

# MINNOVA

093L102  
Silver Queen

821231

MEMORANDUM

DATE: August 2, 1990

A  
TO: J. Purkis

COPIES A  
COPIES TO:

DE  
FROM: A. J. Davidson

SUJET  
SUBJECT: New Nadina Mines and Silver Queen Mine, Houston, B.C.

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Attached please find some data given to me by George Stewart of Kettle River Resources and New Nadina Mines regarding their Silver Queen Mine located near Houston B.C.

The Silver Queen is an underground Ag-Pb-Zn-Au vein deposit with drilled off reserves of:

TONS	AU	AG	CU	PB	ZN
	OPT	OPT	%	%	%
500,000	0.10	10.0	0.65	1.47	6.40

Apparently the ore is metallurgically complex but it may be suitable for Samatosum Mill. George is wondering if we would be amenable to custom milling the Silver Queen ore if he could get it to Sam or if it looks attractive economically Minnova Inc. could do a property deal on it. At first glance it looks like it would be too far a haul to make it but...

Could you please review this stuff and if you are interested in pursuing it, please get back to me. I will be away until Aug. 27th.

NADINA  
MOUNTAIN

SILVER  
COPPER  
PROSPECT  
(owned by Nadina)  
TSALIT  
MOUNTAIN

LAKE

NORANDA / GRANGES  
AIRBORNE ANOMALY

OWEN

28 Miles on all weather, high speed logging road to  
Houston, B.C.

WRINCH CANYON

DISCOVERY DRILL HOLE  
March, 1984.

17' - 5.3 oz / 1 Ag  
23' - 0.6 to 1.0 oz / 1 Ag

1983 / 4 DRILLING INDICATES SIGNIFICANT  
INCREASE IN WIDTH - S.26 VEIN

1983-4 DRILLING SHOWS  
3 FOOTWALL VEINS

HIGH ZINC

4 HOLES IN VEIN TO 350' BELOW  
2600 LEVEL OF ECONOMIC WIDTHS  
AND GRADE DRILLED IN 1970 B  
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 0.2 / TON 0.10, An 0.2 /  
TON 0.0, Cu 0.76%, Pb 2.1%, 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.

EXPLORATION POTENTIAL  
2880 LEVEL

2600 LEVEL

PROPOSED 2000' CROSSCUT  
ON NADINA'S GROUND

SWITCHBACK 7000' FROM PORTAL TO S FACE

PROPOSED 2000' CROSSCUT  
ON NADINA'S GROUND

RUBY EXTENSION VEIN

VEIN 900' LONG, 300'  
DEEP & OPEN TO DEPTH  
4.6' WIDE ASSAYS AVERAGE  
OF 21 HOLES - 0.186 oz / ton Au  
10.81 Ag, 9.03 Zn  
(not weighted to width)

CROSS SECTIONED FOR  
ILLUSTRATION

PROPOSED DRIFTING 650'  
CUT DRILL STATIONS  
& DRILL TO CHECK  
FOR EXTENSION OF  
NO 3 (RUBY) VEIN

UNMINED  
PYRITE VEIN

ECONOMIC GRADE MINERALIZATION  
ENCOUNTERED IN FAULT IN 1977  
DIAMOND DRILLING 1000' BELOW  
2600' LEVEL IN THIS AREA.

NEW NADINA EXPLORATIONS LTD.

SILVER QUEEN MINE  
OMENICA, M.D.

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 GOMS  
PLOT OF HOLES EXTRAPOLATED FROM DATA BY R REID

New Nadina Explorations Ltd. has embarked on a successful exploration program on its Owen Lake silver, gold, zinc property near Houston, B.C.

During the period, May of 1980 to September 1981, a program of deep overburden trenching, mine rehabilitation, surface and underground drilling, crosscutting, data compilation, construction of a 20 man camp and a mine plant capable of sustaining pre-production development mining was completed.

The results of this recent work have indicated a substantial tonnage of good grade silver, gold, lead and zinc mineralization. Assays ranging up to .37 oz./ton Au, 17.2 oz./ton silver and 18.5% zinc over a true width of 3.8' were encountered. The gold assays were atomic absorption and checks by fire assaying showed an increase of 15%.

Management feels confident that enough ore is indicated to begin feasibility studies for the construction of a mill of no less than 300 tons per day.

The underground drilling program conducted during 1981 proved a panel of ore laying below the 2600' level. This ore panel is 900' in length, has 250' of depth and is 5.0' in width; containing grades of approximately 12.4 ounces per ton of silver, 21 oz. per ton gold, 1.26% lead and 10% zinc (see accompanying assays).

The zone tested is less than 20% of the known vein system. This vein was partially mined above the 2600' elevation (by the Bradina Joint Venture) in the early seventies. Diamond drilling done by the previous operators has proven that the ore shoots go to at least 2000' below the 2600' level and continue along the mile of known continuous vein structure.

Surface diamond drilling conducted on the area to the south of the workings has established the presence of a new vein or an extension of the main vein. This vein is at least 1000' in length, has 1500' of depth and where drilled appears to be two feet in width. This vein was encountered in five drill holes, three of which were drilled by New Nadina and two by previous operators.

Trenching in 1980 extended the portal vein and established the presence of a suspected flat fault. This rich vein (5% Cu, 20 oz. per ton silver over 2.5') has defied drill testing because of this flat fault.

Due to the many veins on the property management decided to concentrate on the best known area and on a vein composed of an ore type typical of the bulk of the mineralization on the property.

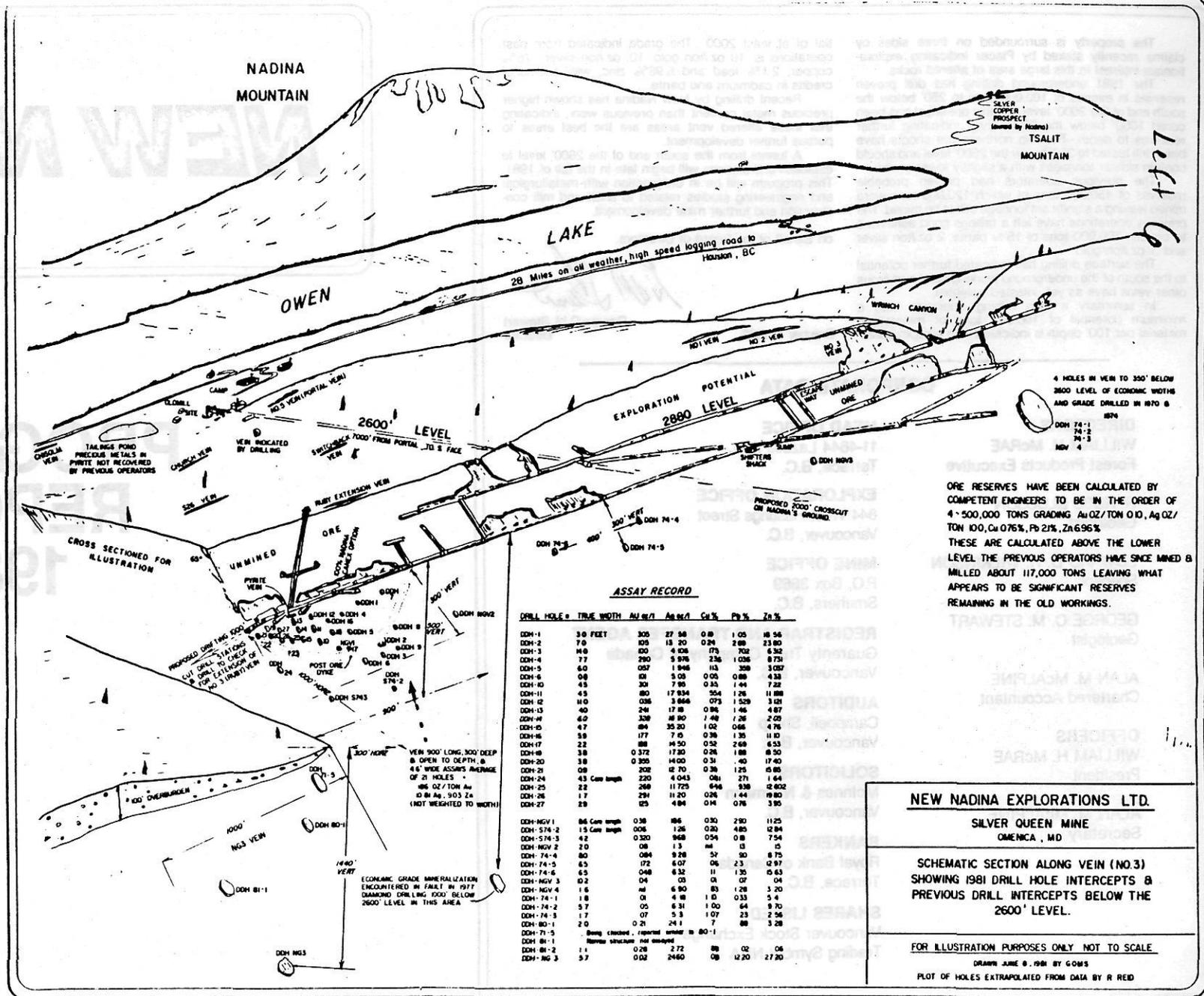
The body of mineralization lying 250' below the 2600' level has been drill proven and further testing below the 2600' level will be limited to drifting from shaft stations.

It is proposed to test the vein lying to the south of the mine workings by underground development to establish reserves adequate to sustain a milling operation during shaft sinking and subsequent lateral development.

A further consideration in concentrating exploration and development in the south end of the property is the intense alteration of the wall rocks and the greater precious metal content of the mineralization found in this area.

This pervasive alteration found in these rocks is due to its proximity to volcanic vents and associated hydrothermal activity. The major part of the altered zone is located beneath deep overburden. The added bonus of vein development in this area is the possibility of encountering a large tonnage proximal vent deposit similar to that operated by Placer Development at Houston, B.C. (Equity Silver).

Placer Development is the owner of some of the northern crown granted mineral claims on the Nadina property and Nadina holds these under a very favourable option agreement.



**NEW NADINA EXPLORATIONS LTD.**

SILVER QUEEN MINE  
ONAMICA, 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 GOWS  
PLOT OF HOLES EXTRAPOLATED FROM DATA BY R RED

The property is surrounded on three sides by claims recently staked by Placer indicating explorationists interest in this large area of altered rocks.

The 1981 underground drilling has drill proven reserves in excess of 100,000 tons to 250' below the south end of the 2600' level and this ore shoot has been cored 1000' below the 2600' level, indicating further reserves to depth. The two northern ore shoots have been drill tested to 250' below the 2600' level and should contain similar tonnages with a slightly lower grade.

The previous operators had proven probable reserves of 450,000 tons of which 120,000 tons were mined leaving a significant tonnage still to be mined. The previous operations have left a tailings pond estimated to contain 100,000 tons of 15% barite, 2 oz./ton silver and .1 oz./ton gold.

The surface drilling has indicated further potential to the south of the underground workings and numerous other veins have as yet untested potential.

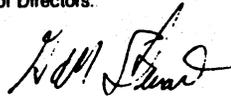
In summary a vein mining operation with a minimum potential of 100,000 tons of mineralized material per 100' depth is indicated with a depth poten-

tial of at least 2000'. The grade indicated from past operations is .10 oz./ton gold, 10. oz./ton silver, .76% copper, 2.1% lead and 6.96% zinc, with additional credits in cadmium and barite.

Recent drilling by New Nadina has shown higher precious metal content than previous work, indicating that these altered vent areas are the best areas to pursue further development.

A tunnel from the south end of the 2600' level to establish drill stations will begin late in the fall of 1981. This program will be in conjunction with metallurgical and engineering studies related to shaft and mill construction and further mine development.

on Behalf of the Board of Directors.



George O.M. Stewart  
Director

October 1, 1982

#### CORPORATE DATA

##### DIRECTORS

**WILLIAM H. McRAE**  
Forest Products Executive

**R. ROSS BLUSSON**  
Geologist

**EDWARD D. H. WILKINSON**  
Solicitor

**GEORGE O. M. STEWART**  
Geologist

**ALAN M. McALPINE**  
Chartered Accountant

**OFFICERS**  
**WILLIAM H. McRAE**  
President

**ALAN M. McALPINE**  
Secretary

##### HEAD OFFICE

11-4644 Lazelle Ave.  
Terrace, B.C.

##### EXPLORATION OFFICE

844 West Hastings Street  
Vancouver, B.C.

##### MINE OFFICE

P.O. Box 3669  
Smithers, B.C.

##### REGISTRAR AND TRANSFER AGENT

Guaranty Trust Company of Canada  
Vancouver, B.C.

##### AUDITORS

Campbell, Sharp  
Vancouver, B.C.

##### SOLICITORS

McInnes & Neumann  
Vancouver, B.C.

##### BANKERS

Royal Bank of Canada  
Terrace, B.C.

##### SHARES LISTED

Vancouver Stock Exchange  
Trading Symbol NNA

# NEW NADINA

# PROGRESS REPORT 1982

# NEW FRONTIER EXPLORATION INC.

The Silver Queen Mine is situated outside of Houston, B.C., Canada. The adjacent map shows a cross-section of a portion of the workings of the mine. Recently completed financings totalling \$170,000.00 have provided the Company with funds to carry out exploration work aimed at increasing the known reserves. The presently known ore structures at the Silver Queen Mine are 8 sub-parallel veins that occupy shears or fracture zones in Mesozoic gently-dipping volcanics. All the veins have been exposed on the surface, but only one has been exposed by underground workings.

Various ore reserves have been estimated by competent engineers in the order of 400,000 tons, grading 0.1 oz. per ton gold, 10 oz. per ton silver, .76% copper, 2.1% lead, and 6% zinc. This grade of ore has a present gross metal value at the mine of about US\$130.00. The following are the estimates on the main vein only:

	Tons	Au Oz/Ton	Ag Oz/Ton	Cu. %	Pb. %	Zn. %
F.R. Thompson, P. Eng.	449,000	0.12	10.00	0.65	1.47	6.40
D.D. Campbell, P. Eng.	551,600	0.10	10.00	0.76	2.10	6.96
Bralorne Resources Ltd.	413,237	0.10	8.39	0.64	1.27	5.64

All of the estimates are based on the same data. Differences in tonnage arise from the greater or lesser vertical extension applied to the better mineralized areas. Differences in grade are chiefly a function of the degree of dilution applied.

The geological potential for new ore is excellent and the initial program is designed to test the extension of the main vein.

Management considers this to be one of the finest multi-metal prospects in British Columbia. Approximately 117,000 tons were mined above the 2600' level during 1972 and 1973 by Bralorne Resources Ltd. The mine was shut down in 1973 due to low mineral prices prevailing at that time and also metallurgical difficulties. Metallurgical problems, in the opinion of Wright Engineers Ltd., consultants to the Company, are soluble.

The exploration and development program is scheduled to start June 1, 1977.

**FUTURE SILVER PRICE:** Silver has experienced gradual but significant shifts in its basic supply/demand picture in recent years, except for 1975. The principal change involved a substantial reduction in the amount of available secondary silver supplies because of 15 consecutive years of deficit mine output. The resultant heavy inventory liquidation has approximated nearly a billion ounces of silver. This development coupled with the continued sharp imbalance between mine production and industrial usage, suggests possible supply difficulties during the years ahead if present consumption rates are maintained or increased. If the deficit between new mine supply and demand in future years should revert to the substantial amounts that prevailed in 1973 and 1974, higher silver prices will be inevitable.

# NEW NADINA

## EXPLORATIONS LTD.

P.O. BOX 130  
GREENWOOD, B.C.

PHONE 445-6540

- 1960 THE NADINA COMPANY WAS FORMED TO EXPLORE AND DEVELOP THE SILVER QUEEN MINERAL CAMP IN WEST CENTRAL BRITISH COLUMBIA.  
THE DIRECTOR/MANAGEMENT TEAM IS COMPOSED OF TWO GEOLOGISTS, AN ACCOUNTANT AND IS HEADED BY A LUMBER MINING EXECUTIVE, THE LATTER TWO LIVING IN THE NORTH WEST OF BRITISH COLUMBIA.  
THE GEOLOGICAL TEAM HAS WORKED IN THE SILVER QUEEN CAMP SINCE THE EARLY 1960'S AND ONE OF THESE GEOLOGISTS WAS LARGELY RESPONSIBLE FOR THE DISCOVERY OF THE LARGE BULK TONNAGE EQUITY SILVER MINE WHICH IS LOCATED 15 MILES TO THE EAST.
- 1965-1971 THE SILVER QUEEN CAMP HAS HAD A HISTORY OF STEADY EXPLORATION SINCE 1965 AND HAS BEEN OPTIONED BY MANY MAJOR MINING COMPANIES (DENNISON MINES 1961, KENNECOT COPPER CORP. 1967, NORTHGATE EXPLORATION 1970, BRALORNE & PACIFIC PETROLEUM 1971 AND CAMPBELL RESOURCES 1981).
- 1971-1973 THE PROPERTY WAS BROUGHT IN TO PRODUCTION IN 1971 BY A JOINT VENTURE PARTNER AT A RATE OF 500 TONS PER DAY. THIS OPERATION WAS CLOSED DOWN IN 1973 AND THE MILL TORN DOWN AND SOLD. NADINA MANAGEMENT FELT THAT THE CLOSURE WAS MAINLY DUE TO INADEQUATE TESTING OF THE MILLING AND MINING TECHNIQUES.
- 1977 THE PROPERTY WAS RETURNED TO NADINA IN 1977 AND ALL DATA AVAILABLE FROM THE JOINT VENTURE WAS COMPILED AND STUDIED.  
IT WAS APPARENT THAT CONSIDERABLE ORE WAS LEFT BY THE JOINT VENTURE (500,000 TONS PROVEN BEFORE PRODUCTION 117,000 MINED AND MILLED).
- THE DRILL CORE WAS RELOGGED AND ORE INTERSECTIONS WERE ASSAYED BY FIRE ASSAY RATHER THAN ATOMIC ABSORPTION METHODS. THE FIRE ASSAY INCREASED THE GOLD ASSAY BY AN AVERAGE OF 15%.
- 1980 IN 1980 A 20 MAN CAMP, SHOP, DRY AND MINE PLANT WERE ERECTED AND THE MINE REHABILITATED BY NEW NADINA (TRACK AND PIPE WERE LEFT IN THE MINE BY THE JOINT VENTURE).
- 1981 UNDERGROUND DIAMOND DRILLING BY NEW NADINA PROVED A BODY OF ORE LYING BENEATH THE MAIN ORE ZONE AT THE SOUTH END OF THE PROPERTY. FIRE ASSAYS SHOWED A GOOD TONNAGE OF .21 OZ/TON AU, 12.4 OZ/TON SILVER AND 10% ZINC OVER GOOD MINING WIDTHS (5 FOOT AVERAGE).  
IT WAS AT THIS STAGE OF DEVELOPMENT THAT IT WAS REALIZED THAT THE MAIN VEIN HAD SEVERAL PARALLEL VEINS THAT WERE NEVER TESTED PREVIOUSLY.
- 1982 IN 1982 AN AIRBORNE SURVEY CONDUCTED BY NORANDA EXPLORATION AND GRANGES EXPLORATION SHOWED SEVERAL ANOMALIES ON THE SILVER QUEEN CAMP.
- 1983-1984 A PROGRAM OF DRILLING IN LATE 1983 TO MARCH 1984 INDICATED THAT THESE PARALLEL STRUCTURES DID NOT GO TO SURFACE WITH STRENGTH BUT WOULD BE IMPORTANT PRODUCERS BELOW THE BOTTOM HAULAGE LEVEL.
- 1984 IN MARCH 1984 THE EXPLORATION CREW DECIDED TO TEST AN OLD KENNECOT SOIL GEOCHEMICAL ANOMALY AND INTERSECTED 40 FT. OF MINERALIZED, SILICIFIED, BRECCIA; 17' OF WHICH ASSAYED 5.3 OZ/TON AG. THIS DISCOVERY TURNED OUT TO BE COINCIDENT WITH THE AIRBORNE ANOMALY AND GROUND GEOPHYSICAL WORK SUBSTANTIATED THE ANOMALY.

THIS WAS THE FIRST TIME IN THE SILVER QUEEN CAMP THAT GEOPHYSICS WAS PROVEN TO LOCATE MINERALIZATION. AS NO MODERN GEOPHYSICAL WORK HAS BEEN DONE ON THE PROPERTY, IT IS ANTICIPATED TO BEGIN TESTING THE 25 SQUARE MILE ALTERED COMPLEX WITH GEOPHYSICS COUPLED WITH ANOMALY DRILLING.

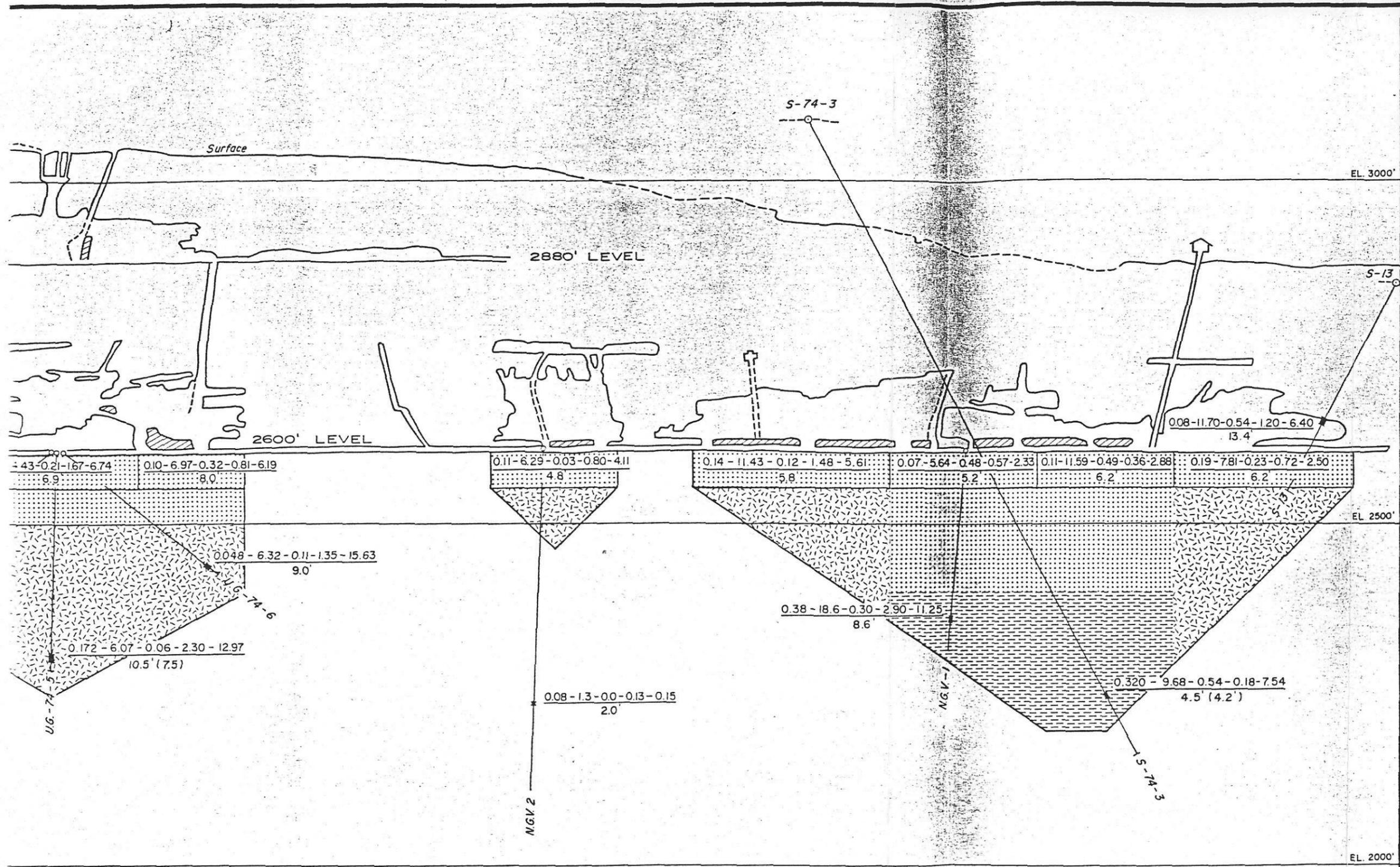
THIS BREAK-THROUGH IN EXPLORATION TECHNIQUE HAS SPARKED RENEWED INTEREST IN THE SILVER QUEEN CAMP AND REPRESENTATIVES FROM SEVERAL MAJOR MINING COMPANIES ARE EXAMINING THE VOLUMINOUS DATA COMPILED BY NADINA OVER THE YEARS.

NADINA, AN ESTABLISHED RESOURCE COMPANY IS POISED TO BEGIN EXPLORATION IN A CAMP WITH PROVEN ORE RESERVES AND GEOLOGY SUITABLE FOR THE DEVELOPMENT OF BULK TONNAGE ORE BODIES. THIS PROGRAM IS TO BEGIN IN A BEAR MARKET FOR ALL COMMODITIES AND WITH SHARE PRICES AT AN ALL TIME LOW.

A STUDY OF THE SHARE PRICE SHOWS THAT IN THE COMPANY'S 20 YEAR HISTORY THE APPRECIATION OF NADINA SHARES OUTPERFORMED THE PRICE INCREASE IN PRECIOUS METALS. A UNIQUE OPPORTUNITY EXISTS FOR THE INVESTOR IN THE SHARES OF A RESOURCE COMPANY WITH A HISTORY SUCH A THIS.

THE ADDED HEDGE FOR THE INVESTOR IS THAT THE POLYMETALLIC VEINS CONTAIN VERY GOOD BASE METAL VALUES AS WELL AS GOLD AND SILVER.

GEORGE D.M. STEWART  
MANAGING DIRECTOR.



NEW FRONTIER EXPLORATION INC.

SILVER QUEEN MINE  
 LONGITUDINAL SECTION OF  
 PORTION OF No. 3 VEIN

HOUSTON, B.C.

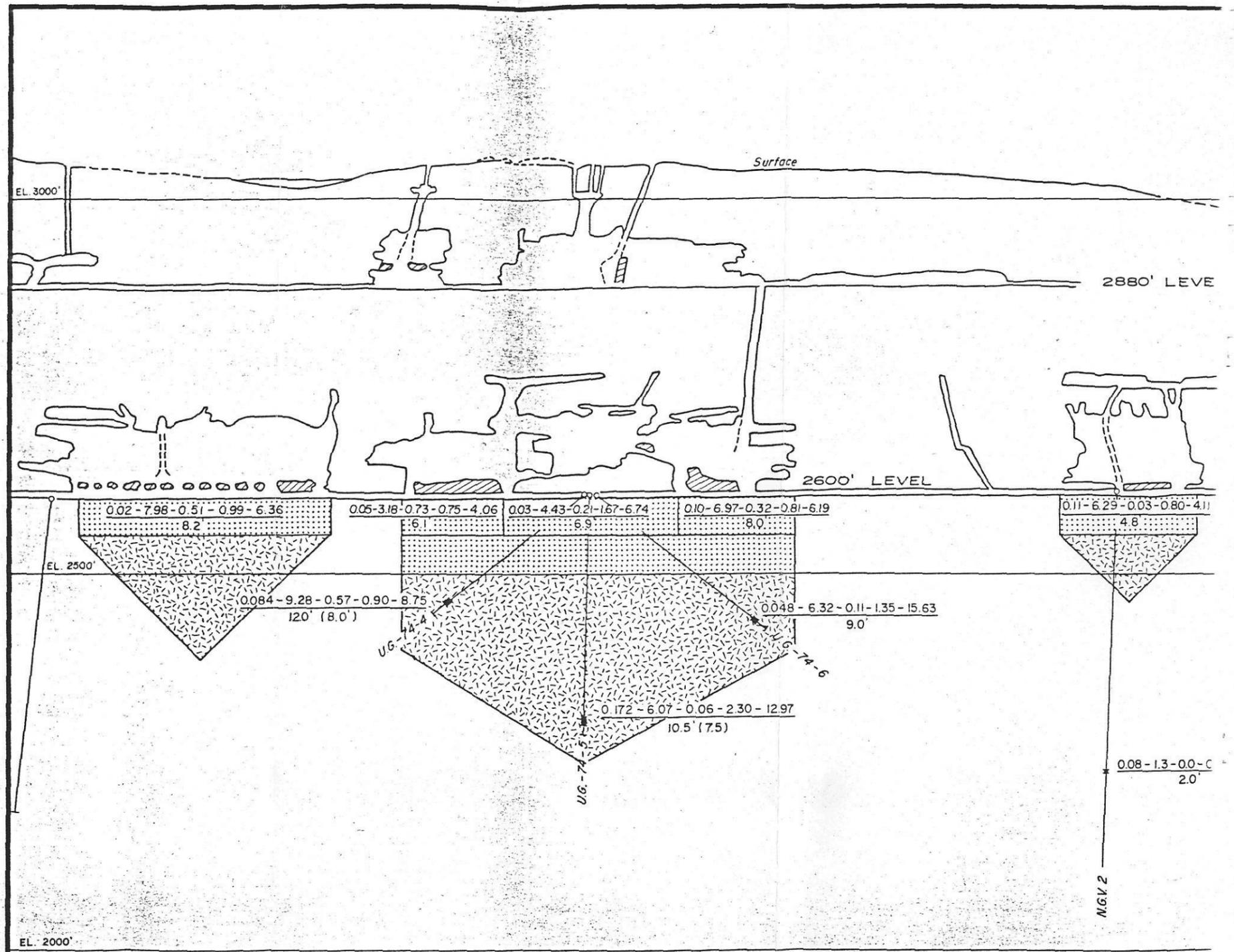
OMENICA MINING DIVISION

SCALE



ASSAY SEQUENCE

INTERSECTION LENGTH (ESTIMATED TRUE WIDTH)	Oz./Ton GOLD	Oz./Ton SILVER	% COPPER	% LEAD	% ZINC
6.9	0.43	0.21	1.67	6.74	
8.0	0.10	6.97	0.32	0.81	6.19
9.0	0.048	6.32	0.11	1.35	15.63
10.5 (7.5)	0.172	6.07	0.06	2.30	12.97
4.8	0.11	6.29	0.03	0.80	4.11
2.0	0.08	1.3	0.0	0.13	0.15
5.8	0.14	11.43	0.12	1.48	5.61
5.2	0.07	5.64	0.48	0.57	2.33
6.2	0.11	11.59	0.49	0.36	2.88
6.2	0.19	7.81	0.23	0.72	2.50
8.6	0.38	18.6	0.30	2.90	11.25
4.5 (4.2)	0.320	9.68	0.54	0.18	7.54
13.4	0.08	11.70	0.54	1.20	6.40



- ORE BLOCKS**
-  REASONABLY ASSURED
  -  PROBABLE
  -  DRILL INDICATED

**ASSAY SEQUENCE**

	Oz./Ton	Oz./Ton	%	%	%
	GOLD	SILVER	COPPER	LEAD	ZINC
0.084 - 9.28 - 0.57 - 0.90 - 8.75					
12.0' (8.0')	INTERSECTION LENGTH (ESTIMATED TRUE WIDTH)				