

# MAR 19640002: WEST CENTRAL ALBERTA

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19640002

ECONOMIC MINERALS

FILE REPORT No.

EE-AE-021(02)

IRON ORE PROSPECTING

PERMIT No. 21

FINAL REPORT

April 27th, 1964

N. S. Edgar, P. Eng.

## Iron Ore Prospecting Permit No. 21 - Final Report

### Descriptions of Programs:

1) In early October, 1962, a preliminary examination of the Permit No. 21 area was made following discovery of iron ore in a borrow pit alongside an access road in Sec. 28-79-9W6. Using information gained from this examination an area was selected and Permit No. 21 was granted.

2) During the life of Permit No. 21, Twenty-five (25) test holes were drilled within the Permit area.

A plan, marked "Appendix A", is included with this report and shows location of these drill holes. Drill logs of these holes also accompany this report.

↳ Map is labeled as #1

### Discussion of Drilling Results:

1) Initial sampling of the top of the zone at the outcrop area indicated the grade of ore to be 39% iron.

2) The drill holes were not sampled in detail since the equipment used was unable to effect a complete core recovery. Sufficient data was obtained however to indicate the thickness and the lateral extent of the ore zone. This is outlined in the plan, Appendix 'A'.

Several geological theories regarding the possible trend and extent of the deposit were tested by this drilling program. Results show, reasonably conclusively, that the ore occurs on a monoclinial structure dipping gently to the east. It terminates on the northeast, North and West by erosion and on the south apparently by the east-west trending Spirit River Ridge or scarp. To the southeast it apparently grades out into the slightly ferruginous Bad Heart sandstone.

It appears that the major deposit in this region lies in Twps. 79 and 80-9W6, as shown on the plan.

The area underlain by the iron ore bed appears to be of about 4,500 acres in extent with an average thickness of about six feet. It is similar to the ore occurrences in the Clear Hills region 50 miles to the north and may be expected to be of similar grade.

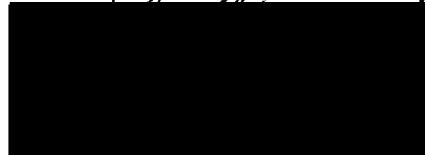
Estimate of Expenditures made on Iron Ore Prospecting Permit No. 21

Total amount spent on this permit area, including

surface exploration and drilling

\$ 6,315.48

Respectfully submitted,



N. S. Edgar, P. Eng.

Portion of Iron Ore Prospecting Permit No. 21 Retained for Lease

In Township 79 range 9 West of the 6th meridian:

N1/2 sec. 17, NE 1/4 sec. 18, E 1/2 sec. 19; sec. 20,  
sec. 21, sec. 26, sec. 27, sec. 28, sec. 29, SE 1/4 sec. 30,  
E 1/2 sec. 34, sec. 35, NW 1/4 sec. 36.

Totalling 9-1/4 sections or approximately 5,920 acres

In Township 80 range 9 West of the 6th meridian:

W 1/2 sec. 1, sec. 2.

Totalling 1-1/2 sections or approximately 960 acres

Total Lease acreage approximately 6,880 acres

TP. 80, R. 9

TP. 80, R. 8

IRON PROSPECTING PERMIT NO. 21

TP. 79, R. 9

TP. 79, R. 8

49

- EXISTING LINE
- PROPOSED NEW LINE
- PROPOSED DRILL HOLE

N. S. EDGAR B. SC. P. ENG. EDMONTON-ALBERTA

PROPOSED DRILLING-IRON PROSPECTING PERMIT NO. 21

SCALE: 1.25"=1 MILE	DATE: 3 DEC. 63	D'W'N: H.W.
		C'K'D: N.S.E.

LOG OF DRILL HOLE NO. 11-17-79-9W6

Location: 100' ESE of centre of LSD Elevation Top: Nil Depth: 110' Page No. 1  
 Elevation: 2559 Inclination: 90° Date Completed: 29 Nov, 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	11'	Tan coloured clay			Grab samples at 5' intervals
11'	19'	Grey, plastic glacial clay			
19'	24'	Grey, brown and harder clay			
24'	47'	Grey-brown, plastic clay, some rusty concretions			
	@ 35'	Thin seam of bentonite			
47'	54'	Soft, grey-blue, plastic clay, occas. pebble			
54'	62'	Grey soft clay with much gravel			
62'	76.5'	As above but less gravel			
76.5'	85'	Hard, grey, clay-shale (bedrock)			
85'	89'	Very hard, grey, gritty shale or thin sandstone beds in grey clay-shale			
89'	90'	Very hard dark brown shale			
90'	98'	Fairly hard, grey, clay-shale			
	@ 98'	Thin very hard bed			
98'	110'	Hard, dark grey shale			

LOG OF DRILL HOLE NO. 4-18-79-9W6

Location: SW Corner of LSD Elevation Top: Nil Depth: 100' Page No. 1

Elevation: 2605 Inclination: 90° Date Completed: 30 Nov., 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	11'	Tan coloured clay			
11'	51'	Blue-grey, sticky, plastic, glacial till			No samples taken
51'	100'	Hard, grey, clay-shales (bedrock)			



LOG OF DRILL HOLE NO. 13-18-79-9W6

In NW Corner of LSD

Location: & 50' East of Corner Elevation Top: Nil Depth: 150' Page No. 1

Elevation: 2640 Monument Inclinatio: 90° Date Completed: 15 Dec. , 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	9'	Tan coloured clay surface mantle			Grab samples at 5' intervals
9'	60'	Sticky, Grey-blue, plastic glacial clay			
@	60'	1/4" seam of coal (probably float)			
60'	67'	Sticky, grey-blue plastic glacial clay			
67'		Bedrock 2573			
67'	69'	Light-grey , clay-shale			
69'	70'	Dark, very hard shale			
70'	97.5'	Grey clay-shale with occasional very thin bed of light-grey shale			
@	97.5'	4" bed, dark-grey, hard, silt-shale with sharply angular fracture			
97.8'	150'	Dark-grey, clay-shale with occasional thin bed (1/8" to 1/4") of grit of fine grained S stone, usually light grey			
		Bottom of 150' elev. 2490			

NE corner of  
16-18-79-9W6

LOG OF DRILL HOLE NO. 16-18-79-9W6

Location: 60' west of road Elevation Top: 2586 Depth: 50' Page No. 1

Elevation: 2610 Inclination: 90° Date Completed: 29 Nov. /62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	13'	Tan coloured clay		5'	) Grab samples @ 5' intervals
13'	24'	Dark grey plastic glacial clay		10'	
				15'	
				20'	
24'	26'	Blue grey hard sandstone with oolites	24'	25'	) Riffle Board catch samples
			25'	26'	
26'	27'	Dark blue, hard, heavily oolitic sandstone	26'	27'	
27'	28'	Brownish blue, softer, heavily oolitic sandstone	27'	28'	
			28'	29'	
28'	30'	Blue, heavily oolitic sandstone	29'	30'	
			30'	31'	
30'	35'	Bluish brown, heavily oolitic sandstone	31'	32'	
			32'	33'	
35'	36.4'	Blue grey sandstone, heavily oolitic	33'	34'	
			34'	35'	
36.4'	41'	Soft blue grey sandstone	35'	36'	
			36'	37'	
			37'	38'	
			38'	39'	
43'	44'	Dark grey gritty shale	39'	40'	
			40'	41'	
			41'	42'	
44'	50'	Dark grey clay shale	42'	43'	
			43'	44'	
			44'	45'	
			45'	46'	
			46'	47'	
			47'	48'	
			48'	49'	
			49'	50'	

LOG OF DRILL HOLE NO. 5-19-79-9W6

Location: About 20' east & 35' south Elevation Top: Nil Depth: 130' Page No. 1  
south of NW corner monument of LSD  
 Elevation: 2620 Inclination: 90° Date Completed: 15 Dec. 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	8'	Tan coloured surface mantle			Grab samples at 5' intervals
8'	18'	Grey-brown clay, fairly firm, with rust from 15' to 18' and a few pebbles at 18'			
18'	37'	Sticky, grey-blue, plastic glacial clay			
37'		BEDROCK elev. 2583			
37'	62'	Interbeds of brown & dark grey, clay shales; rather soft			
62'	130'	Hard, dark-grey, clay-shale with an occasional very thin bed of extremely hard shale			
		Bottom at 130' elev. 2490			

LOG OF DRILL HOLE NO. 13-19-79-9W6

About 100' east & 20'  
south of NW corner of

Location: LSD Elevation Top: Nil Depth: 120' Page No. 1  
Elevation: 2600 Inclination: 90° Date Completed: 15 Dec. 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	11'	Tan coloured surface till			Grab samples at 5' intervals
11'	120'	Sticky, blue-grey, plastic, glacial till  Bottom at 120' elev. 2480			

LOG OF DRILL HOLE NO. 16-19-79-9W6

Location: In NE corner of LSD Elevation Top: 2552 Depth: 85' Page No. 1

Elevation: 2620 Inclination: 90° Date Completed: 14 Dec. 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	9'	Tan coloured hard clay	68'	69'	Grab samples at 5' intervals to 65'
			69'	70'	Kakhi coloured oolitic ore
9'	38'	Grey brown clay (not sticky)	70'	71'	Densely oolitic well oxidized
			71'	72'	" " " "
38'	68'	Blue-grey, soft, sticky, plastic glacial clay	72'	73'	" " " "
			73'	74'	" " " "
			74'	75'	Sandy, brown, with few oolites
68'		BEDROCK - top of ore at elev. 2552	75'	76'	" " " "
			76'	77'	" " " "
68'	79.5'	Ore zone	77'	78'	Heavily oolitic well oxidized
			78'	79'	" " " "
		Bottom of hole at 90' elev. 2530	79'	80'	Brown, sparsely oolitic to 79.5' then dark-blue, gritty, hard shale
			80'	81'	Soft grey-blue, clay, shale
			81'	82'	" " " " sandy shale or grit stone
			82'	83'	As above but with 1/4" interbeds of hard shale & some volcanic ash
			83'	84'	As above - no. vol. ash
			84'	85'	" "
			85'	86'	No log made - reported be similar to end of hole at 90'
			86'	87'	
			87'	88'	
			88'	89'	
			89'	90'	

On West Boundary & 300'

LOG OF DRILL HOLE NO. 4-26-79-9W6

Location: South of NW corner of LSD Elevation Top: 2507 Depth: 25' Page No. 1

Elevation: 2520 Inclination: 90° Date Completed: Nov. 21, 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	13'	Tan coloured clay		5'	Tan coloured clay
				10'	Tan coloured clay
13'	19.5'	Oolitic iron ore, oxidized, becoming less oolitic towards bottom	13'	14'	Ore oxidized & oolitic
			14'	15'	Ore oxidized & oolitic
			15'	16'	Ore oxidized & oolitic
19.5'	22'	Blue shale	16'	17'	Ore oxidized & fewer oolites
22'	25'	Dark grey shale	17'	18'	Ore oxidized & fewer oolites
			18'	19'	Ore oxidized & sparse oolites
			19'	20'	Base of zone & blue shale
			20'	21'	Blue shale
			21'	22'	Blue shale
			22'	23'	Dark grey shale
		<u>Bottom of Hole @ 25'</u>	23'	24'	Dark grey shale
			24'	25'	Dark grey shale

2520  
13  
252

At intersection of WNW & NNE Seismic

es about 170' east of

LOG OF DRILL HOLE NO. 4-27-79-9W6

Location: west boundary of Section Elevation Top: nil Depth: 70' Page No. 1

Elevation: 2525 Inclination: 90° Date Completed: 21, Nov./62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	15'	Dark grey brown clay (O.B.)		5'	Grab samples
15'	70'	Dark blue grey plastic clay, shale (glacial clay) with about 1' of interbedded hard sandstone layers (1/8") showing some pebbles, @ 60'		10'	
				15'	
				20'	
				25'	
				30'	
				35'	
				40'	
				45'	
				50'	
				55'	
				60'	
				65'	
				70'	
		<u>Bottom of hole 70'</u>			

LOG OF DRILL HOLE NO. 5-27-79-9W6

On NNE Seismic line  $\frac{1}{2}$  mi.

Location: NNE of intersection Elevation Top: 2518/2511 Depth: 60' Page No. 1

with WNW line

Elevation: 2560 Inclination: 90° Date Completed: 22 Nov./62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	12'	Tan coloured clay		5'	)
				10'	)
12'	42'	Dark Grey clay shale		15'	)
				20'	)
42'	49'	Dark oolitic iron ore		25'	) Grab samples
				30'	)
49'	50'	Soft, dark grey silty-shale		35'	)
				40'	)
50'	60'	Soft, impure-sandstone, suspect presence of fossils	42'	45'	)
				60'	) Cored and ore section with portion of underlying sandstone shipped to Edmonton.
		Bottom of hole @ 60'			(about 90% core recovery)



LOG OF DRILL HOLE NO. 12-27-79-9W6

50' NNE of SW corner

Location: Mohument LSD 12-27-79-9W6 Elevation Top: 2502 Depth: 55' Page No. 1

Elevation: 2540 Inclination: 90° Date Completed: 17 December, 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	11'	Tan coloured clay surface amntle			Grab samples at 5' intervals to 35'
11'	38'	Sticky, grey blue, plastic, glacial clay	38'	39'	
38'		Top of ore, BEDROCK elev. 2502	39'	40'	
			40'	41'	
38'	47'	Dark-green to brown-green or kakhi coloured, heavily oolitic iron ore	41'	42'	
			42'	43'	
			43'	44'	
47'	49'	Dark blue impure sandstone with oolites	44'	45'	
			45'	46'	
			46'	47'	
49'	51'	As above, softer, no oolites	47'	48'	
			48'	49'	
51'	53'	Interbedded shale and sandstone	49'	50'	
			50'	51'	
53'	55'	Grey blue gritty clay shale	51'	52'	
			52'	53'	
			53'	54'	
			54'	55'	

On West Boundary of

LOG OF DRILL HOLE NO. 12-28-79-9W6

Location: LSD 150' N of SW Corner Elevation Top: 2513/2503 Depth: 83' Page No. 1

Elevation: 2585 Inclination: 90° Date Completed: 24 Nov. /62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	3.5'	Tan coloured clay		5'	)
				10'	)
3.5'	13.0'	Dark grey with pebbles, hard		15'	)
				20'	)
13.0'	35.0'	Hard clay shale, tan & grey		25'	)
				30'	)
				35'	)
				40'	)
35.0'	72.0'	Soft blue sticky clay shale, in appearance similar to the glacial blue clays		45'	)
				50'	)
				55'	)
				60'	)
				65'	)
				70'	)
72'	82'	Ore zone	72'	73'	Oxidized, oolitic iron ore
			73'	74'	Oxidized, =oolitic iron ore
82'	83'	Blue shale	74'	75'	Oxidized, = oolitic ore (iron)
		<u>Bottom @ 83'</u>	75'	76'	Oxidized, oolitic iron ore
			76'	77'	Oxidized, oolitic iron ore
		<u>Bottom of Ore @ 2503'</u>	77'	78'	Oxidized, oolitic iron ore
			78'	79'	Oxidized, oolitic iron ore
			79'	80'	Oxidized, oolitic iron ore
		NOTE: Attempted unsuccessfully to core first hole - No recovery	80'	81'	Oxidized, sandy, no oolites noted
		Catch samples are scanty	81'	82'	Oxidized, sandy, no oolites noted
			82'	83'	Dark blue shale

LOG OF DRILL HOLE NO. 13-28-79-9W6

About 200' south of  
 Location: NW corner of LSD Elevation Top: Nil Depth: 100' Page No. 1  
 Elevation: 2575 Inclination: 90° Date Completed: 23 Nov. /62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	13'	Tan coloured clay surface mantle		5'	
13'	100'	Toughly plastic, dark, blue-grey glacial clay		10'	
				15'	
				20'	
				25'	
				30'	
				35'	
				40'	Grab samples
				45'	
				50'	
				55'	
				60'	
				65'	
				70'	
				75'	
				80'	
				85'	
				90'	
				95'	
				100'	
		<u>Bottom of Hole @ 100'</u>			

In NW Corner of LSD on WNW  
 Location: line midway in Section 29 Elevation Top: 2511.3/2504 Depth: 105' Page No. 1  
 Elevation: 2600 Inclination: 90° Date Completed: 26 November, 1962.

Drill Core		Description	Samples		Description
From	To		From	To	
0'	8'	Tan coloured clay		5'	Grab samples at 5' intervals
8'	44'	Blue grey clay, toughly plastic, soft and sticky		10'	
				15'	
				20'	
44'		Small boulder		25'	
				30'	
44'	76'	Blue grey clay, plastic, sticky with thin brown clay beds		35'	
				40'	
				45'	
76'		Thin hard S. stone bed		50'	
				55'	
				60'	
				65'	
				70'	
				75'	
				80'	
				85'	
76'	82'	Grey clay with thicker brown clay beds and hair line roots in brown clay	88.7'	90'	Interbedded brown shale and thin oxidized oolitic beds
			90'	91'	as above
			91'	92'	as above, with thin coal at 92', gypsum crystals
82'	88.7'	Thin bedded brown shale and coarse grained brown s. stone	92'	93'	Much more brown shale, rare oolites, rusty
			93'	94'	1/2" seams of rusty material sparrets rare oolites
88.7'	96'	Interbedded brown shale and thin oxidized oolitic beds. Thin 1/2" coal seam at 92'. Rare gypsum crystals.	94'	95'	Grey brown and brown shale, occas. pebble, no oolites
			95'	96'	Brown shale, rusty shale, small pieces oolitic ore.

Location: \_\_\_\_\_ Elevation Top: \_\_\_\_\_ Depth: \_\_\_\_\_ Page No. 2

Elevation: \_\_\_\_\_ Inclination: \_\_\_\_\_ Date Completed: \_\_\_\_\_

Drill Core		Description	Samples		Description
From	To		From	To	
96'	102'	Brown shale, some rust, some blue shale	96'	97'	Brown shale some rust
102'	105'	Brown and blue shale beds, very soft	97'	98'	Brown shale, rusty shale, dark green ) impure S. stone )
		.....	98'	99'	as above, some blue shale

LOG OF DRILL HOLE NO. 13-29-79-9W6

On West Boundary of LSD

Location: & on WNW Seismic line Elevation Top: nil Depth: 120' Page No. 1

Elevation: 2585 Inclination: 90° Date Completed: 25 Nov./62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	12'	Tan coloured clay, fairly hard		5'	Grab samples
12'	69'	Toughly plastic & very sticky dark, blue-grey, glacial clay		10'	
				15'	
				20'	
69'	72'	As above with thin beds of red shale & brown clay		25'	
				30'	
				35'	
72'	81'	Mixed dark blue grey clay & brown clay with hair-like rootlets in the brown clay beds, some thin gypsum crystals		50'	
				45'	
				50'	
				55'	
81'	120'	Toughly plastic & very sticky, soft soft dark blue grey clay (glacial?)		50'	
				65'	
				70'	
				75'	
				80'	
				85'	
				90'	
				95'	
				100'	
				105'	
				110'	
				115'	
				120'	
		<u>Bottom @ 120'</u>			

2585  
- 120' x  
2465'

Location: In NE 1/4 of LSD Elevation Top: NIL Depth: 110' Page No. 1

Elevation: 2600 Inclination: 90° Date Completed: 2 February 1963.

Drill Core		Description	Samples		Description
From	To		From	To	
0'	12'	Surface clay mantle			No samples
12'	110'	Blue grey plastic glacial clay some brown coloured sections  Bottom of hole at 110' elev. 2490  <u>No bedrock</u>			

LOG OF DRILL HOLE NO. 4-31-79-9W6

Location: SW Corner of LSD Elevation Top: nil Depth: 100 Page No. 1  
 Elevation: 2570 Inclination: 90° Date Completed: 2 Feb./63

Drill Core		Description	Samples		Description
From	To		From	To	
0'	12'	Tan coloured surface clays, some ironstained clay fragments			
12'	100'	Blue-grey, sticky, plastic glacial till			No samples taken



50' Ne of SW corner  
Monument of LSD

LOG OF DRILL HOLE NO. 4-34-79-9W6

Location: \_\_\_\_\_ Elevation Top: nil Depth: 100' Page No. 1

Elevation: 2520 Inclination: 90<sup>o</sup> Date Completed: 17 Dec. 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	6'	Tan coloured clay surface mantle			Grab samples taken at 5' intervals
6'	11'	Apparently bedded, tan clay			
11'	27'	As above but softer and no bedding			
27'	100'	Sticky, blue grey, plastic, glacial clay			
		At 98' small quartzite boulder			
		NO BEDROCK			
		Bottom of hole at 100' elev. 2420			

Location: On West side of LSD Elevation Top: 2484/2475.5 Depth: 45' Page No. 1

Elevation: 2520 Inclination: 90° Date Completed: 26 November, 1962.

Drill Core		Description	Samples		Description
From	To		From	To	
0'	8'	Tan coloured clay, hard		5'	) ) ) ) ) ) Grab samples at 5' intervals
8'	36'	Grey clay shale some yellow clay at 25'		10'	
				15'	
				20'	
				25'	
				30'	
				35'	
36'	45'	<u>Cored</u> 40% recovery Bottom 6" is blue shale. Next 1' up is interbedded ore and shale, remainder of recovered core is oolitic ore.	36'	40'	Catch sample

LOG OF DRILL HOLE NO. 15-35-79-9W6

On NNE line, 0.65 miles

Location: NNE from W. boundary of Section 35 Elevation Top: 2478.5' Depth: 53' Page No. 1  
 Elevation: 2510 Inclination: 90° Date Completed: Nov. 28/62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	7'	Tan coloured clay	43'	51'	4' core recovered
7'	31.5'	Blue-grey, glacial clay, sticky,	51'	54'	2' core recovered
31.5'	33'	Hard brown & rusty shales plastic			
33'	33.4'	Rust			
33.4'	35'	Hard brown shale, thin rust seams			
35'	43'	Oolitic iron ore, cored; no recovery no returns, no catch samples			
43'	51'	Cored, recover 4' (50%) probably from bottom of run Apparently all ore to 49' than inter- beds of impure blue sandstone to 50.5' then conglomerate			
51'	54'	Cored, recover 2' (65%) probably from top of run - last 1' very soft. 51' - 51.5' conglomerate 51.5' - 52.7' oolitic, kakhi-coloured 52.7' - 53' Blue-grey sandstone			

20' NNE from cored hole

LOG OF DRILL HOLE NO. 15-35-79-9W6

Redrilled

Location: on this site Elevation Top: 2478.5 Depth: 60' Page No. 1

Elevation: 2510 Inclination: 90° Date Completed: 28 Nov. /62

Drill Core		Description	Samples		Description
From	To		From	To	
		Re drilled 20' from cored hole & bagged foot x foot catch samples	30	31	
			31	32	
			33	34	
			34	35	
			35	36	
			36	37	
			37	38	
			38	39	
			39	40	
			40	41	) Heavily oolitic, oxidized
			41	42	)
			42	43	)
			43	44	)
			44	45	) Heavily oolitic, not completely oxidized
			45	46	)
			46	47	)
			47	48	) Blue grey, heavily oolitic, hard,
			48	49	) some oxidized seams
			49	50	)
			50	51	) oolitic, hard, blue to bluish brown,
			51	52	) conglomeritic chert pebbles, etc.
			52	53	oolitic, hard, dark blue silty sandstone
			53	54	)
			54	55	) oolitic blue grey ore & grey clay shale
			55	56	)
			56	57	) grey gritty clay shale, occas, pebbles,
			57	58	) some shell frags.
			58	59	grey clay shale some rusty iron seams,
					pebbles
			59	60	grey gritty clay shale

LOG OF DRILL HOLE NO. 7-2-80-9W6 Redrilled

Location: 20' SSW of cored hole Elevation Top: 2459.5' Depth: 40' Page No. 1

Elevation: 2480 Inclination: 90° Date Completed: 29 Nov./62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	11'	Tan coloured clay	20'	21'	Zone is from 23.7' - 27.5'
			21'	22'	
11'	20'	Grey hard clay shale (bed rock)	22'	23'	
			23'	24'	
20'	22 1/2'	Grey hard clay shale	24'	25'	
			25'	26'	
22 1/2'	23.7'	Grey brown shale & rust	26'	27'	
			27'	28'	
23.7'	24'	Hard dark blue sandstone, rust	28'	29'	
24'	25'	Soft, rusty-brown, oolitic sandstone	29'	30'	
			30'	31'	
25'	26'	as above with shale beds	31'	32'	
26'	27'	soft, rusty-brown, sandstone with hard dark blue beds	32'	33'	
			33'	34'	
			34'	35'	
27'	28'	soft, rusty-brown & grey clay shale	35'	36'	
28'	29'	grey clay shale	36'	37'	
29'	31'	Hard grey & brown clay shales	37'	38'	
			38'	39'	
31'	36'	Hard grey & yellowish clay shale interbeds	39'	40'	
36'	37'	gritty shale			
37'	38'	Grey clay shale with 1/2" seam yellow bentonite			
38'	39'	Grey clay shale			
39'	40'	Grey clay shale sime light yellow bentonite			

LOG OF DRILL HOLE NO. 3-3-80-9W6

Location: About 400' east of NW corner of LSD Elevation Top: nil Depth: 100' Page No. 1  
 Elevation: 2545 Inclination: nil 90° Date Completed: 14 Dec., 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	9'	Tan coloured clay, some rust			Grab samples at 5' intervals
9'	38'	Greenish grey hard pan or clay shale			
38'	76'	Soft, grey, plastic, clay; probably glacial with a thin hard bed at 52' and another at 65'			
76'	85'	Hard grey c lay shale			
85'	100'	Very soft grey and sticky plastic glacial clay			
		PROBABLY NO BEDROCK			
		Bottom at 100' elev. 2445			

LOG OF DRILL HOLE NO. 8-5-80-9W6

Location: Near centre of LSD Elevation Top: Nil Depth: 120' Page No. 1  
 Elevation: 2570 Inclination: 90° Date Completed: 14 Dec./62

Drill Core		Description	Samples		Description
From	To		From	To	
0'	13'	Tan coloured surface mantle			Grab samples at 5' intervals
13'	36'	Sticky blue-grey, plastic, glacial clay			
	36'	BEDROCK elev. 2534			
25'	72'	Grey, borwn, thin bedded, soft clay shale (Lose water to formation, add bran)			
72'	120'	Harder, thin interbeds of grey and brown shale with some rust at 75' A very thin hard silt shale layer at 83'  Bottom at 120' elev. 2450			

LOG OF DRILL HOLE NO. 16-7-79-9W6

Location: NeCorner LSD Elevation Top: Nil Depth: 80' Page No. 1

~~E~~levation: 2590 Inclination: 90° Date Completed: 30 Nov. 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	10'	Tan coloured surface clays			
10'	80'	Blue-grey, sticky, plastic glacial till			No samples taken



14-7-79-9W6

## LOG OF DRILL HOLE NO. 147-79-9W6

Location: NE Corner LSD Elevation Top: Nil Depth: 80' Page No. 1

Elevation: 2595 Inclination: 90° Date Completed: 30 Nov. 1962

Drill Core		Description	Samples		Description
From	To		From	To	
0'	12'	Tan coloured clays			
12'	80'	Blue-grey, sticky, plastic glacial till			No samples taken