

ASSESSMENT REPORTS

MAP No. 105 B 3 TYPE OF WORK: Geological, Geochemical

REPORT FILED UNDER	Noranda Exploration Company Ltd. (NPL)	
DATE PERFORMED	August 1984	DATE FILED: July 2, 1985
LOCATION - LAT.	60°03'N	
LONG.	131°05'W	
CLAIM Nos.	CEA 1-60; YA71248-YA71307	
	DEA 61-72; YA72489-YA72500	
WORK DONE BY	W. Reid	
WORK DONE FOR	Noranda Exploration Company Ltd. (NPL)	
REMARKS	<p>The claims cover Carboniferous, moderately to gently southwest dipping sedimentary rocks of the Yukon Cataclastic Complex which include pebble conglomerates, quartzite, grit to argillite, chert and graphite schists. One main marker horizon is a thin, 15 m wide limestone lense in the central claims which is buff to light grey weathering and well-bedded. The base contains crinoids and minor interbedded grey chert which grades upward into thinly-bedded limestone with minor chert and argillite. The limestone is directly underlain by steeply dipping, sheared chert pebble conglomerate.</p>	

091646

4EX 85 p. 66-67

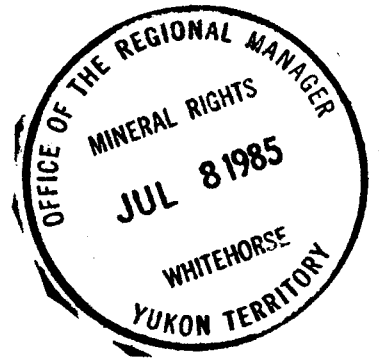
Fine grained clastic rock, consisting of chert, cherty argillites and minor sandstone occur on both sides of the limestone and grade into phyllites and slates to the south, along strike. In the east, massive fine to medium grained quartzites predominate and contain numerous quartz veins and stringers.

The northwest-trending, Cretaceous biotite granite to quartz monzonite intrusion known as the Seagull Batholith is located immediately west of the claims. Minor tourmaline and hornfelsed argillite occur near the contact. A small feldspar porphyry dyke cuts the strata near the centre of the claims.

The only mineralization noted is disseminated pyrite which occurs in phyllites and in minor shear zones in the more competent cherts. Also, minor baritic siltstone was found in float.

A total of 42 silt samples were taken and analyzed for copper, lead, zinc, silver, arsenic, gold and barium. The most significant anomaly, located in the eastern claims near the quartzite-argillite contact, gave silver values between 2.0 and 5.3 ppm and coincident copper (80-160 ppm) and barium (2720-3000 ppm). Also 21 water samples and 18 rock samples were geochemically analyzed. Samples of hornfelsed argillite and kaolinized granite containing tourmaline, pyrite, pyrrhotite and iron oxide contained up to 300 ppm Cu, 4400 ppm Sn, 110 ppm Pb, 2.2 ppm Ag, 80 ppb Au and 8200 ppm Ba. Two pieces of flaggy, light grey baritic siltstone in glacial till assayed 17.8% and 34.6% Ba.

On the eastern claims, a limonite-quartz altered phyllite with 3% disseminated pyrite analyzed 500 ppm Cu, 2.0 ppm Ag, and 2.12% Ba. This is the assumed source area of anomalous silt samples.



GEOLOGY AND GEOCHEMISTRY

1984 ASSESSMENT REPORT

CEA 1-60 CLAIMS



Watson Lake Mining Division

N.T.S. 105 B/3

Latitude 60°03'N

Longitude 131°05'W

by

Wayne Reid

for

Noranda Exploration Company, Limited

(No Personal Liability)

June, 1985

091646
Regional Director
Department of
Geology
Yukon Territory

This report has been examined
under Section 33 (4) of the Quartz
Mining Act and is allowed
representation work in the amount
of \$ 6,000.00.



Regional Manager, Exploration and
Geology, Yukon Territory
of Yukon Territory.

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CHAPTER ONE: INTRODUCTION

1-1: LOCATION and ACCESS

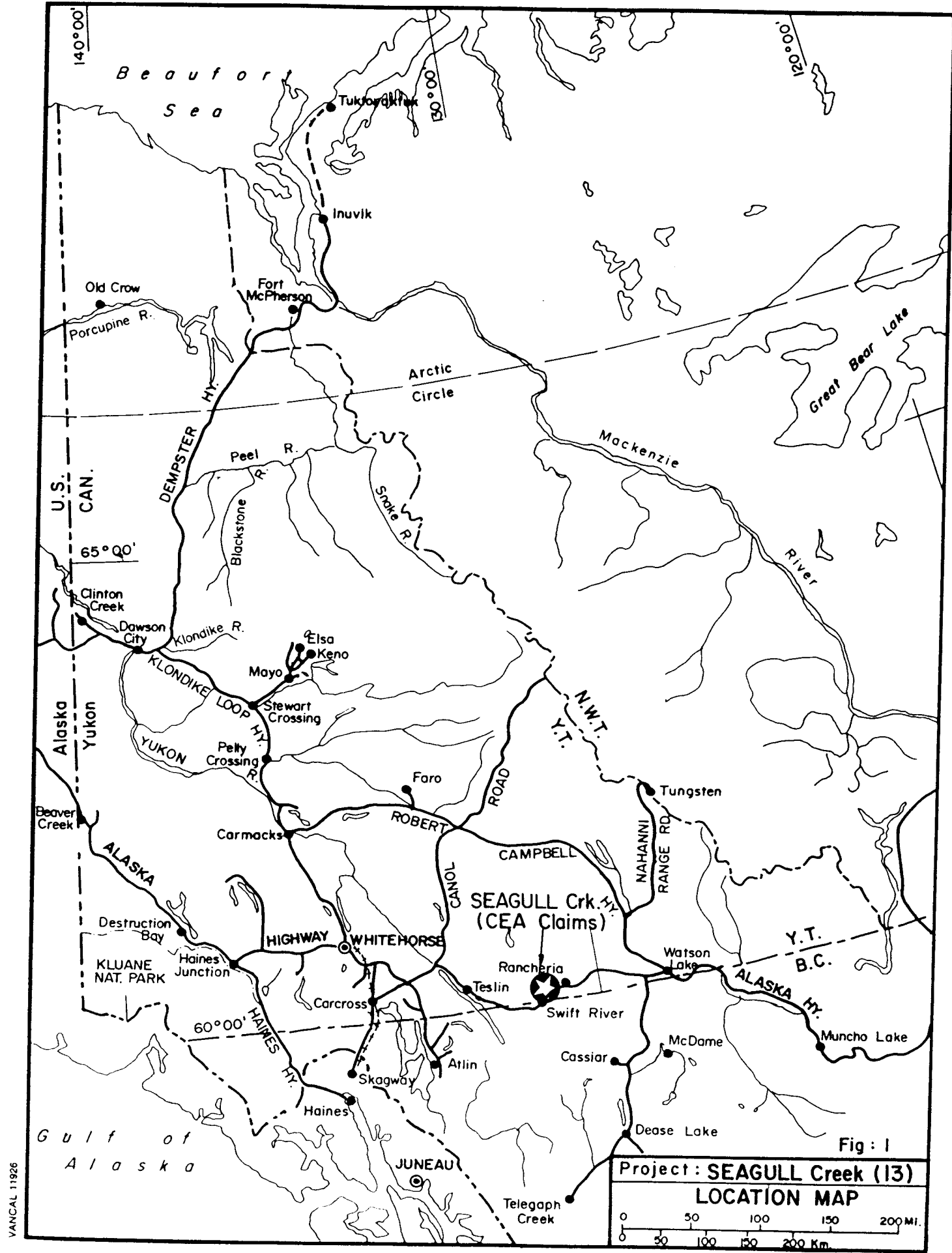
The CEA 1 to 60 claims are located approximately 3 kilometres north of Kilometre Post 1174 on the Alaska Highway. It is seven kilometres northeast of the town of Swift River on N.T.S. 105 B/3 at latitude 60°03'N and longitude 131°05'W (Figures 1 and 2).

The area shows gentle to moderate relief with well glaciated rounded hills having a maximum height of 1400 metres above sea level. Some years ago a large forest fire swept over the area leaving only patches of mature timber with the remaining areas being barren or covered with thick stands of alders and young fir trees.

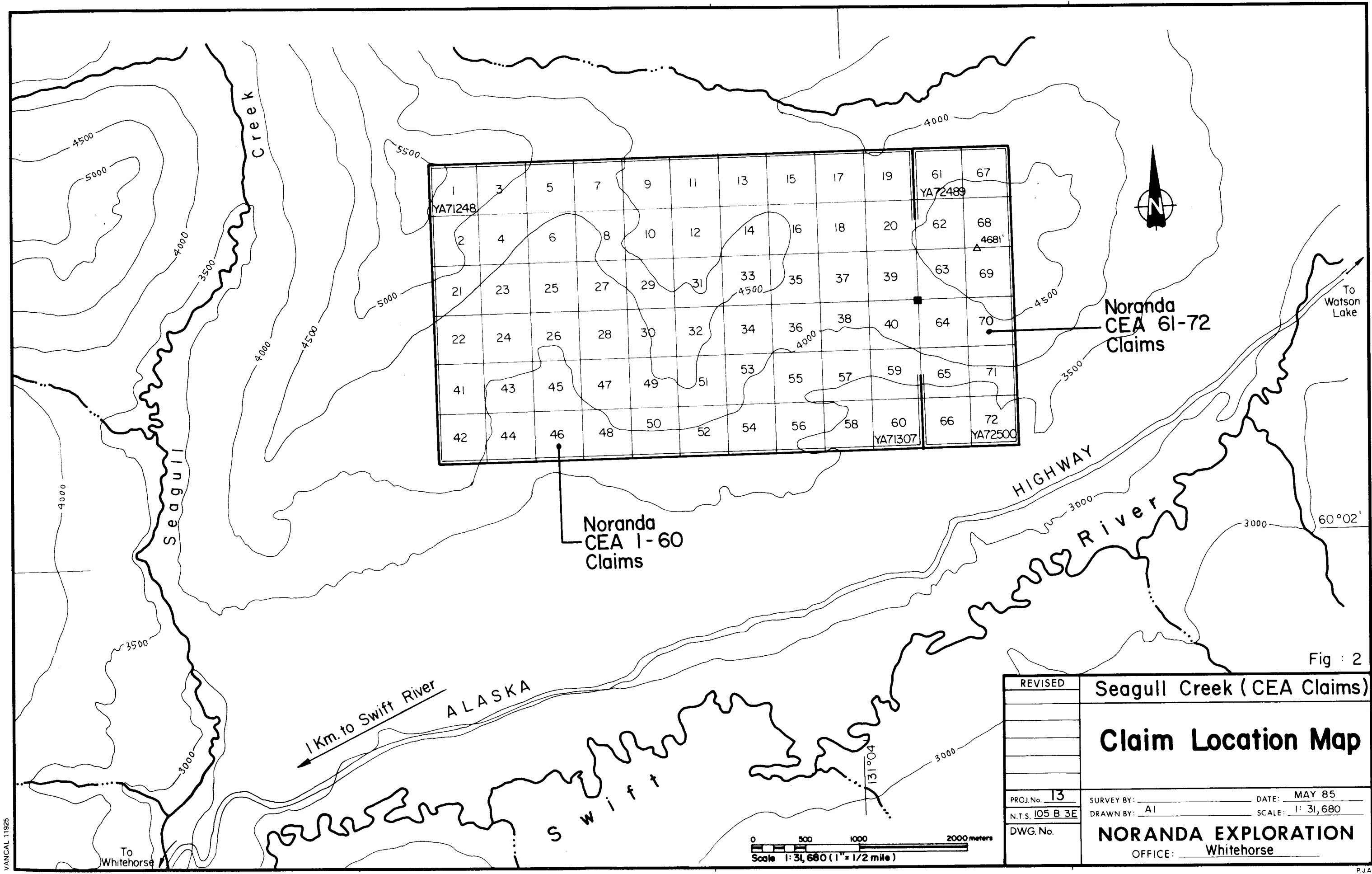
Access is either via helicopter or by foot from the Alaska Highway. The work described in this report was carried out by walking up one of the two main creeks draining the claims. Complete coverage was obtained without using a helicopter.

1-2: CLAIM STATUS

The CEA 1-60 claims were staked in June, 1984 and recorded on July 11, 1984. An additional 12 claims (CEA 61-72) were staked to the east of the original claims and they come due November 1, 1985. The original 60 claims will be in good standing until July 11, 1986 upon



VANCAL 11926



Noranda
CEA 61-72
Claims

Noranda
CEA 1-60
Claims

Fig : 2

REVISED	Seagull Creek (CEA Claims)	
	Claim Location Map	
PROJ.No. <u>13</u>	SURVEY BY: _____	DATE: <u>MAY 85</u>
N.T.S. <u>105 B 3E</u>	DRAWN BY: <u>AI</u>	SCALE: <u>1: 31,680</u>
DWG.No.	NORANDA EXPLORATION	
	OFFICE: <u>Whitehorse</u>	

VANCAL 11925

P.J.A.

acceptance of this report.

CLAIM NAME	GRANT NO.	STAKING DATE	RECORD DATE
CEA 1-60	YA71248-YA71307	June 29, 1984	July 11, 1984
CEA 61-72	YA72489-YA72500	Oct. 26, 1984	Nov. 1, 1984

1-3: PREVIOUS WORK

Work in this area has been very limited during the last few years because it was within the original Alaska Gas Pipeline corridor and thus no staking was allowed. The staking ban was lifted in June 1984 and Noranda staked it immediately. The area was stream sampled by the G.S.C. in 1978 while the pipeline corridor freeze was in effect. A number of silt anomalies were located, including 6300 ppm Ba and 1.6 ppm Ag. Subsequent sampling by Noranda in 1983 delineated the anomalies more completely and it was decided to stake the CEA 1-60 claims when the ground came open.

Geological mapping in the area includes G.S.C. map 10-1960 by Poole et al and a more detailed study by J.C. Abbott of D.I.A.N.D. in 1980.

Although this area has received little attention, further west on the southwest side of the Seagull Batholith a number of deposits of Sn, W and Ag have been defined in several geological environments. These include Logjam Ag, Logtung W and numerous Sn skarn deposits (Figure 3).

1-4: 1984 WORK PROGRAM

A four man crew effectively covered the claim area with detailed stream sampling, geology and prospecting. A total of 42 silts, 21 waters and 18 rocks were sent for analysis. Geological mapping at a scale of 1:10,000 was done in conjunction with the sampling.

The following personnel worked on the claims during August, 1984:

Wayne Reid	Project Geologist
Stuart MacKenzie	Senior Assistant
Steve Mackay	Junior Assistant
Robin Mitchell	Junior Assistant

An attempt in October 1984 to follow up the results for the above program was unsuccessful due to snow conditions. At this time another 12 claims were staked to the east of the original group (CEA 61 to 72).

CHAPTER TWO: GEOLOGY

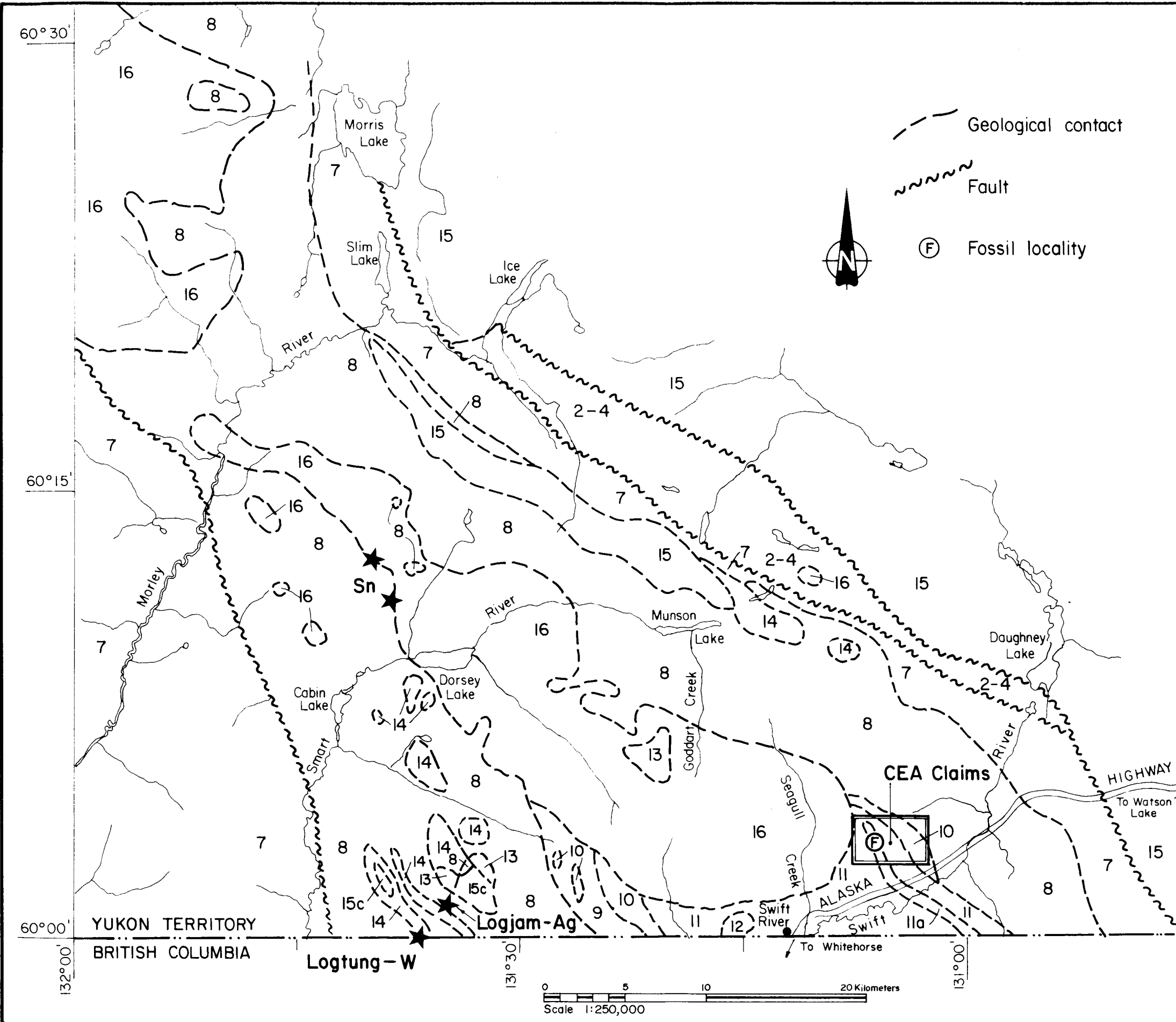
2-1: REGIONAL GEOLOGY

The CEA claims are underlain by Carboniferous sedimentary rocks within the Yukon Cataclastic Complex. This complex is exposed within a broad (30 kilometres wide) northwest trending synform defined by foliation and lithological units (Abbott, 1980; see Figure 3).

The bulk of the Cataclastic rocks consist of clastic sedimentary rocks varying from pebble conglomerates, quartzite and grit to argillites, cherts and graphitic schists. The degree of deformation is variable from almost non-existent to phyllite and schist, often depending on the original rock type.

Thin to moderately thick carbonate units are intercalated with the clastic rocks however these are often lensoid and are not traceable over large distances, as is the case for all layered rock types in this area.

The northwest trending Cretaceous Seagull Batholith intrudes the central part of the Cataclastic Complex and is approximately 45 kilometres by 12 kilometres. The intrusion ranges from biotite granite to quartz monzonite. The northwest portion of the granite has a porphyritic texture and contains roof pendants which generally cap hilltops suggesting that the intrusion is barely unroofed (Abbott, 1980). Further southeast, the intrusion is more equigranular and



- ### Legend
- CRETACEOUS or TERTIARY**
- 16 SEAGULL STOCK (MONZONITE)
- JURASSIC and/or CRETACEOUS**
- 15 CASSIAR BATHOLITH
 - 15c LOGJAM STOCK
 - 14 DIORITE
 - 13 ULTRAMAFIC ROCKS
- PERMIAN to JURASSIC**
- 12 QUARTZITE
- MISSISSIPPIAN**
- 11 ARGILLITE, SLATE
 - 11a CRINOIDAL LIMESTONE
 - 10 QUARTZITE
- DEVONIAN and MISSISSIPPIAN**
- 9 LIMESTONE and DOLOMITE
 - 8 CHERT, ARGILLITE, QUARTZITE
 - 7 GREENSTONE
- CAMBRIAN and OLDER**
- 2-4 QUARTZITE, PHYLLITE and LIMESTONE

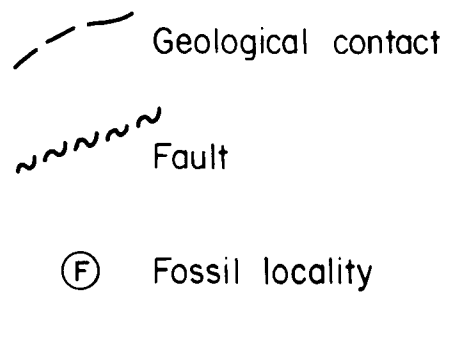
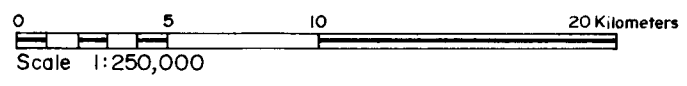


Fig. : 3

REVISED	Seagull Creek	
	Regional Geology (From Poole et al, 1960)	
PROJ.No. 13	SURVEY BY: AI	DATE: MAY 85
N.T.S. 105 B	DRAWN BY: AI	SCALE: 1:250,000
DWG.No.	NORANDA EXPLORATION OFFICE: Whitehorse	



VANCAL 11925

lacking the roof pendants.

Other smaller mafic intrusions are probably Jurassic in age and are located mainly southwest of the Seagull Batholith where it consists of multiple phases including pyroxenite-serpentinite and gabbro-diorite to monzonite-syenite.

2-2: LOCAL GEOLOGY

Geological mapping was carried out on the CEA claims at a scale of 1:10,000 and the results are shown on Figure 4. The main marker horizon is a thin 15 metre wide limestone unit located in the centre of the claims. The unit is a buff to light grey weathering well bedded limestone. The basal part of the limestone (unit 1) contains abundant crinoid stems and fragments with thin interbeds and lenses of grey chert. Conodonts of middle Pennsylvanian age (identified by M. Orchard of the G.S.C.) were obtained from this unit (Abbott, 1980). The fossiliferous limestone grades up into thinly bedded limestone with interbedded chert and argillite (unit 2).

The lower or eastern contact of the fossiliferous limestone is marked by a steeply dipping sheared chert pebble conglomerate probably signifying a tectonic contact.

The main rock type on either side of the carbonate unit is a fine-grained clastic rock (unit 3) consisting of chert, cherty argillites and minor sandstone which appear to grade into phyllites

and slates along strike in the southern part of the claims.

Furthest east, exposures of massive fine to medium-grained quartzites predominate. These are resistant weathering and often contain numerous quartz veins and stringers. The contact with the fine-grained clastic unit is not seen.

The Seagull Batholith (unit 5) does not crop out on the claims but is located immediately west of them. Minor tourmaline crystals and hornfelsed argillite are seen near the contact. A small feldspar porphyry dyke is located near the centre of the claims but its relationship to the Seagull Batholith is unknown.

Foliation is sub-parallel to bedding and generally strikes northwest and dips moderately to gently to the southwest. This foliation is variable, often depending on original rock types and is locally crenulated and kinked in the more intensely altered lithologies. Quartz veins are common in all rocks but much more so in the more massive quartzites and cherts where up to 25% discordant and concordant veins are seen in some outcrops.

CHAPTER THREE: GEOCHEMISTRY

Silt, soil and water samples were analyzed by the Noranda laboratory in Vancouver, B.C. by atomic absorption spectrophotometry. Rock samples were analyzed by Bondar-Clegg in Vancouver.

3-1: SILTS

A total of 42 silts were taken from the CEA claims. The silts were analyzed for Cu, Pb, Zn, Ag, As, Au, and Ba and the results are plotted on Figure 5. All small creeks and drainages were sampled in order to better define a source area.

The most significant anomaly located is on the eastern part of the original 60 claims. Here, Ag values between 2.0 ppm and 5.3 ppm are found draining a highland area near the contact of the argillite and quartzite. Coincident Cu (80 to 160 ppm) and Ba (2720 to 3000 ppm) enhance this anomalous area.

Other smaller anomalies located to the west include a 180 ppm Cu, draining the eastern side of the central dome and a significant Pb, Zn, Ag, and As anomaly in the western part of the claims near the limestone unit.

3-2: WATER

A total of 21 water samples were taken in conjunction with the silts. Results are shown in Appendix A and the sample locations on Figure 5. No anomalies resulted from the water analyses. A lower Ph (6.1) is found on two creeks draining the Seagull Batholith compared to a Ph of 7.0 to 7.6 for the remaining creeks.

3-3: ROCKS

A total of 18 rock samples were taken and analyzed for Cu, Zn, Pb, Ag, Au, and Ba, with some selective As analysis. Results and descriptions are listed in Appendix B and sample locations are plotted on Figure 4. These samples were taken from both outcrop and float from any rock containing sulphide mineralization, alteration and in some cases, quartz veins.

Rocks sampled from near the Seagull Batholith contact zone were somewhat enriched in Cu (300 ppm), Zn (4400 ppm), Pb (110 ppm), Ag (2.2 ppm), Au (80 ppb), and Ba (8200 ppm). These samples were of both hornfelsed argillite and kaolinized granite containing tourmaline, pyro and Fe-oxide.

In the centre of the claims (on the central dome), two pieces of glacial till assayed 17.8% and 34.6% Ba. Both samples consisted of flaggy, light grey baritic siltstone.

On the eastern part of the claims a limonite-quartz altered phyllite, with 3% disseminated pyrite analyzed 500 ppm Cu, 2.0 ppm Ag, and 2.12% Ba. This is within the assumed source area of the anomalous silts, near the quartzite contact. Additional work is needed to understand the significance of this mineralization more completely.

CHAPTER FOUR: MINERALIZATION

The only mineralization seen on the claims was disseminated pyrite in the phyllites and in minor shear zones in the more competent cherts. Quartz veins are quite abundant but are generally barren except for some minor disseminated pyrite and hematite, limonite and manganese staining.

Minor tourmaline and pyrrhotite in altered granite and hornfelsed float was found near the Seagull Batholith. Also two pieces of flaggy baritic siltstone was found on the central dome. This material assayed as high as 34.6% Ba however, the source is unknown. Glacial evidence indicates the source is probably to the west.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

A follow-up program consisting of silt-water and rock sampling, prospecting and geological mapping has resulted in some excellent silt anomalies within fairly confined source areas. Values up to 5.2 ppm Ag with coincident Cu-Ba anomalies are found throughout the eastern part of the claims. One outcrop sample had elevated values in the above elements and is located close to an argillite-quartzite contact which may be of some significance. At present a target model has not been identified and the property remains strictly a geochemistry target at this point.

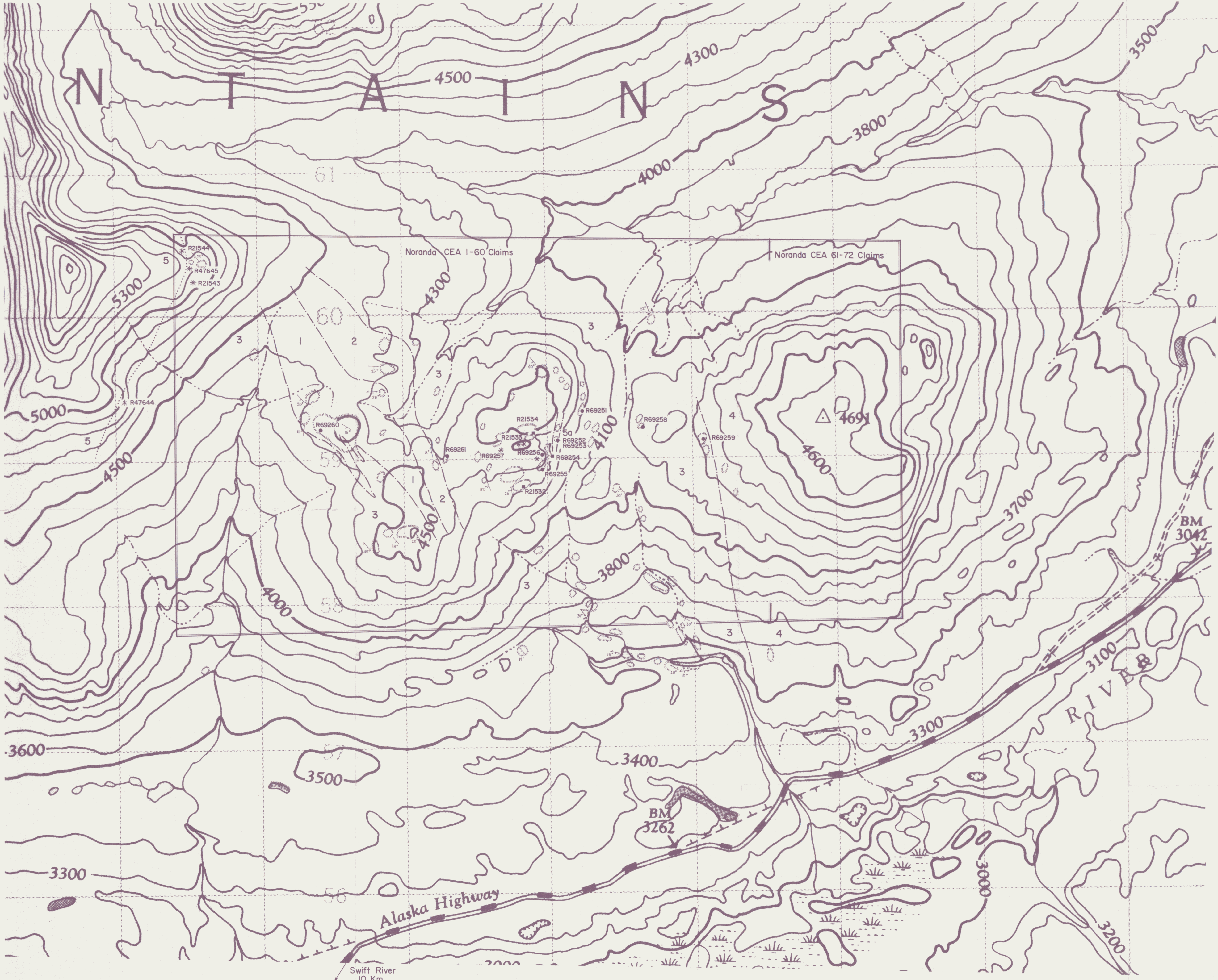
Other less significant anomalies to the west are more multi-element and include As, Pb and Zn anomalies.

Detailed soil sampling is recommended over the main target area along with geological mapping and prospecting. Some mag and VLF-EM orientation surveys may be carried out on the soil grid however their usefulness in target definition is limited at present.

Some reconnaissance soil sampling and prospecting should be undertaken over the other silt anomalies in the central and western parts of the claims.

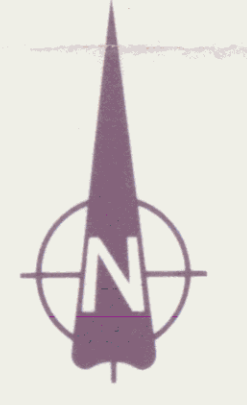
Respectfully submitted,

Wayne Reid
Wayne Reid
Project Geologist



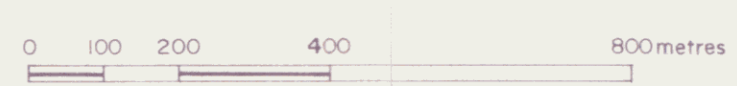
- Legend**
- CRETACEOUS
- 5 SEAGULL BATHOLITH
Granite - Diorite
 - 5a Feldspar Porphyry "Dyke"
- MISSISSIPPIAN
- 4 Quartzite, medium grey.
 - 3 Chert, argillite, chert conglomerate often foliated to a phyllite.
 - 2 Fossiliferous Limestone (Crinoid Stems)
Buff, silicified with chert lenses.
 - 1 Grey limestone with interbedded chert & limy argillite.

- Symbols**
- Geological contact (assumed, approx.)
 - Outcrop
 - * Float
 - Bedding: strike & dip
 - Foliation: strike & dip
 - Rock Sample Location

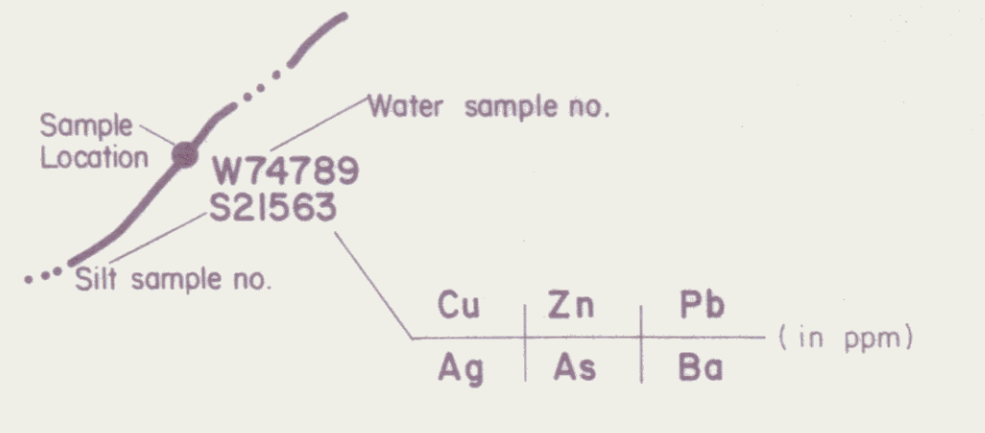
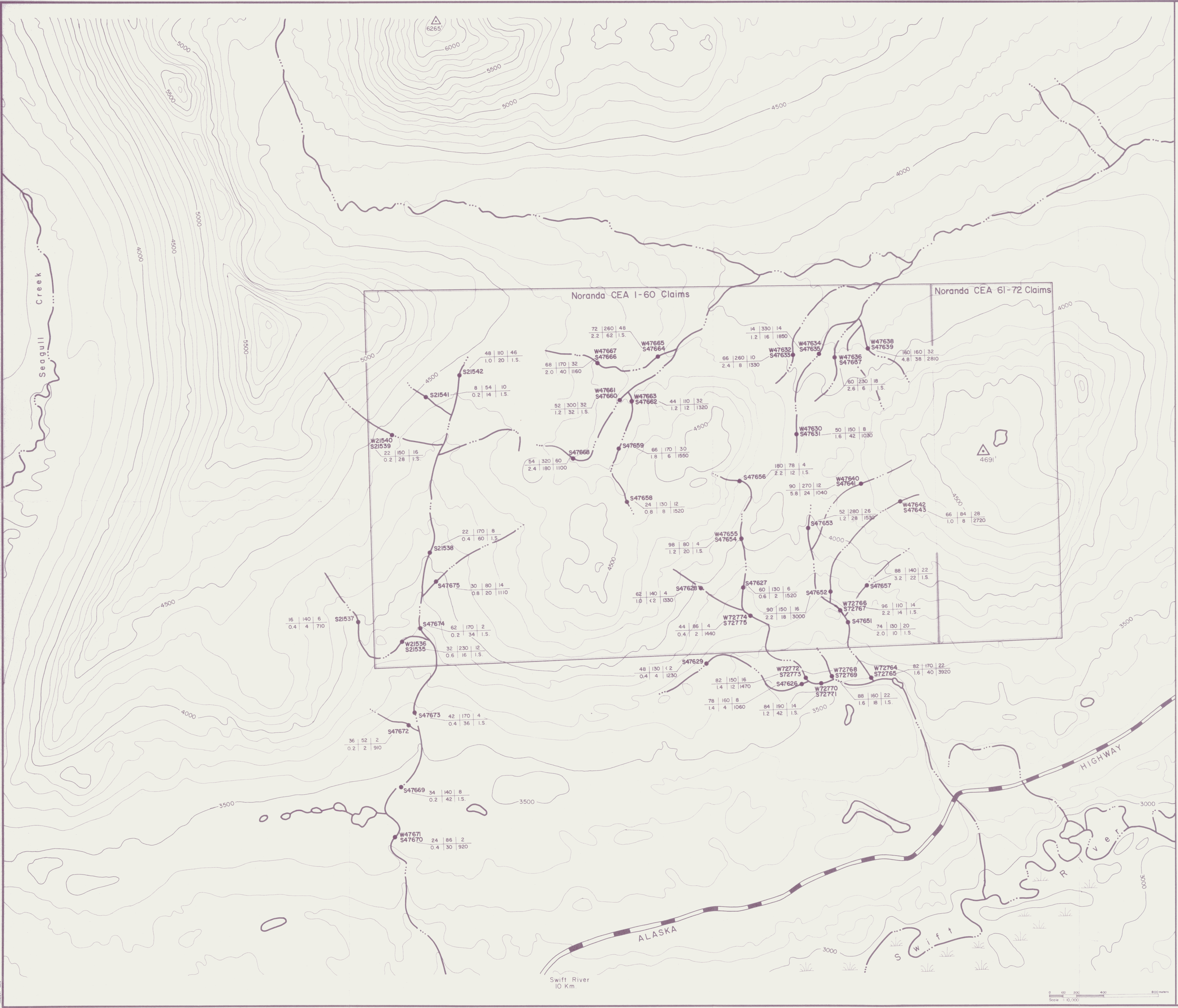


091646, Fig. 4

REVISED	SELWYN REGIONAL - Seagull Creek	
	CEA Claims	
	Geology	
	(Rock Sample Location)	
PROJ. No. 13	SURVEY BY: WR	DATE: SEP 84
N.T.S. 105 B 3E	DRAWN BY: AI	SCALE: 1:10,000
DWG. No.	NORANDA EXPLORATION	
	OFFICE: Whitehorse	



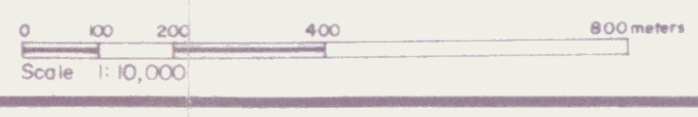
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NOTE:
 I.S. — Insufficient Sample
 All Au 10 ppb
 Water samples — No results

091646
 Fig. 5

REVISED	Seagull Creek (CEA Claims)	
	Geochemistry	
PROJ. No. 13	SURVEY BY: WR	DATE: MAY 85
N.T.S. — 105 B 3E	DRAWN BY: AI	SCALE: 1:10,000
DWG. No.	NORANDA EXPLORATION OFFICE Whitehorse	



REFERENCES

Abbott, J.G., 1980. Geology of Seagull Tin District, Yukon Exploration and Geology, 1979/80, p. 32-44. Department of Indian and Northern Affairs, Whitehorse, Y.T.

G.S.C. 1978 Open File 563. National Geochemical Reconnaissance Map 43-1978 Southern Yukon 105/B.

Poole, W.H., Roddick, J.A., Green, L.H., 1960. G.S.C. Map 10-1960 Geology - Wolf Lake, N.T.S. 105/B Yukon.


STATEMENT OF COSTS

Labour:	
4 man crew for 10 days	\$4500.00
Accommodation	310.00
Meals	750.00
Transportation:	
Rental + gas	400.00
Lab Costs (including shipping)	900.00
Report Writing, Drafting, etc.	<u>800.00</u>
TOTAL COST	\$7660.00

STATEMENT OF QUALIFICATIONS

I, Wayne Reid, of the City of Whitehorse, in the Yukon Territory, do hereby certify that:

1. I have been employed as a Geologist by Noranda Exploration Company, Limited (No Personal Liability) since 1976.
2. I am a graduate of Memorial University of Newfoundland with a Bachelor of Science Degree in Geology.
3. I am a member of the Canadian Institute of Mining and Metallurgy and the Prospectors and Developers Association.
4. I supervised and performed part of the work described in this report.



N. Wayne Reid
Project Geologist
Noranda Exploration Company, Limited
(No Personal Liability)

APPENDIX A

Water Geochemistry Results
(see Figure 5 for sample locations)

T.T. No.	SAMPLE NO.	Cu	Zn	Pb	F	U	pH
1	21536	<10	<10	<20	30	0.4	6.1
2	21540	<10	<10	<20	30	0.3	6.2
3	47630	<10	<10	<20	10	0.1	7.0
4	47632	<10	<10	<20	10	0.1	7.0
5	47634	<10	<10	<20	10	0.1	7.1
6	47636	<10	<10	<20	10	<0.1	7.1
7	47638	<10	<10	<20	10	<0.1	7.2
8	47640	<10	<10	<20	10	<0.1	7.2
9	47642	<10	<10	<20	10	<0.1	7.2
10	47655	<10	<10	<20	10	<0.1	7.1
1	47661	<10	<10	<20	10	0.7	7.2
2	47663	<10	<10	<20	10	<0.1	7.3
3	47665	<10	<10	<20	10	0.3	7.2
4	47667	<10	<10	<20	10	0.3	7.6
5	47671	<10	<10	<20	20	0.1	7.6
6	72764	<10	<10	<20	10	<0.1	7.4
7	72766	<10	<10	<20	10	<0.1	7.5
8	72768	<10	<10	<20	10	<0.1	7.4
9	72770	<10	<10	<20	10	0.4	7.6
20	72772	<10	<10	<20	10	<0.1	7.6
21	72774	<10	<10	<20	10	<0.1	7.4

APPENDIX B
ROCK SAMPLE GEOCHEMICAL RESULTS

SAMPLE NO.	LOCATION AND DESCRIPTION	TYPE/ WIDTH	ASSAYS						Ba ppm
			Cu	Zn	Pb	Ag	As	Au	
21532	Heavily qtz veined phyllite, hem-ser-Mn altered. NE ridge.	chip 1 m	160	24	2	0.2		10	4100
21533	Lt. grey to white f.g. weakly laminated barite? NE ridge.	float	32	20	2	0.2		10	34.6x
21534	Large qtz veins (minor rust + hem + Mn) in phyllite. NE ridge.	chip 3 m	60	28	34	0.2		10	1680
21543	Tourmalinized, kaolinized granitic intrusive 60% tourm. Some ser. from contact.	float	8	4400	2	2.2	44	80	1520
21544	3 mm to 7 mm wide tourmaline bands with 5x sulphides in a hornfelsed arg - from contact. No split.	float	320	620	110	0.4	4	10	540
47644	Float 1 m x 0.75 m near contact, NW ridge. Iron stained hornfelsed cht argillite with <5% dissem. sulphides (py + pyrr +/- arsenpy)	float	.01x	<.01x	.03x	0.7 g/t	.02x	<.07 g/t	.03x
47645	Float 30 cm x 20 cm near contact, NW ridge. Iron stained hornfelsed argillite with bands of pyrr, tourm.	float	.03x	.01x	.02x	0.7 g/t		<.07 g/t	.82x
69251	Lt. grey f.g. "argillite" weathered calcite as "vugs". East ridge.	o/c	8	220	4	0.2		10	340
69252	Gry. phyllite with discontinuous qtz pods.	o/c	22	14	20	0.4		10	740
69253	Lt. grn-gry feldspar porph. rock 2x mafic laths (syenite?)	o/c	8	84	2	0.2	<2	10	1180
69254	Limonite altered qtz vein, minor sericite.	chip 1 m	28	14	8	0.2		10	400
69255	Limonite - rust matrix to f.g. clay altered breccia.	o/c	38	28	2	0.2		10	1780
69256	Siliceous foliated argillite with Mn stain.	o/c	64	26	2	0.2		10	1480
69257	Lt. gry v.f.g. flaggy siliceous rock, 2x diss. py, possible ba?	float	10	50	2	0.2	32	10	17.8x
69258	Lt. gry foliated sericitized rock.	o/c	8	16	4	0.2		10	2040
69259	Limonite-qtz altered phyllite up to 3x diss. py locally.	o/c	500	22	6	2.0	<2	10	2.12x
69260	Lt. gry to white xline limestone.	o/c	6	24	6	0.2		10	1060
69261	F.g. cht pebble congl. (foliated), minor diss. py.		14	36	2	0.2	<2	10	700