



681420

REPORT

- on the -

OWEN LAKE PROPERTY

Omineca Mining Division, British Columbia

- for -

BULKLEY SILVER RESOURCES LTD.
1230 - 800 WEST PENDER STREET
VANCOUVER, B. C. V6C 2V6

- prepared by -

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August 2, 1985

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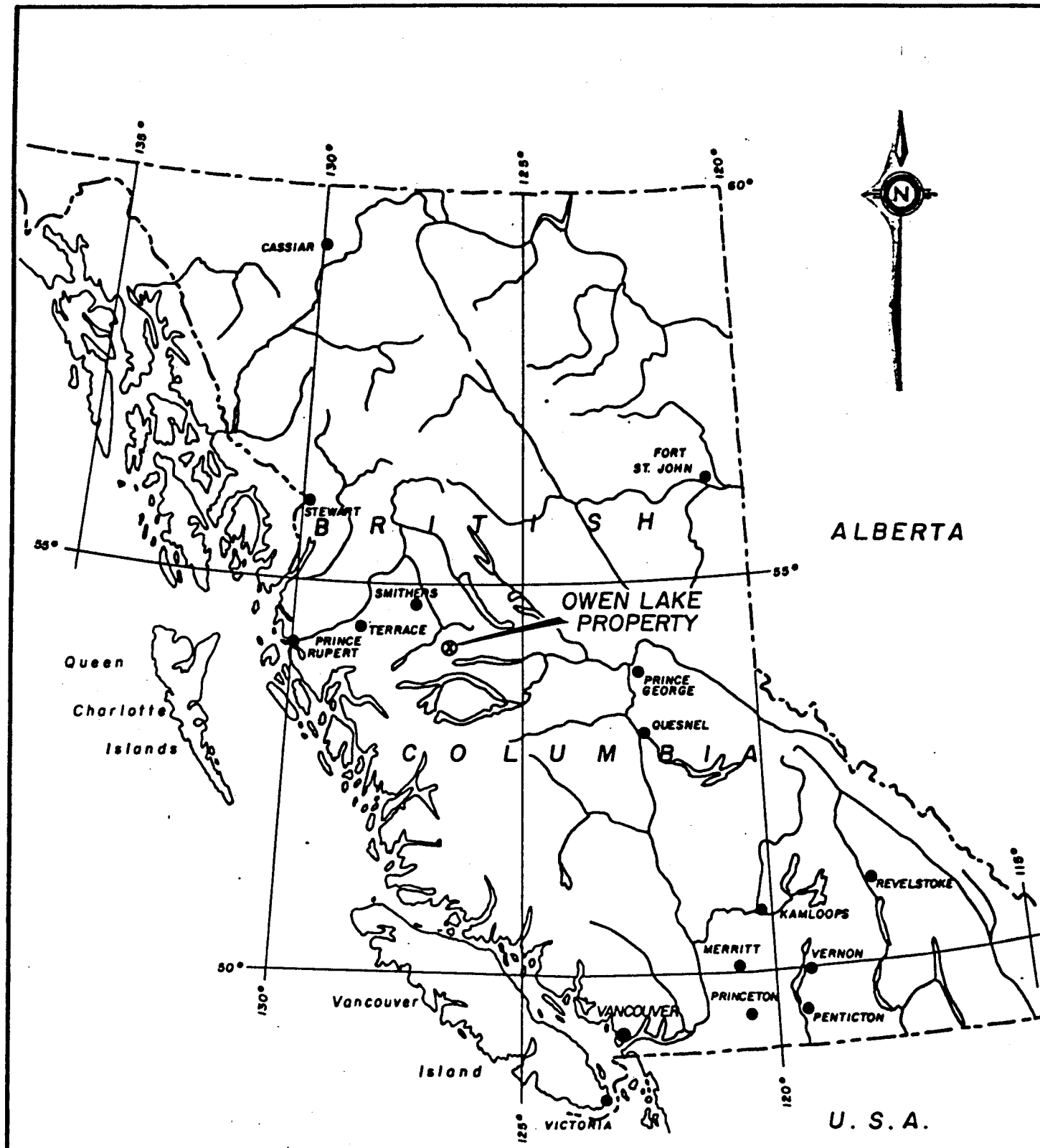
Figure 368-1: Location Map

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BULKLEY SILVER RESOURCES LTD.

**LOCATION MAP
OWEN LAKE PROPERTY**

**OMINECA MINING DIVISION
BRITISH COLUMBIA**

Technical Work by:
Dawson Geol. Cons. Ltd.

Date : July, 1985.

Scale : 1cm. = 87km.

Dwg No. 368-1

INTRODUCTION:

This report has been prepared at the request of the directors of Bulkley Silver Resources Ltd. It reviews the history, geology, mineralization and economic potential of the Owen Lake (Silver Queen) camp which is now under a single management.

A phased exploration programme is recommended to investigate more fully the southeastern part of the camp where precious metal values are higher and where it is hoped much higher metal recoveries will be effected using some of the newly developed bio-leaching techniques.

A series of maps showing property location, claims, location of the main veins and details on the exploration and development of No. 3 vein are included in the text of this report.

SUMMARY AND CONCLUSIONS:

- (1) The Owen Lake property consists of a contiguous block of 49 located and crown granted claims situated in gentle to moderate terrain in west central British Columbia and is road accessible.

- (2) Mineralization was first discovered in the Owen Lake camp in 1912. Additional showings were located and sporadic exploration and mining took place until 1923 when significant tunnelling was completed on the Wrinch Canyon veins. In 1928 the whole camp was optioned and extensive programmes of shaft sinking and tunnelling were completed including the driving of the Earl adit cross cut for 3,000 feet. Canex (Placer Development) acquired control of the bulk of the property in 1941 and carried out sporadic exploration until 1947. Nadina Explorations optioned the Canex claims in 1963 and began an aggressive programme of surface and underground exploration which continued until 1967 when the property was optioned to Kennco. At the same time Frontier Exploration Ltd. had been exploring the Diamond Belle and related prospects in the eastern half of the Owen Lake camp. Kennco carried out geochemical and geophysical surveys and diamond drilling in the search for a porphyry copper deposit until the end of 1967 when they dropped the option. Nadina continued exploration and drilling until 1970 when Northgate Explorations optioned both the Nadina and Frontier ground. After an extensive programme of drilling Northgate dropped their option the next year. In 1971 the Bradina Joint Venture was formed and the property went into production at 500 tons per day in 1972. Problems with mining and metallurgy forced the project to shut down in late 1973 after approximately 200,000 tons of material had been put through the mill. Nadina and Frontier, latterly New Nadina and Bulkley Silver continued exploration on both properties until 1985 when Bulkley optioned the New Nadina ground and put the entire camp under one management.

- (3) The property is underlain by a late Mesozoic to early Tertiary, acid to intermediate volcanic assemblage intruded by a sill-like microdiorite body as well as a number of dikes of pulaskite, trachyte porphyry and basalt. Hydrothermal alteration (pyritization and kaolinization) is widespread and suggests the presence of a deep seated porphyry system related to a nearby volcanic centre.
- (4) Polymetallic, sulphide, vein-type mineralization is primarily confined to northwesterly to northerly trending, moderate to steeply dipping veins. The veins have good longitudinal and depth continuity but are structurally complex in detail. Grades of the veins vary widely but average the tenor of the proven and probable tonnage on the Wrinch Vein System which is 577,590 tons at 0.108 oz/ton gold, 7.51 oz/ton silver, 0.49% copper, 1.49% lead and 6.53% zinc. There is a significant zoning towards higher base metals in the northwest of the camp and higher precious metals towards the southeast.
- (5) It is generally conceded that the property could be put into production at perhaps 200 tons per day provided a satisfactory recovery of precious metals could be obtained. Recent advances in bio-leaching techniques suggest that a significant breakthrough may soon occur in the treatment of refractory pyritic and arsenical ores. Metallurgical test of this type are in progress on the Owen Lake ores.
- (6) The southern part of the Owen Lake property contains a number of veins which have significantly higher precious metal values and have good potential for the delineation of significant tonnages of economic material. An exploration programme to test this aspect of the property is therefore recommended.

PROPERTY:

The property consists of a block of 49 contiguous crown granted and located claims totalling 144 units as follows:

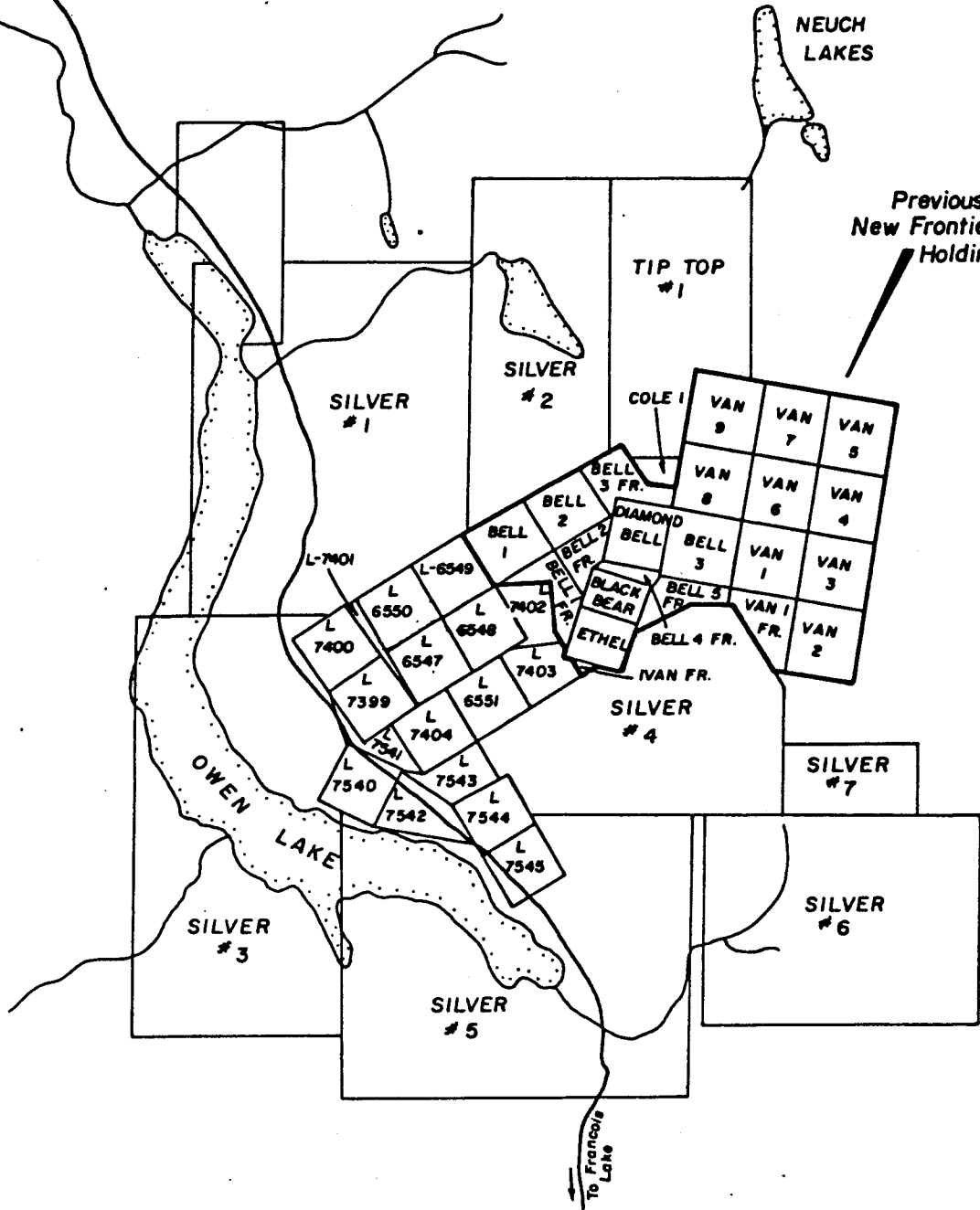
<u>Claim Name</u>	<u>Record No.</u>	<u>No. of Units</u>	<u>Status</u>	<u>Expiry Date</u>
Asta Fraction	7543	1	crown grant	current taxes paid
Bell #1	24929	1	located	June 15, 1986
Bell #1 Fr.	24932	1	located	June 15, 1986
Bell #2	24930	1	located	June 15, 1986
Bell #2 Fr.	24933	1	located	June 15, 1986
Bell #3	24931	1	located	June 15, 1986
Bell #3 Fr.	24934	1	located	June 15, 1986
Bell #4 Fr.	24935	1	located	June 15, 1986
Bell #5 Fr.	24936	1	located	June 15, 1986
Black Bear	1685	1	located	July 2, 1986
Cole #1	636	2	located	July 8, 1989
Diamond Belle	1684	1	located	July 2, 1986
Earl No. 1	7399	1	crown grant	current taxes paid
Earl No. 1 Fr.	7401	1	crown grant	current taxes paid
Earl No. 2	7400	1	crown grant	current taxes paid
Earl No. 3	7402	1	crown grant	current taxes paid
Ethel	7363	1	located	March 7, 1986
I X L	6551	1	crown grant	current taxes paid
I X L No. 3	7403	1	crown grant	current taxes paid
Ivan Fr.	40867	1	located	June 20, 1986
Lily Fraction	7541	1	crown grant	current taxes paid
Lucy	7404	1	crown grant	current taxes paid
Mae	7545	1	crown grant	current taxes paid
Mae No. 1	7544	1	crown grant	current taxes paid
Mary	7540	1	crown grant	current taxes paid
Mary Fraction	7542	1	crown grant	current taxes paid
Silver #2	637	10	located	July 8, 1989
Silver #3	106	18	located	August 25, 1989

To Houston



NEUCH LAKES

Previously
New Frontier Petroleum
Holdings



BULKLEY SILVER RESOURCES LTD.	
CLAIM MAP	
OWEN LAKE PROPERTY	
OMINECA MINING DIVISION, B.C.	
Technical Work By: Dawson Geol. Cons. Ltd.	Scale: 1:50,000
Drawn By: W.G.	Date: July, 1985.
Approved By: J.M.D.	Fig. No. 368-2

To accompany a report by J.M. Dawson, P.Eng.

<u>Claim Name</u>	<u>Record No.</u>	<u>No. of Units</u>	<u>Status</u>	<u>Expiry Date</u>
Silver #4	107	12	located	August 26, 1989
Silver 1	104	20	located	August 25, 1989
Silver 5 M.C.	108	20	located	August 25, 1989
Silver 6	101	12	located	September 2, 1989
Silver 7	102	2	located	September 2, 1989
Silver King	6547	1	crown grant	current taxes paid
Silver Queen	6549	1	crown grant	current taxes paid
Silver Tip	6550	1	crown grant	current taxes paid
Tip Top #1	635	8	located	July 8, 1989
Tyee	6548	1	crown grant	current taxes paid
Van #1 Fr.	35244	1	located	February 23, 1989
Van #1	35245	1	located	February 23, 1989
Van #2	35246	1	located	February 23, 1989
Van #3	35247	1	located	February 23, 1989
Van #4	35248	1	located	February 23, 1989
Van #5	35249	1	located	February 23, 1989
Van #6	35250	1	located	February 23, 1989
Van #7	35251	1	located	February 23, 1989
Van #8	35252	1	located	February 23, 1989
Van #9	35253	1	located	February 23, 1989
Van #2 Fr.	87987	1	located	June 8, 1986

Disposition of these claims is shown on Figure 368-2.

LOCATION AND ACCESS:

The property is located in west central British Columbia about 35 kilometres south of the town of Houston and approximately 265 kilometres west of Prince George. The geographic centre of the claim block is at $54^{\circ} 06'$ north and $126^{\circ} 45'$ west.

Access is gained via 43 kilometres of good, all-weather gravel road south via the Morice River forest access road which leaves Provincial Highway 16 about 4 kilometres west of Houston. A series of jeep roads provide facile access to most parts of the claim block.

PHYSIOGRAPHY AND VEGETATION:

The claims cover a roughly rectangular block measuring about 5 kilometres east-west by about 7 kilometres north-south in gently to moderately rolling country east and south of Owen Lake. Much of the ground occupies a southwesterly facing slope drained by Wrinch Creek and Riddeck Creek.

Total relief on the property is in the order of 1,500 feet rising from just under 2,500 feet at Owen Lake to more than 4,000 feet a.s.l. at the crest of Tip Top Hill. Most of the veins and workings are located between 2,600 and 3,100 feet a.s.l.

The bulk of the property is covered by grassland with scattered clumps of poplar and willows. Occasional stands of spruce and fir are found, principally in the lower reaches and west of Owen Lake.

Outcrop is relatively sparse and overburden may reach depths of more than 100 feet in the low lying areas east of Owen Lake.

HISTORY:

Mineralization was first discovered in Wrinch Creek canyon in 1912 and was staked as the Silver Queen group. Soon after, claims were staked over the Chisholm vein system and in 1915 a shipment of 38 tons of ore grading 31% lead and 6 oz. silver was made from two shallow shafts on these claims. The Cole vein system was also staked as the Diamond Belle group in 1915.

The Silver Queen group was optioned to Federal Mining and Smelting Co. in 1923. This company completed more than 500 feet of drifting from three adits in Wrinch Canyon before dropping their option in 1924.

In 1928 the Owen Lake Mining and Development Co. optioned the Silver Queen, Diamond Belle and Chisholm groups. This company carried out an extensive programme of exploration which included sinking the Cole Shaft to a depth of 123 feet and driving a long cross-cut from the Earl Adit (see Figure 368-3) for approximately 3,000 feet. This drive cut the No. 2 and No. 3 veins at approximately 2,665 and 2,760 feet and was ultimately targeted to cut the Cole Vein at about 7,500 feet. About 1,020 feet of drifting was done on several new veins encountered during the driving of the long cross-cut, however the main drive was stopped at about 3,000 feet when development ceased in early 1930.

Canadian Exploration Ltd. acquired control of the crown granted claims covering the Wrinch and Chisholm Vein systems in 1941 and optioned the claims covering the Cole Vein system and nearby veins. The property was mapped and sampled and some underground rehabilitation performed. The ground covering the Cole veins was dropped in 1943. Canex worked on the crown grants in 1946 and 1947, rehabilitating all the old workings from the Earl Adit and carrying out extensive mapping and sampling.

In 1963 Nadina Explorations optioned the crown grants from Canex and in 1965 began retimbering the portals, as well as carrying out road construction and trenching.

In 1966 Nadina continued mine rehabilitation, drove 1,588 feet of drifts and raises and did extensive surface bulldozer trenching. In 1967 underground development was continued with 1,324 feet of drifting and 16 diamond drill holes totalling 1,559 feet.

Kennco Explorations Ltd. optioned the Nadina property in 1967 and carried out geological mapping, geochemical soil sampling and an induced polarization survey. They completed 1,511 feet of diamond drilling in 5 holes and did extensive trenching and test pitting with the idea that a porphyry copper deposit might be present at depth. The option was dropped at the end of 1967.

The area east of the crown grants received very little attention until it was acquired by Frontier Exploration Ltd. around 1960. Minor trenching and diamond drilling was carried out on the Jack and Axel veins in the early 1960's. In 1967 Frontier did extensive trenching of the veins; stripped and sampled the Cole System and carried out some x-ray diamond drilling.

In 1968, Nadina Explorations continued working on the area of the crown grants. Geochemical soil sampling was extended; at least 30 trenches were cut and additional areas were stripped and sample cuts blasted. The underground workings were geologically mapped and 660 feet of diamond drilling was done in 22 holes.

In 1969 the B. C. Ministry of Energy, Mines and Petroleum Resources' geological staff mapped the entire property in detail as well as the area surrounding Owen Lake. Nadina Explorations completed airborne geophysical surveys on their property and drilled 31 surface core holes totalling 10,637 feet. In addition 20 underground diamond drill holes totalling 3,561 feet and 4,000 feet of drifting were completed.

In 1970, Northgate Explorations optioned both the Nadina and Frontier properties. This company completed 13,500 feet of surface core drilling in both shallow and deep drilling. Underground exploration included 1,500 feet of diamond drilling and approximately 4,200 feet of drifting and raising. Northgate dropped their option at the end of 1970.

In 1971 the Bradina Joint Venture was formed (Nadina Explorations, Bralorne Can-Fer Resources and Pacific Petroleum) for the purpose of taking the property (Nadina ground only) into production. A feasibility study was prepared by Dolmage Cambell and Associates, surface EM and IP surveys were carried out, 6,000 feet of surface diamond drilling was completed in five holes and approximately 800 feet of drifting and raising was completed. In addition eight areas were prepared for stoping and 15,000 tons of development muck was stockpiled.

In 1972, a 500 ton per day mill was completed and mining began on the No. 3 Vein and its extensions (see Figure 368-4). This operation was plagued with difficulties from its inception due to poor planning and bad management. Metallurgical problems resulted in poor metal recoveries and over design of the mill resulted in a 350-400 ton per day mine trying to feed a 600-700 ton per day mill. Operations ceased in September, 1973 after milling 200,000 tons, of which 40% was low grade, oxidized development muck and waste. During 1972-73 the Joint Venture drilled 47 surface diamond drill holes totalling 12,323 feet and 68 underground holes totalling 8,110 feet.

Also during 1972, Frontier Explorations carried out a detailed programme of shoot-back EM on their property east of the Nadina crown grants (see Figure 368-2). Airtrack percussion drilling and about 1,500 feet of diamond drilling in five holes was completed on the George Lake Lineament Vein.

In 1974, the Bradina Joint Venture completed 528 feet of drifting to establish two footwall drill stations. Six underground diamond drill

holes totalling 2,021 feet were drilled. Surface diamond drilling totalled 3,867 feet in 3 holes. The joint venture agreement was terminated late in 1974.

In 1977, the Nadina Explorations property was optioned by New Frontier Petroleum Ltd., the successor company to Frontier Explorations Ltd. A limited surface diamond drilling programme was completed. Four holes aggregating about 2,000 feet were wedged off previous deep drill holes. This option was dropped in 1978.

In 1980, Nadina was reorganized as New Nadina Explorations Ltd. and an extensive programme of backhoe trenching was performed. Two surface diamond drill holes totalling 1,014 feet were completed, some underground facilities were rehabilitated and new surface buildings constructed. New Frontier also carried out trenching on its property during 1980.

In 1981, New Nadina completed rehabilitation on the main level (2,600) in the Silver Queen mine, did 472 feet of drifting to establish three underground drill stations, drilled 28 underground holes totalling 6,470 feet and 4 surface holes totalling 1,776 feet.

In 1981, New Frontier Petroleum Ltd. sold all of its mining interests, including the 22 located claims at Owen Lake (east of Nadina ground) to a new company, Bulkley Siver Resources Ltd. This company attempted to raise money to complete the Earl Adit drive easterly to cut the Cole Vein system at depth. Only 100 feet of this drive was completed when the programme was terminated for financial reasons.

In 1982, a detailed re-evaluation of the New Nadina property was completed by Campbell Resources Ltd. A Questor airborne EM survey was completed over a portion of the property immediately adjacent to Owen Lake and limited metallurgical testing was carried out.

In 1983-84, New Nadina carried out a surface diamond drilling programme totalling 5,997 feet in eleven holes. An additional four holes totalling about 1,500 feet were drilled in March, 1984.

In 1985, Bulkley Silver optioned the New Nadina ground to put the entire camp under one management. A "max-min" EM Survey was conducted over the area of the Questor airborne anomaly (see Figure 368-3). Six diamond drill holes totalling 1,130 feet were drilled in this area in June, 1985.

GEOLOGY:

The property is underlain by a series of late Mesozoic to early Tertiary volcanic flows and pyroclastics cut by a sill-like body of microdiorite. Pulaskite and trachyte feldspar porphyry dikes, some of which are feeders to the microdiorite body cut the volcanics. A younger series of trachyte and trachyandesite lavas and pyroclastics overlie the older rocks in the southernmost part of the claims.

The oldest rocks of the Mesozoic-Tertiary sequence are known as the Okusyelda dacite. This unit is composed of dacite to rhyolite flows and pyroclastics with related intrusions or feeder plugs of similar composition. These rocks are most commonly found at the north edge of the property. However they are also prominently exposed along and south of Cole Creek where they have been strongly kaolinized.

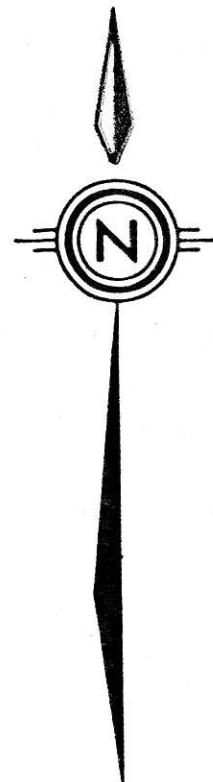
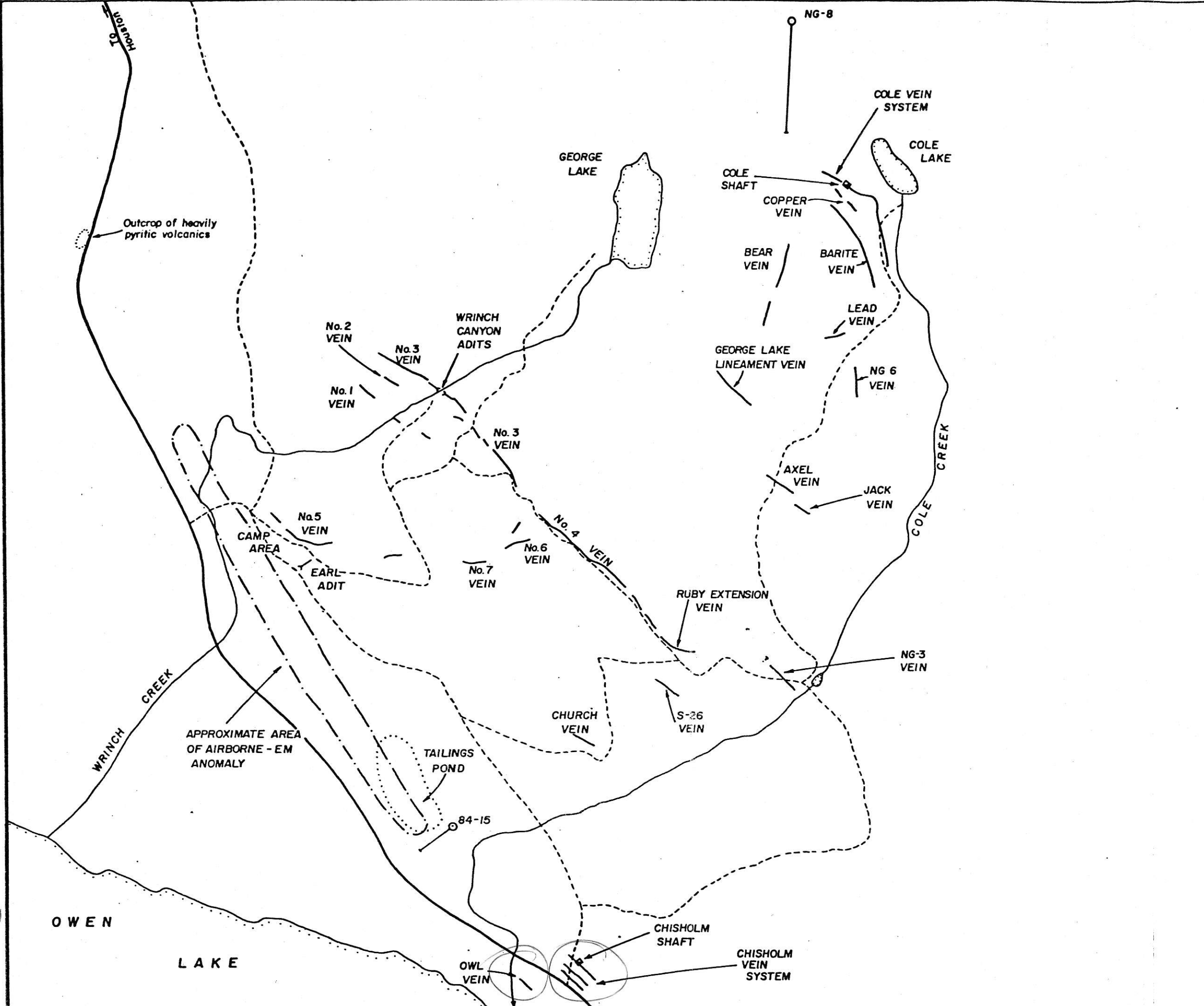
The Wrinch Creek volcanic member is contemporaneous or slightly younger than the Okusyelda unit. It is exposed in Wrinch Creek, around Cole Lake and on the southwest side of Mine hill (see Figure 368-3). This unit consists primarily of dacite and andesite breccias and typically is highly altered.

The Tip Top andesite overlies both the Okusyelda and Wrinch Creek units and is found only in the northwest corner of the property. It consists of brown porphyritic lavas and pyroclastic beds.

The "Mine Hill Microdiorite" intrudes the older rocks in the main areas of mineralization around Mine Hill and between George Lake and Cole Lake. The intrusion is sill-like and outcrops over an area about one mile in diameter. Windows of older rocks are exposed where parts of the intrusive have been eroded as in Wrinch canyon and around George Lake. This rock is usually dark grey to black and finely porphyritic with small plagioclase crystals. The microdiorite is usually fresh and massive except along fissures and where it forms the wallrock of veins.

A series of younger volcanics overlies the older rocks in the south and southeast parts of the claim block. These rocks are generally considered to be Eocene in age. They consist of fresh trachyte and trachyandesite flows and pyroclastics. Where exposed, the lavas are found to be medium grained, vesicular, with few phenocrysts and are commonly zeolite-bearing.

Pulaskite (syenite porphyry) and trachyte feldspar porphyry dikes are commonly found cutting the older rocks in many of the underground workings and surface trenches surrounding Mine Hill. The feldspar porphyry dikes predate or are coincident with the initial phase of mineralization. The pulaskite dikes post-date most of the mineralization.



- LEGEND -

- MINERALIZED VEIN
- NG 8 DIAMOND DRILL HOLE
- ADIT
- SHAFT
- ACCESS ROAD
- CREEK
- AIRBORNE GEOPHYSICAL ANOMALY

BULKLEY SILVER RESOURCES LTD.	
SURFACE PLAN SHOWING MAIN VEINS	
OWEN LAKE PROPERTY	
OMINECA MINING DIVISION, B.C.	
TECH. WORK BY: DAWSON GEOL. CONS. LTD.	SCALE: 1:12,000
DRAWN BY: W.G.	DATE: JULY, 1985.
APPROVED BY: J.M. DAWSON, P. ENG.	FIG. NO. 368-3

OWEN

LAKE

MINERALIZATION:

The Owen Lake property covers a very large mineralized system which probably represents the higher level portion of a mineralized volcanic centre similar to the Sam Goosely (Equity Silver) deposit located some 29 kilometres to the northeast. Polymetallic sulphide vein type mineralization is primarily confined to fillings of northwesterly-trending tension fractures and replacements along northerly-trending shears. The area in which the mineralization is found measures approximately 4 kilometres north-south by about 3 kilometres east-west and is still open. Within this area there are at least 30 known veins of which about 10 have been demonstrated to have significant widths and grades. Deep diamond drilling has demonstrated that at least some of the veins extend to more than 1,400 feet below surface. In addition there are areas of disseminated sulphides containing anomalous base and precious metal values.

The mineralization has been very well described by Church (1969) as follows:

"The veins are mainly the result of fissure filling. This is proved by their vuggy structure and the colloform banding of the ore minerals and gangue. The exact amount of dilation of fissures prior to mineralization is difficult to estimate owing to the partial replacement of wallrocks by pyrite and other vein minerals, however the average width of the veins is 3 to 4 feet, increasing to as much as 15 feet locally.

At least four distinctive mineral assemblages are recognized. These are as follows in approximate order of deposition:

- (1) pyrite and specular hematite,
- (2) sphalerite (ruby jack), pyrite, galena and tennantite,
- (3) chalcopryite, pyrite, sphalerite, bismuthinite(?) and tetrahedrite(?),
- (4) sphalerite (amber), pyrite and galena.

The gangue constituents are mainly cherty quartz, carbonate minerals such as rhodochrosite and siderite, some barite and rarely pyrobitumen. These assemblages occur as single veins or more commonly as lenses and layers in composite veins.

The veins show a rough zonal arrangement. The Wrinch and Portal vein systems in the Mine Hill area are composite reflecting a history of pulsating mineralization with many changes in the temperature and composition of the hydrothermal solutions. On the other hand, in outlying areas such as near Cole Lake and the Chisholm shaft the veins are uniformly carrying the low temperature assemblage, sphalerite-pyrite-galena."



According to Ford(1982):

"Mineral zoning, typical of hydrothermal veins is evident both visually and in the assay data. Horizontally, i.e. along the levels (and on surface), base metals (primarily zinc) increase towards the northwest, and gold and silver increase towards the southeast. Vertically, at least in the southeast end of the mine, gold, silver and zinc increase with depth."

Surface and drill hole assays certainly demonstrate higher precious metal values in the Chisholm vein system, the Church vein, the Ruby Extension vein and the NG-3 vein.

The veins strike northwesterly to northerly and dip moderately to steeply to the east. Although the vein structures can be traced over long distances, they are structurally complex in detail, often pinching and swelling with many horsetail and en echelon structures. However, post mineral faulting is not a prominent feature. Ford (1982) notes that:

"In those areas where the dip of the veins is steep ($>60^{\circ}$), vertical continuity of mineralization is good; where the dip is shallow ($<60^{\circ}$), the mineralization may occur in a number of en echelon shingles.

Where divergence in the strike of the ore grade mineralization occurs, as in the southeast end of the mine (No. 4 and Ruby Extension veins) the original fracture appears to carry on as a low grade stringer for a distance before opening up again as a well mineralized ore-bearing vein.

It was not generally recognized that the No. 3 vein (and southeasterly extensions) was not a simple, single fracture until after diamond drilling had been carried out in 1973, and after fill raises driven on the vein being mined, broke through at surface, 10's of feet in the foot wall or hanging wall of the vein that had been followed by surface trenching."

The Wrinch Vein System, consisting of the No. 3, No. 4 and Ruby Extension veins is the longest and strongest vein presently known on the property. It can be traced for at least 4,500 feet and may be considerably longer if the NG-3 vein is proven to be a faulted extension. All of the mining carried out by the Bradina Joint Venture was on this structure (see Figure 368-4).

Appendix C shows a tabulation of assays, taken from Church (1969), many of which are from the Wrinch Vein System. Although the assays vary widely, the mineralization averages in the order of 0.10 oz/ton gold, 8 oz/ton silver, 0.7% copper, 2% lead and 7% zinc. Proven and probable ore reserves on the No. 3 Vein and extensions (Wrinch Vein System) as calculated by Ford (1982) total 577,590 tons grading 0.108 oz/ton gold, 7.51 oz/ton silver, 0.49% copper, 1.49% lead and 6.53% zinc. A 1981 underground drilling programme consisting of 21 holes below the 2,600 level on the Ruby Extension Vein demonstrated an ore shoot 900 feet long, 300 feet deep and open to depth and 4.6 feet wide averaging 0.186 of/ton gold, 10.81 oz/ton silver and 9.03% zinc (see Figure 368-4).

The NG-3 Vein which does not outcrop on surface and which may be a faulted extension of the Wrinch Vein System has been tested by 6 drill holes of which 3 returned significant assays. The best intersection was in hole NG-3 which cut the vein 1,440 feet below surface and averaged 0.02 oz/ton gold, 24.60 oz/ton silver, 0.08% copper, 12.20% lead and 27.20% zinc.

The Cole Vein System has been traced for approximately 2,000 feet and Rayner (1982) notes that:

"The vein is quite uniform in width averaging about 2.8 feet. Mineralization consists of sphalerite and galena in a gangue of barite, silica, rhodochrosite and other carbonates. Assays have averaged 2.5 oz/ton silver, 2.8% zinc and 3.2% lead. Significantly a hole drilled to test the vein 500 feet below surface returned a silver value in excess of 40 oz/ton in tetrahedrite.

To the south the well defined Cole Vein flexes and changes in nature to a wider zone of mineralized shearing. The shear portion of the structure has been exposed over a length of about 1,000 feet. Sampling done in 1967 over 15 feet of width and 400 feet of length averaged 0.013 oz/ton gold, 8.8 oz/ton silver, 0.45% copper, 3.3% lead and 3.4% zinc."

The Barite Vein has a known strike length of 900 feet and is characterized by a high percentage of barite and a higher than usual percentage of galena. Rayner (1982) states that:

"Another characteristic feature is the presence of a breccia ore which occurs on the hanging wall of the vein. The breccia consists of rhodochrosite fragments containing fine grained sphalerite and galena in a matrix of chalcedonic quartz containing pyrite and minor sphalerite and galena. The best mineralization occurs at the north end of the vein where a 3.8 foot channel sample assayed 0.063 oz/ton gold, 6.15 oz/ton silver, 0.21% copper, 5.3% lead and 13.2% zinc."

The Bear Vein has been traced on surface for about 350 feet and may extend a further 700 feet to the south. The north end of the Bear Vein appears to be offset by an east-west fault system. Coinciding with these faults is a one foot wide cross vein adjacent to a narrow feldspar porphyry dike. Four northerly-trending veins occur on the north side of this cross structure. The Bear Vein, where exposed over the 350 foot strike length, averages 2 feet wide and contains massive sulphide mineralization. The mineral assemblage consists of sphalerite, galena and pyrite in a barite-rhodochrosite gangue. A sample across a 3.4 foot width near the north end of the vein assayed 0.02 oz/ton gold, 4.14 oz/ton silver, 0.27% copper, 1.83% lead, 10.5% zinc and 0.06% cadmium.

The copper vein is parallel to and 200 feet west of the Cole Vein. It consists of a zone of chalcopyrite, pyrite and tetrahedrite veinlets over a width of 15 feet. Some earlier galena-sphalerite-rhodochrosite veinlets also occur within the zone. A channel sample over 1.5 feet returned an assay of 0.017 oz/ton gold, 35.6 oz/ton silver, 3.70% copper, 0.82% lead and 1.05% zinc.

The NG-6 Vein is exposed over a length of 170 feet and averages just over 2 feet in width. The mineral assemblage is similar to other veins in the area with an increase in barite and galena towards the north and an increase in amber sphalerite to the south. A typical assay over 2.3 feet would be 0.05 oz/ton gold, 8.75 oz/ton silver, 0.55% copper, 4.2% lead, 14.0% zinc and 0.08% cadmium.

There is a suggestion that all of these veins near and parallel to the Cole Vein System converge to the north as drill hole NG-8 (see Figure 368-3) cut 9 separate veins and vein structures of varying widths and grades. In addition to the veins, possible hydrothermal channelways as indicated by zones flooded with rhodochrosite, barite and quartz stringers were also intersected.

The lead vein is approximately 1.2 feet wide and is characterized by a barite gangue with the usual assemblage of metallic minerals. It carries a 3-inch wide band of pyrite gouge on each wall and has an abnormally high percentage of sphalerite and galena disseminated and in fractures in the hanging wall.

The George Lake Lineament Vein has been described by Rayner as follows:

"The George Lake Lineament is a marked linear topographic low trending southeast from George Lake. Attempts to trench this vein have failed because of deep overburden and water. The vein has been encountered in two drill holes 1,000 feet apart and appears to be the most significant structure on the property. Veining, shearing and dike activity all appear strong within the zone across widths of 10 to 20 feet. Two separate drill programmes have attempted to test this structure and both failed to core a representative sample. Although the zone has not been cored, pebbles of massive sphalerite with galena were recovered as "cave" during drilling."

The Axel Vein has been traced for about 1,500 feet by trenching. Moderate silver values have been reported over 7 feet.

The Jack Vein has been traced for 700 feet by trenching and has been intersected at the depth of 100 feet by drilling. Assays of 8 oz/ton silver, 1% copper and 1% zinc over 2 feet have been reported (Rayner, 1982).

The S-26 Vein is a narrow (6" to 1') vein of tennantite rich ore which has only been encountered in drill holes. High grade silver assays have been reported.

The No. 5 Vein is exposed near the portal of the Earl Adit and has been traced on surface for about 500 feet. It is typically chalcopyrite-rich and carries above average precious metal values. A quartz-chalcopyrite sample was assayed by Church (1969) with the following results: 0.28 oz/ton gold, 24.2 oz/ton silver, 7.19% copper, 0.17% lead and 0.17% zinc. Ford (1982) reports that this vein is predominantly argentiferous tetrahedrite (freibergite). On surface over a 4 foot mining width the vein averages 0.11 oz/ton gold, 27.83 oz/ton silver, 3.55% copper, 5.64% lead and 2.48% zinc over a 360 foot strike length.

Veins No. 6 and No. 7 are exposed on surface a few hundred feet west of the midpoint on Vein No. 4. They strike easterly and appear to be interconnected. Sphalerite and pyrite are the most important sulphides; galena and chalcopyrite are accessory.

Vein No. 2 may be the northwest extension of Vein No. 4, both being relatively poor in chalcopyrite and having low to moderate precious metal values. Over a 1,200 foot strike length it reportedly averages 0.02 oz/ton gold, 2.8 oz/ton silver, 0.1% copper, 4.3% lead and 6.2% zinc over an average width of 6.4 feet.

Vein No. 1 has copper-lead-zinc values similar to those of the Ruby Extension Vein, however precious metal values are comparatively low. Over a 600 foot strike length it reportedly averages 0.02 oz/ton gold, 6.3 oz/ton silver, 0.66% copper, 1.6% lead and 5.3% zinc over an average width of 6.7 feet.

NADINA MOUNTAIN

SILVER COPPER PROSPECT (owned by Nadina)
TSALIT MOUNTAIN

LAKE

OWEN

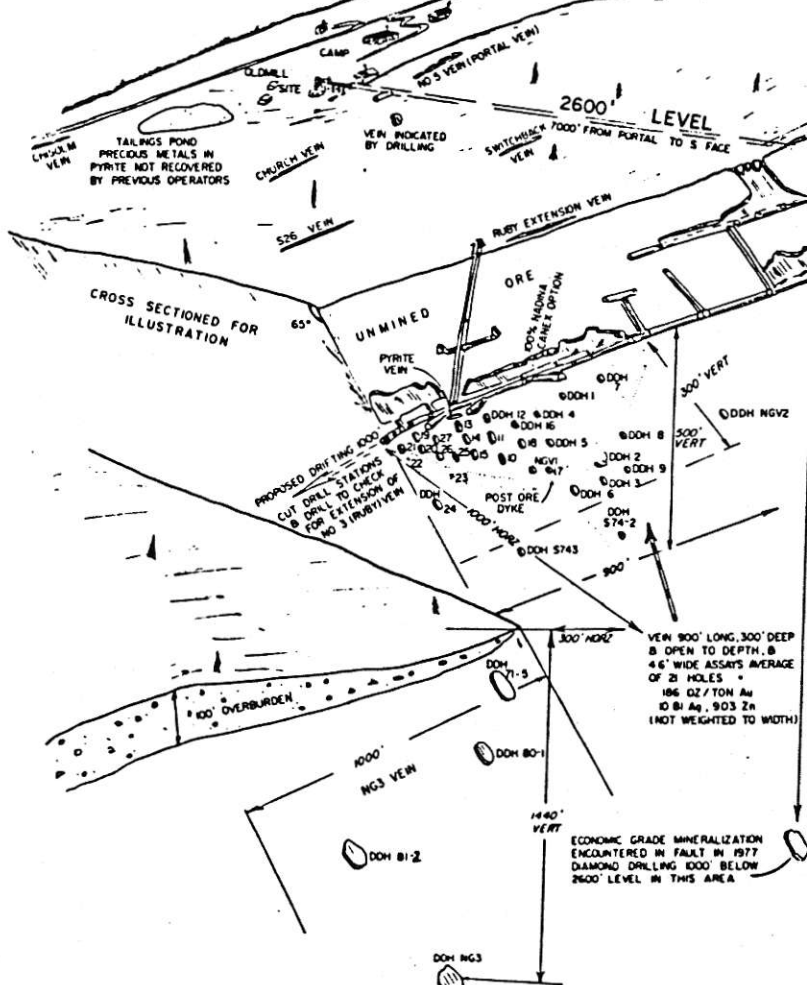
28 Miles on all weather, high speed logging road to Houston, BC

2600' LEVEL

EXPLORATION POTENTIAL
2880' LEVEL

4 HOLES IN VEIN TO 350' BELOW 2600 LEVEL OF ECONOMIC WIDTHS AND GRADE DRILLED IN 1970 & 1974
DDH 74-1
74-2
74-3
NGV 4

ORE RESERVES HAVE BEEN CALCULATED BY COMPETENT ENGINEERS TO BE IN THE ORDER OF 4-500,000 TONS GRADING Au OZ/TON 0.10, Ag OZ/TON 100, Cu 0.76%, Pb 21%, Zn 6.96%. THESE ARE CALCULATED ABOVE THE LOWER LEVEL THE PREVIOUS OPERATORS HAVE SINCE MINED & MILLED ABOUT 117,000 TONS LEAVING WHAT APPEARS TO BE SIGNIFICANT RESERVES REMAINING IN THE OLD WORKINGS.



ASSAY RECORD

DRILL HOLE #	TRUE WIDTH	AU oz/1	Ag oz/1	Cu %	Pb %	Zn %
DDH-1	3.0 FEET	305	27.58	0.19	1.05	18.56
DDH-2	7.0	105	13.20	0.24	2.69	23.80
DDH-3	14.0	100	4.106	1.75	7.02	6.32
DDH-4	7.7	290	5.976	2.36	1.036	8.731
DDH-5	6.0	057	1.946	1.13	3.59	3.037
DDH-6	0.8	01	5.03	0.05	0.89	4.33
DDH-10	4.5	301	7.95	0.35	1.44	7.22
DDH-11	4.5	180	17.934	5.54	1.26	11.98
DDH-12	11.0	036	3.666	0.73	1.529	3.121
DDH-13	4.0	241	17.18	0.96	1.46	4.87
DDH-14	6.0	328	16.90	1.48	1.26	2.05
DDH-15	4.7	194	35.20	1.02	0.66	4.76
DDH-16	5.9	172	7.15	0.39	1.35	11.40
DDH-17	2.2	188	14.50	0.52	2.69	6.53
DDH-19	3.8	0.372	17.20	0.26	1.88	8.50
DDH-20	3.8	0.355	14.00	0.31	1.40	17.40
DDH-21	0.9	202	12.70	0.39	1.25	15.85
DDH-24	4.3 Core length	220	4.043	0.81	2.71	1.64
DDH-25	2.2	269	11.725	6.46	9.98	12.602
DDH-26	1.7	291	11.20	0.26	1.44	19.80
DDH-27	2.9	125	4.84	0.14	0.76	3.95
DDH-NGV 1	8.6 Core length	0.38	18.6	0.30	2.90	11.25
DDH-574-2	1.5 Core length	0.06	1.26	0.20	4.85	12.84
DDH-574-3	4.2	0.320	9.68	0.54	0.8	7.54
DDH-NGV 2	2.0	0.8	1.3	ml	13	15
DDH-74-4	8.0	0.84	9.28	5.7	9.0	8.75
DDH-74-5	6.5	1.72	6.07	0.6	2.3	12.97
DDH-74-6	6.5	0.48	6.32	1.1	1.35	15.63
DDH-NGV 3	0.2	0.4	0.3	0.1	0.7	0.4
DDH-NGV 4	1.6	ml	6.90	8.3	1.28	3.20
DDH-74-1	1.8	0.1	4.8	1.0	0.33	5.4
DDH-74-2	5.7	0.5	6.31	1.00	6.4	9.70
DDH-74-3	1.7	0.7	5.3	1.07	2.3	2.56
DDH-80-1	2.0	0.21	2.4	1.7	8.9	3.28
DDH-71-5						
DDH-81-1						
DDH-81-2	1.1	0.28	2.72	8.8	0.2	0.6
DDH-81-3	5.7	0.02	2.60	0.8	12.20	27.20

Bring checked, reported similar to 80-1
Narrow structure not analyzed

NEW NADINA EXPLORATIONS LTD.

SILVER QUEEN MINE
OMENICA, MD.

SCHEMATIC SECTION ALONG VEIN (NO.3)
SHOWING 1981 DRILL HOLE INTERCEPTS &
PREVIOUS DRILL INTERCEPTS BELOW THE
2600' LEVEL.

FOR ILLUSTRATION PURPOSES ONLY NOT TO SCALE

DRAWN JUNE 8, 1981 BY GOME
PLOT OF HOLES EXTRAPOLATED FROM DATA BY R REID

FIGURE 368-4

The Church Vein was discovered by Dr. B. N. Church while mapping the property in 1969. It is compositionally similar to the veins of the Chisholm Vein System and is located midway between them and the Wrinch Vein System (see Figure 368-3). The vein is 3 feet wide and strikes southeasterly. An assay of a grab sample containing fine grained sphalerite, galena, pyrite, barite and cherty quartz reported 0.24 oz/ton gold, 6.5 oz/ton silver, 0.11% copper, 5.56% lead, 16.55% zinc and 0.10% cadmium.

The Chisholm Vein System is a sheeted fracture system of at least four veins and a number of mineralized stringers over an approximate 50-foot width. The zone can be traced for about 200 feet along strike and is open in both directions. Mineralization consists of sphalerite, argentiferous galena, pyrite and pods of tetrahedrite. The host rocks consist of highly altered dacitic tuffs and tuff breccias. Gold and silver values are higher than usual in these veins. An assay from the south end of Mae No. 2 Vein (the central vein of the Chisholm system) assays 0.12 oz/ton gold, 39.0 oz/ton silver, 14.4% lead and 5.3% zinc.

The Owl Vein parallels the Chisholm Vein System about 400 feet to the southwest. It is now poorly exposed but is reported to be between 1 and 2 feet wide and to contain values similar to those found at the Chisholm system.

A number of less important veins are known on the property including 13 that were encountered in driving the Earl Adit. Some of these correlated with known surface veins but the majority are blind. The frequency of known veins in areas of outcrop and underground workings is such that other veins as yet undiscovered undoubtedly exist in overburden-covered areas.

A Questor airborne EM survey completed over the western quarter of the property in 1982 outlined a linear northwest-trending conductor between the Earl Adit and the main road (see Figure 368-3). The south end of this conductor was tested by at least 2 diamond drill holes in 1984 and 6 holes in 1985. The majority of these holes encountered broad zones of

heavy disseminated pyrite (10-20%) with minor visible sphalerite in some areas. Most of these drill holes returned only anomalous values in silver and zinc, however drill hole 84-15 cut 17.7 feet averaging 5.36 oz/ton silver, and 0.01 oz/ton gold as well as minor values in copper, lead and zinc.

This zone of disseminated pyrite is interpreted to extend at least 4,000 feet northwest of the Earl Adit where an outcrop of heavily pyritic volcanics is exposed in a road cut (see Figure 368-3). It would appear that it extends southeast to encompass the area of the Owl Vein and Chisholm Vein Systems and beyond. There has been no recent drilling in this area and it is reported that in the drilling done in the 1960's only small sections of obvious high grade vein material were assayed.

ECONOMIC POTENTIAL:

The Owen Lake property covers an extensive mineralized volcanic centre which hosts numerous polymetallic, sulphide veins. These have demonstrated great horizontal and vertical continuity, however locally are structurally complex. A previous attempt to mine here was economically unsuccessful because of lack of detailed information on the nature of the veins, poor planning and problems with recovery of metal values. At the time, precious metal prices were low and emphasis was put on producing acceptable "clean" base metal concentrates. Precious metal recoveries were low because of refractory ores and arsenic content and extensive metallurgical testing was not undertaken.

Ford (1982) calculated proven and probable reserves in the No. 3 (Wrinch Vein System) at 577,590 tons grading 0.108 oz/ton gold, 7.51 oz/ton silver, 0.49% copper, 1.49% lead and 6.53% zinc. In addition, records indicate that the tails pond contains in excess of 110,000 tons grading in the area of 0.06 oz/ton gold and 2-3 oz/ton silver. Obviously there is reserve potential on a number of the other veins plus the possibility of bulk tonnage mining in areas where the frequency of veins and veinlets is much greater (i.e. where the veins appear to coalesce north of Cole Lake) or in areas of disseminated sulphide mineralization where precious metal values are higher (area south of tailings pond and in the vicinity of the Chisholm Vein System).

Recent dramatic advances in biological leaching have demonstrated vastly improved recoveries for pyritic and arsenical precious metal ores. Extensive testing of the Sam Goosely ores which are very similar to the Owen lake mineralogy by conventional metallurgical and bio-leaching techniques has been carried out by personnel of Equity Silver Mines and associated consultants. This team has recently performed preliminary bio-leaching tests on a sample of the Owen Lake ore and report very encouraging results towards the improved recovery of precious metal values.

Ford (1982) states that "Preliminary calculations indicate the Silver Queen deposit could be put back into production at current metal prices, provided a satisfactory recovery of precious metals can be obtained, either through improved milling techniques or the marketing of a bulk concentrate."

With currently improving precious metal prices and the very real possibility of a breakthrough in handling the complex metallurgy of the Owen Lake ores those areas of the property with higher gold-silver values have good potential for the development of significant tonnages of economic material. An exploration programme to specifically address that aspect of the property is therefore recommended.

RECOMMENDATIONS:

Phase I

- (1) Metallurgical testing should be continued as per the recommendations of personnel of Coast Tech Research and Bio-Gold Research.
- (2) A programme of detailed backhoe-excavator trenching should be initiated to sample and expand those areas in the southern part of the camp where higher precious metal values are known to occur.

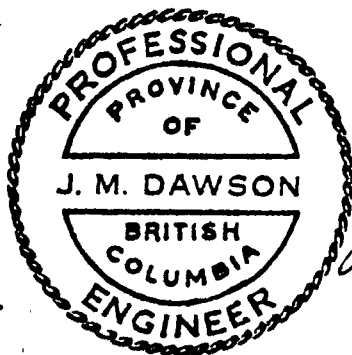
Phase II

Contingent upon the success of Phase I a programme of diamond drilling should be carried out to test these areas at depth.

respectfully submitted,

DAWSON GEOLOGICAL CONSULTANTS LTD.,


James M. Dawson, P. Eng.



Kamloops, B. C.
August 2, 1985.

APPENDIX A

ESTIMATED COST OF RECOMMENDED PROGRAMME

PROGRAMME COSTS

Phase I

(1) Metallurgical Testing		\$ 20,000.00
(2) Detailed Trenching and Sampling		
(a) Kohering 666 Hydraulic Excavator 150 hrs. @ \$120/hr. fueled and operated	\$ 18,000.00	
(b) Mob & Demob of excavator	10,000.00	
(c) One Geologist 20 days @ \$300/day	6,000.00	
(d) Two Swampers 20 days @ \$100/day	4,000.00	
(e) Assays and analyses	2,000.00	
(f) Food and camp costs	2,500.00	
(g) Rental of gas plugger	1,000.00	
(h) Powder, caps and fuse	1,000.00	
(i) Rental of compressor (1 month)	2,500.00	
(j) Bond and reclamation	5,000.00	
(k) Consulting and final report preparation	4,000.00	
(l) Travel, freight and miscellaneous costs	<u>6,000.00</u>	
		<u>62,000.00</u>
		\$ 82,000.00
Contingency @ 10%		<u>8,200.00</u>
<u>Total Cost of Phase I (rounded)</u>		<u><u>\$ 90,000.00</u></u>

Phase II

Diamond Drilling 7,500 feet NQ wireline drilling @ \$40/foot all in	\$ 300,000.00
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APPENDIX B

REFERENCES

REFERENCES

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Various files of Bulkley Silver Resources Ltd.

APPENDIX C

ASSAY RESULTS

Tabulation of Assays

Vein System	Vein	Location	Samples			Gold	Silver	Copper	Lead	Zinc	Source of Data
			Number	Length	Average Width						
Wrinch	No. 1	Surface	4	Ft. 600	Ft. 6.7	Ounce/Ton 0.02	Ounce/Ton 6.3	Per Cent 0.66	Per Cent 1.6	Per Cent 5.3	B.C. Ann. Rept., 1965.
Wrinch	No. 2	Surface	12	1,200	6.4	0.02	2.8	0.1	4.3	6.2	
Wrinch	No. 3	Upper level, south drift	Numerous	560	3.4	0.07	7.8	2.77	0.81	6.7	Nadina Ann. Rept., 1969.
Wrinch	No. 3	Upper level, north drift	Numerous	50	3.0	0.05	6.1	2.55	0.21	0.96	Nadina Ann. Rept., 1969.
Wrinch	No. 4	Surface	Numerous	1,000	4.0	0.17	10.1	0.2	2.8	5.6	Nadina Ann. Rept., 1969.
Wrinch	No. 4 (MacKay vein)	Surface	5	300	4.8	0.06	5.9	0.14	4.3	7.7	B.C. Ann. Rept., 1965.
Wrinch	No. 4	Upper level	Numerous	204	6.5	0.11	6.46	0.33	2.39	6.93	Nadina Ann. Rept., 1969.
Wrinch	No. 4	Earl adit-level	Numerous	848	5.0	0.08	7.5	0.45	1.8	7.9	Nadina Ann. Rept., 1969.
Wrinch	No. 4 (Ruby extension)	Earl adit-level	Numerous	620	4.0	0.19	16.0	0.68	1.8	5.9	Nadina Ann. Rept., 1969.
Portal	No. 5	Surface	17	210	2.5-3	0.078	26.71	5.55	0.33	2.68	Nadina records; press release, November, 1969.
Portal	No. 5	Surface	8	110	3.8	0.22	29.45	3.57	0.21	0.73	Nadina records; press release, November, 1969.
Unclassified	No. 6	Surface	Several	250	3.5	0.13	3.4	0.37	2.20	6.40	Nadina records.
Unclassified	No. 6 (north branch)	Surface	---	---	3.7	0.10	3.0	0.11	2.10	10.20	Nadina records.
Unclassified	No. 7	Surface	---	---	3.0	0.07	4.8	0.93	2.00	8.44	Nadina records.
Portal	Earl adit No. 1	Earl adit	30	80	5.0	0.12	26.5	2.57	0.82	5.28	Old company records.
Portal	Earl adit No. 2	Earl adit	22	150	3.5	0.04	5.7	0.60	0.47	7.06	Old company records.
Portal	Earl adit No. 3	Earl adit	4	30	3.5	0.01	1.5	0.5	0.6	5.2	Old company records.
Portal	Earl adit No. 4	Earl adit	7	---	1.8	0.01	1.5	0.1	0.16	3.5	Old company records.
Portal	Earl adit No. 5	Earl adit	5	---	0.8	0.01	3.56	0.8	0.38	5.1	Old company records.
Unclassified	Earl adit No. 9	Earl adit	---	---	---	---	3.8	0.63	1.2	4.0	Old company records.
Unclassified	Earl adit No. 10	Earl adit	---	200	1.5	---	4.0	1.6	0.9	1.2	Old company records.
Unclassified	Earl adit No. 11	Earl adit	5	220	2.0	0.04	8.2	1.2	0.56	1.4	Old company records.
Wrinch	Earl adit No. 12	Earl adit	9	30	9.4	0.02	3.76	0.3	3.3	9.6	B.C. Ann. Rept., 1965.
Wrinch	Earl adit No. 13	Earl adit	4	250	7.5	0.04	5.7	2.5	1.7	8.0	Nadina records.
Wrinch	Earl adit No. 13 north splay	Earl adit	3	70	1.4	0.05	12.05	7.01	0.72	4.02	Consultant's report to Nadina, 1965.
Chisholm	Mae No. 1	Shaft	2	Spot	1-2	0.10	9.6	0.16	2.08	16.6	Nadina records.
Chisholm	Mae No. 2	Surface	3	100	2.3	0.09	22.47	---	9.2	2.5	Old company records.
Chisholm	Mae No. 3	Surface	5	270	3.5	0.03	5.7	---	1.9	6.7	Old company records.

EXPLORATION AND MINING

APPENDIX D

WRITER'S CERTIFICATE

JAMES M. DAWSON, P. ENG.

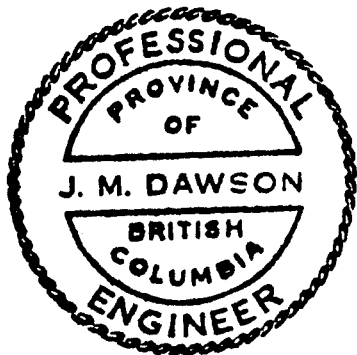
Geological Engineer

#206 - 310 NICOLA STREET • KAMLOOPS, B.C. V2C 2P5 • TELEPHONE (604) 374-0544

C E R T I F I C A T E

I, JAMES M. DAWSON, of Kamloops, British Columbia, hereby certify that:

- (1) I am a geologist employed by Dawson Geological Consultants Ltd. of Suite 206, 310 Nicola Street, Kamlops, B. C.
- (2) I am a graduate of the Memorial University of Newfoundland, B.Sc. (1960), M.Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of British Columbia. I have practised my profession for 22 years.
- (3) I am the author of this report which is based on a visit to the Owen Lake property on June 30, 1985, as well as a study of a vast amount of published and unpublished data.
- (4) I have no direct or indirect interest in the property discussed in this report or in the securities of Bulkley Silver Resources Ltd., nor do I expect to receive any.
- (5) Permission is hereby granted to use this report in a statement of material facts or prospectus to be filed with the Vancouver Stock Exchange and the B. C. Securities Commission.



DAWSON GEOLOGICAL CONSULTANTS LTD.,

James M. Dawson
James M. Dawson, P. Eng.

Kamloops, B. C.,

August 2, 1985.