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REPORT ON ACTIVITIES
1968-1969

This report has been examined by the Geological Evaluation Unit. Approved as to technical worth by:

RESIDENT GEOLOGIST

Approved as to cost in the amount of: ~~$3200.00~~ $5400.00

RESIDENT MINING ENGINEER

Accepted as representation work under Section 53(4) Yukon Quartz Mining Act.

COMMISSIONER OF YUKON

This report has been examined by the Geological Evaluation Unit. Approved as to technical worth by:

RESIDENT GEOLOGIST

Approved as to cost in the amount of: $

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COMMISSIONER OF YUKON

SELWYN EXPLORATIONS LTD.

REPORT ON ACTIVITIES FOR THE PERIOD
SEPTEMBER 1968 TO SEPTEMBER 1969

The purpose of this report is to provide a resume of activities, and an assessment of results of work, conducted on the Shell Creek claims from September 1968 to date.

Engineering Evaluation

The property was visited in the Fall of 1968 by Dr. P.H. Sevensma, President of Selwyn Explorations Ltd., H.S. Aikins, Director of Selwyn, Dr. G.A. Gross of the Geological Survey of Canada, and Dr. C. Findlay, Resident Geologist Yukon and Southwest McKenzie District GSC. Information gathered on this trip by Dr. Sevensma and H.S. Aikins was compiled and studied in subsequent months to assist in market evaluation and to lay plans for work during the Summer of 1969. Mr. Aikins's report, dated February 11, 1969, appears under the Appendix. Consultations were made with H.B. Neal, P. Eng., of Toronto, Canada, an expert in iron deposits, in the early months of 1969. Mr. Neal followed up his studies with a trip to the property from June 2 - June 5, 1969. Mr. Neal's report on the exploration program for Shell Creek iron prospect dated July 11, 1969 appears under the Appendix. During his trip Mr. Neal examined the property thoroughly

...cont'd...

and took rock samples from Shell Claim Nos. 2, 3, 10, and 14. All the trenches were visited in the Northwesterly group of claims, and two samples were taken from trench #5. Drawing SSC-1 in the Appendix shows the location and number of samples taken.

Surveying and Line Cutting

Line cutting and survey crews, consisting of a field manager, surveyor, line cutters and cook were moved into the property in mid-June 1969, with the purpose of carrying out Phase I outlined in H.B. Neal's report of July 11, 1969. Excessive but unavoidable expense resulted from flying personnel and equipment into the property with a helicopter and out again due to the serious forest fires in the area. As a result of the fires about only one mile of line was cut on Shell claims on #4 and #8. The manager on the job was Gordon Eftoda, of Whitehorse, Y.T., and the Surveyor was Ken MacPhee also of Whitehorse, Y.T.

Claim Map

A claim map is included under the Appendix, Drawing SSC-2.

N. R. Low
Exploration Manager
Selwyn Explorations Ltd.

A P P E N D I X

SHELL CREEK IRON

DAWSON M.D. - 116 C/9
64° 35' N., 140° 20'W.
YUKON TERRITORY

1. INTRODUCTION

The properties which are the subject of this report were visited during the period August 14th to August 19th, 1968.

Dr. G.A. Gross of the Geological Survey of Canada was present during this same period, to classify this occurrence of a formational iron deposit for academic and long term resource evaluation purposes.

Dr. C. Findlay, Resident Geologist, Yukon and Southwest McKenzie District G.S.C. visited the property briefly on August 14th and may be expected to include this property in his Report on Activities for the current period.

Dr. P.H. Sevensma, President of Selwyn Explorations was present on August 14th to direct a helicopter reconnaissance of the area and point out geological features revealed by previous studies.

Mr. J. (Jack) Semple of Dawson City was employed to assist the field party. A Jetranger helicopter obtained on a split-charter basis was utilized for 3.6 hours on August 14th to position the party and carry out reconnaissance work. A G-2 helicopter, also on a split-charter basis, was used to return the party to Dawson City.

Existing camp facilities at Shell Creek augmented by supplies provided from Dawson and the Selwyn trailer at Coal Creek proved adequate.

2. IRON FORMATION

Due to the lateral extent of the known portion of this formational iron unit, and the widely spaced and incomplete nature of the exposures, any assessment made at this time will have to be regarded as subject to substantial revision.

Two quite distinct types of ferruginous material together with chert, quartzite, black slates, and schistose rocks of varying composition constitute the sequence of interest. The economic potential of the deposit is dependent mainly on the extent and volume of massive, fine to medium grained magnetite with chert or quartzite interbeds. Disseminated magnetite and thin bands of magnetite and minor amounts of hematite in slatey or schistose rocks, would be of interest only when it is mined in conjunction with ore of higher grade.

Depositional characteristics of this and other similar deposits are imparted which largely dictate the extent of the mining potential. Subsequent folding, faulting and evolution of the topographic surface may modify this picture but no major remobilization of iron occurs.

This deposit, as the only known magnetite iron formation in the area, is unique in that it appears to cover an area of only a few square miles rather than the hundreds of miles characteristic of iron formations of Eastern Canada and elsewhere in the world. The formation to which this deposit belongs may however be the source of much of the iron reported elsewhere in the Yukon and Alaska but which nowhere else displays the combination of grade, metallurgical quality and thickness evident at Shell Creek. The local and somewhat unique character of this deposit does not however preclude the possibility of a multimillion ton potential.

Folding is a pronounced feature of what may in fact have been the deepest part of the depositional basin. Some suggestion of preconsolidation

deformation is also evident but is probably of minor importance only.

The best exposure and possibly the central part of the formation is located just South of the camp and on the steep hillside to the East of Shell Creek. Tightly folded magnetite beds plunging gently to the East occur over a width of several hundred feet. A trench located about one-half mile West of the camp contains much material of a similar character but less evidence of folding is present. The other trenches generally showed more slatey material intercalated with the magnetite beds.

Work by Asbestos Corporation (Explorations) Ltd. was of great assistance in terms of the actual exposures sampled. The failure to sample exposures of folded iron formation East of Shell Creek is not easily accounted for in view of the fact that much material in the +40% Fe range is well exposed. Several hundred pounds of samples and specimens from various parts of the exposed formation were collected. All known workings were visited in the course of the examination.

3. ECONOMIC GEOLOGY

(a) Iron

An assessment of tonnage potential based on the foregoing considerations suggest a maximum of 200 million tons of ± 35% Fe on the East flank of Shell Creek. Extending Westward to trench No. 2 and perhaps beyond is a readily accessible and easily tested zone with a potential in the 50 to 100 million ton range at a possible grade of from 30 to 35% Fe. There is some field evidence to suggest that banded quartzose iron may extend Westward along structures not revealed by previous work but indicated by the airborne magnetic survey. It should be considered that perhaps 500 million tons of near surface iron formation with a grade potential of from 20 to 30% Fe warrants testing.

(b) Coal

Time and access considerations did not permit an examination of the coal deposits but a small dump sample was obtained from the old Coal Creek workings which may be useful in assessing the metallurgical and thermal properties of these deposits.

Helicopter reconnaissance of the terrain between Coal Creek and Cliff Creek confirmed the practicability and need for an extensive program of bulldozer trenching to expose at intervals the coal seams which at present are exposed only where they are cut by stream channels.

4. ACCESS ROAD and AIRSTRIP

(a) Forty Mile Bridge to Yukon River

This portion of the tote trail is constructed on terrain suitable for winter use and for the purpose intended was well located.

(b) East Bank of Yukon River to Shell Creek

The road here follows the river bank as it is the only well drained soil in the area. The road bed is composed of silt and fine sand. No feasible alternate route is evident on this side of the river.

(c) Air-strip

The site has been cleared of trees and brush and appears to be well located for drainage which would be essential. The sub-soil is reported to be sand and clearing the organic surface matter would present no problem. Unless an all weather road can be constructed to this site, it will be necessary to employ a tracked vehicle. Evaluation of sites closer to the property should be given priority over completion of this strip.

(d) Camp and Fuel Supplies

Two areas near the mouth of Shell Creek were cleared and a trailer camp for a two man crew was established. The major part of an 8,000 gallon fuel inventory is located at these points. A suitable ferry landing is located nearby. A freight sleigh and tanker trailer provide means whereby fuel and other supplies may be mobilized to job sites on the coal and iron properties.

(e) General

The frequent availability of jet helicopters in the Dawson area has greatly changed the economics of this type of support for field work. The high speed and increase payload of these aircraft renders practical the movement of men and material over substantial distances.

A river ferry based at Dawson, and maintained by the Territorial Government as a stand-by unit is available for charter work in connection with development projects. The ferry has a rated capacity of 37 tons and is thus able to handle up to a D-7 caterpillar tractor.

5. SUMMARY

Bulldozer trenching is virtually the only method whereby the nature and continuity of the coal measures can be exposed for examination.

Logistic considerations favour the construction of a tote trail from the Yukon River to selected sites along the strike of the iron formation.

Construction of a system of access roads, helicopter landing pads and a ferry landing ramp down stream from Shell Creek would be essential to the efficient conduct of a major program of this property. The fuel and equipment presently located on the property will materially

assist in the expedient initiation of further work. Higher ground should be selected for future road construction.

Examinations, Technical and Market evaluation studies, and the preparitory field work completed to date provide a substantial basis on which to assess the merit, and the nature of the problems, which will determine the future of this property.

6. CONCLUSION

The purpose of this brief report has been to provide a resume of the activities, and an assessment of results of work, conducted to date. Market and Transportation studies suggest that the objective of confirming by drilling the potential for both the coal and iron, which are so fortuitously located appears timely in view of a developing Northern economy based on mineral resources.

Respectfully submitted,

H.S. Aikins, Director,
Selwyn Explorations Ltd. (N.P.L.)

February 11, 1969.

EXPLORATION PROGRAM

FOR

SHELL CREEK IRON PROSPECT

YUKON TERRITORY

SELWYN EXPLORATIONS LTD.

BY

H. E. NEAL P.Eng.

July 11, 1969

EXPLORATION PROGRAM

FOR SHELL CREEK IRON PROSPECT

SELWYN EXPLORATIONS LTD.

1. INTRODUCTION

The following two-stage Exploration Program is recommended for the Shell Creek Iron Prospect, Yukon Territory. This recommendation is based on a study of available geological records of the area and on the mapping conducted by Asbestos Corporation. The property was personally examined on June 3, 1969, accompanied by Mr. N. R. Low of Buval Mines Ltd., and by Dr. P. Sevensma and H.S. Aikins of Selwyn Explorations Ltd.

PHASE I. - Preliminary geological mapping, magnetometer survey, sampling and metallurgical testing of the iron formation to establish the character and extent of the iron zone. The metallurgical testwork is most important in order to determine the magnetic content of the iron formation; the grinding required to produce a high-grade concentrate and the weight recovery of the magnetic concentrate.

Based on this data, a preliminary economic evaluation should be made to establish the competitive position of this iron formation in the iron market.

PHASE II - This phase is completely contingent on favourable results from Phase I indicating that the grade, tonnage and recovery of iron might be competitive.

Phase II program is designed primarily to establish the tonnage and grade of the deposit by diamond drilling. Metallurgical tests will be conducted on the drill core to establish the weight recovery and the

grade of the concentrate. Bulk samples will also be taken for preliminary testwork.

For the purpose of this budget estimate, the Phase II program will be based on a helicopter operation rather than using a bulldozer to establish a road from the Yukon River. The helicopter operation is considered to be faster and cheaper.

2. SUMMARY OF BUDGET ESTIMATES

a) Phase I		$ 34,950
	Time:	June - September 1969
b) Phase II		$203,075
	Time:	May - September, 1970

3. PHASE I PROGRAM

a) Ground Control - To establish sufficient ground control to produce a map at a scale of 1" = 200 feet with 10 foot contours. This map should cover an area of about 1 square mile centred on the main north-south folded area east of the old campsite.

Before the fire it was considered desirable to put in ground control ahead of the geological mapping but now the two will have to be conducted simultaneously. A surveyor will be required during the geological mapping period to locate the stations established by the geologist and the sampler. Cross-section lines will be required for the magnetometer survey, they may extend up to 1 mile west of the old campsite.

b) Geological Mapping - To geologically map all outcrops in the iron formation zones by a qualified iron ore geologist. The purpose of this mapping is to establish the vertical and horizontal extent of the magnetic iron formation and its relationship to the surrounding rocks. The resulting geological map is necessary to make preliminary tonnage estimates and as a basis for future diamond drilling.

c) Magnetometer Survey - To outline the extent of the iron formation by taking magnetometer readings along surveyed cross section lines. The magnetometer survey should cover the folded area east of camp and the area extending one mile west of the campsite. Readings should be taken at 50 foot intervals in the area of known iron formation and at 100 foot intervals where reconnaissance surveys are conducted. A compilation of the magnetometer survey will be prepared.

d) Sampling - To chip sample the iron formation outcrops and former trenches. The sampling should be conducted along at least 5 cross-section lines perpendicular to the strike of the iron formation. These sections should be selected where there are abundant outcrops in order to have nearly continuous sampling of the formations. These sections should be regularly spaced along the entire length of the iron formation.

Individual samples should cover about 20 feet of formation. The location of all samples must be established from the ground control.

e) Chemical Analyses and Metallurgical Testwork. - All field samples should be analysed for Soluble Iron. Samples may be composited or tested separately on a Davis Tube to establish the magnetic extent. Davis Tube tests will be conducted at various grinds to determine the liberation size for a high-grade concentrate.

This testwork may be conducted by Britton Research, based on test procedures to be provided by the author.

f) A Compilation of Data and Preliminary Economic Study - The geological and metallurgical data should be compiled and summarized into a brief report. The grade and a preliminary tonnage estimate should be calculated to provide an order of magnitude estimate.

Preliminary operating cost estimates should be made based on the preliminary stripping and concentration ratios established from the field program. This study will serve as a basis for a decision on the Phase II Program.

4. PHASE I BUDGET ESTIMATE

Ground Control and Map Preparation	$	4,000
Geological Mapping, Magnetometer Survey and Compilation		3,000
Surveyor - Camp Foreman (2 months at $800)		1,600
Labourers - Axemen (4 for 60 days at $25/day)		6,000
Cook (2 months at $650)		1,300
Food Costs ($7.50/day for 8 men for 60 days)		3,600
Camp Equipment and Supplies		2,500
Expediting at Dawson City		500
Travel Cost		1,500
Supervising Consultant		2,500
Compilation and Preliminary Economic Study		2,000
Metallurgical Testwork (50 samples at $30)		1,500
Chemical Analyses (100 samples at $4.50)		450
Helicopter Rental (20 Hours at $225 equivalent)		4,500
Total	$	34,950

The above costs are exclusive of head-office share of overhead and supervision.

5. PHASE II PROGRAM

a) To conduct 5000 feet of drilling to establish in a preliminary manner the thickness and distribution of the iron formation. The thickness of the overlying rock and the stripping ratio can more accurately be determined.

b) The drill core will be sampled, analysed and used for metallurgical testwork. These tests are necessary to establish the magnetic content, the weight recovery and the grade of the magnetic concentrate.

c) To conduct engineering studies on open-pit layouts, tonnage and grade estimates. These studies will more accurately establish the stripping ratio which greatly affects the cost of mining.

d) To conduct geological mapping and magnetometer surveys as extensions of Phase I.

e) To conduct preliminary feasibility reports including a study of transportation costs, operating and capital costs.

f) To obtain and test small bulk samples to provide sufficient concentrates to make a small quantity of pellets for potential partners or clients.

g) This program is based on barging the drill equipment and major supplies from Dawson City to near the mouth of Shell Creek at the Yukon River. This equipment would be ferried by helicopter to the camp and drill site. A small tractor is included to move the drill from one site to another where feasible.

h) An alternative would be to rent a muskeg tractor (price new about $10,000) to transport the heavy supplies from the river to the camp. The helicopter would then be used primarily to transport personnel

and food for a total of about 25 hours. The disadvantage with the muskeg tractor is the necessity to have a special driver who must also be a mechanic to keep it in good running condition.

5. PHASE II BUDGET ESTIMATE

Supervision and Geological Mapping	$	8,000
Drilling (5000 feet at $20/ft)		100,000
Camp Construction		5,000
Cookery Expense		10,000
Barge Rental (6 trips from Dawson City)		3,000
Helicopter Rental (75 hours at $225 equivalent)		16,875
Small Tractor Rental		3,600
Travel Expenses		3,000
Camp Labourers (2 for 3 months at $600)		3,600
Consultants		10,000
Preliminary Feasibility Report		10,000
Sample Transportation		1,500
Metallurgical Testwork and Chemical Analyses		10,000
Sub-total		184,575
10% Contingency		18,500
Total	$	203,075

July 11, 1969.

H. E. Neal, P.Eng.

H. E. Neal & Associates
Mineral Consultants
124 Roxborough Drive,
Toronto.

SHELL CREEK

SAMPLING

June 3, 1969

Sample Description:

24658 - Banded argillaceous chert and jasper iron formation. Location: 75 feet below helicopter pad at 3200 feet elevation.

24659 - Banded cherty and argillaceous iron formation. Location: 40 feet below and 200 feet north of sample 24658.

24660 - Banded cherty magnetic iron formation across 20 feet of exposed beds. Location: 700 feet south of 24659 at 2850 feet elevation.

24661 - Trench 5 North Limits - most northerly 30 feet of trench which was best looking banded cherty magnetic iron formation in this trench.

24662 - Trench 5 North Limits - hematite zone in this trench forming central 30 feet of the trench and consisting of thin banded slaty hematite iron formation.

DAVIS TUBE TEST RESULTS

Conducted by

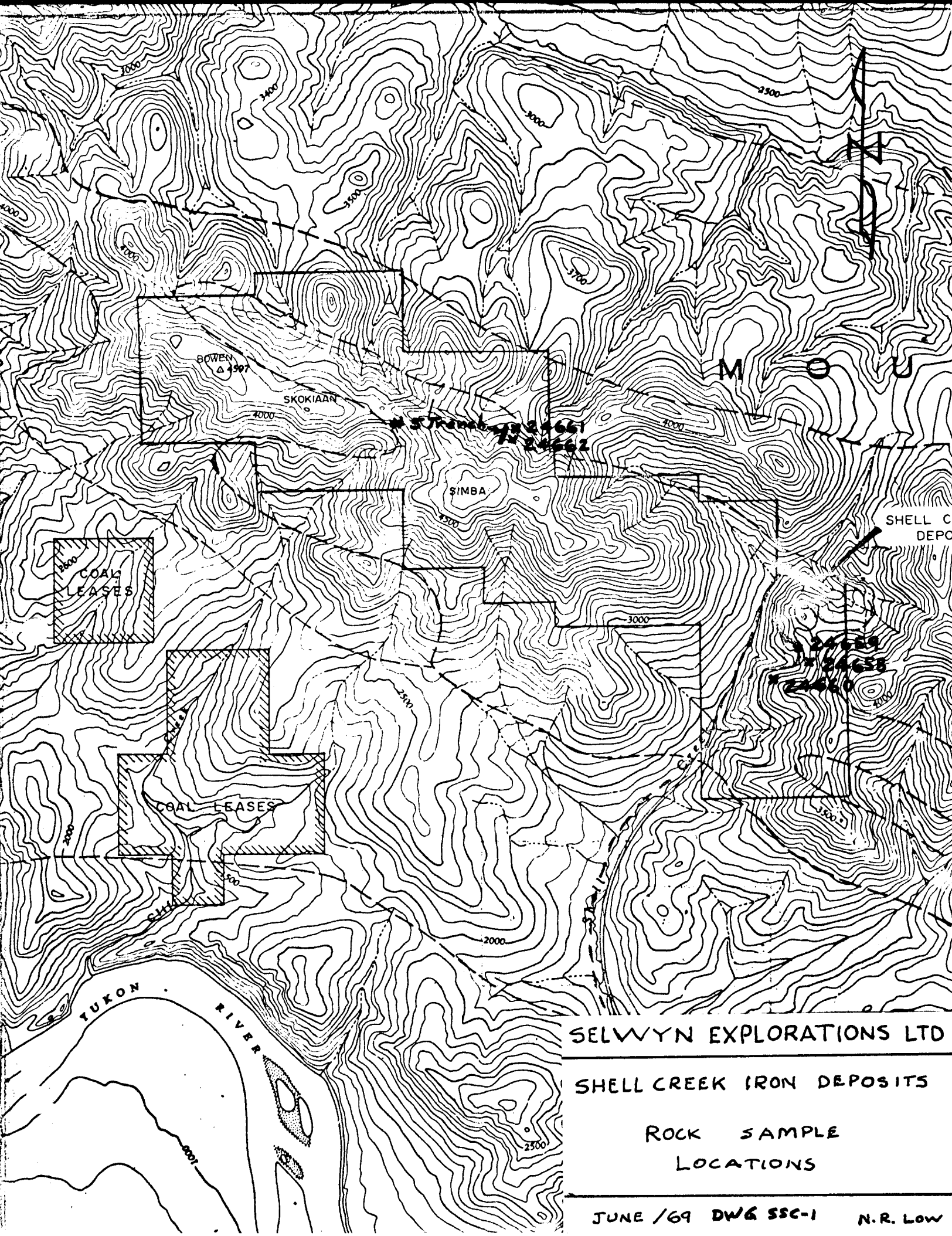
ONTARIO RESEARCH FOUNDATION

Grind: 100% -325 Mesh

Sample No.	Head As Fe %	D.T. Concentrate Weight %	D.T. Concentrate As Fe %	D.T. Concentrate Rec'y	DT Tails As Fe - % (Calc.)
24658	28.1	25.5	70.0	63.5	13.8
59	25.9	15.8	69.4	42.3	17.7
60	30.0	18.3	68.3	41.7	21.4
61	29.2	43.3	58.0	86.0	7.2
62	28.8	14.1	65.2	31.9	22.8

H. E. Neal, P.Eng.,

September 12, 1969


BOWEN
SKOKIAAN
SIMBA
COAL LEASES
COAL LEASES
SHELL C
DEPO
TUKON
RIVER
SELWYN EXPLORATIONS LTD
SHELL CREEK IRON DEPOSITS
ROCK SAMPLE LOCATIONS
JUNE /69 DWG SSC-1
N.R. LOW

SELWYN EXPLORATIONS LTD

CLAIM LOCATION

SEPT/69 DWG SSC-2 N.R.L.

SHELL 18 | SHELL 20 | VOID 4000 | VOID
Y15322 | Y15324
SHELL 17 | SHELL 19 | SHELL 24 | SHELL 22 | SHELL 26 | SHELL 16
Y15321 | Y15323 | Y15328 | Y15326 | Y15319 | Y15317 4600
SHELL 23 | SHELL 21 | SHELL 12 | SHELL 14 | SHELL 7
Y15327 | Y15325 | Y15313 | Y15315 | Y15308
SHELL 13 | SHELL 15 | SHELL 25
Y15314 | Y15316 | Y15318
SHELL 6 | SHELL 5 | SHELL 4
Y15307 | Y15306 | Y15305
SHELL 27 | SHELL 9 | SHELL 8 | SHELL 3
4000
Y15320 | Y15310 3680
Y15309 | Y15304
SHELL 10 | SHELL 2
Y15311 | Y15303
SHELL 11 | SHELL 1
Y15312 | Y15302

LOT 22 Gr 1
2500
2000
C

CREEK

LOT 17 Gr 1
C

LOT 13 Gr. 1 | LOT 16 Gr 1
C | C

LOT 18
C

CLIFF

2000
1600

YUKON RIVER

SHELL CREEK

2500
3000
3500
4000
2000