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Halliday Imp.

ESSEX MINERALS COMPANY

ENGLISH TOWNSHIP PROJECT

Diamond Drilling Report

by

W. Thompson

1979



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English Township Project

Diamond Drilling Report By W. Thompson 1979

During the period between January and April, eight diamond drill holes were drilled in three different townships, and on four different claim blocks. The results of this diamond drilling program are partially inconclusive because the drilling company was unable to intersect the conductive zone on one of the claim blocks (Radio Lake Block).

The last hole (79-8) intersected several graphitic conductive zones, and some encouraging sulphide (pyrite) mineralization, as well as some sporadic sphalerite blebs. Assay values, however, indicate only sporadic Cu-Zn anomalies associated with felsic dikes. Of the eight targets drilled, only one (Radio Lake) is of further interest as it is as yet untested. The other seven EM conductor targets have been explained by drill intersections of conductive graphitic tuffs.

GEOPHYSICS

The diamond drilling was guided largely by the results of Max Min II EM surveys that were done by W.G. Wahl Ltd and Geoex Ltd. To a lesser degree, geology was used, but due to the limited outcrop in the area, it could not really be utilized to its fullest extent.

Geophysical recommendations that were followed up were by W.G. Wahl Ltd and I.G. Park of Park and Bowdidge. The recommendations and details of the geophysical conclusions are contained in the W.G. Wahl report written for Essex Minerals Company on October 19, 1977, and the I.G. Park report that was written on October 25, 1978.

RESULTS AND RECOMMENDATIONS

Seven diamond drill holes intersected predicted conductive zones. These proved to be graphitic tuffs.

Two of the drill holes intersected significant mineralization; these were the 79-2 on Radio Lake and 79-8 on the Hydro block.

Grassy River

DDH 79-1

Intersected a graphitic zone with framboidal pyrite from 341-365 feet. This zone was in intermediate to acid brecciated zones. No further work is recommended on this conductive zone.

Radio Lake

DDH 79-2 to 79-5

79-2 intersected a pyrite zone that appears to be a flanking pod to the main conductor. Assays from this massive pyrite zone were uncharacteristically high for pyrite. Usually, pyrite in this region does not carry any significant values.

DDH 79-3 to 79-5

These were all attempts to intersect the main conductor. All failed to reach their target depth due to ground conditions.

It is recommended that this conductor be drilled from line 36+00 E, drilling north with a steep hole, or from line 28+00 E, where the conductor is still strong. To the best of the author's knowledge, this conductor has never been tested and has a potential as high as any of the best in the area.

Wahl Block V

DDH 79-6

This drill hole intersected four graphitic bands in dacitic tuffs. No further work is recommended in this area.

Wahl Block IV

DDH 79-7

This drill hole intersected three graphitic zones in felsic and dacitic tuffs. No further work is recommended in this area.

Hydro Block

DDH 79-8

This drill hole was a very encouraging hole in that it intersected several small patches of green carbonate along with graphitic conductors and a zone of pyrite (in what would be called a flow ore horizon??) There were also some fairly large blebs of sphalerite, but these were isolated. Nevertheless, they are interesting. Towards the bottom of this drill hole, a zone of carbonated rock was intersected. Assay results are disappointing however; no relevant anomalies were encountered.

CONCLUSIONS

The conductive zone on the Radio Lake Block warrants drill testing, possibly by a vertical drill hole. All other targets have been satisfactorily explained.

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DRILL HOLE LOCATION SUMMARY

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TOWNSHIP	LOCATION	DDH #	LATITUDE	LONGITUDE	DIP	DEPTH
•		•				
Halliday	Grassy River	79-1	13 + 80N	8 + 00E	-45 ⁰ S	4 09 feet
Halliday	Radio Lake	79-2	23 + 20S	36 + 00E	-45 ⁰ S	160 feet -
Halliday	Radio Lake	79-3	22 + 00S	36 + 00E	-45 ⁰ S	332 feet —
Halliday	Radio Lake	79-4	22 + 10S	36 + 00E	-45 ⁰ S	، ــــــــــــــــــــــــــــــــــــ
Halliday	Radio Lake	79-5	22 + 30S	36 + 00E	-45 ⁰ S	160 feet -
Semple	Block V	79-6	11 + 60S	36 + 00E	-45 ⁰ S	330 feet
Semple	Block IV	79-7	10 + 00S	12 + 00W	-45 ⁰ S	4 09 feet
Hutt	Hydro Block	79-8	13 + OON	52 + 00W	-45 ⁰ S	643 feet
						2580'

Length: Dip: Dip Tests: Core Size: Property:	409 feet -50 ⁰ BQ Grassy Ri	ver	Purpose: Latitude: Longitude: Azimuth: Logged By:	To test EM conductive zones 13 + 80N 8 + 00E Grid South W. Thompson
FROM	<u>T0</u>	COMMENTS		
0	190	Overburde	en	
190	192.5	ments flo	bating in the size from 3 m	: Dark grey with lighter frag- dark groundmass. The fragments m to 4 cm and they, too, are
192.5	287.7	that has ments. I cut rando have been carbonate interbedo pyrite be the core 264 feet Bedding	been breccia Dominantly li omly by carbo n slightly sh e veins. Thi ded layers of eds and disse is badly bro is another b	yolitic to rhyodacitic fragmental ted with rounded to angular frag- ght grey in colour. This unit is nate stringers. These stringers eared and cut again by hairline s unit has small sections or the above tuff breccia. Minor minated pyrite occur throughout ken down to 219 feet. At 262- roken up section with vuggy core. possible interlayering contacts 45° CA.
287.5	341.0	except th slightly 4 mm acro more comm	hat it is mor limonitic se oss. In this mon. Carbona	Much like the above section e pyritiferous and has vuggy, ctions. Particles are about section, blebs of pyrite are te veins are not as abundant, the core at about 45° CA.
341.0 _.	365	pyritic g scattered	graphitic sec	ite Section: Typical sedimentary tion. Common to the Abitibi with nd quartz veins. This unit is the et zone.
365	409	Rhyolite bands and	Breccia: Li d blebs to 3%	ght grey competent unit with pyrite.
409		End of He	ole	

Length:	160 feet -45 ⁰ (Grid)	Purpose:	To test EM conductive zones
Dip:	-45 ⁰ (Grid)	Latitude:	23 + 205
Dip Tests:		Longitude:	36 + OOE
Core Size:	BQ	Azimuth:	Grid South
Property:	Radio Lake	Logged By:	W. Thompson

- FROM TO COMMENTS
- 0 116 Overburden

116 122 No core recovered.

122 160 <u>Massive Pyrite</u>: Hole lost at 160 feet. Massive vuggy, brecciated pyritic section. Only 18 feet of core was recovered: from 122 feet to 160 feet. Much of the recovery included cuttings taken from the sludge.

160

End of Hole

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Length:	332_feet	Purpose:	To test EM conductive zones
Dip:	-45 ⁰	Latitude:	22 + 00S
Dip Tests:		Longitude:	36 + OOE
Core Size:	BQ	Azimuth:	Grid South
Property:	Radio Lake	Logged By:	W. Thompson

- FROM TO COMMENTS
- 0 50 Overburden

50 80 No core recovered. Tri-coned through bad ground.

80 332 <u>Porphyritic Andesite</u>: Fine-grained, gray-green, massive feldspar porphyritic andesite. Feldspar phenocrysts are light buff-cream.

80' - 85': Only 3 feet of core was recovered. The core is badly sheared and fractured. The fractures are from 40 to 60° to CA. The fractures occur between 110 feet and 203 feet. Fairly competent massive porphyritic andesite.

203' - 332': Brecciated highly sericited, kaolinized badly broken andesite. Some of the fractures have a black filling in them that is not conductive. Disseminated pyrite is common throughout the core to $\frac{1}{2}$.

332

End of Hole.

This hole had to be cemented twice due to caving ground. It was cemented at 190 feet and again at 332 feet. The hole was finally lost at 275 feet due to sanding in of the rods while trying to drill out the cement.

Withowm

Length: 137 feet Purpose: To test EM conductive zones Dip: -450 Latitude 22 + 105Dip Tests: Longitude: 36 + 00EGrid South Core Size: BQ Azimuth: Radio Lake Property: Logged By: W. Thompson

FROM TO COMMENTS

30

137

Tri-cone hole collecting chips

0

<u>Overburden</u>

30

Porphyritic Andesite: Buff gray-green chips.

The tri-cones broke off in the hole. All attempts to recover the tri-cones failed.

Methods used: (1) Tried to drill through the tricones

- with a button bit failed.
 (2) Tried to drill with diamond bits -
- failed.
- (3) Tried blasting them aside failed.

(4) Tried using a junk basket - failed.

The hole kept sanding in. Every time the rods were pulled, 10 to 30 feet of sand filled the bottom of the hole.

Hole abandoned at 137 feet.

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Length: Dip: Dip Tests: Core Size: Property:	160 feet -45 ⁰ BQ Radio La	Latitude: 22 + 40S Longitude: 36 + 00E Azimuth: Grid South
FROM	<u>T0</u>	COMMENTS
0	75	Overburden.
75	121	Porphyritic Andesite: Buff green-gray feldspar porphyritic andesite. Fracturing from 35°-45° to the CA. Fractures filled with quartz-carbonate. Pyrite occurs throughout the core as fine cubes and is disseminated to ½%.
		The rock is highly altered to kaolin and sericite. Epidote is altered to chlorite.
121	160	No core from 121 feet. Tri-cone samples appeared to be the same rocks but more altered with depth.
160		End of Hole.

The hole was lost due to caving and sanding in.

WA Thompson.

Length: Dip: Dip Tests: Core Size: Property:	330 feet -45 ⁰ BQ Wahl Blo	Latitude: 11 + 60S Longitude: 36 + 00E Azimuth: Grid South
FROM	<u>T0</u>	COMMENTS
0	102	Overburden.
102	126	Dacite: Grey-green, massive, fractured with pyrite blebs on the fractures.
126	180	Dacite: Amygdaloidal fragments in a tuffaceous matrix. Fractures are carbonate rich.
		177'-180': Carbonate-rich fractures. At 135 feet, bedding is at 45 ⁰ to the CA.
180	205	Rhyodacite: Grey-green, massive, cherty, flow and interbedded tuff, locally autobrecciated.
205	205.5	Graphite
205.5	207	Black Chert: Sediment. Bedding is at 70 ⁰ to the CA.
207	231	Andesite: Grey, massive, felted texture. Tremolitic?
231	237	Graphite-Chert: Black bedded sequence that is silici- fied. Graphitic tuff with framboidal bands and blebs of pyrite. The CA angle is 45°.
237	291	Dacite: Green-grey massive dacite that is silicified.
291	291.5	<u>Graphite Chert</u> : With CA at 45 ⁰ .
291.5	292.5	Dacite
292.5	294	Graphite and Bedded Chert: With framboidal pyrite.
294	330	Dacite Andesite: Grey-green. Increasingly silicified and fractured to end of hole. Sericitic fractures are irregular.
330		End of Hole.

Length: Dip: Dip Tests: Core Size:	409 feet -45 ⁰ BQ		Purpose: Latitude: Longitude: Azimuth:		nes
Property:	Wahl Bloc	k IV		P.M. Vanderspuy	
FROM	<u>T0</u>	COMMENTS			
0	66	Overburde	<u>n</u> .		
66	176	$\overline{CA} = 45^{\circ}$. quartz ve	Indistinct ins and occa	lapilli tuff. Poorly lam ly bedded. Occasional sp sional pyrite blebs. Bet nblende diorite dike (pyr	oradic ween
176		Quartz Se	ricitic Vein	ing With Pyrite	
176	220	creasingl	y coarse gra	Coarse grained, becomin ined with depth of hole. te crystals.	
220	258	Felsic Tu slumping.	<u>ff:</u> Very fi CA = 40 ⁰ a	ne grained with soft sedi t 237 feet.	ment
				with layers of felsic tu Locally silicified. CA =	
258	273	Dacitic T	<u>uff</u> : Massiv	e, grey.	
273	274.5	Graphitic	Tuff: Sili	cified	
274.5	283	<u>Dacite Tu</u> pyrite.	<u>ff</u> : Grey-gr	een, fine-grained with bl	ebs of
283	284	Graphitic	<u>Tuff</u> : Sili	cified with bedded pyrite	•
284	310	<u>Dacitic T</u>	<u>uff</u> : With o	ccasional quartz veins.	
310	323	<u>Graphitic</u>	Tuff: Becc	ming lapilli tuff (daciti	c). CA at 70 ⁰ .
323	355	Dacitic T dacitic T	uff: Finely apilli tuff.	bedded tuff (2 feet) gra	ding to
355	409	<u>Dacite Tu</u> massive.	<u>ff</u> : Finely	laminated sericitic tuff	becoming
409		End of Ho	le.		

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Length: Dip: Dip Tests: Core Size: Property:	643 feet -45 ⁰ BQ Hydro Blo	Purpose: To test EM conductive zones Latitude: 13 + OON Longitude: 52 + OOW Azimuth: Grid South Logged By: W. Thompson
FROM	<u>T0</u>	COMMENTS
0	72	Overburden
72	122	Andesite: Gray-green tuff, finely laminated. Core axis angles are 45° at 88'. Pyrite, chalcopyrite and pyrrhotite (?) are found in the planes of the tuff bedding. Total sulphides might amount to 3%.
122	157	Andesite: As above, but more coarse, larger clasts. Increasing bed thickness. Sporadic quartz veining.
157	165	<u>Graphitic Tuff</u> : With framboidal pyrite interbedded with sericitic tuff. Graphite bands range in thick- ness from 6 to 18 inches. CA angle = 45 ⁰ .
165	169	Dacitic Lapilli Tuff: With abundant sulphides in the bedding planes to 20% pyrite.
169	189	Dacitic Tuff: Chloritic, sericitic, with occasional pyrite cubes. There is alos some liminitic staining at 187-189'.
189	225	<u>Graphitic Tuff</u> : With pyrite. Core axis angles = 45 ⁰ .
225	235	Dacitic Tuff: Slump structured. Well laminated. CA angles = 45° . Sulphides 2-5%. Pyrite in blebs to $\frac{1}{2}$ ".
235	252	Dacite: Buff-green, well banded, chloritic, sericitic.
252	279	Dacite: As above, but variably banded with some thick ash beds (?) interlayered with lapilli tuff, thinly laminated beds.
279	279.5	Graphitic Tuff.
279.5	280.5	Dacitic Tuff: As above (252-279).

FROM	<u>T0</u>	COMMENTS
280.5	281	Graphitic Tuff.
281	283	Dacite: Fine-grained, gray-brown tuff.
283	284.8	Graphitic Tuff: With quartz veins.
284.8	287	Dacitic Tuff: Pyritic.
287	287.5	Quartz Vein.
287.5	302	Dacitic Tuff: There is 6" of graphite at 293 feet, and again at 297 feet.
302	307	Graphitic Tuff:
		Core axis angles:
		272' 45° 293' 35° 296' 20° 303' 80° 307' 80°
307	310	Dacitic Tuff: With 2" quartz veins.
310	311	Graphitic Breccia: With quartz veins.
311	313	Dacitic Tuff: Pyritic at 313'. Quartz-pyrite veins occur with possible green carbonate: fuchsite (?).
313	315	Feldspar Porphyry Dike: Grey, silicious.
315	320	Dacitic Tuff: With quartz veins and green carbonate.
320	326	Graphitic Tuff: With framboidal pyrite.
326	329	Pyrite Zone: 60-70% pyrite. Fine grained tuffs, with bedded pyrite ("flow ore"). Core angles are 45° to CA.
329	342	Dacitic Tuff: With bedded pyrite and graphite.
342	406	Mixed Tuff: Silicified, spinifex-textured pebbles. Chloritic, honey sphalerite crystals at 378 feet.

ESSEX MINERALS COMPANY D.D.H. 79-8 Page 3.

FROM	<u>T0</u>	COMMENTS
		Core axis angles: $320' 45^{\circ}$ $330' 45^{\circ}$ $350' 50^{\circ}$ $368' 30^{\circ}$ $397' 30^{\circ}$ $410' 45^{\circ}$ $420' 45^{\circ}$ $450' 60^{\circ}$
406	467	<u>Graphitic Tuff</u> : With interbedded tuff-graphite zones. Dikes occur at 440 to 445 feet and at 461 to 465 feet. The dikes are felsic. Core axis angles are 45°.
467	480	Dacite Tuff: Sericitic, chloritic, bedded pyrite to 10-15%. Partings to 1", averaging ½". Core axis angles are 60°.
480	529	Graphitic Tuff and Dacite Tuff: Interbedded, graphitic zones from 6" to 3 feet. Pyrite cubes and framboids to less than 5%. CA angles to 55°.
529	643	<u>Carbonatized Rock</u> : Possibly ultramafic, quartz- carbonate-talc-chlorite rock. Seems to be a layered ultramafic tuff originally (?). Core axis angles to layering (?) 50 ⁰ .
		Diorite Dike: 473-476.
		<u>Graphite:</u> at 613 and 631. Each zone is about 6" thick.
643		End of Hole.

D.D.H. 79-1

Sample	Footage		Assay	Assays in PPM			
	From	То	Au	Ag	Cu	Pb	Zn
9603	295	300	Nil	Nil	42	42	225
9604	300	305	Nil	NIT	59	27	460
9605	305	310	Nil.	0.3	50	28	670
9606	310	315	Nil	0.2	43	38	745
9607	315	320	Ni1	0.2	36	· 4 0	88
9608	320	325	Nil	0.2	38	32	72
9609	325	330	Nil	Nil	32	26	80
9610	330	335	Nil	0.2	41	40	74
9611	335	341	Ni1	0.5	90	43	~210
9612	341	346	0.03	0.6	940	80	5400
9613	346	355	0.03	0.5	220	92	3900
9614	355	360	0.03	0.5	143	73	1320
9615	360	365	0.03	0.6	89	75	250
9616	365	369	Nil	Nil	50	32	68

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D.D.H. 79-2

Sample	Footage		Assays in PPM				
	From	То	Au	Ag	Cu	РЬ	Zn
9601	122	140	0.03	0.8	90	230	70
9602	140	160	Nil	Nil	30	86	30

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D.D.H. 79-6

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Sample	Footage		Assays in PPM			·····	
	From	То	Au	Ag	Cu	Pb	Zn
9617	177	180	Ni]	Nil	111	41	88
9618	205	207	Nil	0.2	10 7	29	810
9619	231	237	0.03	0.7	422	72	1640
9620	291	291.5	Nil	Nil	81	20	011
9621	292.5	294	Nil	0.5	219	23	540

D.D.H. 79-7

Sample	Footage		Assays in PPM					
	From	To	Au	Ag	Cu	РЬ	Zn	
9675	236	241	Nil	0.4	110	28	42	
9676	250	256	Nil	0.3	90	40	140	
9677	272	274	Nil	0.2	118	38	120	
9678	282	284	Nil	0.3	111	59	143	
9679	310	312	Nil	0.2	120	17	33	

D.D.H. 79-8

Sample	Footage		Assays in PPM					
	From	То	Au	Ag	Cu	РЬ	Zn	
9622	76.5	77.5	Nil	Ni]	108	25	170	
9623	83.5	84.5	Nil	Nil	140	22	87	
9624	87	91	Nil	Nil	132	50	169	
9625	97	99	Nil	Nil	68	15	77	
9626	127	129	Nil	0.2	451	26	168	
9627	141	150	Nil	0.4	440	30	218	
9628	156	165	0.03	0.6	240	41	128	
9629	165	169	0.03	0.2	115	31	101	
9630	171	177	0.03	0.2	40	20	68	
9631	198	202	0.03	0.6	390	52	2610	
9632	202	207	0.03	1.0	469	69	235	
9633	207	211	0.03	1.2	619	7.9	348	
9634	211	217	0.03	1.1	570	80	352	
9635	217	225	0.03	1.0	268	68	103	
9636	225	235	Nil	Nil	49	29	13	
9637	250	255	Nil	Nil	24	20	7	
9638	279	283	0.06	0.6	328	56	40	
9639	283	288	Nil	0.3	253	28	82	
9640	301	307	0.03	0.5	430	32	135	
9641	307	312	0.03	0.2	142	24	240	
9642	312	315	Nil	0.2	100	17	75	
9643	315	320	Nil	0.2	140	20	66	
9644	320	325	0.07	1.2	366	72	120	
9645	325	329	0.05	1.0	115	50	14	
9646	329	337	Ni]	0.2	141	18	59	
9647	337	344	0.04	0.9	518	41	920	
9648	344	350	Nil	Nil	71	22	39	
9649	350	355	Nil	0.2	78	15	55	
9650	355	360	Nil	0.2	60	19	102	

D.D.H. 79-8 Page 2

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	<u>From</u> 360	То	Au	Ag	Cu	DL	-
0053	360				cu	Pb	Zn
9651		365	Nil	0.2	123	16	900
9652	365	370	Nil	Nil	38	30	39
9653	370	375	Nil	0.2	103	19	34
9654	375	380	Nil	Nil	33	22	150
9655	380	385	Nil	0.2	72	14	59
9656	385	389	Ni1	Nil	58	29	108
9657	406	401	0.03	0.8	951	72	38
9658	414	418	0.02	0.4	280	40	860
9659	435	437	0.03	0.9	1025	69	430
9669	438	440	0.10	1.9	2325	85	1045
9661	457	461	0.05	1.3	1016	47	512
9662	468	472	Nil	Nil	42	35	14
9663	472	478	0.03	0.6	63	37	6
9664	478	490	Nil	0.2	223	40	43
9665	490	497	Nil	0.4	358	49	45
9666	497	507	Ni1	Nil	110	32	12
9667	519	524	Nil	0.3	390	48	237
9668	534	539	Ni1	NIT	193	35	31
9669	554	559	Nil	Nil	30	58	5
9670	577	584	Ni1	0.2	51	50	7
9671	584	589	Nil	Nil	62	51	6
9672	595	605	Nil	Nil	53	53	5
9673	613	623	Ni]	Nil	50	52	6
9674	636	643	Nil	Nil	52	55	6

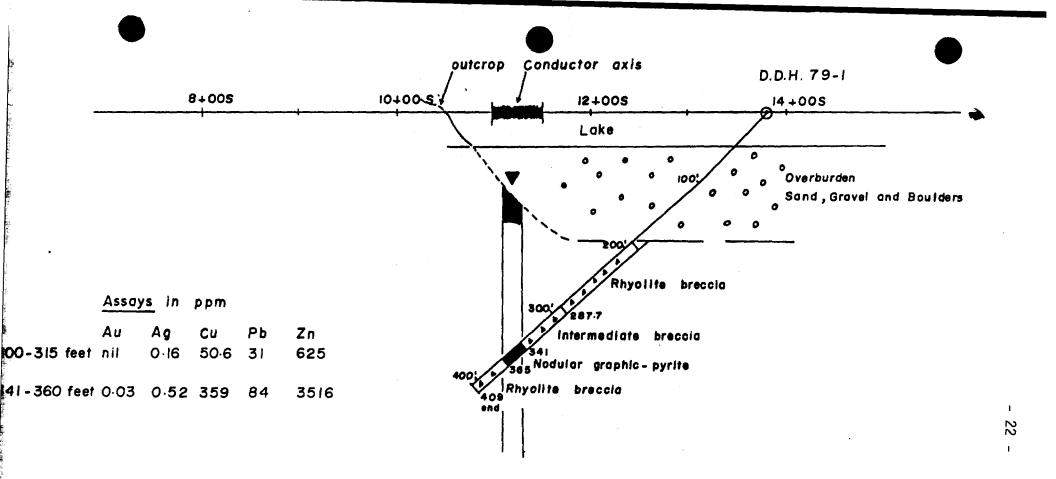
OVERBURDEN TESTING

RADIO LAKE

(Drilled by R. Collins & J. Larche, April, 1979)

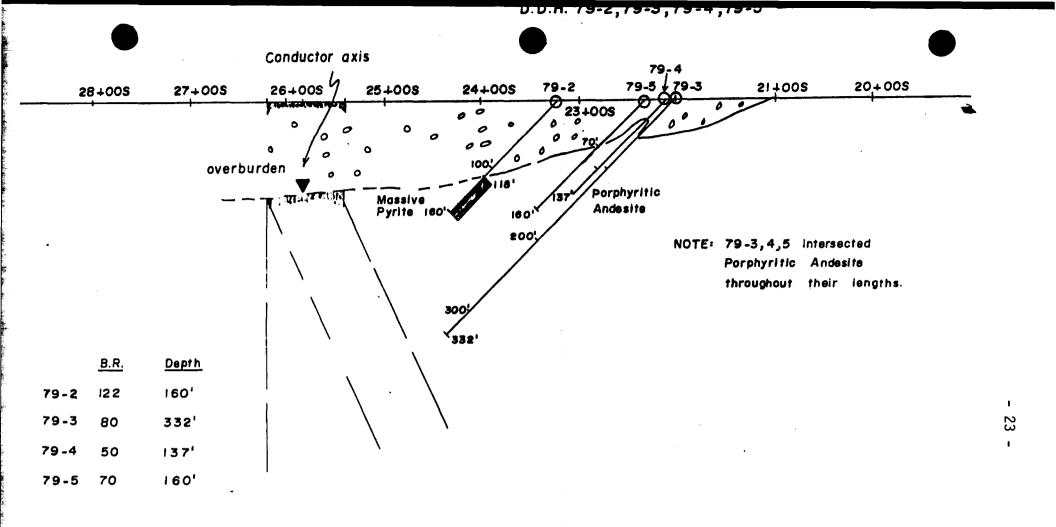
C 14808	R-5	43'	Over the conductor line 36E
C 14751	R-6	41'	Over the conductor line 36E
C 14812	40 + 00E	43'	22 + 60 South
C 14815	40 + 00E	43'	22 + 75 South
C 14816	40 + 00E	35'	22 + 75 South
C 14810	24 + 00E	43'	27 + 75 South
C 14811	24 + 00E	38'	28 + 00 South
C 14814	24 + 00E	45'	28 + 25 South

These samples were sent in for assay in the hope that they might indicate something. The did not reach bedrock. One sample, C 14815, returned an anomalous assay of 44 ppm Au, 30 ppm Ag, 20 ppm Cu, 18 ppm Pb, 81 ppm Zn. This is enigmatic, as the nature and origin of the sample is not known, being derived from a glacial gravel bed, approximately 50 feet vertically above bedrock.

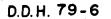


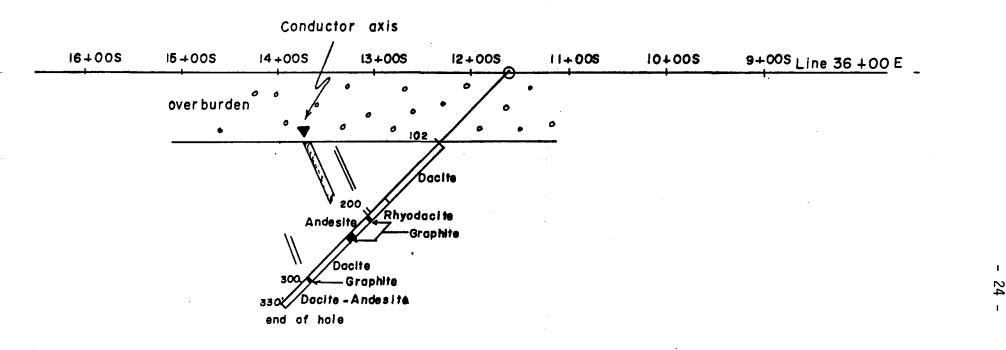
Allerston Option Grassy River

Line 8+00E 13+80 N Dip - 45°s Scale: 1" = 100' at 200' } dip = 41°



Allerston Option Radio Lake D.D.H. 79-2,79-3,79-4,79-5 Line 36+00E Scale: 1"=100' WAMPAN



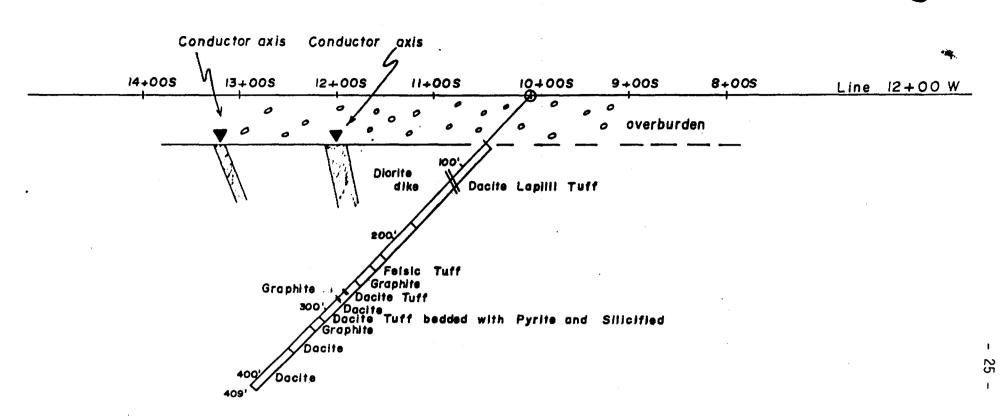


WAHL Block I

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D.D.H. 79-6 Line 11+605, 36+00E Drilled Grid South at -45° Scale : 1" = 100'

D.D.H. 79 -7



ESSEX MINERALS COMPANY

WAHL Block IV

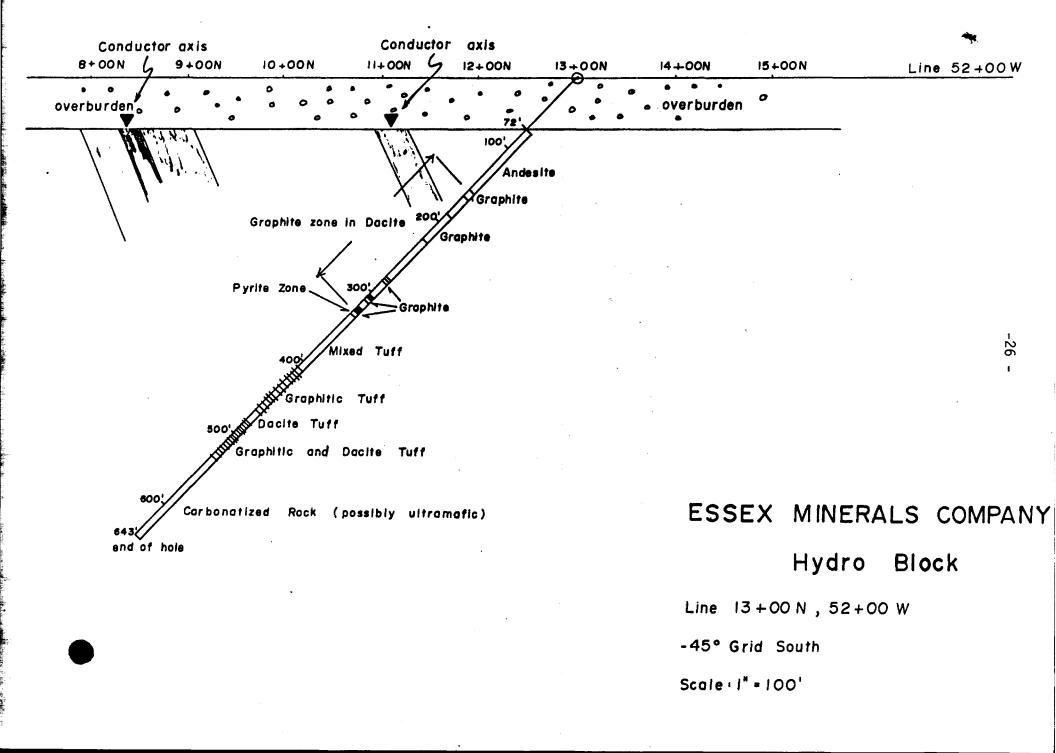
D. D.H. 79-7

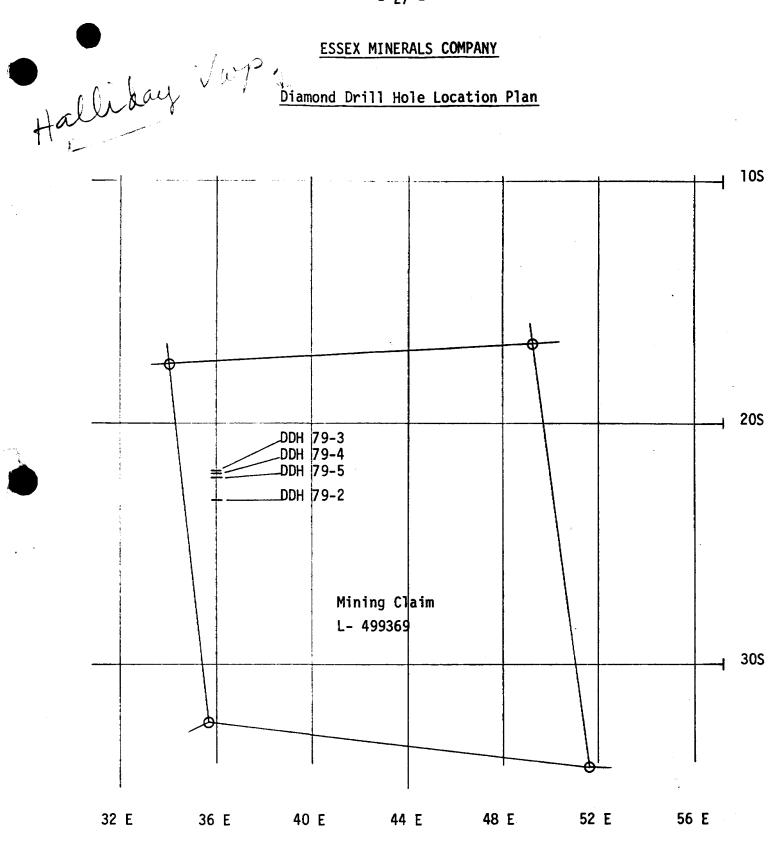
Line 10+005 , 12+00 N

-45° Grid South

Scale: |" = 100'

D.D.H. 79-8





Scale 1" = 400'

WHThowar