85-911-14063

11/86

TRENCHING, MAPPING AND SAMPLING REPORT

ON THE

SILVER HORN PROJECT

SLOCAN/REVELSTOKE MINING DIVISIONS

N.T.S.: 82 K/11 & 14

Latitude: 50° 45' 25"

Longitude: 117° 24' 45"

BY

G.R. McKILLOP

W.J. ROBERTS

FOR

NAKUSP RESOURCES LTD.

September 1985

TABLE OF CONTENTS

APPENDICES

ILLUSTRATIONS

		Scale
MAP NO. 1	SILVER HORN COMPILATION MAP WITH HISTORICAL ASSAYS	1:20000
NO. 2	GEOLOGY MAP	1:10000
NO. 3	HORN LEDGE GEOLOGY AND TRENCH SAMPLING MAP	1:2000
NO. 4	HORN LEDGE ZONE, SOIL SAMPLING RESULTS MAP	1:5000
NO. 5	HORN LEDGE ZONE, VLF-EM SURVEY RESULTS MAP	1:5000

SUMMARY AND RECOMMENDATIONS

The 1985 exploration program on the Silver Horn Project evaluated potential strata bound sulphide mineralization along the northwest trending Horn Ledge and Ellsmere Ledge Zones for a total expenditure of $17,790.

The Horn Ledge Zone occuring intermittently at a limestone-schist contact over a strike length of 3,600 metres and 850 metres vertically, consists of pyrite, galena and sphalerite mineralization over a maximum thickness of 4 metres. Lead-zinc and silver values were low and the best interval containing 30.% Pb, .01% Zn and 1.2 oz/ton Ag over 0.3 metres. Silver-lead ratios averaged less than 1:20. Although alteration is persistent along strike, sulphide mineralization appears to have limited tonnage potential due to erratic distribution of lenses.

The Ellsmere Ledge Zone also occurs at an altered limestone-schist contact over a strike length of 1,800 metres. Although sulphides are more predominant, potential economic grades of lead, zinc and silver mineralization over widths of two to four metres were also low. The best values obtained assayed 10.6% Pb, 7.8% Zn and 0.7 oz/ton Ag over one metre.

The blasting and hand trenching program was the most effective method to sample the horizons, although the depth of oxidation was much greater than expected. The soil sampling program on the Horn Ledge Zone confirmed the discontinuous nature of mineralization by outlining elongate discontinuous lead-silver anomalies along the limestone-schist contact. The VLF-EM survey on the Horn Ledge appears ineffective in locating massive sulphide mineralization.

Both the Black Warrior and Silver Leaf showings with high precious metal contents were snow covered and not accessible.

Overall, the Ellsmere Ledge Zone holds the best potential for discovery of strata bound lead-zinc-silver mineralization with combined Pb-Zn grades in excess of 10 percent. We recommend continued evaluation of this zone by prospecting, trenching, and soil geochem along the trend with a follow-up I.P. survey. At the completion of a successful targeting stage, drill testing should be initiated.

INTRODUCTION

The Silver Horn Project encompasses 116 claim units near Galena Creek in the Lardeau area of southeastern British Columbia. The field program was designed to evaluate the exploration potential of silver-lead-zinc mineralization reported on the claims, particularly the strata bound potential of the Horn and Ellsmere Ledges.

During the period from September 12 to September 20, 1985, 37 man days were spent on the claims mapping, sampling, hand trenching, line cutting and VLF-EM surveying. The results of this work are summarized herein.

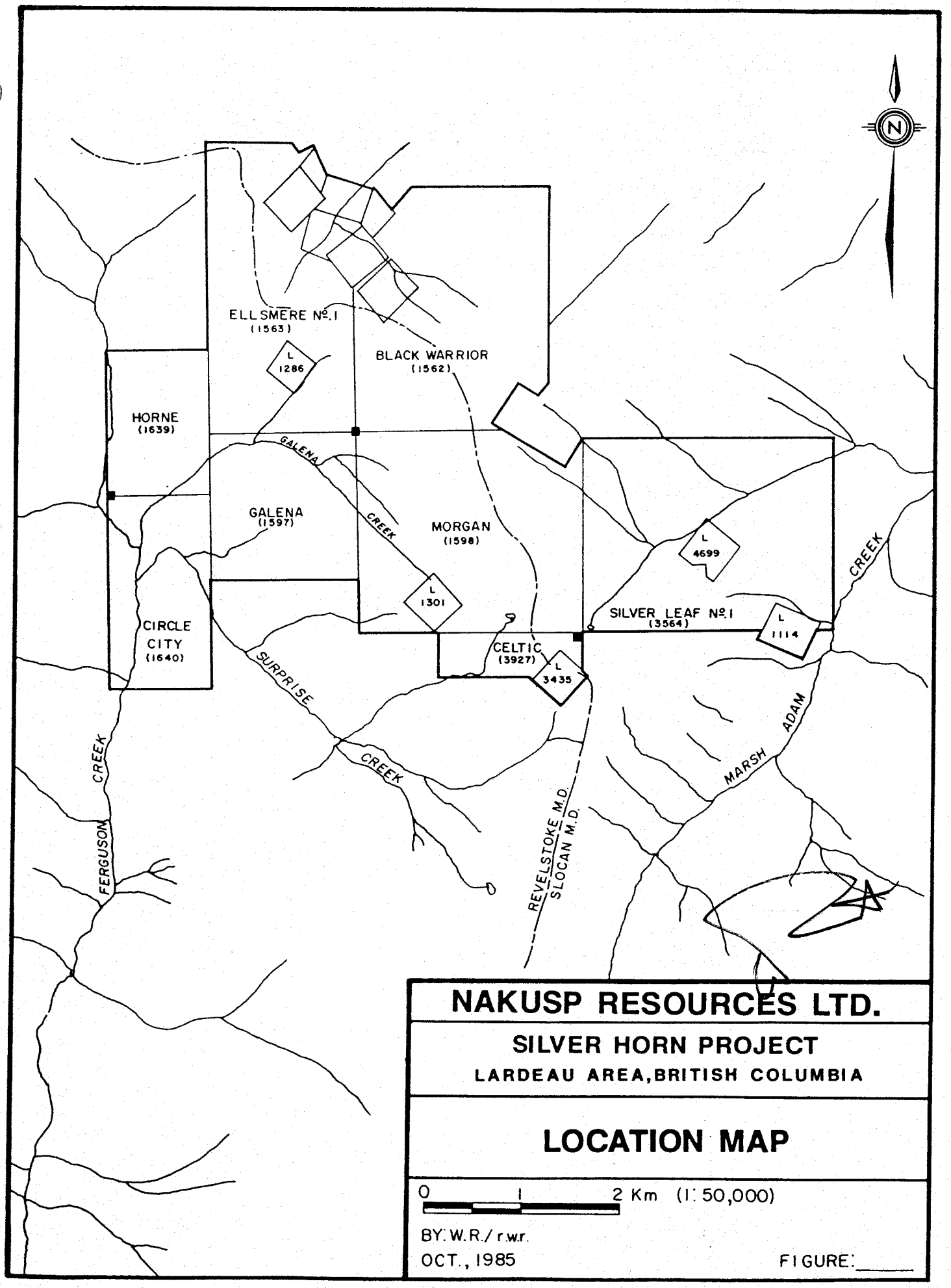
Although time limitations and inclement weather conditions prevented a thorough investigation of the entire claim block, the Horn Ledge zone was evaluated in detail. The Horn Ledge consists of irregular discontinuous zones of highly oxidized lead-zinc-silver mineralization of probable replacement origin associated with limestone-schist contacts over a minimum strike length of 3,600 metres. The Ellsmere Ledge, although similar, contains sulphide rich mineralization that is exposed intermittently over an 1,800 metre strike length.

LOCATION AND ACCESS

The claims of the Silver Horn Project are located at the head waters of Galena Creek, 15.5 air kilometres north-northeast of the community of Trout Lake, NTS 82K/11 & 14, latitude 50° 45' 25" and longitude 117° 24' 45".

Elevations on the claims range from 4,000 feet a.s.i. to over 8,800 feet (1,200 m to 2,680 m). Although most of the claim group lies above tree line, the area investigated in detail lies within alpine timber.

The most practical access to the claims is by helicopter from either Nelson (150 air kilometres) or Revelstoke (65 air kilometres). A network of recently refurbished pack trails connects most of the known showings with the end of the logging road at Fergusson.


N
ELLSMERE No.1
(1563)
L
1286
BLACK WARRIOR
(1562)
HORNE
(1639)
GALENA
CREEK
GALENA
(1597)
MORGAN
(1598)
L
4699
L
1301
SILVER LEAF No.1
(3564)
L
1114
CREEK
CIRCLE
CITY
(1640)
CELTIC
(3927)
L
3435
SURPRISE
CREEK
CREEK
FERGUSON
MARSH
ADAM
REVELSTOKE M.D.
SLOCAN M.D.
NAKUSP RESOURCES LTD.
SILVER HORN PROJECT
LARDEAU AREA, BRITISH COLUMBIA
LOCATION MAP
0
1
2 Km (1:50,000)
BY: W.R./r.w.r.
OCT., 1985
FIGURE:_____

PROPERTY

The Silver Horn Project encompasses 116 claim units, including 3 crown grants, optioned from Jack Denny and Eric Denny, both of Nelson, B.C. The summary of claims follows:

SUMMARY OF CLAIMS

Claim Name	Recording Date	Units	Record No.	Lot No.
Black Warrior #1	83-03-01	20	1562	N/A
Ellsmere #1	83-03-01	18	1563	"
Silver Leaf #1	83-03-01	20	3564	"
Morgan #1	83-07-08	20	1598	"
Galena	83-07-08	9	1597	"
Celtic	83-07-07	3	3927	"
Circle City	83-09-15	8	1640	"
Horne	83-09-15	6	1639	"
Ellsmere	81-09-08	1	1286	"
Morgan	81-09-29	1	1301	"
Edna No. 2	79-03-02	1	1114	(5698)
White Star	79-03-02	1	1115	(11330)
Copper Glance	80-01-17	1	1681	(13483)
Victoria	80-01-17	1	1678	(13479)
Gladstone	80-01-17	1	1679	(13480)
Snowstorm	82-01-18	1	2833	(13481)
Canadian Girl	83-01-24	1	3439	(4705)
Black Warrior	Crown 1913	1	-	(10646)
Eva May	Crown 1913	1	-	(10647)
Silver Leaf	Crown 1901	1	-	(4699)
	Total	116		

PREVIOUS WORK

The Galena Creek area was very actively explored during the period from 1983 to roughly 1917. During that period many claims were recorded and crown granted. Gordon Turner's 1983 assessment report on the Denny claims summarizes the work undertaken during this period and the reader is referred to Turner's summary for historical data.

Sporadic exploration of isolated claims has been completed over the last 50 years, as is evidenced by numerous old claim posts and workings. The results of this exploration is not well documented and unknown to the authors.

1985 EXPLORATION PROGRAM

During the period September 12 to September 20, 1985, a crew consisting of a geologist, two prospectors, a miner, and a sampler spent a total of 37 man days working on the Silver Horn Project. This work included:

- blasting 17.5 m^3 of rock and debris from pits and trenches;
- re-opening the Centre Star Adit;
- clearing over 2 km of old trail;
- cutting 1.2 km of new base line;
- flagging 2.2 km of cross line;
- completing 2.2 km of VLF/EM (Radem) survey;
- collecting 64 rock chip samples;
- collecting 86 soil samples;
- geological mapping of the Horn and Ellsmere Ledges at a scale of 1:1000;
- reconnaissance geological mapping of roughly 2.0 kms at a scale of 1:5000;
- all logistical support for the above program.

LINECUTTING, GRID ESTABLISHMENT AND TRAIL CLEARING

The existing northwest trending base line along the Horn Ledge Zone was extended by 1,200 metres. A total of 2,200 metres of cross lines averaging 200 metres in length were established by chain and compass with 25 metre stations to provide control for detailed soil sampling, VLF-EM surveying, mapping, trenching and sampling.

To provide improsed access to the claims, approximately 2 km of old trail was cleared of deadfall and overgrowth by chain saw.

GEOCHEMICAL SOIL SAMPLING

A total of 86 soil samples were collected at 25 metre intervals along cross lines with 200 metre spacing. Two fill-in lines each 225 metres long with 15 metre sample spacing were established in areas of known mineralization.

All soils were collected from the 'B' horizon, packaged in Kraft soil envelopes and sent to Min-En Laboratories in North Vancouver. The samples were oven dried, screened to -80 mesh and analyzed for lead, zinc and silver by standard atomic absorption techniques utilizing a 0.5 gram sample. Values for all metals are reported in parts per million (ppm). Lead and silver results are plotted on the accompanying Horn Ledge grid map in the pocket accompanying this report.

Geochemical response was relatively poor with few values exceeding 100 ppm lead. High values are coincident with known mineralization and absence of consistent anomalous values along the trend of the Horn Ledge Zone confirms the discontinuous nature of the mineralization. Silver values greater than 1.0 ppm are coincident with high lead values as expected.

VLF-EM SURVEY

A VLF-EM survey was completed along all cross lines along the Horn Ledge Zone grid to determine detectability of sulphide mineralization. Dip angle and field strength readings were recorded at all stations using the Annapolis, Maryland transmitter. Note the appendix for specifics of the instrument.

Actual recorded dip angles (not Fraser filtered) are plotted on the accompanying Horn Ledge Zone grid map. There does not appear to be any correlation of resultant dip angles to known mineralization and it appears this type of survey would be ineffective for targeting potential sulphide mineralization.

REGIONAL SETTING

Read's (1976) regional mapping identified Paleozoic Lardeau Group and Proterozoic Hamill Group rocks within the claim area. The Lardeau rocks consist primarily of phyllite, quartzite, and limestone. Hamill Group rocks consisting of limestone, phyllite and quartzite, lie conformably below the Lardeau and together the two groups form part of a transgressive geoclinal sedimentary sequence that is folded into a series of northwest trending anticlinal/synclinal pairs. Only units of the Lardeau Group were noted during this program.

PROPERTY GEOLOGY

Due to emphasis on sampling and evaluation of mineral potential of the major northwest trending structures, a detailed interpretation of the stratigraphy was not undertaken. Two distinct units were mapped: Chlorite-schist and limestone.

The chlorite schist is the dominant rock type within the mineralized zones on the property. In several areas, particularly on the ridge south of the old Morgan workings, a relatively unsheared equivalent of the schist was found to be a fine grained, thinly bedded tuff of andesitic composition.

The chlorite schist grades into a sericite-pyrite schist which commonly, but not exclusively, occurs adjacent to limestone contacts. The erratic distribution of the sericite-pyrite schist, the gradational contact with the chlorite schist, and the common association with sulphide mineralization suggests the sericite schist may be an alteration product of the chlorite schist.

Detailed mapping has outlined a layer cake sequence of dark grey to black limestone with inter-layers of chlorite-sericite schist. Outcrop patterns and interference figures suggest a period of warping followed by intense isoclinal folding with northeast vergence. Within the Horn Ledge Zone a mimimum of four limestone horizons are apparent. Variable foliation and bedding altitudes are observed as expected in highly folded terranes.

Near sulphide rich zones, the limestone is commonly buff to white in colour and presumed to be a result of alteration during mineralization. Altered limestone is much more wide spread than sulphide mineralization.

MINERALIZATION

Mineralization in the Silver Horn area consists of pyrite, galena, sphalerite, pyrrhotite and chalcopyrite in decreasing order of abundance in a limestone host commonly with 5 metres of the schist contact. The limestone in the vicinity of the sulphides is generally a highly oxidized vuggy rusty brown to black unit that grades outwards to a buff to white limestone which in turn grades to fresh black limestone. Quartz veins are common in all rock types in the area and post date the sulphide mineralization. Quartz and/or calcite crystals occasionally rim vugs. Massive magnetite was noted on a dump between the Morgan and Centre Star workings.

Sulphide content is low in the near surface highly oxidized limestone. Several of the old trenches were deepened by blasting to attempt to reach and sample unoxidized sulphide bearing limestone. Although a sed-ex origin has been proposed by Turner (1983), the textures, grain size and style of mineralization is more suggestive of a replacement-skarn type origin.

The evaluation program of trenching and sampling was concentrated on the two major mineralized zones - the Horn Ledge Zone and the Ellsmere Ledge Zone. The target was a strata bound massive sulphide deposit with attractive precious metal values.

HORN LEDGE ZONE

The Horn Ledge crops out along the crest of the ridge between Surprise and Galena creeks and trends southeast across Dave Morgan Creek for a distance of over 3,600 metres. The horizon is well exposed on the Rob Roy reverted crown granted mineral claim on the east bank of Galena Creek. The Rob Roy adit cross-cuts two mineralized horizons just above the creek level, at which elevation they were sampled and graded 0.06% Pb, 0.02% Zn, and 0.01 oz Ag/ton over one metre intervals. One hundred metres vertically above the adit this zone consists of 3 to 4 metres of intensely oxidized limonite containing visible galena and pyrite. The best one metre chip sample across this zone graded 0.82% Pb, 0.02% Zn, and 0.07 oz/ton Ag. Three metres averaged 0.31% Pb, 0.02% Zn, and 0.05 oz Ag/ton. An adjacent 0.3 m section of semi-massive galena carried 30.2% Pb, 0.01% Zn, and 1.17 oz Ag/ton.

From the Rob Roy Reverted Crown Grant (R.C.G.) to the Centre Star R.C.G., the 1,000 metre strike length of the zone is not well exposed due to moderately sloping terrain. There is a short adit on the Highland Chief R.C.G. that follows a one metre wide zone of oxidized limestone that grades 0.01% Pb, 0.01% Zn and 0.07 oz Ag/ton.

At the Centre Star R.C.G., the zone consists of several limestone beds that are locally replaced by up to 4 metres of oxidized sulphide bearing limestone with irregular skarn development. The limited exposures suggest discontinuous poddy sulphide zones. The original Centre Star workings were deepened to obtain a representative unoxidized sample, although oxidation was persistent to depths of over 2 metres. A series of 4 one metre chip samples at this depth averaged 0.08% Pb, 0.49% Zn, and 0.34 oz Ag/ton, with the best sample assaying 0.11% Pb, 0.02% Zn, and 0.86 oz Ag/ton. A smaller pit on the ridge crest exposed two sulphide zones, each roughly 0.8 m wide in bleached limestone. The best of these zones graded 5.40% Pb, 0.01% Zn, and 0.63 oz Ag/ton.

Further south at the Morgan R.C.G., the Horn Ledge Zone is localized along a single limestone schist contact, with zones of oxidized limonitic limestone or skarn up to 4 metres wide. A parallel and adjacent limestone bed appears to be unaltered and barren. Three of several old pits and trenches were re-opened in the Morgan area. The northern pit exposed 4 metres of oxidized limestone at a depth of over 1.5 metres. The best one metre sample graded 2.24% Pb, 0.22% Zn, and 1.40 oz Ag/ton, while the entire 4 metres averaged 0.86% Pb, 0.08% Zn, and 0.59 oz Ag/ton. The central pit was sampled before and after the excavation with a resulting slight increase in the lead and silver values. The southern trench appears to have been dug across the crest of a parasitic anticline with higher grade values present in the hinge zone, possibly due to remobilization.

Mineralization at Dave Morgan Creek was briefly examined. Oxidation is pervasive in the few poor exposures noted samples of altered limestone contained only trace amounts of lead, zinc and silver.

At the Canadian Girl R.C.G. there are three sub-parallel zones of oxidized limestone separated by chlorite schist and bleached limestone. The respective averages of 2 one metre chips from each zone also returned only trace amounts of lead, zinc and silver.

Overall, most of the galena observed in the Horn Ledge occurs as thin (<1 cm) irregular veins within the oxidized limestone. Disseminated galena, up to 2 mm across is also common, but probably accounts for a lesser volume. Galena pods up to 15 cm across were exposed by blasting, but few showed much continuity. A 30 cm wide zone of semi-massive to massive galena was sampled in the upper Rob-Roy pit, but its location on a very steep face precluded further investigation.

The various mineralized limestone beds noted along the Horn Ledge Zone appear to be fold repetitions of one or perhaps 2 beds. Several anticline crests were noted in outcrop with flat to gently south dipping plunges. It has been suggested that the Horn and Ellsmere ledges are fold repetitions of the same horizon, but insufficient structural data and lack of exposure makes confirmation very difficult.

ELLSMERE LEDGE ZONE

The Ellsmere Ledge occurs to the northeast of Galena Creek. It was briefly examined along an 1,800 metre strike length from the St. Louis adit (on Lot 4710)

northwesterly to the upper Ellsmere adit. In the St. Louis area the mineralization is narrow (< 1 m) and erratic, although considerably less oxidized than the Horn Ledge. The zone here was explored by two short adits and several shallow pits. The best sample assayed 11.20% Pb, 5.38% Zn, and 0.58 oz Ag/ton over 0.7 metres.

Mineralization is higher grade and more consistent at the Ellsmere workings. Widths locally exceed 2 metres, although average widths are probably less than 1 metre. Pyrite, sphalerite and galena locally display crude banding. Chalcopyrite and malachite are locally abundant. As at the Horn Ledge, the mineralization occurs in a limonitic limestone at or near the limestone-schist contact. Several inliers of schist occur in the limestone at the upper or north-western end of the workings. These inliers taper rapidly to the southeast, as does the mineralization associated with their contacts. Alteration extends a minimum of 50 m into the limestone beyond the schist contact. It is not known whether the schist inliers are interbeds, fold repetitions or fault slices. Sulphide mineralization has not been traced northwest of the inliers, although there are excellent possibilities for further exploration along this horizon. The best one metre sample collected across this zone assayed 10.65% Pb, 7.85% Zn, and 0.70 oz Ag/ton.

1985 EXPLORATION PROGRAM

SILVER HORN PROJECT

SUMMARY OF EXPENDITURES

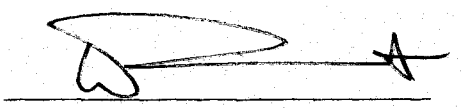
Exploration Function				Expenditure $
ANALYSES GEOCHEMICAL				
86 soil samples @ $4.53/sample				390.60
ANALYSES - ASSAY				
64 rock samples @ $21/sample				1,344.00
CAMP MAINTENANCE				
37 man days @ $25/man/day				925.00
EXPEDITING				
Radio rental & telephone calls				175.45
FIELD EQUIPMENT				
Rental of plugger, purchase of explosives, sample bags, etc.				788.12
MAPS, PRINTS, & DRAFTING				
75 Hours @ $20/hour				1,505.73
SALARIES				
1 geologist	16 days	@ $175/day	$2,800	
1 prospector	10 "	$150/day	1,500	
1 miner	9 "	$150/day	1,350	
1 sampler	11 "	$60/day	726	
1 geologist	5 "	$200/day	1,000	
1 supervisor	2 "	$300/day	600	7,976.00
SURVEYS - GEOCHEMICAL				
Geochemical sampler				2,070.00
TRANSPORTATION - HELICOPTER				
3.7 hours @ $500/hour				1,880.53
TRANSPORTATION - VEHICLE				
11 days @ $50/day			$550.00	
Gas, oil, etc			184.88	734.88
TOTAL DIRECT EXPENDITURES				17,790.31

PROPOSED 1986 PROGRAM

The Ellsmere Ledge Zone holds the best potential for discovery of strata bound high grade sulphide mineralization. Further work is recommended in the early summer of 1986. A program of detailed prospecting, rock chip sampling and mapping along the Ellsmere trend should be undertaken followed by hand trenching and a limited I.P. survey.

The Black Warrior and Silver Leaf showings should be examined with possibilities for development of small tonnages of high grade gold-silver mineralization.

Respectfully submitted



W.J. Roberts

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REFERENCES:

Read, P.B. (1976): Geology - Lardeau East-Half; Open File 432, Geological Survey of Canada.

Turner, Gordon W. (1983): Report on the Denny Claims, Assessment Report No.

APPENDIX i

HORNE SILVER Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL Metres	SAMPLE INTERVAL Feet	SAMPLE LENGTH Metres	SAMPLE LENGTH Feet	Au	Ag	Pb	Zn	DESCRIPTION
22001	0-1m		1m			.07	.04	.01	Canadian Girl locallity, west ledge, LS, ox, py
22002	1-2m		1m			.08	.01	.02	" " " " " LS, ox, py, galena
22003	0-1m		1m			.06	.01	.01	" " " center ledge, LS, ox, py
22004	1-2m		1m			.06	.01	.01	" " " " " LS, ox, py
22005	0-1m		1m			.07	.01	.01	" " " east " , LS, ox, py, galena
22006	1-2m		1m			.12	.01	.02	" " " " " , LS, ox
22007	0-1m		1m			.17	.01	.02	pit S. of D. Morgan Cr, LS, ox, py malachite, galena, cpy
22008	—		grab			.06	.01	.01	pit N. of D. Morgan Cr. LS, ox from dump.
22009	0-1m		1m			2.32	2.63	.04	Morgan locallity, southern pit, LS, ox, galena
22010	1-2m		1m			1.65	6.08	.02	" " " " " " "
22011	0-1m		1m			.15	.32	.03	" " , center pit, LS, ox
22012	1-2.3m		1.3m			.36	.72	.02	" " " " , LS, ox, galena, sericite
22013	0-0.6m		0.6m			.18	2.88	5.90	St. Louis locallity, @ main adit LS, b, py, cpy, galena
22014	—		grab			1.11	16.40	.87	" " " , pit N. of adit, LS, b, galena, sph, malachi
22015	0-0.7m		0.7m			.58	11.20	5.38	Ellsmere zone, high grade galena, sph, py wk banding
22016	0-1.4m		1.4m			.30	8.30	5.70	" " , centre adit, winze, LS, b, py, galena, sph
22017	0-1m		1m			.70	10.65	7.85	" " upper adit, LS, b, galena, sph, py
22018	0-1m		1m			.23	7.90	9.20	" " , LS, ox, galena, sph, py, cpy
22019	0-1m		1m			.23	4.40	5.40	" " , LS, b, galena, py, qtz
22020	1-2m		1m			.19	4.70	3.35	" " , LS, b, galena, py, qtz

HORNE SILVER Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Ag	Pb	Zn	DESCRIPTION
22021	—		grab			.06	.08	.06	B+2400N LS, ox, galena
22022	0-1m		1m			.13	1.47	.02	Highland Chief adit, LS, ox, py, galena
22023	0-1m		1m			.03	.04	.01	Rob Roy adit, LS, b, galena
22024	0-1m		1m			.01	.06	.02	" " " , LS, b
22025	1-2.3		1.3m			.01	.07	.02	" " " , LS, b
22026	0-1m		1m			.04	.08	.10	Rob Roy locality, LS, ox, py, galena
22027	2-3m		1m			.18	.06	.08	" " " LS, ox, py, cpy, qtz
22028	0-1m		1m			.04	.04	.02	Rob Roy " , upper cut, LS, ox, py, galena
22029	1m-2m		1m			.04	.08	.02	" " " " " , LS, ox, py, galena
22030	2m-3m		1m			.07	.82	.02	" " " " " , LS, ox, py, galena
22031	5-5.3m		0.3m			1.17	30.20	.01	" " " " " , massive gal + near mass.
22032	0-0.3m		0.3m			.01	.22	.02	pit south of camp, LS, ox, py, ga
22033	—		grab			.07	.06	.01	another pit south of camp, LS, ox, py, galena
22034	—		grab			.03	.10	.06	pit north of Morgan, LS, ox, py, galena
22035	0-1m		1m			.01	.02	.58	pit just N. of Morgan, LS, b, ox, ± SS, qtz
22036	1.5-2.5m		1m			.06	.14	.06	" " " " " , LS, ox, py, galena
22037	2.5-3.5m		1m			.52	.43	.02	" " " " " , LS, ox, py, galena
22038	3.5 to 4.5		1m			.23	.19	.26	" " " " " , LS, ox, py, galena
22039	0-1m		1m			1.17	2.31	.02	Southern Morgan trench, LS, ox, py, galena
22040	1m-2m		1m			.12	.14	.04	" " " , LS, ox, py, galena

HORNE SILVER Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Ag	Pb	Zn	DESCRIPTION
22041	2-3m		1m			.47	.60	102	Southern Morgan Trench, LS, ox, py, galena
22042	3-4m		1m			.31	.86	102	" " " , LS, b, ox, py (galena?)
22043	0-1m		1m			.86	.11	102	Main Centre Star cut, LS, ox, galena, py, qtz
22044	1-2m		1m			.24	.10	1.72	" " " " , LS, ox, galena, py
22045	2-3m		1m			.07	.02	.14	" " " " , LS, ox, galena, py
22046	3-4m		1m			.17	.10	.07	" " " " , LS, ox, galena, py
22047	0-0.8		0.8m			.06	.01	.01	pit @ 10E-25+30N LS, ox
22048	0.8-1.6m		0.8m			.06	.01	.01	" " " " , LS, ox, py
22049	—		Grab			.07	.01	.01	pit @ 26+50N-₿ LS, ox
22050	—		Grab			.06	.02	.01	pit North of Centre Star, LS, ox, py
22051	0-0.8m		0.8m			.63	5.40	.01	pit @ ₿, centre Star, LS, ox, galena, cpy
22052	0-0.8		0.8m			.07	.10	.01	" " " " LS, ox, galena, cpy.
22053	0-1m		1m			.09	.01	.01	pit west of 22052, LS, ox, galena
22054	0-1m		1m			1.40	2.24	.22	Northern Morgan pit, west side, LS, ox, galena, py, qtz
22055	1-2m		1m			.71	1.02	.04	" " " , LS, ox, py, galena, qtz
22056	2-3m		1m			.14	.12	.02	" " " , LS, ox, py, sericite
22057	3-4m		1m			.10	.06	.02	" " " , LS, ox, py, sericite, qtz
22058	0-1m		1m			.12	.31	.02	centre Morgan pit (after blasting), LS, ox, galena, py, qtz
22059	1-2m		1m			1.05	1.64	.02	" " " " " , LS, ox, py, galena, qtz
22060	0-0.5m		0.5m			.04	.02	.01	₿ -21+00N to 00+05W , LS, ox, py

HORNE SILVER Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	Au	Ag	Pb	Zn	DESCRIPTION
22061	2 to 3m		1m			.06	.01	.01	L21+00N, 00+02 to 03W, LS, ox, py
22062	3.5 to 4.5m		1m			.17	.01	.01	" , 00+03.5 to 04.5W, LS, ox (skarn?)
22063	4.5 to 5.5m		1m			.24	.02	.01	" , 00+4.5 to 5.5W, LS, ox (skarn?)
22064	5.5 to 6.0m		0.5m			.07	.01	.02	" , 00+5.5 to 6.0W, LS, ox (skarn?)

APPENDIX ii

Technical Description of the VLF-3 VLF Electromagnetic System

Frequency Tuning
Automatic digital tuning. Can be tuned to any frequency in the range 15.0 to 27.5 Hz with a bandwidth of 150 Hz. Up to three frequencies can be chosen by keyboard entry for sequential measurements.

Field Strength Range
Fields as low as 100 nA/m can be received. In practice, background noise may require fields up to 5-10 times this level. Maximum received field is 0.65 mA/metre. These values are specified for 20 kHz. For any other frequency, normalize the above limits with station frequency in kHz/20.

Signal Filtering
Narrow bandpass, low pass and sharp cut-off high pass filters.

Measuring Time
0.5 seconds sample interval. As many as 2^{16} samples can be stacked to improve measurement accuracy.

VLF-Magnetic Field Components Measured
1) Horizontal amplitude, 2) vertical in-phase component, and 3) vertical quadrature components. Vertical components are displayed as a percentage of horizontal component and are related in phase to the horizontal component. Their range is ±150%; reading resolution 1%.

VLF-Magnetic Field Sensor
Two air-cored coils in a backpack mounted housing with an electronic level for automatic tilt compensation. The error in the vertical in-phase component is less than 1% for tilts up to 25°.

VLF-Electric Field Dipole
Two capacitive electrodes with integral preamplifiers and 5 m of cable. Probe input impedance exceeds 100 megaohms and capacitance is less than 1 picofarad.

VLF-Electric Field Components Measured
In-phase and quadrature components of the horizontal electric field phase related to the horizontal VLF-magnetic field. These components are not recorded but are used in the calculations of resistivity and phase. The reading resolution is 1 ohm.

Apparent Resistivity Calculation

$$\rho = \frac{1}{2\pi f \mu_o} \left| \frac{E_x}{H_y} \right|^2$$

where:
ρ = apparent resistivity in ohm-meters
E_x = horizontal electric amplitude, calculated.
$E_x = (E_x(I)^2 + E_x(Q)^2)^{1/2}$
H_y = horizontal magnetic amplitude, measured
f = VLF station frequency in Hertz
μ = permeability of the ground in Henries/meter, a constant

The resistivity calculation has a range of 1 to 100,000 ohm-meters with a resolution of 1 ohm-meter.

Phase Angle Calculation
The phase angle ϕ is expressed as:

$$\phi = \text{arc tan} \frac{E_x(Q)}{E_x(I)}$$

where:
$E_x(Q)$ = horizontal quadrature VLF electric field, measured
$E_x(I)$ = horizontal in-phase VLF electric field, measured

The phase angle calculation has a range of -180° to + 180° with a resolution of 1°. By definition the angle is positive when the E field leads the H field.

Digital Display
32 character, 2 line LCD display

Keyboard Input
14 keys for entering all commands, coordinates, header and ancillary information.

Languages
English plus French is standard.

Standard Memory
The internal 16K RAM solid-state memory records up to 1100 VLF-magnetic or 600 combined VLF-magnetic and VLF-electric measurements.

Clock
Real time clock with day, month, year, hour, minute and second. One second resolution, ±1 second stability over 12 hours. Needs keyboard initialization only after battery replacement.

Digital Data Output
RS-232C serial interface for digital printer, modem, microcomputer or cassette tape recorder. Data outputs in 7 bit ASCII, no parity format. Baud rate is keyboard selectable at 110, 300, 600 and 1200 baud. Carriage return delay is keyboard selectable in increments of one from 0 to 999. Handshaking is done through X-on/X-off protocol.

Dimensions
Console: 240 x 90 x 240 mm
VLF-Magnetic Sensor: 110 mm diameter, length 120 mm

Weights
Console with Non-Rechargeable Battery Pack; 3.5 kg.
Console with Rechargeable Battery Pack; 4.0 kg.
VLF-magnetic Sensor with harness; 1.5 kg
VLF-electric Sensor; total weight of capacitive electrodes plus cables is 0.9 kg.

Operating Temperature Range
-40°C to + 50° provided optional Display Heater is used below -20°C.

Power Requirements
Can be powered by external 12 V DC or one of the Battery Pack Options listed below.

APPENDIX iii

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2
(604)980-5814 OR (604)988-4524

SEP 27 1985

TELEX: 04-352828

CERTIFICATE OF ASSAY

COMPANY: NAKUSP RESOURCES LTD. ~~WELCOME NORTH MINES~~
PROJECT: SILVER HORN
ATTENTION: J. MCCLINTOCK

FILE: 5-700/P1
DATE: SEPT.27/85.
TYPE: ROCK ASSAY

We hereby certify that the following are assay results for samples submitted.

SAMPLE NUMBER	AG G/TONNE	AG OZ/TON	PB %	ZN %
22001	2.3	0.07	.04	.01
22002	2.6	0.08	.01	.02
22003	2.2	0.06	.01	.01
22004	1.9	0.06	.01	.01
22005	2.5	0.07	.01	.01
22006	4.0	0.12	.01	.02
22007	6.0	0.17	.01	.02
22008	2.2	0.06	.01	.01
22009	79.5	2.32	2.03	.04
22010	56.5	1.65	6.08	.02
22011	5.2	0.15	.32	.03
22012	12.4	0.36	.72	.02
22013	6.2	0.18	2.88	5.90
22014	38.2	1.11	16.40	.87
22015	20.0	0.58	11.20	5.38
22016	10.2	0.30	8.80	5.70
22017	24.0	0.70	10.65	7.85
22018	7.8	0.23	7.90	9.20
22019	8.0	0.23	4.40	5.40
22020	6.4	0.19	4.70	3.35
22021	2.0	0.06	.08	.06
22022	4.3	0.13	1.47	.02
22023	1.0	0.03	.04	.01
22024	0.2	0.01	.06	.02
22025	0.2	0.01	.07	.02
22026	1.5	0.04	.08	.10
22027	6.2	0.18	.06	.08
22028	1.4	0.04	.04	.02
22029	1.3	0.04	.08	.02
22030	2.4	0.07	.82	.02

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2
E:(604)980-5814 OR (604)988-4524 TELEX: 04-352828

CERTIFICATE OF ASSAY

COMPANY: NAKUSP RESOURCES LTD. ~~WELCOME NORTH MINES~~
PROJECT: SILVER HORN
ATTENTION: J. MCCLINTOCK

FILE: 5-700/P2
DATE: SEPT.27/85.
TYPE: ROCK ASSAY

We hereby certify that the following are assay results for samples submitted.

SAMPLE NUMBER	AG G/TONNE	AG OZ/TON	PB %	ZN %
22031	40.0	1.17	30.20	.01
22032	0.3	0.01	.22	.02
22033	2.3	0.07	.06	.01
22034	1.0	0.03	.10	.06
22035	0.2	0.01	.02	.58
22036	2.0	0.06	.14	.06
22037	18.0	0.52	.43	.02
22038	7.8	0.23	.19	.26
22039	40.2	1.17	2.31	.02
22040	4.2	0.12	.14	.04
22041	16.0	0.47	.60	.02
22042	10.6	0.31	.86	.02
22043	29.6	0.86	.11	.02
22044	8.4	0.24	.10	1.72
22045	2.3	0.07	.02	.14
22046	5.7	0.17	.10	.07
22047	2.0	0.06	.01	.01
22048	2.2	0.06	.01	.01
22049	2.3	0.07	.01	.01
22050	2.0	0.06	.02	.01
22051	21.5	0.63	5.40	.01
22052	2.5	0.07	.10	.01
22053	3.0	0.09	.01	.01
22054	48.0	1.40	2.24	.22
22055	24.2	0.71	1.02	.04
22056	4.8	0.14	.12	.02
22057	3.6	0.10	.06	.02
22058	4.2	0.12	.31	.02
22059	36.0	1.05	1.64	.02
22060	1.5	0.04	.02	.01

Certified by

MIN-EN LABORATORIES LTD.

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE:(604)980-5814 OR (604)988-4524 TELEX: 04-352828

CERTIFICATE OF ASSAY

COMPANY: NAKUSP RESOURCES LTD. ~~WELCOME NORTH MINES~~
PROJECT: SILVER HORN
ATTENTION: J. MCCLINTOCK

FILE: 5-700/P3
DATE: SEPT.27/85.
TYPE: ROCK ASSAY

We hereby certify that the following are assay results for samples submitted.

SAMPLE NUMBER	AG G/TONNE	AG OZ/TON	PB %	ZN %
22061	2.0	0.06	.01	.01
22062	6.0	0.17	.01	.01
22063	8.2	0.24	.02	.01
22064	2.5	0.07	.01	.02

Certified by

MIN-EN LABORATORIES LTD.

APPENDIX iv

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524

SEP 30 1985

TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: ~~WELCOME NORTH MINES~~ NAKUSP RESOURCES LTD.
PROJECT: SILVERHORN
ATTENTION: J. MCCLINTOCK

FILE: 5-700/P1
DATE: SEPT.30/85.
TYPE: SOIL GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 30 samples submitted.

SAMPLE NUMBER	PB PPM	ZN PPM	AG PPM
20+00N0+75W	43	63	0.7
1+00W	34	75	0.6
21+00N0+60E	101	131	0.7
0+45E	NO SAMPLE IN BAG		
0+00	55	85	0.7
0+15W	184	103	5.2
0+30W	187	149	1.6
0+45W	119	144	1.4
0+60W	59	107	0.8
0+75W	50	128	0.7
0+90W	30	42	0.4
1+05W	19	28	0.3
1+20W	44	86	0.5
1+35W	39	39	0.7
1+50W	27	46	0.5
22+00N1+00E	21	40	0.5
0+75E	66	99	0.6
0+00	177	190	3.7
23+00N0+75E	70	107	0.8
0+60E	94	133	0.6
0+45E	41	75	0.4
0+30E	20	67	0.4
0+15E	NO SAMPLE		
0+00	22	58	1.4
0+15W	43	96	0.6
0+30W	42	97	0.6
0+45W	36	136	2.2
0+60W	55	106	0.6
0+75W	38	77	0.5
23+00N0+90W	59	132	1.9

Certified by Eric Jarvis

MIN-E Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: ~~WELCOME NORTH MINES~~ NAKUSP RESOURCES LTD. FILE: 5-700/P2
PROJECT: SILVERHORN DATE: SEPT.30/85.
ATTENTION: J. MCCLINTOCK TYPE: SOIL GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 30 samples submitted.

SAMPLE NUMBER	PB PPM	ZN PPM	AG PPM
23+00N1+05W	46	164	1.7
1+20W	32	145	1.5
1+35W	26	65	0.6
1+50W	17	45	0.9
24+00N1+00E	38	24	0.7
0+75E	41	108	0.7
0+50E	143	110	1.4
0+25E	268	365	1.2
0+00	13	28	0.4
0+25W	21	72	0.4
0+50W	39	75	0.5
0+75W	39	73	0.6
1+00W	26	63	0.5
26+00N1+00E	19	44	0.7
0+75E	13	38	0.2
0+50E	18	77	0.4
0+25E	NO SAMPLE		
0+00	36	65	0.4
0+25W	32	83	0.4
0+50W	24	56	0.6
0+75W	26	50	0.3
1+00W	19	63	0.6
28+00N1+00E	22	41	0.4
0+75E	17	27	0.3
0+50E	14	18	0.3
0+25E	15	49	0.4
0+00	14	39	0.3
0+25W	42	72	0.6
0+50W	39	59	0.6
28+00N0+75W	48	84	0.9

Certified by Eric Imrie

MIN-E Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

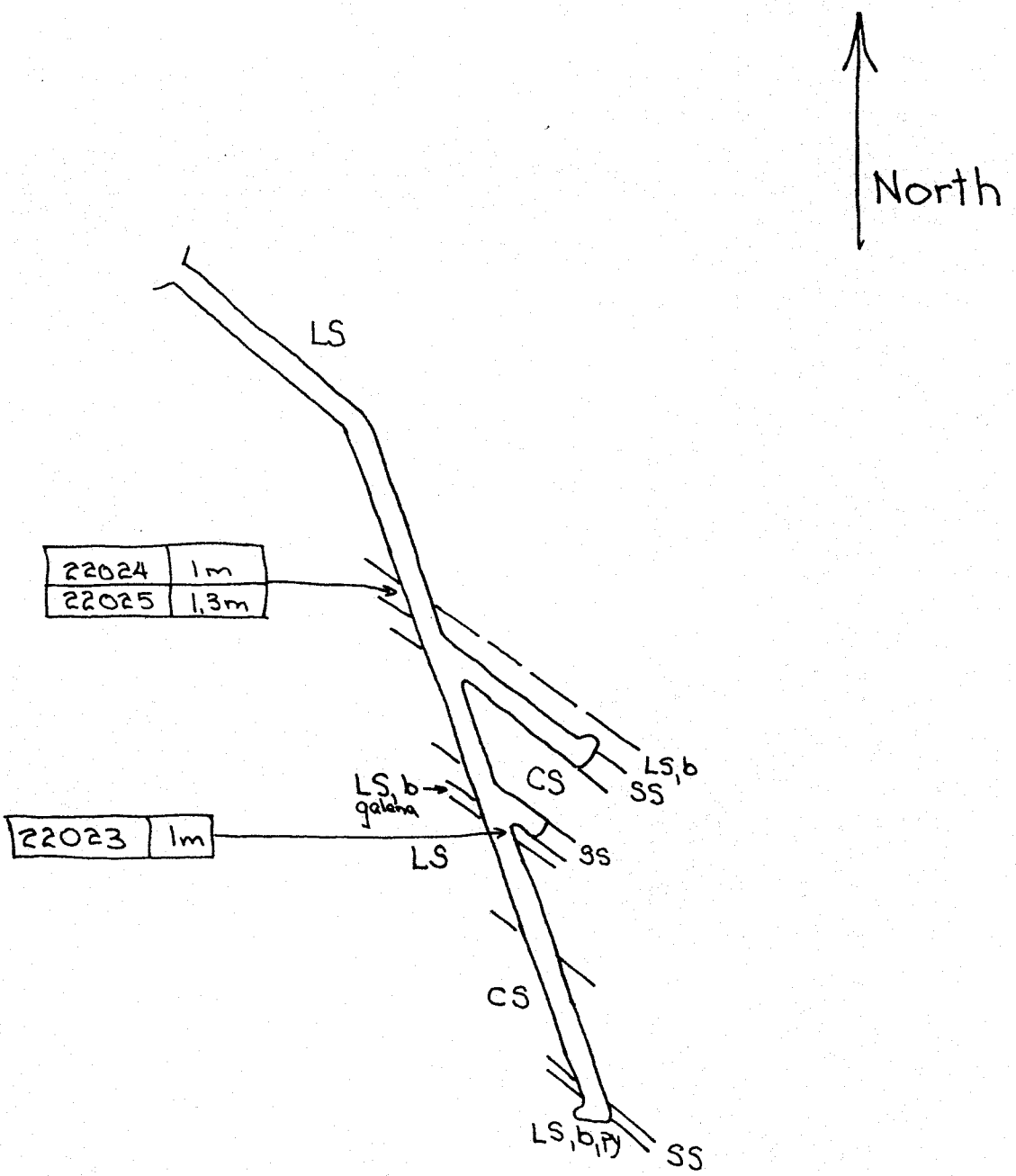
COMPANY: ~~WELCOME NORTH MINES~~ NAKUSP RESOURCES LTD. FILE: 5-700/P3
PROJECT: SILVERHORN DATE: SEPT.30/85.
ATTENTION: J. MCCLINTOCK TYPE: SOIL GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 28 samples submitted.

SAMPLE NUMBER	PB PPM	ZN PPM	AG PPM
28+00N1+00W	23	49	0.6
30+00N1+00E	21	41	0.3
0+75E	47	87	0.9
0+50E	20	52	0.5
0+25E	39	63	0.6
0+00	17	54	0.2
0+25W	19	46	0.3
0+50W	21	47	0.6
0+75W	22	89	0.7
1+00W	35	74	0.5
32+00N1+00E	17	65	0.4
0+75E	31	54	0.9
0+50E	18	53	0.6
0+25E	26	75	0.7
0+00	19	81	0.7
0+25W	NO SAMPLE		
0+50W	2560	720	19.8
0+75W	85	141	0.7
1+00W	20	51	0.7
34+00N1+00E	28	49	0.8
0+75E	14	62	0.5
0+50E	15	48	0.3
0+25E	103	90	1.4
0+00	102	119	1.1
0+25W	32	73	0.6
0+50W	36	67	1.2
0+75W	24	52	0.7
34+00N1+00W	16	21	0.9

Certified by Eric Jarvis

APPENDIX v

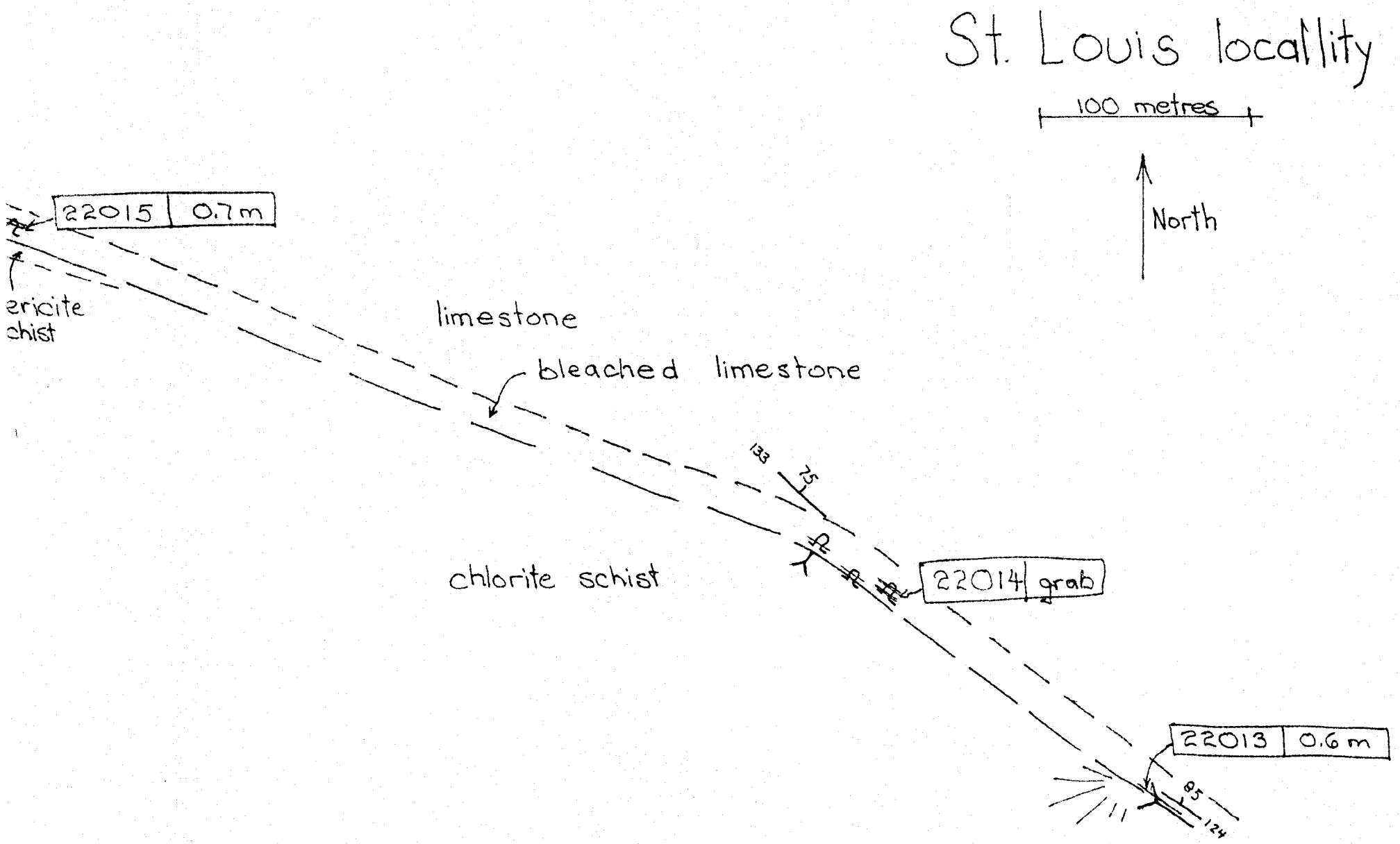


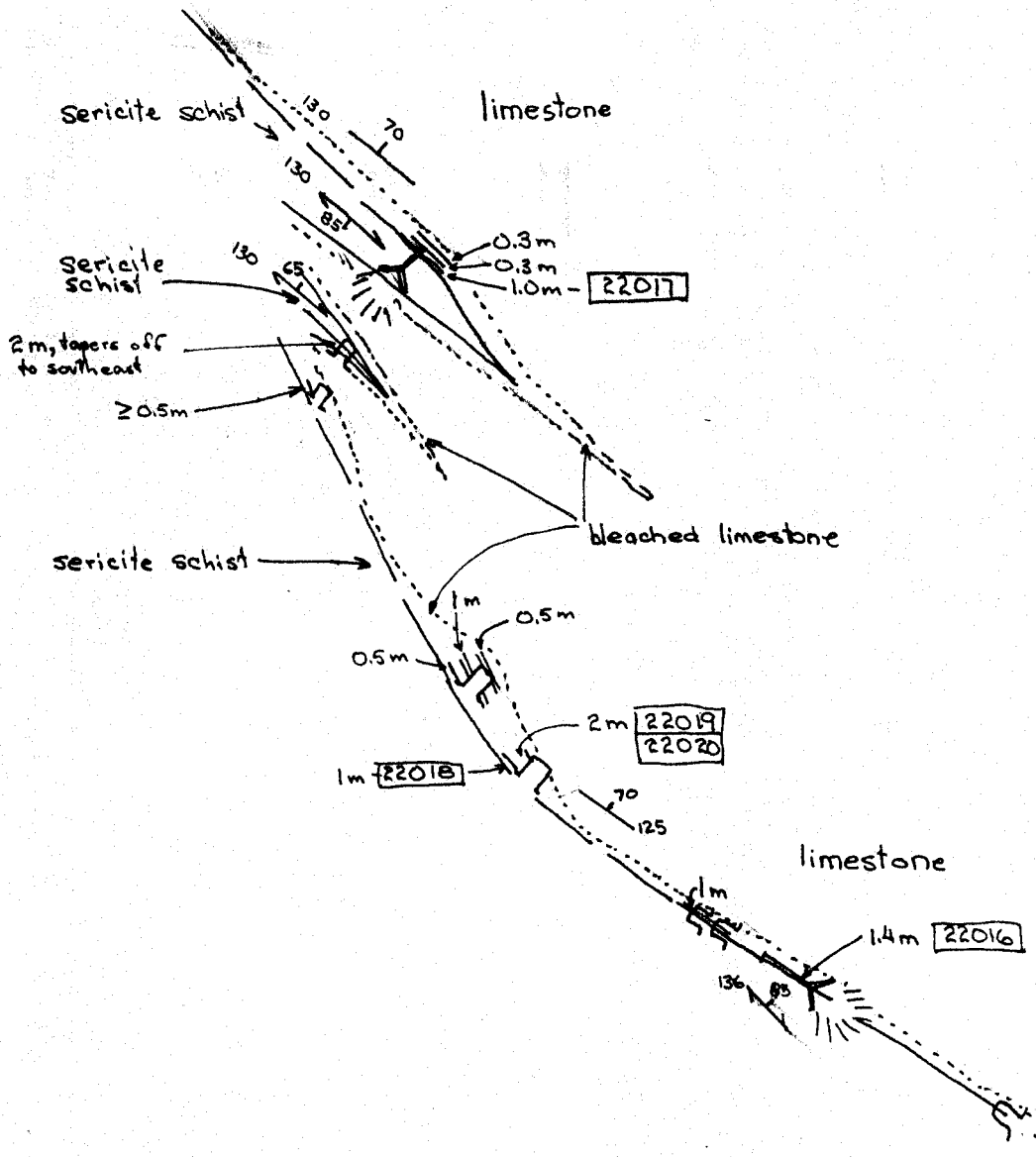
Rob Roy Adit

0 5 10 15 20

metres

St. Louis locality





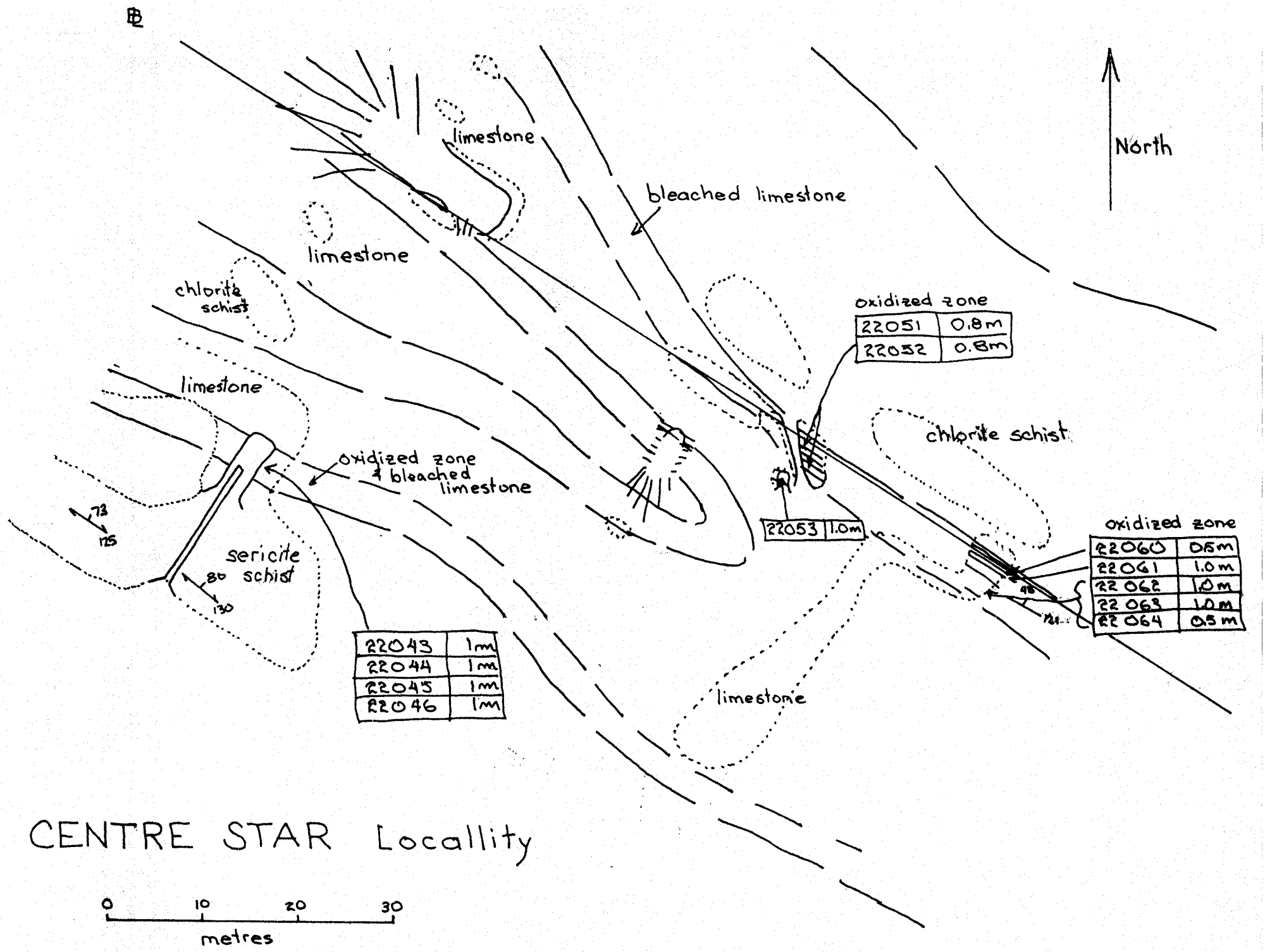
Ellsmere Locallity

1:2500

100 metres

North

main adit, high grade galena, sphalerite and


limestone
limestone
bleached limestone
North
chlorite schist
oxidized zone
22051 0.8m
22052 0.8m
limestone
chlorite schist
oxidized zone
& bleached limestone
73
175
sericite schist
80
130
22053 1.0m
oxidized zone
22060 0.5m
22061 1.0m
22062 1.0m
22063 1.0m
22064 0.5m
22043 1m
22044 1m
22045 1m
22046 1m
limestone
CENTRE STAR Locallity
0 10 20 30
metres

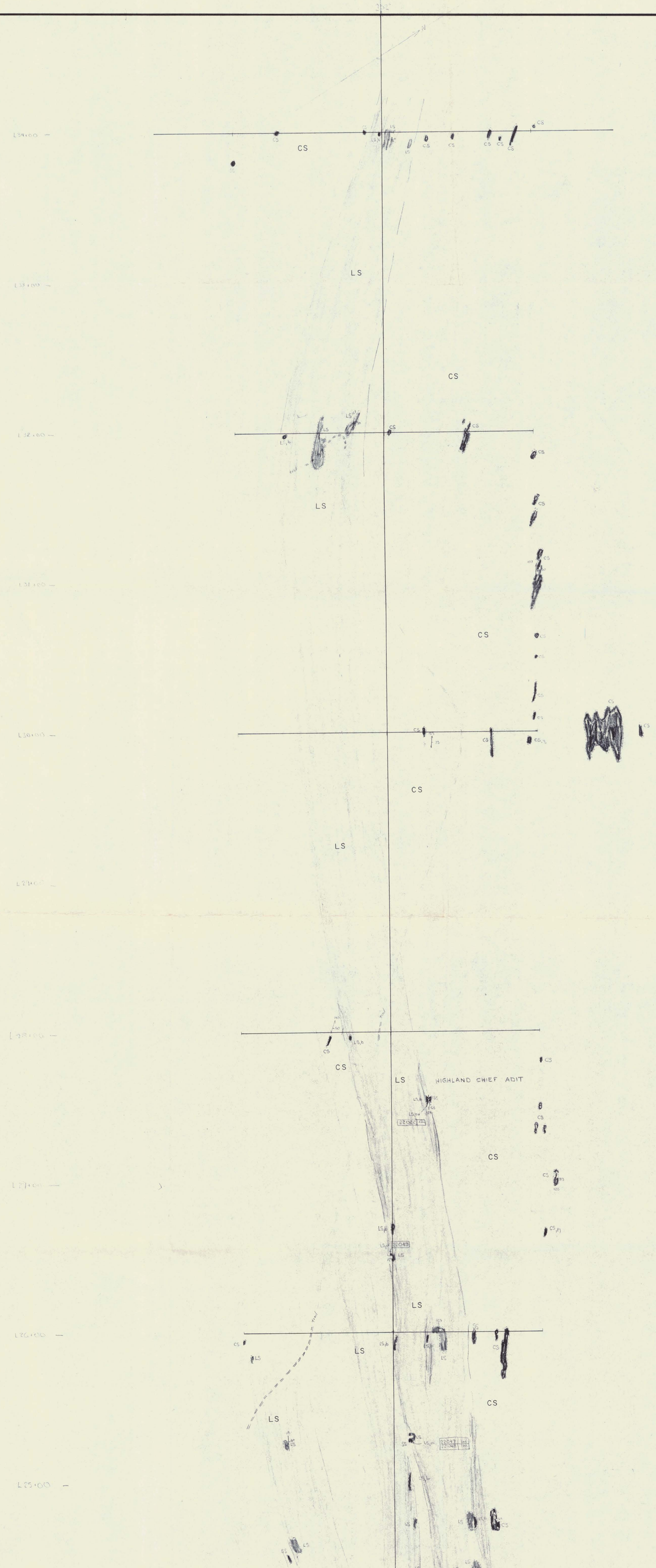
NAKUSP RESOURCES LTD.
SILVER HORN PROJECT

HORN LEDGE ZONE

GEOLOGY MAP

SOUTH SHEET

0 20 40 60 80 100
metres



NAKUSP RESOURCES LTD.

SILVER HORN PROJECT

HORN LEDGE ZONE

GEOLOGY MAP

NORTH SHEET

0 20 40 60 80 100
metres

SHEET #1

NAKUSP RESOURCES LTD.

SILVER HORN

LARDEAU AREA, BRITISH COLUMBIA

LITTLE ROBERT
2.5 TON SHIPMENT
114 oz./t. Ag, 24% Pb

BLACK WARRIOR

78.3 Pb-Zn, 141.22 Ag
GRAB

30 TON SHIPMENT IN 1905. 100 oz./t Ag

.28 Au, 71.2 Ag
2.0 Ft.

48.96 Pb-Zn, 1.31 Ag
GRAB

14.84 Pb-Zn, .32 Ag
16.0 Ft.

18.38 Pb-Zn, .41 Ag
DUMP GRAB

11.75 Pb-Zn, .06 Ag
DUMP GRAB

ELLSMERE LEDGE

18.34 Pb-Zn, .87 Ag
GRAB

32.3 Pb, 2.2 Ag
GRAB

GALENA CREEK

.26 Au, 15.0 Ag
GRAB

HORN LEDGE
SULPHIDE HORIZON
UP TO 100 FEET THICK

SILVER LEAF
BULK SAMPLE 100 oz./t.Ag

19.26 Pb-Zn, 5.02 Ag
GRAB

16.58 Pb-Zn, 4.3 Ag
2.0 Ft.

23.53 Pb-Zn, 5.65 Ag
8.0 Ft.

1.19 Pb-Zn, .17 Ag
GRAB

10.85 Pb-Zn, 2.62 Ag
GRAB

32.3 Pb-Zn, 3.56 Ag
6.0 Ft.

LEGEND:

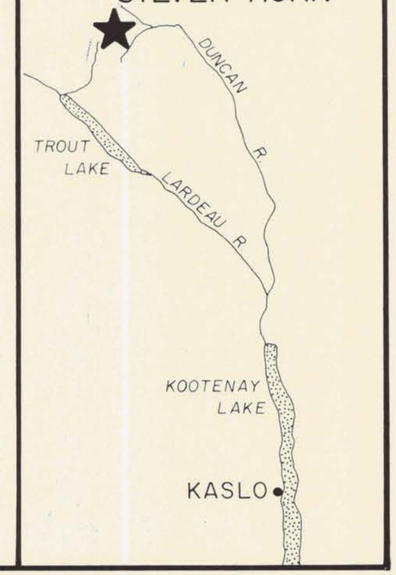
- LIMESTONE
- SCHIST
- STRATABOUND SULPHIDE MINEARLIZATION
- ADIT, TRENCH

HISTORICAL SILVER and GOLD ASSAYS REPORTED IN OUNCES / TON. LEAD and ZINC IN %

0 3000 FEET
0 1000 METRES

N

SILVER HORN



NAKUSP RESOURCES LTD.
SILVER HORN PROJECT

GEOLOGY & TRENCH SAMPLING MAP

LS BADSHOT (LADE PEAK) Fm. limestone

CS INDEX Fm. chlorite schist

SS INDEX Fm. sericite schist

MODIFIERS

b Bleached

Bedding
Foliation
Open cut
Trench
Adit

22017 - 0.70, 10.65, 7.85/1m Sample Nº. - oz./t Ag, % Pb, % Zn

0 100 500 m
METRES

ELLSMERE

22017 - 0.70, 10.65, 7.85/1m
22018 - 0.23, 7.90, 9.20/1m
22019 - 0.23, 4.40, 5.40/1m
22020 - 0.19, 4.70, 3.35/1m
22016 - 0.30, 8.80, 5.70/1.4m

L 5324

L 5323

22015 - 0.58, 11.20, 5.38/0.7m

22014 - 1.11, 16.40, 0.67

L 4710

ST. LOUIS

22013 - 0.18, 2.88, 5.90/0.67

GALENA CREEK

ROB ROY

22023 - 0.03, 0.04, 0.01/1m
22024 - 0.01, 0.06, 0.02/1m
22025 - 0.01, 0.07, 0.02/1.3m
22026 - 0.04, 0.68, 0.10/1m
22027 - 0.18, 0.66, 0.48/1m
22028 - 0.04, 0.04, 0.02/1m
22029 - 0.04, 0.48, 1.02/1m
22030 - 0.01, 0.82, 1.62/1m
2203 - 1.17, 30.20, 0.01/0.3m

BASE LINE

L 4288

L 4290

HIGHLAND CHIEF

22022 - 0.13, 1.47, 0.02/1m
22047 - 0.07, 0.01, 0.01
22021 - 0.06, 0.08, 0.06
22050 - 0.04, 0.02, 0.01
22043 - 0.86, 0.11, 0.02/1m
22044 - 0.24, 0.10, 1.12/1m
22045 - 0.07, 0.02, 0.14/1m
22046 - 0.17, 0.10, 0.07/1m
22051 - 0.43, 5.40, 0.01/0.8m
22052 - 0.07, 0.10, 0.01/0.8m
22048 - 0.04, 0.02, 0.01/0.5m
22061 - 0.06, 0.01, 0.01/1m
22062 - 0.17, 0.01, 0.01/1m
22063 - 0.24, 0.02, 0.01/1m
22064 - 0.01, 0.01, 1.02/0.9m

22053 - 0.09, 0.01, 0.01/1m

CENTRE STAR

22032 - 0.01, 0.72, 0.02/0.3m
22033 - 0.07, 0.04, 0.01

SILVER HORN PROPERTY BOUNDARY

SURPRISE CREEK

22034 - 0.08, 0.10, 0.06
22035 - 0.01, 0.02, 0.68/1m
22036 - 0.05, 0.14, 0.04/1m
22037 - 0.02, 0.45, 0.42/1m
22038 - 0.23, 9.19, 0.26/1m
22054 - 1.40, 2.24, 0.22/1m
22055 - 0.71, 1.02, 0.04/1m
22056 - 0.14, 5.12, 0.02/1m
22057 - 0.10, 0.06, 0.92/1m

MORGAN

Surface {22011 - 0.15, 0.32, 0.03/1m
{22012 - 0.36, 0.72, 0.02/1m
22058 - 0.12, 0.31, 0.02/1m
22059 - 1.05, 1.64, 0.02/1m

Surface {22009 - 2.32, 2.03, 0.04/1m
{22010 - 1.65, 2.08, 0.92/1m
22039 - 1.17, 2.31, 0.02/1m
22040 - 0.12, 0.19, 0.04/1m
22041 - 0.47, 0.40, 0.02/1m
22042 - 0.51, 0.86, 0.02/1m

22008 - 0.04, 0.01, 0.01
22007 - 0.17, 0.01, 0.02/1m

CANADIAN GIRL

22005 - 0.07, 0.01, 0.01/1m
22006 - 0.12, 0.01, 0.02/1m
22003 - 0.06, 0.01, 0.01/1m
22004 - 0.06, 0.01, 0.01/1m
22001 - 0.07, 0.04, 0.01/1m
22002 - 0.08, 0.01, 0.02/1m

L 4705

DAVE MORGAN CREEK

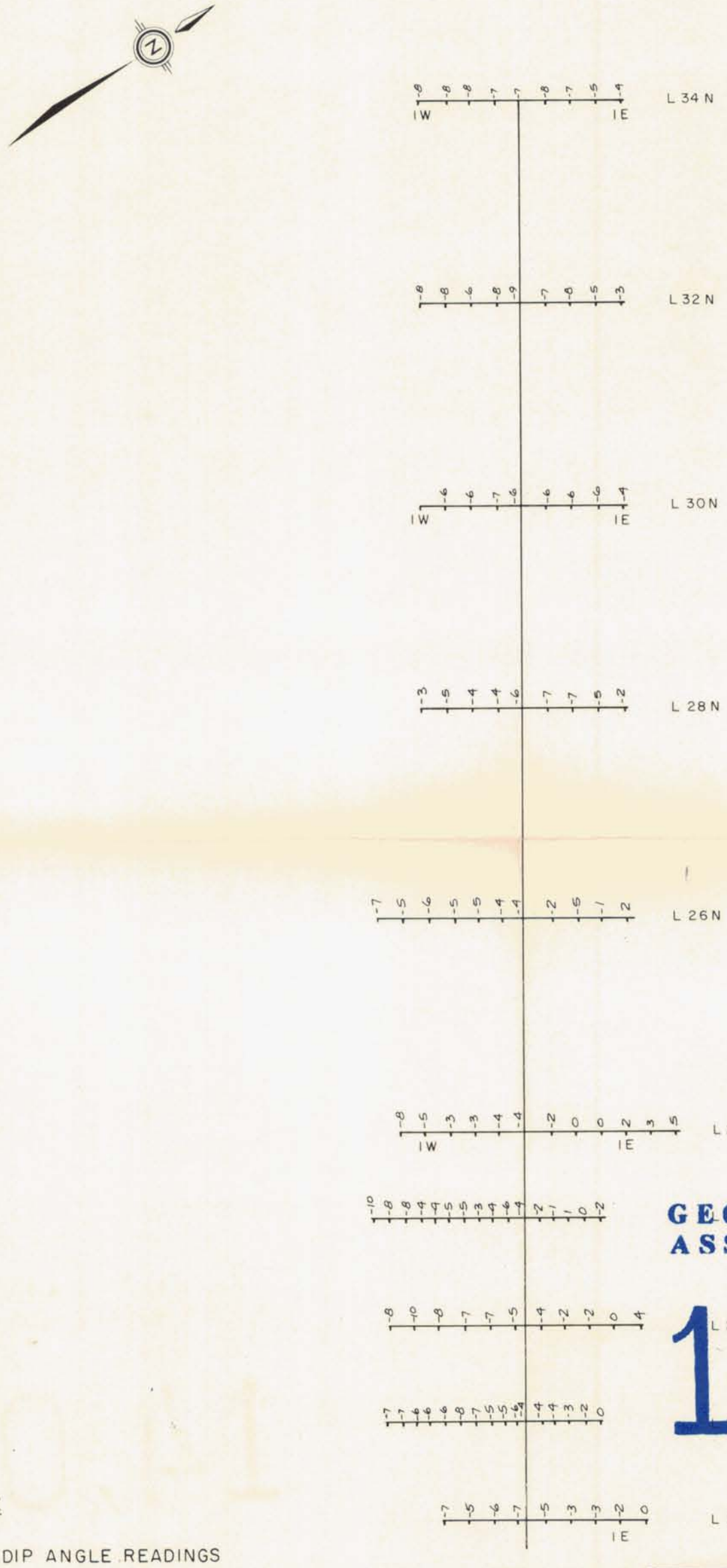
500

7000

8000

6000

5000



LEGEND:

DIP ANGLE READINGS

100 0 100 200 300

SCALE 1:5000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,063

NAKUSP RESOURCES LTD.

SILVER HORN PROJECT

LARDEAU AREA, BRITISH COLUMBIA

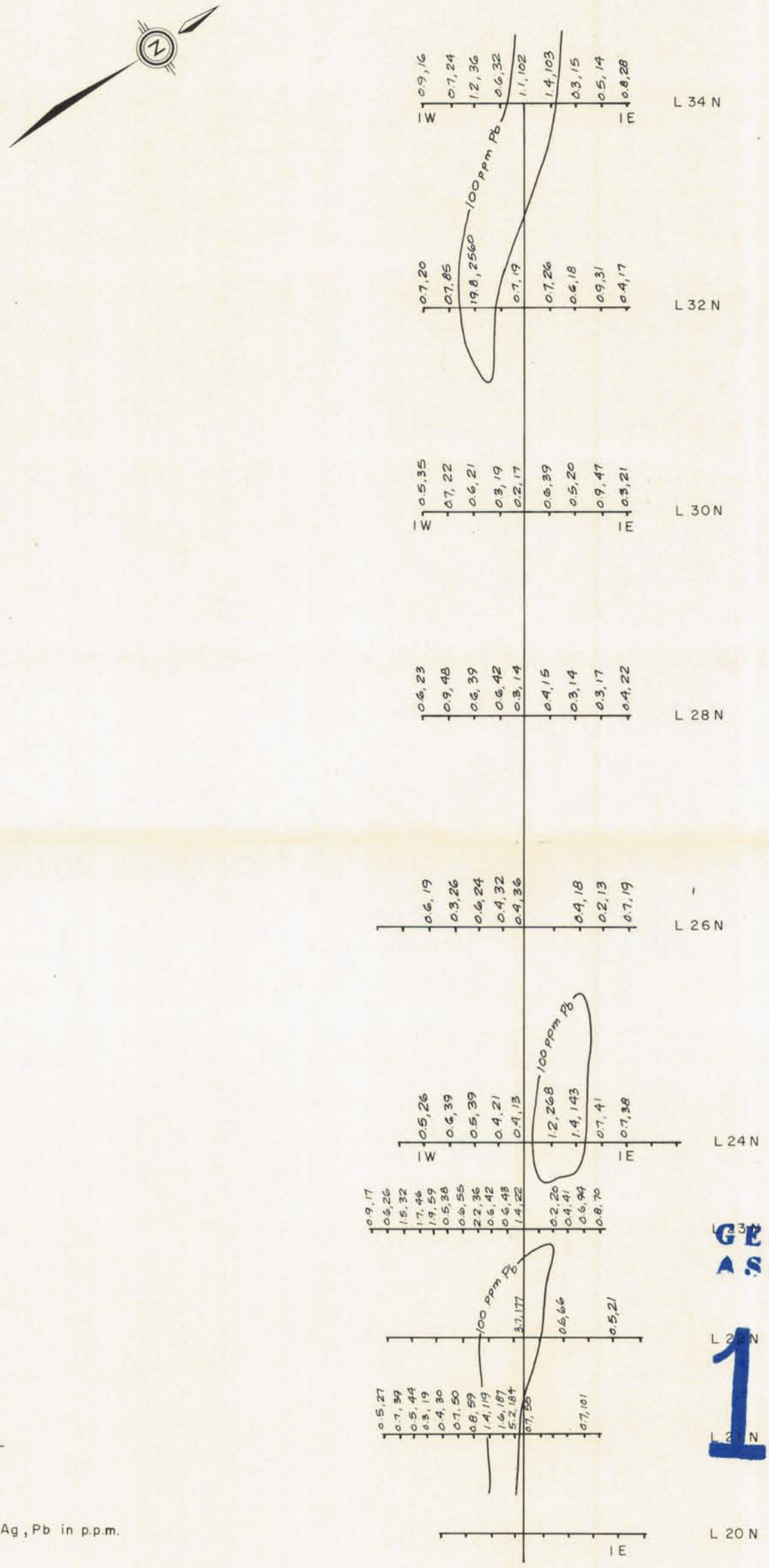
SILVER HORN GRID

VLF-EM SURVEY

DATE: SEPT., 1985

BY: W.R/r.w.r.

FIGURE _____



LEGEND:

5.2,184

Ag, Pb in p.p.m.

100 0 100 200 300

SCALE 1:5000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,063

NAKUSP RESOURCES LTD.

SILVER HORN PROJECT

LARDEAU AREA, BRITISH COLUMBIA

SOIL SAMPLE RESULTS

SILVER HORN GRID

Ag–Pb Results

DATE: SEPT., 1985

BY: W.R/r.w.r.

FIGURE _____