DIAMOND DRILLING

010

TOWNSHIP: Moody

REPORT NO.: 21

WORK PERFORMED BY: Utah Mines Ltd.

CLAIM NO.	HOLE NO.	FOOTAGE	DATE	NOTE
L 610471-72	JL-85-B1	887'	Jan/85	(1)
L 610471	JL-84-B2	561'	Dec/84	(2)
L 610469	JL-85-B3	819'	Jan/85	(3)
		2267'		

NOTES:
(1) #85-85
(2) #86-85
(3) #63-85

HOLE NO. JL-85-B1 | PROJECT: JIM'S LAKE | PAGE NO: 1 OF 11

CASING COLLAR ELEV.: 4' a.g. | GROUND ELEV.: | DATE STARTED: JANUARY 9, 1985 | REF. TO CLAIM CORNER:

COORDINATES: LS2E, 32+85N (NORTH GRID) N. E. | DATE FINISHED: JANUARY 14, 1985 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIVOR

COMMENTS: DIP TESTS (CORRECTED): @ 300', 56°; @ 500', 51°; @ 700', 51°; @ 887', 46°
- N.B. LOST 40' BW CASING DOWN HOLE (∴ NO PLASTIC PIPE CASING)

AVE CORE REC'Y / HOLE 100%

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY (SEE ATTATCHED TYPED NOTES)	MAGNETIC SUS. (LOG 20 SCALE)	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
280'								0'-290' OVERBURDEN								
290'	WEAK	WEAK	STR ↓					sch. @ 60° to c.a.	0.1		290'			290'		
						Py		- qtz-calc vn - wk remnant xlline tex. - hematized, vuggy	290'-296.5' CARBONATIZED ANDESITE 0.1 0.1	0.5%		100%	BQ	296.5'	100%	
300'	MODERATE TO STRONG ↓		VERY STRONG-CALC. ↓			Py		- sch. @ 60° - locally intensely carb^{te} - hem halos on faces - carb vn ± 5% diss mte, 1% Py - gray vfg carb (calc) 'veins' ∥ sch. ± 10% vfg diss mte & 10% vfg diss Py - qc vn - strongly chl^{te} zone	296.5'-328.5' CARBONATIZED ANDESITE TO BASALT 0 0 → 1.5		297'			300'	100%	
						Py					303'	100%		303'	100%	
310'						Py		- carb. bands ± 5% mte, 5% Py - carb-Py vein	0	2%				308'	100%	
						Py		- gray grandr calc vns ± 5% Py - calc vn ± 5% mte, 2% Py - locally strongly chloritized	0 0		314'	100%		314'	100%	
320'								- mag chl alt. bands lends fragmental appearance to rock			317'	100%		317'	100%	
						Py		- calcite bands - calc vn ± 5% mte, 2% Py	0	1%		100%			100%	
					K			- tuffaceous interbed ± 2% mte - thin hem rich silicified bands	0 → 1.9 → 3.4		327'			326'		
330'	MODERATE		MODERATE	WK. SILIC.		Cpy		calc (calc) blebs (tuff frags?) to 25% 328.5'-344' CARBONATIZED BASALT TUFF	0.1					328.5'	100%	
								- wkly silicified zones	0.1			100%		330'	100%	
						Py		- calc vns	0.1	0.25%				335'		
340'									0.2		337' To 347'	100%				

HOLE NO. JL-85-B1
CASING COLLAR ELEV.: 4' a.g. GROUND ELEV.:
COORDINATES: L52E, 32+85 N N. E.
INCLINATION: -55° BEARING: 360°

PROJECT: JIM'S LAKE
DATE STARTED: JAN. 09, 85
DATE FINISHED: JAN. 14, 85
TOTAL DEPTH: 887'

REF. TO CLAIM CORNER:
SCALE: 1" = 10'
LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	SERICITE	CARBONATE	OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE — MAG. SUS. (LOG 20 SCALE) 0 0.5 1.0 5 10	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
340'	MOD		MOD	WK SIL		Cpy		- basalt tuff	0.2				BQ			
								- 1% vfg diss mte		0.25%						
	MODERATE		MODERATE TO STRONG			Cpy		- calc vns	0.2, 0.8			100%				
								344'-368' CARBONATIZED ANDESITE TO BASALT TUFF								
						Cpy		- small calc ± minor qtz 'frags' elongate ∥ folz to 10% rock			347'					
350'									0.3			100%				
								- minor diss mte. to 2-3% in places								
						Py		- hem halo around calc-mte filled frac.	1.1	0.25%	357'					
360'						Py			0.4							
								- v. frag rich interbed				100%		363'		
								frags coarsen to 368', locally appears v. clastic (wacke)	0.2		367'				100%	
	MOD TO STR		STRONG	SIL WK		Py, Cpy		- frags to ½" of bleached carb + and ± gray hard carb in chl? and gndmass.	0.8					368'		
370'								**368'-374.7' ALTERED, AGGLOMERATIC ANDESITE (OR SLUMPED, BRECCIATED ANDESITE TUFF)**	0.8						100%	
								- frags ± mte, sulph.		1%		100%		372'		
						Py		- hard gray carb interbeds ± 10% vfg mte.	0.4					374.7'	100%	
	WEAK	FEW THIN ZONES	MODERATE					**374.7'-405' CARBONATIZED ANDESITE TO BASALT TUFF**								
								calc, fspar tuff frags	0.2							
								- locally carb-qtz 'frags' to 30%			377'					
380'						Py			0.2					381'		
								- aphanitic phase.				100%				
						Py		- qtz frags (brecciated vein)	2.0						100%	
								} locally diss mte to 5%		0.5%	387'			386'		
														388'	100%	
390'	WEAK							- bd kinked, gen.	0.2							
								- chert interbeds or zone of intense silicification				100%		392'		
						Py		- gray carb rich, mte-Py rich interbeds							100%	
								- carb bed/vn ± 2% mte, minor Cpy-Py	2.1					395', 396'		
						Cpy		- mte-Py-Cpy bearing carb 'beds'			397'			398'	100%	
400'						Py			0.6		To 407'	100%				

HOLE NO. JL-86-B1 | PROJECT: JIM'S LAKE | PAGE NO: 3 OF 11

CASING COLLAR ELEV.: 4' a.g. | GROUND ELEV.: | DATE STARTED: JAN. 09. 85 | REF. TO CLAIM CORNER:

COORDINATES: L52E. 32+85 N N. E. | DATE FINISHED: JAN. 14. 85 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	SERICITE	CARBONATE	OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE — MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5 10	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
400'	WEAK	MOD	MOD			Py		- calc vns	0.6, 0.2, 0.2	0.5%		100%	BQ	405'		
	STR.	WK.	STR.			Py		- dolomitic interbeds ē large elong. frags to 25% & 25% gray hard calc-qtz-ser frags. in soft chloritic groundmass. - dolomitic interbeds. 405'-410' ALTERED, AGGLOMERATIC ANDESITE (OR SLUMPED BRECCIATED INTERBEDDED TUFFS)		1%	407'			410'	100%	
410'	WEAK TO MODERATE		MODERATE			cpy		- thin calc seams to 20%. 410'-434' CARBONATIZED ANDESITE TO BASALT TUFF	0.1			100%				
								- 10% small calc. fspar tuff frags	0.1		417'					
420'						Py		- qtz-calc vn	0.1	0.25%		100%				
								- bd locally kinked, slumped appearing	0.1							
						Py		- locally strongly frac. ē thin sil. alt halos - qtz-calc vns & thin carb-Py rich interbeds			427'			428'		
430'						Py		- qtz-calc vns.	0.1			100%		431'	100%	
	STRONG ALT. OF FERROMAGS	MODERATE	V. WEAK, PATCHY					- strong schistosity @ 45°-55°. 434'-512' SHEARED, ALTERED DIORITE (WITH ANDESITE (TUFF?) INTERBEDS) - qtz-calc-fspar vns - finer grained 'chill margin', locally moderately carbᴬ.	0.1, 0.1	TRACE	437'			435', 437'	100%	
440'						Py		- calc vn - and. tuff? interbeds	0.1			100%				
						Py		- pred mg ē 70% plag, 30% chl'd fmags - andesite tuff interbed - qc vn	0.1	TO 0.25%	447'					
450'						Py		- faint chl seams lend 'mottled' appearance to rock - andesite tuff interbed	0.1			100%				
								- qc vns	0.1		457'					
460'	↓	↓	↓					qtz-calc vn.	0.1		To 467'	100%	↓			

HOLE NO. JL-85-B1 | PROJECT: JIM'S LAKE | PAGE NO: 4 OF 11

CASING COLLAR ELEV.: 4 a.g. | GROUND ELEV.: | DATE STARTED: JAN. 09. 85 | REF. TO CLAIM CORNER:

COORDINATES: L52E, 32+85N N. E. | DATE FINISHED: JAN. 14. 85 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIVOR

ALTERATION: CHLORITE | SERICITE | CARBONATE | OTHER

STRONG ALT OF FERROMAGS — MODERATE ALT OF FSPARS — WEAK PATCHY — WEAK — V. WEAK — V. WEAK

FRACTURING | MINERAL | GEOLOGY

COMMENTS:

DESCRIPTIVE GEOLOGY

AVE CORE REC'Y / HOLE

MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5 10

% SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP. INT. | ESTIMATED

SECTION	DESCRIPTIVE GEOLOGY	MAG. SUS.	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.
460'	434 - 512' CONT. (SHEARED, ALTERED DIORITE)	0.1				BQ		
	- and tuff interbed				100%			
	- and. tuff interbed	0.1	TRACE TO	467'				
470'	- strongly schistose, xlline txt largely overprinted							
	- calc-fspar vn				100%			
	- calc-qtz vn	0.1						
	- and tuff interbeds							
	- very mottled appearing, ± xlline txt wkly overprinted by chl-ser-calc bands	0.1	0.25%	477'			477'	
	- qtz-calc vn							100%
480'	- and tuff interbed	0.1					481'	
	- qc vn				100%			
	- qc vns	0.1					486'	
	- strongly sheared, sch zone			487'				
							488'	100%
490'		0.1	0.5%		100%			
	- calc vn							
	- calcite veins, to 10% of rock							
	~ andesite interflow	0.1						
	} locally veg			497'			498'	
	and tuff interbed ± 3% Po-Py-Cpy							
500'		0.1					502'	100%
					100%			
	- strongly sheared, sch., xlline txt overprinted by chl-ser alt.	0.1	0.5%	507'				
	- vveg, locally ± 5% garnets.							
510'		0.1						
	512' - 529' ANDESITE TUFF							
	- diorite dykelets	0.1			100%			
		0	0.5%	517'				
	- qtz vns			To 527'	100%			
520'		0.1						

HOLE NO. JL-85-B1		PROJECT: JIM'S LAKE	PAGE NO: 5 OF 11
CASING COLLAR ELEV.: 4' a.g.	GROUND ELEV.:	DATE STARTED: JAN. 09. 85	REF. TO CLAIM CORNER:
COORDINATES: L52E. 32+85N N.	E.	DATE FINISHED: JAN. 14. 85	SCALE: 1" = 10'
INCLINATION: -55°	BEARING: 360°	TOTAL DEPTH: 887'	LOGGED BY: D. McIVOR

Column headings: SECTION | ALTERATION (CHLORITE, SERICITE, CARBONATE, OTHER) | FRACTURING | MINERAL | GEOLOGY | COMMENTS: / DESCRIPTIVE GEOLOGY | AVE CORE REC'Y / HOLE — MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5 10 | % SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP. INT. | ESTIMATED

Descriptive Geology

524 - 525.4 THINLY BEDDED, SILICIFIED AND TUFF OR ARGILLITE

525.4' - 540' V. STRONGLY ALTERED, SHEARED, DIORITE TO GABBRO

540' - 559.8' WEAKLY CARB^d ANDESITE TUFF (WITH DIORITE DYKELETS)

559.8' - 567.3 SHEARED, ALTERED DIORITE TO GABBRO

567.3' - 570.5' CARBONATIZED ANDESITE TUFF

570.5' - 572' STRONGLY ALT. AND ASH TUFF OR EPICLASTIC ARG. EQ.

572' - 581' DARK BROWN, THINLY BEDDED ALT. INT. ASH TUFF OR EPICLASTIC ARGILLACEOUS EQUIVALENT

Comments (by depth)

Section	Chlorite	Sericite	Carbonate	Other	Mineral	Comments
520'–524'	WK		WK	SIL	Py, Po	- ½" cherty silicified bands
524'–525.4'	NIL	MOD	NIL	STR SIL		
525.4'–540'	STRONG ALT FMAGS	V. WEAK ALT FMAGS	NIL-MOD / NIL	EPID. ALT OF PLAG	Po, Py	- fg chill margin - calc vn c 2% Py - Po - tr. Cpy - andesite interflow - qtz - carb vn - mg sheared diorite - chl bands - qtz-calc-epid vn
540'–559.8'	WEAK / WEAK		WEAK 5% DISS CALC		Py	- wkly fol @ 55° - 3" chl^z shear - chl-calc vn - fg diorite dykelet - fg diorite dykelet - diorite dykelet - strongly chl^z shear zone c 2% Py - mg diorite dykelet - carb-fspar vns.
559.8'–567.3'	STR. ALT. FM.	V. WEAK		EPID. ALT PL.	Py	- mg txt overprinted by sch & related chl-ser alt.
567.3'–570.5'	WK		MOD		Py	
570.5'–572'	V. STR	MOD	NIL			- v. thinly bedded v soft.
572'–580'	STRONG			BIO ?	Py	thinly bd, dark brown (bio rich?) avg or arg tuff - lutaceous app calc blebs to 10%. - calcite seams to 10% - qc vn

Mag. Sus. readings (by depth)

520': 0.1; 525': 0; 526': 0; 530': 0; 535': 0; 540': 0.1; 545': 0; 550': 0.1; 555': 0.1; 560': 0.1; 565': 0.1; 567': 0.1; 570': 0; 573': 0; 576': 0.1; 580': 0.1

Intervals

% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.	Estimated
0.5%		100%	BQ	521'–524	100%	
0.75%	527'			524–525.4	100%	.1 Zn
0.25%		100%		528'–532'	100%	
0.25%	537'					
	547'	100%				
0.25%	557'	100%		550'–555	100%	
TRACE	567'	100%				
TR						
TR		100%		572'–577'	100%	
TRACE	577'					
3%	To 587'	100%	↓	577'–581'	100%	

HOLE NO. JL-85-B1 | PROJECT: JIM'S LAKE | PAGE NO: 6 OF 11

CASING COLLAR ELEV.: 4' a.g. | GROUND ELEV.: | DATE STARTED: JAN. 09. 85 | REF. TO CLAIM CORNER:

COORDINATES: L52E. 32+85 N N. E. | DATE FINISHED: JAN. 14. 85 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	SERICITE	CARBONATE	OTHER	COMMENTS	DESCRIPTIVE GEOLOGY	MAG. SUS. (LOG 20 SCALE)	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
580' – 593.8'	STR / STRONG	WEAK	STRONG	Bio	- chl shear zone - calc rich interbeds - calc vn - calc vns - alternating ser-carb rich vs chl rich 'beds' c qc veining to 25%. ~ 2" qtz-calc 'vein' c 20% vfg diss Py-Po-Cpy	581' - 593.8' CHLORITIZED, CARBONATIZED ANDESITE TUFF	0.1, 0.1, 0.1, 0.1	3%, 1%, 3%	587'	100%, 100%	BQ	581'–591', 591'–593.8'	100%, 100%	
593.8' – 596.7'		WK	WK		30% fspar phenos in siliceous 'dacitic' groundmass	593.8' - 596.7' FELDSPAR PORPHYRY	0	0.5%	597'			593.8'–596.7'	100%	
596.7' – 603'	STRONG	MOD	STRONG	SIL	locally thin ser rich interbeds to 80% -calc vns locally mod. silicified	596.7' - 603' MINERALIZED CARBONATIZED ANDESITE TUFF	0.1, 0.1	3%		100%		596.7'–603'	100%	
603' – 606.8'		WK		WK. SIL.	- 40% fspar phenos in 'dacitic' groundmass.	603' - 606.8' FELDSPAR PORPHYRY		0.5%	607'			603'–606.8'	100%	
606.8' – 612.5'	MOD.	MOD.	STRONG		- calc-Po vein - calc-qtz 'beds' c 10% vfg Po - qtz c carb 'frags' to 5%.	606.8' - 612.5' CARBONATIZED ANDESITE TUFF	0	1%		100%		606.8'–609', 609'–612.5'	100%, 100%	
612.5' – 614.5'	STR	STR	STR		- thinly bd. interbedded calcite rich - sericite rich - chlorite rich argillites	612.5' - 614.5' INTERBEDDED ARGILLITES	0.1	3%, 1%				612.5'–614.5'	100%	
614.5' – 622'	STR / WEAK	STRONG	STRONG		40% dol-calc fragments in strongly sericitized grndmass qtz veins	614.5' - 622' SERICITIZED, CARBONATIZED DACITE LAPILLI TUFF	0.1, 0.1, 0.1, 0	2%	617'	100%		614.5'–622'	100%	
622' – 626.5'		WEAK		SIL HALOS ON FR.	- sil halo on frac. c 1% diss Py - sil halo on frac. c 2% diss Py	622' - 626.5' FELDSPAR PORPHYRY	0	0.5%	625'			622'–626.5'	100%	
626.5' – 633.2'	MOD.		STRONG		40% dol frags in sers grndmass -qtz vn - qtz vn	626.5' - 633.2' FELSIC TO INT. SERICITIZED LAPILLI TUFF TO AGGLOMERATE	0.1, 0.1, 0.1	1%		100%		626.5'–630', 630'–633.2'	100%, 100%	
633.2' – 636.7'	MOD		WK.	SIL. HALOS ON FR.	sil halos on fracs c ass 1% diss Py	633.2' - 636.7' SERICITIZED FELDSPAR PORPHYRY	0	0.25%	636'			633.2'–636.7'	100%	
636.7' – 640'	V STR		V STR		- 40-50% frags & interbeds dol in strongly sericitized grndmass ~ a few thin chert interbeds.	636.7' - 640.5' CARBONATIZED, SERICITIZED FEL. TO INT. LAPILLI TUFF OR EPICLASTIC (WACKE) EQUIVALENT.	0.1	1%	TO 647'	100%		636.7' TO 640.5'	100%	

HOLE NO. JL-85-81 | PROJECT: JIM'S LAKE
CASING COLLAR ELEV.: 4' a.g. | GROUND ELEV.: | DATE STARTED: JAN. 09. 85 | REF. TO CLAIM CORNER:
COORDINATES: L62E, 32+85N N. E. | DATE FINISHED: JAN. 14. 85 | SCALE: 1" = 10'
INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIVOR

DESCRIPTIVE GEOLOGY

640.5-665' INTERBEDDED, ALTERED (CARBONATIZED, SERICITIZED, CHLORITIZED) INTERMEDIATE LAPILLI TUFFS & AGGLOMERATES, OR REWORKED EPICLASTIC EQUIVALENTS (LITHIC WACKE & CONGLOMERATE)

- 10% small dol. frags in ser. grndmass
- qtz vn
- strongly chl^d zone
- locally qtz vning to 80% rock c 5% Py
- dol vn. c 10% vfg Py
- v. coarse. agglomeratic zone c dol. chert frags to 1/2" in strongly sericitized grndmass
- chloritized interbed
- 15% small carb frags in ser-chl grndmass.
- qtz-dol vn
- qtz vn
- becomes intensely sericitized.

665'-669.5' SHEARED. SERICITIZED QFP/PORPHYRITIC RHYOLITE sericitized, siliceous grndmass

- dk gray silicification halos
- calcite alt/replaced fspar phenox in
- sil. halo around qtz ff.

669'-672.5' ALTERED (SERICITIZED & CHLORITIZED) INTERMEDIATE ASH TUFF OR EQUIVALENT ARGILLITE.

- qc vns
- thin alternating ser-chl rich tuff/arg beds
- qc vns

672.5-677' ALTERED (SERICITIZED, CARBONATIZED) ANDESITE TUFF

- bd & wk sch @ 50°
- calc vn.

677'-682' CHLORITIZED, CARBONATIZED ANDESITE TUFF- LAPILLI TUFF

- calc-qtz-Py frags to 1/4" in and. grndmass
- qc vns

682'-685' SERICITIZED, CARBONATIZED INT. ASH TUFF OR EPICLASTIC ARGILLACEOUS EQUIVALENT

- qtz-calc vns
- alternating ser-carb rich 'beds'

686'-688' SERICITIZED, CARBONATIZED DACITE TO ANDESITE TUFF

- carb frags in ser^c grndmass

688'-695.5' SHEARED, CARBONATIZED, SERICITIZED ANDESITE

- strongly schistose, @ 55° to ca.
- fractures offset sch in places
- wk remnant fg xlline txt.

695.5'-712' WEAKLY CARBONATIZED ANDESITE

- locally strongly sch, chloritized.
- fspar phenocrysts

ALTERATION

Section	Chlorite	Sericite	Carbonate	Other
640'-665'	WK / STR / STR / WK / STR / MOD / WK / MOD / WK / WK	STR / STR / STR / MOD / V.STR / MOD / V.STR / V.STR	STR / STR / STR / MOD / STR / MOD / MOD / MOD	
665'-669.5'		STR	MOD	SIL. HALOS ON FRACS
669'-672.5'	STR	STR	WK	
672.5'-677'	MOD	STR	MOD.	
677'-682'	STR	INTENSE	STR	
682'-686'		V.STR.	V.STR.	
686'-688'	STR	STR	STR	
688'-695.5'		V. STRONG	V. STRONG	
695.5'-700'	WEAK		WEAK	

MAG. SUS. (LOG 20 SCALE): 0.1 throughout.

SULPHIDES / INTERVALS

% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int
1%				640.5'	100%
0.5%		100%	BQ	643.5'	100%
5%				644.5'	100%
10%	647'			646.5'	100%
1% / 5%					
0.5%		100%		652.5'	100%
1%				655'	100%
1%	657'			658'	
2%		100%		662'	100%
0.5%				665'	100%
0.5%	667'			669.5'	100%
0.5%		100%		672.5'	100%
0.25%	677'			677'	100%
1%		100%		682'	100%
0.5%				685'	100%
1%	687'			688'	100%
TRACE		100%		695.5'	100%
0.25%	697' TO 707'	100%	↓		

640' 650' 660' 670' 680' 690' 700'

HOLE NO. JL-85-B1

CASING COLLAR ELEV.: 4'a.g. GROUND ELEV.:

COORDINATES: L52E. 32+85N N. E.

INCLINATION: -55° BEARING: 360°

PROJECT: JIM'S LAKE

DATE STARTED: JAN. 09. 85

DATE FINISHED: JAN. 14. 85

TOTAL DEPTH: 887'

REF. TO CLAIM CORNER:

SCALE: 1" = 10'

LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	SERICITE	CARBONATE	OTHER	MINERAL	COMMENTS	DESCRIPTIVE GEOLOGY	MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
700' – 710'	WEAK		WEAK		Py	- calc vns - calc & ep. alt. fspar vn. calc vn. wkly sch @ 55° to c.a.	695.5' - 712' WKLY CARB^N ANDESITE	0 0 0	0.25%	707'	100%	BQ			
	V WK	STRONG	MOD.		Py	carb frags in sericitic grndmass	712' - 716.8' SERICITIZED, CARBONATIZED DACITE TO ANDESITE LAPILLI TUFF OR REWORKED EPICLASTIC EQUIVALENT (WACKE)	0.1 0.1	1%	717'	100%		712' – 716.8'	100%	
720'		STRONG	MOD.		Py		716.8' - 721.5' SERICITIZED, CARBONATIZED DACITE TO ANDESITE TUFF	0	0.6%				716.8' – 721.5'	100%	
		STRONG	MOD.		Po Py	agglomerate. ± 40% ser-dol alt. frags in sericitic grndmass - few thin carbonaceous interbeds	721.5' - 727' SERICITIZED, CARBONATIZED DACITE TO ANDESITE LAPILLI TUFF TO AGGLOMERATE. (OR EPICLASTIC EQUIVALENT)	0.1 0.1	2%	727'	100%		721.5' – 727'	100%	
730'	THIN SEAMS	STRONG	MOD TO STR.		Py Py	wk remnant fg xlline txt. overprinted by sch @ 55°-65° c.a. - calc vns becomes v. strongly sch. alt andesite xenolith	727' - 735.5' SHEARED, ALTERED DIORITE	0.1 0.1 0.1	0.25% 1%		100%		727' – 733' 733' – 735.5'	100%	
	STR					- qtz-calc vn	735.5' - 738' SHEARED, CHLORITIZED ANDESITE	0.1	0.25%	737'			735.5' – 738'		
740'	WK. PATCHY	STRONG	WK TO MOD.		Py	- locally fracs wkly brecc. rock - calc vns - qtz-calc vn. - brecciated qtz frags - qtz-calc vns qtz-calc vns	738' - 749' SERICITIZED, WKLY CARB^N DACITE	0.1 0.1	0.25%	747'	100%		738' – 745' 745' – 749'	100% 100%	
750' – 760'	PATCHY, MOD.	V STRONG	MODERATE		Po Py Po	ser-calc rich/alt frags set in a thinly bedded ser to chl alt groundmass a few chert, qtz frags.	749' - 767.5' SERICITIZED, CARBONATIZED, DACITE TO ANDESITE LAPILLI TUFF TO AGGLOMERATE. (OR EPICLASTIC EQUIVALENT)	0.1 0.1 0.1 0.1	0.5% 2%	757' To 767'	100% 100%	↓	749' – 758' 758' To 767.5'	100% 100%	

HOLE NO. JL-85-B1 | PROJECT: JIM'S LAKE | PAGE NO: 9 OF 11

CASING COLLAR ELEV.: 4' a.g. | GROUND ELEV.: | DATE STARTED: JAN. 09. 85 | REF. TO CLAIM CORNER:

COORDINATES: L52E. 32+85N N. E. | DATE FINISHED: JAN. 14. 85 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIvor

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE: MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
760'	NOD WEAK	WK MOD STR	MODERATE			Py		- carb frags in ser-chl alt groundmass. 749'-767.5' SERICITIZED, CARBONATIZED DACITE TO ANDESITE LAPILLI TUFF TO AGGLOMERATE, (OR EPICLASTIC EQUIVALENT)	0.1	2%		100%	BQ	FROM 758'	100%	
								- lines towards 767.6'	0.1		767'					
								- chert interbeds 767.5-776' INTERBEDDED ARGILLITES (OR ASH TUFFS) thinly bd. interbedded light green sericite rich & dk green chlorite rich argillites	0.1					767.5'		
770'	STRONG	STRONG	MODERATE			Py		- a few chert interbeds	0.1	1%		100%			100%	
						Py		- andesite luff interbed						774'		
						Py		graphitic arg interbeds to 30% , ± 10% Py	0.2	10%				776'	100%	
	WK	STR				Py		- 60% small ser-calc rich clasts in thinly bd. sericitic matrix graph arg interbeds 776'-780' GRAYWACKE TO LITHIC WACKE	0.2		777'					
780'						Py		- thinly bd graph. arg. TRO'-784' MINERALIZED GRAPHITIC ARGILLITE	0	3%		100%		780'	100%	
						Py			0.1	10%						
						Py		- locally intensely carb^{a} 784'-795' SERICITIZED, CARBONATIZED DACITE	0.1					789'		
	SLIGHT	MODERATE	MODERATE			Py		- appears autobrecciated in places	0.1		787'				100%	
790'								- locally intensely brecc. by thin chl-calc rich seams		0.5%				792'		
								- chl^{a} shear zone	0.1			100%			100%	
						Py		- faintly autobrecciated appearing 795'-840' F.G. DARK GRAY ANDESITE (AUTOBRECCIATED IN PLACES)	0.1					795'		
	PATCHY	PATCHY	PATCHY					- contains small 1/32" clusters of white 'fibrous' min.?			797'					
	V. WEAK	V. WEAK	V. WEAK			Py		- autobrecciated zone		0.25%						
800'									0.1					802'		
						Py		- autobrecciated zone.		1%		100%		805'	100%	
								- calc vn	0.1		807'					
810'						Py		- calc vn	0.1							
								- autobrecc zone				100%				
						Py		- calc vns	0.1	0.25%						
						Py		- calc vn.			817'					
820'									0.1		TO 827'	100%				

HOLE NO. JL-85-B1
CASING COLLAR ELEV.: 4' a.g. GROUND ELEV.:
COORDINATES: L52E. 3248N N. E.
INCLINATION: -55° BEARING: 360°

PROJECT: JIM'S LAKE
DATE STARTED: JAN. 09, 85
DATE FINISHED: JAN. 14, 85
TOTAL DEPTH: 887'

PAGE NO: 10 OF 11
REF. TO CLAIM CORNER:
SCALE: 1" = 10'
LOGGED BY: D. McIVOR

COMMENTS:

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY
820'	PATCHY WEAK	PATCHY WEAK	PATCHY WEAK			Py		- locally v. strongly brecciated - chl shear
						Py		- wkly autobrecciated - calc vn - autobrecciated zone - calc vn
830'								- qtz-calc vn - autobrecciated
	THIN SEMS	MODERATE	WEAK			Py		840'-848' CARBONATIZED, SERICITIZED DACITE - calc vn - qtz vn - locally strongly brecciated by thin chl-graph seams - locally strongly carb°
840'		WK	WK			Py		848'-850' AUTOBRECCIATED CARBONATIZED DACITE
			MOD			Py		850'-854' INTENSELY CARBONATIZED DACITIC ROCK - wkly autobrecciated in places
850'	WK	WK	WK	WK SIL.		Py		854'-857' INTENSELY BRECCIATED, ALTERED ROCK
		THIN SEMS	INTENSE	WK SIL.		Py		857'-869' INTENSELY BRECCIATED CARBONATE ROCK - grey carbonate brecciated by thin sericite seams - qtz-calc vn - qtz-magnesite vn - qtz vns
860'								- qtz-magnesite vns
870'	WK / STR	STR / WK	WSTR	STR				869'-877' CARBONATIZED, SERICITIZED TO CHLORITIZED ANDESITE - qtz-calc vns
	WK							877'-887' ANDESITE
880'								

MAG. SUS. (LOG 20 SCALE): 0.5 1.0 5

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
0.25%	827'	100%	BQ	821.5' 823'	100%	
0.25%	837'	100%		837.5' 839.5' 840'	100%	
0.5%		100%		846'	100%	
3%	847'			848'	100%	
0.5%				850'	100%	
1%		100%		854'	100%	
0.5%	857'			857'	100%	
0.75%	867'	100%		863'	100%	
0.5%	877'	100%		869' 877'	100%	
0.75%	To 887'	100%				

HOLE NO. JL-85-81 | PROJECT: JIM'S LAKE | PAGE NO: 11 OF 11

CASING COLLAR ELEV.: 4'a.g. | GROUND ELEV.: | DATE STARTED: JAN. 09. 85 | REF. TO CLAIM CORNER:

COORDINATES: LS2E, 32+85 N. E. | DATE FINISHED: JAN. 14. 85 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 887' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	SERICITE	CARBONATE	OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE: MAG. SUS (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
880'	WEAK					py		877'-887': ANDESITE	0							
						py		- calc-epid-chl seams		0.75%		100%	Ba ↓			
887'									0		887'					

HOLE ENDS @ 887'
78 SAMPLES SPLIT FOR ASSAY
Duncan McIvor FEB. 22. 85

DESCRIPTIVE GEOLOGY NOTES

DDH JL - 85- B1

290 - 296.5'	-carbz and. -fg v soft light green v strongly carbz (diss calc to 25%) and. rock, wkly to mod chlz, wkly serz in places -well foliated at 60° to ca (strong sch) weak remnant fg crystalline texture in places -weakly to mod frac, pred parallel foliation with pred calc, minor chlorite, hematite frac fill -frac appear to weakly brecciate rock in places -a few thin (1/4") calcite vn parallel foliation, occasionally w minor qtz, occasional qtz-calc blebs to 1/4" diss throughout rock -0.5% vfg diss Py -at 292.4', 1/2" calc vn weakly cross cuts foliation at 80° to the ca -a few thin elongate calc blebs to 1/8" parallel foliation, lends tuffaceous appearance to rock in places, but probably discontinuous calc seams -at 296.5', 2" zone of strong hematite staining, vuggy -sharp contact with underlying f (aphanitic) unit
296.5 - 328.5'	-carbz and. to basalt -rock pred a med green (lighter and darker green phases w vary intensities of chlorite alteration) vfg to aphanitic(w a few slightly coarser phases w what appears to be a fg remnant crystalline texture) soft, mod sch (at 60° to the ca) and to bas -v strongly carbz w fg diss calc to 25% of rock -mod to strong chl alteration -numerous(to 5% of rock) thin calc and some qtz 'vn' to 1/4", usually grey, fg, appear granular, usually parallel to foliation, although highly contorted in places, often with minor diss magnetite and Py -mod frac, w pred calc, minor chl, qtz, Py frac fil, frac at random or -a few thin elongate (parallel fol) carbonate blebs, appear frag in places, lend tuffaceous appearance to rock

DDH JL - 85-B1

296.5 - 328.5'

-rock is v mottled appearing w irregular blebs of lighter green material in darker green ground mass (alteration ?) lends brecciated appearance to rock in places
-sulph content, 2% Py pred as mineralization associated with grey carbonate vn, some minor vfg diss mineralization in host and some frac fil
-at 296.5' to 300', lighter greyish green, v intensely carbz
-from 297 to 297.5', numerous frac have bright orange hematite/limonite staining/ halos to 1/2", locally vuggy
-at 298.5', 1/4" highly contorted carb vn /seams with 5% vfg diss magnetite and 1% Py
-from 299 to 299.5', a few 1" pred calc minor qtz vn sub parallel foliation at 45° to ca
-from 300.8' to 301.2', dark grey vfg carb vn parallel foliation to 2" and 70% of rock w associated vfg diss magnetite to 10% and diss Py to 10%, a few semi massive Py bands to 1/8"
-at 302', 3" zone w numerous 1/4" qtz calc bands parallel foliation w associated 2% diss Py and Py blebs to 1/8"
-at 300.3', 1/2" calc minor qtz vn weakly cross cuts foliation at 80° to the ca, highly contorted, minor associated light brown sub metallic appearing mineral, possibly sphalerite.
-from 304 to 306.5', locally darker green more strongly chlz, appears slightly coarser w fg remnant crystalline texture
-from 307 to 307.3', 4" zone w thin 1/4" hard carb bands/vn parallel foliation, often contorted, brecciated, w 5% associated vfg diss magnetite and 5% associated Py as semi massive bands w vn to 1/8" parallel foliation
-at 308', a few 1/4" carb vn parallel bd w 3 to 5% diss Py
-at 308.5' a few 1/4" carb Py bands parallel foliation

DDH JL- 85- B1

296.5 - 328.5'

-at 309', 1/2" grey granular appearing fg carb (calc) vn parallel foliation w 5% Py as semi massive bands parallel foliation
-at 312.5', 1/4" grey granular calcite vn parallel foliation w 5% associated Py
-at 313', 1/2" grey granular carb vn parallel foliation w 5% vfg diss Py and Py frac fil
-at 314', 1" grey granular fg carb vn parallel foliation w 5% diss magnetite 2% associated Py as thin semi massive seams parallel foliation and frac fil
-from 314 to 317', v dark green, more strongly chlz
-from 317 to 326', v mottled appearing w lighter green irregular blebs and bands parallel foliation lending frag appearance to rock but probably an irregular alteration feature, in a few places contains locally 1/8 to 1/4" sub spherical qtz carb blebs that may be amygdules
-at 322', numerous 1/2" grey granular calc bands/blebs parallel foliation
-at 323.5', 1/2" grey granular carb vn parallel foliation w associated 5% vfg diss magnetite and 2% diss Py
-from 326 to 328', tuffaceous interbd thinly bd appearing, containing 2% vfg diss magnetite , and thin 1/2" banded appearing hard siliceous zones w 10% hematite as thin bands pll fol
-relatively distinct contact w underlying coarser unit

328.5 - 344'

-carbz bas (tuff)
-rock pred a dark green, fg, mod to well fol (at 60° to the ca) (sch and bd ?) bas rock
-relatively soft, mod chlz,
-calc to 30% of rock as vfg granular blebs to 1/8" elongate parallel to fol, resembling tuff frag, and thin irregular diffuse seams pll to fol
-contains 5% small thin slips (1/32" to 1/16") of pale pink unknown mineral
-weakly to mod frac at random or, w pred calc, minor qtz, hematite, Py frac fil
-numerous thin (to 1/2") grey calc vn or thicker infil frac to 5% of rock at ran or

DDH JL - 85-B1

328.5 - 344'

-few zones contain minor (1 to 2%) vfg diss magnetite
-appears weakly silicified in places w irr bands and blebs to 1/2" of dark vfg granular qtz w minor calc
-sulphide content, 0.25% Py and trace Cpy ass w carb blebs and frac fil
-from 333 to 333.5', few elongate 1/4"diffuse bands of silicified rock, blebs appear frag, elongate pll to fol, maybe a lapilli size tuff frag
-at 336', 1/2" porphyroblast of hexagonal unknown mineral
-at 339.8', 1/2" calcite fil frac at 45° to the ca w minor diss Py
-at 340.5', 1/2" contorted carb vn w minor diss Cpy
-at 343.5', locally 1% fg diss magnetite
-arbitrary contact w underlying finer unit

344 - 368'

-carbz and. to bas tuff
-vfg dark green and. to bas tuff
-weakly to mod sch and weakly bd at 55° to ca
-mod to strongly carbz w small (1/32") elongate pll to fol thin calc blebs to 10% (tuff frag) and pervasive alt w vfg diss calc to 20% of rock.
-tuff frags are pred carb some contain minor qtz
-weakly to mod frac at ra or w pred calc minor chl, hematite, Cpy, qtz frac fil,
-mod chlz
-a few 1/2" calc w minor qtz vn at ra or
-weakly mag w zones of 2 - 3% vfg diss magnetite
-sulph content 0.25% Cpy, trace Py ass pred w calc vn and frac fil, some vfg diss mineralization in carb tuff frags
-some slightly more frag rich bds in places often w distinct contacts
-from 344 to 344.5', a few 1/2" light green contorted calcite vn w minor vfg diss Cpy
-at 346', 1/2"diffuse appearing contorted calc seams pll fol w 1% vfg diss Cpy

DDH JL - 85-B1

344	- 368'	-from 346 to 350', small elongate tuff frag become light pink, minor Kspar ass w qtz and calc -from 352 to 353', locally v strongly frac w thin 1/16 to 1/8" pred calc minor qtz infil frac at ran or, locally fol strongly contorted from 45° to 60° to the ca -at 357.2', 1/2" hematite and siderite halo around 1/4" calc magnetite fil frac halo is v magnetite rich (5% vfg diss) -at 360 and 360.5' bright orange 1/2" hematite - siderite halos on frac, locally v clastic appearing w small carb frag to 15% of rock -from 363 to 364', distinct interbd w small (1/32") white carb frag to 20% of rock -from 364.8 to 368', distinct small white carb frag coarsen to 1/8" and 20% of rock locally v well bd at 55° to the ca, appears to coarsen towards 368' where frag to 1/4" -at 367.2', 1/2" highly contorted qtz calc vn
368	- 374.7'	-altered agg and. or slumped brecciated eq -thinly bd (to 1/2"), bd v well developed at 60° to the ca, although it appears slumped and contorted in places -pred a dark green, soft aphanitic mod to strongly chltz and. matrix/gr mass w 1) slightly harder grey green bands and elongate pll to bd frag appearing blebs to 1/2" of strongly carbz and. material appears bleached, to 25% of rock 2) frag appearing, elongate pll fol, blebs to 1/2" and thin discontinuous highly contorted bands/bds of grey to white hard carb w minor ass qtz, magnetite, Py, and Cpy, to 10% of rock.

DDH JL - 85- B1

368 - 374.7'

-these appear to be slumped brecciated interbds in places and agg frag in places
-rock is mod frac at ran or, several generations, some displacement of up to 1" along frac, w pred calc, minor qtz chl, Py, Cpy, frac fil
-sulph content approx 1%, 0.75% Py 0.25% Cpy, pred as vfg diss mineralization ass w carb frags and as frac fil w calc and chl
-from 368 to 369', numerous 1/4" to 1/2" highly contorted white carb vn and brecciated vn frags w minor ass magnetite Py and Cpy
-at 369.7', 2" zone of strongly chlz ground mass w highly contorted white 1/8" bleached carbonate frags/interbds (slumped ?) locally a few thin 1/16" Py seams pll fol
-at 370', a few 1/2" contorted white calc and hard grey carb frag, w 2% ass diss magnetite, and minor vfg diss Py - Cpy
-from 370 to 371', locally hard grey carb and qtz blebs/ bands, and brecciated vn frag to 1/2" and 25% of rock, w 1% ass diss magnetite and 1% Py - Cpy
-from 371.8 to 372', a few 1/8" light pink to grey chert interbds pll bd (or maybe intensely sil alteration zones around fracs)
-from 372 to 374.7', bds of hard grey carb (highly frac and micro brecciated) pll bd to 2" and 40% of rock, containing 10% diss magnetite as crystals to 1/8", and ass 1 to 2% vfg diss Py, minor Cpy
-at 374', 1/2" qtz calc vn pll fol w a few 1/4" Cpy blebs
-at 374.5', 1/2" hematite-siderite halo around frac, locally host is v soft, strongly chlz w a few bleached appearing zones, bd v well dev at 60° to the ca

DDH JL 85-B1

374.7 - 405'

-carbz and. to bas tuff
-rock pred a mod soft, dark grey-green to green fg and. to bas tuff, well dev fol (bd and weak sch) at 60° to the ca
-weakly chlz, mod carbz w thin (less than 1/32")diffuse calc seams pll bd to 15% of rock, occasionally w minor qtz,
-contains 10 to 15% small (less than 1/32") elongate pll to fol white tuff appearing frags of pred carb, some fspar, qtz, appears dirty in places (grwk ?)
-contains a few aphanitic phases, appearing more volcanic but w well dev bd
-weakly to mod frac, pred pll fol, although other orientations are present, with pred calc, minor chl, hematite, Py frac fil
-contains a few light green bleached appearing zones (sericite alteration)
-contains a few 1/2" lighter green more strongly carb interbd w diss magnetite to 3 to 5%
-contains a few thin 1/4" to 1/2" qtz calc vn pred pll fol, but often highly contorted brecciated into frags in places
-occasional qtz carb blebs are pink in color v frag appearing,
-contains 5% diss light pink mineral (?) as thin slips (less than 1/32") pll fol
-0.5% fg diss Py, minor Cpy, often ass w carb seams and as frac fil
-at 376', locally hematite frac fil,
-from 377 to 378', locally a light brown carb (calc)- qtz frag appearing blebs to 30%
-from 381 to 387', fg aphanitic phase a few tuffaceous appearing frags, contains numerous qtz calc blebs to 1/2" that appear to be brecciated vn frags, locally only weakly carbonatized
-from 384 to 384.5', a few 1/4" to 1/2" qtz blebs that appear to be brecciated vn frag

DDH JL 85-B1

374.7 - 405'

-from 386' to 387.3', numerous thin 1/16" to 1/8" calc blebs elongate pll to fol appear to be tuffaceous frag, locally more strongly frac, pred pll sub pll fol w bleached sericite alteration halos to 1/16", some qtz and calc frac fil and Py locally to 2%, trace Cpy, as frac fil and fine grained diss mineralization, appear brecciated by frac in places
-from 387 to 387.3', diss partially hematized magnetite to 5% and highly frac zone
-from 387.3 to 389.5', locally foliation contorted, crenulated, from 45 to 60° to the ca, locally more strongly frac - micro frac pred pll sub pll fol w calc frac fil
-from 389.5' to 391', fg to aphanitic phase, only weakly carbonatized
-from 391 to 392', locally fol is kinked crenulated,
-at 392.5', 2" zone of v thinly bd (1/4") v hard green to light pinkish beige argillaceous rock, maybe cherty interbd or zone of intense silicification
-from 392.5', to 394', thin 1/2" to 1" interbd of dark grey to light green fine grained granular appearing v carb rich (to 30%) rock with associated 2% diss magnetite and 2% diss Py, locally bd is kinked, crenulated,
-at 394', 1" yellowish green intensely sericitized zone/interbd
-from 394.8', to 395.2', a few 1/2" lighter green v granular appearing carb rich magnetite bearing (5%) interbds and locally a few 1/4" chert interbds (or strong sil halos around frac pll fol)
-at 396.8', 1/2" carb 'vn' w 2% diss magnetite, minor diss Py-Cpy and Cpy frac fil
-at 398', 4" zone w numerous thin 1/4" hard grey carb rich 'bds' w thin light green sericitic argillaceous seams pll foliation, w minor diss Py and Cpy, and Cpy frac fil
-from 403 to 404', a few 1/2" calc vn pred pll fol
-from 404 to 405', becomes increasingly carbz, w thin bands of light pink ser-carb to 30% of rock,

DDH JL- 85-B1

374.7	- 405'	-distinct contact at 405'
405	- 410'	-altered agg and., or slumped brecciated interbd tuffs -rock thinly bd, to 1 to 2" , bd v well dev at 60° to the ca, -consists of aphanitic to arg dark green strongly chlz soft and. matrix/ground mass w 25% interbds to 2" of beige, harder, v dolomitic appearing rock, bleached appearing, maybe primary carb interbds or intensely carbz interbd/frags, as in places are elongate pll to fol, v agg appearing, w minor sericites alteration in places often stongly micro frac pll to bd, and -25% grey hard frag appearing elongate pll to bd blebs and irregular interbds to 1/4" of calc w minor chl, sericite and qtz, v granular appearing -rock is mod frac pred pll foliation w chlorite, calc Py frac fil -sulphides to 1% pred Py, trace Cpy, as vfg diss mineralization usually ass w grey carb blebs, occ thin seams pll fol, and frac fil w calc -a few 1/4" secondary calc and minor qtz vn, pred pll fol, often contorted or brecciated -some slumpping, and movement along frac -at 406.5', to 407', harder beige, dolomitic interbds to 1/2" and 40% of rock -at 408', 2" hard beige dolomitic interbd -at 408.8', 1" hard beige dolomitic interbd -at 409.2', 2" zone w thin dolomitic appearing bds to 80% of rock -note, dolomitic zones maybe distinct interbds, or zones of intense carb alteration

DDH JL- 85-B1

410 - 434'

-carb and. to basalt
-med green vfg and. to bas tuff, weakly to mod chlz, mod carbz, w thin diss calc & diffuse calc seams pll fol to 20% of rock
-well fol, appears bd, maybe weakly sch at 55 to 60° to ca
-numerous (10%) small thin elongate blebs (less than 1/32" to 1/16"), of white, pred calc, some fspr, tuff appearing frags occasionally to lapilli size, 1/4"
-weakly to mod frac, at ran or, w pred calc frac fil
-a few thin (to 1/2") secondary qtz calc vn pred pll fol
-contains 5% thin slips (much less than 1/32" of pinkish grey micaceous mineral elongate pll fol
-0.25% fg diss Py and Cpy
-some displacement of up to 1/2" along frac
-at 415', 1/4" calc fil frac w a few 1/16" Cpy blebs, locally a light green 1/8" chl-sericite fil frac cross cuts fol at 45° to the ca
-at 419', 1/2" fg granular qtz calc band pll fol w 0.5% fg diss Cpy and Py
-from 422 to 425', fol is kinked, crenulated ranging from 45 to 60° to the ca, appears slumped, with offsets along frac, locally contains numerous 1/2" chl and lighter green calcite rich distinct bds
-at 422.5', 1/2" calcite fil frac at 30° to the ca, locally numerous larger 1/4" calcite blebs elongate pll fol, appear to be frag, or brecciated vn frag,
-at 427.5', 3" highly frac zone, frac exhibit prefered or of 0 to 20° to the ca are calcite infilled w strong grey hard sil alteration halos to 1/8",
-from 428 to 429', numerous 1/2" contorted qtz calc vn pred pll fol w ass 1% Py, trace Cpy, a few irr black 1/2" modelled appearing calc-biotite ? blebs
-at 429.7', 1/4" semi massive Py-carb band pll bd w a 1/4" cherty grey sil alteration halo/, locally vfg diss Py and Cpy to 1% over 2"

DDH JL -85-B1

410 - 434'

-at 431', 1" fg granular calc vn pll bd, locally w diss Py and Cpy to 1% over 2"
-from 431 to 434', becomes lighter green increasingly chlz, contact at 434', marker by numerous 1/2" qtz calc vn pll fol, locally at 55° to the ca,

434 - 512'

-sheared, altered diorite (w and. /and. tuff interbds)
-rock pred a strongly sheared, altered diorite, pred med grained to coarse grained, w fg phases, composed of approx 70% anhedral to sub hedral 1/8" plagioclase crystals and 30% chlz ferromags
-weakly dev sch at 45 to 55° to the ca, although highly variable throughout the unit crystalline texture often over printed by fol, and corresponding stretching of crystals pll to sch, and
-where strongly fol, increasing corresponding alteration, pred ser and chl alteration (ser alt of fsp, chl alt of ferromags), lending v mottled appearance to rock
-weakly carbz in places w minor fg diss calc
-contains a few vfg and. tuff appearing interbds
-rock is mod frac, pred pll fol, w chl, calc, minor hematite frac fil, frac often have thin chl-ser alteration halos
-contains 5% small (less than 1/32") thin short slips of unknown white mineral pll to fol,
-sulph content, trace, to 0.25% fg diss Py, (excluding Py in tuff interbds)
-from 434 to 443', fg zone, chill margin, v well dev fol/sch at 45° to the ca, locally mod carbz, w 5 to 10% diss calc crystalline texture only faint, contains a few qtz calc - fspr vn to 1-2" primarily pll to fol, contains a few ¼" plagioclase phenocrysts
-from 335.8 to 336.5', qtz-calc-hard light green fspr(sausseritized plagioclase) vn to 1/2" pll sub pll fol at 40 to 60° to the ca, to 80% of rock, fol locally accentuated by numerous thin irr difuse 1/8" seams of

DDH JL-85 - B1

434 - 512'

chl, occasionally w minor ser, pll fol, lends mottled appearance to rock
-at 439', 1" difuse light green calc seam at 80° to the ca
-from 440.8', to 441', and. (tuff?) interbd, sharp concordant contacts at 55° to the ca, a light green weakly sch at 55° to the ca, weakly chlz, carbz, and. interbd appears vfg but 'grainy' w numerous small white flecks that may be tuffaceous frags, w 1% ass vfg diss Py, at 440.6' 1" qtz calc light green fspr vn pll fol
-from 441.5' to 442', similar and. (tuff?) interbd w concordant contacts at 45° to the ca, and 2% ass fg diss Py
-from 444 to 445.2', light green vfg weakly carbz weakly fol at 55° to the ca, and. tuff ? interbd, w numerous small white tuff appearing fspr blebs, sharp concordant contacts at 55° to the ca, 1% vfg diss Py
-at 445.2', 2" pred qtz w minor calc, chl and beige to light greenish brown hard fspr /carb ? vn at 80° to the ca, slightly contorted, trace Py along frac
-from 445.2', becomes pred med grained to coarse grained, very mottled appearing
-from 448.5 to 449', numerous thin diffuse irr chl seams to 1/4" pll to fol, lends v mottled appearance to rock
-from 449 to 450.5', light green vfg weakly sch, weakly carbz and. tuff interbd, at 449', 1" qtz calc fspr vn at 55° to the ca, interbd contacts concordant at 55° to the ca contains 0.5% fg diss Py
-at 452.6', 1/2" qtz calc vn cross cuts fol at 45° to the ca, strong chl-carb alteration halo around vn
-at 454.3', 1" qtz calc beige hard carb (dolomite?) vn pll fol at 50° to the ca, w minor bright light green ser
-from 455 to 455.5', irr vcg granular appearing qtz calc vn at 30° to the ca, locally v mottled appearing, w 1/4" to 1/2" dark green chl seams pll to fol overprinting crystaline texture
-from 456 to 457', v mottled appearing w several 1/2" soft chl blebs and seams pll to fol,

DDH JL - 85- B1

434 - 512'

-at 457.7', 1" qtz calc vn at 50° to the ca, w a 1" intensely sheared soft chlz bands at vn margins, locally from 457.7 to 458.5' numerous 1/4" to 1/2"diffuse chl calc seams lends mottled appearance to rock
-from 459.8 to 462.5', vfg light green mod carbz weakly fol at 55° to the ca, and. tuff interbd, w numerous small (1/32") white tuff frags, appears bd in places w slightly coarser vs finer bds 2 to 6" trace fg diss Py, contact at 459.8' is v irr, appears slumped, contact at 462.5', is sharp at 60° to the ca,
-from 462.5', to 463.5', v mottled appearing w numerous 1/4" grey dark diffuse calcite and dark green chlorite seams pll fol and frac fil, at 463.5', 1" and. tuff interbd
-from 463.5', becomes increasingly mottled appearing w bands of chl and ser to 1/2" pll to sch, overprinting crystalline texture, rock becomes increasingly altered to chl ser, numerous diffuse grey calcite seams to 1/2" pll to fol, alteration affects 30 to 40% of rock
-from 465.4' to 466.5', vfg light green weakly carbz and. tuff interbd w trace Py as frac fil, contacts are relatively sharp at 60° to the ca
-from 469 to 471', v altered, sheared sch, at 45° to the ca, very mottled , w strong chl - ser alteration as thin diffuse bands pll to fol, and overprinting crystalline texture, alteration affects 80% of rock
-at 469.5' 1/2" calc and hard beige carb/ fspr ? vn sub pll fol at 50° to the ca,
-at 470.5', 1/2" calc minor qtz, hard beige fspr / carb ? vn pll fol at 50° to the ca,
-at 471.5', 2" pred fg granular appearing calc vn pll fol at 60° to the ca, w minor hard beige carb and or fspr at vn margins
-from 472.8' to 473.5', vfg light green and. tuff interbd w trace Py, contact at 472.8', is contorted, contact at 473.5', is sharp at 55° to the ca,
-from 474.5 to 476.8', light green, fg v grainy appearing (w 5 to 10% small white fspr blebs) and. tuff interbd w trace diss Py, contacts are sharp at 60° to the ca

DDH JL - 85-B1

434 -512'

-from 477 to 486', rock becomes v strongly mottled , well dev sch at 50° to the ca, numerous thin 1/8" to 1/4" difuse chl w minor ser and calcite seams overprinting crystalline texture to 30% of rock, v banded appearing, pred coarse grained where crystalline texture not overprinted
-at 480', 1/2" qtz calc vn pll fol at 50° to the ca,
-at 482 to 482.5', a few 1/2" chl bands pll fol, locally at 45° to the ca, w irr brecciated contacts w an and. tuff unit frags to 2" in dioritic rock
-from 482.5' to 484', vfg light green and. tuff interbd, weakly fol, at 55° to the ca, w 0.5% diss Py, contact at 484' is sharp at 55° to the ca
-at 484.5', 1/2" qtz calc vn pll to sch locally from 484 to 486', v modelled app w thin difuse chl ser bands and minor calc seams overprinting crystalline texture to 40% of rock,
-at 485.5', a few 1/4" calcite minor qtz vn pll fol
-from 486', rock becomes v coarse g more felsic, with a plag //ferromagnesium ratio of 80/20, v hard, ferromags completly altered to chl some weak ser alteration in places, crystals to 1/8 to 1/4", remains weakly fol at 45 to 60° to the ca, a few mottled zones w thin chl ser calc seams pll to foliation
-at 486.2', 1/2" grey calc vn at irr or
-from 486.8 to 488', strongly sheared zone (sch at 50°), strongly altered, w thin 1/4" grey calc seams and diffuse blebs pll fol to 20% of rock, and strong ser chl alteration as thin seams pll to fol ass 1% Py as frac fil and diss mineralization
-at 489.5', a few 1/2" chl and calc vn with a minor diss Py

DDH JL- 85-B1

434 - 512'

-from 486', Py increases to 0.5%, ass pred w irr calc and chl vn and frac fil
-at 493.3', 1" grey granular calc vn at 20° to the ca, from 486' appear to be slickensides along fracs, more strongly frac, pred pll fol, w calc and ser and minor chl frac fil
-495 to 495.5', thin vfg light green and. tuff interbd, contacts are sharp at 55 to the ca, locally w 0.5% Py as frac fil
-from 495.5', to 496', locally v strongly frac at 70° to the ca, w chl, calc, ser, frac fil, appears micro brecciated,
-at 496.2', 1/2 calc vn at 70° to the ca,
-from 497 to 499', only v weakly fol at 55 to the ca,
-at 498.7', 1/16" chl seam/frac at 30° to the ca, w 1% diss Po and Cpy
-at 499', 3" and. tuff interbd, w 3% vfg diss Po , Py and Cpy, and sulph frac fil
-from 499.5', 501.5', vfg and. tuff interbd, well fol at 65° to the ca, contacts are sharp at 65° to the ca, contains 1% vfg diss Py-Po-Cpy,
-at 503', 4" zone where strongly frac, frac cross cut fol at 40° to 50° to the ca, w calc and Py frac fil,
-from 504 to 505', strongly sheared, sch zone, sch at 50° to the ca, w corresponding strong ser - chl alteration, crystalline texture completly overprinted, 1/2" qtz-calcite vn pll to fol at 504.3',
-from 505 to 505.8', v soft, strongly chlz and. interflows/bd, well fol, strongly sch at 60° to the ca, contacts at 60° to the ca, w 1% vfg diss Py-Po
-at 505.8', 1" qtz carb vn at 60° to the ca,
-from 505.8 to 506.3', v strongly sheared sch, at 50° to the ca, intensely chlz, crystalline texture completly overprinted numerous thin calc and qtz calc seams at ran or
-from 506.3 to 512', v v cg, crystals to 1/4", locally more mafic, with 55 % plag and 40% ferromags, w 5% 1/8 to 1/4" pink corroded garnets and 2 to 3 % qtz

DDH JL- 85- B1

434 - 512'

-locally sch is a highly irr, ranging from 30° to 70° to the ca, v weak, locally mod frac at ran or w pred calc, minor qtz ser, chl frac fil, and 0.25 to 0.5% vfg diss Py, Cpy, and trace Po
-sharp contact at 512', at 50° to the ca,

512 - 524'

-and. tuff,
-rock pred a vfg, light to med green, weakly fol, (at 55° to 60° to the ca , as exhibited by weak alignment and prefered or of 10% v small, 1/32" white fspr blebs that resembled tuff frags) and. tuff
-a few aphanitic phases
-weakly to mod frac at ran or, w pred calc, chl frac fil, minor Py
-only v weakly chlz and carbz
-0.5% Py, trace Po and Cpy, as frac fil w calc and chl, and minor vfg diss mineralization
-from 513.2' to 513.8', coarse, strongly sheared sch (at 30° to 50° to the ca) strongly altered (chlz) dioritic dyke
-from 514.6 to 515.5', fg diorite dyke, relatively sch at 45° to the ca, relatively chlz, serz, a few 1/2" calc seams pll to fol, contacts at 40° to 60° to the ca,
-at 516', 1" diorite dyklet at 80° to the ca,
-from 517 to 518',. a few 1/4" light blue qtz vn/seams w calcite, pred pll fol,
-from 519 to 520.5', v dirty appearing, (wacke) well bed at 55 to the ca, w 10 to 15% small white fspr and calc blebs, often elongate pll fol to 1/16",
-at 521', 1/8" chl seam pll fol, w 2% diss Po-Py, trace Cpy,
-from 522 to 522.5', a few 1/2" dark grey cherty silicified bands pll to fol, at 50° to the ca, w 1% ass vfg diss Py-Po, trace Cpy

DDH JL-85 -B1

524 - 525.4'	-thinly bd sil and. tuff, or arg eq -rock pred a v thinly bd (1/16 to 1/2") dark grey to green, v hard, v sil arg rock, w a few v small (less than 1/32") qtz and carb slips elongate pll fol that may be tuff frags -a few thin light green ser rich bands pll fol -mod frac at ran or, with calc, qtz, and Py frac fil -0.5% Py, 0.25% sphalerite, trace Cpy, pred as frac fil mineralization and a few thin 1/16" seams pll bd w chert, minor vfg diss mineralization, -from 524 to 524.2', numerous light green thin ser seams -at 524.9', 1/4" calc vn cross cuts bd at 35° to the ca, -from 524.9 to 525.4', numerous thin light greenish grey chert interbd w a few thin 1/4" calc seams pll bd, a few light reddish brown 1/16" sphalerite rich seams pll to bd, a few 1/8" Py fil frac sub pll bd
525.4 - 540'	-v strongly altered, sheared, diorite to gabbro -rock pred a med grained (w vcg and finer g phases) severely altered, sheared, sch, dioritic to gabbroic rock -composed of, on av., 60% altered plagioclase (altered to light green to yellowish green epidote/sausserite) and 35% altered ferro-mags (altered pred to chl, minor ser) -sch mod dev at 50° to the ca, (varies from 45° to 55° to the ca,), in places crystalline tex completely overprinted by schistosity and related chl-ser alteration -rock is mod to strongly frac, pred pll sub-pll fol, although other or present, w calc, chl, ser, and minor hematite frac fil, frac appear to weakly brecciate rock in places -contains a few 1/2" to 1" irr diffuse calc vn -where strongly fol get clots of fspr and ferromags to 1/4"

DDH JL- 85-B1

525.4	- 540'	-sulph content, 0.25% Py, trace Po and Cpy pred ass w carb seams, frac fil, and v minor vfg diss mineralization. -from 525.4 to 526.5', fg zone (chill margin) -at 527.6', 2" calc vn pll fol to 50° to the ca marking contact w and. interbd, vn has a 2" strongly chlz halo, w 2% diss Py-Po-Cpy -from 527.6 to 530.2', vfg dark green relatively hard weakly chlz mod carbz (diss calc to 5%) and. , w from 528 to 529', a few irr brecciated 2 to 3" diorite 'frag' (xenoliths) weakly fol at 55° to the ca, numerous small 1/32" white fspr blebs lend tuff appearance to rock, contains 0.5% Py pred as frac fil and minor vfg diss mineralization, -from 529.5' to 530', a few 1/16" Py fil frac cross cut fol at 30° to the ca, -from 530.2', to 530.5', irr 1/2" creamy white qtz carb vn at 0° to 50° to the ca, w minor ass diss Py, surrounding host is strongly chl-epidote altered -from 534.5' to 536.5', fg phase, well fol, at 45° to the ca, -at 538', 1/2" v strongly chlz band pll fol at 45° to the ca -at 539.5', 1/2" irr qtz calc fspr epidote vn at 80° to the ca, -sharp contact at 540', at 70° to the ca,
540	- 559.8'	-weakly carbz and. tuff w altered diorite dykelets -rock pred a vfg, light green and. rock probably an ash tuff, -appears weakly to mod fol at 55° to the ca, -slightly grainy appearing, w numerous (10 to 15%) v small (less than 1/32") white fspr blebs weakly aligned pll fol lending tuff appearance to rock -weakly carbz w 5% vfg diss calc in places -relatively hard, fresh, only weakly chlz -weakly frac at ran or w calc, chl, minor Py frac fil in places

DDH JL-85-B1

540 - 559.8'

-contains a few thin highly altered diorite appearing 'dykes' to 2'
-sulphide content, 0.25% Py, pred as vfg diss mineralization and mineralization ass w carb vn
-at 542.5', 3" strongly chlz, v soft shear zone w 10% small (1/32") elongate pll fol slips of unknown white mineral
-at 542.8', 1/4" calcite chl vn pll fol
-from 542.8 to 543.4', locally more strongly carbz, darker green more strongly chlz, w 10% thin white elongate slips pll fol that resemble tuff frags, maybe fspr
-from 543.4 to 543.6', locally 2% vfg Py as thin slips and microfrac fil pll fol
-from 543.6 to 545.5', slightly coarser fg dioritic, 'dyke', contacts are conformable at 50° to the ca, at 545.5', 1/2" calc dolomite fspr vn pll fol
-from 546.5 to 548.3', altered dioritic dyke, fg to med g, only a weak remnant crystalline tex, overprinted by sch at 65° to the ca, contains 10% small white slips to 1/8" pll fol of unknown mineral contains a few 1/4" qtz calc vn at 70° to 80° to the ca,
-from 550 to 550.5', slightly coarser fg and. / diorite 'dyke', mod sch at 55° to the ca, locally strongly frac at ran or w calc frac fil,
-from 550.5 to 551.2', locally aphanitic v soft, but strongly chlz zone w 2% vfg diss Py and Py microfrac fil pll fol
-at 551', 1" qtz calc fspr vn pll fol
-at 551.5', 2" slightly coarser zone w 10% small white blebs pll fol , a few difuse 1/4" calc seams pll fol
-from 552.5' to 555.5', coarser med grained altered, sheared, dioritic dyke, sch at 45° to 60° to the ca, contacts are sharp, conformable, at 50° to the ca, contains numerous 1/2" calc vn at ran or, crystalline tex overprinted by sch and ass chl - ser alteration
-at 553.5 and 554', 1"diffuse grey calc vn
-at 554.8', 1" qtz carb vn pll fol,
-at 556', 2" sheared altered and. to diorite band/dyke at 60° to the ca,

DDH JL 85-B1

540	- 559.8'	-from 556.5' to 557', a few 1/4" hard beige fspr / carb vn pll fol, -at 558', 1/2" hard creamy carb (magnesite?) vn at 90° to the ca, locally with diss Py to 1% over 2" around vn
559.8	- 567.3'	-sheared altered diorite to gabbro -strongly altered, sheared diorite to gabbro pred med grained, some fg phases, mod sch at 55° to the ca, -rock comprised of approx 60% altered plagioclase (now pred a light green, weakly epidote altered) and 40% totally chlz (with some ser) altered ferromags -crystalline tex to a large degree overprinted by diffuse bands and seams of chl and minor ser pll fol -where strongly sch gets large clots of chl ser altered ferromags and epidote altered plagioclase to 1/4" -contains 5% thin small (less than 1/32") slips of unknown white mineral pll to fol -weakly to mod frac, pred pll sch w calc chl frac fil, -trace vfg diss Py -from 559.8 to 561', fg and. appearing phase -sharp contact at 567.3', at 60° to the ca
567.3	- 570.5'	-carbz and. tuff -vfg to fg med green, weakly chlz, mod carbz and. tuff -mod dev bd at 60° to the ca, as exhibited by prefered or and alignment of 20% small (1/32") white calcite blebs resembling tuff frags -weakly frac at ran or w calcite, chl frac fil -trace vfg diss Py -becomes increasingly altered, softer, from 569 to 570.5', -a few 1/4" calc vn pll fol

DDH JL -85-B1

570.5 - 572',

-strongly altered and. ash tuff or epiclastic arg eq
-thinly bd (to 1/4") light greyish green, aphanitic/arg rock
-v v soft, intensely chlz,
-bd v well dev at 55° to the ca
-weakly frac pred pll fol w calc and chl frac fil
-trace vfg diss Py

572 - 581'

-dark brown, thinly bd, altered intermediate ash tuff or epiclastic argillaceous eq
-rock is v thinly bd (1/16 to 1/4") dark brown, aphanitic/arg rock, bd v well dev at 55° to the ca,
-brown colour may be due to vfg biotite to 30 to 40% of rock (or chl), v soft
-contains an av of 10% thin (1/32" to 1/16") grey v v fg calc seams pll fol, and small (to 1/16") elongate calcite blebs that appear to be tuff frags
-some carb free arg interbd
-mod frac, pred pll sub pll bd, w calc, minor frac fil
-a few thin green chl seams pll bd, a few small chl frags elongate pll fol,
-from 572 to 577', pred dark brown arg, calc only 5% as thin seams pll bd and a few frag appear blebs to 1/16", sulph locally only trace Py as vfg diss mineralization
-from 577', becomes more tuff appearing w thin calc and occ minor qtz seams to 1/16" and elongate thin tuff appearing blebs to 1/8" pll fol, to 25% of rock, sulph increase to 3% Py as thin slips pll fol to 1/8",
-at 579', 1/2" qtz calc vn pll fol at 55° to the ca,
-sharp contact at 581',

DDH JL-85-B1

581 - 593.8'

-chlz carbz and. tuff
-dark green well fol (appears bd w a weak pll sch) and. rock, bd at 55 to the ca,
-relatively soft, mod to strongly chlz, mod to strongly carbz w 15 to 20% vfg diss calc as a pervasive alteration
-contains 5%(approx) small 1/32" to 1/16" white calcite blebs elongate pll fol lending tuff appearance to rock, in places appears v 'dirty' , maybe slightly reworked and technically a greywacke
-numerous thin 1/4" calcite w minor qtz vn pll fol to 1"
-mod frac pred pll sub pll fol w calc, some chl, ser, Py frac fil,
some offsets along frac up to 1/2"
-contains in places vf light grey v carb appearing interbd to 1" and 40% of rock
-sulphide content, av 1% pred Py as thin 1/16" slips/stringers pll fol and frac fil, w minor Po-Cpy as vfg diss blebs to 1/32", trace sphalerite as thin slips pll fol
-from 581.8 to 582', 3" strongly chlz v soft shear zone w 10% thin calc stringers pll fol and ass 2% Py as thin stringers pll fol, a few thin sphalerite stringers to 0.25%
-from 582 to 582.5', a few 1/2" faint light grey calc rich interbd (or intensely altered zones)
-at 586.5', 1" calc vn pll fol
-at 588', a few 1/4" calc vn pll fol w minor vfg diss Py
-at 588.8', 1" contorted calcite qtz vn
-from 591 to 593.8', rock becomes v well bd, bds from 1/2 to 1", w grey vfg interbd of ser-carb to 70% of rock, separated by thin 1/4" intensely chlz bd, grey carb rich bds contain minor diss biotite, small carb blebs to 1/8" still present, occasional lrg agglomeratic appearing frags to 1/2", often w Py mineralization
-sulph locally to 3% (2% Py 1% Po trace Cpy) pred ass w carb rich interbds
-at 592.5', 2" bd appearing calc w minor qtz 'vn' pll fol w 20% vfg diss sulph (15% Py, 5% Po trace Cpy)

DDH JL-85-B1

581	- 593.8'	-from 593, 593.5', bd locally highly contorted offset by frac, w numerous contorted 1" pred calc minor qtz vn to 25% of rock, w ass 5% Py, trace Po mineralization -sharp conformable contact at 55° to the ca
593.8	- 596.7'	-fspr Porphyry/porphyritic dacite -conformable sharp contacts at 55° to the ca either a sill or flow -rock consists of a light greyish green, relatively siliceous, aphanitic dacitic ground mass, weakly serz, w 30% phenocrysts to 1/4" av 1/8", usually sub hedral, of fspr -fspr are mod carbz (calc as a replacement) -weakly schz at 55° to the ca, -mod micro frac pred pll fol w calc and ser frac fil -contains 0.5% vfg diss Py -contains 2 to 3% small (1/32") chl clots throughout unit
596.7	- 603'	-mineralized, carbz and. tuff -rock pred a thinly banded/bd (v well dev fol at 55° to the ca, bands/bd av 1/8") med to dark green altered and. tuff w 30% calc as thin 1/8" to 1/16" discontinuous seams pll bd between thin dark green chlz bands -calc blebs appear to be frags in places but may be discontinuous calc stringers -weak to mod frac at ran or w pred calc some chl frac fil -proximal to fspr porphyries, rock contains numerous 1/2" to 1" grey v ser rich arg bands/ interbd pll fol, w stronger chl alteration of and. tuff -numerous thin (to 1/2") pred calcite w minor qtz vn/bands pll bd -sulph to 3% (2% nonmag Po 1% Py) pred as seams to 1/8", and thin slips to 1/32" pll bd

DDH JL 85-B1

596.7 - 603'

-from 596.7 to 598.5', dark grey ser rich bd to 1" and 80% of rock, separated by thin v chl bands, numerous thin calc w minor qtz stringers to 1/4" pll fol, (to 10%) and 3% Py 0.5% Po as thin 1/32" stringers pll bd and diss blebs to 1/8", often ass w calc seams
-at 599', numerous 1/2" calc vn pll fol
-from 602.3' to 603', appears to be mod sil w thin 1/2 to 1" grey hard irr sil bands
-sharp contact at 55° to the ca

603 - 606.8'

-fspr porphyry/porphyritic dacite
-sharp conformable contacts at 55° to the ca,
-rock consists of an aphanitic light grey to yellowish grey v sil hard dacitic ground mass w 35 to 40% phenocrysts of fspr (pred anhedral to sub hedral) to 1/4", av 1/8", partially altered/replaced by calc
-weakly fol (sch) at 55° to the ca, weakly overprints crystalline texture, weakly alignes fspr phenocrysts, lends mottled app to rock
-ground mass is weakly serz
-mod microfrac pred pll fol w calc and ser frac fil
-0.5% vfg diss Py,
-a few (5%) qtz phenocrysts
-some frac have thin 1/4" sil alteration halos

606.8 -612.5'

-carbz and. tuff
-vfg dark grey to greenish grey well fol (bd) strongly carbz and. tuff
-carbz as v thin (1/32 to 1/8") diss -calc blebs and seams pll fol to 25% of rock
-weakly to mod chlz and serz in places
-contains a few 1/16 to 1/8" thin elongate calc blebs that appear frag
-a few thin 1/4" calc vn pred pll fol
-appears 'dirty' in places, resembling a greywacke
-weakly frac, pred pll fol w calc and chl frac fil

DDH JL-85-B1

606.8 - 612.5'

- sulph content, 1% (0.75% nonmag Po and 0.25% Py) ass w calc vn, minor diss mineralization
-at 608', 1" calc vn pll fol w thin nonmag Po stringers in diss blebs to 2%
-from 608.5 to 609', numerous 1/2' highly contorted vfg hard granular carb - sil bands/vn/bd w ass 10% vfg diss nonmag Po, minor Py and Cpy
-from 611 to 612.5', locally v strongly chlz v soft, sulph increase to 3% (2% Py, 1% Po) as thin slips to 1/16" pll fol, and a increase in qtz content as 'frag' elongate pll fol to 1/8" and 5%, a few 1/4" qtz calc vn pll fol

612.5 - 614.5'

-interbd arg
-thinly bd (less than 1/16" to 1/2") bd v well dev at 55° to the ca, pred a light green, v ser rich, relatively hard arg (or dacitic ash tuff) w a few white to light grey carb (or calc rich arg) interbd and dark green chl interbd
-sulph to 1%, pred nonmag Po and Py, w trace Cpy as v v fg slips along bd planes, some minor frac fil
-weakly frac at random or w pred calc frac fil
-at 613', 3" coarser tuff interbd
-at 613.8', 1" grey calc rich arg/carb interbd
-from 614 to 614.5', dark green soft chl arg interbd

614.5 - 622',

-serz carbz intermediate (dacitic) lapilli tuff
-rock pred a v thinly bd (1/16 to 1/4") bd v well dev at 55° to the ca, although contorted in places, altered intermediate lapilli tuff, comprised of a light green aphanitic strongly ser relatively soft ground mass/matrix w 40% thin (1/32 to 1/4") elongate (pll fol) short (to 1/4") frag appearing lapilli size white to pale beige carb (pred calc,some harder dolomite)blebs that resemble lapilli tuff frags and in places

DDH JL- 85-B1

614.5 - 622' more clastic appearing frag (maybe a grwk)
-contains a few 1/8 to 1/4" elongate qtz frags to 5%
-contains a few thin cherty interbd to 1/16"
-a few zones where carb blebs appear more tobe boudinaged interbd in a ser ground mass
-mod frac at ran or w ser, calc, chl and Py frac fil
-contains a few secondary qtz carb vn at ran or to 1/2"
-sulphide content, 2% Py, trace nonmag Po and Cpy, pred as v thin (1/16") slips pll bd some frac fil
-from 614.5' to 616', locally ground mass is dark green, strongly chlz, becomes increasingly serz from 616 to 622',
-from 614.5 to 615.5', bd locally highly contorted, from 0 to 55° to the ca, slightly coarser w larger carb and quartz frag and interbd to 1/4", locally sulph to 3% (pred Py, minor Po Cpy) as thin seams pll bd and cross cutting frac fil
-at 620', 1/2" qtz vn cross cuts bd at 70° to the ca, w Py microfrac fil
-at 620.5' 1/2" qtz carb vn pll fol
-at 622', 1" qtz vn at 80° to the ca, marks contact w underlying fspr porphyry

622 - 626.5' -fspr porphyry
-weakly fol at 50 to 55° to the ca,(sch)
-rock consists pred of aphanitic yellowish green weakly to mod serz hard, sil, dacitic to rhyolitic ground mass, w 0.5% fg diss Py, mod microfrac pred pll sch w calc and ser frac fil, and
-35 to 40% anhedral to sub-hedral pred fspr phenocryst to 1/4" , av 1/8", weakly aligned, pll fol, fspr phenocrysts are weakly carbz (calc as a replacement feature)
-contains 5% small qtz phenocrysts
-contains numerous intensely silicified zones around qtz carb vn and qtz fil frac, where host is intensely silicified (both matrix and phenocrysts) and weakly pyritic

DDH JL-85-B1

622	- 626.5'	-at 622' , 1/2" silicification halo around frac -from 622.5' to 623.2', strongly silicified as an alteration halo around 1/2" qtz carb vn at 40° to the ca, and numerous qtz fil frac Py increase to 1% as diss blebs to 1/4" along frac and vfg diss mineralization in silicified alteration halo, minor vfg black tourmaline as frac fil in qtz vn at 623.2', from 624 to 625', strongly silicified zone, as alteration halos around frac, locally mod to strongly frac at pref or of 0 to 20° to ca, w ser, Py, and carb frac fil, locally Py to 2% as vfg diss mineralization in alt-halo and blebs to 1/4" along frac -contact at 626.5' at 40° to the ca,
626.5	- 633.2'	-carbz ser felsic lapilli tuff to agg -rock pred a v thin bd (at pred 55°to ca, varies from 50 to 55°) extremely altered felsic to intermed lapilli tuff to agg, composed of a thinly bd (1/16 to 1/4") light grey hard sil aphanitic to light greyish green mod serz sil gound mass (rhyolitic to dacitic) w 30% to 40% light beige relatively hard carbonate (dolomite?) as thin 1/16" to 1/8" elongate pll fol lapilli size frag to 1/4" agg frag and a thin interbd /seams pll fol (looks v fragmental, but maybe thin brecciated or boudinaged dolomitic interbd) -a few 1/4" frag appearing qtz blebs to 10% of rock -rock is weakly to mod frac, pred pll fol, although other or exist, w ser, calc, and minor chl and Py frac fil, -fines from agg at 626.5' to lapilli tuff at 633.2', -dolomitic appearing frag maybe an intense alteration (i.e. carbz) of sil frag in agg -sulph content, 1% Py, pred vfg diss mineral-ization as cubes & amorph blebs to 1/16", and minor frac fil -from 626.5 to 627.5', rock pred dolomitic frag to 1/2" and thin dolomitic bands pll fol to 80% of rock, in ser ground mass, v granular appearing in places w numerous small qtz 'eyes'

DDH JL 85-B1

626.5 - 633.2'

-at 631', 1/2" qtz vn pll fol w a few 1/4" Py blebs
-at 632', 6" qtz vn at 0° to the ca, locally bd weakly contorted, kinked, crenulated, becomes a finer lapilli tuff from 632 to 633.2 and becomes slightly more chl

633.2 - 636.7'

-serz fspr porphyry/porphyritic rhyolite to dacite
-rock pred a vfg aphanitic light yellowish green hard sil mod serz rhyolitic to dacitic ground mass, weakly fol (sch) at 55° to the ca
-strongly microfrac pll fol w calc and ser frac fil, w
-35 to 40% small (to 1/4" av 1/16 to 1/8") anhedral to subhedral white fspr phenocrysts partially altered to or replaced by calc, weakly aligned pll fol, w 5% small light green qtz phenocrysts
-porphyritic texture overprinted in areas by sch and ass ser alteration
-contains 0.25% vfg diss Py
-a few 1/4 to 1/2" sil halos around qtz stringers and qtz fil frac
-contacts are sharp and are conformable at 55° to the ca,
-at 633.5', 1/2" sil halo around frac cross cuts fol at 45°
-at 636', 1/2" sil halo around 1/16" Py calcite qtz fil frac at 70° to the ca,

636.7' - 640.5'

-intensely carbz, serz, felsic to intermed lapilli tuff or epiclastic (wacke)eq.
-rock consists pred of, v thinly bd (1/32" to 1/2") bd w well dev at 55 to 60° to the ca,
-light greenish grey intensely serz ground mass/matrix w
-40 to 50% thin (1/16 to 1/8") grey to beige carb seams pll bd, and thin elongate pll bd blebs to 1/2" carb that appear to be lapilli size frag (although maybe boudinaged or brecciated thin interbd)

DDH JL 85 B1

636.7 - 640.5'

-carbonate pred a dolomite (v weak reaction to HCL, relatively hard)
-a few thin 1/8 to 1/2" cherty silica interbd
-a few 1/2" beige dolomitic (w minor ser) interbd
-rock is v strongly microfrac pred pll fol w calc chl ser and Py frac fil, microfrac lends v mottled appearance to rock
-contains 1% Py as thin slips / seams pll fol, occ diss cubes ass w carb, and minor frac fil
-at 638.5 to 639.5', interbd to 1/2" of hard beige dolomite and lighter green totally serz rock are severely brecciated by thin frac at a pref or of 70 to 90° to the ca, offsets along many frac to 1/2", v well dev brittle deformation structures in carb bd bd ranges from 0 to 55° to the ca,
-from 639.5 to 640.5', interbd of light grey totally serz arg rock and dark grey green ser carb altered rock, w a few thin 1/8" chert interbds and a few thin chloritic seams rock less lapilli tuff appearing
-rather arb contact w underlying agg unit which is slightly more chloritic, and less carb rich

640.5 - 665'

-interbd, altered, (carbz, serz, chlz) intermediate lapilli tuffs and agg, or reworked epiclastic eq (lithicwackes and conglomerates)
-rock exhibits highly variable appearance, w varying types and intensities of alteration and varying frag/ground mass ratio
-pred,a v thinly bd (bd ranges from 35 to 65° to the ca, pred at 55° to the ca, light to med green aphanitic/arg, soft pred v strongly serz (w strongly chlz zones) ground mass/ matrix w frag of white to light green to beige pred carb (calc and dolomite), occ frag of serz rock, qtz, and sulph, ranging in size fr 1/16" to 1/8" to 1/4 to 1/2", and w coarse agg bd, and finer lapilli tuff bd, ranging in abundance from 25% to 50 to 60% of rock.

DDH JL 85 B1

640.5 - 665'

-bd appears slumped, highly contorted in places
-rock is pred mod frac, pll sub pll bd w calc, ser, chl, and Py frac fil
-sulph content is highly variable, as outlined below,
-a few thin 1/2" secondary qtz carb vn pred pll sub pll bd
-either interbd lapilli tuffs and agg, or slightly reworked epiclastic eq, technically greywackes and conglomerates
-from 640.5' to 643.5', light green thinly bd (55°) pred sericitic arg, w thin 1/32" to 1/16" grey hard dolomitic interbd to 25% and 5 to 10% small (1/8") dolomitic frag elongate pll to fol, coarsens slightly to 643.5', w a few 1/4" to 1/2" carb frag
-at 641.2', 1" contorted qtz vn, weakly pll fol at 55° to the ca, bd strongly contorted around vn from 35 to 55° to the ca, weak chl alteration halo around vn w thin Py seams at margins
-at 642.5', a few 1/2" qtz w minor calcite and dolomite frag, maybe boudinaged or brecciated vn frag
-from 643 to 643.5', strongly chlz zone w numerous 1" qtz and hard beige dolomite minor calc contorted vn pll sub pll fol w minor ass diss Py
-at 643.5', thin beige dolomitic bands to 1/4" and 80% of rock over 1", locally to 90° to the ca,
-sulph locally from 640.5 to 643.5', are 0.5% Py as diss blebs to 1/8"
-from 643.5 to 644.5', qtz vn to 80% of rock massive white vn from 643.5 to 644', and 644.2 to 644.5', w strongly chlz and serz zones between vn, vn are mod to strongly frac at ran or w chl and Py frac fil and minor diss Py at vn margins (Py to 5% over 1')
-from 644.5 to 646.5', thinly bd (bd locally at 35 to 45° to the ca,) strongly chl-ser rich / altered bd w only minor thin dolomitic seams and frag pll to bd
-at 645' 3" highly contorted light green dolomitic bd/vn at 35° to the ca, (appears to be vfg granular carb w minor qtz) w ass 10% vfg diss Py and Py frac fil
-from 645.3 to 646.5', vfg diss Py and thin

DDH JL 85 B1

640.5 - 665'

Py seams pll bd to 15% of rock, overall sulph content from 644.5 to 646.5', is 10% Py
-from 646.5 to 648.5', v coarse agg appearing unit, bd ranges from 55° at 646.5 to 45° 648.8', v crenulated, slumped appearing
-matrix / ground mass is a light green sericitic rock w 40 to 50% irr frag to 1/2" of pred beige hard carbonate (dolomite) and minor light green serz rock, minor cherty qtz, and qtz
-at 648', 2" zone with thin beige dolomite-ser band/vn w ass 3% Py
-overall sulph content from 646.5 to 648.8', is 1% Py as thin seams pll bd and ass w vn
-from 648.8 to 649', preceeding coarse bd terminated by this thinly bd slightly darker green more chloritic interbd at 65° to the ca
-at 649', 1" zone w numerous thin dolomitic and cherty qtz seams and blebs to 1/8" pll fol, w 5% ass vfg diss Py
-from 649 to 652.5', bd locally at 45° to the ca, mod chlz and serz ground mass w only 10 to 15% thin carb bd and frag appearing blebs to 1/8", Py to 0.5% pred as frac fil w calc and qtz, bd locally is kinked along frac
-at 649.5' 1/8" qtz carb fil frac at 90° to the ca, kinked and offsets fol, Py to 3% locally over 1" as halo around frac
-unit contains a few thin qtz calc dolomite vn to 1/2" pred pll fol
-from 652 to 652.5', coarsens, frag to 1/2" and 40%, pred light green to beige carb and ser rich rock, bd locally is highly crenulated and contorted from 40° to 60° to the ca,
-at 652.5', 1/2" qtz ser vn / band at 65° to the ca,
-from 652.5 to 655', v strongly serz, light yellowish green ground mass, v thinly bd bd locally at 45° to the ca, w 25% small (1/8" to 1/4") thin white carb (dolomite) and ser altered frag pll fol
-at 652.8', 1" dolomite qtz vn pll fol at 45°
-at 654', 1" qtz dolomite vn pll fol
-locally sulph 1% Py as thin elongate frag appearing blebs to 1/2" ass w ser and carb,

DDH JL 85 B1

640.5 - 665' and thin slips pll fol
-from 655 to 658', slightly darker green, more chl ground mass w only 10% frag of pred dolomite and ser altered rock, a few cherty qtz frag
-at 655.5', 1/2" qtz vn pll bd at 55° to the ca,
-from 655.5 to 656', slightly coarser zone w 15% frag to 1/2"
-at 657.5', 1" serz band
-from 657.5 to 658', coarser zone w 15 to 20% frag of ser carb altered rock to 1/2"
-sulph locally from 655 to 658', Py to 1% as thin discontinuous seams ass w bd and fg diss mineralization
-from 658 to 662', strongly serz ground mass w 10% (small to 1/8") ser carb and Py frag elongate pll fol, w 5% thin carb interbd
-from 658 to 658.5', v strongly serz, bright yellowish green, locally a few 1/4" thin elongate Py frag
-from 659 to 659.5', bright yellowish green strongly serz zone, w Py locally to 2% as small 1/8" semi massive frag w minor carb, ser, and qtz, locally v 'dirty' appearing maybe a wacke
-from 662 to 665', appears strongly sch pll to bd, (50° to the ca) slightly coarser, v soft, intensely serz ground mass, w only 5% frag appearing carb and ser blebs to 1/4" and thin seams pll to bd
-locally sulph 0.5% diss Py ,
-a few 1/2" qtz dolomite vn pred pll sch and bd

665 - 669.5' -sheared serz porphyritic rhyolite to dacite /QFP
-rock v similar to preceeding fspr porphyry units, but porphyritic texture is overprinted by sch and strong ser alteration
-rock a light yellowish green vfg aphanitic mod hard siliceous weakly sch (at 55° to the ca,) strongly ser ground mass, v strongly a micro frac pll fol w ser, and minor calc Py frac fil, w a few (5%) small qtz phenocryst and v faint remnant calc replaced fspr phenocrysts to 25%

DDH JL-85-B1

665	- 669.5'	-numerous intensely sil zones around frac -overall Py content, 0.5% vfg diss Py throughout rock and as frac fil -from 665 to 665.5', a strongly sil zone around frac to 0 to 20° to the ca, locally Py to 1% as blebs to 1/8" along frac -at 668', 2" intensely sil halo around qtz carb fil frac at 80° to the ca, w 1% vfg diss Py in silicified halos
669.5	- 672.5'	-altered (serz, chlz) intermediate ash tuff or arg eq -at 669.5' to 670', a few 1/4" qtz calc ser vn pll fol -at 672.4', 2" zone w numerous thin 1/2" qtz and calc vn pll bd -rather arb contact w underlying unit. -rock v thinly bd (1/32 to 1/2") bd v well dev at 50° to the ca, consists of interbd of a dark to med green v soft strongly chlz aphanitic ash tuff or arg, and lighter greyish green strongly serz ash tuff or arg -appears weakly sch pll to bd -chlz bd 60%, serz bd 30% serz zones appears to be alteration halos around frac in places -contains 10% thin calc stringers and seams to 1/16" pll bd -contains a few qtz calc vn pll to bd -mod frac pred pll fol, w calc, chl ser frac fil -Py to 0.5% as occ thin seams pll to bd and minor frac fil, minor vfg diss mineralization

DDH JL-85-B1

672.5 - 677'	-altered (serz, carbz) and. tuff -rock a light green, v soft, strongly serz (mod chlz in places) thinly bd (at 50° to the ca, appears sch pll to bd) and. ground mass w 20% small (1/32") white calc blebs elongate pll fol lending tuff appearance to rock -numerous thin calc seams to 1/16" pll fol (to 5%) -mod frac pll bd, w calc, minor chl and ser frac fil -appears strongly carbz in places w vfg diss calc to 15% -0.25% Py as diss blebs to 1/16", and occ frag appearing blebs -at 676.5', 1" calc vn pll bd -arb contact w underlying unit
677 - 682'	-chlz carbz and. tuff to lapilli tuff -dark green, vfg to aphanitic, v soft v strongly chlz, v strongly carbz (diss vfg calc to 20%) and. tuff to lapilli tuff -bd and pll sch at 55 to 60° to the ca, -contains 10 to 15% elongate pll to fol clots / blebs of pred calc, occ w minor qtz and Py, to 1/4", that resembles a lapilli size tuff frag, although maybe boudinaged or brecciated interbd -numerous thin grey calc (occ w minor qtz) seams to 1/4" pll fol -numerous thin light grey aphanitic ser rich /bands pll fol to 1/4" (to 10% of rock increasing in frequency towards 682') -Py to 1% as thin seams pll fol to 1/16" occ w minor qtz carb vn and frac fil

DDH JL 85 - B1

677	- 682'	-mod to strongly frac, pred pll fol, w calc minor chl, ser, and Py frac fil -at 679.2', a few 1/4" qtz calc vn pll bd -from 680.5 to 681.5', numerous 1/4" to 1/2" pred calc w minor qtz vn pll bd to 10% of rock, thin ser bands increase to 15% of rock -from 681.5 to 682', strongly chlz, w thin hard grey granular appearing carb seams to 1/8" pll bd, and occ large frag shaped blebs to 1/2" , w 3% Py as thin seams pll fol and fg diss mineralization
682	- 685'	-intensely serz, carbz, intermediate ash tuff or epiclastic arg eq -rock is v thinly bd at 65° to the ca, (bd from 1/16 to 1/4") pred a greenish grey to pinkish grey intensely carbz (w vfg diss calc to 25% of rock) serz aphanitic or arg rock -banded bd appearance due to alternating bd of pink v ser rich and grey ser carb rich rock -mod to strongly frac pred pll sub pll fol w calc, minor chl, ser, Py frac fil - a few thin calc stringers pll fol, a few small 1/8" frag appearing calc blebs -a few 1" calc vn pll fol -0.5% Py as vfg diss mineralization and occ thin seams to 1/16" pll bd -at 682.8', 1" calcite vn pll bd -at 683.2', 1/2" qtz calc vn pll bd -at 683.5', 1" chl band
685	- 688'	-serz carbz dacite to and. tuff -v thinly bd (1/32" to 1/4") light green strongly serz, carbz dacite to and. tuff comprised of a light green strongly serz

DDH JL 85 -B1

685 - 688' ground mass w 15 to 20% thin carb (calc some minor dolomite) 1/32" seams pll to bd and small tuff appearing frag pll to bd
-weakly to mod frac pred pll fol w calc frac fil, bd slightly kinked, crenulated in places
-Py to 1% as occ frag appearing blebs to 1/8", and thin seams ass w calc to 1/8" pll fol
-from 687 to 688', locally darker green, strongly chlz
-sharp contact w underlying unit

688 - 695.5' -strongly sheared, carbz, serz, intermediate vol (and.)
-dark grey to greenish grey intensely altered and.
-strongly sch at av. or of 55° to the ca, although varies locally from 40 to 70° to the ca, w strong kinked, and crenulation in places, and offsets along frac of up to 1/2"
-v strongly serz, and v strongly carbz, (really a ser - carb sch), but w a weak faint remnant fg crystalline texture
-rock composed of apprx 40% ser, 40% calc, and 20% chl
-rock is strongly frac at ran or w pred calc frac fil
-a few thin calc vn, usually highly contorted to 1/2"
-trace vf diss Py
-at 692', 1" brecciated calc vn at 30° to the ca,
-from 694.5', to 695.5', v strongly frac at ran or w calc frac fil, frac offset sch
-contact at 695.5', is sharp, at 20° to the ca

DDH JL 85-B1

712	- 716.8'	-weakly chlz in places -v dirty appearing in places, resembles a greywacke - a few thin 1/4" calc vn pll fol -a few small grey cherty qtz frag -mod pervasive carbz in places w v fg diss calc and thin calc stringers pll to bd -appears to be weakly to mod sch pll bd -1% Py as vfg diss mineralization and micro-frac filling, and occ thin slips pll fol -from 712 to 712.5', slightly darker green, weakly chlz -rather arb contact w underlying finer unit
716.8	- 721.5'	-serz ,carbz, dacite to and. tuff -rock a light greenish grey to grey well fol , bd appearing vfg strongly serz mod carbz dacite to and. tuff, calc to 20% as vfg diss blebs, weakly aligned pll fol, lends tuff appearance to rock -contains numerous 1/4" to 1/2" aphanitic light green ser interbd -weakly to mod frac at ran or w pred calc ser, and minor Py frac fil, -0.5% Py as vfg diss mineralization and occ thin seams pll to bd -sharp contact at 721.5',

DDH JL 85B1

721.5 - 727'

-mineralized serz, carbz, dacite to and. lapilli tuff to agg or epiclastic eq (wacke to conglomerate)
-thinly bd (1/16" to 1/2") (bd v well dev at 55° to the ca, appears mod sch pll to bd) light green strongly serz relatively soft dacite to and. ground mass w 20 to 25% small (to 1/4", av 1/8 to 1/16") thin white to light green pred calc, some ser calcite (altered) elongate pll bd frag (lapilli size)
-a few coarser agg zones where frag to 1/2"
-a few qtz frag, often v cherty
-bd is kinked, crenulated in places
-rock is weakly to mod frac pred pll fol w calc, ser, minor Py frac fil
-sulph content, 2% (1.5% Po, 0.5% Py) pred as thin 1/16" seams pll fol, minor diss mineralization, and a few Po frag to 1/8" trace Cpy w Po
-from 721.5' to 722.7', v coarse agg or conglomeratic horizon, w pred hard beige ser-carb (dolomite) altered frag elongate pll bd to 1", a few v cherty grey silica frag, a few calc frag, a few Po frag to 1/8" frag locally to 40%, and sulph locally to 3% (2.5% Po, 0.5% Py) as thin seams to 1/8" pll fol, minor diss blebs, and occ frag appearing blebs to 1/8" (some dolomitic frag maybe boudinaged or brecciated interbd as opposed to agg frag)
-from 722.7', becomes finer lapilli tuff
-from 726. to 727', weakly carbz w up to 20% thin graphitic interbd

727 - 735.5'

-sheared altered (serz, carbz) diorite (or coarse crystaline dacite to and.)
-rock a light green, strongly altered diorite to coarse dacite to and. flow
-mod sch at or ranging from 55 to 65° to the ca,
-weak remnant fg to med g crystaline texture but pred overprinted by sch and ass v strong ser alteration

DDH JL 85 - B1

727 - 735.5'

-mod to strongly carbz w vfg diss calc to 30% as an alteration or replacement of fspr
-contains 5% thin slips (less than 1/32") of unknown white to pale pink mineral elongate pll fol
- a few 1/4" sub hedral to anhedral plagioclas phenocrysts
-weakly to mod frac, at ran or, w pred calc frac fil
-a few 1/4 to 1/2" calc vn at ran or
-0.25% fg diss Py, and minor Py frac fil
-at 728.5', numerous 1/4" grey calc seams pll fol
-at 731', a few 1/4" calcite vn at irr or locally a few thin 1/8" aphanitic ser bands pll fol
-from 731' becomes increasingly strongly sheared and sch w corresponding increase in intensity of ser and carb alteration, crystaline texture becomes increasingly overprinted, becomes more strongly frac w calc, chl, and ser frac fil,
-contains a few 1/2 to 2" darker green chl shear zones
-from 733', v strongly sch at 55° to the ca, intensely carbz w small 1/8" calc blebs to 40% (altered fspr), Py increase to 1% as vfg diss mineralization along sch planes.
-at 735', 1" aphanitic dark grey intensely carbz and. xenolith
-arb contact w underlying severely altered unit

735.5 - 738'

-sheared, sch chlz and.
-fg (weak remnant crystaline texture) dark green mod sch at (60° to the ca,) and. or severely altered diorite
-strongly chlz
-strongly frac at ran or w calc frac fil
-a few 1/4" altered fspr phenocrysts
-a few 1" calc vn pll fol

DDH JL 85-B1

695.5 - 712'

-weakly carbz and.
-rock pred a light green fg crystaline appearing and.
-weakly sch at 55 to 60° to the ca, although sch varies from 35 to 60°
-weakly carbz w 5 to 10% fg diss calc in places
-v weakly chlz
-contains 10% small (less than 1/32") white slips/blebs of unknown mineral (fspr?) lending faint tuff appearance to rock, but exhibits a fg crystaline texture
-contains 2 to 3% large 1/4" fspr phenocrysts pred subhedral
-weakly to mod frac at ran or w pred calc, minor chl hematite frac fil
-0.25% fg diss Py
-from 695.5 to 698.5', strongly sch at 40° to the ca, (kinked, crenulated), locally v soft, v strongly chlz, and v strongly frac at ran or w calc and hematite frac fil
-at 698.5', 1/2" calc seam at 20° to the ca, locally 3% fg diss hematite in host
-at 702.5', 1" grey diffuse calcite vn
-from 703 to 703.5', 1" calcite vn at 0° to the ca, w minor light green epidote altered fspr blebs
-at 704', 1/2" bright light green calc - epidote altered fspr vn/seam at 45° to the ca,
-at 705', 2" irr grey calc seam
-from 711 to 712', becomes v fg

712 - 716.8'

-serz, carbz, dac to and. lapilli tuff or reworked epiclastic eq (wacke)
-rock a light greenish grey, thinly bd (bd v well dev at 55 to 65° to the ca, kinked and crenulated in places, and offset by frac) strongly serz dacitic to andesitic ground mass w 25% v small (1/32" to 1/16") thin elongate pll bd tuff frag, pred light green ser and grey carb altered rock
-mod frac and micro frac pred pll sub pll bd w calc, ser and minor Py frac fil

DDH JL 85 B1

735.5 - 738'

-occ thin aphanitic chl bands to 1/4" pll fol
-0.25% Py as fg diss mineralization
-at 737', 1/2" calc minor qtz vn at 45° to the ca

738 - 749'

-serz, weakly carbz dacite
-rock a fg (weak remnant crystaline texture) light green, strongly serz, weakly to mod carbz, (vfg diss calc to 10%) dacite
(to and. appearing in places where weakly chl)
-mod sch at 55° to the ca,
-a few 1/4" andhedral to sub hedral fspr phenocrysts scattered throughout unit
-mod frac, pred pll sch, w calc, minor chl ser, Py frac fil, frac appear to weakly brecciate rock in places
-a few thin qtz calcite vn pred pll fol
-from 738 to 739', weakly chl, locally v strongly frac, w chl, calc, and qtz frac fil, frac appear to weakly brecciate rock locally v strongly carbz, maybe v minor amts of carbonaceous mat.as frac fil locally
-from 739.5' to 740', a few 1/4" calc seams pll fol
-from 742 to 742.5', 6" coarse grained granula qtz calcite vn at 20° to the ca,
-from 742.5', 743', numerous 1/4" qtz calcite vn pll fol to 10% of rock
-at 745.5', a few 1/2" frag of cherty grey rhyolite ? (maybe a brecciated qtz vn)
-from 745.5', to 749', becomes slightly darker green, more chl, v soft, strongly altered, more strongly frac at ran or w calc frac fil, numerous qtz carb vn to 1" and 5%
-at 746', 1" qtz calc brecciated vn frag
-from 746.5 to 747', numerous 1" qtz calcite vn pred pll to fol, to 25% of rock
-at 748 and 748.3', 1" qtz calc vn pll sch
-overall sulph content 0.25% Py as frac fil and mineralization ass w thin calc seams

DDH JL 85 B1

749 - 767.5'

-mineralized serz carbz dacite to and. lapilli tuff to agg, or eq epiclastic rock (wacke to conglomerate)
-rock comprised of a v thinly bd (1/16" to 1/4") light grey to light green altered (pred v strongly serz, and in places mod chlz) dacitic to and. ground mass/matrix, bd v well dev at 65° to the ca,
-contains on av. 30 to 40% clasts/frag ranging in size from 1/16" to 1/2", w fine lapilli tuff bd in coarser agg bd, frag pred a light greenish grey to white v calc rich /altered rock, and a light green serz rock
-frag are elongate pll to fol, v pyroclastic appearing, frag content ranges from 15 to 60% of rock
-a few white to blueish white qtz frag
-a few grey cherty frag
-rock is pred weakly to mod frac at ran or w calc, chl, ser and minor Po-Py frac fil
-pred a agg appearing, w 20% small frag (less than 1/8") and 10% larger frag (to 1/2")
-overall sulph content, 2%, 1% Py and 1% nonmag Po, w trace Cpy, occ as thin 1/16" seams pll to bd, minor vfg diss mineralization and occ frag blebs to 1/8"
-from 749 to 752', frag only 10 to 15% of rock, a fine lapilli type tuff, v clastic appearing in places, sulph locally only 0.5% pred Py and trace nonmag Po as thin seams pll to fol and micro frac fil
-from 759 to 759.5', aphanitic / arg, v soft intensely chlz and carbz interbd,
-from 759.5', to 762', dark green prominant alteration of ground mass is chl
-from 762 to 762.5', thin vfg granular appearing grey calc rich wacke interbd
-from 762.5 to 767.5', pred a f lapilli tuff, frag only 1/8", to 20% of rock, becomes increasingly finer towards 767.5', arb contact w underlying unit

DDH JL 85 B1

767.5 - 776'

-interbd arg (or ash tuff)
-rock consists of v thinly bd (to 1/2") (bd v well dev at 70° to the ca,) pred 1. light grey to greyish green v ser rich arg or aphanitic serz ash tuff to 50% of rock and
-2. darker green to dark grey v chl arg or chlz ash tuff, to 40% of rock
-contains a few slightly coarser 1 to 2" dirty and. tuff or wacke interbd to 10% of rock , usually v calc rich
-all bd are mod to strongly carbz (v calc rich to 20% as vfg diss mineralization)
-mod to strongly frac at ran or w pred calc, minor chl, ser, Py frac fil
-a few 1/4" cherty silica interbd in places
-bd is kinked, crenulated in places
-a few chl interbd maybe weakly carbonaceous (up to 5%)
-overall sulph content, 1% Py, as fg diss mineralization, frac fil, and thin seams pll to fol
-at 767.5', a few 1/4" grey hard cherty interbd
-from 770 to 771', fg diss Py locally to 2%
-from 773.6 to 774.2', strongly carbz, chlz and. tuff interbd.
-from 774.2 to 776',graphitic arg interbd to 30%, ass Py increase to 10% as blebs elongate pll bd to 1/2", w numerous frag appearing brecciated calc rich and. tuff interbd to 1/2"

776 - 780'

-greywacke to lithicwacke
-thinly bd (1/16" to 1/8") bd v well dev at 70° to the ca, greywacke-lithicwacke or lapilli tuff, w a v soft v fg to aphanitic mod to strongly serz matrix/ground mass and 50 to 60% small (to 1/8") pred light green ser and calc rich frag/clasts slightly elongate pll to foliation
-3% Py as frag appearing to 1/4" and thin seams pll to bd, minor frac fil

DDH JL 85 B1

776 - 780'

-rock is mod frac at ran or w pred calc minor Py, chl, and ser frac fil
-at 777', 3" interbd of fg to med g appearing intensely carbz and chlz rock?
-a few dark black graphitic arg interbd to 1/2"
-a few small dark green chlz clasts/frag a few grey cherty sil frag
-at 778.5', 1/2" graphitic arg interbd w Py blebs to 1/2" a rims
-from 779.5', to 780', rock becomes intensely carbz (diss calc to 30%)

780 - 784'

-mineralized graphitic arg. (w ser arg interbd
-pred a thin bd jet black hard graphitic (to 60%) arg, bd v well dev at 70° to the ca,
-10% Py as thin semi massive bands to 1/4" pll bd, vfg diss mineralization, and small 1/8" spherical nodules some secondary frac fil
-contains 3 to 5% small 1/8 to 1/4" qtz pods and thin silica seams often in close spacial association w Py
-contains a few thin calc seams pll to fol
-mod frac at ran or w calc, hematite, Py frac fil,
-contains 10 to 15% thin light green v ser rich relatively hard arg interbd w up to 10% vfg diss Py
-at 781' and 781.5', locally abundant hematite frac fil & thin vuggy hematite seams pll bd
-from 783 to 784', contact with underlying dacite, grey intensely carbz v soft rock w 10% diss Py bleb to 1/4", rock weakly brecciated by thin graphite chlorite seams

DDH JL 85-B1

784 - 795'

-serz, carbz dacite
-rock pred a vfg light green massive to v weakly sch in places (at 70° to the ca)
-mod serz, mod carbz dacite
-carbonate is vfg calc occ as thin v small acicular crystals, often in radiating aggregates, to 20% of rock
-rock appears mod autobrecciated in places w v faint frag appearing blebs to 1" set in a ground mass of similar composition, frag are elongate pll to weak fol at 70° to the ca,
-rock is mod frac, pred pll fol, w calc, chl, minor hematite and Py frac fil frac also appear weakly breccia rock in places
-contains a few 1" v soft chlz shear zone pll fol,
-intensely carbz from 784' to 787',
-contains 0.5% Py as fg diss mineralization and frac fil
-from 789 to 790', appears mod autobrecciated w faint 'frag' to 1" elongate pll to fol set in a slightly darker but similar composition material, frag matrix ratio is 90/10
-at 790', 2" zone where brecciated darker more chl rich seams to 1/4" pll fol, frag appear bleached, hard, and dolomitic
-at 790.3', 1" chlz shear zone at 70° to the ca
-appears bleached in places where faintly autobrecciated
-from 790.5 to 791.5', appears weakly autobrecciated w slightly harder, bleached appearing frag to 2" in a similar ground mass,
-791.7 ', 2" chlz shear zone at 70° to the ca,
-from 793 to 795', more strongly frac at ran or w calc, hematite, and Py frac fil, locally a few 1/2" grey calc vn at ran or, locally appears faintly autobrecciated, w slightly darker more chl seams to 1/4 " pll fol brecciating rock
-arb contact w underlying unit

DDH JL 85B1

795 - 840'

-fg dark grey and., autobrecciated in places (similar to unit intersected from 465.5 to 615', in hole JL84-A, maybe a recrystalized metasediment) rock pred a dark grey to dark greenish grey vfg and.
-weakly sch/fol at 45 to 70° to the ca, av. or is 65° to the ca, fol somewhat contorted in places
-relatively hard, mod to strong but patchy carb alteration w vfg diss calc to 20% of rock in places
-appears 'crystaline' w 20% vfg v small acicular often radiating clusters of white fibrous mineral (less than 1/32") maybe a carb or a fspr, but simultaneously rock appears relatively granular w white fibrous mineral surrounding vfg 'grains'
-v weakly serz and chlz in places particular where autobrecciated
-autobrecciated zones common, w thin (to 1/8") slightly darker more chl faint seams pll sub pll fol brecciate host with frags 1 to 2", av 1/2", elongate pll to fol, of host rock
-where strongly brecciated, often get increase in ser and chl alteration of brecciated frag
-rock is strongly frac w both chl and weakly carb autobrecciating frags & thin randomly or calc, hematite, Py and chl fil frac
-contains a few irr qtz calc vn at ran or
-is pred weakly autobrecciated w frag to 3 to 4", and a few more strongly brecciated zones
-overall sulph content is 0.25% Py as fg diss mineralization, ass pred w weak brecciated zones, andPy frac fil ass w calc
-at 796', 1/4" green chlz pheoncrysts? clasts ?
-at 799.5', 1" light green weakly serz 'frag' in autobrecciated zone
-from 802 to 805', weakly autobrecciated w weak corresponding increase in ser and chl alteration, locally 1% Py as frac fil ass w calc seams
-at 805', 2" fg granular calc vn at 65° to the ca,

DDH JL 85 B1

795 - 840'

-at 806', a few 1 to 2" lighter grey green weakly serz autobrecciated frag
-from 807 to 808', weakly autobrecciated weakly serz, foliation is mod dev at 70° to the ca,
-at 808 ' 1"diffuse grey calc vn at 70° to the ca,
-from 809 to 809.5', weakly chlz and serz autobrecciated zone
-from 811 to 812', numerous 1/8 to 1/4" calc seams pred pll weak fol at 65° to the ca w minor ass Py, and a few weakly serz and chlz frag to 1"
-at 812.5', 1/4" calc chl vn pll fol at 40° to the ca,
-from 812.5 to 813', weakly chlz and serz auto brecciated zone
-at 813.5', a few 1/2" chlz and serz altered 'frag', locally offset along frac
-from 815.5 to 816', mod chlz zone
-from 816 to 817', numerous 1" irr fg granular calc vn at ran or to 10%
-at 818.5', 1" irr calc vn at 0° to the ca,
-from 821.5', 823', locally v strongly brecciated w v soft dark green strongly chlz and carbz frag to 1", av 1/4", to 40% ; set in a 60% chl ground mass/matrix, well dev fol at 55° to the ca, locally v strongly frac at ran or w calc frac fil
-at 823.5', 1/4" hard dark black chl (and minor graphite) band at 60° to the ca,
-at 825', 1" strongly chlz band at 55° to the ca,
-at 828', to 828.5', strong frac pll fol locally at 60° to the ca, w calc frac fil locally weakly autobrecciated and chlz
-from 829 to 829.5', mod autobrecciated light green, weakly chlz and serz frag av. 1/2 to 1", frag matrix ratio locally 90/10
-at 831', 1" irr calc vn
-at 832.2', 1" grey calc vn at 60° to the ca
-at 834', 1" qtz carb vn cross cuts fol at 70° to the ca
-at 836.5', 1/2" carb-ser seams pll fol at 55° to the ca, locally appears slightly coarser, better dev fol/sch at 55° to the ca
-at 836.8', 1/2" calcite - chl seams at 40°

DDH JL 85B1

795 - 840'

to the ca, locally minor Py frac fil blebs to 1/8" w calc
-from 837.5 to 839.5', mod to strongly brecciated frag av. 1/2", light green, mod chlz, and serz, locally frag matrix ratio is 90/10
-at 838.2', 2" calc vn, highly contorted, cross cuts fol at 50° to the ca, locally mod fol at 55° to the ca,

840 - 848'

-carbz serz, dacite
-rock pred a light green v fg relatively hard sil mod serz dacite
-only v weakly sch at 65° to the ca,
-weakly carbz, (to intensely carbz from 847 to 848') with vfg diss calc to 10%
-strongly frac at ran or w pred calc, minor hematite, ser, chl and Py frac fil
frac appear to brecciate rock in places
-appears v faintly autobrecciated in places
-a few 1/2" to 1" calc seams at ran or
-0.5% fg diss Py and minor Py frac fil
-a few 1/4" white anhedral to sub hedral fspr phenocrysts
-at 842.5', 1/2" calc vn
-from 842.5', 843', intensely frac at 0° to the ca, w calc - hematite frac fil
-at 845', 4" qtz vn at 65° to the ca, w a few 1" intensely serz frag of host rock, w minor diss Py at vn rims
-from 845 to 846', v strongly frac at ran or, frac appear to weakly brecciate rock, w chl, calc, minor hematite frac fil
locally dacite slightly coarse, contains acicular fibrousappearing clusters of small (less than 1/32") white carb ?/fspr? crystals
-from 846 to 846.7', strongly brecciated zone w 1/2" elongate strongly carbz dacitic type frag to 40% , set in a graphitic chl ground mass/matrix (60%), well fol, as exhibited by orientation of frag at 60° to the ca, Py to 5% locally as semi massive seams pll fol ass w graphitic matrix

DDH JL 85 B1

840 - 848'

-from 846.7 to 848', v strongly carbz
Py increase to 1% vfg diss mineralization
brecciated contact at 848' -

848 - 850'

-autobrecciated carbz dacite
-rock consists of 40% frag, usually elongate pll to weak to mod fol to 65 to 70° to the ca, frag to 2" av. 1/4" to 1/2" of light green strongly carbz (diss calc to 30%) weakly serz dacitic frag, set in a light grey slightly harder more siliceous but v similar matrix (60%)
-frag- clasts contact are v faint, appears to be autobrecciated, or some type of conglomeratic horizon
-from 848 to 848.2', brecciated by thin dark grey to black chl (w trace carbon)seams pll fol w ass 3% Py
-Py to 0.5% as diss mineralization in frag
-mod frac at ran or w calc frac fil

850 - 854'

-intensely carbz dacitic rock (brecciated in places)
-rock pred a vfg light greenish grey dacitic rock
-v weakly fol (sch) at 65° to the ca
-intensely carbz, w fg diss calc to 50% of rock
-a few 1/4" anhedral to subhedral fspr phenocrysts
-mod frac at ran or w calc, ser, Py frac fil
-rock is weakly serz in places
-appears weakly autobrecciated in places w faint frag to 1" set in a slightly darker grey matrix of similar composition
-Py to 1% as vfg diss mineralization, occ minor frac fil
-from 853 to 854', mod autobrecciated, frag elongate pll fol at 65° to the ca, to 80%, set in a matrix of similar composition numerous thin 1/4" calc seams pll fol, occ w minor black chl

DDH JL 85 B1

850	- 854'	-arb contact w underlying unit
854	- 857'	-intensely brecciated, altered rock -intensely brecciated, altered rock pre-curser probably dacitic -at 854', frag/matrix ratio is 50/50, w 50% small (to 1/2") light green intensely carbz, weakly serz dacitic type frag and 50% darker grey vfg weakly chl and calc rich matrix -from 855 to 857', frag become indicernable becomes a strongly sch strongly chl - ser-carb altered rock, w a few thin 1/2" to 1/4" calc vn pll fol -from 856.5 to 857', rock becomes hard grey, appears weakly sil -rock is mod frac, pred pll fol, w calc hematite, Py frac fil -Py to 0.5% pred as diss mineralization and frac fil
857	- 869'	-intensely brecciated carb rock, (or totally carbz dacite) -rock pred a relatively hard, white to dark grey, carb -is fg, granular appearing, appears to be pred dolomitic -intensely brecciated, by thin light green ser seams to 1/8" at 65° to the ca, varies locally from 50 to 70° to the ca, -carb content approx 70%, and thin ser seams to 30% -appears v agg in places, w elongate pll to fol brecciated frag to 1", av 1/8" to 1/4" -contains a few 1/2" secondary qtz calc vn at ran or -rock is intensely frac pred pll fol, w ser calc, minor qtz, Py frac fil -Py to 0.75 % as vfg diss mineralization ass w carb, and minor frac fil

DDH JL 85 B1

857 - 869'

-from 857 to 859', numerous irr 1/4 to 1" grey blebs of sil, proximal to qtz fil frac to 10% of rock
-at 861.5', 1/2" qtz minor pink calc vn cross cuts fol at 45° to the ca,
-at 863', 1/2" qtz minor pink calc vn cross cuts fol at 60° to the ca,
-at 864', 1" irr qtz and hard white magnesite vn cross cuts fol at 75° to the ca,
-at 867', a few 1/4" qtz vn at 70° to the ca,
-sharp contact at 869',

869 - 877'

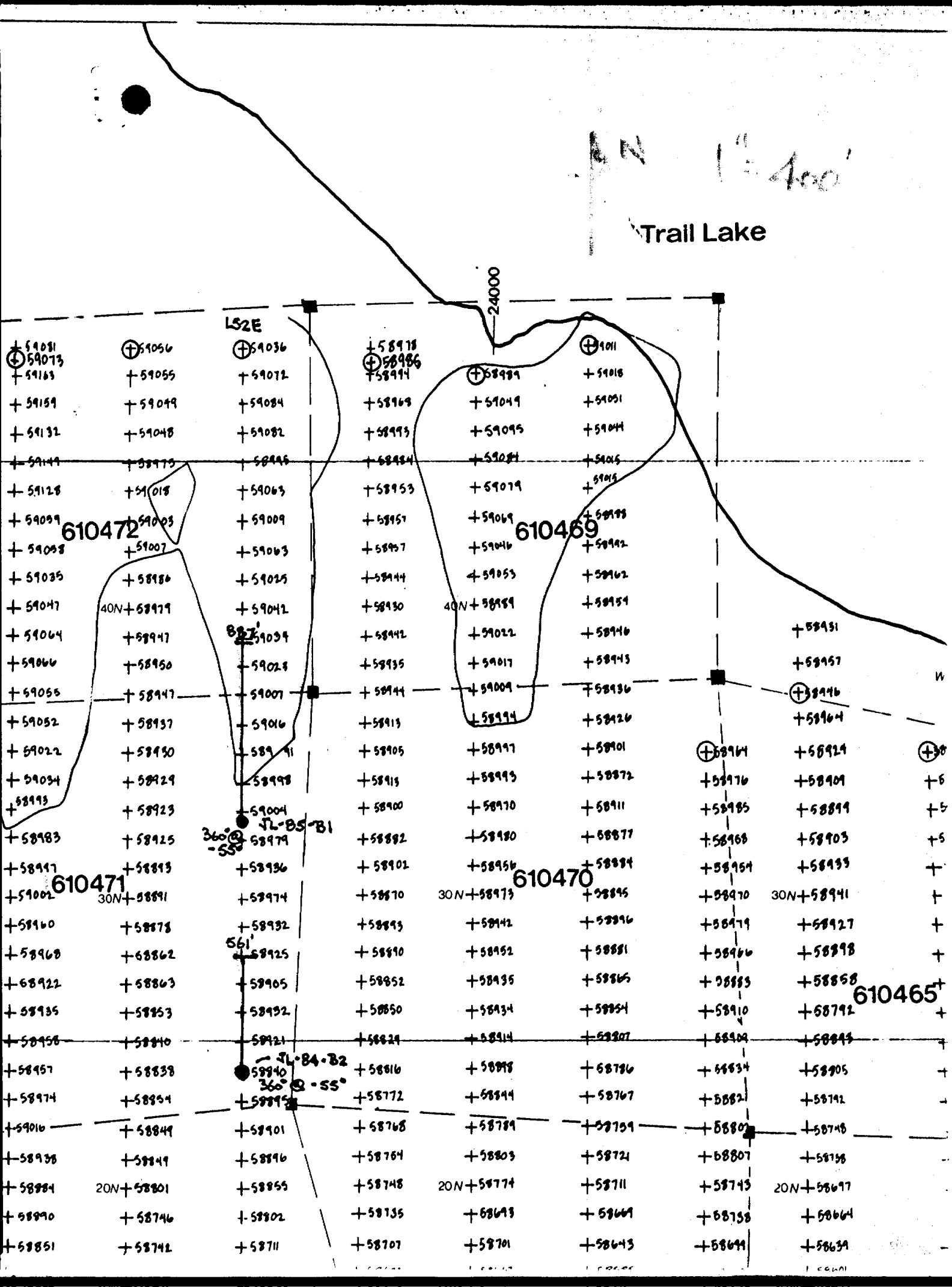
-carbz, serz, to chlz to and.
-rock pred a vfg, light green, (serz) to med green (chlz) strongly carbz (w 25% diss vfg calc) and., v soft
-mod sch at 70° to the ca,
becomes more massive appearing towards 877'
-numerous thin 1/4 to 1/2" calc and qtz calc vn pll fol to 10% of rock
-rock is strongly frac pred pll fol, w calc ser, chl, and minor qtz, Py frac fil
-from 869 to 873', v well fol, appears almost bd, dominant alteration is sericite becomes more chl from 873' to 877'
-contain 0.5% fg diss Py
-at 869' 1" qtz hard white magnesite vn pll fol at 70° to the ca
-at 870', 1/4" black qtz seam pll fol
-from 869 to 870.5', qtz calc and harder magnesite vn pll fol to 1/4" and 20% of rock
-at 871.5' 1/4" black qtz and calc vn pll fol
-from 873.5', to 874', numerous 1/2" calc and minor qtz vn pll fol to 15% of rock

877 - 887'

-andesite
-fg light to med green weakly chlz and.
-weakly sch 70° to the ca,
-contains 10% small white fspr blebs that lend tuff appearance to rock, but has a fg crystaline texture

DDH JL 85 B1

877 - 887'	-strongly frac pred pll fol at 70° to the ca, -frac appear to weakly brecciate rock in places, pred chl and calc frac fil, occ hematite, Py -a few 1" white calc vn at irr or often w minor light green epidote -0.75% Py, pred as frac fil, occ diss cubes to 1/8" -at 881', 6" highly frac zone with chl calc, and epidote fil frac to 1/4", a few Py blebs to 1/4" along frac -from 884', to 884.5', numerous contorted 1/4 to 1/2" epidote- calcite-chl vn w occ Py blebs to 1/4" -from 884.5 to 887', v strongly frac, w chl and calc frac infilling to 1/4", appear to weakly brecciate rock, locally Py to 1% as frac fil, and diss blebs to 1/8"


N 1" = 400'
Trail Lake
24000
LS2E
610472
610469
610471
610470
610465
40N
30N
20N
827'
561'
JL-B5-B1
360° @ -55°
JL-B4-B2
360° @ -55°

HOLE NO. JL-84-B2
CASING COLLAR ELEV.: 4' above ground GROUND ELEV.:
COORDINATES: L52E, 24+00N (NORTH GRID) N. E.
INCLINATION: -55° BEARING: 360°

PROJECT: JIM'S LAKE
DATE STARTED: DECEMBER 12, 1984
DATE FINISHED: DECEMBER 15, 1984
TOTAL DEPTH: 561'

REF. TO CLAIM CORNER:
SCALE: 1" = 10'
LOGGED BY: D. McIVOR

COMMENTS:
DIP TESTS (CORRECTED): 226' - 56°, 420' - 52°, 561' - 51°
- LOST 116' OF N CASING DOWN HOLE
- PLASTIC PIPE TO 560'. (BUT MAY BE BLOCKED @ 560)

AVE CORE REC'Y / HOLE: 100%

MAG. SUS. (LOG 20 SCALE): 0.5 1.0 5

ALTERATION: CHLORITE | SERICITE | CARBONATE | OTHER — FRACTURING — MINERAL — GEOLOGY

DESCRIPTIVE GEOLOGY
(SEE ATTATCHED TYPED NOTES)

SECTION: 200' 210' 220' 230' 240' 250' 260'

0'-223' OVERBURDEN

- cored through hd. black vfg bio rich graywacke boulder
- 1/2-1" gran., gran gn, dbse-gabbro cobbles
- qtz-calc 'vn' c 5% Py

223'-247.5' INTENSELY CARBONATIZED, MINERALIZED ARGILLITE (OR INTERMEDIATE ASH TUFF)

- calc vning to 25%
- calc-Py 'veins'
- chloritic arg interbed
- thinly bedded v. soft intensely carb^a arg. c 10% small qtz-calc-Py blebs (may be tuff frags)
- qtz-calc vns c 10% vfg diss Py
- hard beige dol. vns
- locally appears v. clastic, c 10% small qtz.calc.Py blebs
- contorted chert interbed
- locally appears wkly brecciated by thin carb-ser seams
- cherty qtz-dol vn c 5% Py, 1% Po
- becomes increasingly dolomitic appearing
- qc vns c 5% Py

247.5'-270.5' MINERALIZED INTERBEDDED ARGILLITES (CONTORTED, SLUMPED)

- thinly bedded, interbedded light gray-green arg., chloritic arg, dolomitic arg, cherty arg. & granular qtz-calc-dol 'veins/beds'
- qtz-calc vns locally to 80%
- chert interbeds c 5% Py-Po
- chert interbeds
- slump brecciated
- chert interbeds locally 15%, c 5% Py, some mte

Alteration (223'-247.5'): Chlorite: FEW THIN INTERBEDS; Sericite: WEAK / WEAK; Carbonate: INTENSE / INTENSE
Alteration (247.5'-260'): Chlorite: INTERBEDS TO 10%; Sericite: WEAK / WEAK; Carbonate: STRONG / WEAK

Mineral: Py, Py, Py, Py, Py, Py, Py, Po, Po, Py

Mag. sus.: 0.1, 0.1, 0.1, 0.1, 0, 0.1, 0.2, 0.8

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE
TR	221'-224'	100%	BQ
2%	224'-226'	100%	
	226'-237'	100%	
	237'-243'	100%	
3%	243'-253'	100%	
	253'-257'	100%	
	257' To 267	100%	

SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
221'-223'	100%	SALTED SAMPLE (LAB CHECK)
223'-226'	100%	
226'-227'	100%	
227'-235'	100%	
235'-240'	100%	
240'-245'	100%	
245'-247.5'	100%	
247.5'-249.5'	100%	
249.5'-254'	100%	
254'-258'	100%	
258' To 261'	100%	

HOLE NO. JL-84-82 | PROJECT: JIM'S LAKE | PAGE NO: 2 OF 7

CASING COLLAR ELEV.: 4'a.g | GROUND ELEV.: | DATE STARTED: DECEMBER 12, 84 | REF. TO CLAIM CORNER:

COORDINATES: LS2E-24+00N | N. | E. | DATE FINISHED: DECEMBER 15, 84 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 561' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE: MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
260'	INTERBEDDED TO 60%	WEAK	STRONG					ddl-calc-qtz bd/vn ± 6% Py	247.5'-270.5' MINERALIZED INTERBEDDED ARGILLITES				BQ	261'	100%	
								white & black (± 3% mte) chert interbeds locally to 40%	0.8	3%		100%				
								locally v. slumped, appears 'agglomeratic'			267'					
								qc 'beds/veins'	1.5					268'		
								locally bd is v. contorted, slumped						270.5'	100%	
270'	STR		STR-STRONG					black (± 3% mte) chert beds to 30%	0.7							
								clast rich bands/beds of carbonate (dol ± calc) in chloritic arg.	270.5'-275' LITHIC WACKE (TO CONGLOMERATE)	0.5%		100%			100%	
									275'-278.5' CARBONATE RICH ARGILLITE					275'		
			STR					few small calc-Py-Po blebs	0.1	Tr.	277'				100%	
280'	INTERBEDDED TO 20%	WEAK	MODERATE					dolomite interbedded, soft gray arg, cherty arg, dolomitic arg & chloritic arg	278.5'-293.5' MINERALIZED INTERBEDDED ARGILLITES, ± SLUMPED, BRECCIATED LITHIC WACKE TO CONGLOMERATE HORIZONS	1%				278.5'		
								locally black (± 15% mte) chert interbeds to 35%	0.2			100%		282'	100%	
		WEAK						pred soft strongly chloritic arg. ± 30% slump brecc. dol frags to 1"		2%				285'		
								sericitic arg	0.2	Tr					100%	
								locally conglomeratic appearing, ± 1" clasts/frags of chert & dol.		2%	287'			289'		
								dolomite beds.		0.5%						
290'								chert to 35%, ± wacke interbeds	0.1	5%		100%		293.5'	100%	
	STRONG		INTENSE					qc vning to 20%	293.5'-340' INTENSELY CARBONATIZED, CHLORITIZED ANDESITE ASH TUFF							
								calc vn	0.1							
								locally bedding is kinked, recrystallized			297'				100%	
300'								calc (± minor qtz) veins	0	0.5%				300'		
												100%			100%	
								strongly sh. chl' zone ± 20% qtz-calc vns, 5% diss mte, 1% Py-Po	0		307'			306.5'		
														307.5'	100%	
310'				V. STRONG				calc-mte vn	0.2							
												100%		312.5'	100%	
										0.5%						
								qtz-calc vn			317'				100%	
320'											To 327'	100%		To 322'		

HOLE NO. JL-84-BZ | PROJECT: JIM'S LAKE | PAGE NO: 3 OF 7

CASING COLLAR ELEV.: 4' above gr. | GROUND ELEV.: | DATE STARTED: DEC. 12, 84 | REF. TO CLAIM CORNER:

COORDINATES: L52E, 24+00N N. E. | DATE FINISHED: DEC. 15, 84 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 561' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE: MAG. SUS (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
320'	STRONG — STRONG		V. STRONG - V. STRONG			Cpy Py Py		293.5' - 340' INTENSELY CARBONATIZED, CHLORITIZED ANDESITE ASH TUFF - qtz-calc vns - dol vn - calc-qtz vn ± 5% mte	0				BQ	322'	100%	
						Py		- calc-qtz vn ± 5% mte	0.1	0.5%	327'	100%				
330'						Py		- chloritized shear zone - qtz-calc vn	0.1					332'	100%	
						Py		- qtz-calc vns	0.1	0.5%	337'	100%			100%	
340'	WEAK TO MODERATE		MOD TO STRONG			Py		- small white (fspar?) tuff frags to 25% 340' - 356.7' CHLORITIZED, CARBONATIZED ANDESITE TUFF - qtz-calc vn - qtz-calc vn	0.1					340'		
						Py		locally strongly chloritized, ± 5% thin qtz-calc vns	0	0.5%	347'	100%		347'		
350'						Py			0	1%				350'	100%	
									0.1	0.5%	357'	100%		356.7'		
360'	WEAK TO MODERATE		INTENSE - INTENSE			Py Py Py		356.7' - 377' INTENSELY CARBONATIZED ANDESITE ASH TUFF - well dev. bedding @ 60° - calc-qtz stringers, ± strong chl alt halos ± 2% Py - qtz-calc vn - strongly chloritized zone ± 5% diss mte	0.1			100%			100%	
						Py		- strongly chloritized zone ± 10% diss mte - qtz-calc vns	0.1	0.5%	367'			367'		
370'						Py		- dolomitic bands - bedding locally contorted - qtz-calc vns	0.1			100%			100%	
	MOD		MOD			Py		377' - 406.5' CHLORITIZED, CARBONATIZED ANDESITE ASH TUFF - calc-fspar vns	0.1	0.25%	377' To 387'	100%		377'		
380'																

HOLE NO. JL-84-B2 | PROJECT: JIM'S LAKE | PAGE NO: 4 OF 7

CASING COLLAR ELEV.: 4' above gr. | GROUND ELEV.: | DATE STARTED: DEC. 12, 84 | REF. TO CLAIM CORNER:

COORDINATES: L52E, 24+00N | N. | E. | DATE FINISHED: DEC. 15, 84 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 561' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	SERICITE	CARBONATE	OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE: MAG. SUS. (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
380'	MOD. — STRONG — STRONG		MODERATE — MODERATE			Py		377'-406.5' CHLORITIZED, CARBONATIZED ANDESITE ASH TUFF - qtz-calc vns well foliated @ 60° ca (bedding) - qtz vein ± 1" bleached alt halo - calc vn ± minor diss mte - qtz vn - contorted qtz-calc vns ± 1% Py - locally calc stringers to 20% of rock - fg granular qtz-calc vns ± 3% mte, 3% Py - calcite veins to 60% of rock - locally v. strongly carb°. frac pattern lends 'agglomeratic' appearance to rock - calcite stringers to 60% of rock	0.1 0.1 0.1 0 0	0.25% To 0.5%	387' 397' 407'	100%	BQ	392' 396'	100%	
410'	WEAK TO MODERATE		MODERATE TO STRONG			Py Cpy		406.5'-428' WKLY CHLORITIZED, STRONGLY CARBONATIZED ANDESITE schistose, @ 60° to ca qtz-calc vn - calc vn - strongly chl° band ± 1% diss Py calc vn - qtz-calc vns - locally v. strongly schistose - qtz-calc vns	0 0 0 0 0	0.5%	417' 427'	100%		425' 428'	100%	
430'	STRONG		STRONG			Py		428'-443' AGGLOMERATIC ANDESITE thinly bd chl° groundmass ± 40% frags to 1-2" carbonatized fragments & frags of 'calc-qtz' - qtz-calc vn locally frags contain 10% fg diss mte - locally appears slumped, & highly contorted bedding - calc-dol vn	0.1 0.1	0.5%	437' To 447'	100%		435' To 443'	100%	

HOLE NO. JL-84-82
CASING COLLAR ELEV.: 4' above gr. GROUND ELEV.:
COORDINATES: L52E, 24+00N N. E.
INCLINATION: -55° BEARING: 360°

PROJECT: JIM'S LAKE
DATE STARTED: DEC. 12. 84
DATE FINISHED: DEC. 15. 84
TOTAL DEPTH: 561'

REF. TO CLAIM CORNER:
SCALE: 1" = 10'
LOGGED BY: D. McIVOR

DESCRIPTIVE GEOLOGY

Section	Alteration	Comments
440'	Chlorite: STR; Carbonate: STR	- qc vn - qc vns
	Chlorite: MODERATE TO STRONG; Carbonate: INTENSE	- wkly sch. @ 50-55° - calc vn, c 1% Py - locally sch. is kinked, crenulated **443'-494.5' ANDESITE**
		- fg crystalline txt - calc-qtz vns - locally hem frac fill
450'	Carbonate: WEAK	- chl seams
		- qtz-calc-chl vn - locally appears wkly brecciated by thin chl. seams
460'	Carbonate: WK; Other: WK EPID ALT	- slightly coarser, locally appears m.g. dioritic - a few 1/4" epid alt fspar phenox
	Carbonate: WK	- locally aphanitic, strongly carbonatized. - qtz-calc vn
470'	Carbonate: STR-STR	- fg xlline txt - locally appears wkly brecciated by chl-calc filled fracs - calc vn - pink calc vn.
480'	Carbonate: WEAK	- calcite vns
	Carbonate: V. STRONG	- qtz-calc-hem vn - becomes increasingly carbonatized - calc vn
490'		- qtz-calc vn.
	Chlorite: WEAK; Sericite: WEAK; Carbonate: INTENSE	- mod. sch. @ 60° **494.5'-500.5' INTENSELY CARBONATIZED ANDESITE (TUFF?)** - small qtz, calc blebs lend tuffaceous app. to rock - calc vns - calc, qtz blebs to 5% rock (tuff frags/amygdules?)
500'		

Mineral: Py noted at several intervals.

AVE CORE REC'Y / HOLE — MAG SUS (LOG 20 SCALE) 0.5 1.0 5: readings 0.1 throughout (440'–500').

% Sulphides	Drilling Interval	% Core Recovered	Core Size
0.5%	447'	100%	BQ
0.5%	457'	100%	
0.5%	467'	100%	
0.5%	477'	100%	
	482'	100%	
	493'	100%	
0.5%	To 503'	100%	

Sample Interval	% Rec'y Samp. Int.	Estimated
443'	100%	
449'	100%	
467'		
471'	100%	
476.5'		
483.5'	100%	
494.5'	100%	
To 500.5'	100%	

HOLE NO. JL-84-82 | PROJECT: JIM'S LAKE | PAGE NO: 6 OF 7

CASING COLLAR ELEV.: 4' above gr. | GROUND ELEV.: | DATE STARTED: Dec. 12, 84 | REF. TO CLAIM CORNER:

COORDINATES: L52E, 2+00N | N. | E. | DATE FINISHED: Dec. 15, 84 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 561' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE: MAG SUS. (LOG 20 SCALE) 0.5 1.0 5	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
500'	FEW SEAMS	WEAK	INTERMEDIATE			Py		fg granular calcite-qtz beds ± 5% diss'mte fracture pattern lends fragmental appearance to rock thinly bedded @ 60° strongly chloritized zone ± 5% Py	500.5'-508' INTENSELY CARBONATIZED ANDESITE ASH TUFF OR EPICLASTIC ARGILLACEOUS EQUIVALENT		1%	503'	100%	BQ	500.5'		
510'	WEAK TO MOD.		V. STRONG			Py		mod sch. @ 60° ± faint remnant fg xlline tex few thin calcite vns	508'-521' CARBONATIZED ANDESITE		0.25% To 0.5%	519'	100%		508'	100%	
520'	MODERATE — MODERATE — V. STR	WEAK, PATCHY — WEAK, PATCHY	V. STRONG — V. STRONG — V. STR			Py		appears bedded @ 60° dolomite vns/beds ± 2% Py	521'-555' CARBONATIZED ANDESITE (ASH TUFF?)			524'	100%		521' 522'	100%	
530'						Py Py Py		calc vns ± strong chl, alt halos qtz-calc vn ± 5% mte, 1% Py gray calc vns ± 2% Py qtz-calc vns to 75%, ± 10% diss mte, 2% Py		0.5%		529'	100%		529'	100%	
540'						Py		pink, v. siliceous, granular 'aplitic' dyke qz vein calc vn strongly chl' zone		0.5%		535' 546'	100%		536' 537' 541' 542.5'	100% 100% 100%	
550'						Py		qz vn locally some slumping calc vn cherty qtz band/vn fg siliceous pink aplitic dyke locally appears agglomeratic					100%		549'	100%	
560'	V. STR		V. STR			Py		40% intensely carb'd ½" frags in strongly chl' groundmass	555'-561' AGGLOMERATIC ANDESITE	2%		556' To 561'	100%	V	555' To 561'	100%	

HOLE NO. JL-84-B2 | PROJECT: JIM'S LAKE | PAGE NO: 7 OF 7

CASING COLLAR ELEV.: 4' above gr. | GROUND ELEV.: | DATE STARTED: DEC. 12, 84 | REF. TO CLAIM CORNER:

COORDINATES: L52E, 24+00N N. E. | DATE FINISHED: DEC. 15, 84 | SCALE: 1" = 10'

INCLINATION: -65° | BEARING: 360° | TOTAL DEPTH: 561' | LOGGED BY: D. McIVOR

SECTION	ALTERATION: CHLORITE	ALTERATION: SERICITE	ALTERATION: CARBONATE	ALTERATION: OTHER	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
560'	STR		STR		/			DESCRIPTIVE GEOLOGY	2%	561'	100%	BQ	561'	100%	
561'															

HOLE ENDS @ 561'
- 46 SAMPLES SPLIT FOR ASSAY.

Duncan McIvor FEB. 24, 1985

DESCRIPTIVE GEOLOGY NOTES

HOLE JL-84-B2

0	- 223'	-overburden -from 221 to 222.8', -cored through a hard, black vfg biotite rich (25%) grwk bolder (salted sample) -from 222.8 to 223', a few 1/2" to 1" granite granite gneiss, and diabase-gabbro cobbles
223	- 247.5'	-mineralized, intensely carbonatized, arg (or volcanic tuff eq) -rock pred v thinly bd (1/32 to 1/4", bd v well dev at 55° to the ca) light greenish beige to beige arg -intensely carbz (may be a chemical carbonate as a pervasive alteration, w diss calc in thin 1/32" bd/bands calc to 25% of rock (overall carb content approx 30 to 35%) -occ harder beige dolomitic bd -weakly serz -tuffaceous appearing, w small (to 1/8", av. 1/16 to 1/32") elongate (pll bd) pred carb (calc, occ w minor qtz and Py) frags to 10% of rock (varies from 0 to 20%), a few qtz frag, occ rounded, clastic appearing in places -numerous (5%) secondary coarser calc vn pred pll fol, w ass minor qtz, Py -a few contorted (slumped-brecciated) zones, as exhibited by highly contorted carb vn -a few darker green, weakly chl interbd -rock is weakly frac at random or, w pred calc, minor Py frac fil -rock is weakly brecciated in places, by thin highly contorted chl - calc - Py seams and infilled frac -contains minor vfg diss black mineral (biotite ?) elongate pll to bd -sulph content, av 2%, to 5% in places, pred Py, trace Po, occurs as v v v fg mineralization ass w thin 1/32" calc bd/bands, and w calc frag, minor diss mineralization throughout rock, lending mottled appearance

HOLE JL-84-B2

223	- 247.5'	to rock -at 224.5', 2" bd, dark grey granular qtz carb band w 5% vfg diss Py -at 226.7', 2" zone w 5% vfg Py ass w 25% calc vn pll to bd, and Py frac fil -at 228.2', 2" zone w 10% Py as seams to 1/16" of vfg mineralization ass w calc seams pll to bd -at 229', 4" dark green chloritic arg interbd (or alteration zone) -at 232.5', minor hematite frac fil, locally vuggy -at 234', a few dark grey fg granular qtz-calc vn, brecciated into 1/2" frag in places locally v clastic appearing w 10% small (less than 1/32") carb and qtz blebs/clasts/frags -at 235.2', 2" zone w 1/4" grey cherty qtz and calc vn pll fol to 60% of rock, w 10% ass Py -from 235', carb becomes increasingly dolomitic -at 236', a few 1/4" hard beige dolomite interbd -at 236.5', 1" bd of vfg granular qtz-calc w 1/32" ser seams at rims -from 237 to 238', locally v clastic appearing, w 10% small 1/32" qtz, calc, and Py blebs pll to fol (wacke?) -from 239.5', to 240', locally v clastic appearing, w 10% small (less than 1/32") qtz and calc blebs -at 241', 1" qtz bleb elongate pll to bd -at 242', 2" contorted light green to grey chert w minor diss calc-dolomite, w minor Py-Po -from 242.5 to 243', rock appears weakly brecciated by numerous thin 1/32" chl - Py seams pll bd -from 243', begins to appear weakly brecciated by thin beige carb-ser seams pll fol (appears 'agglomeratic', w carb frags in sericitic ground mass) -from 242.5 to 245.5', highly contorted brecciated appearing cherty grey qtz and beige dolomite vn/bd w 5% Py, 1% Po, as thin seams pll fol and blebs to 1/4"

HOLE JL-84-B2

223	- 247.5'	-at 246.2', a few thin 1/32" bright light green ser seams pll bd -arb contact w underlying brecciated unit
247.5	- 270'	-mineralized interbd arg (contorted, slumped brecciated) -thinly bd (to 1 to 2" av, 1/4" to 1/16" bd v well dev at 55 to 58° to the ca,) interbd arg, bd is slumped, highly contorted in places -comprised of, 1. light greenish grey to beige relatively soft arg to 50% - 2. soft, darker green weakly chl arg to 10% - 3. yellowish beige, hard v dolomitic arg to 10% - 4. black to grey to white cherty arg to 10% - 5. v fg granular appearing qtz-carb (calc and dolomite) bd/vn pll fol to 15% -pred a light greyish green to beige arg w interbd of dolomitic, cherty, and chl arg, as above -strongly slumped / brecciated in places, lends v agg appearance to rock, w elongate slumped frag pll to bd -mod frac, pred pll bd, although other or present, w calc, minor Py-Po, and qtz frac fil -numerous (to 15%) vfg granular calc (w minor dolomite and qtz) vn/bd pll bd to 1/2" -numerous small (less than 1/32" to 1/16") elongate pll to bd, calc-qtz-dolomite 'blebs', lending tuffaceous appearance to rock in places -sulph content, av 3% (varies 1 to 10% locally), 2% Py, 1% Po, trace sphalerite, as vfg mineralization ass w carb-qtz bd/vn and as frac fil, v minor v fg diss mineralization in cherty arg

HOLE JL-84-B2

247.5 - 270'

-from 247.5' to 248'. numerous 1/2" to 1" grey hard granular qtz-calc w minor dolomite vn/bd , w 5% vfg diss Py, vn somewhat contorted, hosted in light green soft sericitic arg
-from 248 to 249.5', Py to 10% as semi massive bands to 1/4" ass w thin 1/2 to 1/4" hard grey granular qtz calc vn/bd pll fol and as frac fil, locally trace Po, and sphalerite
-from 248.5 to 249.1', cherty qtz vn/bd locally the thin light green arg is v calc rich (diss to 25%)
-from 249.1 to 249.5', a few 1/4" cherty qtz vn/bd
-from 249.5 to 250', v tuffaceous appearing with 20% grey carb (calc and dolomite) 'frags' to 1/4" elongate pll bd, and a few v contorted vn/bd
-at 251', 3" zone w grey cherty qtz-carb vn/bd to 80%, w ass 5% diss Py, 2% Po, vn contorted in places, appear to be 'frags' to 1"
-from 252 to 252.5', strongly brecciated slumped w 3" grey chert clast, v strongly frac locally, Po to 3%, Py 1%, as vfg diss mineralization in all lithologies
-from 253 to 253.5', strongly slumped, contorted, w numerous 1/2" chert-Py-Po frag /bd, sulph locally 5% (3% Py, 2% Po)
-from 254 to 254.5', a few highly contorted 1/4" cherty arg bd, w minor ass hematite
-at 254.8', locally intensely slumped brecciated
-from 255.4', to 256', a few 1/4" grey cherty arg interbd
-at 256.7', 1" rounded chert qtz frag(clast?)
-from 258.5', 259.5', thin chert bd to 1/4" and 15%, locally the qtz carb vn/bd are v dolomitic appearing, locally Py to 5% as thin seams pll to bd asssociated w qtz carb vn, minor diss mineralization, and frac fil, locally a few sphalerite blebs
-from 259.8 to 260.5', thin bd (to 1/4") white chert and black magnetite rich chert bd to 60%, w 40% hard beige cherty dolomite bd, w 1% Po - Py trace sphalerite, distinct cross cutting frac set at 90° to the ca, w qtz-sulphide frac fil

HOLE JL-84-B2

247.5 - 270'

-at 261.5', 2" contorted fg granular hard carbonate (dolomite to calc) qtz ('bd',) w 5% diss Py, trace Po
-from 263.5', to 264', thin white and black magnetite rich,(3%) chert bd to 1/2" and 40%, a few pink hematite rich cherty bd
-from 264 to 266.8', very slumped, appears 'fragmental - agg',
-from 266.8', to 267', frag of cherty to 1" and 60% pll fol (brecciated frag)
-at 267.5', 2" zone w thin qtz - calc-hematite bd/vn contain trace sphalerite
-from 268.5', to 269.2', bd v contorted, slumped
-from 269.2 to 269.5', thin 1/4" black magnetite bearing (3%)chert bd to 30%
-from 270.3', to 270.5', black magnetite bearing chert bd, w dolomitic frac fil
-unit pred contorted slumped brecciated arg., may have conglomeratic zones,

270.5 - 275'

-lithicwacke (to conglomerate)
-rock consists of a thin bd (1/32" to 1/4" bd at 60 to 70° to the ca, pred at 60°) dark green, v chl, soft, arg matrix, w 50% thin (to 1/4") dark grey to beige hard carb (pred dolomite, some calc) bands, comprised of small fragmental/ clastic appearing blebs from 1/8 to 1/4", a few chert frag/clasts, and a few thin chert interbd
-(may be a lapilli tuff to agg, as opposed to an epiclastic rock)
-mod frac pred pll bd, w chl and calc frac fil
-0.5% diss Py-Po, minor Py-Po frac fil, and occ frag/clasts to 1/8"
-at 270.6', 1" beige dolomitic frag/ clasts w 2% fg diss Py
-at 271', 1" contorted grey chert interbd
-at 271.5', 1" grey chert bd w 0.5% diss Py, and a few 1/4" beige dolomite contorted interbd

HOLE JL-84-B2

270.5 - 275'	-from 273 to 274', interbd of vfg hard granular appearing beige dolomite, highly contorted, brecciated by thin qtz seams, a few 1/4" to 1/2" chert interbd, contains 0.25% fg diss Po-Py, v bleached appearing -at 274.2', a few 1/8" Po-Py bands pll bd ass w 1/2" contorted hard beige and grey carb interbd, locally from 274 to 275', sulph to 3% (1.5% Po, 1.5% Py)
275 - 278.5'	-carbz (or carbonate rich) arg rock -light grey, thinly bd at 60% to the ca) soft arg, v calc rich -mod frac, pred pll sub pll bd, w qtz, calc, minor frac fil, frac appear to weakly brecciate rock in places -trace Py - Po as frac fil and ass w calc blebs -from 277 to 278.5', 10% small (to 1/8 ") round to elongate pll bd calc (w minor Po-Py) blebs
278.5 - 293.5'	-mineralized interbd arg, w slumped, brecciated wacke to conglomeratic horizons -rock comprised of interbd, -light greenish grey, soft, arg, w varying degrees of carbz (or calc content), from weak to intense, often mod to strongly frac, w qtz and calc frac fil, to 50% -chert, from grey, to jet black, jet black bd contain vfg diss magnetite to 5%, to 10% of rock -dark green v soft chl arg, to 20% of rock -hard beige dolomitic arg, to 10% of rock -bd range in thickness from 1/16" to 1/4" to 6 to 8" -bd v well dev at 60 to 65° to the ca, although highly contorted, slumped in places -contains several 'horizons' where slumping has resulted in conglomeratic / brecciated appearing zones, usually consisting of more brittle dolomite & cherty clasts/frag set in

HOLE JL-84-B2

278.5 - 293.5'

a soft chloritic or light greenish grey arg matrix
-rock is pred mod to strongly frac, pred pll sub pll bd, although other or exhist, w calc, qtz, chl, and Py - Po frac fil,
-a few secondary cross cutting qtz calc vn
-from 278.5' to 279', a few 1/4" to 1" grey chert bd, and frag bd, w beige dolomitic and dolomitic arg frag to 1/4" and 20% of rock, a few thin 1/16" Po - Py seams pll to bd
-from 279'to 280', pred hard beige dolomite/ dolomitic arg (could be an alteration or a primary bd), strongly frac w a distinct set at 30° to the ca, w qtz, and Py-Po frac fil
-a few cross cutting secondary qtz vn to 1/2" at 30° to the ca, w Po-Py blebs to 1/4" and 1%
-at 279.5', 1/4" grey chert bd pll bd
-from 280' to 282.5', milky grey chert (20%) and black magnetite bearing chert (15%) to 35% of rock, bd to 2" av. 1/2", w 25% dolomitic arg bd, and 30% softer grey weakly chloritic arg bd, slumped, brecciated in places
-1% Py,trace Po, pred as frac fil
-locally strongly frac w qtz, carbonate, sulph frac fil
-from 282.5', 283', a grwk appearing zone, w thin interbd contain 30 to 40% small (1/32" clastic appearing carb blebs, a few chert and chloritic arg interbd, contains vfg diss Py and Py frac fil to 1% w trace Po and trace sphalerite
-from 283'to 285', pred a v soft dark green chl arg w 30% thin (to 1") brecciated frag of hard beige dolomite, and minor ass chert
-from 284.5', to 285', brecciated chert and dolomite frag to 90% of rock

HOLE JL-84-B2

278.5 - 293.5'

-sulph 2%, 1% Py, 1% Po trace sphalerite, as micro frac fil in strongly frac, brecciated dolomitic arg and chert frag
-locally from 284.5 to 285', Po-Py to 5% as blebs to 1/4"
-from 285'to 286', light green, weakly sericitic arg, w trace Py as frac fil
-from 286'to 286.5' , conglomeratic appearing (slumped breccia zone) w lrg (to 1") frag of chert, and cherty beige dolomitic arg, to 40 to 50% of rock , set in a dark green soft chl matrix, w 2% sulph (1% Py 1% Po) as frac fil and thin seams pll to to bd
-from 286.5'to 289', pred light grey green arg, v soft, strongly carbz (or calc rich) w a few 1" contorted hard beige dolomitic arg interbd w 0.5% Po , trace Py, as frac fil
-from 289' to 293.5', thinly bd (to 1 to 2") interbd grey chert (35%) and light green soft sericitic arg, which coarsens to a wacke in places (35%), w 20% thin dolomitic seams, often brecciated, fragmented, and 5% sulph (3% Py-1%Po-1%sphalerite) as vfg diss mineralization in wacke interbd and micro frac fil, and thin seams pll to bd
-sharp contact at 293.5',

293.5 - 340'

-intensely carbz, chlz andesite (ash tuff)
-rock pred a vfg (to aphanitic/arg) light green, v soft, v strongly carbz (diss calcite to 30% as pervasive alteration) and strongly chlz and. rock(ash tuff) well dev fol at 55° to 60° to the ca, appears to be bd, maybe weakly sch pll bd
-numerous light green to white calcite (with minor ass qtz) seams/vn to 1" and 3 to 5% of rock, pred pll fol

HOLE JL-84-B2

293.5 - 340'

-mod frac at ran or w pred calc, some chl, Py, and Po frac fil
-overall sulph content, 0.5% pred Py, trace Po, Cpy, as vfg diss mineralization, mineralization ass w qtz carb vn, and frac fil w calc
-from 293.5' to 312.5', intensely carbz, more grey in colour, more arg appearing, better dev bd, but grades into a less altered and. tuff
-from 294 to 295', thin (to 1/2") qtz calc vn to 20%, pll bd,
-at 296.5', 1" diffuse appearing calc vn pll fol
-from 297 to 298', bd is locally slightly kinked, crenulated,
-from 299 to 299.5', numerous 1" diffuse appearing pred calc, minor qtz vn pll sub-pll fol to 20% of rock
-at 300', 1" diffuse calc minor qtz vn pll fol
-from 306.5 to 307.5', darker green, v strongly chlz zone, w numerous (to 20%) 1 to 2" qtz calc vn pll bd, w 5% diss magnetite as cubes in vn to 1/16", and 1% diss Po-Py trace Cpy, ass w vn
-at 310.5', 1/4" calc vn pll bd w 10% diss magnetite as cubes to 1/16"
-at 311', 2" zone w numerous thin 1/8" calc seams pll bd, w 1% diss Py
-from 312.5' appears slightly coarser, more and. appearing, but still w mod dev bd
-at 317', 1/2" qtz calc vn pll bd
-at 319.5', 1" qtz w minor calc vn pll bd w minor Py at rims
-at 320.8', 1" qtz calc vn cross cuts fol at 60° to the ca,
-from 321 to 321.5', a few 1/4" qtz calc vn pll fol
-at 322.5' a few 1/4" light green hard carb vn pll bd, w minor diss Cpy and Py
-at 325.3', 1/2" calc minor qtz vn pll bd w 5% diss magnetite and 3% diss Py
-at 328', 1" chloritic shear zone pll bd w 1/4" calc vn pll bd and ass 3% diss Py cubes to 1/16"

HOLE JL-84-B2

293.5 - 340'	-at 329.5', 1" diffuse appearing calc minor qtz vn pll bd -from 330', becomes slightly harder, fresher, w occ bands pll bd of stronger dark green chl alteration around 1/4" to 1/2" calc minor qtz vn, usually w minor ass Py at rims -arb contact w underlying slightly coarser less altered unit
340 - 356.7'	-chlz, carbz, and. tuff -fg, light green, mod fol (bd and weak sch at 55° to the ca) mod to strongly carbz (as a pervasive alteration w 20% diss calc, although patchy) and weakly to mod chlz and. rock, probably a tuff, slightly coarser and less well bd than overlying unit -numerous (25 to 30%) small (less than 1/32") white blebs (calcite and fspr?) elongate pll to fol, lending tuffaceous appearance to rock -weakly to mod frac, pred pll fol, w calc minor Py, Po, chlorite, and hematite frac fil -a few thin 1/4 to 1/2" calc and minor qtz vn pred a pll fol, -sulphide content, 0.5% diss Py, pred as cubes to 1/16", minor Py frac fil, trace Po (Py often weakly hematized) -at 343.2', 1" qtz calc vn pll fol -from 344 to 344.5', 4" irr qtz calc vn w 1% ass Py as blebs to 1/8", -from 347 to 350', more strongly chlz, w numerous (5%) thin (to 1/4") calc and minor qtz vn pll fol, w 1% ass Py as diss cubes at vn rims -at 352.5', a few 1/8" yellowish green carb? fspr? fill frac/seams sub pll fol

HOLE JL-84-B2

256.7 - 377'

-intensely carbz and. ash tuff
-rock pred a dark grey to greenish grey aphanitic well foliated (bd, at 60° to the ca), v intensely carbz (diss calc to 30% as pervasive alteration) and. appearing rock probably an ash tuff, although maybe slightly reworked and arg
-mod to strongly frac, pred a pll bd, w calc, chl, minor hematite, and Py frac fil
-weakly to mod chlz in places, rock is v soft,
-numerous 1/16" to 1/2" dark green v strongly chlz bands pll bd
-a few thin qtz calc vn pred pll bd
-suph content, 0.5% Py, as diss cubes to 1/16", frac fil, and minor mineralization ass w qtz carb seams
-frac pattern lends fragmental appearance to rock in places
-contains numerous thin bleached appearing dolomitic appearing zone, usually as halos around thin calc seams
-maybe weakly sericitic in places
-at 358', 1% diss small (less than 1/16") acicular black mineral (?) crystals
-from 358.5', to 359', locally dark green, v strongly chlz
-from 359.8 to 359', numerous thin 1/8 to 1/4" calc w minor qtz seams pll fol w 2% diss Py
-at 359.5', 1" qtz calc vn pll fol w trace diss Py,
-at 361', 1" irr calc w minor qtz vn pll fol w 1% ass Py as frac fil
-from 364.2', to 365', v strongly chlz, v soft, w numerous thin (to 1/2", and 10%) fg granular calc seams pll fol w 5% diss magnetite and 1 to 2% diss Py
-from 366.5 to 366.8', dark green v strongly chlz zone w thin 1/32" calc stringers pll bd to 60% of rock, w ass 10% magnetite as semi massive bands pll bd to 1/8" and vfg diss mineralization
-at 367.5', 1/2" calc vn pll fol
-at 368.5', 1/2" diffuse grey calc vn pll fol
-at 369.5', 1/2" qtz calc vn cross cuts fol at 80°

HOLE JL-84-B2

256.7	- 377'	-at 372', a few 1/2" beige slightly harder dolomitic bleached appearing bands pll bd -at 374', bd slightly contorted -from 376.5', to 377', numerous 1/2" qtz calc vn pll bd -becomes increasingly chloritic from 376 to 377', at 377', a rather arb contact w underlying more strongly chlz and less carbz unit
377	- 406.5'	-chlz, carbz, and. ash tuff -vfg to aphanitic med to dark green v well fol (bd in weak pll sch, at 60° to the ca) andesitic rock -relatively soft, mod chlz, (strongly chlz from 386 to 406.5',) -mod (to strongly in places) carbz, w diss calc throughout most of the unit to 15%, often occurring as faint diffuse bands/bd to 1/2" pll fol, -numerous (to 5%) grey calcite w minor qtz vn/bands pred pll fol -mod frac pred pll fol w calcite, minor hematite, Py, and chl frac fil -thin calc fil frac often lend agg appearance to unit, bd is v distorted in places - qtz calc vn often highly contorted, often have light yellowish beige 1/8" bleached alteration halos -sulph content, 0.25% to 0.5% vfg diss Py often as cubes to 1/16" and mineralization ass w qtz calc vn, minor frac fil - a few zones of more intense chl vs carb alteration lends banded appearance to rock in places -some movement along frac, maybe some minor slumping -v mottled appearing in places, due to varying intensities of carbz -from 377 to 386', slightly lighter green, more strongly carbz (diss calc to 25%) becomes increasingly chloritic towards 386',

HOLE JL-84-B2

377 - 406.5'

-at 379.5', 2" zone w numerous thin 1/4" calc - fspr seams pll fol w ass 2% Py as diss cubes to 1/16"
-at 380', 1" qtz calc vn pll fol
-at 380.5', 1" qtz calc vn pll fol
-at 381.5', 1" qtz calc vn w 1% fg diss Py
-at 382.5', 1" qtz calc vn pll fol w 1/2" bleached beige alteration halo
-from 382.5' to 384', locally v strongly frac pll fol, lending frag/agg appearance to rock
-at 384', 1/2" calcite vn pll fol w a few 1/8" diss magnetite blebs
-at 386', 1" qtz calc vn pll fol
-from 386.5', to 387', numerous 1/4" to 1/2" pred calcite minor qtz vn, highly contorted in places, pred pll sub pll bd, at 60 to 80° to the ca, w 1% fg diss Py
-at 389', 4" zone w thin 1/4" calc w minor qtz and Py seams pll fol to 20% of rock
-at 391.5', locally some displacement along frac
-at 393', a few 1/4" fg granular qtz calcite vn pll fol w ass 3% diss magnetite blebs to 1/8" and minor diss Py
-at 393.5', 3" zone w 60% thin 1/4" pred calc minor qtz vn/seams pll fol w 2% ass diss magnetite blebs to 1/16", and 3% vfg diss Py
-from 394' to 395', locally intensely chlz v soft
-from 395.5' to 396', thin (to 1/2") av. 1/8") grey calc vn pll fol, often highly contorted, to 60% of rock, w 0.5% ass diss Py
-from 397', to 400', locally v strongly carbz, locally frac pattern lend agg app to unit
-at 403.3', 2" zone w thin calc seams to 60% of rock
-at 404', 1/2" calc vn pll fol w 2% diss Py, and 4" Pyritic alteration halo, where Py is 2% in wall rock

HOLE JL-84-B2

377	- 406.5'	-rather arg contact at 406.5', w underlying slightly coarser unit
406.5	- 428'	-weakly chlz, strongly carbz and. -vfg light to med green and., weakly to mod chlz, mod to strongly carbz, mod fol at av. or of 60° to the ca, as exhibited by alignment and preferred or of numerous (10 to 15%) small (less than 1/32") white frag of calc and fspr -numerous thin elongate chl blebs to 1/16" -mod sch -weakly to mod frac at ran or, (one set pll fol) w pred calc, minor hematite and Py frac fil -0.5% diss Py as cubes to 1/8", trace Cpy minor Py frac fil, and Py ass w qtz carb vn -a few thin (to 1/2") grey calc vn pred pll fol, occ w minor qtz, to 5% of rock -at 408' 1/2" contorted qtz calc vn w a few 1/16" Cpy blebs -at 409', a few 1/4" qtz calc vn pred pll fol -at 416.5', 1" grey calc vn pll fol -from 417', sch becomes gradientally stronger -at 418', 1" strongly chlz band pll fol w 1% Py as cubes to 1/8" -at 418.8', 1" diffuse grey calc vn pll fol -at 422', a few 1/2" qtz calc vn pll fol w diss Py cubes to 1/8" and 1% -at 423.5', 1" grey calc vn pll fol -from 424' to 425', locally v strongly sch -from 427.5' to 428', a few 1/2" to 1" qtz calc vn cross cuts fol at 70 to 80° to the ca, w minor diss Py -rock becomes gradientally finer from 425 to 428', distinct contact w underlying unit at 428',

HOLE JL-84-B2

428 - 443'

-agg and. (or slumped brecciated and. tuffs)
-rock is thinly bd/banded (av. 1/4")
bd v well dev at 65° to the ca,
-composed of a dark green , v soft, strongly chlz ground mass w 40% (av.) thin (av. 1/4" to 1 to 2") lighter grey green strongly carbz elongate pll to bd altered frag (pre curser is and.) and thin interbd (larger frag)
-carbz of frag is pred calc, maybe minor dolomite in places where appears bleached and harder)
-also contains thin v granular appearing calc interbd and agg shaped frag to 20% of rock, often w minor ass qtz
-some slumping, movement along frac, indicating frag maybe brecciated interbd (but looks v agg)
-mod frac at ran or w pred calc and chl frac fil, some movement/displacement along a few fractures
-a few thin qtz calc vn pred pll fol to 1/2" although often highly contorted
-sulphide content, 0.5% Py, trace Cpy, as diss mineralization ass pred w calc frag and lighter carbz andesitic agg frags, some minor frac fil, and a few thin seams pll to bd
-from 428 to 431', only weakly agg, pred a thin bd dark green chlz andesite tuff, w a few zones where calc frag to 20%
-at 429.5', 2" agg zone w light grey elongate pll fol v granular appearing calc rich 'frag' to 80% , w 2% ass fg diss Py
-from 430 to 430.5', agg , w 30% thin (to 1/4") grey elongate pll to fol calc 'frag' w 1% ass cubic Py blebs to 1/16"
-from 430.5' to 431', light green strongly carbz andesite tuff, occurs locally slumped
-from 431' to 434', becomes more agg appearing w 30% dark green soft chl matrix 30% grey calc rich seams pll to bd and calc frag, and 30% lighter green to beige carbz frag and thin interbds, locally rock is v thinly bd, (1/4"), locally several offsets of up to 1/2" along frac

HOLE JL-84-B2

428	- 443'	-at 432', 1/2" qtz calc vn pll fol -at 433', a few 1" beige carbz frag contain 10% diss magnetite crystals to 1/16" -from 434', becomes v agg, w lighter green carbz and. frag to 30% and grey granular appearing calc frag to 20%, often w minor ass qtz -at 434.5', frac at 10° to the ca, offset bd/frag by up to 1/2", locally v contorted slumped appearing -from 434 to 436', several (to 15%) brecciate carb vn (pred calc, w minor dolomite and qtz) appear as frag to 1/2" -at 437.2', 1/2" calc dolomite vn pll bd at 65° to the ca, -at 439.3', 1/8" Py seam pll to bd -at 440', 1" qtz calc vn pll bd, locally w a few 1/4" diss Py blebs -at 442', a few 1/2" qtz calc vn pll fol -at 443', 1" qtz calc vn pll fol, locally offset by up to 1/2" by frac
443	- 494.5'	-andesite -pred a med green, fg (w a few aphanitic and a few med grained appearing phases) altered crystalline and. -pred mod (to strongly in places) chlz w varying intensities of carbonate (calc) alteration (from v weak to v strong) -weakly sch at 50 to 55° to the ca -mod to strongly frac at ran or (1 set pll sch), w pred chl, calc, and minor hematite frac fil -a few thin diffuse appearing grey calc vn, a few thin qtz vn, at ran or -contains in places 5% very small (less than 1/32") white to pale pink short slips of unknown mineral, pll fol, lends tuff app to rock in places -0.5% Py ass primarily w carb vn, thin chl seams, and as frac fil, w minor diss mineralization

HOLE JL-84-B2

443 - 494.5'

-numerous thin (to 1/2") chl bands pred pll fol, often w minor ass hematite, calc, and Py, lending mottled appearance to rock
-frac appear to weakly brecciate rock in places
-from 443 to 449', lighter grey, locally intensely carbz, w diffuse calc seams and diss calc to 35% of rock, gradiently becomes less carbz and increasingly chl towards 449', locally sch is stronger in places as weakly kinked and crenulated locally contains 5% small short white to pale pink slips of unknown mineral, lending tuffaceous appearance to rock
-at 443.5', 1/2" calc seam weakly cross cuts fol at 80° to the ca, w 1% diss Py
-at 443.8', locally sch is kinked, crenulated
-at 444.5', sch is locally kinked, crenulated
-at 445.8', 1" qtz calc vn pll fol
-from 449' to 461.5', becomes slightly coarser, fg, appears crystalline, is only weakly carbz (minor diss calc, and only weakly sch), at 55° to the ca
-from 449 to 451', numerous 1/4" diffuse appearing grey calc w minor qtz vn
-from 451 to 452', numerous thin hematite chl fil frac at ran or
-at 454.3', 1/2" calc - chl - hematite fil frac at 35° to the ca, locally v mottled appearing w numerous irr chl blebs and infilled frac
-at 455.8', 1" calc 'bleb'
-at 456.8' 2" qtz calc chl vn at 80° to the ca, locally foliation v weak
-from 460 to 461.5' appears weakly brecciated by numerous thin chl (w minor hematite and calc) filled frac at ran or
-from 461.5' to 464', becomes slightly coarser, appears med g (remnant crystalline texture), contains a few 1/4" yellowish green epidote altered fspr phenocrysts

HOLE JL-84-B2

443 - 494.5'

-at 462', 2" diffuse grey calc w minor hematite and chl band at 55° to the ca
-from 464 to 467', becomes fg
-from 467 to 471', becomes vfg to aphanitic slightly softer, strongly carbz (diss calc to 20%)
-from 468 to 469', 1/2" qtz calc vn at 20° to the ca,
-at 471', a few 1/2" irr calc seams w minor diss Py at ran or
-from 471 to 476.5', becomes slightly coarser, fg, v mottled appearing, more strongly frac w dark green chl and some calc frac fil pred pll to weak fol at 45 to 50° to the ca, appears weakly brecciate by frac in places, remains strongly carbz
-at 475.2', 1" calc vn pll fol
-from 476.5', to 483.5', becomes darker green, more strongly chlz, only weakly carbz, softer, w numerous small 1/32" short slips of pink to white unknown mineral, weak fol, at 50° to the ca, locally more basaltic appearing
-at 477.3', 1/2" pink calc vn at 45° to the ca,
-from 478 to 479', 1/4" calc fil frac at 0° to the ca
-at 480.3',1/2" calc vn at 45° to the ca
-at 481', 1/2" pink calc vn at 45° to the ca
-from 483.5', to 494.5', becomes slightly coarser, fg, w 10 to 15% small white slips of unknown mineral lending tuffaceous appearance to rock, but w faint remnant crystalline texture, weakly sch at 55° to 60° to the ca, rock fines towards 494.5', and becomes increasingly carbz towards 494.5', where is grey and intensely carbz (w diss calc to 30%)
-at 485', 1" qtz calc hematite vn pll fol
-at 485.2', 1" calc vn, locally abundant hematite frac fil
-at 489', 1/2" calc vn pll fol
-at 493', 1/2" contorted qtz calc vn
-arb contact w underlying unit

HOLE JL-84-B2

494.5 - 500.5'

-intensely carbonatized andesite (tuff?)
-v similar to overlying unit, but intensely carbz
-vfg, light greyish green, mod sch (at 60° to the ca,) and.rock
-v strongly carbz, w diss calc to 30% as a pervasive alteration
-weakly to mod frac, pred pll fol, w calc and minor hematite frac fil
-weakly chlz, weakly serz in places, relatively soft
-contains (to 5%) thin (to 1/4") calc (w occ minor qtz) seams pred pll fol, and occ thin elongate frag appearing calc blebs to 1/4" that may be tuffaceous frag or brecciated calc seams
-contains in places small (to 1/8") sub spherical qtz blebs and calc blebs, perhaps amygdules, or perhaps tuffaceous frag
-0.5% Py, pred as fg diss mineralization and mineralization ass w carb seams
-at 494.5', 1" light greenish grey calc vn
-at 495.5', and 496', 1/2" calc vn pll fol at 60° to the ca,
-from 496.5' to 497.5', small 1/8" blebs of qtz w minor calc , often spherical, or slightly elongate pll fol, to 10% of rock, look like frag but maybe stretched amygdules, locally host is weakly serz
-from 497.5', to 499', small elongate pll to fol calc w minor qtz and Py blebs to 1/4" and 5%, locally lends v fragmental appearance to rock, locally 2% diss vfg black sub metallic mineral (nonmagnetic-?)
-sharp contact at 500.5'

HOLE JL-84-B2

500.5 - 508'

-intensely carbz intermediate ash tuff or epiclastic arg eq
-rock pred an aphanitic / arg, well bd (bd to 1", av. less than 1/4") grey to light greyish green to yellowish green rock
-bd at 60° to the ca,
-intensely carbz, w calc to 30% as pervasive alteration/vfg diss mineralization
-appears bleached in places, to a beige yellowish green
-contains numerous thin 1/16" to 1/8" calc bands pll bd, often w minor ass magnetite
-contains a few thin chlz zones
-mod to strongly frac pred pll fol w calc and chl frac fil, frac pattern lends agg appearance to rock in places
-1% vfg diss Py and Py ass w carb seams
-from 500.5 to 502.5', thin 1/4" vfg granular appearing calc w minor qtz bands/bd pll bd to 25% of rock, w 5% ass diss vfg magnetite and 1% ass Py, host is alternating bands/bd, bd of beige carb and green chl arg, locally v strongly frac, v frag appearing
-from 505.5' to 506.5' a few elongate 1/4" qtz blebs
-from 507.5 to 508', dark green, v chlz zone w 5% Py as semi massive 1/8 to 1/4" bands pll bd and diss cubes to 1/16"
-sharp contact at 508',

508 - 521'

-carbz and.
-vfg to fine g light greyish green mod sch (at 60° to the ca), soft strongly carbz (diss calc to 20%) and. rock, appears to have a faint remnant fg crystalline texture but also contains numeorus (10%) small (less than 1/32") white blebs of calc / fspr ? that may be tuffaceous frag, no distinct bd
-weakly frac at ran or w calc, minor chl, and Py and hematite frac fil, some offset along a few frac

HOLE JL-84-B2

508 - 521'

-a few thin 1/4" calc vn pred pll fol, occ w minor qtz
-weakly to mod chlz
-becomes gradientally f towards 521/,
-0.5% Py as mineralization ass w calc filled frac, minor vfg diss cubes
-arb gradientally contact w underlying unit

521 - 555'

-carbz and. (ash tuff ?)
-rock pred a vfg to aphanitic light green to greyish green well foliated (appears bd, at 60° to the ca,) and. rock, w varying intensities of alteration
-pred intensely carbz, w vfg diss calc and diffuse calc bands pll bd to 30% of rock
-mod chlz, v soft, a few darker green intensely chlz zones
-mod frac pred pll fol, although other or present, w chl and calc frac fil, frac pattern in places lends frag appearance to rock
-numerous thin qtz calc seams to 1/4" pred pll fol
-a few yellowish green bleached appearing bands pll fol to 1/4"
-a few 1/4" chl bands pll bd,
-v mottled appearing in places
-weak ser alteration in places, w thin ser rich seams pll fol
-0.5% Py as mineralization ass w strongly chl zones, carb seams, and carb fil frac v minor fg diss mineralization
-at 521.5', 3" zone w numerous 1/4 to 1/2" hard beige dolomitic appearing bands pll fol, locally v strongly frac, appears brecciated by thin chl calc seams, w ass 2% fg diss Py, and 2% fg diss nonmagnetic black mineral
-from 530 to 530.5', a few 1/2" calc seams pll fol w strong chl alteration halos containing Py blebs to 1/4",

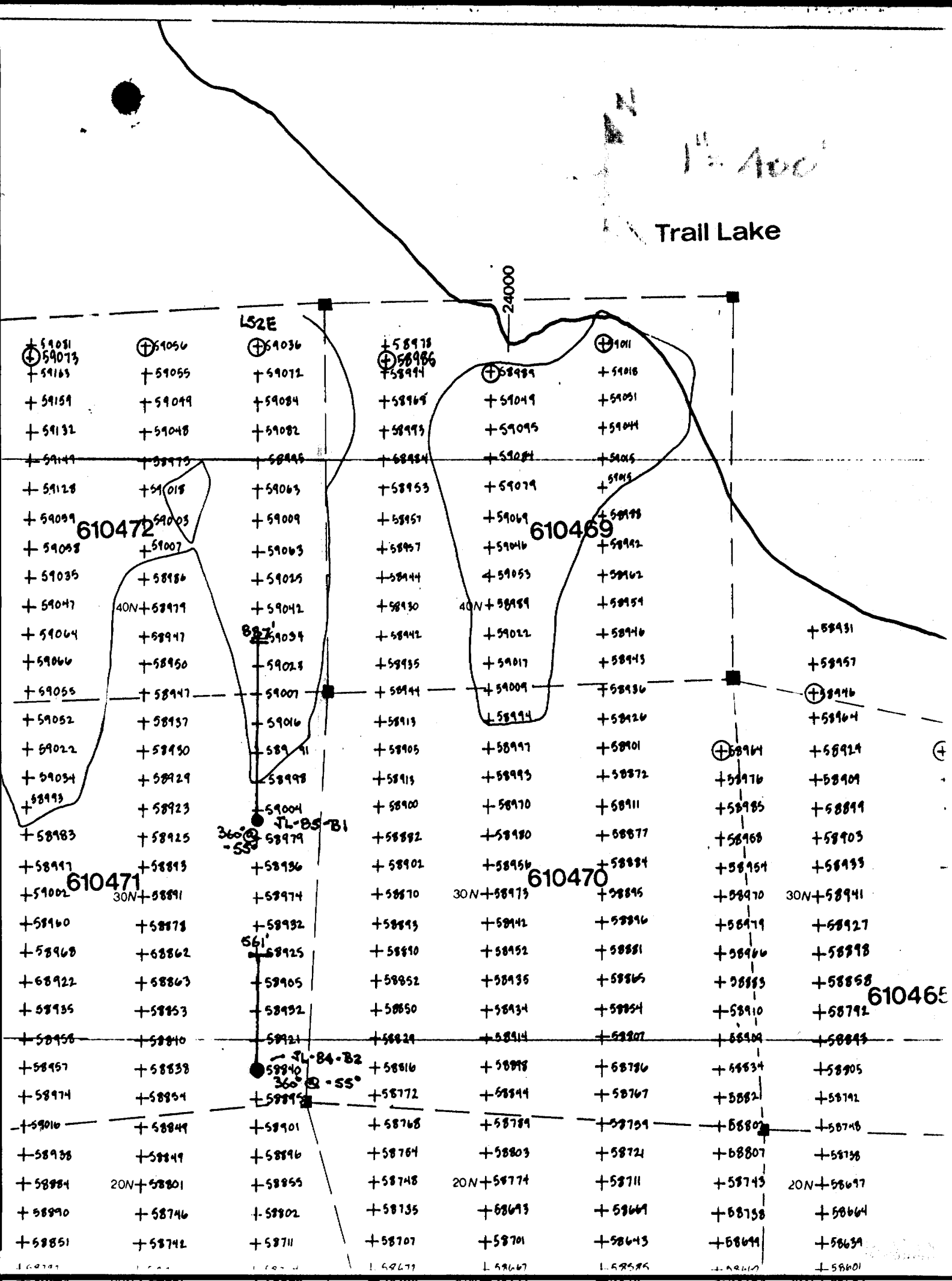
HOLE JL-84-B2

521 - 555'

-at 531.5', 1/2" qtz calc vn pll fol w 5% magnetite as blebs to 1/8", and 1% vfg diss Py, locally host appears weakly brecciated by numerous thin chl fil frac
-at 532', 1/2" chl band pll fol w thin 1/8" calc and Py seams
-at 532.4', 2" zone w grey calc vn to 1/2" pll fol w ass 5% Py as blebs to 1/4" abundant fg diss nonmagnetic black sub-metallic appearing mineral (specular hematite ?)
-from 536.4', to 536.8', thin 1/2" qtz calc vn pll fol to 75% of rock, w 10% ass magnetite as blebs to 1/4", and 2% ass Py
-from 541.5' to 542.5', vfg pink siliceous granular aplitic dyke(or vn) at 55° to the ca, (pll fol) w 5% diss small chl blebs minor diss calc, and trace fg diss Py
-at 543', 6" zone w numerous harder light greyish green bleached appearing bands to 1" pll bd
-at 543.8', a few 1/4" qtz calc vn pll fol w trace diss Cpy
-at 545', 1" brecciated calc vn
-from 545', becomes pred aphanitic , v arg appearing
-at 546', 1" chlz band pll fol w numerous thin calc seams and a few thin Py stringers
-from 545', contains a few thin beige bleached appearing, perhaps weakly dolomitic seams pll bd, w some evidence of slumping
-at 546.5', locally appears slumped
-at 547', 1" qtz calc vn pll fol
-at 548.3', 1" fg granular calc vn pll fol
-at 549', 1/2" chl band pll fol w numerous thin calc stringers
-at 549.5', 1/2" contorted calc vn sub pll fol at 50°
-at 550', 1" zone pll fol w numerous thin 1/4" qtz and calc seams, and elongate blebs pll to fol, frag appearing
-at 551.5', 1/4" contorted cherty grey sil band/vn pll fol
-at 552.5', 1/4" qtz bleb, locally a few 1/8" carb - Py seams pll fol

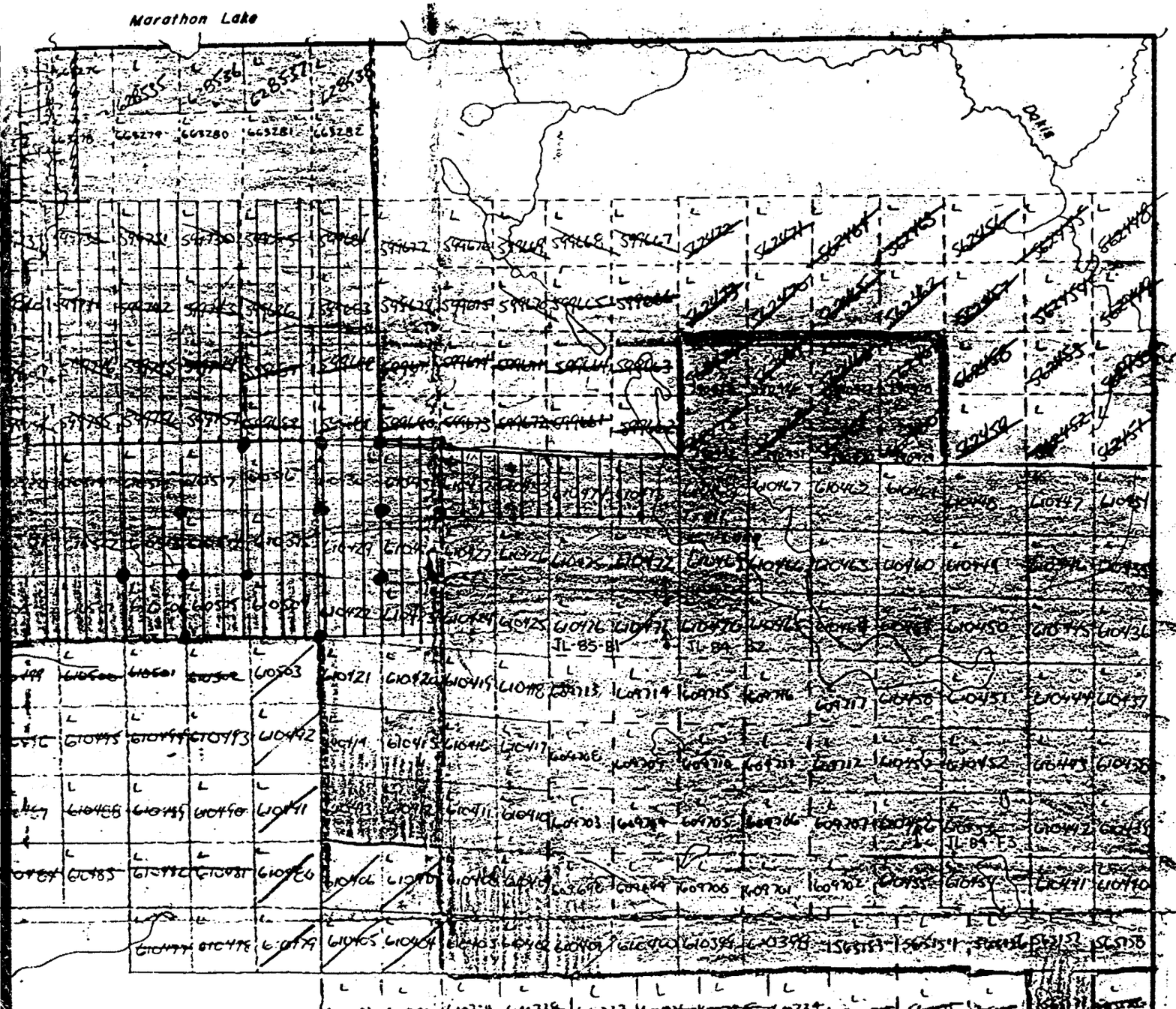
HOLE JL-84-B2

521	- 555'	-at 553', 2" pink v fg v sil aplitic dyke /vn pll fol at 60° to the ca, -from 553.5' to 554', numerous 1/4" to 1/2" bands and agg appearing frag of dark grey to white carb (or intensely carbz and.), locally strongly brecciated , frac, w 1% Py (maybe a thin agg horizon)
555	-561'	-agg and. -rock thinly bd at 65° to the ca, comprised of an aphanitic dark green soft intensely chlz ground mass w 30 to 40% thin (to 1/2" av. 1/8" to 1/4") elongate (pll bd) dark grey to green , harder, intensely carbz altered and. / or carb frag and interbds, appeared to agg frag but maybe brecciated interbds -also contains granular appearing fg calc (w minor qtz) frag appearing blebs elongate pll fol to 10 to 15% -contains 2% Py as amorphous blebs to 1/8" ass w agg frag - a few thin secondary qtz calc vn pred pll bd -at 558', 1/2" siderite halo around frac -from 560.5 to 561', bleached light beige to greenish beige v dolomitic appearing interbd


N
1" = 400'
Trail Lake
24000
L52E
610472
610469
610471
610470
610465
40N
30N
20N
887'
561'
JL-B5-B1
360° @ -55°
JL-B4-B2
360° @ -55°

MARATHON TP. M.542

Marathon Lake



GALNA TP. M.480

THE TOWNSHIP OF

MOODY

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	P
CROWN LAND SALE	C.S.
LEASES	L
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.

NOTES

HOLE NO. JL 85 - B3 | PROJECT: JIMS LAKE NE ONTARIO | PAGE NO: 1 OF 10

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: 15 JAN 85 | REF. TO CLAIM CORNER:

COORDINATES: NORTH GRID L68E - 40N | DATE FINISHED: 22 JAN 85 | SCALE: 1" = 10'

INCLINATION: -55° | BEARING: 360° | TOTAL DEPTH: 819' | LOGGED BY: PETER LEGEN

COMMENTS: NO PLASTIC CASING LEFT IN HOLE
ABANDONED 100' HW CASING IN 2FT LENGTHS
56' NW - CASING

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: SILICIFICATION	ALTERATION: QTZ V.	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
240						0 - 264 OVERBURDEN							
250										NTW			
260								264					
270						264 - 287 - MODERATELY ALTERED DIORITE 2% DISS BLEBS OF PYRITE UP TO 3MM 269' - 1' MASSIVE QTZ V. 271' 0.2' " " " " 275 0.2' " " " " 287 1.0' MASSIVE QTZ V. 287 - 305 - RELATIVELY UNALTERED SAUSSERITIZED PLAG BUT NO PERVASIVE SILICIFICATION. - OCCASSIONAL QTZ VIEN 5MM THICK @ 45 - 55° TO CA 298' - 0.5' SECTION PLAG COMPLETELY ALTERED TO LT GREEN CHLORITE (MUCH LIKE SERPENTINE!)			100	BQ		100	Tr
280						264.0 - 317.3 QFP - MOTTLED LT GREENISH GREY TO GREENISH WHITE. - MG EQUIGRANULAR TO PORPHYRITIC 2 MG PLAG + QTZ CRYSTALS IN FG-APH GROUND MASS - THE ROCK IS COMPOSED OF 10-25% QTZ, 60-75% PLAG, & 0-10% MAFIC (CHLORITE?) - IN PLACE THE ROCK IS SILICIFIED & SAUSSERITIZED TO A GREENISH WHITE - OCCASSIONAL QTZ VIENS UP TO 1.0 FT MAY BE ASSOCIATION TO THE SILICIFICATION. - SULFIDE MINERALIZATION - UP TO 2% DISS FG PYRITE	2%	275	100		276	90	Tr
290							TR.	285 287 293 295	60 100 95 100		287		
300													

HOLE NO. JL 85 - B3
CASING COLLAR ELEV.:
COORDINATES: 158E / 40N N. E.
INCLINATION:
GROUND ELEV.:
BEARING: 330

PROJECT: JIMS LAKE NE ONTARIO
DATE STARTED: 15 JAN 85
DATE FINISHED: 22 JAN 85
TOTAL DEPTH: 819'

REF. TO CLAIM CORNER:
SCALE: 1" = 10
LOGGED BY: P. LEGEIN

SECTION	ALTERATION (SILICIFICATION / QTZ V.)	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
300					302' - 1" QTZ V @ 45° TO CA	264.0 - 317.3 QFP (CONT)	TR		100	BQ			
	M				305-309 MODERATELY SILICIFIED Ē QTZ V @ 308.0 Ē 1" BLEB OF Py			305			305 – 308.0		tr
310	M				310 - 313.5 MODERATELY SILICIFIED		1%		100		310 – 313.5		TR
					313.5-317 PORPHYRITIC Ē 25% SAUSSURITIZED PLAG XL'S	317 - IRREGULAR INTRUSIVE(?) CONTACT		315					
320					← 321.0' 2" QTZ CARBONATE VEIN Ē QTZ CARB EPIDOTE ALTERATION ENVELOPE.	317.3 - 330 MAFIC VOLCANIC GREEN FG EQUIGRANULAR SILTY SCHISTOSE MAFIC VOLC 40-60% MAFICS (CHLORITE?) 40-60% PLAG SCHISTOSITY AT 65° TO C.A. OCCASSIONAL FRACTURES WITH MINOR Py COATINGS. - NONMAGNETIC.		325	100				
330					330-343 ARGILLITE Ē NUMEROUS QTZ CARBONATE VEIN UP TO 2 INCHES	330 - 364.5 INTERBEDDED ARGILLITE + LAPILLI TUFF (SED?) ARGILLITE - AH TO FG MASSIVE GREY Ē VFG BIOTITE - WEAK BEDDING FEATURES - NUMEROUS IRREGULAR QTZ CARBONATE VEINS UP TO 2 INCH MAKING UP TO 10% OF ROCK OVERALL	Tr	335	100				
340						LAPILLI TUFF - MOTTLED LT GREY, GREY, UP TO 50% STRETCH LITHIC LAPILLI AND XL FRAG UP TO 4mm LONG. IN GREY ARGILLITIC MATRIX. BLUISH QTZ FRAG UP TO 5% - OCCASSIONAL SERICITIZED ZONE AND FRACTURE NOTED IN DETAIL - BEDDING AND SCHISTOSITY @ 70° TO C.A.		344	100		345.5 – 346.5		Tr
					← 345.0 RUSTY FRACTURE Ē HEMATITE STAIN 346.0 1 FT SERICITIZED ZONE								
350			Po		← 350.6 1 FT SERICITIZED ZONE POSSIBLE RELATED TO A FRACTURE HEMATITE AND LIMONITE STAINED IN PART - OCCASSION BLEBS OF Po UP TO 3mm. IN LAPILLI TUFF				100		350.0 – 351.5		Tr
					355.0 - 358.0 LAPILLI TUFF			355	100				
360					← 359.0 - 1/2 INCH QTZ V @ 45° TO CA								

HOLE NO. JL85-B3 | PROJECT: JIM LAKE NE ONTARIO | PAGE NO: 3 OF 10

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: JAN 15 85 | REF. TO CLAIM CORNER:

COORDINATES: L6SE/40N N. E. | DATE FINISHED: JAN 22 85 | SCALE: 1" = 10'

INCLINATION: | BEARING: | TOTAL DEPTH: 819' | LOGGED BY: P. LEGEIN

ALTERATION: STRUCTURE | SILICIFICATION | QTZ V | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

% SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y SAMP INT. | ESTIMATED

SECTION

360

361.5 3" CG QTZ CARB VEIN ± TR-1% Py

330-364.5 INTERBEDDED ARGILLITE & LAPILLI TUFF (CONT)

100

365

364.5-374.0 CHLORITIZED MAFIC TUFF

- GREEN LAMINATED, SCHISTOSE APHANITIC TUFFACEOUS
- 40% MAFICS (CHLORITE)
- TR DISS FG Py & OCCASIONAL Py FRACTURE COATINGS
- SCHISTOSITY @ 70° TO C.A.

100

370

374.0-392.0 DACITE TUFF

LT GREY TO GREENISH GREY, LAMINATED TO BLLY LAMINATED
OCCASIONAL FG LITHIC FRAG UP TO 1mm
- OCCASIONAL 2-3mm CARB VEINLET @ 45° C.A
- MINOR FG ORO CARB VEIN UP TO 5mm

376

100

380

386

389.5-392.0 QTZ CARB V 1.5" ± MODERATE TO INTENSE SILICIFICATION OF TUFF WITH 1-5% DISS FG & BLEBS OF Py

1-5% Py

100

389.5

392.0

Tr

390

392.0-409.0 DACITE LAPILLI TUFF

LT GREENISH GREY LITHIC XL LAPILLI TUFF
30% - STRETCH FELSIC LITHIC FRAG UP TO 2cm
20% BROKEN QTZ XL FRAGMENTS UP TO 5mm
50% FG-APH LT GREY MATRIX.
SCHISTOSITY @ 70° TO C.A.

397

398.0 to 401.0 MASSIVE DACITE

100

400

406.0 5" CG QTZ V NO SULFIDE

406.0-409.0 - MODERATE TO STRONG SILICIFICATION & ASSOCIATED FRACTURING MAY BE CAUSED BY ADJACENT QFP

406

406

409

Tr

410

410 - 1' BAND OF SILICIFIED DACITE TUFF

409.0 416.0 QFP

MOTTLED LT GREY PORPHYRITIC ± 5-10% FG QTZ, 30% M-CG SAUSERITIZED PHG, IN 40% APH MATRIX
INTRUSIVE CROSS CUTTING CONTACTS

100

417

416.0 - ANDESITE VOLC AND ANDESITIC LAPILLITUFFS & TUFFS

420

HOLE NO. JL85-83 | PROJECT: JIMS LAKE NE ONTARIO | PAGE NO: 4 OF 10

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: 15 JAN 85 | REF. TO CLAIM CORNER:

COORDINATES: L6RE/40N North Grid N. E. | DATE FINISHED: 22 JAN 85 | SCALE: 1"=10'

INCLINATION: | BEARING: | TOTAL DEPTH: 819' | LOGGED BY: P. LEGEIN

ALTERATION: SERICITE. | SILICIFICATION | QTZ-CARB V | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

% SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT. | ESTIMATED

SECTION 420 / 430 / 440 / 450 / 460 / 470 / 480

416-435 MASS ANDESITE VOLC
FRH-FG 25% MAFICS
- ABUNDANT CARB VEINING THROUGHOUT & CARBONATE ALTERATION

435-445 LAMINATE SCHISTOSE ANDESITIC TUFF
SCHISTOSITY @ 60° TO C.A.
OCCASIONAL CARB. VEIN AND MODERATE CARBONITIZATION

445-457' ANDESITIC LITHIC LAPILLI TUFF
- 30-40% STRETCH INT VOLC FRAGS UP TO 2cm IN A GREEN ANDESITIC TUFF MATRIX
- 2 LITHIC DACITE FRAGS OVER 5 CM
- ONE OF THESE FRAG CONTAIN AN QTZ VEINLET
- NO CARBONATE ALTERATION OR VEINS IN THIS SECTION.

457'-470.3 DACITIC-ANDESITIC VOLC BRECCIA
25-30% LITHIC BRECCIA FRAGMENTS IN 70% BREEN TO DARK GREEN CHLORITE MATRIX
PATCHY TO MODERATE SILICIFICATION ALONG SHISTOSITY

471 2" CG QTZ V @ 45° TO C.A.
471-472 1% DISS FG Py
470.3-482. MASSIVE TO SLTY SCHISTOSE ANDESITE ≥ 30% MAFICS
PATCHY MODERATE TO STRONG SILICIFICATION THROUGHOUT

470' DIPTEST MINUSCULE = 62°
TRUE ∠ = 54°

4160-588 ANDESITE VOLC AND ANDESITIC LAPILLI TUFFS AND TUFFS

ANDESITE - MASSIVE GREEN FG-APH EQUIGRANULAR SLTY SHISTOSE
- 25% MAFIC CHLORITE.

LAPILLI TUFFS - MOTTLED GREY GREEN SPOTS IN DARKER GREEN MATRIX
- 25% LITHIC FRAGS UP TO 1 CM. IN MORE MAFIC APH MATRIX
- FRAGS STRETCH AND MATRIX SCHISTOSE WITH CHLORITE AND SERICITE

NOTE CHLORITE AND SERICITE ARE LIKELY PRODUCTS OF METAMORPHIC DEFORMATION AND NOT ALTERATION

DRILLING INTERVAL: 427 / 437 / 447 / 457 / 471

% CORE RECOVERED: 100 / 100 / 100 / 100 / 100

CORE SIZE: BQ

SAMPLE INTERVAL: 416 / 426 / 435 / 445 / 457 / 464 / 470.3 / 476 / 482

ESTIMATED: tr / Tr / Tr / Tr / Tr / Tr

HOLE NO: JL 85-83 | PROJECT: JIMS LAKE NE ONTARIO | PAGE NO: 5 OF 10

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: 15 JAN 85 | REF. TO CLAIM CORNER:

COORDINATES: L6E/40N N. NORTH GRID E. | DATE FINISHED: 22 JAN 85 | SCALE: 1"=10'

INCLINATION: | BEARING: | TOTAL DEPTH: 819' | LOGGED BY: P. LEGEIN

ALTERATION: SERICITE | SILICIFICATION | QTZ CARBV

SECTION	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
480				482 2" CG QTZ @ 50° TO CA								
				482-497 MASSIVE TO SLTY SCHISTOSE ANDESITE. 25% MAFIC (CHLORITE) - OCCASSION LITHIC LAPILLI BANDS - 3 QTZ CARBONATE VEIN 1-3 INCHES			487	100				
490								100				
				497-499.5 NUMEROUS QTZ CARBONATE VEINS UP TO 2" IN ANDESITE			497			497		Tr
500										499.5		
				499.5-507 - ANDESITE TUFF ∈ CALCITE BLEB UP TO 1mm SLT CARBONATE ALTERATION				100				
	FS			507.0-512' SCHISTOSE ANDESITE ∈ UP TO 25% CARBONATE IN BLEB UP TO 5-8mm IN BIA. POSSIBLE AMYOULE FILLING.			507			507		
510				509 IRREGULAR CARBONATE VEINS UP TO 2" W 5% Py					BQ			Tr
				512-518.5 SCHISTOSE ANDESITE TUFF ∈ OCCASSION CALCITE BLEB SLTLY CARBONATIZE THROUGHOUT.				100		512		
							517			518.5		Tr
520				518.5-522.0 - SCHISTOSE ANDESITE WITH NUMEROUS IRREGULAR CARBONATE VEINS ∈ UP TO 25-50% FG QTZ MAKING UP 15% OF ROCK				100		522.0		
				522-535 - SCHISTOSE ANDESITE TUFF OCCASSIONAL THIN 4mm CARBONATE VEINS ± - MODERATELY CARBONATIZED THROUGHOUT			527					
530				531 - THIN DACITIC? TUFF BAND (OR SILICIFICATION) @ 65° TO C.A. PARALLEL TO SCHISTOSITY.				100				
				535-543.5 ANDESITIC LITHIC LAPILLI TUFF STRETCHED ANDESITE LAPILLI UP TO 25 cm MAKING UP TO 30% OF RX LAPILLI ARE CARBONITIZED BUT MATRIX IS NOT			537					
540												

41G-58 ANDESITE VOLC AND ANDESITIC TUFFS & LAPILLI TUFFS (CONTINUED)

HOLE NO. JL 85-83 | PROJECT: JIMS LAKE NE ONTARIO | PAGE NO: 6 OF

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: 15 JAN 85 | REF. TO CLAIM CORNER:

COORDINATES: L68E/40N N. NORTH GRID E. | DATE FINISHED: 22 JAN 85 | SCALE: 1" = 10'

INCLINATION: | BEARING: | TOTAL DEPTH: 819' | LOGGED BY: P. LEGEIN

ALTERATION: SERICITE | SILICIFICATION | QTZ CARB V | FRACTURING | MINERAL | GEOLOGY

COMMENTS: | AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

% SULPHIDES | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | SAMPLE INTERVAL | % REC'Y. SAMP. INT. | ESTIMATED

416 – 588 ANDESITE VOLC, TUFFS & LAPILLI TUFFS (CONTINUED)

543.0 - 559.3 SCHISTOSE ANDESITE TUFF
- OCCASSION CARBONATE VEIN
- TUFF MODERATELY CARBONATIZED THROUGH OUT

557-559 - MORE SILICEOUS, DACITIC TUFF BAND

559-565. ANDESITIC LITHIC LAPILLI TUFF, 30% ANDESITIC FRAG UP TO 10mm NO CARBONATE ALTERATION
563 AND 564 2 SERICITE BANDS

565-568.5 SCHISTOSE ANDESITE TUFF SLTLY MORE DACITIC
- LAPILLI SLTLY CARBONATIZED

568.5-588.00 MASSIVE TO SLTLY SCHISTOSE ANDESITE VOLC
LT GREEN ± 25% MAFIC (CHLORITE)
WEAK TO MODERATELY CARBONITIZED THROUGH OUT

572 1' QTZ CARB V } BOTH VEINS COMPOSED OF 40% QTZ
5756 1' QTZ CARB V } 25% CALCITE AND 35% LT APPLE GREEN MINERAL (EPIDOTE?)
± TR-1% Py

582.5 0.7' QTZ CARB V 80% CC QTZ 20% CALC.

588-604 INTERBEDDED ANDESITE TUFF AND DACITE TUFF

588 - 595.3 DACITE TUFF
GRADATIONAL UPPER CONTACT MODERATELY CARBONITIZED ± NUMEROUS SMALL QTZ CARB VEINS

ANDESITE TUFF SAME AS ABOVE

DACITE TUFF - LT GREY ± FELSIC LITHIC LAPILLI IN FELSIC ASH MATRIX, 2% MAFIC

595.3-599.5 ANDESITIC TUFF

540	
550	
560	
570	
580	
590	
600	

1%	
1%	

547	
557	
567	
577	
587	
597	

100	
100	
100	
100	
100	

BQ

562	Tr
564	
571.5	Tr
572.5	Tr
575.5	Tr
576.5	
582	Tr
583	

HOLE NO. JL 85-B3
CASING COLLAR ELEV.:
GROUND ELEV.:
COORDINATES: L68E / 40N N. NORTH GRIDE.
INCLINATION:
BEARING:

PROJECT: JIMS LAKE
DATE STARTED: JAN 15 85
DATE FINISHED: JAN 22 85
TOTAL DEPTH: 819'

REF. TO CLAIM CORNER:
SCALE: 1" = 10'
LOGGED BY: P. LEGEIN

SECTION	ALTERATION: SERICITE	SILICIFICATION	QTZ CARB V	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
600							600-604 DACITE TUFF	584-604 INTERBEDDED ANDESITE TUFF + DACITE TUFF CONTINUED				BQ			
								604 - 622 MG DIORITE - MOTTLED LT GREY AND GREEN, MASSIVE MG-FG EQUIGRANULAR - COMPOSED OF 35% MAFICS, 65% PLAG. - FG TO PORPHYRITIC TOWARDS CONTACTS - OCCASSIONAL CUT BY QTZ CARB VEIN UP TO 5mm THICK		607					
610															
							618 - 8mm THICK QTZ CARB VEIN @ 45 TO C.A.			617					
620								622-625 DACITE TUFF							
								625 - 642 FG DIORITE SAME AS 604-622 MASS FG 35% MAFICS		627					
630							630 1' SECTION OF DACITE TUFF?								
										637					
640							639.4 - 641.3 2.6' QTZ CARB V 70% CARB (DOLOMITE) 30% QTZ TR PoPy						639.3 - 641.3		Tr
								642-670.5 MINERALIZED INTERMEDIATE LITHIC LAPILLI TUFF - MOTTLED DARK GREEN & LT GREY SPOTS - COMPOSED OF FELSIC LITHIC LAPILLI LT GREY TO DK GREY IN COLOUR AVERAGING 1-15mm IN LENGTH ALONG STRETCHED LENGTH, OCCASSIONAL FRAGMENTS UP TO 3" THICK IN A DARK GREEN ANDESITIC TUFF MATRIX 65% LAPILLI 35% TUFF - 1-2% PoPy FRAG UP TO 5mm LONG FROM 642 - 657'	1-2%	642 647			642 - 652		Tr CuAg
650					PoPy				1%	652 657			652 - 657		Tr CuAg
660															

HOLE NO. JL 85-B3 | PROJECT: JIMS LAKE NE ONTARIO | PAGE NO: 8 OF 10

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED: 15 JAN 85 | REF. TO CLAIM CORNER:

COORDINATES: L68E/4ON N. NORTH GRID | DATE FINISHED: 22 JAN 85 | SCALE: 1"=10'

INCLINATION: | BEARING: | TOTAL DEPTH: 819' | LOGGED BY: P. LEGEN

SECTION	ALTERATION: SERICITIZATION	ALTERATION: SILICIFICATION	ALTERATION: QTZ CARB V	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
660							642-670.8 MINERALIZED INT LITHIC LAPILLI TUFF (CONT) - SCHISTOSE AND LOWER CONTACT @ 65° TO C.A.				100				
										667			667		
670					Py 1%		← 669.2' 3" BAND WITH 5mm BAND AND BLEB OF Py/Po MAKING UP 10% OF RX. NOTE MUCH SMALL LAPILLI OVER LAST THREE FEET.		Py 1%				670.8		TR
					Py 5%		CONDUCTOR. 670.8-673 GRAPHITIC ARGILLITE ≤ 15% Py IN BAND OF UP TO 5mm		Py 5%		100		673		Tr
							673 - 687.2 F-MG DIORITE								
							← 677 - 3" IRREGULAR QTZ CARB VEIN. SAME 604 - 622 - CUT BY SEVERAL MINOR QTZ CARB VEIN UP TO 5-10 mm LARGER VEIN NOTED IN DETAIL			677					
680							← 682 7" IRREGULAR QTZ CARB VEIN 60% QTZ 25% CALC 15% DOLOMITE?)				100				
							← 687 2" QTZ CARB VEIN			687					
							682-717 DACITE - DARK TO LT GREY AND GREENISH GREY - MASSIVE TO SLTLY SCHISTOSE, FAH EQUIGRANULAR. - APPEARS TO HAVE A PALE GREEN TO LT GREY ALTERATION TOWARDS THE LOWER CONTACT					BQ			
690											100				
										697					
700							← 700' DIP TEST MINISCUS ∠ = 60° TRUE ANGLE ∠ = 52° - OCCASIONAL QTZ CARB VEIN UP TO 5mm AT VARIOUS ANGLE TO C.A.				100				
										707					
710	W						708 - 714.8 - PALE APPLE GREEN ALTERATION POSSIBLY SERICITE THOUGHT LITTLE SERICITE ACTUALLY VISIBLE				100				
	W						714.8 - 717 - LT GREY ALTER DACITE WEAK CARBONITIZATION.			717					
720							717 - 736 INTERBEDDED DACITIC LAPILLI TUFF AND GRAPHITIC ARGILLITE								

HOLE NO. JL 85-83
CASING COLLAR ELEV.: GROUND ELEV.:
COORDINATES: L68E/40N N. NORTH GRID E.
INCLINATION: BEARING:

PROJECT: JIM'S LAKE NE ONTARIO
DATE STARTED: 15 JAN 85
DATE FINISHED: 22 JAN 85
TOTAL DEPTH: 819'

REF. TO CLAIM CORNER:
SCALE: 1" - 10'
LOGGED BY: R LEGEIN

SECTION	ALTERATION: SERICITIZATION	SILICIFICATION	QTZ CARB V	FRACTURING	MINERAL	GEOLOGY
720					Py (722.5–726)	
730	S (727–731)		///		Py (731–734)	
760			·· (757–758.6)			
767	S		/			
773		S		//		
777			/			
780						

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

722.5-726 3 INTERBEDS OF PYRITIC GRAPHITIC ARGILLITE c 5% Py

727-731 SERICITIZED DACITIC TUFF c ABUNDANT QTZ CARB V.

731-734 INTERBED OF PYRITIC GRAPHITIC ARGILLITE c 5% Py

734-736 DACITE TUFF c 2% FG Py

717-736 INTERBEDDED DACITIC LAPILLI TUFF AND GRAPHITIC ARGILLITE

- DACITIC LAPILLI TUFF – LT GREY TO DARK GREY
  30% STRETCH DACITIC LITHIC LAPILLI IN 60% APH MATRIX UP TO 10% PLAG XL FRAGS.
  - SCHISTOSITY AT 60° TO CA
  - MAY CONTAIN UP TO 5% DISS FG Py AND Py LAMELLA
- GRAPHITIC ARGILLITE
  - BEDDED c UP 20% Py TR SPHAL

736-754.5 ANDESITIC LITHIC LAPILLI TUFF

MOTTLE LT GREEN AND GREEN

- 40% STRETCHED ANDESITIC LITHIC LAPILLI UP TO 2 cm LONG IN DARK GREEN APH TUFF MATRIX c 25% MAFIC (CHLORITE)
- SCHISTOSITY AT 50° TO C.A., CHLORITE FOLIATION
- OCCASIONAL CARBONATE (DOLOMITE) ALTERATION OF LITHIC FRAGS BUT IN GENERAL THE ROCK IS UNALTERED

754.5-819 ANDESITIC TUFF

GREEN SCHISTOSE TUFF AND LAPILLI TUFFS c 25% MAFIC

SCHISTOSITY AT 50° TO CA, CHLORITE FOLIATION

- OCCASION CARBONATE ALTERATION OF LAPILLI (SAME AS IN PREVIOUS UNIT)
- OCCASION QTZ CARBONATE VEINS

← 756.5 2' QTZ CARB V @ 40 TO CA

757-758.6 SEVERAL LAPILLI REPLACE c CARBONATE

← 767-766 – SERICITE c QTZ CARB V.

← 773 – MODERATE FRACTURING c MODERATE SILICIFICATION FOLLOW BY 2' SECTION OF CHLORITE SCHIST

← 777.2 1" IRREGULAR QTZ CARB V.

% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
5% Py		100	BQ	722.5–726		Tr
	727			727–731		Tr
5% Py		100		731–734		Tr
2% Py				734–736		Tr
	737	100				
	747	100				
	757	100				
	767	100				
	777					

HOLE NO. JL 85-133
CASING COLLAR ELEV.: GROUND ELEV.:
COORDINATES: L68E/40N N. NORTH GRID E.
INCLINATION: BEARING:

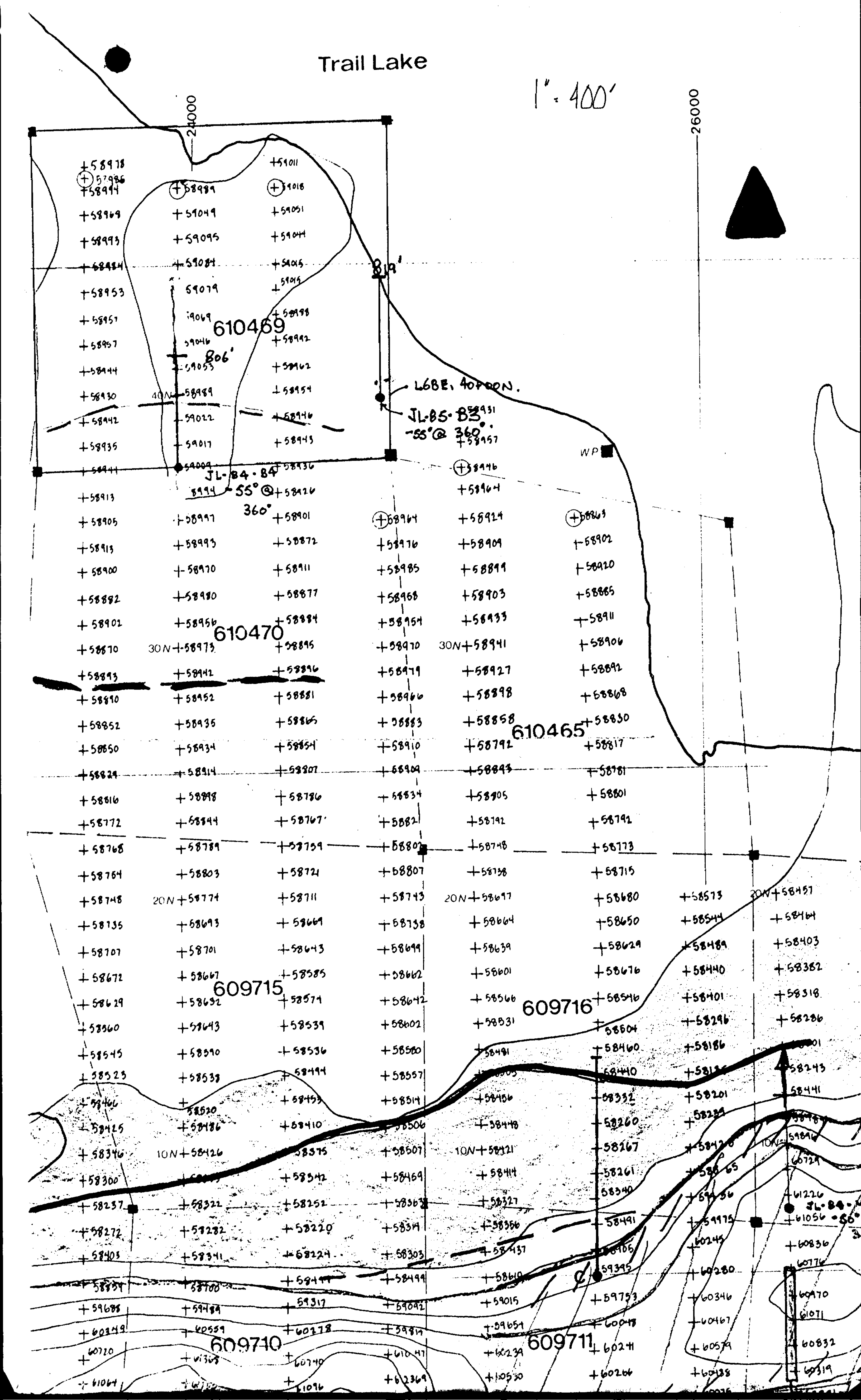
PROJECT: JIM'S LAKE NE ONTARIO
DATE STARTED: 15 JAN 85
DATE FINISHED: 22 JAN 85
TOTAL DEPTH: 819'

REF. TO CLAIM CORNER:
SCALE: 1" = 10'
LOGGED BY: P LEGEIN

SECTION	ALTERATION: SERICITIZATION	SILICIFICATION	QTZ CARB V.	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
780							754.5 – 819 ANDESITIC TUFFS (CONT)			100	BQ			
							787.5 6" SECTION c̄ QTZ CARB BLEB 4mm IN DIAM.		787					
790							789 – 4' SECTION c̄ 10-15% QTZ CARB BLEBS UP TO 10mm IN DIA.			100				
					Py		794 – 1" QTZ CARB VEIN WITH 2% FG DISS Py c̄ SERICITIZED MARGINS	TR-1%				793 – 795		TR
800							800-802 – IRREGULAR QTZ V. MAKING UP 20% OF THE RX		797	100				
810									807	100				
819							812.5 QTZ CARB V 1/2" THICK @ 45° TO C.A. c̄ 80% CALCITE		817	100				

COMPLETED LOGGING 28 JAN 85

Peter Legein
Duncan F McVR



Trail Lake
1" = 400'
24000
26000
610469
610470
610465
609715
609716
609710
609711
L6BE, 40+00N.
JL-85-B3
-55° @ 360°
JL-84-84
55° @ 360°
806'
819'
WP
40N
30N
20N
10N

ATHON TP. M.542

1" = 40 chains

Lake

MOODY TWP

Trail

Lake

JL-B5-B3.

JL-B4-F3

JL-B5-F5

GALNA TP. M.480

KNOX TWP

Fl.

Fl.

Fl.

Fl.

Ministry of Natural Resources
Ontario

Report of Work

L 610861

42A16SW0061 21 MOODY

900

#85

separate form for each rded (see table below). form no. 1362 "Report ysical, Geochemical and

Name and Postal Address of Recorded Holder

UTAH MINES LTD

ance No.

T-793

1238 Riverside Drive, Timmins, Ontario, P4R 1A4

Summary of Work Performance and Distribution of Credits

Total Work Days Cr. claimed: 887

for Performance of the following work. (Check one only)

- ☐ Manual Work
- ☐ Shaft Sinking Drifting or other Lateral Work.
- ☐ Compressed Air, other Power driven or mechanical equip.
- ☐ Power Stripping
- ■ Diamond or other Core drilling
- ☐ Land Survey

Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.
L	610870	23	L	610878	40	L	610885	40
	610871	40		610879	40		610886	40
	610872	40		610880	40		610917	40
	610873	40		610881	40		610918	40
	610874	40		610882	40		610919	40
	610875	40		610883	40		610920	40
	610876	40		610916	40		610921	24
	610877	40		610884	40			

All the work was performed on Mining Claim(s): L 610471

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
RESEARCH OFFICE
MAR 12 1985
RECEIVED

Required Information eg: type of equipment, Names, Addresses, etc. (See Table Below)

JL-85-B1

ONE BQ DIAMOND DRILL HOLE, TOTALLING 887'

Collared @ L52E, 32+85N, North Grid

Bearing 360°, Inclination: -55°

(see enclosed log and location maps)

Drilled By; Bradley Bros Ltd

P. O. BOX 485, Timmins, Ontario, P4N 7E7

From Jan, 9, 1985 to Jan, 14, 1985

LARDER LAKE MINING DIV.
RECEIVED
FEB 28 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

RECORDED MAR 1 1985
C. No.

Date of Report	Recorded Holder or Agent (Signature)
Feb 27/85	Duncan McIvor

Certification Verifying Report of Work

I hereby certify 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 and the annexed report is true.

Name and Postal Address of Person Certifying

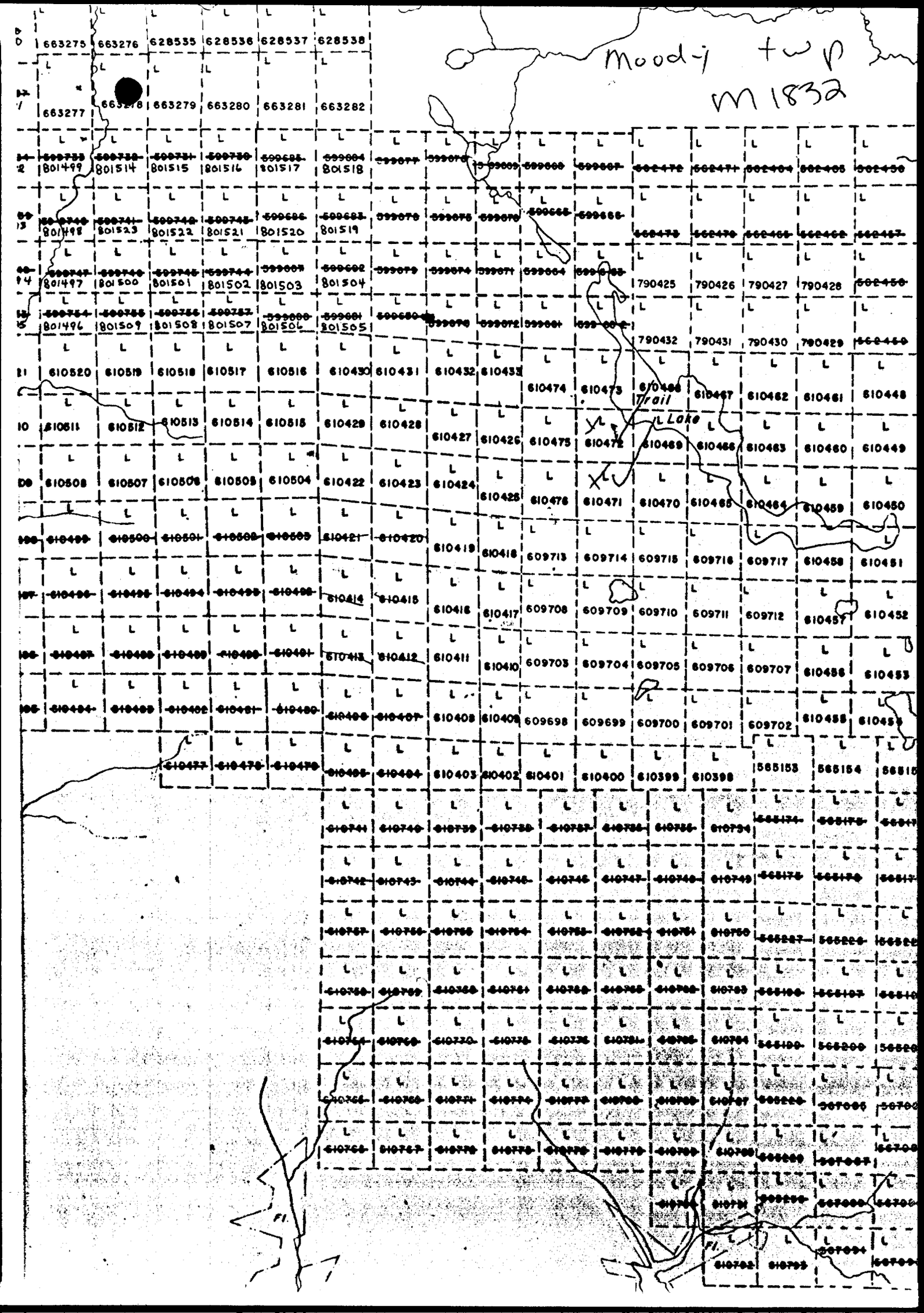
Duncan F. McIvor, 1238 Riverside Dr. Timmins, Ontario, P4R 1A4

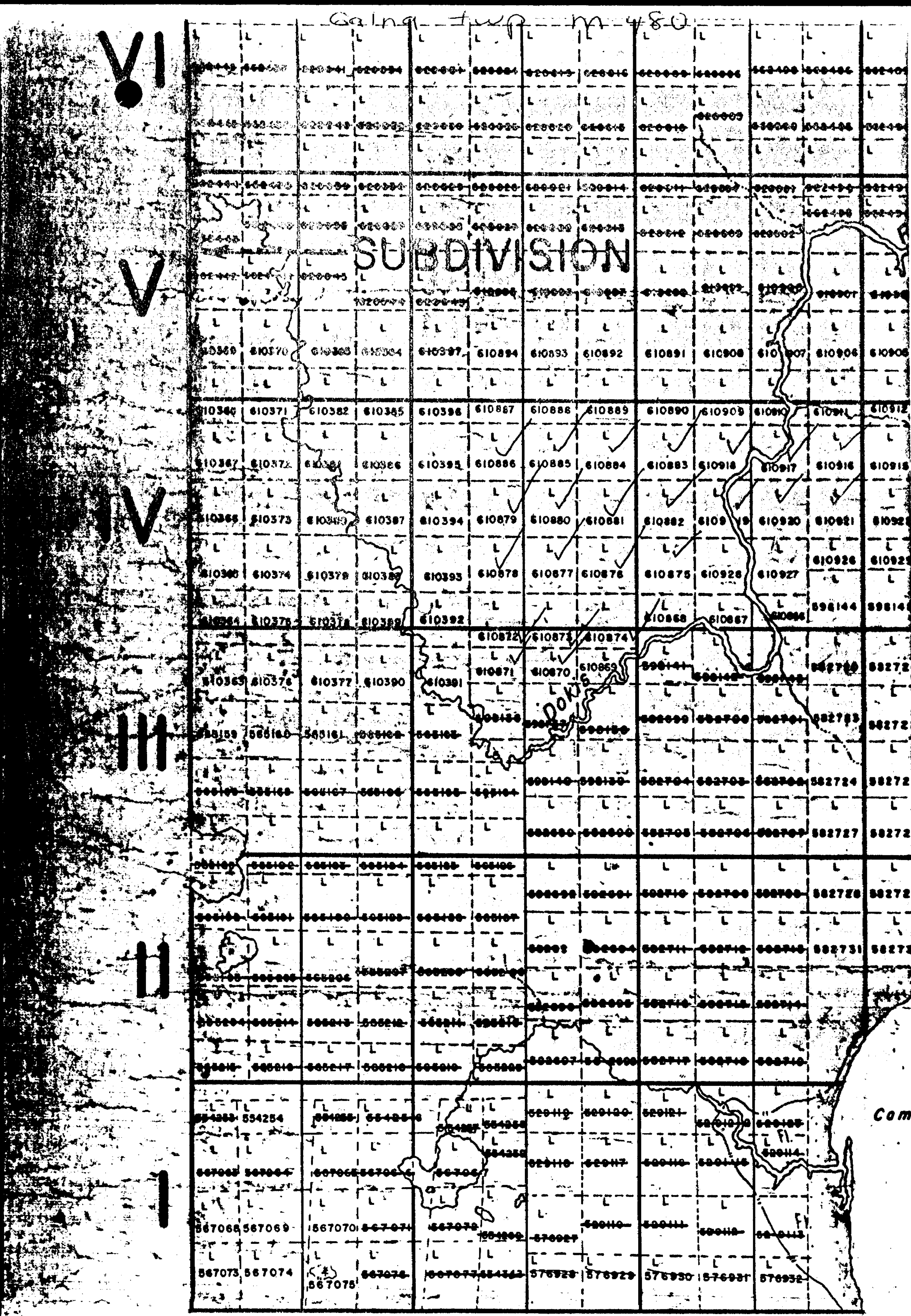
Date Certified	Certified by (Signature)
Feb 27/85	Duncan McIvor

Table of Information/Attachments Required by the Mining Recorder

Type of Work	Specific information per type	Other information (Common to 2 or more types)	Attachments
Manual Work	Nil	Names and addresses of men who performed manual work/operated equipment, together with dates and hours of employment.	Work Sketch: these are required to show the location and extent of work in relation to the nearest claim post.
Shaft Sinking, Drifting or other Lateral Work			
Compressed air, other power driven or mechanical equip.	Type of equipment		
Power Stripping	Type of equipment and amount expended. Note: Proof of actual cost must be submitted within 30 days of recording.	Names and addresses of owner or operator together with dates when drilling/stripping done.	
Diamond or other core drilling	Signed core log showing; footage, diameter of core, number and angles of holes.		Work Sketch (as above) in duplicate
Land Survey	Name and address of Ontario land surveyor.	Nil	Nil

768 (81/3)


Moody twp
M1832
Trail
Lake
Fl.
Fl.



SUBDIVISION
VI
V
IV
III
II
I
DOKIS
Com
610369 610370 610397 610894 610893 610892 610891 610908 610906
610371 610382 610385 610396 610887 610888 610889 610890 610909 610912
610367 610386 610395 610886 610885 610884 610883 610918 610917 610916 610915
610373 610387 610394 610879 610880 610881 610882 610920 610921
610374 610379 610393 610878 610877 610876 610875 610928 610927 610926
610392 610868 610867 598144
610872 610873 610874
610376 610377 610390 610391 610871 610870 610869
582723
582724
582727
554254
567068 567069 567070
567073 567074 567075
576929 576930 576932

Ministry of Natural Resources
Ontario

Report of Work

Mining Act

Instructions
- Supply required data on a separate form for each type of work to be recorded (see table below).
- For Geo-technical work use form no. 1362 "Report of Work (Geological, Geophysical, Geochemical and Expenditures)".

Name and Postal Address of Recorded Holder

UTAH MINES LTD

Prospector's Licence No.
T-793

1238 Riverside Drive, Timmins, Ontario, P4R 1A4

Summary of Work Performance and Distribution of Credits

Total Work Days Cr. claimed: 561

for Performance of the following work. (Check one only)

- ☐ Manual Work
- ☐ Shaft Sinking Drifting or other Lateral Work.
- ☐ Compressed Air, other Power driven or mechanical equip.
- ☐ Power Stripping
- ■ Diamond or other Core drilling
- ☐ Land Survey

Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.
L	610921	16	L	565158	60			
	610926	40		565159	60			
	610927	40		565160	60			
	610928	40		565161	5			
	565153	60						
	565154	60						
	565156	60						
	565157	60						

All the work was performed on Mining Claim(s): ~~L609713~~, ~~610476~~, 610472

Required Information eg: type of equipment, Names, Addresses, etc. (See Table Below)

JL-84-B2

One BQ Diamond Drill Hole, Totalling 561'
Collared @ L52E, 24+00N, North Grid
Bearing: 360°, Inclination: -55°
(see enclosed log and location maps)

Drilled By: Bradley Bros Ltd
P. O. Box 485, Timmins, Ont, P4N 7E7

From December 12-15, 1984

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
RESEARCH OFFICE
MAR 12 1985
RECEIVED

LARDER LAKE
MINING DIV.
RECEIVED
FEB 28 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

RECORDED MAR 1 1985

Date of Report: Feb 27/85

Recorded Holder or Agent (Signature): Duncan McIvor

Certification Verifying Report of Work

I hereby certify 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 and the annexed report is true.

Name and Postal Address of Person Certifying
Duncan F. McIvor, 1238 Riverside Drive, Timmins, Ontario, P4R 1A4

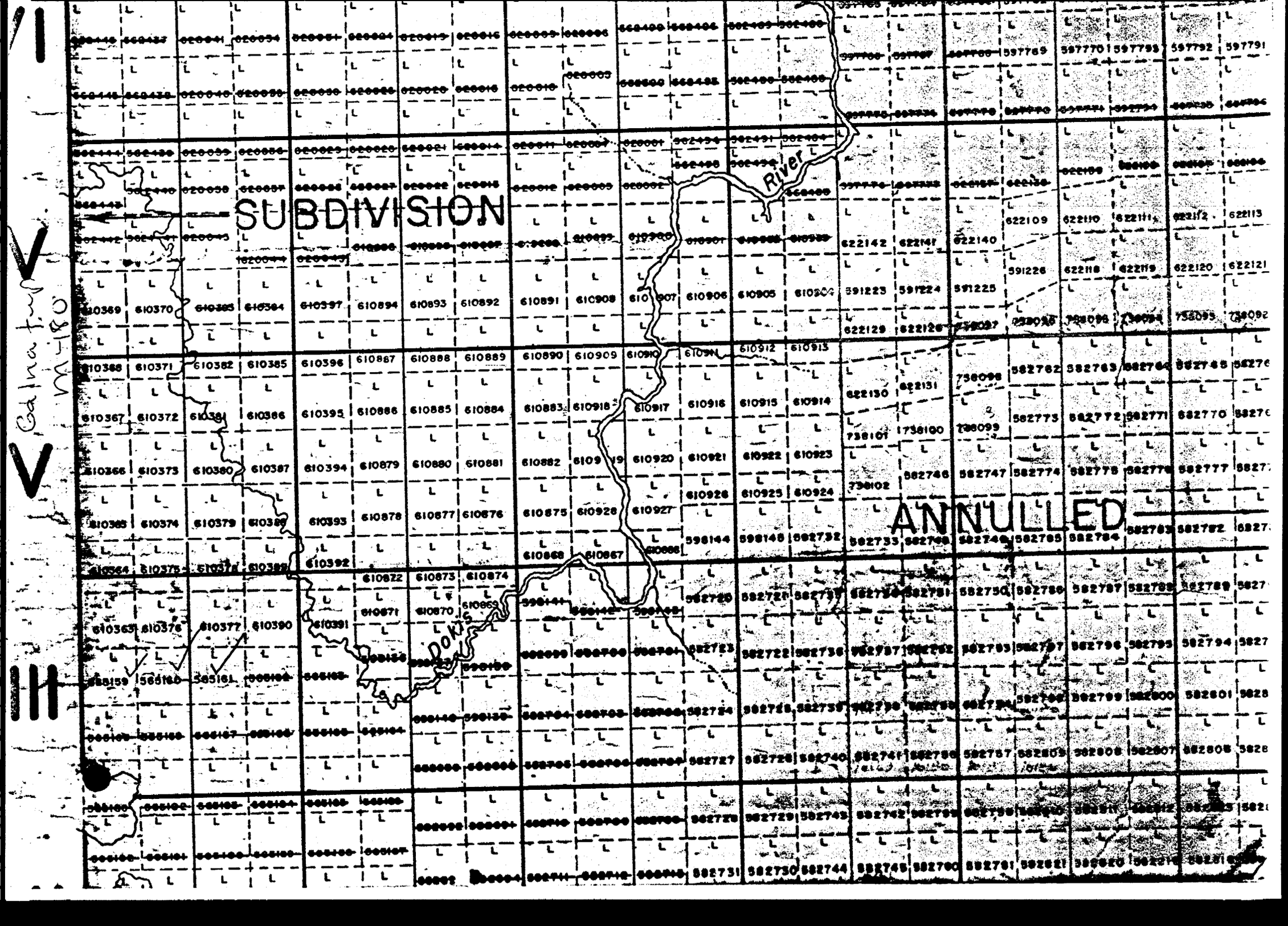
Date Certified: Feb 27/85

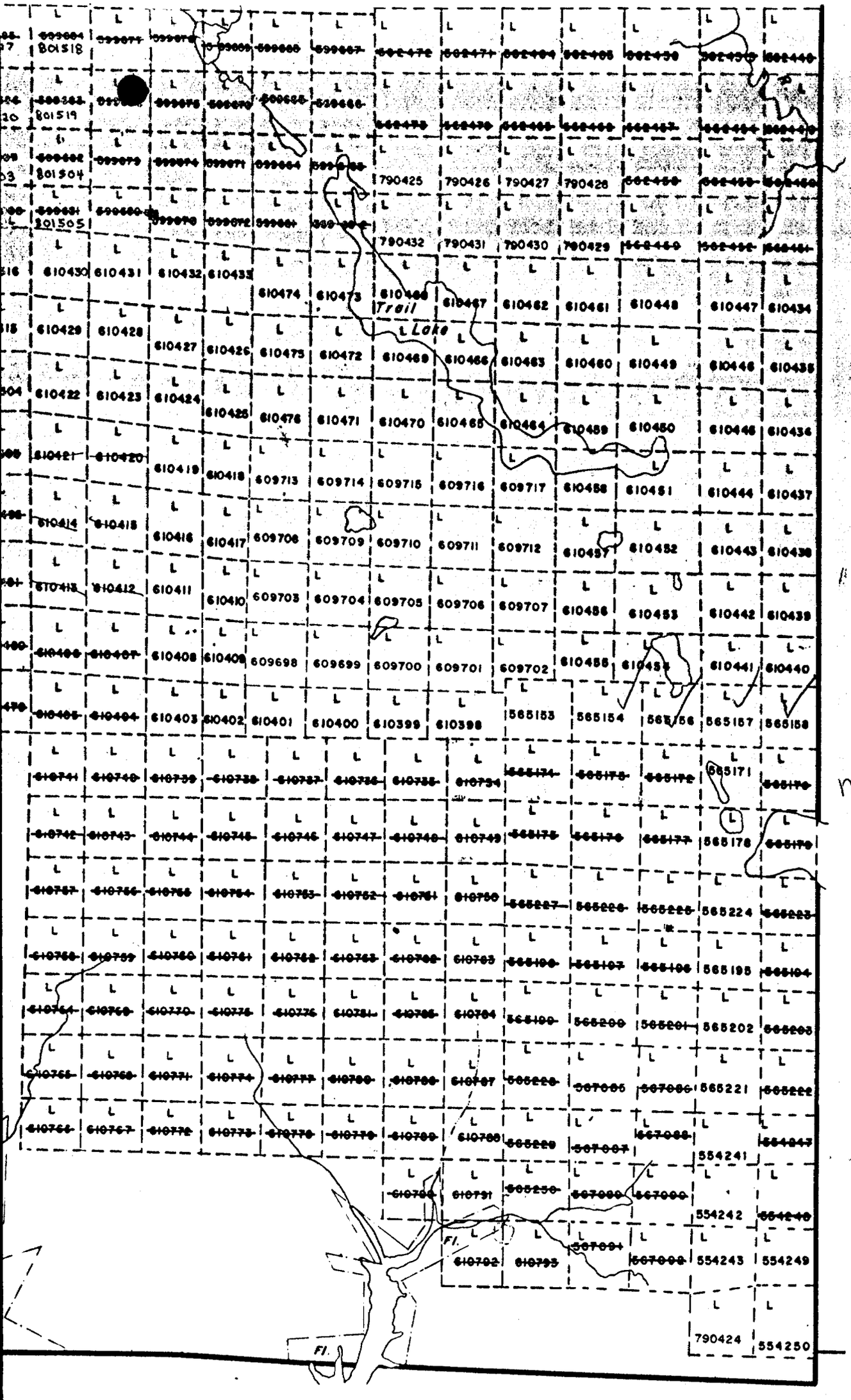
Certified by (Signature): Duncan McIvor

Table of Information/Attachments Required by the Mining Recorder

Type of Work	Specific information per type	Other information (Common to 2 or more types)	Attachments
Manual Work	Nil	Names and addresses of men who performed manual work/operated equipment, together with dates and hours of employment.	Work Sketch: these are required to show the location and extent of work in relation to the nearest claim post.
Shaft Sinking, Drifting or other Lateral Work			
Compressed air, other power driven or mechanical equip.	Type of equipment		
Power Stripping	Type of equipment and amount expended. **Note:** Proof of actual cost must be submitted within 30 days of recording.	Names and addresses of owner or operator together with dates when drilling/stripping done.	
Diamond or other core drilling	Signed core log showing; footage, diameter of core, number and angles of holes.		Work Sketch (as above) **in duplicate**
Land Survey	Name and address of Ontario land surveyer.	Nil	Nil

768 (61/3)


SUBDIVISION
River
ANNULLED
Doks


GALNA TP. M.480
Moody twp
M1832
Trail Lake
Fl.
Fl.

Ministry of Natural Resources
Ontario

Report of Work

Mining Act

Instructions
- Supply required data on a separate form for each type of work to be recorded (see table below).
- For Geo-technical work use form no. 1362 "Report of Work (Geological, Geophysical, Geochemical and Expenditures)".

Name and Postal Address of Recorded Holder

UTAH MINES LTD

1238 Riverside Drive, Timmins, Ontario, P4R 1A4

Prospector's Licence No.: T-793

Summary of Work Performance and Distribution of Credits

Total Work Days Cr. claimed: 819

for Performance of the following work. (Check one only)

- ☐ Manual Work
- ☐ Shaft Sinking Drifting or other Lateral Work.
- ☐ Compressed Air, other Power driven or mechanical equip.
- ☐ Power Stripping
- ☒ Diamond or other Core drilling
- ☐ Land Survey

Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.	Mining Claim Prefix	Mining Claim Number	Work Days Cr.
L	610374	34	L	610375	38	L	610418	38
[redacted]	610411	38	[redacted]	610376	38	[redacted]	610419	38
[redacted]	610440	38	[redacted]	610377	38	[redacted]	610446	40
[redacted]	610441	38	[redacted]	610378	38	[redacted]	610447	40
[redacted]	610442	38	[redacted]	610379	40	[redacted]	610448	40
[redacted]	610443	38	[redacted]	610380	40	[redacted]	610449	13
[redacted]	610444	38	[redacted]	610416	38			
[redacted]	610445	40	[redacted]	610417	38			

All the work was performed on Mining Claim(s): L 610469

Required Information eg: type of equipment, Names, Addresses, etc. (See Table Below)

1 Hole BQ CORE, JL-85-B3, Collared @ L68E, 40+00N
Bearing 360°
Inclination -55°
Total Depth 819'
(see enclosed log & location maps)

Date of Report	Recorded Holder or Agent (Signature)
Feb 19, 1985	Duncan F McIvor

Certification Verifying Report of Work

I hereby certify 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 and the annexed report is true.

Name and Postal Address of Person Certifying

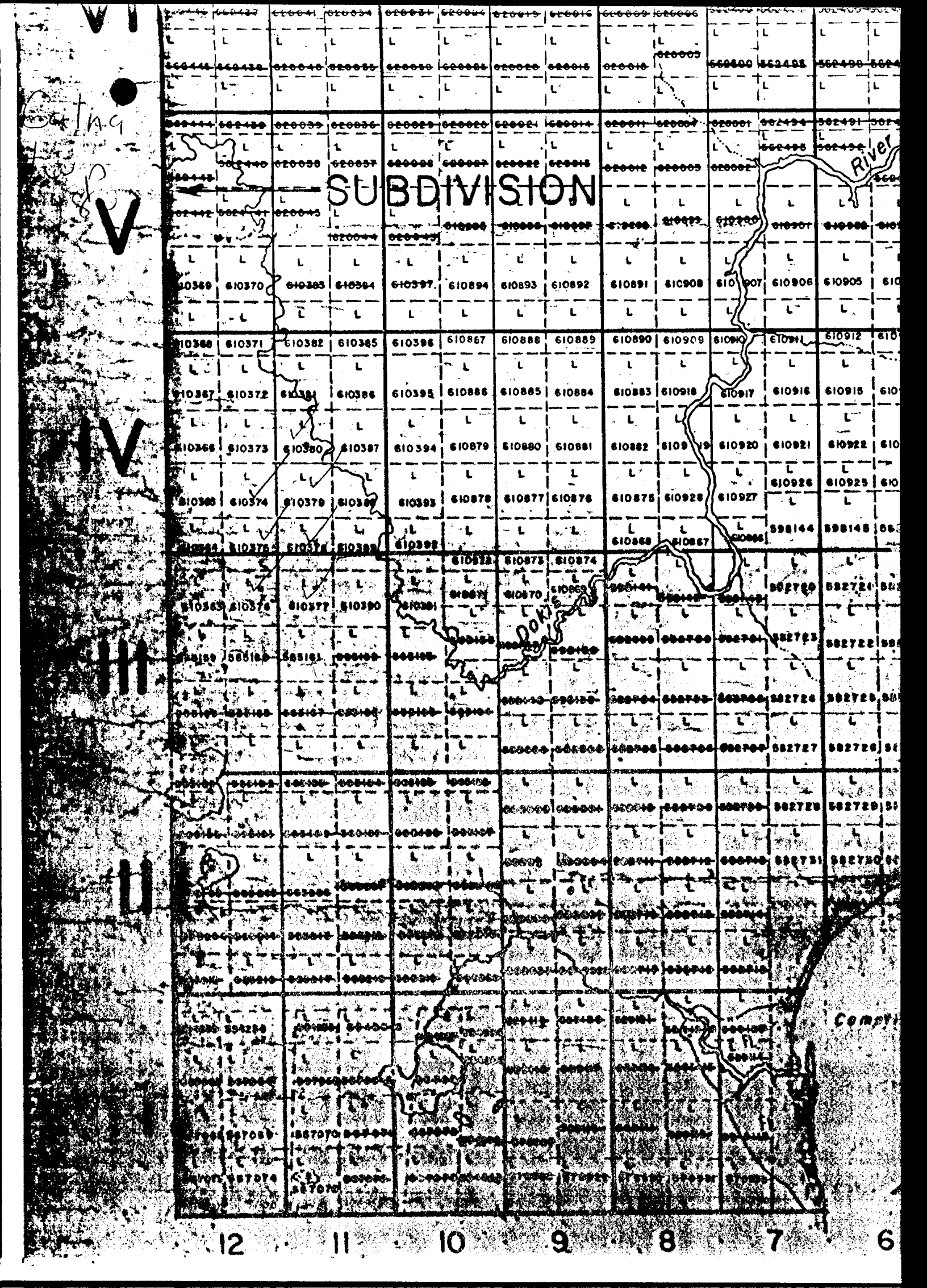
Duncan F. McIvor, 1238 Riverside Drive, Timmins, Ontario, P4R 1A4

Date Certified	Certified by (Signature)
Feb 19, 1985	Duncan F McIvor

Table of Information/Attachments Required by the Mining Recorder

Type of Work	Specific Information per type	Other information (Common to 2 or more types)	Attachments
Manual Work	Nil	Names and addresses of men who performed manual work/operated equipment, together with dates and hours of employment.	Work Sketch: these are required to show the location and extent of work in relation to the nearest claim post.
Shaft Sinking, Drifting or other Lateral Work			
Compressed air, other power driven or mechanical equip.	Type of equipment		
Power Stripping	Type of equipment and amount expended. **Note:** Proof of actual cost must be submitted within 30 days of recording.	Names and addresses of owner or operator together with dates when drilling/stripping done.	
Diamond or other core drilling	Signed core log showing; footage, diameter of core, number and angles of holes.		Work Sketch (as above) in duplicate
Land Survey	Name and address of Ontario land surveyer.	Nil	Nil

768 (81/3)


SUBDIVISION
River
DOKIE
12
11
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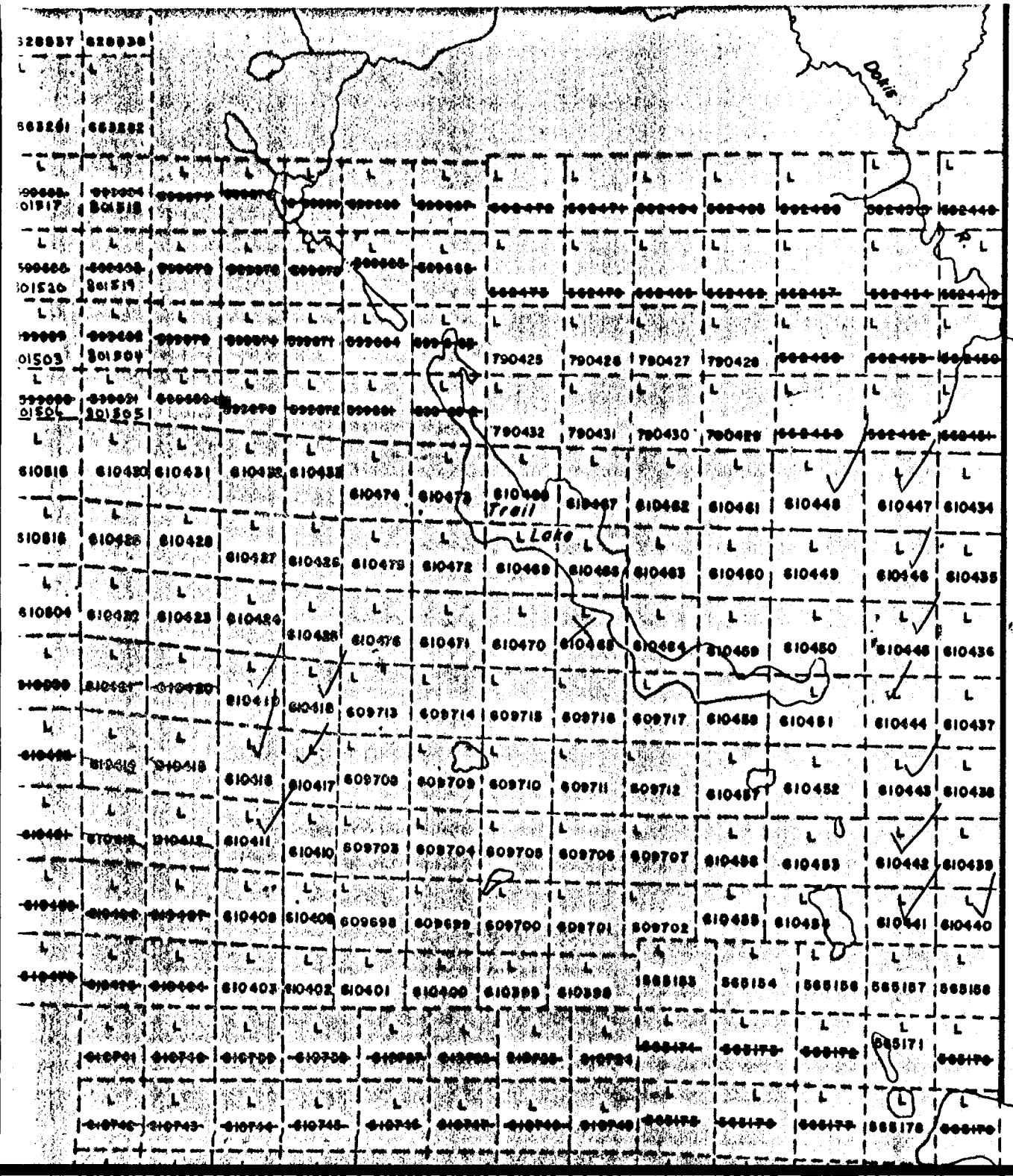

GALNA TP. M.480

MOOD

M183

DISTRICT

COCHRANE

LARDER LA

MINING DIVI

SCALE: 1-INCH=40

LEGEND

PATENTED LAND
CROWN LAND SALE
LEASES
LOCATED LAND
LICENSE OF OCCUPATION
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

NOTES

400' surface rights reservati
shores of all lakes and riv