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REPORT ON THE GEOLOGY

OF THE

HANNA (SOLITUDE) LAKE PROPERTY SOLITUDE LAKE AREA DISTRICT OF THUNDER BAY

NTS 52-J-7

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MINING LANDS SECTION

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December 1986

SUMMARY

The Hanna (Solitude) Lake property is underlain by northeast trending chert-magnetite iron formation overlain by southeast facing massive to pillowed magnesium tholeiitic basalts and intruded by gabbroic sills and dykes. The main iron formation bands are totally engulfed by the gabbro. Granitoid bodies border the volcanic-sedimentary sequence to the north.

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The property lies on the north limb of a syncline closing to the west associated with an older (D_1) deformation. Refolding of the D_1 folds and development of shearing accompanies D_2 deformation.

A few localized weak to moderately anomalous gold values were obtained from the iron formation; although little suiphide was encountered. Sulphidic quartz veining associated with shearing in volcanics and gabbro returned very low gold values.

CONCLUSIONS AND RECOMMENDATIONS

Broadly spaced sampling of the iron formation has outlined four areas with weakly anomalous gold contents (>20 ppb):

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- 1) at the west boundary of claim Pa 876225 at L23S, 2W
- 2) in the vicinity of drill hole 64 (L2OS, 6W) to L16S, 5W on claim Pa 876224
- 3) between L4N, 4E and L8N, 5E on claim Pa 876249, and
- 4) just east of the east boundary of Pa 876243

Additional sampling is required during the 1987 field season in these areas to provide better targeting of diamond drilling. Trenching with a plugger and explosives is necessary to obtain samples from the smoothsurfaced iron formation outcrops. Only analysing for gold is needed as all pathfinder elements are at background levels. Gold in this case is the best indicator of gold.

Ground geophysical surveys (magnetic, H.E.M.) are needed on the exisiting grid to trace the iron formations in overburden covered areas and provide further information on the structural complexity of the property. Prior to this survey, lines L23S to L16S should be extended by 300 metres to 10W and L0 to L26N by 300 metres to 8E to provide coverage of the entire iron formation.



52J10SE0001 52J10SE0021 SOLITUDE LAKE

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INTRODUCTION

A geological mapping and rock sampling program was carried out on the Hanna (Solitude) Lake property from July 26 to August 11, 1986. The writer was assisted by Desmond Cullen who mapped approximately 20% of the property under direct supervision. Mapping was carried out at 1:5000 scale making use of 100 metre grid lines for control. ころうち ちちちち ちちちち ちちちちち

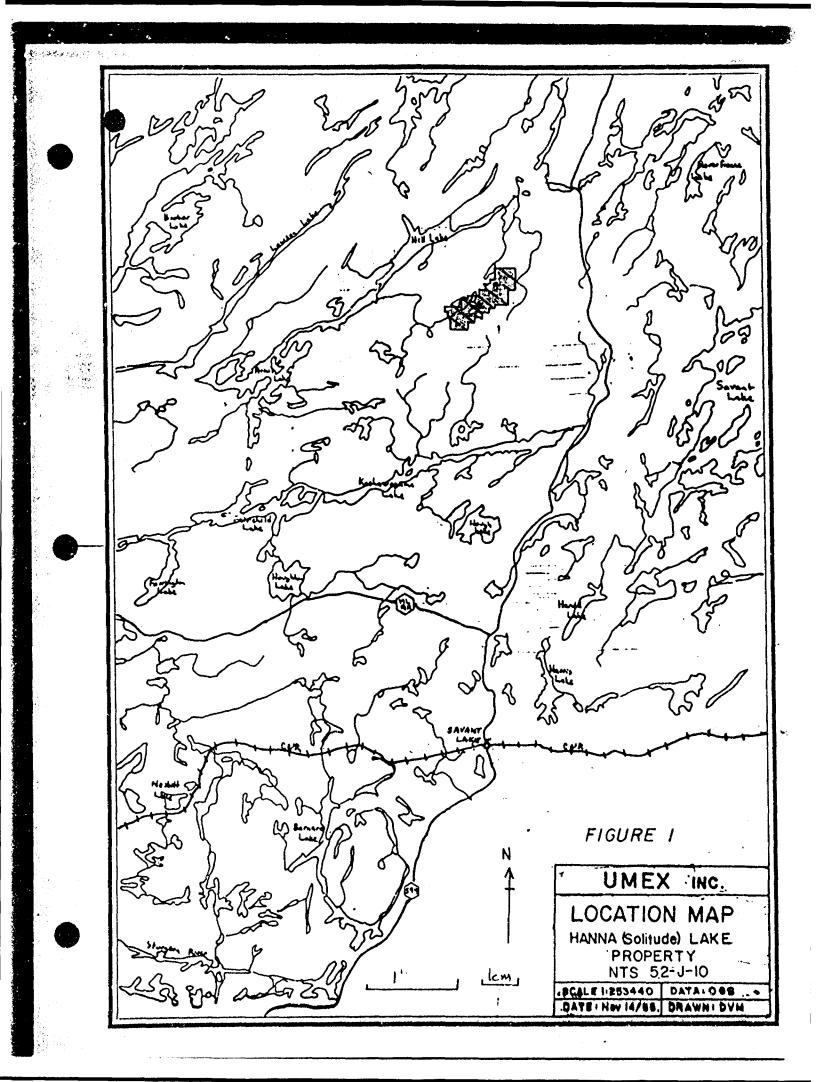
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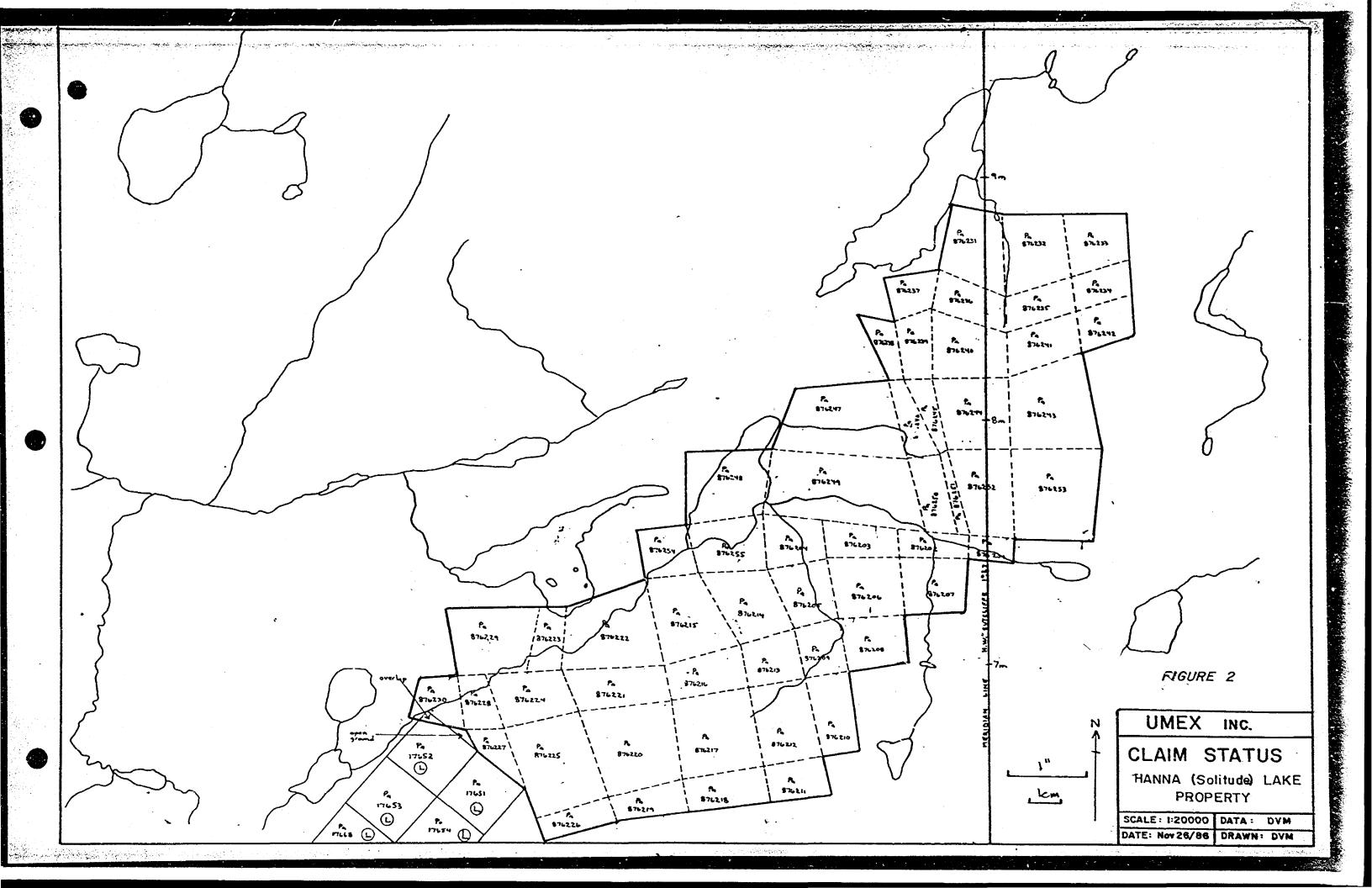
The property consists of 55 unpatented mining claims (Figure ?) although the grid does not cover the entire claim block. Total grid coverage occurs on claims Pa 876204, 214, 216, 220, 221, 225-227 inclusive, 231, 236-239 inclusive and 255; partial coverage on claims Pa 876203, 205, 213, 215, 217, 219, 222-224 inclusive, 228, 232, 240, 245-247 inclusive, 249 and 254; and no coverage on claims Pa 876201, 202, 206-212 inclusive, 218, 229, 230, 233-235 inclusive, 241-244 inclusive, 249 and 250-253 inclusive. Limited claim line reconnaissance mapping was completed on claims Pa 876234, 235, 241-246 inclusive and 250-253 inclusive.

Part of claim Pa 876230 overlaps leased claim Pa 17652 while an open gore is bounded by claims Pa 17652, Pa 876227 and Pa 876230 (Figure 2).

LOCATION ACCESS AND TOPOGRAPHY

The Hanna Lake property is located approximately 30 kilometres north-northwest of Savant Lake, Ontario and 7 kilometres west of Highway 599 (Figure 1). Summer access is by float plane based near Savant Lake to either Hanna Lake near the centre of the property or Longwok Lake to the northeast. The linecutting crew camped at Longwok Lake while the geologic survey crew erected a camp and dock at Hanna Lake. An old drill tote road branches southwest off Highway 599 approximately 37 kilometres north of Savant Lake but is overgrown and would have to be upgraded for





summer access. During the winter, access would be by ski-plane based at Sioux Lookout 95 kilometres to the south west or Pickle Lake 100 kilometres to the north.

The southern half of the property consists of fairly high ground with moderate outcrop. A steep-sided southwest trending esker traverses the northern part of the property. These higher areas are covered with spruce, poplar and jackpine. Spruce-alder swamp fills narrow valleys between oucrop areas. The northeast part of the property is dominated by a large spruce-tea-tamarack swamp. Boulder fields and piles are common across the claim block. Erratics of granite up to 10 metres high were found.

PREVIOUS WORK

The geology of the surrounding the Hanna Lake property has been compiled on Ontario Department of Mines preliminary map P-354 by Davis and Pryslak (1966). No detailed mapping by government workers has been done on the property but $\frac{1}{2}$ mile scale mapping was conducted by Bond (1977) in McCubbin Township immediately to the south.

The area covered by the claim block was previously staked in 1956 by Northern Canada Mines and acquired by Hanna Mines in 1966. Northern Canada Mines retains a leased claim block to the southwest. Work by Northern Canada Mines was reconnaissance in nature, consisting of a magnetometer survey along claim lines and prospecting. Their leased claims were subject to more detailed ground surveys and diamond drilling. Iron ore was the sought after commodity.

Hanna Mines carried out more detailed work on the "Hanna Lake" property. Magnetometer and detailed geological mapping were completed during 1966 and 1967 respectively. The quality of the detailed mapping supervised by Nelson Hogg is very good. Hanna Mines also drilled one

hole totalling 35.2 metres (#20) in 1966 and five holes totalling 249.5 metres during 1968. All drill holes were located in the field but no core is available. Also, the log for hole #20 has not been filed.

An airborne electromagnetic survey flown by Umex Inc. in 1975 covers the area surrounding the claim block. The claims held by Hanna Mines lapsed in 1985 and were staked for Umex in the spring of 1986.

REGIONAL GEOLOGY

The reader is referred to reports by Trowell (1986), Bond (1977, 1979, 1980) and Skinner (1969) for a review of the regional geology of the Savant Lake Greenstone Belt. The property lies near the northern boundary of the Wabigoon Subprovince. Briefly, it lies near the base of a tholeiitic volcanic sequence underlain by iron formation. This sequence is folded about a synclinal axis well documented from previous mapping, drilling and airborne geophysical surveys.

PROPERTY GEOLOGY

The Hanna Lake property is underlain by a series of northeast trending, southeast dipping chert-magnetite iron formation, intruded by numerous gabbroic sills and dykes, overlain by massive to pillowed mafic volcanics. Granitoid bodies border the claim block to the north but only outcrop in the extreme northeast corner of the grid near Longwok Lake.

The iron formation appears to form several bands that are separated by discontinuous gabbroic sills. It is thought that the iron formation bands were initially one thick chemical sedimentary horizon that was subsequently wedged apart by the intrusions of gabbro. Lateral continuity of the iron formation does not imply stratigraphic continuity.

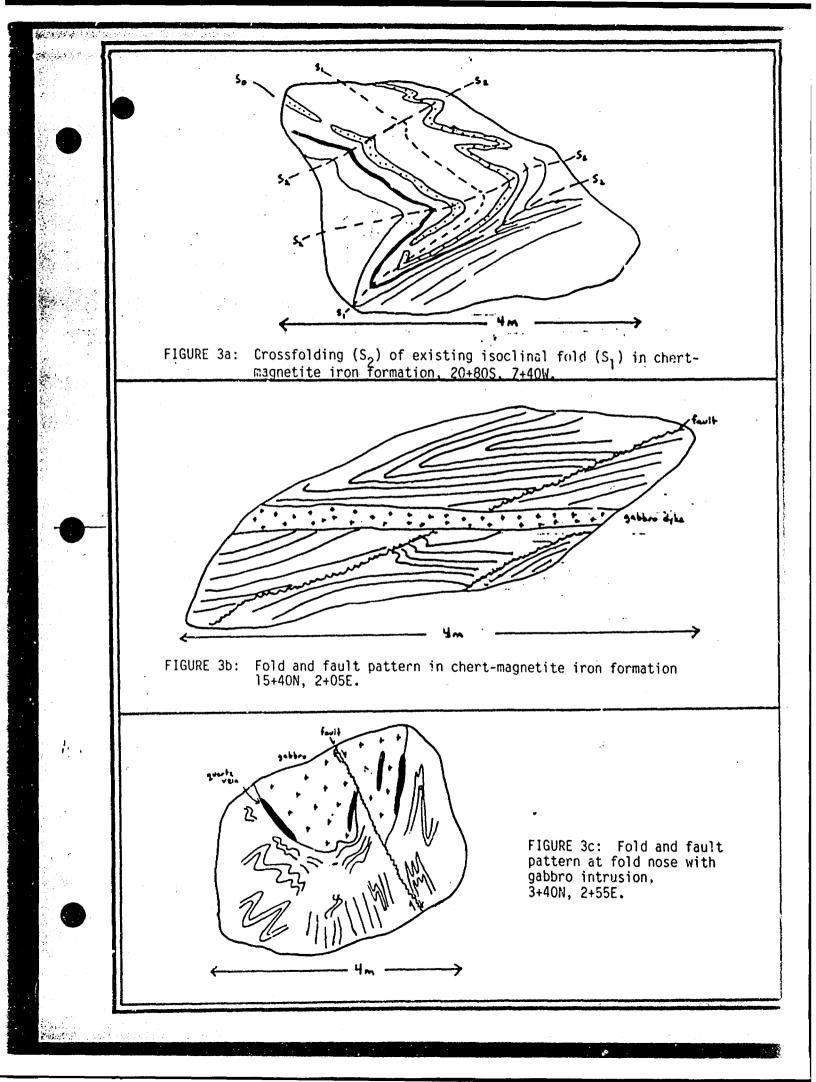
The iron formation bands vary in thickness from 0.5 to over 100 metres. Thicker sections are due to isoclinal folding. Dips vary between 40° and 80° to the southeast. Hogg (1968) defined four types of iron formation based on magnetite content while the writer, whose mandate was not to assess the iron potential of the property, grouped all magnetite-bearing hcrizons as iron formation regardless of iron content. The reader is referred to Hogg's excellent 1:1200 scale maps for this detailed subdivision.

Magnetite bands rarely exceed 3 cm in thickness, unlike the chert beds which are much thicker. The cherts are generally grey to creamy-white in colour though speckled varieties were observed. One thin weakly pyritic graphitic argillite was found at 15+25N, 1+80E. Sulphide occurrences were very rare and consisted of minor disseminations (<1%) of pyrite and/or pyrrhotite at the margins of the magnetic bands. No individual sulphide horizons were mapped.

Besides the main iron formation bands, thin magnetite-chert beds generally less than 1 metre in thickness occur as interflow sediments within the mafic volcanic sequence.

Tight isoclinal folding was observed in several exposures of iron formation across the property. In some outcrops two ages of deformation is evident (Figure 3a) while other outcrops show complex relationships of folding, faulting and mafic intrusive activity (Figures 3b, c). Detailed structural analysis was not attempted; in part due to the strong magnetic deflection caused by the iron formation. A sun compass would be needed for a meaningful structural survey.

Overlying the main iron formation horizons are a series of intercalated massive to pillowed mafic volcanics. Some pillowed horizons can be traced along strike for 1500 metres. Tops from pillow shapes and flow contacts



indicate a south to southeast facing sequence. Pillowed flows are usually thinner than the massive varieties. Strikes generally parallel those of the adjacent iron formation although in the southwest the volcanics swing to a due west trend, almost normal to the iron formation strike. This discordance is probably due to folding and intrusion of the gabbros and not an unconformable relationship with the iron formation.

Some of the coarser grained flows may be finer grained portions of the gabbroic rocks as contact relationships were seldom observed.

Metamorphic differentation has created banded structures in some volcanic units that have previously been interpreted as mafic tuffs. Thin section study revealed a metamorphic rather than pyroclastic/epiclastic origin.

Crosscutting "bleached" alteration patches were noted in several exposures. This bleaching (sausseritization) is composed of fine grained zoisite with minor quartz. This section study also showed that no feldspar is present, probably destroyed at the expense of zoisite.

Minor gossans associated with narrow shear zones and quartz veining were located near L7S, 3+50E; L15S, 3+75E; L17S, 4+25E and L22S, 4+00W. Pyrite and trace pyrrhotite occur in these gossanous shears.

Intruding the volcanic-sedimentary sequence are medium to coarse grained gabbroic sills and dykes. The bulk of gabbro intruded along the main iron formation-mafic volcanic contact and stoped a significant portion of the iron formation. A prolonged period of intrusive activity is indicated by structural/intrusive relationships with iron formation (Figures 3b, c). Some of the gabbroic rocks may be high level magma chambers feeding flows still higher in the volcanic stratigraphy. Similar relationships between gabbros and iron formation are reported

from the Honeywell Township area east of Red Lake (Johns, 1979) and from the Shaw Dome area south of Timmins (Pyke, 1982) although the latter case involves ultra mafic rather than mafic intrusions. Coarse gabbroic dykes (hornblendite) were observed cutting medium grained gabbro near L23S, 8+50N.

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A moderately developed shear zone approximately 300 metres wide trending at 090° and dipping at 40° to 90° south, cuts diagonally across the gabbro near the centre of the gridded area (LO). Narrow quartz-filled weakly pyritic shears are common within the zone. Minor carbonate was observed adjacent to some shears, as were garnet porphoblasts. Small scale folds plunging to the southwest were recorded in the zone as well.

Granitoid bodies border the claim block to the north but are exposed only in the extreme northeast corner of the grid near Longwok Lake. They probably underlie much of the swampy area along the baseline as hornfelsic "baked" textures were noted in some outcrops immediately south of the swamp. Ground magnetic surveys should define the contact zone.

STRUCTURAL GEOLOGY

The property lies on the north limb of a westerly closing synclinal structure. The fold nose lies immediately to the southwest of the claim group. Initial isoclinal folds (D_1) , probably related to predominantly vertical motion tectonism associated with granitoid intrusion are modified by a younger predominantly horizontal motion tectonism (D_2) associated with northwesterly regional compression (Schwerdtner et al, 1979). Evidence of the two periods of deformation is graphically displayed in Figure 3a. The initial folding has locally thickened the iron formation horizons.

Gabbro intrusion appears to be both predate and postdate D_1 deformation (Figures 3b, c).

The main shear zone in gabbro may be related to the D_2 deformation event although regional structural analysis was not attempted.

A dextral fault with approximately 200 metre horizontal displacement is interpreted to transect both volcanic and intrusive rocks between L3S and L5S. This fault is subparallel to the above mentioned shear zone and may be related to the same D_2 event. Other faults with small displacements were observed on several exposures across the property.

GEOCHEMISTRY

A total of 63 samples were collected and sent to Acme Analytical Laboratory for their 30 element (ICP) plus gold (AA) analysis. Both sulphidic quartz veins (16) and iron formation (47) were analysed. No anomalous gold or "pathfinder" element (As, B, Bi, Sb, W) contents were encountered in the quartz veins although some copper "kicks" were recorded indicating minor chalcopyrite associated with the pyrite/ pyrrhotite.

Five anomalous gold values (>20 ppb) were returned from the iron formations sampled; the highest being 400 ppb Au from sample A93152. This sample is from a very small outcrop of garnetiferous magnetitebearing material (iron formation?) at the west boundary of the property. Other weakly anomalous areas occur between Hanna drill hole #64 (L2OS, 6W) and L16S, 5W; between L4N, 4E and L8N, 5E; and just east of claim Pa 876243. All pathfinder elements are at background levels.

Two samples of pillowed mafic volcanics were sent to X-ray Assay Laboratories for whole rock analysis. Data reveals that at least two types of magnesium tholeiitic basalt occur on the property. This magnesium



chemistry is consistent with the low stratigraphic position of the flows. The two types are a more "primitive basalt characterized by higher MgO, Cr_2O_3 and Ni contents and a less "primitive" basalt characterized by higher TiO₂, P₂O₅, Y, and Zr contents.

De Ml. C.

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Dave Mullen December 23, 1986

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PHONE 253-3158 DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

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DATE RECEIVED: AUG 29 1986 DATE REPORT MAILED: Cleft 6/86 ASSAYER, D. Styff. DEAN TOYE. CERTIFIED R.C. ASSAYER.

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493101	1	66	3	40	- 1	18	10	116	3.90		5	ND	1	4	1	2	2	82	. 25	. 021	4	105	2.03	19	.06	3	1.71	.06	.04	1	2
A93102	1	131	- 14	- 44	.3	8	13	241	4.57		5	KD.	1	5	1	2	2	31	1.07	.049	1	19	. 80	18	.04	2	. 82	.12	.02	1	2
A93103	3	172	5	612	.1	14	18	310	4.39		5	ND	2	3	2	2	2	11	.45	.029	17	10	.25	14	.04	2	.73	.04	.04	1	15
A93104	1	20	13	34	.1	4	9	185	21.26	2	5	KÛ	1	3	1	2	2	\$.22	.052	29	2	. 05	5	.01	2	. 03	.01	.01	1	51
493105	ι	463	19	20	.2	24	34	216	14.07	2	5	NB	۱.	4	2	2	5	8	.50	. 061	74	4	.05	4	.01	5	.09	.01	. 01	1	3
493106	1	44	13	5	.1	- 4	3		1.00	2	5	ND	1	3,	1	2	2	•	. 15	,001	2	10	. 08	6	.01	3	. 07	.01	.01	ł	2
A93107	3	205	6	12	•1	- 4	13		10.27	2	5	ND	1	2	ł	2	2	16	1.12	.040	13	7	.43	4	.04	2	.65	.09	. 02	1	1
893108	ł	54	26	36	•1	6	11	199	19.66	6	5	ND	1	13	1	2	3	5	.36	.036	22	3	.13	ð	.01	2	. 07	. 02	. 02	3	19
A93109	1	417	2	5	1.0	B	20	110	1.69	5	5	ND	I	17	1	2	2	11	1.20	.01:	4	14	. 21	4	.03	2	.80	.02	.01	1	2
A93110	1	76	6	35	.1	10	1		4.07	8	5	ND	1	1	1	2	2	102		. 056	14	9	. 66	55	.12	2	.94	.18	.09	1	6
A93111	1	119	1	86	.3	8	16	171	10.24	5	5	ND	1	7	2	2	2	10	. 33	.047	4	3	.15	9	.01	2	,17	. 02	.05	1	3
STD C/AU-0.5	21	59	40	130	7.1	72	31	1116	3.96	G	21	8	33	48	18	16	20	83	. 48	.109	35	58	.89	180	. 09	35	1.73	.06	.13	13	500

PAGE 1

CERTIFICATE OF ANALYSIS

TO: UMEX INC. ATTN: CAVID UNGER 1935 LESLIE STREET DON MILLS, CNTARIC M3B 2M3

CUSTOMER NO. 571

· See

CATE SUBMITTED 27-AUG-86

REPORT 29131

REF. FILE 24766-F4

3 RCCKS PRCJ. SABIN

WERE ANALYSED AS FOLLOWS:

	метнор	DETECTION LIMIT
WRMAJ %	WR	0.010
NI PPM	XRF	10.000
WRMIN PPM	MS.	10.000

X-RAY ASSAY LABORATORIES LIMITED

DATE 10-SEP-86



X-RAY ASSAY LABORATORIES LIMITED • 1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • (416) 445-5755 • TELEX 06-986947

SAMPLE S102 AL203 CAO MGO NA20 K20 FE203 MKO T102 P205 CR203 L01 SUH A93112 46.4 16.2 11.5 9.41 2.17 0.22 12.0 0.19 0.68 0.05 0.05 1.00 99.9 A93113 48.9 15.2 9.53 7.16 3.34 0.17 12.9 0.18 0.98 0.08 0.04 0.62 99.1 X-RAY ASSAY LABURATORIES 10-SEP-36 REPORT 29131 REFERENCE FILE 24766 PAGE 2 SAMPLE RB SR Y ZR NB RA A73112 20 60 C10 20 20 70 A93113 20 50 20 50 20 80 SAMPLE NI <ppm< td=""> PPM 50 20 80</ppm<>	X-RAY A	issay labor	ATURIES	i	10-sep-28	5	RÍ	eport 29	131 RE	FERENCE I	FILE 247	66		PAGE 1		
A93113 '48.9 15.2 9.53 7.16 3.34 0.17 12.9 0.18 0.98 0.08 0.04 0.62 99.1 X-RAY ASSAY LABURATORIES 10-SEP-36 REPORT 29131 REFERENCE FILE 24766 PAGE 2 SAMPLE RB SR Y ZR NB BA A93112 20 60 (10 20 20 70 A93113 20 50 20 50 20 80	SAMPL		S102	AL203	CAO	MGO	NA20	K20	FE203	MNŪ	T102	P205	CR203	LOI	SUM	
X-RAY ASSAY LABURATORIES 10-SEP-36 REPORT 29131 REFERENCE FILE 24766 PAGE 2 SAMPLE RB SR Y ZR NB BA A93112 20 60 K10 20 20 70 A93113 20 50 20 50 20 80	A73112	•	46. 4	16. 2	[,] 11. 5	9, 41	2 17	0. 22	12. 0	0. 19	0. 68	0, 05	0. 05	1. 00	9 9. 9	•
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A93112 20 60 <10	X-RAY	Assay labo	RATORIE	S	10-SEP-8	36	F	EPORT 2	9131 RI	EFERENCE	FILE 24	766	* • • • •	PAGE 2	· • • • • • • • • • • • • • • • • • • •	
A93113 20 50 20 50 20 80	SAMPLE		RB	SR	Ŷ	ZR	NB	FA								
	A93112	2	20	60	<10	20	20	70								
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		A93113		140												

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PROPERTY	Minuss River Property - Hanna Take Claim
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DEPARTURE

Determine PORMATION statute reve reve 0-5 Casing	PCI VAT	юм ви	-45 ¹ 12							
5- 34 Basic Dike - amphibolitized -34- 41 Lean Iron Formation - cherty 41- 48 Basic Dike - amphibolitized -44- 50 Lean Iron Formation - cherty 50-132 Basic Dike or Sill - amphibolitized. -50-132 Basic Dike or Sill - amphibolitized. -132-159 Banded Iron Formation -132-159 Amphibolitized, -133 Bande of megnetite and yellow -133 -130 -133 -130 -133 -130 -133 -130 -133 -130 -133 -130 -133 <		FORMATION		FROM	10	T	T		V VALUES	
34- 41 Lean Iron Formation - cherty 41- 48 Basic Dike - amphibolitized - 44- 50 Lean Iron Formation - cherty 50-132 Basic Dike or Sill - amphibolitized. - Massive, fine to medium grained.	0- 5	Casing								
41- 48 Basic Dike - smobibolitized -44- 50 Lean Iron Formation - cherty -50-132 Basic Dike or Sill - smobibolitized. - Massive, fine to medium grained. - 132-159 Banded Iron Formation - Thin bands of megnetite and vellow - iron silicetes. - 159-200 Amphibelity	5- 34	Basic Dike - amphibolitized								-
41-50 Lean lion Formation - cherty 50-132 Basic Dike or Sill - amphibolitized. Nameive. fine to medium grained. 132-159 Banded Iron Formation Thin bands of megnetite and vellow iron silicates. 159-200 Amphibelity	- 34- 41	Lean Iron Cornetion - cherty			<u> </u>	<u> </u>		+	•	
50-132 Basic Dike or Sill - sechibolitized. Nessive. fine to pedium grained. 132-159 Banded Iron Formation Thin bands of memetite and vellow iron silicates. 159-200 Amphibality	41- 48	Basic Dike - amphibolitized				<u> </u>	<u> </u>			
Massive, fine to medium grained. 132-159 Banded Iron Formation Thin bands of megnetite and vellow Iron silicates. 159-200								+		
132-159 Banded Iron Formation Thin bands of memetite and vellow Iron silicates. 159-200 Amphibelity							·			
Thin bands of memetite and vellow Iton silicates.	- 112-160							1	1	
Iron silicates.	126-137		┼───┤							
159-200 Amphibelite			<u>├</u>				-	 		
	159-200		┟╼╼╼╼┥							
			<u> </u> -							
200 LND OF HOLE		END OF HOLE								

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£ ## # # ? i		•			ULTIMA	18 14 1914	•		
ELEVATH	Drø	45.2	2.41	- 4:	PBOPO1	NO DEPTH			
DEPTH 1511	FORMATION	BANPLE NO	FROM	70	-			VALUES	
0- 10	Casing							4	-
10- 32	Amphibolitized Davie Tuff								
, 	Panded, some biotite, becoming				 				
	coarse textured at contact								
32-133	Bunded Iron Formation								ļ.
	Hagnetite, iron silicates and sugary				<u> </u>				-
	quarts in bands almost normal to the								-
	core aria. Cut by a few very narroy				ļ				╞
******	dikes of puphibolite up to y foot								+-
	vide.								╞
133-1*9	Lean Iron Formation				ļ				╞
- 	Less magnetite and inci wased silicat	6							╞
	bands.				~~~				+-
		<u> </u>		ل		L		<u> </u>	
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		r within ??
		Contraction of the second
	是你就是你们就是你们的我们不可能的。""你你们,你们还是你们的?""你们,你们不是你的。""你们,你们们们们的你们。""你们,你们们们们的吗?""你们,你们不是你	

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+ 1	• •				1 7 80 P ()				
DEPARTU	91 BEADING				WETIMA	14 DEPTH			
ELEVATIO	94 0 HK				KOPON	NA DELLA			
			· · · · · · · · · · · · · · · · · · ·	1			A 184 Y	V#1.U18	
CPTH 7867	FORMATION	BAMPLE NO	FROM	70	-				
53-196	Banded Iron Formation								
	With banding at 70° to core axis.								
	Hainly magnetite and yellow to green			-					
	silicates,								
9(-208	Ican Iron Formation								
	Hainly vellow iron afficates and						ļ		
	sugary quarta with minor magnetite_	 							
	in 1/8" laninations.	ļ							
108-218	Amphibolitized Basic Tuff								-
	Biotitic bands and bands of vellow								
	silicates.								
218-230	Graphitic Tuff			· .	· · ·		 		
	Contorted banding - about 30X								
	sulphiden, made up mainly of			Rel					

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								and the second division of the local divisio			
一般的过去时,这些人的话,是是这些人的情况的,我们就是这些人的话,这些人的问题,我们们就是这个人的,我们就是这个人的,我们也是不是这些人的,我们就是我们的我们的我	-	-	0480			· · · · · ·					
	19 A. 1	- 1 A		 5	Sec. 2. 19		1		1 - C - C - C - C - C - C - C - C - C -	18 A. S. A. S.	

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BLEVATHO	Си Би				PROPE	580 DAPTI	*	
	FORMATION	54.100.6 100		10	wight		A	T VALUE
			<u>↓</u>					
	pyrrhotite, with minor pyrite and a	 	!	 		ł		
230-239	few specks of chalcopyrite.		+'				-	
-424-422-4	Amphibolitized Basic Tuff Some biotitic banding		t	<u> </u>				
239-248			h					+
	Banda of sugary quarts, yallow and							
·····	green silicates of iron, with heavy		'					_
	pyrrhotite and minor pyrite.		4	ļ				
248-274	Amphibolitized Basic Tuff		· '					
	Biotitic banding,				•			
274	END OF HOLE					<u> </u>		
				}		+		
- Contraction of the Andrewson			·	<u></u>				
			'					

DIAMOND DRILL RECORD

PROPE	RTY Miniss River Property - Hanna Lak	e Claim	S		HOLE	No	66		
SHEET N	Claim Pa-36612 - 450' East of #3	Post	0		STARTE	o Au	gust 26,	1967	
LATITUD	E		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Compi	Au ETED	gust 27,	1967	
	IRE 400 I E BEARING N50								
ELEVATIO	ON	°W 38	80 <mark>1 - 3</mark> 1	9 ⁰ 301		SED DEPTH			
		BAMPLE	<u> </u>	1			ASSAY	VALUES	· · · · · · · · · · · · · · · · · · ·
DEPTH FEET	FORMATION	NO,	FROM	то	WIDTH				<u> </u>
0- 17	Casing							•	
17- 26	Basic Tuff								
	With biotitic banding at 55° to core	•		•					
26- 52	Lean Iron Formation								} - •
	Brown iron silicate, sugary quartz								
	and magnetite interband at 65° to								
	core. Minor pyrrhotite and pyrite								
52- 78	Banded Iron Formation								
	As above, but magnetite bands are				÷.				
	more frequent.			5 9 15	<u>د</u> ر				
78- 87	Lean Iron Formation			FED "		• • •			
87-114	Interbanded Lean Iron formation and		4 ⁴ -	10 (1,12)	12,0,0	3) d 			
	amphibolitized.basic volcanic.								
The second	· · · · · · · · · · · · · · · · · · ·		. ,	L				1 Providence	·
NORTHERN	MINER FORM BOS REVJ84	••••••••••••••••••••••	(help		Q1			

DIAMOND DRILL RECORD

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	RTY Miniss River Property - Hanna Lake							00	
	UMBER 2 OF 4 SECTION FROM						_		
	DN								
				1				VALUES	
EPTH FEET	FORMATION	BAMPLE ND.	FROM	, TO	WIDTH			••	
14-135	Lean Iron Formation								
	Banded at 72 ⁰ to core. Brown iron								
	silicate bands predominate.								
.35-1.77	Banded Iron Formation				,				
	Bands of magnetite, brown iron silid	ates							
	and greenish amphibole. Minor								
	pyrrhotite.								
77182	Amphibolite								
	Basic dike or sill with fine margins	•							
.82-238	Lean Iron Formation	•		و' ت	. ئ				
	With bands of brown iron silicates			i .	- 7		1		
	and minor magnetite.				1999 - 1997 - 1 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	20.3			
38-291	Randed Iron Formation			Å					
·····	Bands of magnetite, brown iron					¥,	1		
NOATHERN	MINER FORM 505 REV./84	,	(Ch o		(b)	11		

DIAMOND D	RIL	L	RE	CO	RD

PROPERTY	Miniss River H	Property - Ilanna Lal	ke Claims	HOLE No.	66
SHEET NUMBER	3 of 4			STARIED	
		,		COMPLETED	,
	• · · · ·				
DEPARTURE				ULTIMATE DEPTH	

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FORMATION silicate and sugary quartz at 70 ^{0.} -	NO.	FROM	TO	WIDTH				•
						1		
000					•			· · ·
80 ⁰ to core.								
ean Iron Formation								
Only a few narrow magnetite bands.					•			
Includes 2 narrow dikes of amphibol-								
ite, up to l_2^1 feet thick.								
egmatite								
Coarse granitic rock, with several								
inclusions of amphibolite.								
mphibolitized Basic Volcanic			- 113 			!		
Generally massive, with faint band-	. 1			·				
ing - possibly a tuff.	an a I		: 	· · · · ·	<u>,</u>			
nterbedded Lean Iron Formation			1				-	.
And basic tuff in bands up to 5' thi	ck.				A-	l,		<u> </u>
	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to 1 ¹ / ₂ feet thick. egmatite Coarse granitic rock, with several inclusions of amphibolite. mphibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to 1 ¹ / ₂ feet thick. egmatite Coarse granitic rock, with several inclusions of amphibolite. uphibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff. Methoded Lean Iron Formation And basic tuff in bands up to 5' thick.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to 1 ¹ / ₂ feet thick. egmatite Coarse granitic rock, with several inclusions of amphibolite. mphibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff. netrbedded Lean Iron Formation And basic tuff in bands up to 5' thick.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to $1\frac{1}{2}$ feet thick. egmatite Coarse granitic rock, with several inclusions of amphibolite. ophibolitized Basic Volcanic Ing - possibly a tuff. ing - possibly a tuff. And basic tuff in bands up to 5' thick.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to l ¹ / ₂ feet thick. egmatite Coarse granitic rock, with several inclusions of amphibolite. uphibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff. ind basic tuff in bands up to 5' thick.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to 1½ feet thick. egmatite Coarse granitic rock, with several inclusions of amphibolite. aphibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff. interbedded Lean Iron Formation And basic tuff in bands up to 5' thick.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to 1½ feet thick. igmatite Coarse granitic rock, with several inclusions of amphibolite. uphibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff. ind basic tuff in bands up to 5' thick.	Only a few narrow magnetite bands. Includes 2 narrow dikes of amphibol- ite, up to 1½ feet thick. ite, up to 1½ feet thick. ogmatite Coarse granitic rock, with several inclusions of amphibolite. phibolitized Basic Volcanic Generally massive, with faint band- ing - possibly a tuff. ind basic tuff in bands up to 5' thick.

ppmp	EDTY Minica Divor Droporty - Manna Laka	Claima					6.6			-
•	ERTY Miniss River Property - Hanna Lake									
SHEET N	IUMBER 4 OF 4 SECTION FROM	Ť	0		STARIE	D				
LATITUD	EDATUM				СОМРЦ	ETED				
DEPARTU	JREBEARING			·····	ULTIMA	TE DEPTH				
ELEVATIO	DN					SED DEPTH.		<i></i>		
		T	[]		ļ	ASSAY	VALUES	······	- -
EPTH FEET	FORMATION	SAMPLE NO.	FROM	то	WIDTH					
04-434	Amphibolite	•				•				-
	Probably a dike or sill, with finer									-
	textures toward contact.									_
34	END OF HOLE									
										_
										-
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							<u>, 19 -</u>	<u> </u>		
HORTHERN	HINER FORM 303 REV. 184 Heath & Sherwood			Ch	elo		alis	a		

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	DIAMOND	DRI	LL	REC	OR	D				
PROPE	ERTY Miniss River Property - Hanna Lake	Claims			HOLE	: No	67	7		•
SHEET N	Claim Pa-36609 - 400' S65°E of #4 AUMBER l of l	Post I(D		STARIE	o Au	gust 28	3, 1967	*****	
1.	E									
	JRE				•					•
N	ONDIP									
DEPTH FEET	FORMATION	BAMPLE NO.	FROM	то	WIDTH		ASSAY	VALUES	}	- 1
0- 12	Casing							·		- ·
12- 75	Lean Iron Formation									-
	Bands of sugary quartz, brown iron		÷							-
	silicates and minor magnetite cut					•				-
	the core at 60-80°.									
75- 81	Amphibolitized basic Dike									-
81-1 20	Lean Iron Formation as from 12 - 75	<u> </u>			ļ					
20-224	Banded Iron Formation									
	Magnetite content increased from									-
:	120 to 148 feet, and banding is			· · · · · · · · · · · · · · · · · · ·	2 ''					-
	more prominent at 70 ⁰ to core.			F	P · · · ·	• •				
224-298	Amphibolite -				A	0.1.5	•			
	Medium to coarse-grained with							. ri (_
0.0	plagioclase laths.									_

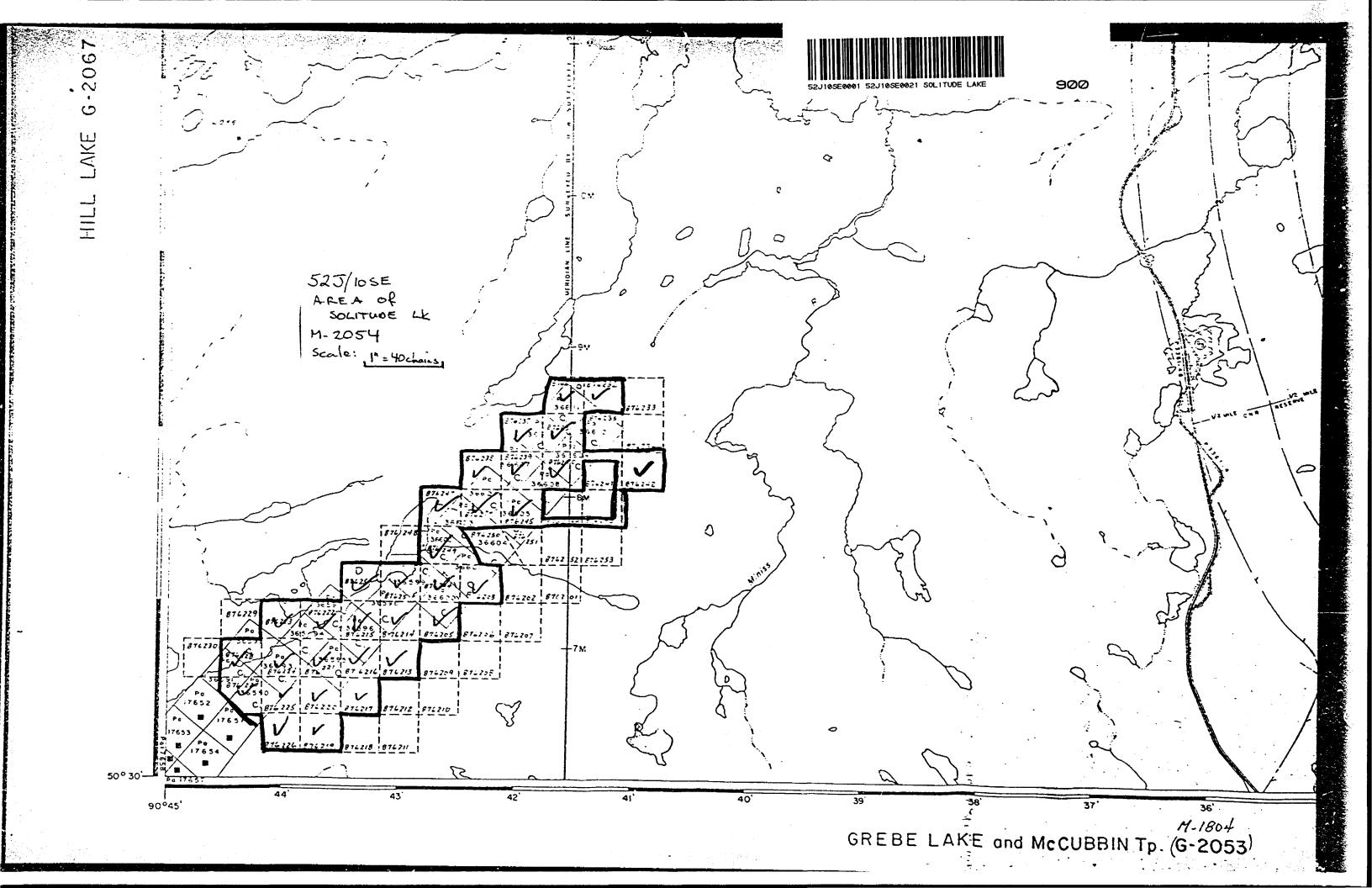
DIAMOND DRILL RECORD

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SHEET N	Clain: Pa-36610 - 200' N35 ⁰ W of #3 10MBER O.f. 2SECTION FROM E L 192NDATUM	T	D			Au	gust 30	, 1967	
DEPARTU	re	·····		•	ULTIMA	TE DEPTH		4 '	······································
ELEVATIO	он	3	18' - 34	0		SED DEPTH			
							ASSAY	VALUES	
DEPTH FEET	FORMATION	SAMPLE NO.	FROM	от	HTOIW	• • •	.		
0- 8	Casing						· · · · · · · · · · · · · · · · · · ·	•	
8- 25	Amphibolite								
	Probably a basic dike, somewhat shea	red at							
	the contact.					•			
25-123	Banded Iron Formation								ļ
	Magnetite in bands up to 2" thick								
	with brown iron silicate and sugary								
	quartz. Banding cuts core at								
	65-73 ⁰ .	•				••••			
123-144	Amphibolite -			19 19	5.	2			
	Probably a sill as dike, with fine-			FE		:		:	
	grained margins.		:			∩ 1, 2	,		
144-159	Banded Iron Formation	•							
1	Magnetite bands in equal amount with						ίγ I	•	

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DIAMOND	DRIL	LR	ECOR	D
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PROP	ERTY Minies River Property - Manna Lake	<u>Claims</u>			HOL	E No	68	68		
	NUMBER 2 OF 2 SECTION FROM									
LATITUD	EDATUM	•••••			COMPL	ETED			•••••	
DEPART	JAEBEARING					TE DEPTH		• • • • • • • • • • • • • • • • • • •		
ELEVATIO	ONDIP	•••••••••••••••••••••••••••••••••••••••	••••••••••••••••••			SED DEPTH		• •	••••••	
DEPTH FEET	FORMATION	SAMPLE NO.	FROM	то	WIDTH		ASSAY	VALUES		
	brown silicates and sugary quartz						•	•		
	at 70° to core.	-								
159-258	Lean Iron Formation						 			
	Silicate bands pre-dominate, with						·			
	lesser amounts of sugary quartz,				 					
	magnetite and pyrrhotite. Banding				 				 	
	is at 75-85 ⁰ to core.									
258-271	Randed Iron Formation									
	In which magnetite constitutes 25%.			• ••• •						
271-334	Amphibolite		•••	话宫底	. v ^{i "} "	1.11				
	Probably a basic dike, or sill, with			FEB	1					
	laths of feldspar irregularly		2		· • • • • • • • • • • • • • • • • • • •	and an an a				
	idstributed.				•••			r ri l		
334	END OF HOLE		•		- -					
NOATHEAN	MINER FORM SOS AEV./84		• , •	a	. 0		Q1.			



R	Northern Alleirs	Report of Work					Please type or print, Il number of mining claims traverse				
(Lilar	and Mines	(Geophysical, Geolog Geochemical and Exp		#87-8	3		excends space Only days "Expenditue	e on this form, i credits calculat es'' section may	ettach a l ted in t be ente		
	Pickette			Mining Ac	t		in the "Ex Do not use si	pend. Days Cr. haded areas below	" colum		
Туре	Geological	· ·		•		Township		aroa C	2214		
Claim	Geological Holder(s)			•	•••		-	Licence No.			
Aun	UIEX Inc			·····	· .		<u> </u>	_T-133			
	1935 Leslie S	treet, Don Mi	ills, On	itario I	M3B 2M3						
	UMEX Inc				26 07 Dey Mo.		08 86 Mo. Yr.	ntal Miles of line	Cut		
Nam	• and Address of Author to Dave Mullen,		. 1935 L	eslie St	Don M	ills. 0	nt. M3	B 2M3			
	ts Requested per Each C	the second s		Mining Claim	s Traversed (and the second se	and the second se			
Spec	at Provisions	Geophysical	Days per Claim	Minin Pretix	g Claim Number	Expend. Devs Cr.	Min Prefix	Ing Claim Number	Exper Deys		
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	Enter 40 days, (This includes line cutting)	- Magnetometer		ST. S.S.	876204		- TA -	876237			
F	or each additional survey:	- Padiomatric		112.00000	876205		AT CAL	876238			
	ing the same grid:	- Other			979609	+					
	Enter 20 days (for each)	Geological	40		876213		Sec.	876239			
		Geochemicat	40-			<u>+</u> {		876240			
Main	Οεγε		Days per	No. of the local states of	876214						
c	omplete reverse side	Geophysical	Claim	5273 (155 S	876215			876245			
1	nd enter total(s) here	- Electromagnetic			876216		1000	876246			
		- Magnetometer			876217			876247	_		
		- Radiometric							_		
'	≤ []])	- Other		1.39.3	876219			876249			
JAN 1		Geological		ANA 25. 5	876220						
		Geochemical		25375.2	876221			876254			
Aleb	orne Credit.		Days per Claim		876222	1		876255	• • • • • • • • • • • • • • • • • • • •		
N	ote: Special provisions	Electromagnetic			876223			0/0255			
	credits do not apply	Magnetometer		155 15 200				·····	-		
	to Airborne Surveys.			11 S & S &	876224		100				
<u> </u>	D 2 C	Thadigment T			876225		-		Jowe Street		
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	• •	· · · · · · · · · · · · · · · · · · ·			876227			w and a second	150		
Perto	ormed on Claim(s)				876228						
	<u>با در ا</u>	NICO CONTRA		ACLAND			232.0				
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	Total Expenditures		Total /s Credits		876232						
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	Jan. 13/87	ito della	<u>22</u>	1240	l		\leq	V			
	ification Verifying Rend		<u> </u>		h				the second		
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	David Unger,	<u></u>			Jan.13	, , /07		Visignatures			

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Ministry of Northern Development and Mines	Technical Assessment Work Credits	29711	File 2.9711						
tario		Date January 30,1987	ng Recorder's Report of (No, 87-8						
ecorded Holder	UMEX INC								
ownship or Area	SOLITUDE LAKE AREA								
Type of survay and numbe	r of	Mining Claims Assessed							
Assessment days credit per c Geophysical									
Electromagnetic	days								
Magnetometer	days								
Radiometric	days	PA 876204							
Induced polarization	dave	876214 to 16 incl 876219 to 21 incl							
		876224 to 27 incl							
Other	days	876236 to 40 incl	876231 876236 to 40 inclusive 876245 to 47 inclusive						
Section 77 (19) See "Mining Claims A	ssessed" column	876245 to 47 incl 876249	876245 to 47 inclusive 876249						
Geological	40 days	876255							
Geochemical	days								
Man days 📋	Airborne								
Special provision 🗶	Ground 🔀								
Credits have been reduced because coverage of claims,	of partial								
Credits have been reduced because									
to work dates and figures of applic	ant,								
pecial credits under section 77 (16)	for the following mining claims								
20 DAYS GEO	LOGICAL	10 DAYS GEOLOGICAL							
PA 876205	LUGICAL	PA 876203							
87621/ 876222-2	2	876213 876254							
876228	5	07 02 54							
876232									
o credits have been allowed for the t									
not sufficiently covered by the sur	vey 🦳 insufficient tech	nical data filed							

I. Cath	Report of Work (Geophysical, Geolog Geochemical and Exp	ical, enditures)	2.97 # 87- Mining	8	Note —	If number creekils space Only days "Expenditue in the "Ex Do not use s	or print, of mining claims of mining claims or on this form, a credits calculate res" section may (pend, Day, Cr." hailed areas below	ttach a list. Id in the be entered Columns,
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Dave Mullen,	Geo Technical report)	1025 1	oclio S					
edits Requested per Each (ims Traversed			3B 2M3	
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Complete reverse side and enter sotal(s) here	- Electromagnetic			876216	K		876246	v
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alculation of Expanditure Dav	s Credits			876231				.
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Total Days Credits may be a choice. Enter number of day				For Office Use	Only	11	1	
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February 17, 1987

Your File:87-8 Our File:2.9711

2.9711

Mining Recorder Ministry of Northern Development and Mines Court House P.O. Box 3000 Sioux Lookout, Ontario POV 2T0

Dear Sir:

RE: Notice of Intent dated January 30, 1987 Geological Survey on Mining Claims PA 876204, et al, in the Solitude Lake Area

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

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J.C. Smith, A/Hanager Mining Lands Section Mineral Development and Lands Branch Mines and Minerals Division

Whitney Block, Room 6610 Queen's Park Toronto, Ontario M7A 1W3

Telephone: (416) 965-4888 DK/mc cc: Umex Inc 1935 Leslie Street Don Mills, Ontario M3B 2M3 Attention: David Unger Resident Geologist Sioux Lookout, Ontario

Dave Mullen c/o Umex Inc 1935 Leslie Street Don Mills, Ontario M3B 2N3

Nr. G.H. Ferguson Nining & Lands Commissioner Toronto, Ontario

Intario

Ministry of Northern Development and Mines

> Notice of Intent for Technical Reports January 30, 1987 2.9711/87-8

2.9711

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on the record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

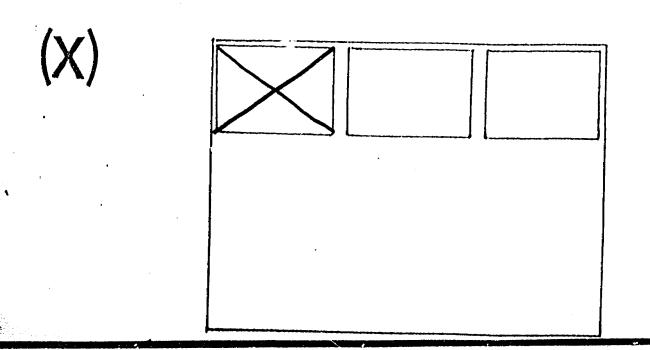
If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

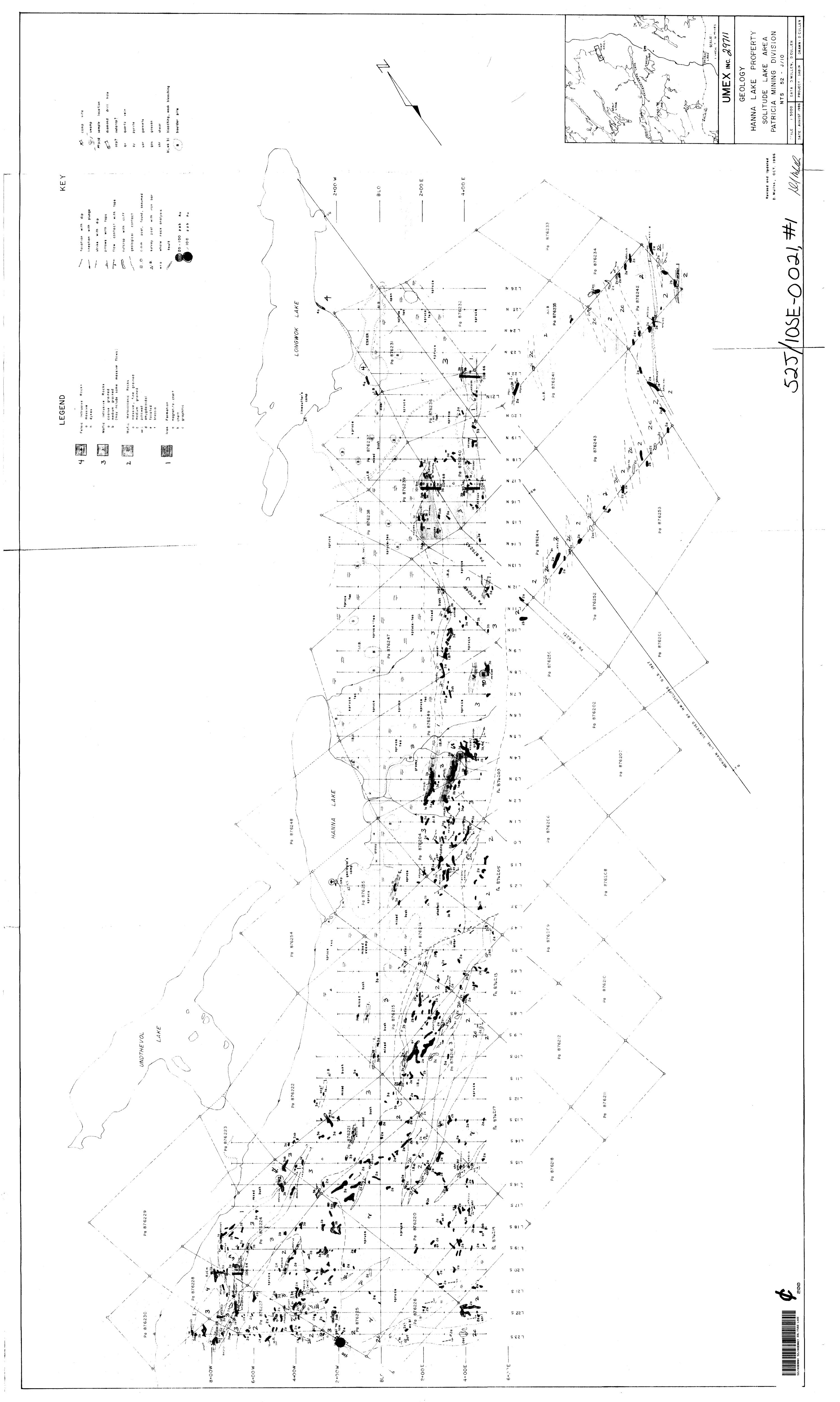
If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted directly to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.



525/10SE-0021 == 1

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE





1 Annual Annual