

1221

BUFFALO RESOURCES LTD.

ASSESSMENT REPORT ON THE ARC 3 AND ARC 4 CLAIMS

LIARD MINING DIVISION

BRITISH COLUMBIA

NTS 104 - B / 10E

W. Longitude: 130⁰ 31'

N. Latitude: 56⁰ 40'

FOR

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NOVEMBER 24, 1989

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SUMMARY

The Buffalo Resources Ltd. property, consisting of two contiguous mineral claims named the Arc 3 and 4 totalling 30 units, lies approximately 300 kilometers north of Smithers, British Columbia. Access is via road to Bell II on Highway 37, at Bell Irving Creek crossing, a distance of approximately 275 kilometers northwest of Smithers. From this point the claims can be accessed by helicopter for a distance of 33 air kilometers to the southwest. An alternate access is via fixed-wing aircraft to the Bronson Creek airstrip on the south side of the Iskut River and then by helicopter to the property.

The Buffalo Resources property lies within British Columbia's "Golden Triangle" which contains numerous significant mineral deposits which are currently being developed by surface and underground exploration as well as Skyline's Stonehouse Gold Zone which is currently in production.

The Arc 3 & 4 claims lie within the westernmost part of the Intermontane Tectonic Belt, close to the boundary of the Coastal Crystalline Tectonic Belt. The property is underlain by a suite of volcanic and sedimentary rocks which are intruded by a major stock of dioritic composition. A major north-south trending lineament splay off the Harrymel Creek and crosses the subject property. Numerous northeast-southwest lineaments splay off this major lineament which is interpreted as a fault structure.

A small exploration program, including silt and rock sampling and a limited geological examination, was undertaken by the writer during late August-early September of 1989. A total of eleven silt samples and three rock samples were taken on the Arc 4 claim.

The limited sampling conducted in the 1989 program did not return any anomalous values in Ag, As, Cu, Pb, Sb, Zn, or Au. However, these samples were only taken on the Arc 4 claim in an area of black siltstone outcrop. Further exploration work is recommended to fully evaluate the entire property, especially in areas straddling the contact of volcanics with sedimentary rocks, as this is the contact zone which hosts mineralized horizons in the area.

INTRODUCTION

During late August-early September 1989, a program of limited geological mapping and geochemical sampling was carried out on the Arc 4 claim.

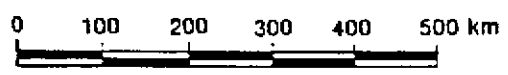
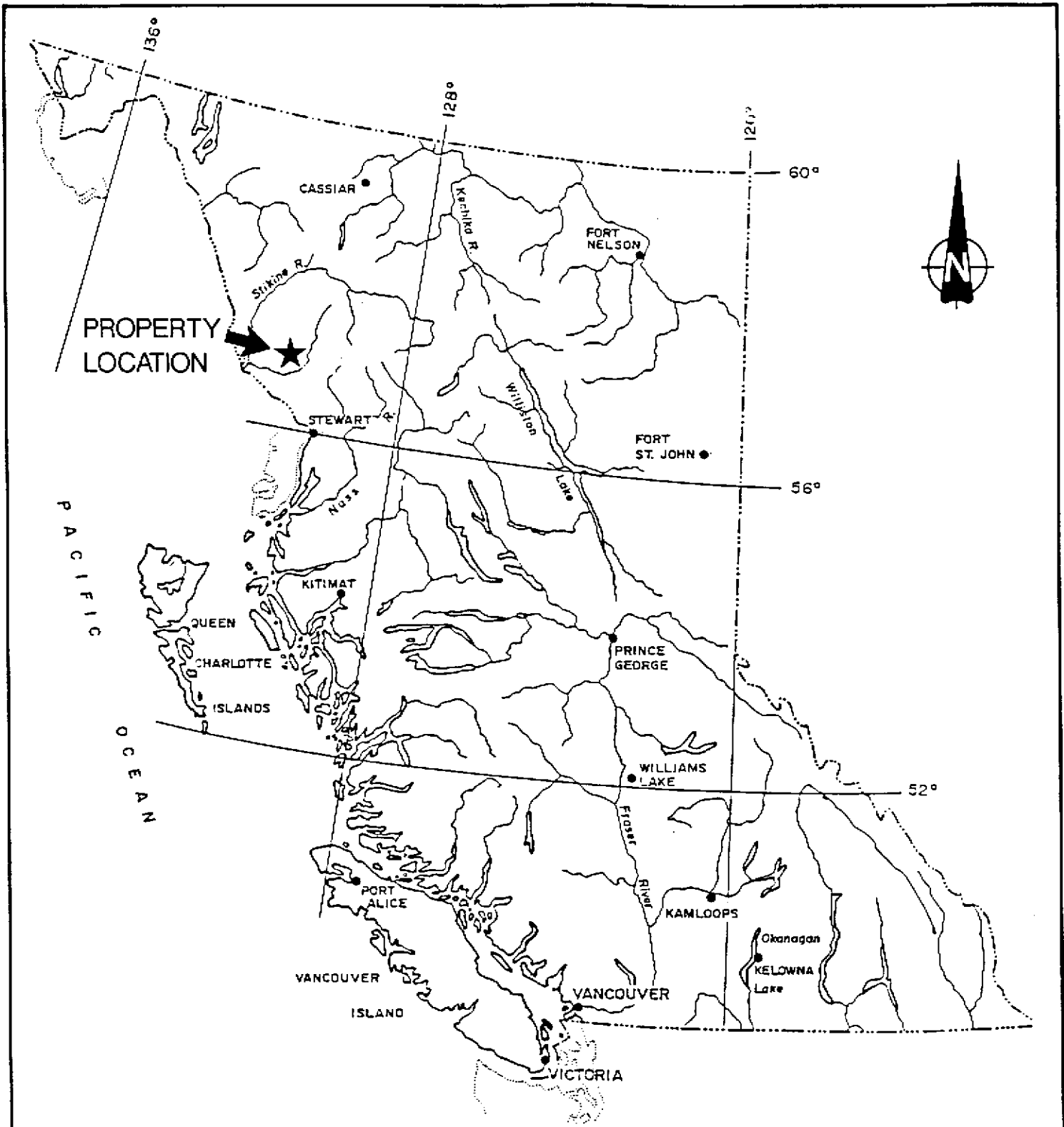
LOCATION AND ACCESS


The Arc 3-4 claims are located within the eastern boundary of the Coast Range Mountains (Figures 1 and 2). The subject property is approximately 300 air kilometers northwest of Smithers, British Columbia, 125 air kilometers east of Wrangell, Alaska and 35 air kilometers east from the Bronson Creek airstrip. The northwest corner of the claims is about 7 kilometers southeast of the Iskut River. The claims lie within the Liard Mining Division, on NTS Map 104-B/10E.

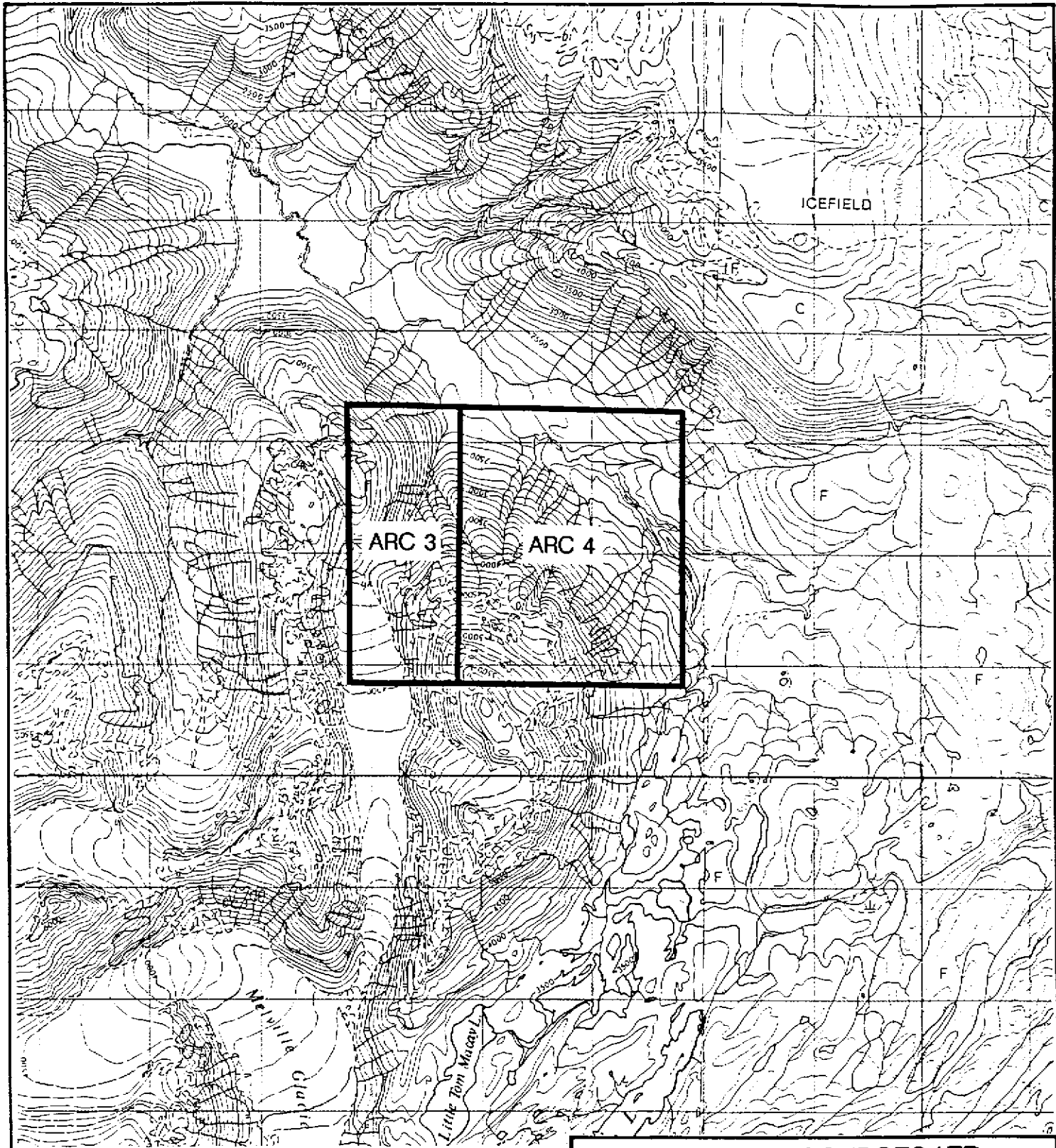
The area can be accessed by using fixed wing aircraft from Smithers, Wrangell, Terrace or Stewart to gravel airstrips at Bronson Creek, Snippaker Creek and Johnny Mountain, located on the southern side of the Iskut River. Access to the subject property can also be obtained by truck from Smithers for a distance of 275 kilometers to Bell II on Highway 37 at the Bell Irving Creek crossing. The claims can be reached by helicopter from Bell II, a distance of 33 air kilometers to the southwest.

PROPERTY AND OWNERSHIP

The property consists of two (2) contiguous mineral claims totalling 30 units, held in the name of Buffalo Resources Ltd.



BUFFALO RESOURCES LTD			
ARC 3 & ARC 4 CLAIMS			
LIARD M.D., B.C.			
GENERAL LOCATION MAP			
 MTEC RESOURCE MANAGEMENT LTD.	SCALE: As shown	N.T.S. 104B/10E	FIGURE No: 1
	DWN. BY: H.V.	DATE: Nov/1989	
	CHKD. BY: V.Kuran	PROJECT No: 89BC027	FILE No:



ARC 3 ARC 4

ICEFIELD



BUFFALO RESOURCES LTD

ARC 3 & ARC 4 CLAIMS
LIARD MD., B.C.

TOPOGRAPHIC MAP



M-TEC
RESOURCE MANAGEMENT LTD.

SCALE: 1 : 50,000	N.T.S.: 1048/10E	FIGURE No: 2
DWN. BY: H.V.	DATE: Nov./1989	FILE No:
CHKD. BY: V.Kuran	PROJECT No: 89BC027	

The property is recorded at the British Columbia Ministry of Energy, Mines and Petroleum Resources as follows:

<u>CLAIM</u>	<u>UNITS</u>	<u>RECORD No.</u>	<u>RECORD DATE</u>
Arc 3	10	5611	December 31, 1988
Arc 4	20	5612	December 31, 1988

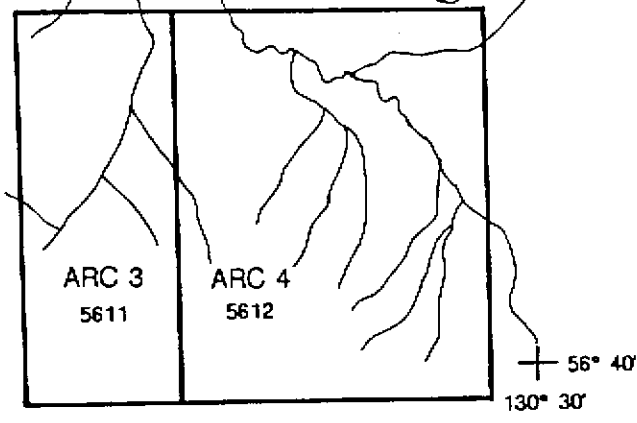
The entire property is shown on the Mineral Claim Map 104-B/10E and on Figure 3 of the present report.


PHYSIOGRAPHY

The ARC 3 and ARC 4 claims are situated in a mountainous, heavily glaciated terrain. Relief ranges from 670 meters (2,200 feet) above sea level along the northern boundary to approximately 1,710 meters (5,600 feet) along the southern boundary. The Richard Glacier lies immediately to the southwest of the claim area.

Tree line is at approximately 1,200 meters ASL. Dense vegetation below this consists predominantly of spruce, fir and hemlock with an undergrowth of devil's club. Steep, erosional side creeks provide the best access and geologic control in the area.

Snow cover is a limiting factor on the exploration field season. The period of least snow cover occurs between July and mid-September.



BUFFALO RESOURCES LTD			
ARC 3 & ARC 4 CLAIMS			
LIARD M.D., B.C.			
CLAIM MAP			
 M-TEC RESOURCE MANAGEMENT LTD.	SCALE: 1 : 50,000	N.T.S.: 104B/10E	FIGURE No: 3
	OWN. BY: H.V.	DATE: Nov./1989	FILE No:
	CHKD. BY: V.Kuran	PROJECT No: 89BC027	

HISTORY AND PREVIOUS WORK

Exploration for precious metals in the Sulphurets Creek area dates back to the late 1800's when placer gold was discovered in the upper reaches of the Unuk River. By 1898, several prospectors had entered the area and the first mineral claims, the Cumberland and Globe Groups, were staked by H.W. Ketchum and L. Brant. These claims proved to be attractive and by 1901, the Unuk River Mining and Dredging Company had purchased them and established a stamp mill on the Globe group. A road between Burroughs Bay and Sulphurets Creek was also begun by this company, but was never completed.

Extensive gossans in the upper reaches of Sulphurets Creek attracted Bruce and Jack Johnson to stake claims in this area in 1935. Hence, the name "Brucejack Lake".

The region was quiet again until 1960 when search for porphyry copper deposits led Newmont Mines to conduct a helicopter borne magnetic survey in the Sulphurets area. Claims were staked on behalf of Granduc Mines Ltd. at the Sulphurets Creek headwaters, and between 1961 and 1967, Granduc and Newmont conducted geological and geophysical work on this ground. More claims were acquired by Granduc and their exploration effort continued until 1970.

The jump in precious metal prices renewed activity, and in the period of 1975 to 1977, Texasgulf Inc. and Granduc Mines both conducted exploration in the Sulphurets area. In 1979, Granduc optioned their claims to Esso Resources Canada Ltd. who spent more than \$2 million over 5 years in exploration for precious metals.

The Esso-optioned claims reverted back to Granduc and were subsequently optioned under joint venture to Lacana Mining Corporation and Newhawk Gold Mines Ltd.

In 1985, the Lacana/Newhawk joint venture drilled 13,066 feet in the Brucejack Lake area. This effort along with the 26,068 feet previously drilled has outlined mineral reserves of 1,011,543 tonnes grading 0.826 ounces gold equivalent per tonne (silver:gold ratio = 50:1).

In addition to these mineral reserves, the 1985 Lacana/Newhawk project located the new Snowfields Zone. Company reports state that limited drilling on this bulk tonnage target has indicated over 7,000,000 tonnes grading 0.083 oz Au/tonne (Sorbara, 1987).

During 1986, 1,500 feet of underground development drifting and crosscutting was completed on the West Zone in order to obtain a bulk sample. The results showed an average grade of 0.225 oz Au/ton over 52.5 feet without including several high-grade pockets. These results were very encouraging and a winter road to Brucejack Lake was started early in 1987. A permanent camp has been established and more drilling and underground work is being conducted. The subject property lies about 26 kilometers to the northwest of the Lacana/Newhawk Brucejack claims.

Catear Mines established recently a pilot test mill on their Gold Wedge property, located 2 kilometers east of the Brucejack Zone. Published reserves are 373,224 tons grading 0.753 oz Au/t and 1.07 oz Ag/t and the geological potential is 1,000,000 tons grading 0.5 oz Au/t.

C.R. Harris (1985) summarizes the exploration's history of the Unuk River area, and more particularly of the Calpine Resources Inc.-Consolidated Stikine Silver Ltd.'s Eskay Creek property as follows:

" The property has a long history of exploration by various companies since discovery in 1932 by a party headed by Tom MacKay. The exploration has been principally directed to the location of high grade precious metal mineralization. Following is a brief summary of the work to date.

- 1934 Unuk Valley Gold Syndicate did some surface work on the #21 and #22 zones.
- 1935-38 Premier Mines drilled 10 diamond drill holes totaling 1,727' on the #21, #5 and #22 zones and added to the trenching.
- 1953 American Standard Mines did some surface work.
- 1963 Western Resources drove the Emma Crosscut and Drift for 360'.
- 1964 Canex Aerial Exploration drilled six underground diamond drill holes from the Emma Adit totaling 735'.
- 1965-72 Stikine Silver extended the Emma Drift 265' and added to trenching on the #22 zone.
- 1973 Kalco Valley Mines drilled seven diamond drill holes, totaling 983' on the north end of the #22 zone.
- 1975 Texasgulf performed geological, E.M. and magnetometer surveys.
- 1976 Texasgulf drilled seven diamond drill holes totaling 1,225 feet on the #5 and Emma Creek zones.
- 1979 May Ralph Industries high-graded trenches of the #22 zone and shipped 9.65 tons of picked ore to the Trail smelter.
- 1980-83 Ryan Exploration (U.S. Borax) performed soil and rock geochemical surveys and drilled three holes totaling 496m on the #22 zone.

Only two ore shipments have been recorded although several small test shipments are thought to have been made during the 1930's.

1971 Stikine Silver shipped 1.68 tons of picked ore, yielding: 0.3 oz gold, 239 oz silver, 64 lb lead, 94 lb zinc; assaying: 0.2 oz/t gold, 142.3 oz/t silver.

1979 May Ralph Industries shipped 9.65 tons of picked ore yielding: 40.62 oz gold, 819.54 oz silver, 907 lb lead, 2220 lb zinc; assaying: 4.208 oz/t gold, 84.90 oz/t silver."

In 1985, Kerrisdale Resources Ltd. carried out diamond drilling on the #21 and #22 zones, and in 1987 Consolidated Stikine Silver Ltd. conducted a soil sampling and trenching program on the Eskay Creek property.

During 1988 and 1989, the Eskay Creek property was extensively drilled by Calpine Resources Inc.-Consolidated Stikine Silver Ltd. and extremely promising results were reported from the #21 zone since hole 88-6 hit 96.5 feet grading 0.73 oz gold and 1.1 oz silver (Northern Miner, Nov. 7/88). In August 1989, Calpine released a 46 foot interval (hole 89-87) grading 1.67 oz gold (Northern Miner, Aug 14/89) and on August 28, 1989, results from hole 89-109 were reported in the Northern Miner as follows: "682 foot interval grading an average of 0.875 oz gold, 0.97 oz silver, 1.12% lead and 2.26% zinc. Within this interval is a 200.1 foot section averaging 2.877 oz gold, 0.85 oz silver, 1.86% lead and 3.44% zinc". Also reported in the Northern Miner (Sept. 4/89) is massive sulfide intersection located at the north end of the #21 Zone consisting of a 30 foot section and a 26 foot section of pyrite-galena-sphalerite-chalcopyrite massive sulfide mineralization. To date, no assays are available on this zone. The Buffalo Resources Ltd. property is located only 7 kilometers to the northwest of the Eskay Creek property.

REGIONAL GEOLOGY AND MINERALIZATION

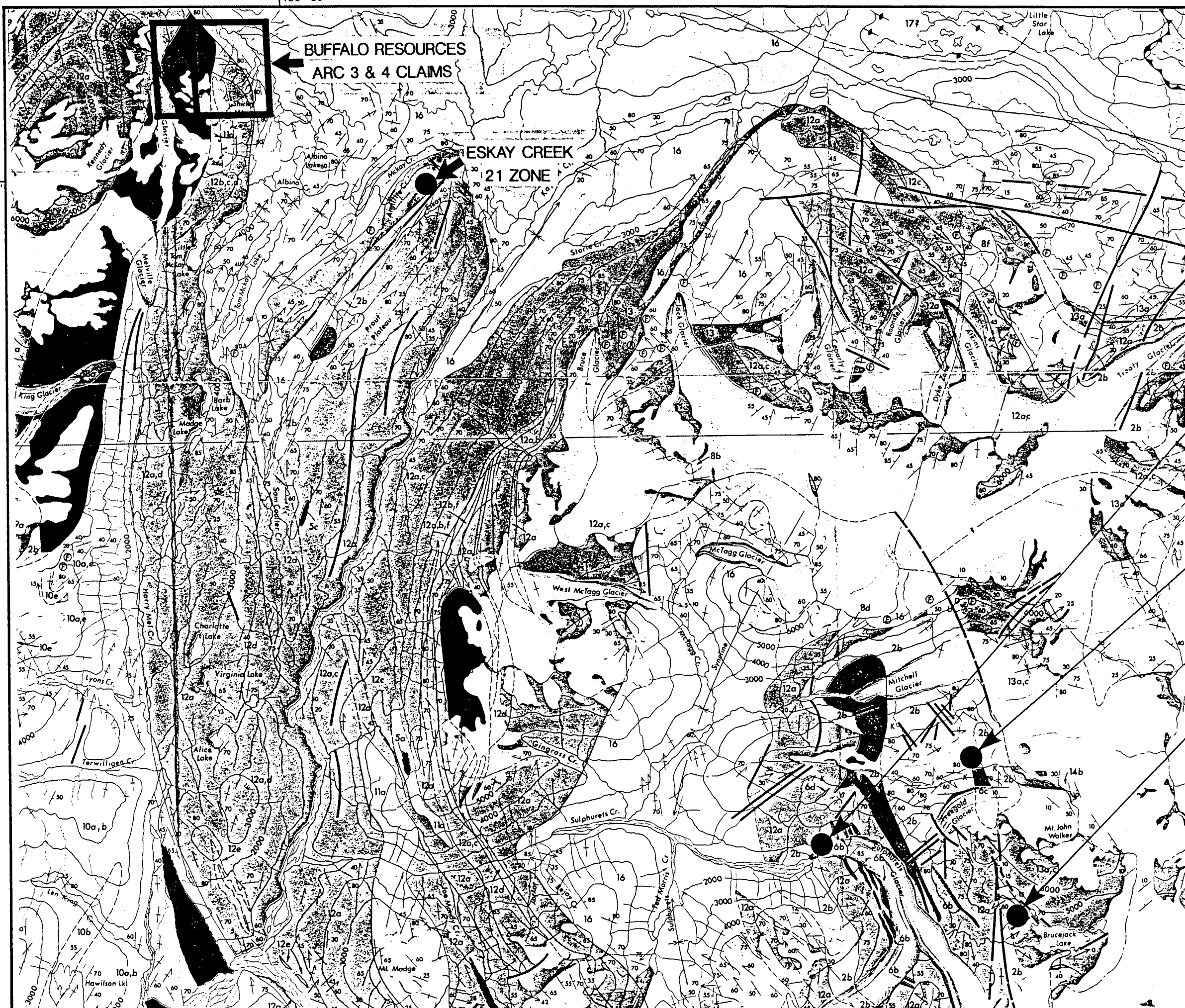
The subject property lies within the western most part of the Intermontane Tectonic Belt, close to its boundary with the Coastal Crystalline Tectonic Belt. As a result of the proximity of this area to a regional tectonic boundary, geologic relationships tend to be quite complex. The geology of this area (Figure 4) has been studied by Kerr (1930, 1948), and by Grove (1986), and is represented in Geological Survey of Canada Maps 9-1957, 1418A and 1505A.

The Sulphurets-Unuk River area is underlain by Upper Triassic to Lower Jurassic strata which Grove refers to as the Stewart Complex. The oldest rocks consist of Upper Triassic epiclastic volcanics, marbles, siltstones, and sandstones which are overlain by sedimentary and volcanic rocks of the Hazelton Group. In general the Early to Middle Mesozoic strata are referred to as the Lower Jurassic Unuk River Formation, the Middle Jurassic Betty Creek and Salmon River Formations, and the Upper Jurassic Nass Formation (Grove, 1986).

The Unuk River Formation forms an angular unconformity with the underlying Upper Triassic units and consists mainly of lithic tuffs, pillow lavas, and thin bedded siltstones. The Betty Creek Formation unconformably overlies the Unuk River Formation and it consists of bright red and green volcanoclastic agglomerates, with minor intercalated pillow lavas, andesitic flows, chert, and some carbonate lenses. A thick assemblage of intensely folded siltstones and lithic wackes form the Salmon River Formation and they are in conformable to disconformable contact with the underlying Betty Creek Formation. Unconformably overlying the Salmon River Formation is the Nass Formation consisting of slightly deformed argillites.

130° 30'

**BUFFALO RESOURCES
ARC 3 & 4 CLAIMS**



SULPHURETS GOLD ZONE
20,000,000 tons of
0.08 oz Au/ton
indicated potential

SNOWFIELD ZONE
25,000,000 tons of
0.08 oz Au/ton
indicated potential

**BRUCEJACK LAKE
GOLD/SILVER ZONE**
1,000,000 tons of
0.70 oz Au/ton
drill indicated

BUFFALO RESOURCES LTD			
ARC 3 & ARC 4 CLAIMS			
LIARD MD., B.C.			
REGIONAL GEOLOGY and MINERAL DEPOSITS			
 H-TEC RESOURCE MANAGEMENT LTD.	SCALE: As shown	N.T.S.: 104B	FIGURE No: 4
	DWN. BY: H.V.	DATE: Nov./1989	
	CHKD. BY: V. Kuran	PROJECT No: 89BC027	FILE No:

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

QUATERNARY

PLEISTOCENE AND RECENT

18 BASALT FLOWS

JURASSIC

HAZELTON GROUP

UPPER JURASSIC

NASS FORMATION

17 SILTSTONE, GREYWACKE, SANDSTONE, SOME CALCARENITE, ARGILLITE, CONGLOMERATE, MINOR LIMESTONE, MINOR COAL (INCLUDING EQUIVALENT SHALE, PHYLLITE, AND SCHIST)

MIDDLE JURASSIC

SALMON RIVER FORMATION

16 SILTSTONE, GREYWACKE, SANDSTONE, SOME CALCARENITE, MINOR LIMESTONE, ARGILLITE, CONLOMERATE, LITTORAL DEPOSITS

BETTY CREEK FORMATION

14 PILLOW LAVA, BROKEN PILLOW BRECCIA (a); ANDESITIC AND BASALTIC FLOWS (b)

13 GREEN, RED, PURPLE, AND BLACK VOLCANIC BRECCIA, CONLOMERATE, SANDSTONE, AND SILTSTONE (a); CRYSTAL AND LITHIC TUFF (b); SILTSTONE (c); MINOR CHERT AND LIMESTONE (INCLUDES SOME LAVA (+14)) (d)

LOWER JURASSIC

UNUK RIVER FORMATION

12 GREEN, RED, AND PURPLE VOLCANIC BRECCIA, CONGLOMERATE, SANDSTONE, AND SILTSTONE (a); CRYSTAL AND LITHIC TUFF (b); SANDSTONE (c); CONGLOMERATE (d); LIMESTONE (e); CHERT (f); MINOR COAL (g)

11 PILLOW LAVA (a); VOLCANIC FLOWS (b)

TRIASSIC

UPPER TRIASSIC

TAKLA GROUP (?)

10 SILTSTONE, SANDSTONE, CONGLOMERATE (a); VOLCANIC SILTSTONE, SANDSTONE, CONLOMERATE (b); AND SOME BRECCIA (c); CRYSTAL AND LITHIC TUFF (d); LIMESTONE (e)

PLUTONIC ROCKS

EOCENE (STOCKS, ETC.) AND OLDER

8 QUARTZ DIORITE (a); GRANODIORITE (b); MONZONITE (c); QUARTZ MONZONITE (d); AUGITE DIORITE (e); FELDSPAR PORPHYRY (f)

7 COAST PLUTONIC COMPLEX: GRANODIORITE (a); QUARTZ DIORITE (b); QUARTZ MONZONITE, SOME GRANITE (c); MIGMATITE - AGMATITE (d)

JURASSIC

MIDDLE JURASSIC AND YOUNGER ?

6 GRANODIORITE (a); DIORITE (b); SYENODIORITE (c); MONZONITE (d); ALASKITE (e)

LOWER JURASSIC AND YOUNGER ?

DIORITE (a); SYENOGABBRO (b); SYENITE (c)

TRIASSIC

UPPER TRIASSIC AND YOUNGER ?

DIORITE (a); QUARTZ DIORITE (b); GRANODIORITE (c)

HORNBLLENDE PREDOMINANTH
BIOTITE PREDOMINANTB

METAMORPHIC ROCKS

JURASSIC

2 HORNFELS (a); PHYLLITE, SEMI-SCHIST, SCHIST (b); GNEISS (c); CATACLASITE, MYLONITE (d); TACTITE (e)

AREA UNMAPPED

SYMBOLS

- ADIT
- ANTICLINE (NORMAL, OVERTURNED)
- BEDDING (HORIZONTAL, INCLINED, VERTICAL, CONTORTED) + H H
- BOUNDARY MONUMENT
- CONTOURS (INTERVAL 1,000 FEET) 5000
- FAULT (DEFINED, APPROXIMATE)
- FAULT (THRUST)
- FAULT MOVEMENT (APPARENT)
- FOLD AXES, MINERAL LINEATION (HORIZONTAL, INCLINED) ↗ ↘
- FOSSIL LOCALITY ⊕
- GEOLOGICAL CONTACT (DEFINED, APPROXIMATE)
- GLACIAL STRIAE
- GRAVEL, SAND, OR MUD ⋯⋯
- HEIGHT IN FEET ABOVE MEAN SEA LEVEL +6234'
- INTERNATIONAL BOUNDARY
- JOINT SYSTEM (INCLINED, VERTICAL)
- MARSH
- MINING PROPERTY
- RIDGE TOP
- SCHISTOSITY (INCLINED, VERTICAL)
- SYNCLINE (NORMAL, OVERTURNED)
- TUNNEL
- VOLCANIC CONE *

The Stewart complex is commonly intruded by plutonic rocks of quartz monzonite to quartz diorite composition. These intrusions are Late Cretaceous to Early Tertiary in age. To the east of the main intrusive complex, smaller granitic plugs and stocks are prevalent.

The two most significant mineral deposits subject to current investigation in the Iskut River area are the Skyline Explorations Ltd. Reg property on the north slope of Johnny Mountain and the Delaware Resources-Cominco Ltd. joint venture Snip property near Bronson Creek. These properties are only five kilometers apart and appear to be similar in nature. These deposits are located approximately 39 kilometers west of the Arc 3 and 4 claims.

At least seven auriferous, mineral rich quartz veins are known to occur on Skyline's Reg property (Grove, 1986). These are collectively known as the Stonehouse Gold Zone. Grove (1988) estimated the known reserves to be 1,087,875 tons grading 0.70 oz Au/ton, 1+ oz Ag/ton and 1% Cu. Probable reserves were estimated at 4,000,000 tons at similar grades. After further detailed work was completed this reserve calculation was modified to 876,000 tons grading 0.55 oz gold with a cut-off grade of 0.3 oz gold. The deposit is presently in production and as of June 1989 was operating at a rate of 312 tons/day.

On the Delaware-Cominco joint venture Snip property, native gold occurs in a 1-10 meters thick discordant banded shear zone cutting a massively bedded feldspathic greywacke-siltstone sequence.

In the Sulphurets area, Shroeter (1983) examined the geology and mineralization in the Brucejack Lake area (approximately 26 km southeast of the ARC 3 and 4 claims) where hornblende syenites, alkali feldspar syenites and country rocks are cut by numerous north to northwesterly faults and are intensely altered with sericite, K-feldspar, silica, carbonate and chlorite. Five separate sulfide zones occur along a 7 kilometer belt with mineralization occurring in several styles, including low grade disseminations, epithermal stockworks and veins.

In the Unuk River Area, a geological cross section of the Calpine/Consolidated Stikine's Eskay Creek property, located 4.5 kilometers southeast of the Arc 3 and 4 claims, (Sorbara et al., 1989) shows that the hanging wall consists of interbedded breccias, pillow lavas and andesites up to 100 meters thick. The contact zone, a black argillite containing felsic fragments up to 2 inches across, is 10 to 15 meters thick with mineralization occurring at the base of the unit. In the north section of the contact #21 Zone, mineralization consists of electrum, aktashite (Cu-Pb-Zn-Ag-Hg sulphosalt) and honey coloured blebs of sphalerite rimmed with chlorite alteration. Free gold was observed in the core. Disseminations and needles of arsenopyrite predominate in the south section of the #21 contact zone with sections of massive stibnite, veinlets of stibnite and blebby realgar. Gold assays from this contact zone vary from .25 oz Au/t to several oz Au/t.

The footwall to the mineralized zone belongs to the Dillworth Formation and consists of a 100 to 150 meters thick rhyolite breccia lapilli tuff. Along strike to the north the lapilli fragments are finer. Alteration observed is silicification, strong K-spar and white mica. Gold assays from this section vary up to .25 oz Au/t. A 10 to 20 meters thick argillite layer separates the lapilli tuffs

from a felsic lithic tuff which varies from 60 to 100 meters thick. This latter unit, which may be the equivalent of the Betty Creek Formation, forms large gossans of pyritic material assaying from .15 to .25 oz Au/t. The bottom of the footwall is formed by thickly bedded siltstone containing pelecypods (dating in progress) and locally developed conglomerates. Drill intersections of the north part of the #21 Zone (hole 89-109) were recently reported in the Northern Miner as follows: "682 foot interval grading an average of 0.875 oz gold, 0.97 oz silver, 1.12% lead and 2.26% zinc. Within this interval is a 200.1 foot section averaging 2.877 oz gold, 0.85 oz silver, 1.86% lead and 3.44% zinc" (Northern Miner, Aug. 28/1989). The South Zone has been outlined for 300 meters along strike and 200 meters down dip and reserves have been calculated at 2.8 million metric tonnes at 0.25 oz Au/t and 3.0 oz Ag/t were reported. This South Zone is to be mined by open pit methods. No published reserves for the North Zone are available yet. The Northern Miner reports (Sept. 4, 1989) that drill hole 89-126 intersected at the far north end of the #21 Zone a disseminated to massive sulfide mineralized section of 445 feet in width, of which a 30-ft and a 26-ft section consisted of pyrite-galena-sphalerite massive sulfide mineralization. This may indicate a volcanogenic massive sulfide lense off the #21 Zone.

PROPERTY GEOLOGY AND MINERALIZATION

Geological Survey of Canada mapping indicates that the area of the subject property is underlain by a series of sedimentary and volcanics rocks intruded by dioritic intrusives (Figure 4).

Geological mapping of the claims confirmed the presence of the above suite of rocks (Figure 5) although the volcanic sequence was not identified during the limited mapping program. It also showed that the contact between the sedimentary rocks and the dioritic intrusives is misplaced on the regional geological map. A strong north-south trending lineament which splays off the Harrymel Creek is interpreted as a fault. This fault structure crosses the Arc 3 and Arc 4 claims and is considered by the writer to be an important exploration target. Numerous northeast-southwest lineaments in turn splay off this major lineament. This structural element is very important as the Eskay Creek mineralization appears to be related to strong structural breaks.

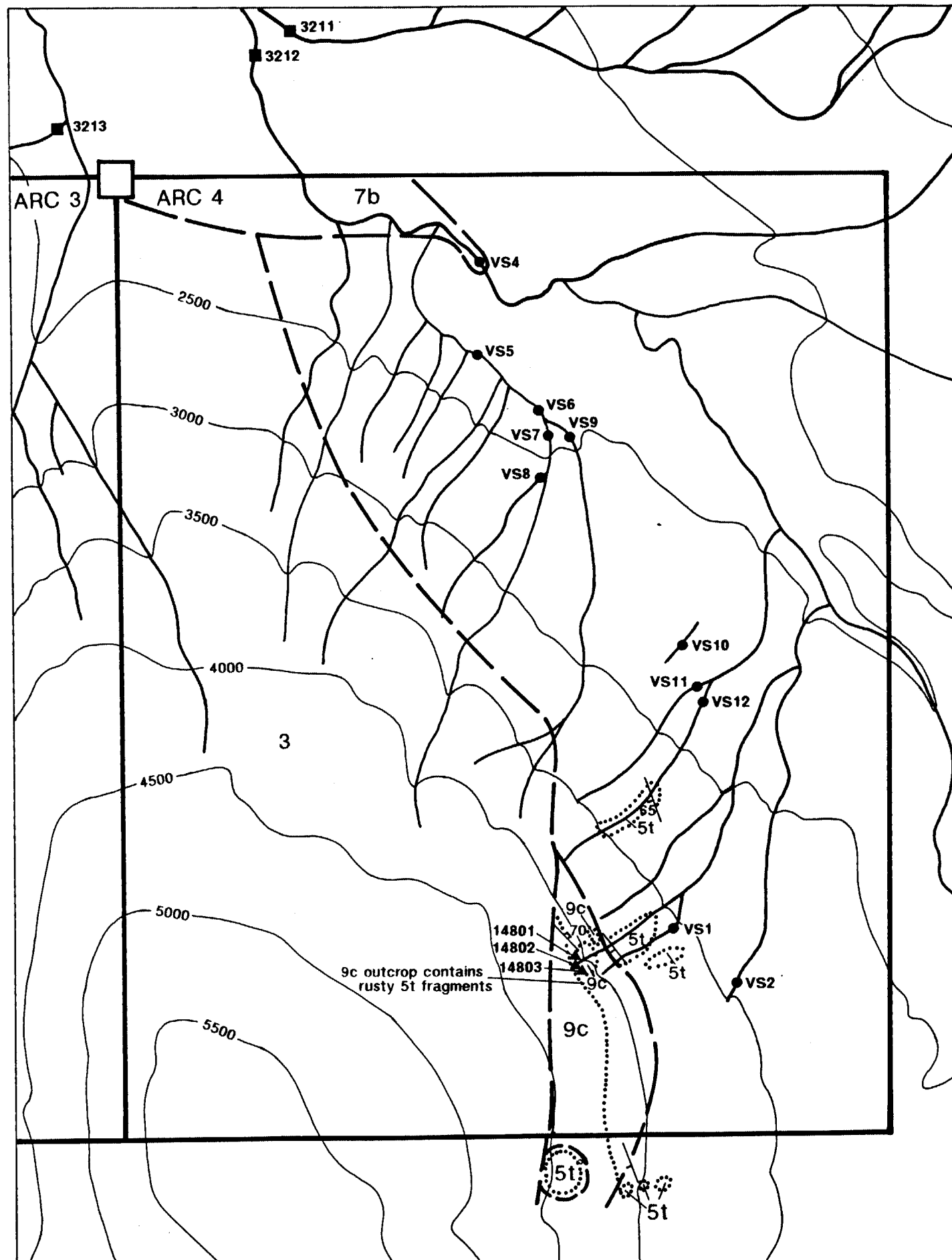
PROPERTY GEOCHEMISTRY

The British Columbia Regional Geochemistry Survey #18 (July 1988) shows four silt samples which were collected nearby the northern boundary of the Arc 3 and Arc 4 claims. The following table presents the results recorded in these samples.

TABLE 1

Sample #	Zn	Cu	Pb	Ag	As	Hg	Sb	Au
3211	146	36	11	.1	9	130	0.7	4
3212	140	40	15	.2	15	160	0.9	1
3213	120	39	9	.1	5	65	0.4	1
3214	225	54	14	.2	13	125	1.6	3

A total of eleven silt samples and three rock samples were taken during the 1989 program. The silt samples were taken on the Arc 4 claim to sample the major drainages near the base of the creeks. Silt samples were mainly composed of rock chips with minor silt material. The three rock samples were taken at the contact of an intrusive with argillite. Rusty, brecciated fragments of argillite occur



LEGEND

INTRUSIVE ROCKS

9c Melville hornblende-biotite diorite to quartzdiorite

VOLCANIC AND SEDIMENTARY ROCKS

QUATERNARY

PLEISTOCENE TO RECENT

7b Alluvium underlain by Pleistocene to Recent basalt

MIDDLE JURASSIC (TOARCICAN TO BAJOCIAN)

5t Salmon River Formation - Rhythmically bedded siltstone and shale (turbidite)

LOWER JURASSIC (PLIENSACHIAN TO TOARCICAN)

3 Betty Creek Formation - pyroclastic-epiclastic sequence.

SYMBOLS

- Geological Boundary, approximate, assumed
- Bedding, tops unknown inclined
- Joint
- Outcrop Pattern
- 3211 National geochemical reconnaissance sample site
- 14801 Rock Sample Location
- VS11 Silt Sample Location



BUFFALO RESOURCES LTD

ARC 3 & ARC 4 CLAIMS
LIARD M.D., B.C.

PROPERTY GEOLOGY &
SAMPLE LOCATION MAP



SCALE: As shown	N.T.S. 104B	FIGURE No: 5
OWN. BY: H.V.	DATE: Nov./1989	
CHKD. BY: V. Kuran	PROJECT No: 89BC027	FILE No:

argillite. Rusty, brecciated fragments of argillite occur within quartz veins at this contact. Rock sample descriptions are located in Appendix II. All of the samples were submitted to Min-En Laboratories Limited, North Vancouver, British Columbia for analysis. Samples were subjected to 6 element ICP analysis for Ag, As, Cu, Pb, Sb, and Zn. Samples were analyzed for gold by fire geochem. Analytical procedures are described in Appendix III.

Analytical data for the silt and rock samples are reported in Appendix IV. The sample locations are plotted on Figure 5 and the results are presented in Table 2. None

TABLE 2

<u>Sample Number</u>	<u>Sample Type</u>	Ag ppm	As ppm	Cu ppm	Pb ppm	Sb ppm	Zn ppm	Au ppb
14801	Rock-grab	2.4	16	43	29	2	93	4
14802	Rock-grab	.6	1	9	11	1	82	6
14803	Rock-grab	3.4	34	36	47	5	121	8
VS01	silt	.5	17	55	38	1	136	1
VS02	silt	.1	17	52	25	1	147	1
VS04	silt	.2	12	44	26	1	151	2
VS05	silt	1.9	6	60	34	4	120	2
VS06	silt	2.5	17	58	45	3	127	3
VS07	silt	.7	17	58	32	1	133	1
VS08	silt	2.8	13	63	47	4	146	4
VS09	silt	2.0	1	55	39	2	135	1
VS10	silt	1.5	1	34	40	1	131	3
VS11	silt	1.1	4	34	30	1	116	4
VS12	silt	.9	16	44	30	1	106	1

of the silt samples taken on the Arc 4 claim returned anomalous values for the seven elements - Ag, As, Cu, Pb, Sb, Zn, and Au. These samples were taken in creeks which drained an area of thin bedded, black siltstone outcrop. The rock samples were taken to test a light blue coating seen on the weathered surface of the siltstone to determine if it was hydrozincite. However, none of the samples contained anomalous zinc values.

CONCLUSIONS

The Arc 3 and Arc 4 mineral claims lie approximately 39 kilometers east of the Stonehouse and Snip gold deposits, 26 kilometers northwest of the Newhawk showing, and 4.5 kilometers northwest of the recent Calpine discovery. The Stonehouse gold zone proven reserves to date are 876,000 tons grading 0.55 oz Au/t, with a cut-off grade of 0.3 oz gold. This deposit is presently in production and in June 1989 produced at a rate of 312 tons/day.

The Arc 3 and Arc 4 claims, which are the subject of this report, are underlain by a sequence of volcanic and sedimentary rocks, which is intruded by a large diorite stock. Nearby properties exhibit similar suites of rocks, which host known gold showings and deposits in the region.

The limited sampling conducted in the 1989 program did not return any anomalous values in Ag, As, Cu, Pb, Sb, Zn, or Au. However, these samples were only taken on the Arc 4 claim in an area of black siltstone outcrop. An exploration program is warranted to fully evaluate the potential of the entire claim group, especially in areas which straddle volcanic-sediment contacts, to host precious metal deposits similar to those recently found in the region.

RECOMMENDATIONS

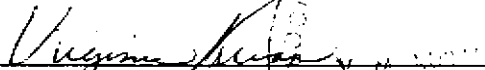
In order to evaluate the mineral and economic potential of the Buffalo Resources Ltd. property, a multi-phase exploration program is recommended.

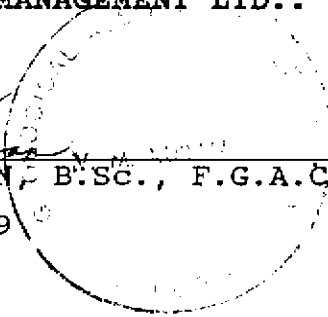
Phase I should include additional prospecting, detailed geological mapping and geochemical sampling (rocks, soils and stream sediments). Special attention should be paid to

areas straddling the contact of any volcanic package with the coarse clastic sedimentary rocks, as this is the contact zone which hosts mineralized horizons in the area.

Dependant upon positive results from the Phase I exploration program and upon a review of the data, ground geophysics should be carried out to help delineate any significant structure, followed by an exploratory diamond drilling program to define the geometry and grade characteristics of any identified mineralization.

Respectfully submitted,
HI-TEC RESOURCE MANAGEMENT LTD..


VIRGINIA M. KURAN, B.Sc., F.G.A.C.
November 15, 1989



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APPENDIX I

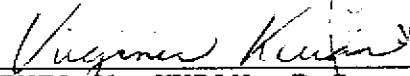
STATEMENT OF QUALIFICATIONS

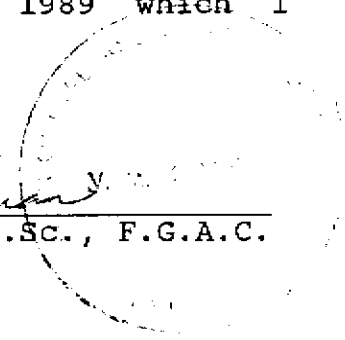
STATEMENT OF QUALIFICATIONS

I, VIRGINIA M. KURAN, of the Municipality of Maple Ridge, in the Province of British Columbia, hereby certify:

1. THAT I am a geologist residing at 25630 Bosonworth Avenue RR#1, Maple Ridge, British Columbia, Canada, V2X 7E6.
2. THAT I obtained an Honors Bachelor of Science degree in Geology from the University of British Columbia, in the City of Vancouver, in the Province of British Columbia, in 1980.
3. THAT I have practiced geology professionally from 1980 to 1989, including 2 years as an Exploration Geologist with Cominco Ltd.
4. THAT I am a registered Fellow of the Geological Association of Canada.
5. THAT this report is based upon a work program completed between August 30 and September 1, 1989 which I personally took part in.

SIGNED:


VIRGINIA M. KURAN, B.Sc., F.G.A.C.



November 28, 1989

APPENDIX II

ROCK SAMPLE DESCRIPTIONS

Sample Number Description

14801 altered intrusive

14802 brecciated argillite fragments in slickensided
quartz veins at contact between argillite and
intrusive

14803 rusty argillite- pale blue weathered
coating

APPENDIX III

GEOCHEMICAL PREPARATION AND ANALYTICAL PROCEDURES

LABORATORY ANALYTICAL METHODS

After initial preparation, all samples were analyzed by the Inductively Coupled Plasma (ICP) method for Ag, As, Cu, Pb, Sb and Zn. Gold was determined by the fire assay and atomic absorption method.

After drying soil and stream sediment samples at 95°C, they were screened with an 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. For some of the silt samples, 40 mesh or 20 mesh sieves were used. Rock samples were put through a jaw crusher and a ceramic-plated pulverizer.

For ICP analyses, 1.0 gram of sample material was digested for 6 hours with a hot HNO_3 - HClO_4 mixture. After cooling, samples were diluted to a standard volume. The solutions were then analyzed by a computer-operated Jarrell Ash ICP Analyzer. Reports are formatted by a route computer dotline printout.

For Au analyses, a suitable sample weight of 15 or 30 grams was fire assay preconcentrated. Samples were then digested with an Aqua Regia solution and then taken up to suitable volume by adding a 25% HCl solution. Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with methyl isobutyl ketone. Gold is analyzed by Atomic Absorption instruments using a suitable standard solution. The detection limit is 1 ppb.

APPENDIX IV

ANALYTICAL DATA FOR SILT AND ROCK SAMPLES

APPENDIX V
STATEMENT OF COSTS

STATEMENT OF COSTS

BUFFALO RESOURCES LTD.
 Project 89BC027
 ARC 3 and 4 Claims

Salaries

J.P. Sorbara, Geologist 2.25 days @ \$350/day	\$787.50	
V. Kuran, Geologist 2.25 days @ \$175/day (technician rate for this project)	<u>393.75</u>	\$1,181.25

Project Expenses

Project Preparation		1,106.12
Mobilization/Demobilization		3,513.69
Truck Rental and Fuel		633.97
Helicopter Support 2.25 hours		1,984.12
Domicile 4.5 man days @ \$75/man/day		337.50
Supplies		223.06
Geochemistry		
11 silt geochem- 6 element trace ICP	\$ 55.00	
11 silt geochem - Au fire	79.75	
11 silt sample preparation	11.00	
3 rock geochem- 6 element trace ICP	15.00	
3 rock geochem- Au fire	21.75	
3 assay sample preparation	11.25	
Misc. Lab charges	<u>1.50</u>	195.25
Maps and Publications		145.38
Radio Rental		122.27
Accounting, Communications, Freight		389.56
15% Project Management Fee		1,297.64
Assessment Report		<u>750.00</u>
		\$11,879.81