

THE BUCKHORN GOLD PROSPECT  
NORTHWEST MORESBY ISLAND  
QUEEN CHARLOTTE ISLANDS, B.C.

N.T.S. 103C/16W  
53° 6' NORTH  
132° 35' WEST

103 F/2E

REPORT ON PERCUSSION DRILLING PROGRAMME

Sept. - Oct. 1979

by

J.S. Christie, Ph.D.

December 14, 1979

OWNER OPERATOR: Chevron Standard Limited

CONTRACTORS: JMT Services Corporation  
Tonto Drilling

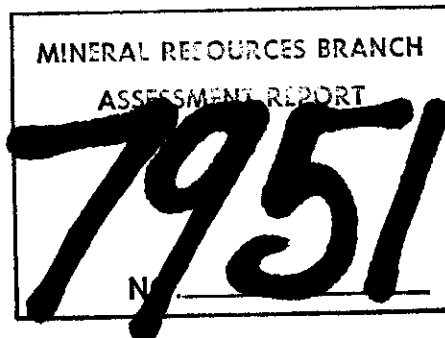


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## INTRODUCTION

The Buckhorn Property, comprised of 3 mineral claims (22 units), is centred on Nobals Creek near Buck Point, at the northwest corner of Moresby Island, Queen Charlotte Islands. Staking of the Buckhorn claims was the outcome of an exploration programme initiated after a silt sample, and a sample of silicified, quartz veined float were collected near the mouth of Nobals Creek in mid-June 1977. Both samples proved anomalous in gold and arsenic and in mid-August follow up sampling was undertaken. The Nobals Creek drainage was further tested with silt, soil and rock chip samples collected at the base of slope. Limestone outcrops were discovered near the bend in Nobals Creek, and large areas of overburden cover were noted on the lower slopes and valley floor. Geochem results indicated anomalous gold and arsenic extended some 2 miles up Nobals Creek, almost to the headwaters.

A third trip was made to the area in mid-October 1977, and the Buckhorn claims were staked. Later, a preliminary geological map was constructed covering the Nobals drainage and adjacent ridges. An effort was made to sample the lowest outcrops on both sides of Nobals Creek, and soil samples were collected at 200' centres along both sides of the valley at the base of slope. Subsequently two large areas of anomalous gold in soil and rock were identified adjacent to large overburden covered areas on the valley floor.

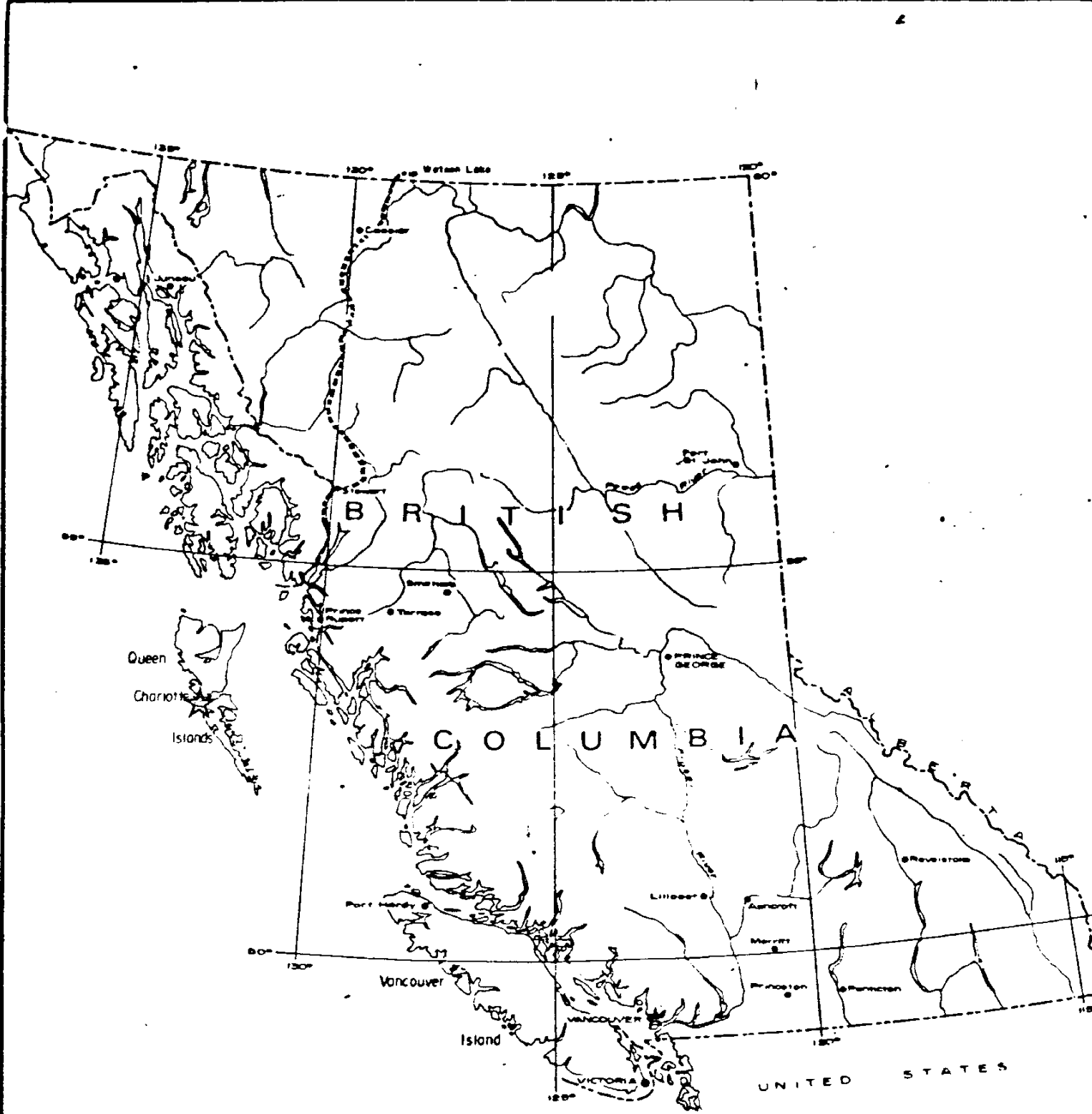
The current percussion drilling programme was initiated to provide wide-spaced bedrock intersections within the geochemically anomalous areas covered by extensive overburden. One of Tonto Drilling's Nodwell mounted percussion drills was transported by tug and barge to the property. A Mountain Logger skidder was also moved onto the property to assist the chainsaw men in roughing out drill trails. Personnel and supplies were moved by helicopter to a tent camp set up at the beach.

The initial plan on the property called for 22 holes testing both the lower and upper anomaly areas. Overburden exceeding 150 feet in thickness in the lower area slowed progress and only 4 of 11 holes drilled there reached bedrock. The programme to percussion drill the upper anomaly area was suspended in early October on account of possible similar deep overburden conditions, soft ground, and the lateness of the season.

#### LOCATION AND ACCESS

The property lies between Buck Point and Kitgoro Inlet on the northwest coast of Moresby Island, some 25 miles west of Queen Charlotte City. While on the exposed west coast of the Charlottes, and relatively inaccessible in stormy weather, the mouth of Nobals Creek is protected by a narrow 1000 foot long embayment in the coast, cut-off to a large extent by shelving rocks just seaward of the entrance. Beach landings in small boats apparently almost always are possible, except when heaviest seas pound the outer coast. The same protected bay also provides a convenient landing site for a helicopter.

Road access, although difficult, would be physically possible in the event a major exploration programme or mining operation, were undertaken. About 3 miles of road would be required (pass elevation 900 feet) to reach relatively protected tidewater on Buck Channel to the north. From Buck Channel, 8 additional miles of road would be needed to reach logging roads leading to Sandspit (pass elevation 750 feet).



**JMT SERVICES CORP.**

**BUCKHORN  
PROSPECT**

**PROPERTY LOCATION MAP**

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SCALE

Mile 1:136 1:36 Miles

|             |          |              |
|-------------|----------|--------------|
| Prepared by | Date :   | NTS MAP AREA |
| Drawn by    | Revised. | 103F/2E      |
|             |          | DRAWING No.  |

## TOPOGRAPHY AND VEGETATION

Nobals Creek drains a broad 2 mile long U-shaped valley which steepens abruptly above the 500 foot contour, some 8000 feet upstream from the sea. The creek and valley follow a linear northwest course in the upper part of the drainage but swing abruptly southwest (the bend) about 3000 feet from the sea. The valley floor is generally flat and appears to be mantled by relatively thin fluvial deposits, and narrow talus appears at the break in slope. Small areas of landslide debris are marked by hummocky topography. Bedrock, with the exception of C748 below the bend in the creek, is not exposed on the valley floor. Lowermost outcrops are shown on accompanying maps. The valley floor therefore constitutes a broad swath of overburden cover ranging from 300 - 500 m in width, over the entire 3000 m length of the valley.

Valley walls are steep and rocky, rising to ridge lines on the average about 300 m above the valley floor. Maximum elevation of 700 m occurs on the ridge just east of the headwaters of Nobals Creek.

Vegetation on the valley floor and lower slopes consists of open spruce-hemlock forest with little underbrush. Trees are of small to medium size by Queen Charlotte standards and are not closely spaced. Windfall is quite heavy and several blowdowns are present in the lower 700 m of the valley.

Tree size is greatly diminished on the upper slopes and ridges but windfall persists. Several mudslide scars mark the northern and northeastern slopes of the valley.

CLAIMS

The property consists of the Buckhorn 1 - 3 mineral claims described below and shown on the accompanying claim map.

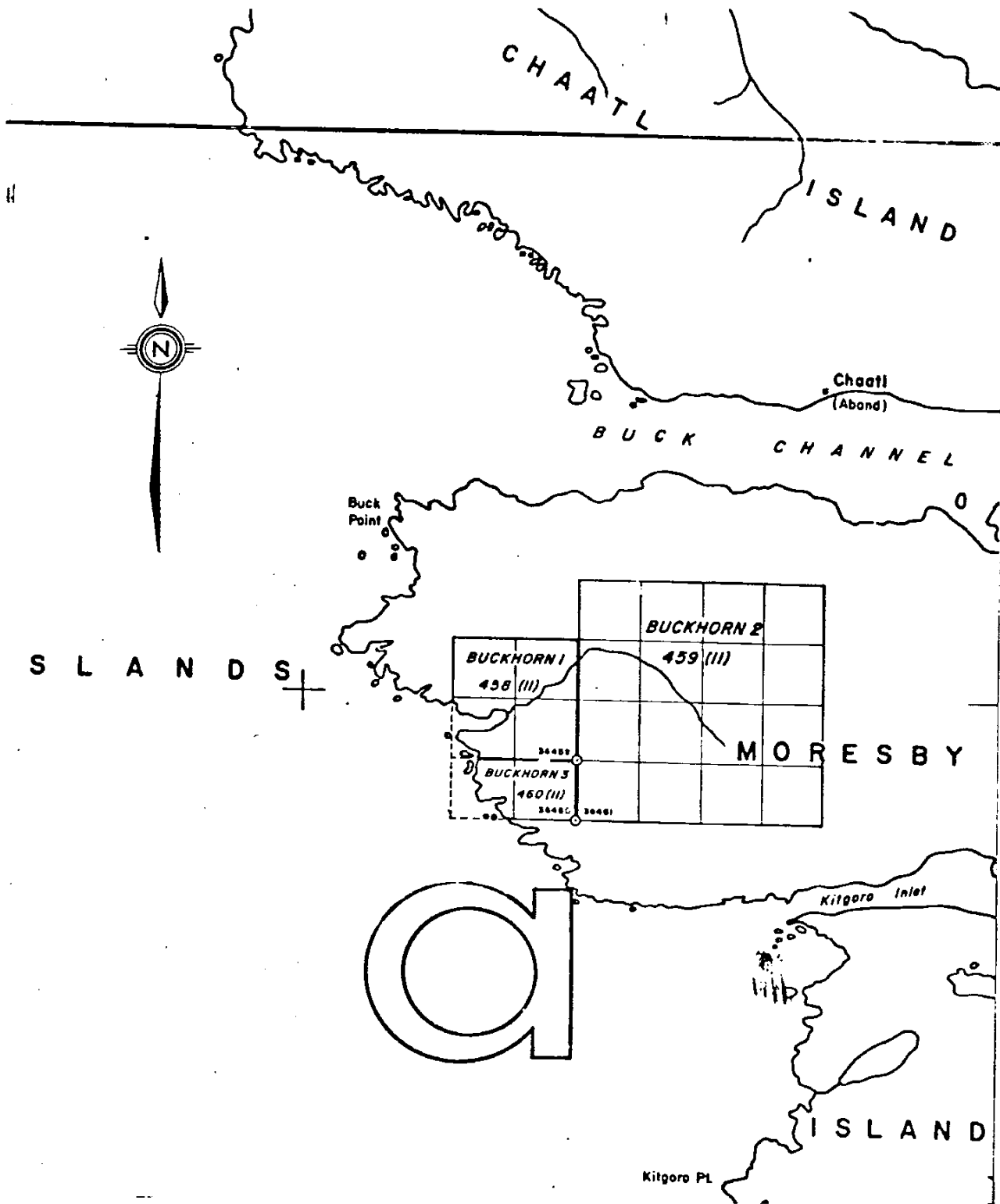
| <u>Name</u>    | <u>Units</u> | <u>Record No.</u> | <u>Record Date</u> | <u>Locator</u> |
|----------------|--------------|-------------------|--------------------|----------------|
| Buckhorn No. 1 | 4            | 458               | Nov.10,1977        | G.G. Richards  |
| Buckhorn No. 2 | 16           | 459               | "                  | "              |
| Buckhorn No. 3 | 2            | 460               | "                  | "              |

GEOLOGY

Regional mapping by Sutherland-Brown 1968, B.C. Dept. of Mines Bull.#54 indicated that the entire Buckhorn area is underlain by rocks of the Karmutsen Formation of Triassic age. The Karmutsen is described as a submarine volcanic succession comprised principally of tholeiitic basalt but containing interbedded aquagene tuffs and minor sediments. More detailed work at Buckhorn and within an area extending 16 km southeast to Security Inlet has indicated the presence of a mappable although possibly discontinuous sedimentary succession within the Karmutsen. These sedimentary rocks are present on the Buckhorn Property and appear to underlie Nobals Creek valley in the areas of greatest interest.

The sedimentary succession includes massive grey and black limestones, flaggy black limestone and limy argillite, thin bedded limy argillite and non calcareous argillite. In total, they closely resemble rocks of the Kunga Formation of Upper Triassic-Jurassic age, but none of the typical Kunga fossils were found at Buckhorn. Distinctive Kunga ammonites and pelecypods were noted in similar rocks some 8 km southeast of Buckhorn, north of Boomchain Bay, where the rocks are approximately on strike with the Buckhorn succession, and may well be an extension of the same sequence.





BUCKHORN PROSPECT  
CLAIM MAP  
103F/2E

Mapping has also indicated the presence of a pluton composed of coarse grained grey diorite exposed on the shore-line and along claim lines in the southwestern part of the Property. Narrow alteration zones and quartz veins cut these diorites.

Numerous small fine grained light to medium grey feldspar porphyry dykes were noted in outcrops above the bend in Nobals Creek. These typically contain disseminated pyrite and in some instances quartz-pyrite veinlets. These dykes appear to bear a close spatial relationship to the gold-arsenic geochemical anomalies.

#### DRILL EQUIPMENT AND TECHNIQUE

The drill rig used by Tonto consisted of an Atlas Copco type 51 hammer mounted on a Gardner Denver unit and powered by a 750 c.f.m. compressor. Hole diameter in bedrock was 2". Cuttings were removed from the holes by flushing with water during drilling and after each 10 foot run. The sludge was directed into an electric splitter which diverted a 1/8th cut into a garbage can. Excess water was poured off and the sample for analysis was then transferred to a 12" X 18" canvas bag where the remaining water was squeezed off through the bag.

#### GEOLOGY OF PERCUSSION DRILL HOLES

Holes BH#5 - 8 reached bedrock after penetrating between 52 and 140 feet of overburden consisting of alluvial sand, gravel and clay. A sample was collected during each 10 foot run and a cut of the chips was examined under a binocular microscope. Logs of observations are attached.

Rocks penetrated in all of the holes are dark greenish grey volcanics of the Karmutsen formation containing zones of chloritization, bleaching and some silicification. Disseminated pyrite occurs throughout each of the holes and fracture controlled pyrite was noted in hole BH#6.

On the basis of the geology shown on the accompanying map on which the drill holes are plotted, rocks of the Karmutsen formation were not anticipated within the area where penetrations occurred. Sediments of the Kunga formation occur on both sides of the valley in this area and appeared to underlie the covered area. Major faulting along the valley may have introduced a "slice" of Karmutsen into the Kunga; alternatively the unconformity may be involved.

#### GEOCHEMISTRY

Rock chip samples obtained for each 10 foot run were analysed for gold, arsenic, mercury by Bondar Clegg and Company using the following standard procedures:

- Arsenic: Perchloric Nitric-Colorimetric
- Mercury: Controlled Aqua Regia - Closed Cell Atomic Absorption
- Gold: Fire Assay and Hot Aqua Regia - Atomic Absorption

Results for all these elements are anomalously low in view of the much higher surface geochem values in the surrounding areas. Results are attached with drill holes and assay intervals added.

CONCLUSIONS

The results of the percussion drilling are non-conclusive in as much as only one small part of the potential mineralized area has been tested. The areas shown to be of interest in the initial survey remain valid targets and warrant further consideration.

Within the lower area consistently deep overburden has been demonstrated and effectively restricts future exploration to more costly diamond drilling. One or two angle holes crossing the projected structures should be considered.

Geophysics might still be considered as a preliminary stage in the upper valley to attempt to define structures prior to diamond drilling.

Respectfully Submitted



J.S. Christie, Ph.D.

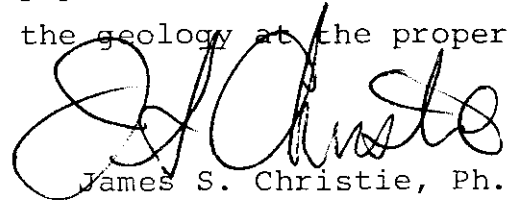
REFERENCES:

Christie, J.S., Richards, G.G. - The Buckhorn Gold Prospect -  
Assessment Report dated November 24, 1977.

CERTIFICATE OF QUALIFICATIONS

I, James S. Christie of Vancouver, British Columbia do hereby certify that,

1. I am a Professional Geologist residing at 3921 W. 31st Ave., Vancouver, B.C. V6S 1Y4
2. I am a graduate of the University of British Columbia B.Sc. Honours Geology - 1965, Ph.D. Geology - 1973.
3. I have practiced my profession as a mining exploration geologist, continuously since 1965.
4. I am a Fellow of the Geological Association of Canada.
5. I am a Member of the Geological Society of America.
6. This report is based on my personal knowledge of the district, and mapping of the geology at the property.



James S. Christie, Ph.D.  
December 14, 1979

ITEMIZED COST STATEMENT

|   |   |                  |
|---|---|------------------|
| J. Christie, geologist                                    | 10,11-30 Sept., 1-7,30 Oct.<br>28½ days @ \$150/day | \$ 4,275.00      |
| S. Courte, assistant                                      | 12-30 Sept., 1-7 Oct.<br>26 days @ \$ 80/day        | 2,000.00         |
| W. Lillies, "   | 3-7 Oct.<br>5 days @ \$75/day                       | 375.00           |
| Meals: geological & slash crew -                          | 59½ man days @ \$20                                 | 1,190.00         |
| drill & skidder crew -                                    | 80 man days @ \$20                                  | 1,600.00         |
| Airfares: Vancouver to Sandspit                           |   | 375.00           |
| Motels  |   | 195.18           |
| Chainsaw Rental: 30 saw days @ \$6/day                    |   | 180.00           |
| Block Rental: Rowford                                     |   | 60.00            |
| Truck and Boat Rentals                                    |   | 900.00           |
| Sampling Equipment, Field Supplies, Sample Bags and Misc. |   | 1,536.65         |
| Camp Supplies and Rentals                                 |   | 300.05           |
| Geochem - Bondar Clegg                                    |   | 518.04           |
| Radiophones - Communications                              |   | 223.62           |
| Freight   |   | 201.67           |
| Reports   |   | <u>550.00</u>    |
|   |   | <u>14,560.21</u> |
| <u>Contract Costs</u>                                     |   |                  |
| Tonto Drilling Ltd.                                       | 15 Sept. 4,056.67                                   |                  |
|   | 30 Sept. 17,803.29                                  |                  |
|   | 15 Oct. <u>3,750.00</u>                             | 25,609.96        |
| Cross Creek Logging (Skidder & Opnr)                      |   |                  |
|   | 30 Sept. 3,530.00                                   |                  |
|   | 15 Oct. <u>1,080.00</u>                             | 4,610.00         |
| Mitco Marine Ltd. (barge transport)                       |   |                  |
|   | 15 Oct. 5,760.00                                    | 5,760.00         |

## Queen Charlotte Helicopters Ltd.

|          |               |          |
|----------|---------------|----------|
| 16 Sept. | 921.48        |          |
| 17 Sept. | 552.85        |          |
| 19 Sept. | 236.80        |          |
| 25 Sept. | 177.50        |          |
| 29 Sept. | 207.20        |          |
| 2 Oct.   | 769.20        |          |
| 5 Oct.   | 500.07        |          |
| 7 Oct.   | <u>281.40</u> | 3,646.50 |

Chevron Costs

|                                       |              |                    |
|---------------------------------------|--------------|--------------------|
| Time: D. Arscott, 12-16 Sept., 4 days | 600.00       |                    |
| Expenses:                             |              |                    |
| Air                                   | 79.90        |                    |
| Hotel                                 | 60.90        |                    |
| Food                                  | <u>17.00</u> | <u>157.80</u>      |
|                                       |              | <u>757.80</u>      |
| TOTAL                                 |              | <u>\$54,944.47</u> |



APPENDIX I

GEOCHEM RESULTS



# BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-352667

## As; Perchloric Nitric Geochemical Lab Report

Hg; Controlled Aqua Regia

Au; Fire Assay & Hot Aqua Regia

Extraction Hg; Closed Cell Atomic Absorption

Method Au; Atomic Absorption As; Colorimetric

Report No. 29 - 2283A *BUCHHOEN PERCUSSION DRILLING*

From JMT Services Corp.

Fraction Used \_\_\_\_\_

Date November 1 19 79

| SAMPLE NO.                           | As ppm | Hg ppB | Au ppB | SAMPLE NO.                         | As ppm | Hg ppB | Au ppB |
|--------------------------------------|--------|--------|--------|------------------------------------|--------|--------|--------|
| <i>HOLE - BH #5</i><br>BH - 1(52-60) | < 2    | 40     | < 5    | BH - 31(210-220)                   | < 2    | 135    | < 5    |
| 2 (60-70)                            | < 2    | 55     | < 5    | 32(220-230)                        | < 2    | 155    | < 5    |
| 3(70-80)                             | 2      | 25     | < 5    | 33(230-240)                        | 2      | 95     | < 5    |
| 4(80-90)                             | 3      | 45     | < 5    | <i>HOLE - BH #8</i><br>34(140-150) | 6      | 105    | < 5    |
| 5(90-100)                            | < 2    | 50     | < 5    | 35(150-160)                        | < 2    | 65     | < 5    |
| 6(100-110)                           | 2      | 10     | < 5    | 36(160-170)                        | 3      | 70     | < 5    |
| 7(110-120)                           | < 2    | 25     | < 5    | 37(170-180)                        | 3      | 50     | < 5    |
| 8(120-130)                           | 3      | 10     | < 5    | 38(180-190)                        | 3      | 45     | < 5    |
| 9(130-140)                           | < 2    | 10     | < 5    | 39(190-200)                        | 2      | 35     | < 5    |
| 10(140-150)                          | < 2    | 20     | < 5    | 40(200-210)                        | 3      | 55     | < 5    |
| 11(150-160)                          | < 2    | 25     | < 5    | 41(210-220)                        | 4      | 25     | < 5    |
| <i>HOLE - BH #6</i><br>12(70-80)     | 6      | 65     | < 5    | 42(220-230)                        | 3      | 40     | < 5    |
| 13 (80-90)                           | 8      | 175    | 5      |                                    |        |        |        |
| 14 (90-100)                          | 33     | 85     | 10     |                                    |        |        |        |
| 15 (100-110)                         | 320    | 60     | 200    |                                    |        |        |        |
| 16 (110-120)                         | 32     | 75     | 15     |                                    |        |        |        |
| 17 (120-130)                         | 11     | 60     | 5      |                                    |        |        |        |
| 18 (130-140)                         | 3      | 35     | 15     |                                    |        |        |        |
| 19 (140-150)                         | 5      | 50     | 5      |                                    |        |        |        |
| 20 (150-160)                         | < 2    | 35     | < 5    |                                    |        |        |        |
| 21 (160-170)                         | < 2    | 55     | < 5    |                                    |        |        |        |
| <i>HOLE - BH #7</i><br>22(120-130)   | 2      | 90     | < 5    |                                    |        |        |        |
| 23(130-140)                          | < 2    | 90     | < 5    |                                    |        |        |        |
| 24(140-150)                          | < 2    | 50     | < 5    |                                    |        |        |        |
| 25(150-160)                          | < 2    | 95     | < 5    |                                    |        |        |        |
| 26(160-170)                          | < 2    | 40     | < 5    |                                    |        |        |        |
| 27(170-180)                          | < 2    | 70     | < 5    |                                    |        |        |        |
| 28(180-190)                          | < 2    | 50     | < 5    |                                    |        |        |        |
| 29(190-200)                          | < 2    | 45     | < 5    |                                    |        |        |        |
| 30(200-210)                          | < 2    | 65     | < 5    |                                    |        |        |        |

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7951**

APPENDIX II

BUCKHORN PERCUSSION DRILL LOGS

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BUCKHORN PERCUSSION DRILL LOGS

- HOLE BH#1 - (0-120) - casing  
- unable to penetrate overburden.
- HOLE BH#2 - (0-160) - casing  
- unable to penetrate overburden.
- HOLE BH#3 - (0-150) - casing  
- unable to penetrate overburden.
- HOLE BH#4 - (0-140) - casing  
- unable to penetrate overburden.
- HOLE BH#5 - (0- 52) - casing  
52- 60 - Karmutsen andesite - chloritized bleaching  
60- 70 with disseminated pyrite up to  
70- 80 1% - some silicification.  
80- 90 - " "  
90-100 - more pyrite  
100-110 - less pyrite and bleaching  
110-120 - as (52-60)  
120-130 - "  
130-140 - "  
140-150 - "  
150-160 - "
- Panned concentrate - pyrite only sulfide present.
- HOLE BH#6 - (0- 70) - casing  
70- 80 - greenish grey andesite - light grey to  
80- 90 pinkish grey silicification - disseminated  
pyrite.  
90-100 - as above but some fracture pyrite  
100-110 - as above but more pyrite & bleaching  
110-120 - as (70-80)  
120-130 - " "  
130-140 - " " but stronger bleaching and pyrite  
140-150 - pervasive bleaching - some silicification  
150-160 - as above  
160-170 - " "
- Panned concentrate - pyrite only sulfide identified.
- HOLE BH#7 - ( 0-120) - casing  
120-130 - dark green Karmutsen andesite - trace  
130-140 disseminated pyrite - minor bleaching  
140-150 - as above  
150-160 - "  
160-170 - "  
170-180 - "  
180-190 - "  
190-200 - "  
200-210 - strong chl & epid - more py.  
210-220 - as (120-130) - weak silicification  
220-230 - as above
- Panned concentrate - pyrite only sulfide identified.

HOLE BH#8 - (0-140) - casing  
140-150 - green grey andesite with some silicification  
and dis. py.  
150-160 - as above  
160-170 - "  
170-180 - strong chlorite and bleaching  
180-190 - as (140-150)  
190-200 - as above but more pyrite  
200-210 - stronger chlorite - more pyrite - lighter  
210-220 green grey  
220-230 - as above  
230-240 - as above

Panned concentrate - pyrite is only sulfide.

HOLE BH#9 - (0-140) - casing - unable to penetrate overburden

HOLE BH#10- (0-140) - casing - unable to penetrate overburden

HOLE BH#11- (0-140) - casing - unable to penetrate overburden

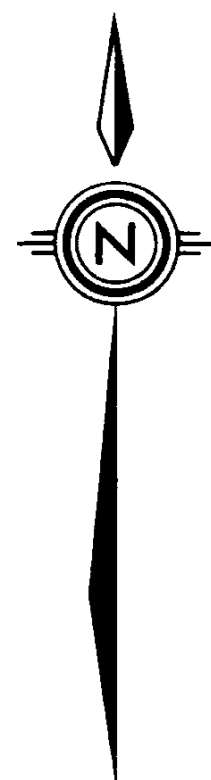
BUCK CHANNEL

\*

\*

BUCK POINT

PACIFIC OCEAN



| LEGEND |                                       |
|--------|---------------------------------------|
|        | Silicified Karmutsen                  |
|        | Diorite                               |
|        | Kunga (?) argillite                   |
|        | Kunga (?) black lms. & limy argillite |
|        | Kunga (?) massive grey limestone      |
|        | Karmutsen greenstone & argillite      |
|        | Rock chip (float)                     |
|        | Rock chip                             |
|        | Soil sample                           |
|        | Silt sample                           |
|        | Foliation                             |
|        | Bedding                               |
|        | Fault                                 |
|        | Claim Post                            |
|        | 1379 Percussion Drill Hole            |
|        | Drill Trail                           |

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7951**

J.M.T. SERVICES CORPORATION  
BUKHORN GOLD PROSPECT  
**GEOLOGY AND DRILLSITES**

NTS 103C/16W  
MAP 1. LAT. 53° 0' N  
LON. 132° 35' W

SCALE IN FEET  
0 100 200 300 400 500  
0 400 800 1200 1600

NOTE: Control Survey by air-photo enlargement compass, topofil, barometer.

To Accompany Assessment Report  
by: J. S. Christie  
G. G. Richards

