Diamond Drilling

010

Township of HURTUBISE

Report Nº: 12

Work performed by: Canadian Superior Exploration Ltd.

Claim Nº	Hole Nº	Footage	Date	Note
L 105539	1	560'	Mar/71	(1)
	2	898'	Apr/71	(1)

Notes: (1) 98/71 - autopositive enclosed.

SUMMARY REPORT

on

GEOPHYSICAL SURVEYS and DIAMOND DRILLING

RELATIVE to the SIGMA PROJECT

HURTUBISE TOWNSHIP, ONTARIO

February 26th to April 22nd 1971

by

Jay D. Murphy, P.Eng.

#98/71 Hurtubise Tp
Can. Superior Expl Ltd

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INTRODUCTION

The area of interest represents a small part of a large block of ground that was investigated over a period of several years (1965-1969) on a joint venture basis by C.S.E. and United States Smelting Refining and Mining Company, the work being directed by the latter.

Preliminary work on the original block involved an airborne geophysical survey using the Barringer "Input" system followed by a geochemical stream sediment survey, ground geophysics and diamond drilling.

In the spring of 1970 when all data was turned over to C.S.E. by U.S.S.R.&M., the area referred to above stood out as an obvious target for further work. A recommendation to this effect was made by the writer and the work that was subsequently carried out constitutes the basis of this report.

Location and access for the area of interest is illustrated in Plate 10-D-1.

SUMMARY AND CONCLUSIONS

Evidence to date indicates that the Turam anomaly, which was the main reason for conducting the most recent work, is invalid. No encouragement was obtained in other areas investigated outside the Turam area.

Seigel Associates have agreed to review all data available and attempt to account for the apparently spurious nature of the Turam anomaly.

RECOMMENDATIONS

No further work can be recommended on the property at least until Seigel Associates have reported on the results of their review of work completed to date.

PROPERTY HISTORY

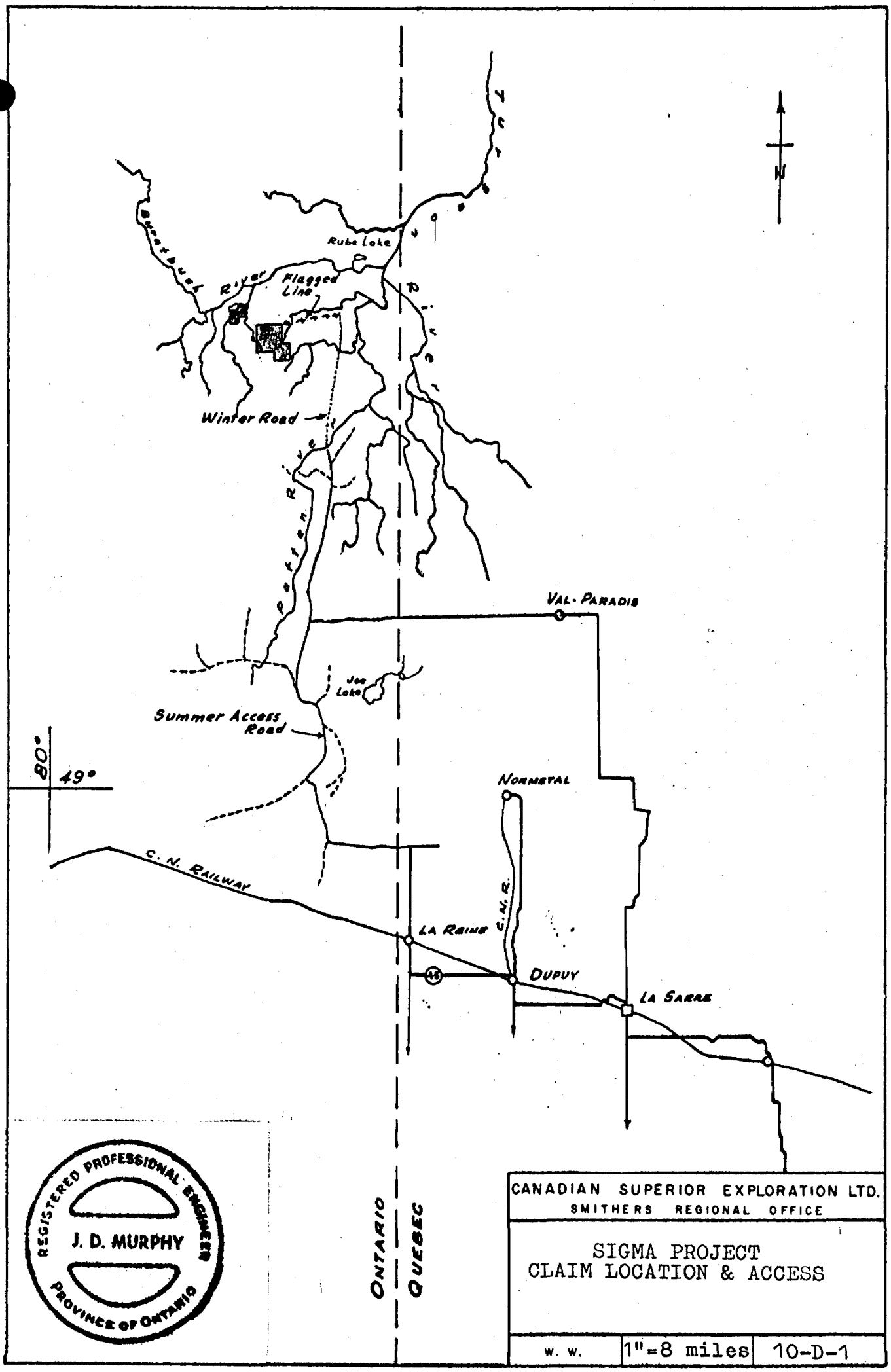
Appendix A, a report by W.G. Robinson, effectively covers the work history of the general area and the zone of current interest in particular, prior to the most recent work as discussed here.

CURRENT WORK

TRANSPORTATION AND ACCESS

In early February, Doug Whalen of C.S.E. went to the Noranda area to scout access to the property for personnel of the contract geophysical and diamond drilling crews to follow. Both air and ground access were investigated.

It was found possible to land a light fixed wing aircraft on a small pond just west of the main claim group. It was planned to bring in the geophysical crew this way, but when attempted using a larger aircraft from La Sarre Air Service the pilot refused to land. The reason given by the pilot was that he was afraid of slush, although he had been previously assured by D. Whalen that ice conditions were good. The result was that the geophysical crew from Cana Exploration Consultants Ltd. was put down on Rube Lake, about 7 miles ENE



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SMITHERS REGIONAL OFFICE

SIGMA PROJECT
CLAIM LOCATION & ACCESS

W. W.	1"=8 miles	10-D-1

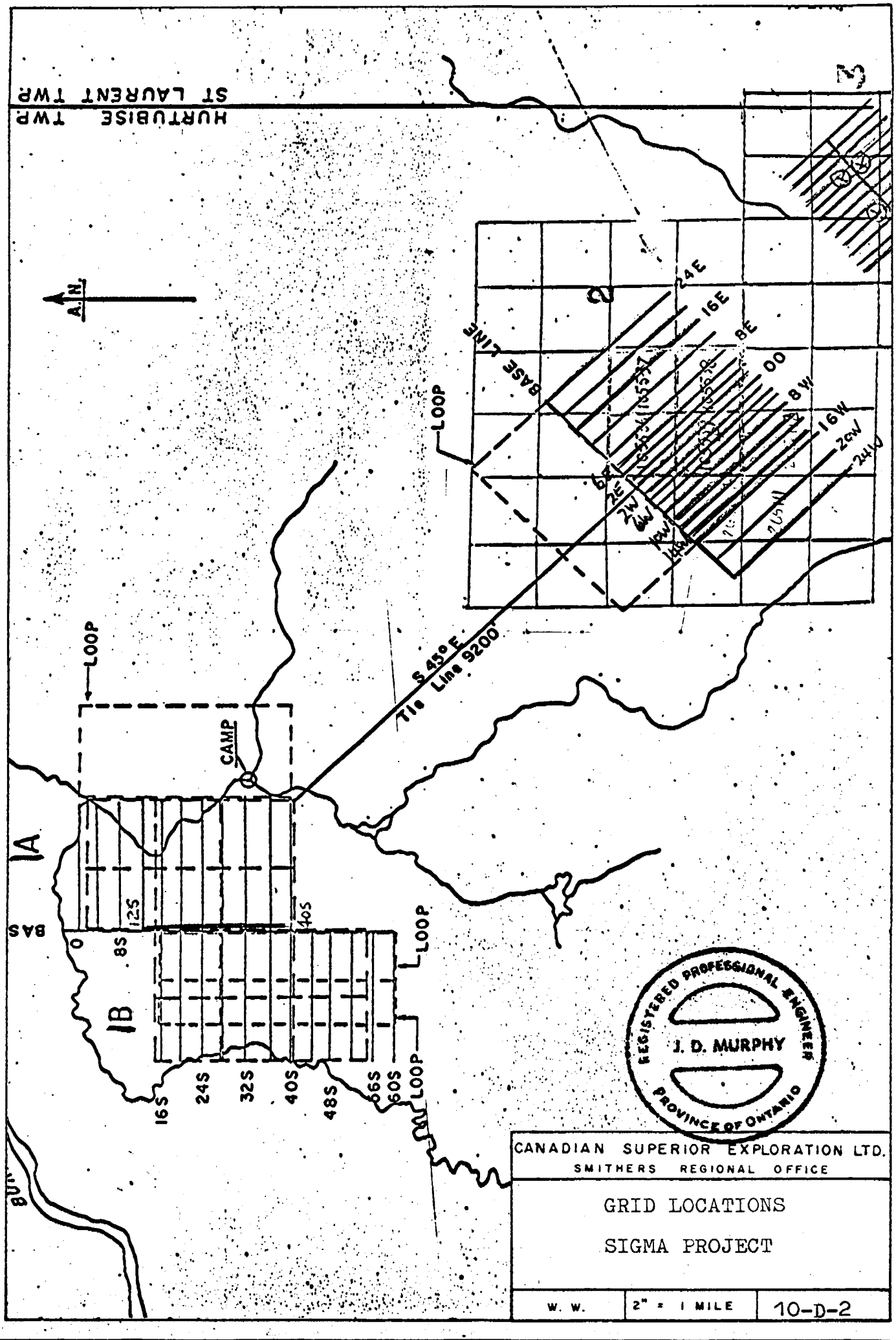
of the survey area, and had to make its way overland using snow vehicles. Nine crew days were expended in this phase of the move. A helicopter was mobilized from Timmins to move the crew and equipment the last couple of miles.

To prepare for the mobilization of the drill crew, D. Whalen rented a muskeg tractor and operator to scout the Abitibi logging road west from the provincial boundary then north to the Patten River (Plate 10-0-1). This section was later snowplowed to permit Inspiration Drilling to mobilize by truck via Val Paradis to the south side of the Patten River. The drill contractor's muskeg tractor and operator were then employed to scout out a trail to the drill site and move in the crew and equipment. Round trip from the Patten River to the drill site usually took 5 to 6 hours, the estimated distance one way being about 12 miles. When drilling was completed the breakup of the Patten River trapped the muskeg tractor on the south side, cutting off ground access to camp and forcing the crew to move out by helicopter. A barge was later used to cross the river and demobilize the drill equipment.

GEOPHYSICAL SURVEYS

A fairly exhaustive electromagnetic survey using several types of instrumentation in both the reconnaissance and detail stages, was conducted on the area of interest. A flux-gate magnetometer survey was also completed. Details are given in the accompanying report by Cana Exploration Consultants Ltd. entitled "Report on Magnetic and Electromagnetic Surveys, Hurtubise Township, Ontario on behalf of Canadian Superior Exploration Limited."

Results from this work were essentially negative. Some weak indications of conductivity were noted on Grids 1 and 2 (Plate 10-D-2) but nothing to stimulate further work. No


HURTUBISE TWP
ST LAURENT TWP
N.
A.N.
LOOP
BASE LINE
24E
16E
8E
00
8W
16W
24W
2E
2W
6W
12W
S 45° E.
Tie Line 9200'
CAMP
LOOP
1A
1B
BAS
0
8S
12S
40S
LOOP
16S
24S
32S
40S
48S
56S
60S
LOOP
REGISTERED PROFESSIONAL ENGINEER
J. D. MURPHY
PROVINCE OF ONTARIO
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GRID LOCATIONS
SIGMA PROJECT
W. W.
2" = 1 MILE
10-D-2

confirmation of the original Turam EM conductor on Grid 2 could be obtained with the EM-17 horizontal loop, the SE-200 vertical loop or the Ronka-16 VLF unit. Magnetics were also particularly flat in the area of the Turam anomaly.

In the Grid 3 area an extensive reconnaissance survey failed to locate any signigicant conductivity to confirm the weak airborne anomalies which prompted this phase of the work.

DIAMOND DRILLING

It was decided prior to initiation of current work that the Turam conductor would be drilled regardless of geophysical results.

Two holes totaling 1458 ft. were drilled on a 1500 ft. contract let to Inspiration Drilling Ltd. of Val D'Or, P.Q. Both holes were drilled to investigate the original Turam EM conductors as determined by Seigel Associates in the spring of 1969. The layout and results are best illustrated by Plate 10-D-3.

Hole No.1 was drilled due grid south approximately as recommended by Scintrex Ltd. originally, only set further back from the conductor trace to allow for deeper overburden.

The hole flattened so badly that below 500 ft. several lengths of rod had to be pulled so that the core tube was in a steeper section of the drill hole, otherwise the wireline overshot device would not connect with the top of the core tube. The hole would usually cave during this operation, causing a short block on the next run. Progress became so slow that it was impractical to continue to the projected depth of 750 feet, consequently Hole No.1 was stopped at a final depth of 560 feet.

The results from Hole No.1 are detailed in drill log form as Appendix B.

No sulphides of economic interest were seen and no samples were taken. Scattered pyrite, pyrrhotite and chalcopyrite were the principal metallic minerals observed. No sheared or graphitic zones were noted.

Hole No.2 was spotted to undercut all three of the approximately parallel Turam conductors as illustrated in Plate 10-D-3. A bearing 20° off grid north was selected to get an intersection more perpendicular to the indicated strike of the conductors. This hole was steepened to 50°, partly to compensate for flattening and partly to obtain a deeper intersection on the main conductor since the results from Hole No. 1 suggested that if the Turam conductor was actually valid then it most likely represented a "blind" deposit that did not extend upwards to the surface of bedrock.

Hole No.2 also flattened appreciably but succeeded in attaining a maximum depth below surface of more than 550 feet. Rock types were found similar to those of Hole No.1. No significant sulphides were seen although one section described as mineralized quartz diorite porphyry was sampled over a 40 foot width with negative results. No sheared or graphitic zones were cut. A badly fractured section was noted between footages 439 and 443 and no return water was obtained after cutting this section. At the same time the flow of water in Hole No.1 ceased, so that this hole could no longer be used as a source of drill water for Hole No.2.

Details of the results from Hole No.2 are given in the corresponding drill log included as Appendix C.

DISCUSSION OF RESULTS

It is felt that efforts to confirm the Turam EM anomaly geophysically have been more than adequate. None of the electromagnetic techniques applied gave any indication of conductivity corresponding with the Turam conductors. Ground magnetics were particularly flat in this area.

Similarly, the Turam target was adequately drill tested and nothing, either economic or non economic, was found to explain the indicated conductivity. It is difficult to conceive of any continuous tabular conductive body attaining such an attitude that it would not be cut by one or the other of the two drill holes.

All evidence gathered by the most recent work points to the obvious conclusion that the Turam anomaly is not valid for reasons, such as operator error, that can only be speculated upon but not proven at this time. Accepting this as a fact then it remains to be explained why this apparently spurious Turam anomaly coincides with the location of airborne input anomalies.

Regarding the drilling results it should be pointed out that according to the Ontario Department of Mines geological map No. P-373, both holes drilled should have encountered andesite throughout since the drilling area lies 500 to 1500 ft. south of the indicated dacite-andesite contact. However, since mainly intermediate volcanics with minor andesite was cored in both holes, then the actual contact must lie farther south than indicated by the O.D.M.

The fact that the Turam conductors are at variance to the

formational trend suggests that mineralization, if present, is more likely controlled by structure than by lithology. Consequently, the exact location of the dacite-andesite contact may not be critical from an economic point of view.

APPENDIX A
HURTUBISE TWP. CLAIMS DIEPPE BLOCK - SIGMA PROJECT

General

In September 1969, U.S. Smelting, Refining and Mining Company terminated the agreement under which they undertook to finance and direct the exploration work on the Sigma project. Subsequently they returned most of the exploration records pertaining to this project to C.S.E. Noticeably absent were any comprehensive reports summarising the results of their operations.

Jay Murphy of C.S.E. discussed these operations with John Sharpe (then with U.S.S.R.), and concluded that an area in Hurtubise township with geochemical and geophysical anomalies warranted further work. The writer has also reviewed the available information, looking for other "tag ends" that warrant follow-up.

Selco Surveys

In March 1965, a 250 square mile area known as the Dieppe Block was tested with an airborne Input Survey by Selco Exploration, under contract. This included the northern half of Hurtubise township. Lines were flown north-south at quarter mile intervals. Two prominent conductors were indicated in Hurtubise - one trending southwest across the northwest part and one trending south of east across the northeast part. Both appear to represent graphitic formations or graphitic shears. In the north central area, two single line conductors 31F and 31G were indicated on line 31.

Geochemical Surveys

As commonly happens, the Selco survey indicated more conductors on the Dieppe Block than could be reasonably tested on the ground. It was decided that a geochemical silt survey would be done to try and indicate areas of copper and zinc concentrations so that conductors in their vicinity could receive priority in investigation. Such a survey was made in 1965 by Barringer Research, under contract.

In Hurtubise township, an area of about two square miles to the southeast and upstream from anomalies 31F and 31G, showed anomalous copper values. Anomalous zinc values were obtained from the same streams downstream to the north. In August of 1968 additional geochemical surveys were made (presumably by U.S.S.R.) along other small streams in the vicinity of the copper anomaly. Where the two surveys overlapped, the new survey showed values approximately one half of those obtained by Barringer and showed similar anomalous determinations on streams to the east.

Questor Survey

In 1968, a twenty square mile area in Hurtubise and St. Laurent townships, encompassing the copper anomaly, was tested with an airborne Input Survey by Questor Surveys, under contract. Lines were flown N77°W at intervals of 1000 feet. A multitude of conductors were indicated in the vicinity of Selco conductors 31F and 31G but most of these appeared to coincide with streams. Two conductors, 11C and 12E were indicated to the east, upstream from the main copper anomalies. Another cluster of conductors, 10A, 9AA, and 9BB were indicated about a mile to the southeast, near the St. Laurent boundary. No conductors had been indicated by the Selco survey in these vicinities.

Cl[illegible]s

In April 1969, twelve claims 105524-535 were staked to protect the cluster of anomalies near Selco conductors 31F and G. On the same date, four claims 105535-539 were staked to protect the Questor conductors 11C and 12E. Subsequent work satisfied the assessment requirements on all 16 claims to April 11, 1971.

On July 2, 1970 a further 40 claims were staked by C.S.E. to expand the southerly 4 claim group and to protect Questor conductors 10A, 9AA and 9BB. Assessment work will be required for those claims before July 2, 1971.

Turam Surveys

In March and April of 1969, Siegel Associates carried out Turam surveys over the 16 claims staked in that year. Readings were taken on lines spaced at 400 feet intervals.

On the north group, the survey showed a random pattern of conductors which Siegel attributed to overburden. One group of these appears to cross the survey lines at accute angles, and could be checked with one or two cross-lines.

On the south group the survey indicated two or three consistant parallel conductors trending northeasterly for a length of 2400 feet. Overburden was calculated to have maximum depth of 100 to 140 feet. A magnetometer survey over these conductors was botched and results were not released. Siegel recommended that the conductors be tested by drilling. U.S.S.R. concluded that the high cost of bringing in a drill was not justified.

Future Plans

After freeze-up, a geophysical party will do E.M. and magnetometer surveys on the south group. Check lines and fill in lines will be run over the Turam anomaly. Other lines will be run in the vicinity of Questor conductors 10A, 9AA and 9BB. The Turam conductor zone, and any other conductors of apparent importance, will be tested with diamond drill holes.

Geophysical check work may be done on several other conductors that are within reach of the Hurtubise operation.

W.G. Robinson,
September 29th, 1970

CERTIFICATE

I, Jay D. Murphy, of the Town of Smithers, Province of British Columbia, do hereby certify that:

1. I am a Geological Engineer resident at 151 7th Avenue N., Smithers, British Columbia.
2. I am a graduate of the University of Manitoba (1954) with a B.Sc. degree in Geological Engineering.
3. I have been practising my profession for 17 years.
4. I am a registered professional engineer in the Provinces of Ontario and British Columbia.

Dated at Smithers
This 20th day of May, 1971

Jay D. Murphy, B.Sc. (Geol. E.) P. Eng.

REGISTERED PROFESSIONAL ENGINEER
J. D. MURPHY
PROVINCE OF ONTARIO

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

LOCATION: [illegible] Ont.

HOLE No: 1

AZIMUTH: 155°

PROPERTY: Sigma

DIP: -15°

LENGTH: 560 ft.

ELEVATION:

CLAIM No: 1-105539

STARTED: March 31/71

CORE SIZE: AQ

DATE LOGGED: April 4/71

SECTION: 1+00-S

COMPLETED: April 7/71

DIP TESTS: 20° (Uncorrected) at 535

LOGGED BY: JDH

PURPOSE: Check [illegible] Target

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE No:	FOOTAGE from	FOOTAGE to	LENGTH					
0.0	136.0	Casing: NX to 90.0, clay and sandy clay to 86.0, hard compacted clay 86.0 to 96.0, quicksand & boulders 96.0-116.0, sand & boulders 116.0 to bedrock									
136.0	144.7	Dacite (Massive): grey green fine grained, uniform, hard & siliceous, v.t. fracturing at 25-50° to c.a., [illegible] & drusy qtz. along fracture planes, grades to slightly more mafic softer rock at 141.7									
144.7	224.0	Dacite (Banded): medium to dark green, fine to coarse grained, heterogeneous appearance, shows distinct (flow?) banding at 25°, occasional irregular banding at 15° over 1-2" possibly representing flow contacts, tuffaceous sections [illegible] less prominent but distinct banding at 50°, fracturing [illegible] at 40-60°.									

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 1

PAGE Nº: 2

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH						
144.7	224.0	(contd)										
155.2	165.2	155.2-165.2 - greygreen to blue grey fa[illegible] with med. grained fine; upper and lower [illegible] [illegible] showing 20% fleck of Cpy. at 157.2 and 164.5										
165.2	173.1	[illegible] - [illegible] "bleached" appearance with abundant greenish white minerals, probably plagioclase, as irregular blebs and [illegible] [illegible] to [illegible] wide; abundant dark coarse fragments roughly aligned at 30°; chloritic in part,										
173.1	206.6	[illegible] - med grey green, f.g. massive to closely fragmental with faint banding at 48°.										
192.0	201.0	[illegible] numerous 1/8 to 1/2" qtz. strs. at various angles, mainly 45°, barren, Cpy. smear along fracture at 195.6										
206.6	224.0	[illegible] - strongly "mottled" dacite consisting of med to coarse dark angular patches in fine grained, slightly bleached matrix, dark patches roughly aligned at 30°,										
224.0	251.8	Dacite (Massive): grey green, fine to med. grained massive with banding at 30-40°, bottom cont. sharp at 50° ē chilled over 3"										

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE No: 1

PAGE No: 3

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE No:	FOOTAGE from	FOOTAGE to	LENGTH						
251.8	271.0	Diorite (Fragmental) med. to dark green, with scattered to abundant coarse dark frags, interbanded crackled & bleached zones to about 1 ft. wide in barren qtz. stix, usually some fine fleck CPY associated with bleached sections										
271.0	357.[illegible]	Diorite (Massive): grey green, fine to med grained, occasional banded sections @ 35°, scatd qtz stix up to 4" @ 65° & along core axis, minor slips @ 30-35° 288.5 - 24" coarsely porphyritic [illegible] fragmental appearance near upper contact @ 50°;										
305.5	309.8	chloritic section weakly sheared @ 40°, scatd grey qtz stix @ same angle.										
[illegible]	319.0	yellowish white, fine grained massive, bleached, abundant qtz as irregular veinlets and as clear fillings forming lattice work in crackled zones, main fractures @ 45°,										
331.0	316.5	bleached zone similar to above: brecciated & chloritic over 17" @ 341.0, lower contact of zone along @ 45°										

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE No: 1

PAGE No: 1

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE No:	FOOTAGE from	FOOTAGE to	LENGTH						
35[illegible]	180.7	DACITE (FRAGMENTAL): med grey, fine to med grained matrix with med. to coarse angular fragments, cream, cream colored rhyolite frags with fine qtz. phenos; a prominent [illegible] texture, bedding well defined at [illegible]° upper ctct sharp at 40°, tuffaceous & well banded at 45 to 50° over first 12".										
115.0	117.1	v. coarsely fragmental w. frags. of rhyolitic [illegible] up to 1", abundant greenish yellow mm possibly epidote. Flecks of Cpy in qtz. slips at 117.0 & with qtz. slps in rhyolite frags at 123 & 134.7. barren grey qtz. slps up to 10" between 152 and 156										
113.1	156.5	tuffaceous material grading to fine to med grained fragmental, distinct bedding at 60°, 166: 6" dacite flow, ctcts. at 30° lower fragmental ctct. at 15°, sharp.										
180.7	195.3	CONTACT ZONE: med. to dark grey green, fine to med grained, massive andesite interbedded with coarse fragmental dacite in 1ft to 2 ft. bands, from 191 to end of section dark, fine grained dyke rock (diabase?) cuts fragmental dacite with sharp ctcts. at 55-60°, minor Py in fragmental sections										

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE NO: 1

PAGE NO: 5

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE NO:	FOOTAGE from	FOOTAGE to	LENGTH
495.3	539.0	Andesite: med gray green to dark green, fine to med grained, mainly massive, occasional banding @ 45-50°, relatively soft, chloritic in part, finely disseminated Py & Pyrrhotite common throughout with occasional coarse blebs Py, few sealed core chips				
		512.6 - 4" vesicular flow contact @ 50°; top to ...				
		525.0 - 2" bleached vesicular flow top @ 50°, few med grained yellowish [illegible]				
539.0	560.0	Dacite: med to gray green fine to med grained, mainly massive with some well banded fragmental and tuffaceous sections, 20" fragmental section at top contact banded @ 55°, tuffaceous section 549.6 - 551.7 weakly banded @ 50°,				
		559.0 - 12" ground core				
	560.0	END OF HOLE				

REGISTERED PROFESSIONAL ENGINEER
J. D. MURPHY
PROVINCE OF ONTARIO

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

LOCATION: L4W - 20+00S

HOLE NO: 2

AZIMUTH: 336° True

Tropari @ 760' 339° True

PROPERTY: Sigma

Hurst Prise Twp Ont

DIP: - 50°

LENGTH: 898

ELEVATION:

CLAIM NO: L 105539

STARTED: April 13 1971

CORE SIZE: AQ 1 7/16"

DATE LOGGED: April 18-22/71

SECTION:

COMPLETED: April 22 1971

DIP TESTS: Tropari @ 760' - 29°

LOGGED BY: D.J.H.

PURPOSE: Check Turam Target

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE NO:	FOOTAGE from	FOOTAGE to	LENGTH
0	151'	overburden consisting of clay fine sand, gravel and clay and a few boulders. cased to 154'				
151	443	Dacite - an intermediate volcanic				
151	230	grey-green to green, medium to fine grained, flowy to massive uniform moderate shearing indicated on some core ends (35°-50° to core axis) few scattered amygdules @ 166', some with epidote cores. bleached - 167'-170' (possible flow top) followed by slightly sheared section 169-174' this section contains subrounded fragments (could be basal breccia) - shearing 35°-50° to core axis. Qtz bleb 177' - amygs & bleaching 183-185 - 183-188 suggestion of subrounded frags - white-grey-bleached flow top? @ 188' contact @ 50° to core axis. 188' - 205.5' grey green subrounded fragments running into amygdules & grey-white very fine grained sections near top of flow?? contact @ 40° to core axis this flow more or less brecciated through out.				

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 2

PAGE Nº: 2

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH
205	230	medium fine grained - grey green to creamy white - brecciated - subrounded fragments - minor Limonite 226' @ 230' contact @ 40° to core axis				
230	245	uniform - grey green - odd fragment suggested. @ 245' 6" bleached - minor Limonite + pyrite few voids in core.				
245	249	bleached - suggestion of coarse ash?? finer subrounded frags irregular contact @ 35° to core axis				
249	253	Tuff - very fine grained grey-green - bedding @ 55° to core axis lower contact @ 50° to core axis				
253	257	Ash?? +/or Tuff some finer grained sections, fine subangular frags lower contact 45° ½" qtz veinlet.				
257	274	Bleached sections thru to 265' minor Limonite 258', ½" qtz veinlet 263', 269-271 uniform with development of irregular shaped mafic min. 6" flow breccia? @ 273.5 - 274' contact @ 45° to core axis.				
274	300	uniform to 276', irregularly bleached to 288', 1" qtz veinlet 274.5' amygdules - dark centres bleached rims. @ 275' - odd sub rounded frag. 1" calcite @ 287' - @ 288.5' irregular blebs of pyrrhotite & minor chalcopyrite over 3" of core.				

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 2

PAGE Nº: 3

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH
		about .2% of the rock (enough to influence the compass) remainder grey to Partly bleached. Odd shadowy fragment — lower contact @ 55° minor amount of Pyrite & chalcopyrite on contact.				
300	305	Tuff — some bedding @ 305' @ 40° to core axis.				
305	334	upper contact flowy @ 30° — 305-309 bleached - suggestion of ghost frags. 306 minor disseminated pyrrhotite & chalcopyrite over 4" (~~Sulphides~~ may be .2% of rock.) (Sufficent to influence compass) 309-314 uniform — 314 bleached, amygdules or dark quartz phenocrysts (fine), 314-320 bleached qtz eyes? odd shadow fragment — calcite 1" normal to core @ 320' — flowy & bleached to 332' — becomming fine grained uniform to 334' where contact is 50° to core axis.				
334	340	first foot is bleached & contains minor pyrrhotite & chalcopyrite as flecks & irregular fillings. sulphides less than .2% — becomming grey green with odd calcite stringer. generally @ low angles to the core — 338' becomming uniform to 340' — @ 340' a contact @ 65° to core axis.				

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 2

PAGE Nº: 4

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH
340	347	partly bleached - shadow fragments lower contact @ 50°				
347	349	Tuff - fine grained uniform shadowy bedding @ 50° to core axis - irregular lower contact @ ± 50°				
349	362	med grained, partly bleached - shadow frags - mottled toward 362' - contact near normal to core axis.				
362	384	uniform to 369 becomming mottled and lighter in color few quartz blebs, @ 371 few minor blebs pyrrhotite over ½ inch lower contact @ 55° to core axis.				
384	409	bleached with fragments - has flowy appearance - few fine grained uniform sections (green in color) [these may be large fragments as ther have chilled margins] small bleb pyrrhotite & chalcopyrite @ 386.8' - core sponge-like & broken up around 403' - irregular contact @ ± 50° to core axis				
409	439	grey green, medium grained - flew fragments (bombs) 6" - 8" with chilled edges - bleached sections [crackled] - fractures quartz filled Hematite on fracture 418' flowy 430' - rock porous &				

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 2

PAGE Nº: 5

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH	Cu. (%)	Ag. (Oz/Ton)	Au. (Oz/Ton)
		Contains minor Limonite @ contact.							
	1	few minor blebs - pinhead size - poorly							
		@ 439' over 3" - contact @ 40°							
439	443	core badly broken rock							
		is porous, some Limonite, some							
		drussy quartz on fractures							
		[this is the water seam area]							
		442 - 443 - flowy volcanics.							
		after this section was drilled the							
		water did not return - also the							
		source of the drill water hole #1							
		dried up. about 6 feet of sand							
		was brought up in the core barrel							
		the sand had been washed in by							
		flowing water.							
443	483	Quartz diorite porphyry							
		upper contact @ 40° to core axis	4951	443	448	5'	<0.001	<0.1	<0.005
		[irregular] grey - medium grained	4952	448	453	5'	<0.001	<0.1	<0.005
		siliceous. - few opaque quartz	4953	453	458	5'	<0.001	<0.1	<0.005
		phenocrysts. — pyrrhotite evenly	4954	458	463	5'	<0.001	<0.1	<0.005
		disseminated throughout diorite.	4955	463	468	5'	<0.001	<0.1	<0.005
		± 3% of core is sulphide. —	4956	468	473	5'	<0.001	<0.1	<0.005
		chalcopyrite, pyrite + molybdenite	4957	473	478	5'	<0.001	<0.1	<0.005
		also noted. Rock very hard odd	4958	478	483	5'	<0.001	<0.1	<0.005
		quartz veinlet also mineralized							
		@ 464' core is broken up in 2 -							
		3 + 4 inch pieces - random							
		fracturing in rock. Fracturing to							
		480'. Lower contact nearly normal							
		to core axis @ 483'							

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE NO: 2

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FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE NO:	FOOTAGE from	FOOTAGE to	LENGTH
483	511.5	grey-green, medium grained - uniform few random barren quartz vienlets @ various angles to core axis. - drussy quartz vein + porous rock - 502 - 1 foot 505-508 core follows a cloudy barren quartz vein (this could deflect the dip + bearing of the hole) @ 511 — 6" of core contains ±3% sulphides - pyrite, pyrrhotite + chalcopyrite. 511.5 contact @ 55° to core axis.				
511.5	533	Breccia - containing siliceous + cherty fragments, angular to sub rounded, fine to coarse frags, some elongated @ 50° to core axis. becomming very siliceous + grey-white in color 531 - 533 (almost rhyolitic) lower contact @ ± 75° to core axis. few flecks + streaks of pyrite, pyrrhotite in this section also few rusty flecks (decomposed pyrite?).				
533	555	grey-green - porphyritic with odd irregular fragment or phenocryst. some uniform sections, few barren quartz veinlets, some lightly bleached sections. - 554-555 - breccia possible fault, no angle, core broken.				
555	564	555-559 moderately bleached core broken up in this section. 559-564 brecciated with qtz phenocryst. 564 - contact 50° to core axis.				

CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 2

PAGE Nº: 7

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH
564	772	Andesite – dark greeny massive medium – fine grained, uniform except for few bleached sections. 566 – 567.5 – bleached, generally softer than dacite, often contains epidote as fracture fillings, & in altered or 'bleached zones'. Hematite quite noticeable on fractures in this section. This section generally barren except 2" core @ 677' contains ±.3% pyrite pyrrhotite. There are also the odd irregular quartz veinlet which are barren. Some light colored sections – dacite? – 750'-760' andesite to 772'.				
772	782	a gradual change to a more intermediate phase to 782' where a contact @ 55° to core axis. 1 inch quartz with rounded fragments & hairline hematite.				
782	799	Andesite similiar to previous cracked 794 – 796 – irregular bleb milky quartz @ 796' lower contact near normal to core axis.				
799	898	Intermediate volcanic – dacite grey green – grey – medium fine grained – irregular blebs of quartz 805 – 807 well sheared zone suggestion of fragments, shearing @ 50°-55° to core axis.	–	could be	same	flow as 539' hole #1??

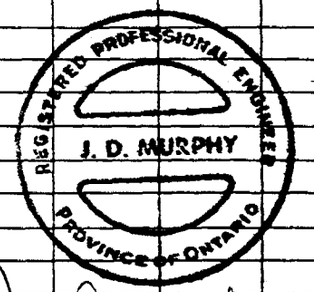
CANADIAN SUPERIOR EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 2

PAGE Nº: 8

FOOTAGE from	FOOTAGE to	DESCRIPTION	SAMPLE Nº:	FOOTAGE from	FOOTAGE to	LENGTH
		brecciated 819 - 823				
		uniform to 825				
		@ 825 Core runs in and out of a medium grained fragmental - frags creamy - white - siliceous. - and a fine grained dacite. - numerous fractures at various angles have hematite coatings.				
		848 - 851 core follows a quartz vein - quartz barren except for irregular inclusions of black & green chloritic material, calcite in fractures in qtz, minor hematite.				
		This quartz may lie between the uniform & fragmental rocks as half of the core is uniform volcanics.				
		866' - 2" quartz vein contains plagioclase feldspar.				
		866' - 867' bleached, possible contact @ 75° to core axis.				
		uniform 867 - 871				
		Fragmental 871 - 878 - andesitic?				
		uniform 878 - 885				
		Finer fragmental 885 - 888				
		1" quartz vein running with core				
		891' - 895' — quartz vein milky has plagioclase feldspar on walls				
		6" barren quartz @ 896				
		897 - 898 core following quartz vein with chlorite and plagioclase feldspar.				
		End of hole 898				



W71 0 8 105539

32E05NW0098 12 HURTUBISE

900

ONTARIO

THE MINING ACT REPORT OF WORK

required for each type of work to be recorded.

To the Recorder of ...The Larder Lake... Mining Division

I, ...Canadian Superior Exploration Ltd.... A-37377
name of Recorded Holder — Miner's Licence

...2201-1177 West Hastings Street, Vancouver, B.C.
Post Office Address

do hereby report the performance of ...1458... days of ...diamond drilling...
type of work

not before reported to be applied on the following contiguous claims (see attached claim schedule) *

Claim No.	Days	Claim No.	Days	Claim No.	Days
265109	20	265118	20	265124	20
265110	20	265119	20	265126	20
265114	20	265120	20	265127	20
265115	20	265121	20	265128	20
265116	20	265122	20	265129	20
265117	20	265123	20	265113	20

All the work was performed on Mining Claim (s) ...105539...
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations – Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

See attached report.

Drilling performed March 31, 1971 to April 17, 1971
April 13, 1971 to April 22, 1971

Date ...June 17, 1971...

...W. S. Robinson...
Signature of Recorded Holder or Agent

The Mining Act
Certificate Verifying Report of Work

I, ...Jay D. Murphy...
...Box 100, Smithers, B.C.
(Post Office Address)

hereby certify:

1. That I have a personal and intimate knowledge of the facts set forth in the report of work annexed hereto, having performed the work or witnessed same during and/or after its completion.

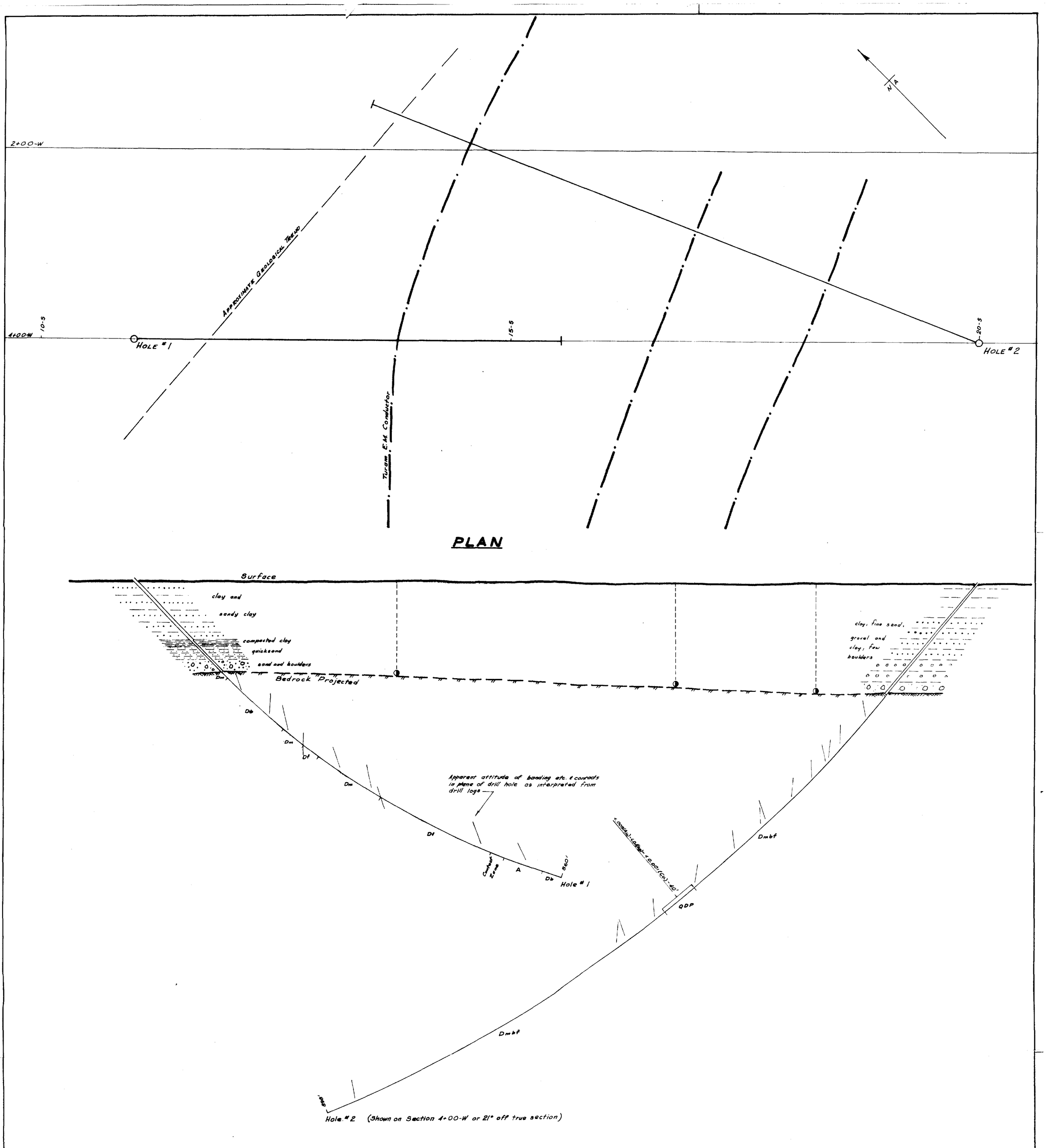
2. That the annexed report is true.

Dated ...June 11th... 19 71

...Jay D. Murphy...
Signature

RECORDED JUN 21 1971
REC. No.

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS $500. OR SIX MONTHS IMPRISONMENT OR BOTH



LEGEND

D - b, m, f	:- Dacite - banded, massive, fragmental
Dmbf	:- Dacite - undifferentiated
A	:- Andesite
QDP	:- Quartz diorite porphyry

#98/71 Hurtubise

HURTUBISE TWP., D. D. R. # 12

CANADIAN SUPERIOR EXPLORATION LIMITED
SMITHERS REGIONAL OFFICE

PLAN & SECTION OF DRILL HOLES HURTUBISE TOWNSHIP, ONTARIO SIGMA PROJECT

J.L.M.	1 IN. = 50 FT	MAY 1971	10-D-3

REGISTERED PROFESSIONAL ENGINEER
J. D. MURPHY
PROVINCE OF ONTARIO