-tuff" : quartz > 90%, pyrite = 1.0% mostly in inter-layers. No other sulphides are visible. The quartzose layers are interbedded with thin schistose layers that comprise about 30% of this unit. Layers are at 80-90° to the core axis. 3$^{rd}$-pnase metamorphism progressively overprints 2$^{nd}$-phase metamorphic assembly down the hole.<br>Box 13: recovery >98%.<br>-light tan to orange variably weathered and oxidized section | 19784<br>52-53.5 m | 3.2 | 0.5 | 7.5 | 3.1 | 56 |
| | | | | | 19785<br>56-58 m | 0.5 | <0.1 | 4.5 | 4.8 | 59 |
| | | | | | 19786<br>58-60 m | 0.5 | <0.1 | 4.1 | 3.3 | 37 |
| | | | | | 19787<br>60-62 m | 1.3 | 0.1 | 8.0 | 4.8 | 48 |
| | | | | | 19788<br>62-63 m | 1.6 | 0.2 | 10.2 | 6.0 | 63 |
| 62.9 | 76.0 | 206.4 | 249.3 | Schist containing 70% 2$^{nd}$-phase and 30% 3$^{rd}$-phase metamorphic mineral suites. Almandine garnet porphyroblasts are about 3 mm across. Pyrite content = 0.1%. No other sulphides are visible.<br>Box 16: recovery >99% | | | | | | |

**Appendix 'B'**
**DDH L5AH1, Drill Log Summary**
**continued**

**Note:** **All ICP results from this drill hole are recorded in Appendix 'A'.**

| Depth from (m) | to (m) | from (ft) | to (ft) | Details of rock unit penetrated | Sample No. | Gold ppb | Silver ppm | Copper ppm | Lead ppm | Zinc ppm |
|---|---|---|---|---|---|---|---|---|---|---|
| 76.0 | 82.0 | 249.3 | 269.0 | Light grey "Felsic Meta-tuff" : quartz > 90%, pyrite = 0.7% mostly in inter-layers. **Trace PbS occurs with pyrite. Probably ZnS and chalcopyrite are present also.** Layers are at 80° to the core axis. Small amounts of 4th-phase re-crystallization result in some yellow-green epidote in some layers. | 19789 76-78 m | 0.8 | <0.1 | 13.3 | 1.8 | 39 |
| | | | | Box 18: recovery >99% | 19790 78-80 m | 0.6 | < 0.1 | 12.8 | 2.3 | 55 |
| contains at 76.0 | 79.0 | 249.3 | 259.2 | -Late 2nd-phase breccia with felsic clasts in a light grey fine-grained matrix. BOTTOM OF CAMP ZONE | 19791 80-82 m | <0.5 | <0.1 | 9.8 | 2.0 | 51 |
| 82.0 | 86.1 | 269.0 | 282.5 | Garnet-biotite-chlorite-plagioclase 2nd-phase schist 70% re-crystallized to 3rd-phase muscovite-sericite-chlorite-albite mineral suite. Pyrite content = 0.1%. No other sulphides are visible. Box 20: recovery >98%. | | | | | | |
| 86.1 | 89.2 | 282.5 | 292.7 | Post-metamorphic dark green andesitic dyke with 4 cm-thick chill zones at 45° to the core axis. | | | | | | |
| 89.2 | 97.6 | 292.7 | 320.2 | 70% schist containing 30% quartzose layers with almost pervasive 3rd-phase metamorphic mineral assemblage. Pyrite content <0.1%. | | | | | | |
| containing at 93.7 | 94.5 | 307.4 | 310.0 | -white 1st-phase quartz boudin | | | | | | |
| 97.6 | 100.9 | 320.2 | 331.0 | Post-metamorphic dark green andesitic dyke with 4 cm-thick chill zones at 45° to the core axis. A 15 cm thick medial section is porphyritic with 0.5 cm plagioclase phenocrysts in a dark green hornblende biotite matrix. | | | | | | |
| 100.9 | 116.1 | 331.0 | 380.9 | Very contorted felsic "Meta-tuffs and lapilli tuffs" with pervasive 3rd-phase metamorphism. | | | | | | |
| 116.1 | 116.8 | 380.9 | 383.2 | Post-metamorphic dark green andesitic dyke with contacts at 80° to the core axis. | | | | | | |
| 116.8 | 124.7 | 383.2 | 409.1 | Very contorted felsic "Meta-tuffs and lapilli tuffs" with pervasive 3rd-phase metamorphism. | | | | | | |
| containing at 123.0 | 124.7 | 403.5 | 409.1 | -Late 2nd-phase fault breccia with lots of 1st-phase white quartz boudins | | | | | | |
| 124.7 | | 409.1 | | END OF HOLE | | | | | | |

## APPENDIX 'C'

## COST AND APPORTIONMENT OF FUNDS FOR THE 2006 DRILL PROGRAM

# Mineral Titles Online

## Mineral Claim Exploration and Development Work/Expiry Date Change

Confirmation

**Recorder:** Saturn Minerals Inc. (200500)
**Submitter:** Saturn Minerals Inc. (200500)
**Recorded:** 2006/DEC/22
**Effective:** 2006/DEC/22
**D/E Date:** 2006/DEC/22

**Your report is due in 30 days. Please attach a copy of this confirmation page to the front of your report.**

**Event Number:** 4117228

**Work Start Date:** 2006/AUG/15
**Work Stop Date:** 2006/SEP/25
**Total Value of Work:** $ 515000.00
**Mine Permit No:**

**Work Type:** Physical Work
**Physical Items:** Drilling, Labour, Reclamation, Supply costs, Transportation / travel expenses

**Summary of the work value:**

| Tenure # | Claim Name/Property | Issue Date | Good To Date | New Good To Date | # of Days For-ward | Area in Ha | Work Value Due | Sub-mission Fee |
|---|---|---|---|---|---|---|---|---|
| 524610 | MAPLE LEAF 1 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 317.50 | $ 3809.96 | $ 381.34 |
| 524611 | MAPLE LEAF 2 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 250.58 | $ 3006.96 | $ 300.97 |
| 524612 | MAPLE LEAF 3 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 317.66 | $ 3811.90 | $ 381.54 |
| 524613 | MAPLE LEAF 3 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 234.11 | $ 2809.27 | $ 281.18 |
| 524614 | MAPLE LEAF 4 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 50.15 | $ 601.78 | $ 60.23 |
| 524616 | RIZZ 1 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 418.97 | $ 5027.66 | $ 503.23 |
| 524617 | RIZZ 2 | 2006/jan/01 | 2007/jan/01 | 2010/jan/01 | 1096 | 267.99 | $ 3215.93 | $ 321.89 |
| 539394 | LINK | 2006/aug/15 | 2007/aug/15 | 2010/aug/15 | 1096 | 351.52 | $ 4218.29 | $ 422.21 |

**Total required work value:** $ 26501.75

**PAC name:**
**Debited PAC amount:** $ 0.00
**Credited PAC amount:** $ 0.00

**Total Submission Fees:** $ 2652.59

**Total Paid:** $ 2652.59

The event was successfully saved.

## Adjusted Cost Statement
## Drilling on the Maple Leaf Property in 2006

| | | |
|---|---|---|
| 1) | Equipment and Camp Supplies | |
| | a. Food | |
| | b. Camp Supplies | |
| | c. Core-Boxes | |
| | d. Generator Rentals | |
| | e. Propane | |
| | f. Gasoline | $31,130.28 |
| 2) | Diamond Drilling | |
| | a. Kluane Diamond Drilling, 4 Man Crew | $186,241.67 |
| 3) | Personnel | |
| | a. R. Quo Vadis, Camp Manager<br>Aug1–Sept17 @ $300/day | (11,400) |
| | b. M. McLaren, Geologist<br>10 days, Aug1-Sept17 @ $450/day | (4,500) |
| | c. D. Connolly, Camp Construction & Demos<br>8 days @ $300/day | (2,400) |
| | d. T. Timpany, Camp Construction & Demos<br>8 days @ $300/day | (2,400) |
| | e. John Ostler, Geologist<br>31 days, Aug18-Sept17 @ $400/day | (12,400) |
| | f. Annette Glesbrecht, Cook, First Aide<br>35 days, Aug14-Sept17 | (12,250) |
| | g. Rick Smith, Labor<br>3 days @ $300/day | (900) |
| | h. R. Connolly, Carpenter Assistant | (295) |
| | | $46,545.00 |
| 4) | Fuel, Drill Timber, Electrical Wiring | $20,955.52 |
| 5) | Helicopter (Discovery & Capital Helicopter) | $152,929.52 |
| 6) | Satellite Communication | $2,621.03 |
| 7) | Analytical Costs (Acme Analytical) | $2,842.24 |
| | TOTAL | **$443,265.26** |

## APPENDIX 'D'

## CERTIFICATE OF QUALIFICATION

I, John Ostler, of 2224 Jefferson Avenue in the City of West Vancouver, Province of British Columbia do hereby certify:

That I am a consulting geologist with business address at 2224 Jefferson Avenue, West Vancouver, British Columbia;

That I am a graduate of the University of Guelph in Ontario where I obtained my Bachelor of Arts degree in Geography (Geomorphology) and Geology in 1973, and that I am a graduate of Carleton University of Ottawa, Ontario where I obtained my Master of Science degree in Geology in 1977;

That I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia;

That I have been engaged in the study and practice of the geological profession for over 35 years;

That this report is based on data in the literature and exploration conducted by me on the Maple Leaf-Rizz property from August 20 to September 15, 2006;

That in matters concerning legal title to the Maple Leaf-Rizz property areas and on economic, environmental, and legal aspects of developing a mine in British Columbia, I disclaim responsibility. I am not licenced to practice law in the Province of British Columbia;

That I have no interest in the Maple Leaf-Rizz property or in Saturn Minerals Inc., nor do I expect to receive any.

John Ostler; M.Sc., P.Geo.
Consulting Geologist

West Vancouver, British Columbia
February 22, 2007

PROFESSIONAL
PROVINCE OF
JOHN D. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST