

DIAMOND DRILLING



42B01NE0009 12 MUSKEGO

010

Township: MUSKEGO

Report No: 12

WORK PERFORMED FOR: UTAH MINES LTD.

RECORDED HOLDER: SAME AS ABOVE [x]

: OTHER [ ]

<u>CLAIM NO.</u>	<u>HOLE NO.</u>	<u>FOOTAGE</u>	<u>DATE</u>	<u>NOTE</u>
825426	BL-86-01	508	Jan./86	(1)
"	86-02	458	"	(1)
825423	86-03	580	"	(1)
825406	86-06	323	Feb./86	(1)
"	86-07	488	"	(1)
825423	86-08	478	Jan./86	(1)
825427	86-10	458	Feb./86	(1)
825430	86-11	488	"	(1)
825424	86-12	471	Jan./86	(1)
	9	4252		

NOTES: (1) #222/86

BOULDER LAKE PROPERTY BL-86-01

DIP TESTS:  
 @ 250' . 32°  
 @ 508' . 28°

STRATIGRAPHY  
 DIPPING @  
 85° N.

ONTARIO GEOLOGICAL SURVEY  
 ASSESSMENT FILES  
 RESEARCH OFFICE  
 JUL 24 1986  
 RECEIVED

HOLE SUMMARY BL-86-01

COLLAR LOCATION: 75' East of L28W, 13+00N, and 100' due north of 'Main Vein-Shear' Horizon.  
 BEARING: 180°  
 INCLINATION: -45°  
 TARGET: Down dip extension of 'Main Vein Shear' Horizon and VLF conductor centered 400' south of collar 508'.  
 TOTAL DEPTH:

0	-13'	OVERBURDEN
13	-27.5'	MODERATELY SCHIST CHLORITIZED BAS
27.5	-48.5'	CHLORITE SCHIST
48.5	-78'	MODERATELY CHLORITIZED CARBONATIZED BASALT
78	-81'	CHLORITE SCHIST
81	-88'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
88	-93.5'	CHLORITE SCHIST
93.5	-98'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
98	-102.5'	QUARTZ-VEIN (MAIN VEIN), WITH 2% PO-PY
102.5	-115.5'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
115.5	-127'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
127	-146'	STRONGLY CARBONATIZED, MODERATELY CHLORITIZED WEAKLY SERICITIZED F.G. CRYSTALLINE BASALT
146	-148'	BASALT
148	-154.5'	CHLORITE-CARBONATE SCHIST
154.5	-184.5'	M.G. CRYSTALLINE BASALT OR INTRUSIVE EQUIVALENT GABBRO
184.5	-201'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
201	-211'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
211	-215.5'	TALC-CHLORITE-SERICITE SCHIST
215.5	-218'	STRONGLY CHLORITIZED BASALT.
218	-278.3'	ANDESITE
278.3	-312'	F.G. CRYSTALLINE BASALT OR INTRUSIVE EQUIVALENT (GABBRO)
312	-316'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
316	-317.5'	BRECCIATED, RECRYSTALLIZED QUARTZ-MAGNETITE EXHALA- TIVE (OXIDE FACIES IRON FORMATION).
317.5	-336'	STRONGLY CHLORITIZED BASALT
336	-343.5'	F.G. CRYSTALLINE BASALT.
343.5	-386.5'	STRONGLY CHLORITIZED, MODERATELY CARBONATIZED BASALT
386.5	-403'	TALC-SERICITE SCHIST
403	-427.5'	MAGNETITE BEARING, STRONGLY SILICIFIED MAFIC ROCK (BASALT) WITH 15% LARGE MINERALIZED QUARTZ-CARBONATE VEINS (1-5% PY-PO-CPY)

HOLE SUMMARY  
BL-86-01

427.5	-469'	ANDESITE TO BASALT
469	-470.5'	MINERALIZED (5% PO) QUARTZ-MAGNETITE EXHALATIVE
470.5	-482.5'	CHLORITIZED ANDESITE TO BASALT
482.5	-487.5'	BIOTITE RICH, WEAKLY SILICIFIED, SERICITIZED BASALT
487.5	-493.5'	CHLORITE-SERICITE SCHIST
493.5	-498.5'	MINERALIZED, WEAKLY SILICIFIED F.G. CRYSTALLINE BASALT, (3% PO)
498.5	-505'	MINERALIZED, SILICIFIED ANDESITE TO BASALT (2% PO)
505	-508'	ANDESITE TO BASALT
508'	-568'	F.G. CRYSTALLINE BASALT
560		

D. McLaughlin  
JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-01

- 0 -13' OVERBURDEN
- 13 -27.5' MOD. CHLZ BAS  
-rock is dark green, relatively soft, mod chlz, fg (weak rem fg xline tex), mod to strongly sch at an ave orien of 50 deg to the ca,  
-only weakly carbz w 2 to 3% diss calc and occ small calc blebs that maybe stretched amygdules  
-mod frac pred pll fol w calc and minor py-po frac fil  
-a few secondary 1/4 to 1" calc and qtz calc vn pred pll fol  
-sulphide content, 2%, pred po, (1.5%)w some py(.5%) and trace cpy, as vfg diss mineralization, and frac fil ass w calc  
-from 13 to 14.5', locally sulphides 5% w semi massiv py bands to 1/4" and 2% diss py throughout rock locally trace diss magnetite  
-at 26', 4" zone w 1/2" qtz calc epidote altered plag vn to 30% of rock  
-at 26.8', 1/4" carb vn pll fol w 1/2" ser-carb alteration envelope  
-from 27 to 27.5', becomes grad softer, more strongly sch, more strongly chlz
- 27.5 -48.5' CHL SCHIST (INTENSELY SHEARED, SCH CHLZ BAS)  
-rock a vfg dark green v soft, strongly to intensely sheared, sch, at 50 deg to the ca,  
-intensely chlz, and locally mod carbz w 15% thin 1/16" calc stringers in seams along sch planes  
-mod frac pll sch w calc and lesser py-po frac fil  
-a few secondary qtz and qtz calc vn pll sch to 1"  
-minor diss biotite in places  
-contains 2 to 3% vfg diss magnetite in places  
-contains 0.5% f diss py-po  
-at 35.5', 3" zone where 1/4 to 1/2" fg sugary qtz calc vn pll fol to 30% of rock  
-at 36.5', 3" sugary tex recrystallized qtz vn pll fol  
-at 39', a few 1/4" sugary tex qtz vn pll fol

48.5

-78'

CHLZ CARBZ (CALC)BAS

- med green, fg, rem xline texture, mod to strongly chlz, relatively soft, mod carbz, w vfg diss calc to 10% and thin 1/16" calc stringers and seams pll fol
- mod sch at 50 deg to the ca,
- contains 15% small diss white blebs that maybe plagioclases
- mod frac pred pll fol w calc and minor py po frac fil
- a few secondary qtz calc vn pll fol to 1"
- contains 6 to 7% diss magnetite as thin slips pll fol and diss cubes to 1/16", rock is strongly magnetic
- contains 1/16" to 1/8" calc blebs that app to be stretched amygdules
- sulphide content, 1%, 0.75% py, 0.25% po, trace cpy pred as vfg diss mineralization
- at 53.5', 1/2" qtz calc vn pll fol
- at 58', 3" qtz calc vn pll fol w minor py-po
- at 58.5', 1/2" qtz calc vn pll fol
- at 59.2', 1" calc vn pll fol
- at 64', 3" qtz calc epidote altered plagioclase vn at 60 deg to the ca,
- from 64.5 to 65.5', calc seams and vn to 1/2" pll fol to 50% of rock
- from 66 to 68', locally magnetite to 10% of rock as thin seams pll fol
- at 67.5', 1" calc vn pll fol w 2% po
- at 69.5', 1/2" calc vn pll fol
- from 71 to 72', locally a few 1/2" calc seams pll fol, and locally magnetite to 10% as semi massive 1/4" bands pll fol and diss 1/8" blebs
- at 74', 1" qtz calc vn pll fol
- at 77.5', 1/2" qtz calc vn pll fol

- 78      -81'      CHL SCHIST (STRONGLY SHEARED SCHISTOSE CHLZ BAS)  
 -vfg, dark green, v soft, v strongly chlz, v strongly  
 sch at 55 deg to the ca, weakly carbz w minor diss  
 calc and a few thin calc seams pll sch  
 -weakly frac pll sch w calc frac fil  
 -contains 3% diss magnetite crystals to 1/16"  
 -at 0.5% fg diss py, trace po  
 -at 78.2', 1" qtz calc vn pll fol w 1% magnetite  
 -at 78.7', 1" qtz calc vn pll fol
- 81      -88'      MOD CHLZ CARB (CALC) BAS  
 -mod sch at 60 deg to the ca, med to dark green,  
 mod chlz, relatively soft, mod to strongly carbz  
 w 15 to 20% vfg diss calc and 10% thin 1/16" calc  
 seams pll fol  
 -a few secondary qtz calc vn pll fol  
 -trace fg diss py  
 -at 81.5', a few 1.2" calc vn pll fol  
 -at 84.5', a few 1/2" qtz calc vn pll
- 88      -93.5'      CHL SCHIST (STRONGLY SHEARED SCH CHLZ BAS)  
 -v strongly sheared, sch at 65 deg to the ca  
 dark green, v soft, v strongly chlz, mod carbz w  
 15% calc as thin slips pll fol and vfg diss mineral-  
 ization  
 -weakly to mod frac pred pll fol w calc frac fil  
 -trace fg diss py  
 -at 92', 1/2" fg sugary tex qtz vn pll fol
- 93.5      -98'      MOD CHLZ, MOD TO STRONGLY CARBZ (CALC) BAS  
 -mod to strongly sch at 60 to 65 deg to the ca,  
 med to dark green, soft, mod to strongly chlz,  
 mod to strongly carbz, w 15 to 20% calc as thin  
 stringers pll fol and vfg diss blebs  
 -vfg, w a weak rem xline tex visible in places  
 where less strongly sch  
 -a few secondary qtz calc vn pred pll fol  
 -sulphide content, 1%, 0.5% po, 0.5% py, trace cpy  
 as vfg diss mineralization and thin slips along sch  
 planes  
 -at 96.2', 1" qtz vn at 55 deg to the ca,

98

-102.5'

QTZ VN

- pred fg milk white to dark grey sugary tex recrystallized app qtz vn to 80% of rock w 20% thin chl seams and 1 to 2" inclusions of host bas
- chl seams and wall rock bands at a pred orien of 70 deg to the ca, are usually mineralized w an overall sulphide content of 2%, pred po w minor py and cpy
- qtz vn contains minor tourmaline
- vn is mod frac at ran orien
- qtz vn contacts are conformable at 65 to 70 deg to the ca,

102.5

-115.5'

STRONGLY CHLZ CARBZ BAS

- dark green, vfg to aphanitic, strongly sch at an ave orien of 55 deg to the ca, w a weak cross cutting S2 sch at 35 deg to the ca,
- v soft, strongly chlz, strongly carbz w 25 to 30% calc as thin 1/16" stringers pll fol and a few 1/8" to 1/16" blebs elongate pll fol that are probably stretched amygdules
- mod frac pll Sland S2 fol w calc, and minor qtz and py po frac fil
- a few secondary large qtz calc vn to 2 to 3" pred pll fol
- sulphide content, ave 1%, pred py, trace cpy, and po, as frac fil, diss mineralization, and mineralization ass w calc vn
- locally from 102.5 to 104', py to 5% as vfg diss mineralization, and mineralization ass w thin 1/4" highly contorted qtz calc vn
- at 104.5', 1/4" qtz calc vn pll fol w 1% diss cpy-py
- from 110 to 113', rock is intensely chlz, v soft, as alteration around the following vn
- at 111', 3" qtz calc vn at 70 deg to the ca, w 5% blebs of tourmaline
- at 111.6', 2" qtz calc vn at 65 deg to the ca, w minor cpy
- at 111.9', 1" qtz calc vn at 80 deg to the ca,
- at 112.1', 1/2" qtz calc vn at 55 deg to the ca,
- at 112.3', 1" qtz calc vn w minor cpy at 55 deg to the ca,
- from 113 to 115.5', numerous 1/2" qtz calc vn pll fol to 15% of rock, w ass 2% py



115.5 -127'

MOD. CHLZ, STRONGLY CARBZ, (CALC) BAS

- dark green, fg, w a weak rem fg xlline app tex as exhibited by 25% diss small calc blebs to 1/8" that resemble replaced or altered feldspar
- relatively soft, mod chlz, strongly carbz, w 25% calc blebs and 10% thin calc seams pll sch to 1/8"
- mod sch at 60 deg to the ca,
- mod frac pred pll fol w calc frac fil
- a few secondary 1 to 2" calc and qtz calc vn pll fol
- contains 10% v fg diss biotite
- sulphide content, 1% py, trace po, and cpy as vfg diss mineralization and mineralization ass w calc seams
- at 117.7', 3" calc vn pll fol
- from 124 to 124.5', 6" qtz calc vn strongly brecciated by thin chl seams, w 5% diss magnetite crystals to 1/16" and 1% diss py
- from 124.5 to 127', fg diss py-po increases to 2% ass w 1" calc bands pll fol to 30% of rock

127 -130'

ANDESITE TO BAS

- med green, vfg, only weakly sch at 55 deg to the ca, weakly chlz, weakly frac pll fol, trace diss py

130 -146'

STRONGLY CARBZ (CALC) MOD CHLZ, WEAKLY SERZ FG BAS

- rock is med green, relatively soft, strongly carbz w 20% thin 1/8" to 1/4" calc bands pll sch and numerous to small diss calc blebs
- mod chlz, and weakly serz, slightly bleached app in places
- rem fg to med g app in places xlline tex as exhibited by clots of chl and calc
- strongly sch at 60 deg to the ca, w a strong S2 as exhibited by micro frac set cross cutting S1 at 40 deg to the ca,
- sch is strongly kinked and crenulated in places
- a few 1/2 to 1" secondary qtz calc vn pll fol
- sulphide content, variable, from 130 to 140', trace diss py-po as mineralization ass w calc seams
- from 140 to 146', 2% py-po
- from 132.5 to 133.5', less sch less altered
- at 137.5', 1" qtz calc vn pll fol
- at 140.5', 1" qtz calc vn pll fol
- from 140.5 to 144.5', calc vn pll fol w minor ass qtz to 1" and 40% of rock w 2% fg diss sulphides, 1% po, 1% py, trace cpy, as thin slips pll fol
- at 143.8', 3" banded qtz calc vn pll fol w a strong 2" sericitic alteration halo, and 2% diss py-po

- at 144.3', 1" qtz vn pll fol
- 146      -148'      BAS

  - fg, dark green, weak rem fg xlline tex
  - weakly to mod chlz, mod carbz, w 10 to 15% fg diss calc and thin calc seams pll sch
  - mod sch at 60 deg to the ca,
  - trace fg diss py-po-cpy
- 148      -154.5'      STRONGLY CHLZ CARBZ(CALC) BAS

  - dark green, v soft, v strongly chlz, strongly carbz w fg diss calc to 20% and 10% thin calc seams to 1/4" pll fol
  - vfg to aphanitic
  - strongly sch at 60 deg to the ca,
  - a few secondary 1" qtz calc vn pll fol
  - weakly frac pll fol, w a weak cross cutting micro frac set at 30 deg to the ca,
  - 0.5% diss py, trace po
  - at 148.5', 1/2" cherty qtz vn pll fol
  - at 150.2', 1/2" qtz calc vn pll fol
  - at 150.6', 1" qtz calc vn pll fol
  - from 152 to 154.5', 5% diss magnetite crystals to 1/16"
  - at 153.6', 1" qtz calc vn pll fol
- 154.5      -184.5'      SCH, MOD CARBZ (CALC) CHLZ MED G XLLINE BAS OR GABBROIC EQ

  - dark green, rem med g xlline tex, w chl clots and 30 to 35% diss 1/8" calc clots that resemble altered or replaced plagioclase
  - relatively soft,
  - mod to strongly sch at 50 deg to the ca,
  - a few fg app, more sheared, chlz zones
  - app weakly autobrecciated in places by thin chl seams pll sch
  - weakly to mod frac pred pll fol w calc frac fil
  - a few secondary qtz calc vn pll fol
  - contains 1 to 2% diss magnetite as crystals to 1/8"
  - contains 1% diss py, trace po, as blebs to 1/8"
  - from 158 to 159', fg more strongly chlz more strongly sch zone
  - at 158.7', 1" calc vn pll fol
  - at 160', 1" calc vn pll fol
  - from 162 to 163.5', fg, more bas app zone
  - at 163', a few 1/2" qtz calc epidote vn pll fol

184.5 -201'

MOD CHLZ MOD CARBZ SCH BAS

- dark green, fg to vfg, mod to strongly sch at an ave orien of 60 deg to the ca, mod chlz, mod carbz w 15% thin calc seams to 1/8" pll fol and 5 to 10% fg diss calc, trace ser in places
- a few secondary 1 to 2" qtz calc vn pll
- mod frac pll fol w calc frac fil, and a weak cross cutting micro frac set at 35 deg to the ca,
- sch is strongly kinked and crenulated in places
- contains 0.5% py as mineralization ass w carb seams and minor diss mineralization
- from 185 to 185.5', locally thin calc bands pll fol to 40% of rock
- from 186.5', 187', locally sch is strongly crenulated
- from 190 to 191.5', locally v strongly sch, weakly ser altered, and strongly micro frac at 35 deg to the ca,
- from 195 to 196.5', rock becomes weakly sil in places
- at 195.2', 3" qtz calc chl vn pll fol
- at 196.3', 2" qtz calc vn at 55 deg to the ca,
- from 196.5 to 201', v strongly chlz, v soft, v strongly sch

201 -211'

STRONGLY SCH, STRONGLY CHLZ, MOD CARBZ(CALC) FG

- TO MED G BAS OR SHEARED INTRUSIVE EQ GABBRO
- dark green, v soft, v strongly chlz, mod carb, w 25% calc as small 1/16" blebs that resemble replaced or altered feldspars in a fg to med g rem xlline tex, and 10% thin calc bands to 1/8" pll fol
  - strongly sch at 60 deg to the ca,
  - sch and chl alteration increase in intensity towards 211'
  - mod frac pred pll fol w calc frac fil
  - a few secondary qtz calc vn pred pll fol
  - 1% py as diss blebs to 1/8", trace po
  - a few 1/4" qtz calc vn pll fol
  - at 206', 1/2" qtz calc vn pll fol

- 211 -215.5' TALC CHL SER SCH (ALTERED KOMATIITE)  
 -distinct contacts  
 -rock a v soft, intensely sch at 65 deg to the ca although sch is strongly kinked and crenulated  
 -v intensely altered to talc (30%) chl(30%) and ser(30%), light greenish grey,  
 -contains minor calc as diss blebs and a few thin seams to 1/4" pll fol  
 -trace diss f py  
 -at 213', a few 1/2" calc vn pll fol  
 -from 214 to 215', 1/2" calc vn pll fol to 30% of rock
- 215.5 -218' STRONGLY SCH CHLZ BAS  
 -dark green, vfg to aphanitic, strongly sch at 60 deg to the ca, strongly chlz, mod carbz w 10% thin calc seams pll fol  
 -weakly frac pll fol and pll cross cutting S2 at 30 deg to the ca,  
 -trace diss py
- 218 -221' ANDESITE (OR WEAKLY SIL BAS)  
 -rock a dark grey to greyish green, vfg, weakly sch at 60 deg to the ca, weakly chlz, weakly to mod carbz w 10 to 15% thin calc seams to 1/32" pll sch, relatively hard, maybe weakly sil  
 -a few secondary 1/4" qtz calc vn pll fol  
 -weakly frac pll fol w calc frac fil  
 -0.5% diss py-po, trace cpy,  
 -from 218 to 218.5', numerous thin 1/4" calc bands pll fol to 30% of rock w 3% ass sulphides  
 2% po, 1% py, trace cpy, and occ thin sulphide bands to 1/16" pll fol  
 -at 220', 1/4" qtz calc vn pll fol w 1% diss po
- 221 -278.3' ANDESITE TO BAS  
 -rock pred a vfg to aphanitic, med green, weakly to mod sch at orien ranging from 65 to 75 deg to the ca,  
 -only weakly to mod chlz,  
 -weakly to mod carbz w 5% vfg diss calc and 5 to 10% thin calc stringers to 1/4" pll fol  
 -weakly to mod frac pred pll fol w calc frac fil and in places a cross cutting S2 related frac set at 30 deg to the ca  
 -a few secondary qtz carb vn to 1", ave 1/2", to 3 to 5% of rock, usually w up to 1% diss magnetite and py  
 -sch is weakly crenulated in places

- contains in places 1 to 2" zones where greyer, harder, maybe weakly sil in places
- contains diss magnetite crystals to 1/16" in places but v patchy distribution
- ave sulphide content, 0.5% py, trace po and cpy as mineralization ass w qtz calc and calc seams minor vfg diss mineralization in host rock
- from 221 to 225', locally more strongly sch, softer, more strongly chlz, w thin calc bands pll fol to 1/4" and 40% of rock, w an ass sulphide increase to 1%, pred py
- at 228.5', 1/4" calc vn pll fol w 5% po, 4% py, 1% cpy
- at 230', 1/2" qtz calc vn pll fol
- at 230.8', a few 1/2" qtz calc vn pll fol
- at 232.2', 1" qtz dolomite vn pll fol
- at 234.6', 2" sugary tex qtz minor calc vn pll fol
- from 235.5 to 236.5', numerous 1/2" diffuse calc vn pll fol
- at 236.5', 1/4" calc vn has 5% diss py magnetite
- from 237' to 238', locally diss magnetite crystals to 1/8" and 5% of rock
- at 238.7', 4" zone where calc vn to 1/2" and 30% of rock
- at 239 to 240', locally 1/4" magnetite crystals to 5% of rock
- at 240.5', 3" banded app zone around 1" qtz vn, hard, app silicified
- at 241', a few 1/2" calc bands pll fol w 1% py, and a few 1/4" magnetite cubes
- from 243 to 244', locally 1/4" calc vn pll fol to 30% of rock
- at 246', 1/4" calc vn pll fol w 5% magnetite, 2% py
- at 246.5', 1" qtz calc vn pll fol w 1% py
- from 252.5 to 253', a few qtz calc vn w 5% py-po and 5% magnetite, locally host contains a few 1/4" magnetite crystals
- from 254.5', to 256', thin 1/2" qtz calc vn pll fol to 25% of rock w 10% diss magnetite as crystals in host and vn to 1/4", and 3% diss py-po
- from 256.5 to 257', 6" mottled zone around a few 1/2" qtz calc vn, w 10% biotite, 2% magnetite, 2% py and po
- at 260', 1" qtz calc vn pll fol
- from 260 to 263', locally diss py blebs to 1%

- at 265.7', 1/2" qtz calc vn pll fol
- from 270 to 271', numerous 1/2" qtz calc vn pll fol to 25% of rock w 15% thin biotite seams at vn margins locally 1% py as fg diss mineralization
- from 273 to 275', qtz calc vn to 2" and 30% of rock w ass 10% biotite seams to 1/32", 1% magnetite, and 1% py
- at 275', 6" zone where diss 1/8" beige epidote altered plagioclase blebs to 30% of rock
- at 275.8', 1" qtz calc vn pll fol
- at 277.5', 1" calc epidote altered plag vn pll fol
- at 278.3', 1" qtz calc vn pll fol

278.3 -312'

FG XLLINE BAS OR SUB-INTRUSIVE INTRUSIVE EQ GABBRO

- rock a med to dark green, fg(to med g in places) w a weak to mod dev xlline tex exhibited by clots of weakly to mod chlz, ferromags to 65% of rock and 35% light green weakly epidote altered plagioclase blebs, xlline tex overprinted by sch in most places
- weakly sch at an ave orien of 70 deg to the ca,
- mod chlz, weakly carbz, w minor (5%) diss calc blebs
- mod frac pred pll fol w calc, chl, frac fil some qtz and epidote
- a few secondary qtz calc vn to 1/2" pred pll fol
- app weakly autobrecciated in a few places and brecciated by thin chl seams pll fol
- occ 1/4 to 1/2" weakly epidote altered plagioclase 'bleb' and irr plag rich bands
- contains 0.5% fg diss py, trace cpy
- from 278.3 to 280', v mottled zone, strongly fol at 70 deg to the ca, w 40% small 1/16" beige plagioclase and carb altered plag blebs in bands crudely pll fol and 15% diss biotite and thin 1/32" biotite bands pll fol, locally numerous thin calc seams to 1/8" and 15% of rock
- at 279.8', 3" zone w fg calc bands pll fol at 70 deg to the ca, to 50% of rock
- from 280 to 283', fg zone, more strongly chlz, w 10% fg diss biotite and thin biotie rich bands pll fol
- at 281.3', 1/2" qtz calc vn pll fol
- at 281.8', 1" qtz calc vn pll fol w minor diss py
- from 282 to 283', locally biotite to 15%, and fg diss py to 2%

-from 291 to 293', aphanitic dark green intensely  
chlz horizon, a shear zone, sch at 65 deg to the ca,  
-at 292', 1.5" qtz calc vn  
-at 292.3', 1/2" qtz calc vn  
-from 292.6', to 293', vfg sugary tex qtz minor calc  
vn w 3% diss py, 3% magnetite  
-at 293.6', 2" qtz epidote altered plagioclase-calc  
vn pll fol  
-at 309', 1/2" calc vn pll fol  
-from 311 to 312', becomes more sch, chlz,

312        -316'        MOD CHLZ CARBZ (CALC) BAS  
-med green, mod sch at at 65 deg to the ca, mod chlz  
mod to strongly carbz w 20% calc as diss pervasive  
alteration and thin seams to 1/8" pll fol  
-vfg, relatively soft,  
-mod frac pred pll fol w calc and chl frac fil  
-a few 1/4" secondary qtz calc vn pll fol  
-trace diss py

316        -317.5',        BRECCIATED RECRYSTALLIZED QTZ MAGNETITE EXHALATIVE  
-thinly banded at 70 deg to the ca, bands ave 1/16"  
to 1/2", pred vfg sugary tex qtz (50%) and jet  
black magnetite (30%), a few massive magnetite  
bands to 1/2"  
-bands brecciated to slumped app  
-contains 10 to 15% calc as secondary vn pll fol  
and diss w recrystallized qtz, and 5% py as vfg diss  
mineralization in carb bands, and occ large 1/4"  
blebs at carb vn margins

317.5      -336'        MOD TO STRONGLY CHLZ BAS  
-rock a dark green, vfg to fg in places, w a weak  
rem crystalline tex, mod sch at orien ranging from  
65 to 75 deg to the ca, ave 70 deg to the ca,  
mod to strongly chlz, relatively soft  
-only weakly carbz w minor (5%) fg diss calc  
-contains 5% thin irregular 1/4" calc vn pred pll fol  
and a few secondary qtz calc vn to 1" pll fol  
-weakly to mod frac pred pll fol w calc and chl  
frac fil  
-contains 0.5% diss py, trace po  
-from 322', to 324', locally slightly coarser  
-from 324 to 324.5', calc vn pll fol to 1" and 30% of  
rock  
-at 325', a few 1/4" qtz calc vn pll fol  
-from 326.5 to 328.5', v mottled zone, w an ave of  
30% small 1/16" to 1/8" light green to yellowish  
green epidote altered plag and hard carb replaced  
plag crystals in poorly defined bands pll fol,

-w ass 15 to 20% biotite as diss blebs and thin seams pll fol, locally contains numerous fg sugary tex qtz calc vn to 2" and 25%, notably at 327', (1/2" vn,) 328', (3" vn w 10% magnetite) and 328.3', (2" vn w 30% magnetite)  
-from 326.5 to 328.5', sulphides locally 2% py  
-at 329.5', 1/2" qtz calc vn w a 4" alteration halo containing 3% py, 2% po, trace cpy as fg diss mineralization  
-at 330.2', 1" qtz carb vn pll fol

336 -343.5'

FG XLLINE BAS

-rock a med green, weakly to mod sch at 70 deg to the ca, weakly chlz, weakly carbz, w 5% diss calc, fg to med g app (rem xlline tex) bas or sub intrusive intrusive eq gabbro  
-weakly frac pll fol w calc frac fil  
-a few 1/8" calc vn pll fol  
-a few fg more strongly chlz zones  
-trace fg diss py  
-from 341.6 to 342', locally aphanitic, strongly chlz

343.5 -386.5'

MOD TO STRONGLY CHLZ, WEAKLY TO MOD CARBZ (CALC) BAS

-dark green, relatively soft, v fg to fg, mod to strongly chlz, mod to weakly carbz w 5 to 10% diss calc and 5% thin calc seams pll fol  
-mod to strongly sch at an ave orien of 75 deg to the ca, sch is kinked and crenulated in places  
-contains 3 to 5% vfg biotite in places as thin biotite rich seams pll sch  
-mod frac pll fol w calc, minor qtz, chl, and epidote altered feldspar frac fil  
-a few weakly sil zones, usually proximal to large qtz vn  
-numerous secondary qtz and qtz calc vn pred pll fol to 2" and 5% of rock  
-at 345.5', 1/2" calc vn pll fol  
-at 346', 1" qtz calc epidote altered plag vn pll fol  
-at 346.2', 1" sugary tex qtz vn pll fol  
-at 346.5', a few 1/4" sugary tex qtz calc vn pll fol  
-from 348.5' to 349.3', v mottled zone, w locally several 1 to 2" biotite rich bands pll fol  
-at 349.7', 2" epidote altered plag-calc-qtz rich band pll fol  
-from 351 to 352', numerous 1/2" to 2" fg qtz calc plag vn w minor ass ser and biotite, to 30% of rock



- from 352.5 to 353', fg qtz calc vn w 10% sulphides (8% po, 2% py)
- at 355', 1/2" qtz calc vn pll fol
- from 357.5 to 358', thin 1/4" qtz calc bands pll fol to 30% of rock w locally 10% diss biotite and thin biotite seams pll fol
- at 358.3', 1" qtz calc vn pll fol
- from 361.5 to 362.5', locally intensely chlz
- at 362.5', 1/2" qtz calc vn pll fol
- from 360 to 370', locally sch at 80 to 85 deg to the ca, strongly kinked and crenulated
- at 367.5', 1/2" qtz calc vn pll fol
- from 368 to 369.5', locally biotite rich, to 10% and rock is weakly sil
- at 370.6', 1/2" qtz calc vn pll fol
- at 371.5', 1/2" qtz calc vn pll fol
- at 374', 1/4" qtz vn pll fol w 10 to 15% thin biotite slips pll fol, locally from 374 to 374.5' rock becomes lighter green, hard, sil, w 2% diss PY
- at 377', 4" intensely sil cherty horizon w 10% diss sulphides, 5% po, 5% py, trace cpy
- at 382.5', 3" zone w numerous 1/4" qtz calc bands pll fol w very strong 1/2" sil alteration halo locally rock contains 10% py, trace po, and cpy, as vfg diss mineralization in vn and sil alteration halos
- at 383.5', a few 1/4" intensely sil bands pll fol w 10% diss py
- from 385.5 to 386.5', becomes intensely chlz, v soft, intensely sch, sharp contact at 386.5', w underlying talc ser unit

386.5 -403'

TALC SER SCH (ALERTED KOMATIITE)

- rock is dark grey, v soft, mod sch at 60 deg to the ca, composed of 50% ser, 40% talc, and 10% chl, in a faint med grained rem app xlline tex
- in places talc and ser app to pseudomorphs olivine? crystals to 1/8"
- rock is weakly to mod frac pred pll fol w talc minor ser, chl, calc, and py frac fil
- sulphide, py to 1% as diss cubes to 1/8" and frac fil
- at 392.5', 1/2" talc vn at 50 deg to the ca,

-at 393', 1" talc vn at 60 deg to the ca,  
-locally from 393 to 395', py to 2% as blebs to  
1/4" along talc fil frac  
-from 397 to 398', a few 1/2" talc vn at ran or  
orien to 20% of rock

403

-427.5'

MAGNETITE BEARING, STRONGLY SIL MAFIC ROCK, W  
NUMEROUS LARGE MINERALIZED QTZ CARB VN

-rock pred a dark greyish green vfg to aphanitic  
hard(to cherty in places) strongly sil basalt, w  
a few less strongly sil weakly chl unaltered  
envelopes

-weakly to mod sch at highly irr and contorted  
orien ranging from 0 to 90 deg to the ca, pred  
fol at 70 deg to the ca,

-mod to strongly frac at highly variable orien  
w calc, less qtz, magnetite, sulphide, hematite  
and chl frac fil

-contain numerous large (to 6 to 8") well mineralized  
qtz and less calcite vn to 15% of unit  
as outlined below

-strongly brecciated in a few places as outlined  
below

-pred strongly magnetic w an ave of 5% (although  
highly variable content) diss magnetite crystals  
to 1/8", ave 1/16", and occ semi massive magnetite  
bands ass w qtz vn

-from 403 to 403.7', locally intensely chlz, v  
soft, mod sch at 75 deg to the ca,

-from 403.7 to 404.3', rock is intensely micro  
brecciated by thin 1/32" biotite seams at a crude  
pref orien of 75 deg to the ca, host rock is  
intensely sil and weakly ser altered, biotite to  
35%, small 1/16" to 1/2" frag to 65%, locally  
contains 1% diss py

-from 404.3 to 404.8', 6" qtz minor calc vn w 0.5%  
diss cpy-py as blebs to 1/8" at vn margins

-from 404.8 to 406', dark green sil bas w 5% mag-  
netite and 1% diss py

-from 406 to 407', grey vfg sugary tex cherty bands  
at highly contorted orien ranging from 30 to 70  
deg to the ca, to 70% of rock w thin bands of in-  
tensely sil host rock between them, strongly  
frac pll fol and 70 deg to the ca, w py-cpy-magnetite  
frac fil, locally 3% sulphides( 2% py, 1% cpy) as  
diss blebs to 1/16", fg diss mineralization  
and frac fil, and 10% magnetite as semi massive 1/4"  
contorted bands and diss crystals to 1/16"

-from 407 to 408.5', dark grey intensely sil bas  
w 10% diss magnetite, 1% py, - cpy, locally two  
distinct fol S1 at 70 deg to the ca, and S2 from

0 to 90 deg to the ca, that is highly contorted  
-from 408.5 to 409.3', 1/2" to 1" pred fg qtz minor  
calc and pinkish red kspar vn, w a few  
light green epidote vn, to 30% of rock pred pll fol  
at 70 deg to the ca, although highly contorted  
in places, w 1% ass cpy, minor py, as frac fil  
in vn and diss blebs to 1/16", locally host rock  
a dark green, sil bas w 5% diss magnetite  
-from 409.3 to 409.7', weakly sil bas w 5% magnetite  
0.5% py-cpy as frac fil ass w calc  
-from 409.7 to 410.1', qtz calc vn at 80 deg to the  
ca  
-from 410.1 to 415', mod sil bas w 5% magnetite,  
0.5% py, trace cpy, w at 411', a 1/2" qtz calc vn pll  
fol w 10% diss py  
-from 415 to 416', numerous highly contorted grey  
fg granular sugary tex qtz vn at an ave orien  
of 30 to 50 deg to the ca, to 30% of rock, often  
w strong yellow bleached sil ser alteration halos  
locally w a second generation qtz epidote vn system  
cross cutting qtz vn at 80 to 90 deg to the ca,  
locally diss 1% py  
-from 416 to 418', dark greenish grey intensely sil  
bas w 5% magnetite and 0.5% py, S1 at 80 deg to the  
ca, S2 at 45 deg to the ca,  
-from 418 to 418.5', locally intensely sil bright  
light green strongly frac w two generations,  
1 at 80 to 90 deg to the ca, cuts two at 35 to 40  
deg, locally w qtz calc py cpy and magnetite frac  
fil  
-from 418.5 to 419.5', mod sil bas w 5% magnetite  
and 0.5% py-cpy  
-from 419.5 to 422', locally fg cherty grey qtz vn  
to 40% of rock to 1 to 2" at 30 deg to the ca,  
although contorted to brecciated in places and v  
strongly frac by at least 2 generations, 1 at 80 to  
90 deg to the ca, cutting a second at 45 deg to  
the ca, contains 8% sulphides as frac fil and diss  
mineralization at vn margins, pred py, trace cpy  
sph, po, w 5 to 10% magnetite as bands to 1/16"  
at vn margins and diss blebs in highly altered sil  
wall rock  
-from 422 to 422.5', mod sil bas  
-from 422.5 to 425.5', dark grey vfg intensely sil  
almost cherty bas, as a highly contorted banded/bd  
app fol at 0 to 90 deg to the ca, highly contorted  
kinked, and crenulated in places, and a second  
cross cutting fol at 80 deg to the ca, locally  
w py frac fil to 3%  
-from 425.5 to 427.5', mineralized qtz carb vn to  
80% of rock including from 425.5 to 426', a banded  
qtz calc vn at 60 to 70 deg to the ca, w 20% po  
10% py, and trace cpy, as semi massive bands to 1/4"

and blebs to 1/4"

-at 426.2', 1/2" calc vn w 15% diss py-po

-from 426.5 to 427.5', qtz vn at 60 deg to the ca,  
w py blebs to 1/8" at vn margins

427.5 -469'

WEAKLY CHLZ WEAKLY CARBZ (CALC) ANDESITE TO BAS

-rock a med to dark green, weakly sch, at orien  
ranging from 70 to 75 deg to the ca,

-weakly chlz, weakly carbz w 2 to 3% fg diss calc  
and 5% thin 1/16" calc slips pll fol

-weakly frac pred pll fol w calc frac fil

-contains 3 to 5% diss biotite in occ thin biotite  
seams pll fol

-contains a few (to 5% of rock) qtz calc epidote  
altered plag vn pll fol to 1"

-contains 0.5% diss py, trace po and cpy

-at 430.7', 1/2" calc vn pll fol

-at 431', 1" contorted calc vn

-at 431.6', a few calc epidote vn pll fol

-at 436', 1" qtz calc vn pll fol

-at 437', 1" qtz calc vn pll fol

-from 437.5 to 438', numerous thin calc seams pll  
fol to 20% of rock

-at 428.5', 3" qtz calc epidote altered plagioclase  
vn

-at 441', 1" qtz calc epidote vn pll fol

-at 444 and 445', 1/2" calc vn pll fol w 1% diss  
py-po

-at 448' a few 1/2" qtz calc epidote altered plag vn  
pll fol

-at 450.5', a few 1/2" qtz calc vn pll fol

-at 452', to 452.5', qtz calc epidote altered plag  
vn pll fol

-from 455.5 to 456', 1" qtz calc epidote altered  
vn to 20% of rock

-at 460.5', a few 1/2" highly contorted calc vn

-at 462', 1/2" qtz calc vn pll fol at 75 deg to the  
ca

-at 462.3', 1" qtz calc vn pll fol

-at 465', a few 1/2" qtz calc vn pll fol

- 469 -470.5' MINERALIZED BANDED QTZ CARB MAGNETITE INTERFLOW EXHALITE  
 -thinly banded(to 1/4" ave 1/16") , w bands of vfg sugary tex qtz, calc, and chl, banded well dev at 80 deg to the ca, approx 30% chl, and 70% qtz carb, w ass 10% magnetite as vfg diss mineralization in qtz carb bands and occ 1/2" massive bands  
 -5% sulphides, 4% po, 1% py, trace cpy, as vfg diss mineralization and thin slips pll fol  
 -at 469.5', 1/2" qtz calc vn pll fol  
 -at 470', 2" qtz calc vn pll fol  
 -at 470.3', 2" qtz calc vn pll fol
- 470.5 -482.5' MOD CHLZ, FG ANDESITE TO BAS  
 -med green, mod chlz, weakly to mod sch at 70 deg to the ca, sch is kinked and crenulated in places, fg w a weak rem fg xline tex  
 -mod frac pred pll fol w pred calc, minor qtz, epidote altered plagioclase frac fil  
 -minor (2 to 3%) diss biotite and thin biotite seams pll fol in places  
 -a few secondary qtz calc vn pll fol  
 -0.5% diss py, trace po, and cpy  
 -at 477', a few 1/2" qtz calc vn at 80 deg to the ca  
 -from 477 to 478', locally sch is highly kinked and crenulated, w a well dev cross cutting frac set at 40 deg to the ca,  
 -from 478.3 to 478.5', locally thin calc seams to 50% of rock  
 -at 478.5', 2" qtz calc vn pll fol  
 -from 482 to 482.5', locally mod sil w 3% po, 2% py as thin seams pll fol
- 482.5 -487.5' BIOTITE RICH WEAKLY SIL SERZ BAS  
 -rock a med green, relatively hard, mod sil and serz bas w 20 to 25% biotite as thin seams to 1/32" pll weakly dev sch at 65 deg to the ca,  
 -biotite seams micro brecciate rock into 1/16" to 1/8" ser-sil altered blebs, lending a med g crystalline/cummulate tex and app to unit  
 -fol is highly contorted in places  
 -mod frac pred pll fol w calc, epidote frac fil  
 -a few 1/4" secondary epidote altered plag-calc-qtz vn pll fol  
 -trace diss py

487.5 -493.5'

CHL SER SCHIST (ALTERED BAS)

- med to light green, strongly sch at orien ranging from 75 to 80 deg to the ca, sch is strongly kinked and crenulated in places, vfg, v strongly chlz, strongly serz composed of approx 50% chl and 40% ser, v soft,
- a few thin calc seams pll fol to 1/16" and 5% of rock
- a few secondary qtz carb vn to 1" pll sch
- weakly to mod frac pll fol w calc frac fil
- from 488 to 489', locally sch is intensely crenulated
- from 491.5 to 493.5', locally qtz calc vn to 1" pll fol to 20% of rock w 2% ass py, 2% po, and trace cpy as fg diss mineralization in both vn and wall rock
- at 493', 1" qtz carb vn pll fol w 30% semi massive sulphide blebs (20% po, 10% py)

493.5 -498.5'

MINERALIZED WEAKLY SIL FG XLLINE BAS

- dark green weakly sch at 70 deg to the ca, hard, weakly sil, fg xlline bas, weak ser chl, alteration,
- contains 10 to 15% small plag slips, in a few places replaced by or altered to calc
- weakly frac pll fol w calc, minor qtz, and py po frac fil
- contains 3% diss po, as fg blebs to 1/32", and 1% py as frac fil
- numerous secondary qtz calc vn to 2" and 10% of rock
- at 495.6', 3" qtz calc vn at 70 deg to the ca,
- at 495.8', and 495.9', 1" qtz calc vn pll fol w minor diss py-po-cpy at rims
- at 496', 2" qtz calc vn at 70 deg to the ca,
- from 497 to 497.5', 6" qtz calc vn

498.5 -505.5'

MINERALIZED SIL ANDESITE TO BAS

- fg dark green weakly to mod sch at 70 to 75 deg to the ca, hard, mod sil, weakly chl, ser alteration vfg to fg andesite to bas
- weakly to mod frac pll fol and in places cross cutting fol at 45 deg to the ca, w pred calc frac fil
- contains a few secondary qtz calc vn to 1/2" pll fol
- rock app granular in places due to silica alteration (app almost clastic in places)

-contains 2% diss po, trace py and cpy, as mineralization ass w vn outlined below  
-from 501.5 to 502.5', qtz calc vn to 1" and 30% of rock w 1% grey diss arseno py, 1%  
-from 503 to 503.7', locally more strongly chlz,  
-at 503.7', 3" qtz calc vn at 75 deg to the ca, w 4% po, 1.5% py, and 0.5% cpy

505.5 -508'

MOD CHLZ, CARBZ ANDESITE TO BAS  
-med green, vfg to aphanitic, strongly sch at 80 deg to the ca, w a well dev S2 at a cross cutting orien of 45 deg to the ca  
-mod to strongly chlz, relatively soft, weakly to mod serz  
-mod carbz w 5% diss calc and 15% thin calc slips pll fol  
-a few secondary 1/4" qtz calc vn pll fol  
-contains 1% py-po ass w carb vn  
-at 507', 6" zone w calc vn pll fol to 1" and 30% of rock w 10% vfg diss py-po, trace cpy and arseno py, locally wall rock mottled, w 30% biotite

508 -539'

VFG XLLINE BAS  
-dark green, vfg, only weakly sch at 70 deg to the ca, mod chlz, weakly carbz, w 5 to 10% vfg diss calc and thin calc seams pll sch  
-rock is mod frac pred pll sch w a cross cut orien at 20 to 30 deg to the ca, pred calc, minor chl frac fil  
-contains 10% thin 1/4" qtz calc vn pll fol  
-contains a few biotite rich zones w fg diss biotite to 10%  
-0.5% diss po, trace py and cpy  
-from 517 to 519', locally contorted 1 to 2" sugary tex qtz calc vn to 30% of rock  
-at 521.3', 1.5" qtz calc vn at 80 deg to the ca, w 2% po, trace py and cpy  
-at 523.5', a few 1/4" qtz calc vn pll fol w 0.5% po,  
-at 524.1', a few 1/4" qtz calc vn pll fol  
-at 524.6', 2" qtz calc vn pll w 2% po, trace cpy  
-at 527.7 to 528', 4" qtz calc vn pll fol w 5% po, trace cpy  
-from 528 to 528.3', numerous 1/2" qtz calc epidote altered vn pll fol to 30% of rock w 1% po, trace cpy and py, locally host rock is biotite (10%) rich  
-from 528.3 to 532', rock is v mottled app, w 15% biotite, and numerous 1/8" to 1/4" qtz calc epidote altered vn pll fol to 20% of rock, locally 1% py-po

- at 529.2', and 529.5', 1/2" qtz calc vn pll fol
- at 536.7', 1" qtz calc vn pll fol
- at 538 and 538.5', 1" calc vn pll fol

539        -568'

FG XLLINE BAS OR INTRUSIVE EQ GABBRO

- dark green, only v weakly sch at 70 deg to the ca, fg to med g in places xlline app bas or intrusive eq gabbro
- weakly chlz, v weakly carbz w 5% diss calc, weakly epidote altered in a few places
- mod frac, at ran orien, w calc and epidote frac fil
- a few 2 to 3" secondary qtz calc kspar vn at ran orien in places w 1/4 to 1/2" epidote alteration halos
- 0.5% diss py, trace po, and cpy
- from 542.5 to 543.5', fg granular calc minor qtz and epidote vn to 1" and 40% of rock w trace diss po, cpy
- at 545', a few 1/4" calc vn at ran orien w trace diss py, cpy
- at 546', 1" calc vn at 70 deg to the ca, w 1% py
- at 546.8' 1" epidote altered band pll fol
- at 550.5', 1/2" qtz calc vn pll
- at 554.5', 1" qtz calc epidote vn at 65 deg to the ca
- from 556 to 557', a few 1/4" epidote seams at ran orien
- from 558 to 559', a few 1/4" qtz epidote vn at 20 deg to the ca,
- from 559 to 559.5', a few 1/4" qtz kspar fil frac at ran orien w 1/8" cpy blebs
- from 560 to 562.5', numerous 1/4" calc kspar fil vn at 0 to 20 deg to the ca, w occ 1/2" cpy blebs in fil frac and along frac margins
- from 562.5 to 563', qtz calc kspar vn
- at 566', 3" qtz calc vn pll fol



BOULDER LAKE PROPERTY BL-86-02

DIP TESTS:

@ 250' 38°

@ 458' 28°

STRATIGRAPHY DIPPING @ .85° N.

HOLE SUMMARY BL-86-02

COLLAR LOCATION: L24W, 13+50N  
 BEARING: 180°  
 INCLINATION: -45°  
 TARGET: Eastern Strike Extension of Main Vein-Shear  
 Horizon, and VLF Conductor Centered Beneath  
 L24W, 10+50N  
 TOTAL DETPH: 458'

0	-25'	OVERBURDEN
25	-28'	CHLORITE-CARBONATE SCHIST
28	-44'	MODERATELY CHLORITIZED BASALT
44	-51'	CHLORITE SCHIST
51	-60'	CRYSTALLINE BASALT OR INTRUSIVE EQUIVALENT (GABBRO)
60	-62.5'	QUARTZ-CALCITE-CHLORITE VEIN (N.B. PROBABLY EASTERN STRIKE EXTENSION OF MAIN VEIN-SHEAR HORIZON)
62.5	-68.5'	CHLORITE SCHIST
68.5	-85'	F.G. CRYSTALLINE BASALT
85	-87'	CHLORITE SCHIST
87	-124'	F.G. CRYSTALLINE BASALT OR INTRUSIVE EQUIVALENT (GABBRO)
124	-146.5'	DIABASE
146.5	-180'	CHLORITIZED, CARBONATIZED BASALT
[180	-186'	INTENSELY OXIDIZED SHEAR ZONE (HEMATITE-LIMONITE)
186	-200'	DIABASE-GABBRO
[200	-209'	INTENSELY OXIDIZED SHEAR ZONE (HEMATITE-LIMONITE)
209	-217'	F.G. CRYSTALLINE BASALT OR INTRUSIVE EQUIVALENT (GABBRO)
[217	-222'	STRONGLY OXIDIZED (TO HEMATITE-LIMONITE) CHLORITIZED BASALT.
222	-265'	CHLORITIZED F.G. CRYSTALLINE BASALT OR INTRUSIVE EQUIVALENT (GABBRO)
265	-286'	CHLORITE SCHIST
[286	-307'	INTENSELY OXIDIZED (HEMATITE-LIMONITE) SHEAR ZONE.
307	-310'	TALC-CHLORITE-TREMOLITE SCHIST
310	-316.5'	OXIDIZED, RECRYSTALLIZED QUARTZ-MAGNETITE EXHALATIVE (IRON FORMATION, OXIDE FACIES)
316.5	-342.5'	MINERALIZED (2% PO, TR. PY, CPY) STRONGLY CHLORITIZED BASALT
342.5	-356'	BASALT
356	-398'	STRONGLY CHLORITIZED, CARBONATIZED BASALT ) 372-383
398	-417.5'	F.G. BASALT TO INTRUSIVE EQUIVALENT (GABBRO) 113 pp6
417.5	-427'	BASALT
427	-458'	GABBRO

D. Myluse

JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-02

- 0            -25'            OVERBURDEN
- 25           -28'            CHL-CARB SCHIST (INTENSELY SHEARED, ALTERED BAS)  
-rock v soft, intensely chlz, (to 70% of rock)  
mod carbz (calc to 25% as thin slips along sch  
planes and diss mineralization) intensely sch  
at 70 deg to the ca,  
-strongly frac pll sch, w chl frac fil  
-contains 1% diss 1/16" hematite bleb and thin  
hematite blebs and thin hematitic seams pll sch  
that may have been py, no visible sulphides
- 28           -44'            MOD CHLZ, (TO STRONG IN PLACES) BAS  
-rock fg, only weakly sch at an ave orien of 70  
deg to the ca, dark green, xlline app bas  
-contains 10 to 15% small (1/32") elongate pll  
fol slips of white plagioclase  
-strongly frac pred pll fol w chl, calc, and hem-  
atite frac fil  
-weakly to mod chlz,  
-vuggy w numerous small 1/16" pits/vuggs, maybe  
weathered out sulphides  
-contains 1% diss small hematite blebs that maybe  
oxidized py, trace fresher py  
-from 37 to 38', locally intensely chlz and intensely  
sch at 70 deg to the ca, (shear)  
-from 42 to 43', locally v soft, strongly chlz  
(shear)
- 44           -51'            CHL SCHIST  
-intensely sch at 70 deg to the ca, v v soft,  
intensely chlz, v fg to aphanitic, although rem  
fg xlline tex visible in a few less sch places  
-strongly frac, and broken, at ran orien, w  
pred calc and chl frac fil, trace diss hematite  
blebs to 1/16" (oxidized py)

- 51        -60'        WEAKLY CHLZ BAS OR SUB INTRUSIVE EQ GABBRO  
 -rock a dark green, mod to strongly sch at orien  
 ranging from 35 to 40 deg to the ca, ave 40 deg  
 to the ca, fg to med g app in places, w a weak  
 rem xlline tex, bas or intrusive eq sheared gabbro  
 -mod frac at ran orien w chl and calc frac fil  
 -weakly to mod chlz  
 -weakly carbz w a few thin calc seams and diss  
 slips pll fol  
 -mod to strongly magnetic w 5% diss magnetite in  
 places  
 -contains 2% py as blebs to 1/16"
- 60        -62.5'        QTZ-CALC-CHL VN  
 -crudely fol at 40 deg to the ca, qtz(40%) - calc  
 (40%) vn, highly contorted and brecciated by 20%  
 thin chl seams pll fol  
 -trace diss py
- 62.5 |    -68.5'        CHL SCHIST(STONGLY SHEARED CHLZ BAS)  
 -dark green, v fg, v strongly sch at orien ranging  
 from 35 to 45 deg to the ca, intensely chlz,  
 v soft rock  
 -strongly frac at ran orien w chl and calc frac fil  
 -trace diss hematite blebs to 1/16" that are prob-  
 ably oxidized py
- 68.5    -85'        MOD SCH MOD CHLZ FG XLLINE BAS  
 -dark green, mod sch at 45 deg to the ca, mod chlz  
 fg xlline app bas  
 -mod frac pred pll fol w chl and calc frac fil  
 -a few secondary 1" qtz vn pll fol  
 -mod magnetite w up to 5% diss magnetite in places  
 -contains 1% diss py, trace cpy as blebs to 1/16"  
 -at 83.4', 1" fg sugary tex qtz vn at 85 deg to the  
 ca,
- 85        -87'        CHL SCH(STONGLY SCH CHLZ BAS)  
 -dark green, strongly sch at 45 deg to the ca  
 strongly chlz bas  
 -trace diss py  
 -at 86', 1" qtz vn at 0 deg to the ca,

87

-124'

MOD CHLZ, WEAKLY TO MOD CARBZ (CALC) FG XLLINE BAS  
OR INTRUSIVE EQ GABBRO

-med green, relatively soft, mod chlz, mod carbz w  
15% fg diss calc blebs to 1/32" and thin slips  
pll sch

-weakly sch at 50 deg to the ca,

-weakly to mod frac pred pll fol w calc and  
chl frac fil

-a few more strongly sheared, chlz zones

-contains 10 to 15% small 1/32" plagioclase  
slips

-contains a few secondary 1/4 to 1", calc vn  
usually highly contorted

-sulphide content, variable, from 87' to 111'  
0.25% py, trace cpy as occ diss blebs to 1/16"

-and from 111' to 124', 1% py as blebs to 1/16"

-from 87' to 89', locally more strongly sch at  
45 deg to the ca, more strongly chlz

-from 106 to 111', locally more strongly sch and  
strongly chlz, a shear zone

-at 106.5', 1" sugary tex qtz vn pll fol

-from 111' to 124', only v v weakly fol, v diabasic  
app

-at 121', 4" qtz calc vn pll fol at 50 deg to the ca

124

-146.5'

FG XLLINE BAS OR INTRUSIVE EQ GABBRO/DIABASE

-fg xlline homogeneous diabasic app rock, only  
weakly sch at 55 deg to the ca, to massive in places

-only v weak chl alteration of ferromags, and weak  
epidote alteration of plagioclase (65% ferromags,  
35% plagioclase)

-a few larger 1/8 to 1/4" epidote altered plagioclase  
blebs

-a few 1/4" calc vn at ran orien w minor ass qtz  
and epidote

-weakly frac at ran orien w calc, chl, and hematite  
frac fil

-trace diss py

-at 125', 2" qtz calc vn at 55 deg to the ca

-at 140' a few 1/2" qtz calc vn at 70 deg to the ca,

-from 140 to 146.5', becomes increasingly fg, to  
v fg

-from 143.5 to 144', numerous diffuse 1/2" calc  
vn to 30% of rock

-at 146.5', sharp contact at 60 deg to the ca,  
w underlying chlz bas

146.5 -180'

MOD CHLZ CARBZ ANDESITE TO BAS

- rock a vfg to aphanitic, med green, mod to strongly sch at an ave orien of 60 deg to the ca, mod chlz, mod carbz w 10 to 15% fg diss calc and 10% thin calc stringers to 1/8" pll fol, altered andesite to bas
- strongly frac, at 45 deg to the ca, w pred calc, minor qtz, and chl frac fil
- contains numerous 'mottled' zones where blebs to 1/8" of beige to light green epidote altered plagioclase to 30% of rock in thin bands pll fol, usually ass w a coarse biotite content to 10%, mottled zone usually proximal to qtz calc vn
- a few biotite seams in places to 1/16" pll fol to 5% of rock
- a few large secondary qtz calc vn pll fol
- patchy magnetite content as diss crystals to 1/8" ranging from nil to 10% in places
- sulphide content, ave 2%, 1% po, 1% py, pred as mineralization ass w fg granular sugary tex qtz calc vn, some minor diss mineralization in host rock
- at 146.7', a few highly contorted 1/4" qtz calc vn pll fol
- from 147 to 147.7', rock is weakly brecciated by thin biotite seams to 1/16", locally w ass 1% py
- from 147.7 to 149', highly contorted 1" qtz calc vn ranging from 0 to 90 deg to the ca, to 50% of rock w 2% diss py, 0.5% po and trace cpy
- from 149 to 149.5', locally 2% py as fg diss mineralization and frac fil
- from 154.5 to 155.2', v mottled zone w 20% thin 1/4" qtz calc vn/bands pll fol and yellowish beige carb-plagioclase blebs in host rock to 1/16" and 30% of rock, w 10% coarse biotite blebs in crude bands to 1/16", locally py and po to 1% as vfg diss mineralization
- at 155.5', 1/2" calc vn pll fol w 5% sulphides (3% py, 2% po)
- at 157', 1" qtz calc vn pll fol w 1/8" biotite blebs at vn margins
- at 157.3', 1/2" calc vn pll fol w 10% po,
- at 157.6', 1" calc vn pll fol w 10% po
- at 157.8', 1" calc vn pll fol w 5% po, 5% py, trace cpy, and a 1" halo of coarse biotite blebs to 1/4"
- from 158 to 160.5', v mottled one w bands to 1/8" of carb/plagioclase to 25% w 15% ass coarse black biotite blebs to 1/8", locally qtz calc vn to 15% of rock
- at 158.7', 1/4" calc vn w 10% pypo
- at 159.1', a few 1/4" calc vn pll fol w a few large py and arsenopy crystals
- at 160', 1/4" qtz calc vn w 5% diss pypo

- at 161.5', 3" qtz calc vn pll fol  
w 10% coarse biotite at vn margins
- at 170', 6" mottled zone w numerous 1/4" qtz  
calc vn pll fol and 20% carb/plagioclase blebs to  
1/8" and 15% of rock
- at 176', 1" qtz calc vn pll fol w 3% pypo
- at 177.5', 2" fg sugary tex qtz calc vn pll fol  
w 8% po, 2% py
- from 177.5 to 180', locally v soft, strongly chlz  
and v strongly sch at 65 deg to the ca

180 -186'

- INTENSELY OXIDIZED, REGOLITHIC SHEAR ZONE
- rock pred a bright orange, v v soft, totally  
hematite-limonite altered material, clay like  
w a rem intense sch at 75 to 80 deg to the ca,
  - a few rem identifiable minerals, pred biotite
  - a few rem qtz vn frag
  - a few less altered recognizable zones strongly  
chlz, fg to med g app xlline bas to gabbro  
but intense oxidization affects 80% of zone
  - at 180.3', a few qtz chips, rem of vn
  - from 180 to 181.5', hematite-limonite alteration  
is strong, but original lithology recognizable  
as bas
  - from 181.5 to 182.5', unaltered window of green  
strongly chlz bas to gabbro
  - at 184', 2" qtz vn
  - at 185', 3" qtz vn
  - no visible sulphides

186 -200'

- STRONGLY FRAC DIABASE - GABBRO
- rock a dark green, weakly to mod sch at orien  
ranging from 55 to 60 deg to the ca, fg to med  
g diabase-gabbro, w well dev xlline tex, composed of  
60% weakly to mod chlz ferro mags and 40% weakly  
epidote plagioclase in biabasic tex
  - intensely frac at ran orien w pred hematite and  
limonite frac fil, some frac have 1" intense  
hematite alteration halos
  - trace diss py
  - at 187.5', frac w intense 1" hematite alteration  
halo

- 200 -209' STRONGLY OXIDIZED, FRAC, CHLZ, BAS OR SUB-INTRUSIVE  
INTRUSIVE EQ BIABASE TO GABBRO  
-pred where unaltered, a fg xlline app dark green  
mod to strongly sch at 65 deg to the ca, strongly  
chlz bas or intrusive eq, intensely frac at ran orien  
w several zone of intense ass hematite-limonite  
alteration to an orange clay, and w a mod pervasive  
hematite-limonite alteration affecting 60 to 70%  
of rock  
-no visible sulphides  
-at 200', 2" hematitic clay seam  
-from 205 to 206.5', pred hematitic clay  
-from 205.5" 1/2" qtz vn at 70 deg to the ca,
- 209 -217' FG XLLINE BAS OR SUB-INTRUSIVE INTRUSIVE EQ  
GABBRO  
-med green, fg, xlline, w 60% weakly chlz ferromags  
and 40% weakly epidote altered plagioclase in well  
dev xlline tex  
-mod to strongly sch at orien ranging from 45 to 55  
deg to the ca,  
-strongly frac at ran orien w pred hematite,  
some qtz, calc frac fil  
-a few 1/2" intense hematite alteration halos on  
frac  
-no visible sulphides, but 0.5% diss red hematite  
blebs that may have been py  
-at 214', 2" sugary tex qtz vn at 65 deg to the ca
- 217 -222' INTENSELY OXIDIZED, HEMATITIC, TO CHLZ, BAS  
-v strongly sch at 60 to 65 deg to the ca, pred a  
light orange strongly hematite altered bas, w a few  
less altered windows where fg chlz bas visible  
-v strongly frac at ran orien w pred hematite  
and some qtz frac fil  
-no visible sulphides  
-from 217.5 to 218', intensely altered to regolithic  
hematitic clay  
-from 219.5 to 222', pred intensely chlz



222

-265'

STRONGLY FRAC, MOD TO STRONGLY CHLZ, FG XLLINE  
 BAS OR SUB-INTRUSIVE INTRUSIVE EQ DIABASE-GABBRO  
 -rock is dark green, mod to strongly sch at 55 deg  
 to 65 deg to the ca, w a mod dev rem fg xlline tex  
 w 60% weakly chlz ferromags and 35% light green  
 to white weakly epidote altered plagioclase blebs  
 -relatively soft due to chl alteration  
 -intensely frac at ran orien w pred chl, some qtz,  
 calc, and hematite frac fil  
 -a few intensely hematite altered zones  
 as halos around frac  
 -a few secondary vuggy qtz vn to 2 to 3"  
 -a few v soft, intensely chlz shear zones  
 -only trace visible py, 0.5% diss hematite blebs  
 that may have been py  
 -at 228', 2" qtz vn  
 -from 228 to 231', v strongly frac, broken up core,  
 locally v strongly chlz and v soft  
 -at 235.6', 4" sugary tex recrystallized qtz vn  
 -at 236.4', 2" sugary tex qtz vn pll fol  
 -from 241 to 242', locally strongly chlz,  
 -at 244', 2" intensely hematized zone as halo around  
 frac  
 -locally from 247 to 257', v strongly frac, core  
 badly broken, rock is strongly chlz, with several  
 2 to 3" zones of intense hematite alteration as  
 halos on frac  
 -at 251.8', fg sugary tex qtz vn pll fol  
 -from 262 to 265', becomes increasingly chlz, fg,  
 arb cont w underlying chl sch

265

-286'

CHL SCH (INTENSELY SCH, CHLZ, BAS)  
 -vfg to fg, dark green, intensely sch at an ave orien  
 of 60 deg to the ca, v soft, intensely chlz (80%  
 chl) altered andesite to bas  
 -a few slightly less chlz more bas app zones  
 -a few thin biotite rich seams pll sch to 5% rock  
 -a few secondary fg granular sugary tex qtz bands to  
 1/4" pll fol  
 -v strongly frac pred pll fol w chl, minor hematite  
 frac fil  
 -trace diss py  
 -from 266.5 to 269', locally v biotite rich, w 30%  
 biotite bands to 1/32" pll fol and diss biotite  
 throughout rock, locally thin sugary tex qtz vn  
 to 1/4" pll fol and 20% of rock  
 -from 269 to 270.5', less sch less chlz window  
 -from 274 to 276.5', less sch, less chlz, window  
 -from 276.5' to 286', v intensely chlz, intensely  
 sch

- 286      -307'      INTENSELY OXIDIZED (HEMATITE) SHEAR  
-rock pred a bright red to orange intensely oxidized altered clay, pred hematite and limonite, intensely sch at 70 deg to the ca,  
-rem biotite diss throughout to 5 to 10% in places  
-a few less altered windows that are strongly chl and bas app  
-strongly frac at ran orien w hematite, some qtz, chl, frac fil  
-a few secondary remaining fg to med g sugary tex qtz vn to 2 to 3"  
-no visible sulphides  
-at 288.7', 3" qtz vn  
-from 293.6' to 294.5', 10" fg sugary qtz vn  
-at 296.7', 2" qtz vn w minor tourmaline  
-at 298', 1" qtz tourmaline vn
- 307      -310'      TALC CHL TREMOLITE SCH (ALTERED KOMATTITE)  
-rock a dark green, v coarse, xline, composed of 30 to 40% large acicular intergrown light green tremolite crystals to 1/4" in crude snowflake /pseudo spinifex type tex, w interstitial talc chl to 60 to 70% of rock  
-v soft, strongly sch at 55 deg to the ca,  
-no visible sulphides
- 310      -316.5'      OXIDIZED RECRYSTALLIZED QTZ MAGNETITE IRON FORMATION  
-rock pred a fg sugary tex qtz bands and fg semi massive magnetite bands to 1/2" at 55 deg to the ca, w zones of intense hematite alteration to clay  
-no visible sulphides  
-composed of approx 30% qtz, 30% magnetite, and 40% intensely oxidized hematite

316.5 -342.5' STRONGLY CHLZ, CARBZ, (CALC) BAS  
-med green, v fg to aphanitic, mod to strongly sch at 65 deg to the ca, w a weak cross cutting S2 fol at 30 deg to the ca,  
-strongly chlz,  
-strongly carbz w 10 to 15% thin calc seams pll sch and 10% vfg diss calc  
-relatively soft  
-weakly serz in a few places  
-numerous (to 5% of rock) secondary often highly contorted 1/4 to 1/2" calc vn pll fol  
-mod frac pll S1 and S2, w calc, minor qtz, py frac fil  
-sulphide content, ave 2%, pred vfg diss po, and thin po slips pll fol, w trace py and cpy  
-from 316.5 to 318', locally thin calc seams to 1/4" pll fol to 35% of rock  
-at 331', 1" qtz calc vn pll fol w 5% diss po  
-at 331.5', 1/2" qtz calc vn pll fol w 2% po,  
-from 335 to 335.5', 1/2" qtz calc vn pll fol to 30% of rock  
-at 336', 1" qtz calc vn pll fol  
-at 340.2', 2" qtz calc vn pll fol  
-at 340.5', a few 1/4" qtz calc vn w 10% po, minor py and cpy

342.5 -356' ANDESITE TO BAS  
-fg, only weakly sch at 55 deg to the ca, med green, weakly chlz, v weakly carbz w 5% diss calc  
-weakly frac pred pll fol w calc frac fil  
-a few thin 1/2" secondary qtz calc vn pll fol  
-minor diss biotite in places  
-0.25% diss py, trace po  
-at 345', 6" zone where locally diss biotite blebs to 1/32" and 10% of rock, and locally fg diss py to 1%  
-at 347.5', 1/4" calc vn w 1% po

356 -397.8' STRONGLY CHLZ CARBZ(CALC) BAS  
-rock a v soft, dark green, v fg, v strongly sch at an ave orien of 65 to 70 deg, steepening to 75 deg by 397.8'  
-sch is strongly kinked and crenulated in places, w a weak S2 fol cross cutting S1 at 30 deg to the ca  
-rock is v strongly chlz, and weakly serz in a few places

- strongly carbz w 10 to 15% diss calc and 15% thin calc stringers to 1/4" and pll to fol
- mod to strongly frac pll S1 and S2 w pred calc, minor qtz, and chl frac fil
- numerous secondary qtz calc vn to 2" and 5% of rock
- minor diss biotite and thin biotite seams pll fol to 1/16"
- a few mottled app zones, where yellowish beige hard carb/plagioclase porphyroblasts in thin bands pll fol and ass 10% biotite to 6 to 8"
- sulphide content, 0.5% to 1% fg diss py-po, as mineralization ass w qtz carb vn
- from 358 to 360', locally fg calc bands to 2" pll fol to 50% of rock
- at 359.5', 6" mottled zone where diss biotite clots to 10% and 20% small yellow carb porphyroblasts in crude bands pll fol
- at 366.5', 1" qtz calc vn pll fol
- at 368.3', 1" calc vn pll fol w 3% po
- at 369', 1/2" calc vn pll fol w 10% po
- from 372 to 372.5', 6" qtz calc vn pll fol w 7% po, 3% py, trace cpy and arsenopy
- from 372.5 to 373', thin qtz calc bands pll fol to 25% of rock
- from 375 to 376', mottled zone w 10% biotite clots and 15% small carb porphyroblasts, locally at 375.5 and 376', 1/2" calc bands w 10% po,
- at 376.5', 2" sugary tex qtz calc vn pll fol
- at 377', 1" qtz calc vn pll fol
- at 377.5', 1" calc vn pll fol
- at 378.8', 2" qtz calc vn pll fol
- at 380', 1" fg sugary tex qtz calc vn pll fol w 5% diss py-po
- from 380.5 to 381', mottled, w 5% biotite as blebs to 1/16"
- at 381.5', a few 1/4" calc vn to 25% over 4"
- from 382 to 383', calc vn to 1" to 30% of rock
- from 384 to 385', locally diss biotite blebs to 10%
- at 387', 1" calc vn pll fol
- from 388.5 to 390', v mottled, w coarse 1/8" biotite clots to 15% of rock, and 1/32" yellowish beige carb/plagioclase porphyroblasts to 25% of rock in crude bands pll fol
- from 392 to 392.5', mottled zone w 10% biotite and 20% plag/carb
- at 394', 3" mottled zone w 10% biotite

-at 395', 3" bleached sil app zone around a 1/4"  
qtz vn pll fol

397.8 -417.5' FG XLLINE BAS OR SUB-INTRUSIVE INTRUSIVE EQ GABBRO  
-rock a med green, relatively hard, only v weakly  
sch at 70 deg to the ca, to massive in places  
weakly chlz, fg xlline bas or biabase-gabbro  
-weakly frac pred pll fol w calc and chl frac fil  
-a few secondary qtz calc vn pll fol  
-minor diss biotite in places  
-trace diss py-po-cpy  
-at 398.8', a few 1/4" qtz calc vn at 65 to 90 deg  
to the ca,  
-at 402', 1" calc vn at 70 deg to the ca,  
-at 403', locally 1% diss py-cpy over 6"  
-from 414 to 416', locally fg diss py-po and cpy  
to 2%  
-from 416 to 417.5', massive qtz vn w a few 1/4"  
acicular black tourmaline blades

417.5 -427' MOD CHLZ, WEAKLY CARBZ BAS  
-dark green, fg, mod sch at 65 deg to the ca,  
mod chlz, weakly carbz w 10% f diss calc  
-weakly frac pred pll fol w calc and chl frac fil  
-a few secondary qtz carb vn to 2"  
-5 to 10% f diss biotite  
-sulphide content, 0.25% fg diss py, trace po  
and cpy  
-at 420', a few 1/2" calc vn pll fol  
-at 425.3', 2" calc vn pll fol  
-at 427', a few 1/2" qtz calc vn pll fol

427 -458' GABBRO  
-rock pred a med g, composed of 70% weakly chlz  
ferromag clots and 25% weakly epidote altered  
interstitial plagioclase  
-dark green,  
-wealy sch at 60 deg to the ca,  
-weakly frac pll fol w calc and chl frac fil  
-a few secondary qtz calc vn to 3 to 4"  
-a few fg zones  
-sulphide content, 1% , 0.5% po, 0.5% py, trace cpy  
as fg diss interstitial mineralization and frac fil  
in places

- at 437', 1/2" qtz calc vn pll fol
- at 438', 2" vfg zone
- from 438.5 to 439.5', vfg zone
- from 440.2 to 440.8', vfg zone
- from 442 to 444.5', vfg zone
- from 446.5', 447.5', 4 to 6" qtz calc vn at 60 deg to the ca, to 80% of rock
- from 451 to 452', qtz calc vn to 3" and 90% of rock

BOULDER LAKE PROPERTY BL-86-03

DIP TESTS @

250' 37°

580' 25°

STRATIGRAPHY DIPPING @ 80° N.

HOLE SUMMARY BL-86-03

COLLAR LOCATION: 100' East of L16W, 24+50N  
 BEARING: 180°  
 INCLINATION: -45°  
 TOTAL DEPTH: 580'  
 TARGET: Down Dip Extension of Vein Carrying 0.12 oz/ton Au 89' South of Collar Shear Carrying 70 ppb Au 0.13% Zn, 139' South of Collar, and IP Anomaly Centered Beneath L16W, 21+00N

0	-5	OVERBURDEN
5	-39.5'	MODERATELY CHLORITIZED, CARBONATIZED, F.G. CRYSTALLINE BASALT
39.5	-44.5'	STRONGLY CHLORITIZED, CARBONATIZED, BASALT
44.5	-87'	STRONGLY CHLORITIZED, CARBONATIZED, F.G. CRYSTALLINE BASALT
<del>87</del>	<del>-90'</del>	CHLORITIZED, CARBONATIZED BASALT
90	-106'	MINERALIZED (1.5% PY, 0.5% PO) SERICITE-CARBONATE CHLORITE SCHIST.
106	-114'	MINERALIZED (5% PY) QUARTZ-CARBONATE (VEIN) FLOODED CHLORITE-SERICITE SCHIST
114	-125'	SERICITE-CARBONATE SCHIST
125	-138.5'	PORPHYRITIC-PORPHYROBLASTIC INTENSELY SERICITIZED CARBONATIZED ROCK (ALTERED BASALT)
138.5	-159'	PORPHYRITIC/PORPHYROBLASTIC INTENSELY SERICITIZED CARBONATIZED ROCK WITH 30% QUARTZ-CARBONATE VEINING
159	-185'	INTENSELY SERICITIZED, CARBONATIZED BASALT
185	-193'	MINERALIZED (3% PY) INTENSELY SERICITIZED, CARBONATIZED ROCK (ALTERED BASALT)
193	-202.5'	INTENSELY SERICITIZED, CARBONATIZED ROCK (ALTERED BASALT)
202.5	-237'	MINERALIZED (3% PY) BANDED INTENSELY SERICITIZED, CARBONATIZED ROCK (ALTERED BASALT).
237	-274.5'	MODERATELY CHLORITIZED, STRONGLY CARBONATIZED, WEAKLY SERICITIZED ANDESITE TO BASALT
274.5	-295'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
295	-301'	MODERATELY CHLORITIZED, STRONGLY CARBONATIZED BASALT
301	-302'	MINERALIZED (2% PY) SILICIFIED, SERICITIZED BASALT
302	-304'	MODERATELY CHLORITIZED, CARBONATIZED, SERICITIZED BASALT
304	-305.5'	MINERALIZED (5% PY) SERICITE SCHIST
305.5	-327'	MINERALIZED (1.5% PY, 0.5% PO) STRONGLY CHLORITIZED SERICITIZED CARBONATIZED BASALT
327	-371' <i>IP</i>	MINERALIZED (8% PY) MODERATELY SERICITIZED, CARBONATIZED, CHLORITIZED BASALT (IP ANOMALY)



HOLE SUMMARY  
BL-86-03

371	-402'	ANDESITE
402	-406.5'	MINERALIZED (5% PY) MODERATELY CHLORITIZED CARBONATIZED, SERICITIZED ANDESITE TO BASALT
406.5	-417'	ANDESITE
417	-428'	MINERALIZED (2% PY 1% PO) QUARTZ-CARBONATE (VEIN) FLOODED STRONGLY SERICITIZED, CHLORITIZED, CARBONATIZED ANDESITE TO BASALT
428	-438.5'	MODERATELY CHLORITIZED, SERICITIZED, STRONGLY CARBONATIZED BASALT
438.5	-447'	MINERALIZED (4% PY, 1% PO) QUARTZ-CARBONATE (VEIN) FLOODED, STRONGLY CHLORITIZED, SERICITIZED, BASALT
447	-462'	MINERALIZED (2% PY) STRONGLY SERICITIZED, MODERATE CHLORITIZED, CARBONATIZED BASALT.
462	-474.5'	MINERALIZED (15% PY) QUARTZ-CARBONATE (VEIN) FLOOD FUCHSITE BEARING, INTENSELY SERICITIZED ROCK (ALTE BASALT)
474.5	-490'	CHLORITE-CARBONATE SCHIST
490	-498'	MINERALIZED (5% PY) SERICITE-CHLORITE-CARBONATE SCHIST
498	-519'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
519	-541'	STRONGLY CHLORITIZED, MODERATELY CARBONATIZED BASALT
541	-546'	FUCHSITE BEARING SERICITE-CHLORITE-CARBONATE SCHIST
546	-550'	MINERALIZED (10% PY) QUARTZ-CARBONATE BRECCIA
550	-580'	MODERATELY SERICITIZED, CHLORITIZED, CARBONATIZED BASALT

D. M. J. W. 2  
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DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-03

- 0 -5' OVERBURDEN
- 5 -39.5' MOD CHLZ, MOD TO STRONGLY CARBZ(CALC) FG XLLINE  
BAS  
-rock dark green, vfg to fg, mod sch, at 45 to 50 deg to the ca, mod chlz, mod to strongly carbz w an ave of 30% small 1/32" calc blebs/slips pll fol (as replaced/altered feldspar)  
-rock is weakly to mod frac pred pll fol w calc and chl frac fil  
-a few secondary qtz calc epidote vn to 2 to 3" pll fol  
-v minor diss magnetite as crystals to 1/16", ave 1% of rock  
-overall sulphide content, 0.5% py, as vfg diss mineralization and mineralization ass w occ qtz calc vn  
-from 5' to 15', more strongly frac, broken up, weakly oxidized in places, w some frac(hematite)  
-at 15', locally a few 1/16" diss magnetite crystals to 2% over 2"  
-at 19', a few 1/2" calc vn pll fol  
-at 20', a few 1/16" magnetite crystals diss throughout rock  
-at 22', 3" intensely chlz, sheared zone, pll fol  
-at 25.5', 4" qtz carb plagioclase vn pll fol  
-at 27.2', a few 1/2" calc vn pll fol  
-at 30', 1" qtz calc vn pll fol  
-at 33', 1" qtz calc vn pll fol w 1% diss py
- 39.5 -44.5' STRONGLY CHLZ CARBZ. BAS  
-much fg than overlying and underlying units  
-dark green, vfg to aphanitic, mod to strongly sch at 55 deg to the ca, strongly chlz, mod to strongly carbz w 15 to 20% fg diss calc blebs and 10% thin (to 1/16") calc seams pll fol  
-mod frac pred pll fol w calc frac fil  
-a few secondary qtz calc vn pll fol to 1/2"  
-1% vfg diss py

44.5 87'

STRONGLY CHLZ CARBZ (CALC) FG XLLINE BAS  
-rock a dark green, vfg to fg strongly chlz  
(chl alteration and rock soft increased towards  
87') strongly carbz w 30% fg diss calc slips and  
thin (to 1/16") calc seams pll mod to strong sch  
at ave orien of 55 deg to the ca,  
-fg xlline tex pred weak, overprinted by sch  
-mod frac pred pll fol w calc, minor py frac fil  
-a few secondary calc, qtz cal, and epidote vn  
to 1 to 2" pll fol  
-some rem plagioclase in places  
-minor (1 to 2%) diss magnetite crystals to 1/16"  
in a few places  
-from 44.5 to 50', v xlline, almost diabasic-gabbroic  
app, only weakly sch locally  
-at 53.5', 1" qtz calc vn pll fol  
-at 58.5', 1" qtz calc plagioclase vn pll fol  
-from 60 to 60.5', numerous 1" qtz calc epidote  
altered plagioclase vn pll fol to 30% of rock  
-from 63 to 64', 2% diss magnetite crystals to 1/16"  
-at 66', 3" qtz calc vn pll fol  
-at 68', 3" zone w numerous thin 1/4" qtz calc  
stringers pll fol w locally 2% vfg py ass w vn  
and in more strongly chlz wall rock around vn  
-locally from 68 to 73', sch at 65 to 70 deg to the  
ca  
-at 69.5', 4" qtz minor calc vn at 80 deg to the ca,  
-from 65', xlline tex increasingly overprinted by  
increasing intensity of alteration and increasing  
sch  
-from 72 to 72.5', v intensely chlz sheared zone  
at 65 deg to the ca,  
-from 74 to 78', intensely chlz, v soft, sheared  
zone at 55 deg to the ca, locally v strongly mag-  
netic w 10% fg diss magnetite  
-from 78 to 87', v strongly magnetic w 15% diss mag-  
netite, becomes increasingly fg to vfg, chl,  
-overall sulphide content, ave 1% pred vfg diss  
py, some py ass w qtz carb vn and w calc fil frac

87 -90'

CHLZ CARBZ BAS  
-vfg strongly sch at 60 to 65 deg to the ca,  
dark to med green, strongly chlz, strongly carbz,  
w 25% diss 1/32" calc blebs and thin bands to 1/16"  
pll fol, becomes increasingly banded app towards  
90' w calc bands approaching 30% of rock

- becomes weakly serz towards 90'
- contains 1% vfg diss py

90 -106'

MINERALIZED BANDED SER CARB CHL SCH (ALTERED MAFIC VOLCANIC TUFF?)

- rock a light grey to green, vfg, somewhat granular app, v strongly fol, banded/bd app and sch at 55 to 60 deg to the ca,
- composed of thin (1/8 to 1/4") alternating bands of light greyish green vfg sch chl-ser and bands of grey vfg carb ser, and carb pred Fe/Mg, some calc, to 35% of rock, w 35% ser and 20% chl
- becomes increasingly ser (at expense of chl towards 106')
- sch is strongly kinked and crenulated in places
- rock contains numerous secondary grey to black fg granular qtz carb vn pll fol, occ contorted and boudinaged into elongate frag pll fol, lending agg app to rock in places, vn to 1 to 2" ave 1/2" and 5% of rock
- rock is mod frac pred pll fol w calc, chl, and some py frac fil
- rock is weakly oxidized in places w carb stained orange
- weak cleavage on sch places, maybe weak S2 present
- sulphide content, from 90 to 95', 1% pred vfg py, trace po and cpy, from 95 to 106', 2%, 1.5% py, 0.5% po, trace cpy, as vfg mineralization and carb bands and frac fil
- at 91.5', 1" brecciated vn frag of black vfg qtz calc
- from 92.5 to 93', fg granular black qtz calc and white Fe/Mg qtz carb vn to 1" and 50% of rock at orien ranging from 45 to 70 deg to the ca, at 95', 2" zone w thin po cpy blebs and carb bands to 2%
- at 95.5', 1/4" carb band pll fol w 5% po,
- from 96.5' to 97', black fg qtz calc vn to 2" and 50% of rock at 45 to 50 deg to the ca,
- from 101.5 to 102.5', locally strongly oxidized carb stained orange
- at 105.5', a few 1/2" fg granular black qtz vn pll fol
- arb contact w underlying less banded unit, more qtz carb vn rich unit

106

-114'

MINERALIZED QTZ CARB (VN) FLOODED CHL SER SCH  
(INTENSELY ALTERED ANDESITE TO BAS)

- rock pred a v soft, intensely sch at orien ranging from 45 to 60 deg to the ca, pred 45 to 50 deg to the ca, med green intensely chlz, serz, (chl 40%, ser 35%) vfg rock with, 30% secondary qtz carb vn to 2 to 3", ave 1/2", of black fg granular qtz calc and white qtz-calc-dolomitic carb
- vn often v contorted to brecciated into frag
- rock is mod frac pll sch w calc and some py frac fil
- sulphide content, highly variable, w from 106 to 109', 2% py ass pred w qtz carb vn, from 109 to 111', 3% py ass pred w qtz carb vn, and from 111 to 114', 10% sulphide mineralization (py w trace po, cpy, and sph) as vfg diss mineralization in vn, frac fil in vn, and thin bands at vn margins and diss in host rock
- at 106.7', 1" white calc vn pll fol
- at 107.5', 1" highly contorted grey, qtz calc vn
- at 108.3', 1/2" qtz calc vn
- at 108.8', 2" qtz calc vn
- at 109', 1" qtz calc vn pll fol
- from 109 to 111', numerous 1/2" dolomitic carb vn pll fol
- from 111 to 114', qtz carb vn locally to 2 to 3" and 60% of rock

114

-125'

SERICITE CARB SCH (INTENSELY ALTERED ANDESITE TO BAS)

- rock pred a light greyish green, vfg, v soft, v strongly sch at 60 deg to the ca, and crudely banded at 60 deg to the ca, w a mod to well dev S2 sch sub pll S1 at 25 deg to the ca,
- rock composed of pred ser (60%) w 30% small blebs (to 1/32") and seams pll S1 of pred Fe/Mg carb some calc
- contains 5% small (1/32" to 1/16") diss dark green translucent ferromag blebs/porphyroblasts, lending rem xlline tex to rock(maybe chloritoid)
- a few more chl zone
- contains numerous (to 10% of rock)thin (to 1 to 2", ave 1/4 to 1/2") qtz calc, calc, and dolomitic carb vn pred pll S1 fol, although contorted to boudinaged and brecciated in places
- rock is mod frac pred pll S1 w calc, chl and ser frac fil
- a few oxidized zones where carb is stained orange
- at 115', 1/2" qtz calc vn pll fol

- at 115.5', 2" contorted calc vn pll fol
- from 116 to 116.5', a few 1" calc vn at 45 to 50 deg to the ca,
- at 117', 2" qtz calc vn pll fol
- from 118 to 118.5', locally oxidized, carb stained orange
- from 119.5 to 121.5', numerous 2 to 3" oxidized zone w orange carb
- sulphides, 1% vfg diss py and thin py slips pll fol

125

-138.5'

- PORPHYRITIC/PORPHYROBLASTIC, INTENSELY SERZ, CARBZ, (CALC) ROCK (ALTERED ANDESITE TO BAS)
- rock a light grey to greenish grey, v v soft, v strongly sch at 55 to 60 deg to the ca, w a strong S2 fol sub pll S1 at 20 to 25 deg to the ca,
  - intensely serz (ser to 65% of rock), and strongly carbz w 35% vfg diss calc
  - pred vfg but w 20% small 1/32 to 1/16" acicular to lath shaped sub to uhedral dark green translucent ferromags blebs (chloritoid?) that lend rem med g xlline tex to rock
  - rock is mod to strongly frac pred pll S1 fol, w calc, some py, qtz chl, ser, hematite frac fil
  - numerous oxidized zones where carb is stained orange
  - numerous (to 25% of rock) thin 1/4 to 1/2" fg qtz calc vn pll fol, usually w 1 to 2% fg diss py
  - sch is strongly kinked and crenulated in places
  - overall sulphide content, 0.5% py as vfg diss mineralization and mineralization ass w carb bands
  - at 126', locally oxidized,
  - at 129', 2" oxidized zone
  - at 131.5', a few 1/4" calc bands pll fol w 5% vfg diss py
  - at 134.5', 1" fg calc vn pll fol
  - from 134.5 to 136.5', numerous 1 to 2" strongly oxidized zone
  - from 136.5 to 137', a few 1 to 2" fg granular grey qtz calc dolomite vn to 30% of rock
  - at 138.2' and 138.3', 1" grey carb vn pll fol
  - arb contact w underlying more carb vn rich unit

138.5 -159'

PORPHYRITIC/PORPHYROBLASTIC INTENSELY SERZ CARBZ  
ROCK W STRONG S2 FOL AND 30% SECONDARY CARB VN  
-similar to overlying units, a vfg light grey to  
greenish grey intensely sch at 55 to 65 deg to the  
ca, w a strong well dev S2 fol sub pll S1 at 30 deg  
to the ca, causing strong and tight kinking and  
crenulation of S1 sch  
-intensely serz (ser to 70% of rock) and carbz w  
30% small 1/32" diss Fe/Mg carb minor calc blebs  
and slips/seams pll fol  
-10 to 15% small 1/16 to 1/32" acicular sub to  
uhedral green ferromag blebs (chloritoid?) lending  
a rem med g xlline tex to rock  
-v banded app w 25 to 30% bands/vn of  
fine g to med g, light green to white Fe/Mg carb  
and calc, vn pred pll S1 fol although in places  
highly contorted  
-from 138.5 to 139.5', qtz(50% calc) (50% vn) w  
minor talc ser frac fil  
-at 140.5', a few grey to black qtz calc vn pll fol  
-at 142', 2" qtz calc vn pll fol w 1% diss py  
-at 154', 3" oxidized zone  
-at 154.5', 3" qtz calc vn pll fol  
-from 154.5 to 155.5', locally strongly oxidized  
-at 156', 1" band where py blebs to 1/8" and 10%  
of rock  
-at 157.7', 2" carb vn pll fol  
-at 158.5', 1" carb vn pll fol  
-overall sulphide content, 1% py as vfg diss mineral-  
ization and mineralization ass w carb vn

159 -185'

VERY STRONGLY SERZ CARBZ(CALC) ROCK(INTENSELY ALTERED  
ANDESITE TO BAS  
-rock a light greyish green vfg to aphanitic  
strongly sch at 65 deg to the ca, w a strong S2 fol  
sub pll S1 at 30 to 35 deg to the ca, w strong  
cleavages on S1 sch planes  
-v soft, intensely serz (ser to 70% of rock) w 25%  
calc as fg diss blebs and slips pll sch, and thin  
bands to 1/8" pll fol  
-mod frac pred pll fol w calc and ser frac fil  
-sch is strongly and tightly kinked, crenulated  
-weakly porphyritic/porphyroblastic w 2 to 3% small  
1/16" light green translucent ferromag crystals  
(chloritoid?)  
-a few (to 5% of rock) secondary pred calc w minor  
qtz, dolomite, vn pll S1 to 1 to 2", ave 1/2"  
usually w minor ass diss py, and often v contorted  
to brecciated  
-a 159.5', a few 1/2" calc vn w 1% fg py bands pll  
fol  
-from 160 to 160.5', a few 1/2" calc vn pll fol

- from 160 to 160.5' a few 1/2" calc vn pll fol
- at 161.5', 162', 162.6', 163.2', 1 to 2" calc vn pll fol w up to 1% diss py
- from 164 to 165.5', locally oxidized w carb stain orange
- from 165.5 to 167', locally v porphyritic, w 30% 1/16" dolomitic blebs/porphyroblasts
- at 167', a few 1/4" py blebs along a 1/8" carb seam
- at 168.2', a few 1/4" py blebs along 1/2" calc seam
- at 169.5', 2" qtz calc vn pll fol
- at 171', 2" qtz calc vn pll fol
- from 171 to 172', 1/4" qtz calc vn pll fol to 30% of rock
- at 178.5', 179', 1" qtz calc vn pll fol w minor diss py
- from 179 to 181', S2 fol is v strong
- from 181 to 183', locally strongly oxidized, carb stained orange
- overall sulphide content, 1% py, as vfg diss mineralization and mineralization ass w calc seams

185

-193'

MINERALIZED INTENSELY SERZ CARBZ ROCK (ALTERED BAS)

- as before, rock vfg light greyish green intensely serz (60%) carbz (w diss vfg calc and calc slips pll sch to 30% of rock
- v strongly sch at ave 60 deg to the ca, w S2 well dev at sub pll 25 to 35 deg to the ca, sch is strongly kinked and crenulated, strong cleavages on S1
- locally contains 10-15% secondary calc, qtz calc and Fe/Mg carb bands/veins pll fol to 3-4" ave 1/2"



- at 185.6', 1" fg granular qtz calc dolomite vn pll fol w 2% diss po-py, trace cpy
- at 187', 3" fg dolomitic carb vn, strongly frac w 5% py, trace cpy and sph as frac fil
- at 187.4', 2" ser calc band pll fol w 1% diss py
- from 187.5 to 189', 6" zone where py to 5% as frac fil, and occ thin 1/8" semi massive seams
- from 189.5 to 190.5', vn to 4" of fg granular Fe/Mg carb to 90% of rock, vn strongly frac w bright green talc and fuchsite frac fil, trace diss py
- at 191', 2" calc vn pll fol
- at 191.5', locally numerous 1/4" calc stringers pll fol w 10% py as blebs to 1/8" and vfg diss mineralization
- at 192.5', 2" qtz dolomite vn pll fol w 5% diss py
- at 193', 2" brecciated qtz vn pll fol w 1% py
- overall sulphide content, 3% py, trace po, cpy sph, pred ass w qtz carb vn, some minor fg diss mineralization.

193

-202.5'

INTENSELY SERZ CARBZ(CALC) ROCK(ALTERED BAS)

- rock a light greyish green vfg to aphanitic intensel sch at S1 at 60 deg and S2 of 25 to 30 deg to the ca, sch strongly kinked and crenulated
- intensely serz (65%) and carbz to 30% vfg diss calc
- weakly banded app w 10% thin 1/4" pred calc w minor qtz and dolomite vn/bands pll fol
- mod frac pred pll S1 w calc, ser, and minor py frac fil
- at 195', 3" zone where thin contorted calc seams to 30% of rock w ass 2% fg diss py
- at 195.5', 1/2" calc vn pll fol w 1% diss py
- at 196.5', 1" calc vn w 3% diss py
- at 197.5', 2" calc vn pll fol w 2% diss py
- at 198.6', a few 1/2" carb bands pll fol w 5% diss py
- at 199', 2" fg cherty grey qtz vn pll fol w minor dolomitic carb, and ass 2% py as frac fil in vn
- overall sulphide content 1% py as mineralization ass pred w carb bands and vn, minor vfg diss mineralization

202.5 -237'

MINERALIZED BANDED INTENSELY ALTERED (SER CARB CHL)  
ROCK (PRECURSOR PROBABLY BAS)

-rock a light grey to light green, v soft, strongly fol, w a strong S1 sch in banding at 60 to 65 deg to the ca, and a mod to strong S2 at 0 to 35 deg to the ca, sch is strongly kinked and crenulated in places

-rock comprised pred of intensely ser to chl ground mass w 35 to 40% thin (to 1 to 2", ave 1/8 to 1/4") bands pll fol of grey dolomitic carb and more secondary app dolomitic carb plus or minus calc, plus or minus qtz vn, often highly contorted to boudinaged to brecciated in places, usually w ass sulphide mineralization

-rock is strongly frac pll S1 w pred calc frac fil

-at 204.6', 1/2" carb ser band pll fol w 5% py

-at 205.5', 2" secondary qtz calc vn pll

-from 205.5 to 207', intensely carbz band

-from 207 to 208', locally py to 10% as thin 1/32" seams ass w ser and calc, minor ass cpy

-from 209 to 210.5', sulphide locally 10%, ass w 60% qtz dolomite calc vn to 2 to 3" pll fol pred py, trace cpy, and sph

-at 211.5', numerous 1/2" carb ser band pll fol w 3% diss py

-from 213 to 213.5', 60% thin grey, vfg sugary tex qtz and qtz calc bands pll fol w ass 7% py as diss mineralization at vn margins and frac fil in vn

-from 213.5 to 215', grey qtz vn to 40% of rock locally w 5% py as frac fil and large blebs in vn and f diss mineralization along vn margins

-at 215.5', 2" carb band pll fol w 5% py

-from 217 to 221.5', locally bands of dolomitic carb to 1 to 2", to 70% of rock, often brecciated into frag by thin ser seams, contains 5% ass vfg diss py

-from 223 to 228', locally v frag appearing, w brecciated and boudinaged carb frag elongate pll fol to 1/2"

-at 230', 1" carb band w 10% py

-from 231 to 231.5', 6" zone w highly contorted qtz vn to 1/4" and 50%, w 10% ass diss py

-at 233', 2" qtz carb vn pll fol w 10% f diss sulphides, 5% po, 5% py, trace cpy

-from 233 to 237', becomes increasingly chloritic

-at 235', 2" qtz vn pll fol

-at 236.5', 2" zone w 20% diss py

-overall sulphide content, 3% py, trace po, cpy, as mineralization ass w qtz carb bands and vn, and minor vfg diss mineralization

237 -274.5'

MOD CHLZ STRONGLY CARBZ (CALC) WEAKLY SERZ ANDESITE TO BAS

- rock a med green, vfg to aphanitic, strongly sch at 65 deg to the ca, mod chlz, and strongly carbz w 35% thin 1/32 to 1/16" calc bands pll fol, relatively soft, weakly serz andesite to basalt
- contains numerous (to 5%) elongate pll fol 1/8" to 1/4" calc blebs that resemble tuff frag, but ar probably stretched amygdules and boudinaged calc seams
- mod frac pred pll sch w calc frac fil
- a few secondary qtz calc vn pll fol to 2", ave 1/4 to 1/2"
- sch is weakly kinked and crenulated in a few places w a weak S2 fol cross cutting S1 at 20 to 30 deg to the ca,
- at 238.8', 1" calc vn pll fol
- at 244.4', 1" fg granular qtz calc dolomite vn pll fol w 2% diss py po
- at 252.5', a few contorted 1/2" qtz calc vn
- at 253.5', 1" calc vn pll fol
- at 267', 1" calc vn pll fol
- at 267.3', 1/2" highly contorted qtz calc vn pll fol w 3% diss sulphides, 2% py, 1% po, trace sph and cpy
- from 267 to 271', rock is locally strongly serz w locally 5% sulphides as vfg diss mineralization 4% py, 1% sph, trace cpy and po
- from 271 to 274.5', becomes increasingly chl, dark green, softer,
- overall sulphide content, 1% vfg diss py and py ass w calc seams, w trace cpy, sph, and po

274.5 -295'

STRONGLY CHLZ MOD CARBZ (CALC) BAS

- dark green, vfg, v soft, strongly chlz, mod carbz w 15 to 20% f diss calc blebs to 1/16" and thin calc seams pll fol, mod to strongly sch at 65 deg to the ca,
- mod frac pred pll fol w calc frac fil
- a few secondary calc, qtz calc vn to 2", ave 1/4 1/2", pred pll fol, 0.5% diss py
- at 286, 2" qtz calc vn pll fol
- at 286.5', 1" qtz calc vn pll fol
- from 290 to 295', becomes more strongly carbz w calc seams pll fol increasing to 30% of rock

- 295 -301' MOD TO STRONGLY CHLZ, STRONGLY CARBZ(CALC) BAS  
 -med green, fg, strongly sch at 65 deg to the ca,  
 mod to strongly chlz, soft, strongly carbz w 30%  
 calc as f diss blebs pll sch and thin 1/ 32"  
 seams pll sch  
 -mod to strongly frac pll sch w calc chl frac fil  
 -a few secondary 1/2" calc vn pll fol  
 -0.5% diss py
- 301 -302' MINERALIZED SERZ SIL BAS  
 -lighter green mod ser, bleached app, hard, weakly  
 sil  
 -sch at 65 deg to the ca,  
 -strongly frac pll sch w calc sulphide frac fil  
 -a few secondary 1/2" qtz calc ser vn pll fol,  
 -contains 2% vfg diss py, trace sph, cpy, po, and  
 occ thin py seams pll sch
- 302 -304' MOD SERZ CHLZ CARBZ BAS  
 -med to light green, vfg, mod sch at 65 deg to  
 the ca, mod chl ser altered, mod to strongly carbz  
 (calc w 25 to 30% vfg diss calc blebs and thin  
 seams pll sch  
 -mod frac pll fol w calc frac fil  
 -a few secondary 1/2" qtz calc vn pll fol  
 -0.5% vfg diss py, trace po,
- 304 305.5' MINERALIZED SER SCH  
 -intensely serz, strongly sch and banded at 65 deg  
 to the ca, w 15 to 20% thin 1/4 to 1/2" qtz and  
 qtz dolomite vn pll fol, w 5% py, trace cpy, and  
 sph, as vfg diss mineralization throughout rock  
 and occ 1/8" semi massive seams ass w qtz dolomite  
 vn  
 -app weakly sil in places  
 -weak S2 fol at 0 to 10 deg to the ca, cross cutting  
 S1

305.5 -327'

MINERALIZED MOD TO STRONGLY CHLZ, SERZ, CARB,  
(CALC) ANDESITE TO BAS

-rock a vfg to aphanitic, strongly sch at 65 to 70 deg to the ca, (sch is mod kinked and crenulated in places, weak S2 visible in places cross cutting S1 at 25 to 35 deg to the ca, w mod cleavages on S1 sch planes) and banded app, v soft, strongly chlz (30%), serz, (30%) and carbz(30%) w vfg diss calc and calc and calc slips pll fol

w

-30% secondary pred calc, minor qtz dolomitic carb vn/bands pll fol to 1/2", often w minor ass py mineralization

-rock is mod to strongly frac pred pll S1, w calc some qtz, chl, ser, and py frac fil

-weakly oxidized in a few places

-at 306.3', 307', 1/2" carb bands pll fol w 3% fg diss py

-at 308', and 308.7', 1/2" calc vn pll fol w 5% py

-at 310.5', and 311.3', 1" oxidized carb vn pll fol

-from 312 to 313', numerous black qtz and oxidized carb vn to 1" and 40% of rock

-from 313.5' to 314.5', rock brecciated by a highly contorted 2" black qtz vn

-from 315 to 316', locally v strongly serz and weakly silicified, w numerous thin dolomitic bands of carb and 5% py trace sph, as thin slips pll sch

-from 317 to 318.2', numerous dolomitic carb vn pll fol w 3% vfg diss py-po, trace cpy

-at 321', 2" dolomitic carb-calc vn pll fol w 5% py-po mineralization

-from 321' becomes increasingly chl at expense of ser, and less carb rich

-overall sulphide content, 2%, 1.5% py, 0.5% po, trace cpy and sph, pred as mineralization ass w carb bands and vn, minor vfg diss mineralization

327 -365'

STRONGLY CHLZ MOD CARBZ (CALC) BAS

-rock pred a vfg to aphanitic, dark green, v soft, mod to strongly sch at orien ranging from 55 to 65 deg to the ca, strongly chlz, strongly carbz w 30% calc as f diss blebs pll fol and thin slips seams pll fol

-mod frac pred pll fol w calc frac fil

-a few secondary qtz calc vn pred pll fol to 1 to 2" ave. 1/4", to 10% of rock

-weak S2 visible in places as exhibited by related frac set at 0 to 20 deg to the ca cross cutting S1

- crudely banded pll sch w 1/4 to 1/2" calc rich vrs calc poor bands
- from 340.5 to 342', numerous calc minor qtz vn to 1" pll fol and 20% of rock w minor diss py cpy
- at 343.5' a few 1/4" qtz stringers w locally 1% diss py
- at 344.7', 1" qtz calc vn pll fol
- at 347', 1/2" calc vn pll fol w 1% py
- at 349', 358.5', and 360', 1" qtz calc vn pll fol
- from 360 to 365', becomes lighter green, weakly sericitic,
- at 365', 1" qtz calc vn pll fol
- overall sulphide content, 0.5% py ass pred w calc bands

365 -371'

MINERALIZED, MOD SERZ, CARB, CHLZ, ANDESITE TO BAS

- rock a vfg light grey to greenish grey, mod sch and banded at 65 deg to the ca, w a mod dev S2 as exhibited by cleavages on S1 sch planes and by a prominent frac set cross cutting S1 at 15 to 30 deg to the ca, mod serz, mod chlz, mod carbz, w 25% pred dolomitic carb, minor calc as thin bands pll fol to 1/4"
- relatively hard maybe weakly sil
- contains 15% secondary qtz carb (calc and dolomite) vn pll S1 fol
- mod frac pll S1 and S2 w pred calc, some py, some ser, chl frac fil
- some carb bands are brecciated and boudinaged into elongate 1/2" frag, lending agg app to rock
- contains 5 to 8% py, trace sph, as v v fg diss mineralization and thin slips pll fol

371 402'

WEAKLY CHLORITE SER CARB ALTERED ANDESITE

- rock a fg, somewhat granular app, dark grey andesite weakly to mod chl ser altered, weakly to mod carbz w 10 to 15% f diss pred calc, minor dolomitic carb, as blebs to 1/8"
- mod sch at 65 deg to the ca,
- mod frac pll fol w calc frac fil
- a few secondary qtz calc vn to 2", ave 1/2", pred pll sch
- 0.5% diss py and occ py blebs to 1/8" ass w qtz carb vn
- at 371', 1" carb vn pll fol w 3% diss py
- at 382', 6" zone where highly contorted qtz calc vn to 50% of rock w ass 3% py as cubes to 1/8"
- at 384.7', 2" qtz calc vn pll fol
- at 386.6', 2" qtz calc vn pll fol
- at 388.5', 3" qtz calc vn pll fol

-at 389', 1" qtz calc vn pll fol  
-at 393', a few 1 to 2" qtz calc vn pll fol w py  
blebs to 1/4"  
-from 393 to 402', sch becomes stronger at 65 to 70  
deg to the ca, and chl ser alteration becomes  
stronger.

402        -406.5'    MINERALIZED, MOD CHLZ, SERZ, CARBZ, ANDESITE TO BAS  
-rock a dark grey to greenish grey, mod to strongly  
sch at 70 deg to the ca, and banded app, w a weak  
S2 as exhibited by a frac set at 0 to 10 deg to  
the ca,  
-mod chlz, and serz in places, weakly to mod carbz  
w 10% thin calc seams pll fol  
-mod frac pred pll S1 and S2, w calc and minor py  
frac fil  
-contains 10% thin 1/4 to 1/2" secondary qtz calc  
vn pll fol  
-overall sulphide content, 5% py, trace sph,  
as vfg diss mineralization, thin slips pll fol,  
and occ semi massive bands to 1/4" pll fol  
-at 402.7', a few 1/4" semi massive py bands pll fol  
-at 404', a few 1/8" semi massive py bands pll fol  
-at 404.5', 1" qtz dolomite vn pll fol w 10% diss  
py  
-at 405', 1" qtz vn pll fol w numerous thin 1/16"  
ass py bands

406.5      -417'      WEAKLY SERZ CHLZ CARBZ ANDESITE  
-light green, vfg to aphanitic, mod sch at 65 deg to  
the ca, w a weak S2 cross cutting S1 at 10 to 20 deg  
to the ca,  
-weak ser-chl alteration, w 10 to 15% vfg diss calc  
and thin calc slips pll fol  
-mod frac pred pll S1, w calc frac fil  
-a few secondary 1/2 to 1/4" qtz calc minor dolomite  
vn pll fol  
-0.5% py as diss cubes to 1/8", minor vfg diss  
mineralization  
-at 413.2', 6" strongly bleached Fe/Mg carb altered  
zone  
-from 416 to 417', mod Fe/Mg carb altered zone

417

-428'

MINERALIZED, QTZ CARB(VN) FLOODED, MOD TO STRONGLY SER-CHL-CARB ALTERED ANDESITE TO BASALT

-rock a vfg to aphanitic, light greyish green, soft, mod to strongly chl ser altered w 20% thin 1/16" to 1/8" bands pll fol of pred dolomitic carb, minor calc, and minor diss calc as pervasive alteration

-strongly fol w sch at 70 deg to the ca, and crudely banded w alternating 1/16" to 1/8" chl rich vrs ser rich vrs carb rich bands

-mod S2 fol as exhibited by a frac patter at 0 to 20 deg to the ca, cross cutting S1

-mod to strongly frac pll S1 and S2 w pred calc minor py, qtz, chl, and ser frac fil

-contains 25% secondary qtz - dolomite - calc vn to 2 to 3", ave 1/4 to 1/2", pred pll S1, although contorted in places, usually w ass significant sulphide content

-from 417 to 418.5', vfg grey granular qtz dolomite vn to 1" to 80 % of rock w ass 15% py, trace sph, as frac fil in intensely frac vn, and vfg diss mineralization in vn, occ 1/8 to 1/4" semi massive bands pll fol

-from 418.7', to 419', 4" brecciated strongly frac dolomitic carb minor qtz vn w 2% diss py, and a few thin fuchsite seams at vn margins

-at 420', 1" dolomitic carb vn pll fol w 5% vfg py

-from 420.5 to 421.2', qtz carb vn w 10% diss py 2% po, and trace sph, as frac fil in vn and vfg diss mineralization

-at 423.7', 2" qtz calc vn pll fol

-from 424 to 424.8', fg granular qtz dolomite vn pll fol, brecciated by thin qtz seams to 1/4"

w 20% associated sulphides as vfg diss mineralization frac fil, and occ large blebs to 1/4" (10% py, 10% po, trace cpy and sph)

-from 427 to 428', numerous 1" qtz dolomite vn pll fol to 50% of rock w 3% fg py,

-overall sulphide content, 3% (2% py, 1% po, trace sph, and cpy) pred as mineralization ass w large qtz carb vn and minor diss py throughout rock

428

-438.5'

MOD CHL SER ALTERED, STRONGLY CARBZ(CALC)BAS

-rock a vfg light greyish green to dark green mod to strongly sch at 65 deg to the ca, and banded app pll sch w bands of chl vrs vrs calc rich rock

-pred mod chlz and serz, w 30% thin calc bands to 1/4" pll fol, and occ 1/4" calc blebs that resemble stretched amygdules



- mod frac pll fol w pred calc frac fil
- a few secondary qtz calc and qtz dolomite vn to 1" pll fol to 10% of rock
- 1% vfg diss py and py ass w qtz carb vn, trace sph and po
- at 430', 1" qtz dolomite vn w 10% vfg py
- from 431 to 431.5', a few talc ser fuchsite slips pll fol to 5% of rock

438.5 -447'

MINERALIZED, QTZ CARB(VN) FLOODED, STRONGLY CHLZ, SERZ, BAS

- rock pred a med to dark green, strongly sch at variable and highly contorted orien ranging from 45 to 60 deg to the ca, pred at 60 deg to the ca, and v banded app pll sch
- soft, strongly chlz and serz, w chl ser bands to 1/4" pll fol and 40% bands and secondary vn of grey dolomitic carb + or minus qtz and calc pll fol
- vn highly contorted to boudinaged and brecciated in places, w elongate frag pll fol, lending agg app to rock
- vn/bands usually contain 1 to 2% fg py
- rock is mod frac pred pll fol, w chl, ser, calc and some py frac fil
- a few thin talc, ser, and fuchsite slips pll sch
- from 438.5 to 438.8', 4" hard dolomitic carb vn w minor black qtz at 65 deg to the ca, w 10% diss sulphides as vfg mineralization, frac fil, and blebs to 1/8", of 8% py, 2% po, trace cpy and sph
- from 439.5 to 440', 6" black qtz vn w trace py cpy at vn margins
- from 440 to 441.3', thin seams of dark brown py to 1/32" pll sch to 10% of rock
- from 441.3 to 443', locally brecciated and boudinage grey qtz-dolomite vn to 3" to 70% of rock, w 3% ass vfg py and py frac fil in vn, locally a few thin fuchsite slips in vn,
- at 444', a few 1 to 2" qtz dolomite vn pll fol w 5% py
- at 445', 1" qtz carb vn w 10% py
- from 445.5 to 447', brecciated fg qtz carb vn to 80% of rock w ass 10% fg diss mineralization(5%py, 5%po)
- overall sulphide content, 5%, 4% py, 1% po, trace cpy and sph, ass pred w qtz carb vn

447

462.5'

MINERALIZED STRONGLY SERZ, MOD CHLZ, CARBZ(CALC)  
BAS

- rock a dark grey to greenish grey, v soft, strongly serz, mod chlz, and mod carbz w 10 to 15% vfg calc and thin calc seams pll fol, altered bas
- strongly sch at 65 to 70 deg to the ca, w a weak but highly contorted S2 at 25 to 40 deg to the ca,
- mod banded app w 1/8 to 1/4" ser rich vrs darker chl rich bands
- mod frac pll S1 and S2 w calc and minor py frac fil
- a few secondary pred calc, some qtz calc and qtz dolomite vn to 1/2" pll fol and 10% of rock
- contains 2% py, pred as vfg diss mineralization ass w secondary qtz carb bands pll fol
- from 449 to 450', S2 is strong at 20 to 50 deg to the ca,
- at 450', a few 1/4" qtz calc dolomite vn w 3% diss py
- at 452', 4" black qtz minor calc vn w 1% py
- at 443.5', 1/2" qtz calc vn pll fol w a few 1/8" py blebs
- at 446', a few 1" qtz dolomite calc vn pll fol w 5% diss py
- from 453 to 456', v sericitic
- from 458 to 461', locally fg qtz dolomite vn to 30% of rock w 5% ass py

462.5

-474.5'

MINERALIZED, QTZ CARB(VN)FLOODED FUCHSITE BEARING  
INTENSELY SERZ ROCK (PRECURSOR PROBABLY BAS)

- rock pred a grey to greenish grey, v strongly sch at orien ranging from 60 to 70 deg to the ca, (pred 70 deg) and banded app (w carb, qtz and sulphide bands), sch is strongly kinked and crenulated in places, w a weak S2 cross cutting S1 at 20 deg to the ca,
- intensely serz (rock pred ser)
- contains 30% secondary white to black qtz and hard grey Fe/Mg carb vn to 6 to 8", ave 1/4 to 1/2" pred pll fol but usually contorted, v strongly frac and boudinaged to brecciated by py-ser-calc seams
- ser in places is very bright light green and maybe minor fuchsite (2 to 3%) present
- from 462.5' to 463.5', py to 30% locally as mineralization in qtz carb vn pll fol to 50% of rock
- from 463.5 to 464.5', jet black qtz vn w 1% py as diss mineralization at vn margins
- at 464.5', a few 1" qtz carb vn w 30% py as blebs to 1/8" and vfg diss mineralization, locally trace sph

- from 464.5 to 465', locally v strong talc alteration, sch highly contorted, and py to 25% as diss mineralization, and mineralization ass w 30% qtz carb vn
- from 465 to 466', locally highly contorted to brecciated qtz dolomite vn frag to 2" and 70% of rock w 10% py, trace sph
- from 467 to 468', py locally 15% as vfg diss mineralization
- from 468.5 to 470', contorted qtz carb vn to 2" and 70% of rock w 25% ass py, trace sph
- from 470 to 474.5', intensely serz and bleached py to 10% as semi massive bands to 1/8" and vfg diss mineralization
- overall sulphide content, from 462.5 to 470', 20% py, trace sph and from 470 to 474.5', 10% py, trace sph

474.5 -490'

CHL CARB(CALC) SCH (ALTERED BAS)

- med to dark green, strongly sch at 65 to 70 deg to the ca, although sch is strongly kinked and crenulate in places, v soft, strongly chlz and carbz rock w 30% thin 1/32 to 1/16" calc bands pll sch
- mod frac pll sch and cross cutting sch at 45 deg to the ca, w calc frac fil
- a few secondary qtz calc vn to 1" pll fol
- weakly serz in a few places
- weak S2 visible in places
- weak S2 visible in places sub pll S1 at 10 to 25 deg to the ca,
- 1% vfg diss py and py ass w qtz carb vn
- at 475.4', a few 1/4" qtz calc vn pll fol w 1/4" py blebs
- at 479', 1/2" ser carb vn pll fol
- at 480', a few 1/2" qtz calc vn pll fol w 3% diss py
- from 481 to 483', locally sch strongly crenulated
- at 485.5', 1/2" qtz calc vn pll fol w 3% py
- at 487.5', 1/2" qtz dolomite vn pll fol
- at 488.2', 1" qtz calc vn pll fol
- from 488 to 490', becomes increasingly mineralized and sericitic

490

-498'

MINERALIZED SER-CHL-CARB SCH (ALTERED BAS)

- light green to grey, intensely sch at 70 to 75 deg to the ca, sch is strongly kinked and crenulated in places, v soft, intensely altered to pred ser (60%) w 25% thin chl bands and 15% dolomitic carb as f slips pll sch and occ thin bands to 1/4" pll sch
- mod frac pred pll fol w ser, chl, py and calc frac fil
- a few secondary qtz dolomite and calc vn to 1/2" pll fol
- a few zones appear weakly sil, bleached
- strong S2 cleavage on S1 sch planes, although S2 orien not visible
- from 490 to 494', fg py slips pll fol to 3%
- from 494 to 497', intensely serz, ser to 90% of rock
- at 494.2', 1/2" qtz dolomite vn pll sch w 10% py
- at 494.5', 1" qtz py vn pll fol
- from 494 to 497', py to 5%
- at 495', 1/2" qtz carb vn pll fol w 30% py
- at 496.5', 3" smokey qtz vn pll fol w 6" coarse ser talc alteration envelope
- from 497 to 498', py locally 10% as thin slips to 1/8" pll fol

498

-519'

STRONGLY CHLZ CARBZ (CALC) BAS

- dark green, vfg to aphanitic, mod to strongly sch at 80 deg to the ca, strongly chlz, soft, strongly carbz w 25% vfg diss calc slips pll sch
- mod frac pred pll sch w calc frac fil
- a few secondary qtz calc minor dolomite vn to 1 to 2", ave 1/4", pll fol to 5% of rock
- contains 1% py as f diss mineralization and occ 1/8" blebs ass w qtz carb vn
- at 498.8', 3" zone where thin 1/4" qtz dolomite vn pll fol to 70% of rock
- locally from 498 to 500', py to 2%
- at 500.5', 1/2" qtz dolomite vn pll fol
- at 508 to 508.8', calc qtz vn pll fol at 25% of rock
- at 515', 2" qtz calc vn pll fol

- 519        -535'        DIABASE  
-vfg, dark green, only weakly sch at 70 deg to the ca, v weakly chlz, v weakly carbz w 5% diss calc slips  
-weakly frac pred pll sch w calc frac fil  
-strongly magnetic w 10% f diss magnetite  
-1% f diss py  
-a few secondary qtz calc vn to 1" pll fol
- 535        -541'        STRONGLY CHLZ, MOD CARBZ (CALC) BAS  
-dark green, relatively soft, mod sch at 70 to 75 deg to the ca, strongly chlz, mod carbz w 20% diss calc blebs pll fol, porphyroblastic app in places  
-a few secondary 1/4" qtz calc dolomite bands pll fol to 2% of rock  
-0.5% diss py  
-at 536', 4" aphanitic zone, harder, weakly sil w 3% diss py  
-
- 541        -546'        FUCHSITE BEARING SER CHL CARB SCH  
-rock pred a strongly sch at 80 deg to the ca, (sch v strongly kinked and crenulated, and w a mod S2 as exhibited by cleavages on S1 sch planes cross cutting S1 at 10 to 25 deg to the ca,) banded app, w bands pll fol to 1/8" of alternating chl-ser (60%) and carb(30%) carb pred dolomitic minor calc, carb bands are often boudinaged into elongate frag app blebs  
-rock is mod frac pll S1 and S2 w calc frac fil  
-ser is v bright green in places, fuchsitic  
-from 541 to 542', rock is intensely serz, sheared locally w 15% thin (bright light green fuchsite slips pll fol)  
-from 544 to 544.5', secondary qtz dolomite vn to 1" pll fol to 25% of rock  
-contains 0.5% diss py

546

-550'

## MINERALIZED QTZ CARB BRECCIA

- rock comprised pred of vfg granular dark grey to light greenish grey v hard intensely carbz (Fe/Mg carb) and sil material that may be vn but is more probably intensely altered rock, and in crude bands pll fol at 70 deg to the ca, but highly contorted to brecciated in places, into 1/2" frag, by thin chl seams
- these zones to 60% of rock, w 10% chl ser carb altered basaltic zones, and 10% clearly secondary brecciated qtz dolomite frag
- intensely frac at highly variable orien from 0 to 90 deg to the ca, w chl, qtz, calc, and py frac fil contains 10% diss magnetite crystals to 1/16"
- contains 10% py as semi massive bands to 1/8" and vfg diss mineralization throughout unit
- at 546', 2" carb vn/band at 70 deg to the ca, w 20% py, 1% magnetite
- from 546.5 to 547', qtz carb bands at 70 deg to the ca, to 60% of rock w 20% ass py
- from 547.2 to 550', 60% carb vn, 10% qtz vn, 10% py and 10% magnetite,
- may be an interflow breccia

550

-580

## MOD SERZ TO CHLZ, AND CARBZ ANDESITE TO BAS

- rock a vfg, light to med green, mod sch at 70 to 75 deg to the ca, mod serz to mod chlz in places, and mod carbz w 20 to 25% pred Fe/Mg carb blebs to 1/16", and thin carb seams pll fol
- in places v banded app w Fe/Mg carb bands pll fol to 20% of rock, and elsewhere porphyroblastic app, w 20 to 25% 1/16" Fe/Mg carb blebs.
- in places carb bands are boudinaged and brecciated into elongate app frag
- weak S2 in places cross cutting S1 at 20 to 40 deg to the ca, causing strong kinking and crenulation of S1 sch
- numerous secondary qtz calc and qtz dolomite vn to 2" and 15% of rock
- rock is strongly frac pred pll S1 w calc ser qtz, py, and chl frac fil
- contains 1% py pred ass w qtz carb vn
- from 550 to 552.5', locally a dolomitic carb and qtz vn pll fol to 1" and 40% of rock, and w ass 2% py
- at 562', 2" qtz calc vn w minor black tourmaline
- from 565 to 569', v porphyroblastic app
- at 570.5', locally sch is highly contorted
- at 571', 2" qtz calc vn w minor tourmaline
- at 573.5', 1" zone where py to 5%
- at 576', 3" qtz dolomite vn pll fol

-from 576 to 577', locally qtz dolomite vn to  
30% of rock w 2% ass py

BOULDER LAKE PROPERTY BL-86-06



DIP TEST  
40° @ 250'

STRATIGRAPHY DIPPING @ 75° N.

HOLE SUMMARY BL-86-06

COLLAR LOCATION: L44W, 12-00S  
BEARING: 180°  
INCLINATION: -45°  
TOTAL DEPTH: 323'  
TARGET: Strong IP Anomaly Centered Beneath L44W,  
14+00S  
Strong Soil Geochemical Anomalies  
(to 850 ppb Au) over L44W, 15+00S

0	-90'	OVERBURDEN
90	-248'	REGOLITHIC CLAY
248	-290'	BRECCIATED, MODERATELY CHLORITIZED, SERICITIZED, SILICIFIED ANDESITE TO BASALT.
290	-323'	BRECCIATED, SERICITIZED, SILICIFIED ANDESITE TO BASALT HOLE CAVES @ 323'

- NO ANOMALIES -

D. M. Love

JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-06

- 0 -90' OVERBURDEN
- 90 -90.5' STRONGLY CHLZ SERZ ANDESITE TO BAS  
-strongly sch at 15 deg to the ca, could be a boulder due to unusual core angle and relatively fresh app
- 90.5 -100' DARK BROWN REG CLAY  
-pred dark brown reg clay w a few rem less intensely altered frag where a sch visible at orien ranging from 60 to 80 deg to the ca,  
-rem sch app v strongly kinked and crenulated  
-some rem ser in places, rock app to have been a ser sch, w 20% recognizable frag to 1/2" of sch ser rock  
-from 99 to 100', numerous recognizable frag of ser sch w a strong sch at 75 deg to the ca, and numerous 1/8" vuggy vfg sugary tex qtz stringers pll sch
- 100 -100.5' 6" FG SUGARY TEX QTZ VN
- 100.5 -110' KAOLINITIC REG (REM PORPHYRY TEX)  
-rock composed of a white v soft, kaolinite in a rem xlline massive app tex, which has been intensely frac to micro brecciated, frac at 80 to 90 deg to the ca, now filled w brown clay, may have been sulphides  
-a few rem 1/8 to 1/16" qtz eyes lending porphyry app to rock  
-v vuggy, where presumably carb was present  
-a few rem 1/4" sugary tex qtz vn at ran orien  
-at 109', a few 1/2" qtz blebs
- 110 -113' BROWN REG CLAY  
-pred dark brown reg clay, w minor rem recognizable ser, and weak rem sch at 75 deg to the ca,
- 113 -128' REM SER SCH  
-dark brown, soft, partially oxidized, vfg somewhat granular app ser sch, w a strongly sch at 85 deg to the ca, a few fg sugary tex 1/4" qtz vn/bands pll fol at 85 deg to the ca,

- 128 -138' REM TALC SER SCH  
-light green to dark brown, strongly oxidized/altered to reg, but w a rem strong sch at 40 to 45 deg to the ca, sch is strongly crenulated, w a strong cross cutting frac pattern at 45 deg to the ca,  
-contains 20% rem recognizable soft green talc and ser but pred (80%) brown to yellowish brown clay  
-in places v vuggy (presumably where carb once was) and in places numerous thin 1/16 " hematite streaks that may have been sulphides
- 138 -159' YELLOWISH BROWN REG CLAY  
-pred a yellow brown reg clay, v v soft, weak rem sch at 75 deg to the ca,  
-in places contains 30% white soft kaolinite blebs /slips to 1/16", that resemble rem crystals, lends a rem porphyry app to unit, some rem ser present in a few places
- 159 173' BRIGHT ORANGE TO RED REG CLAY  
-pred a orange to reddish orange v soft reg clay w a mod dev rem fol/sch at 70 deg to the ca, a few recognizable 1/32" sugary qtz fil frac, often w black oxidized material that may have been sulphide  
-minor recognizable ser in places,  
-rem breccia tex visible in places, w angular 1/4 to 1/2" red red clay frag in a yellow clay matrix  
-from 170 to 173', becomes grad less reddish orange and more yellowish green (could this have been a sulphide rich zone?)
- 173 -198' YELLOWISH BROWN REG CLAY  
-pred soft, yellowish brown reg clay w a few rem zones where recognizable sch at 70 deg to the ca, minor recognizable rem ser in places,  
-at 177', a few 1/2" fg sugary tex qtz frag
- 198 -223' RED REG CLAY  
-pred soft pink to red reg clay w a weak rem sch in places at an ave orien of 60 deg to the ca,  
-rem frac surfaces are coated w black oxidized sulphides to 2 to 3%  
-in places strong rem S2 cleavage on S1 sch planes  
-minor rem ser recognizable in places  
-at 214', a few 1/2" fg sugary tex qtz frag

-at 218', 3" zone where ser recognizable to 30% of rock, and strongly sch at 50 deg to the ca,

- 223 -238' ORANGE REG CLAY  
-bright orange, soft, reg clay, rem strong sch at 60 deg to the ca, a few black oxide seams and coated oxide frac that may have been sulphides
- 238 -248' YELLOWISH BROWN REG CLAY  
-very soft, no recognizable textures or rem mineralization
- 248 -290' BRECCIATED, MOD CHLZ TO SERZ, AND SIL IN PLACES ANDESITE TO BAS  
-rock is a dark green, strongly sch (at 60 deg to the ca,) altered andesite to basalt, composed of a vfg somewhat granular app mod chl to ser ground mass/matrix w 30% small white (less than 1/32") blebs of feldspar? that may be small tuffaceous frag elongate pll sch, and  
-numerous zones where large (from 1/16 to 1", ave 1/4") lighter green, to grey to white, much harder, sil frag elongate pll fol, resemble lapilli tuff frag to agg frag, but also as numerous bands pll fol of sil host rock, maybe boudinaged/brecciated bands, to 30% of rock  
-rock is intensely frac/micro frac pred pll fol w pred chl, ser, some hematite-limonite frac fil  
-rock is still partially oxidized in places, softer, and light brown  
-rock is vuggy, no carb present, numerous vuggy bands pll sch that may have been carb vn  
- a few secondary qtz vn pll fol  
-from 250 to 250.5', bleached app, to greyish white w mod pervasive kaolinite alteration, v soft  
-at 255.4', 255.7', 256', 256.7', 256.9', 1 to 2" bleached sil bands pll fol  
-at 263', 4" sand seam  
-at 264', 1" bleached sil band pll fol  
-at 265', 1" bleached sil band pll fol  
-at 267', 2" bleached sil band pll fol  
-at 267.5', 1/2" hematite limonite seam  
-at 270', 6" sand seam  
-at 271.5', 273.8', 1" bleached sil band pll fol

- from 281 to 284', numerous 1/4" to 1" elongate pll fol of white bleached sil frag, (brecciated/boudinaged alteration bands, but v frag app)
- at 285.5', 2" bleached sil zone pll fol
- at 285.8', 3" bleached sil band pll fol
- at 286', 286.3', 286.5', 1" bleached sil band pll fol
- at 286.5', 3" brecciated app sil band w numerous ponds of diss py to 5%
- at 287.3', numerous 1/2" qtz hematite seams pll fol (hematite was altered py?)
- from 287.5', to 290', bleached sil vuggy bands pll fol to 1 to 2" to 50% of rock, w numerous 1/4" semi massive py - qtz bands/vn pll fol py locally 3% from 286.5 to 290',
- overall sulphide content, from 248 to 286.5', none and from 286.5 to 290', 3% py
- arb cont w underlying more pervasive bleached and sil rock

290

-323'

- BRECCIATED SERZ SIL ANDESITE TO BAS
- rock a vfg, mod sch at 65 deg to the ca, dark grey mod serz, and bleached app, w a mod to strong pervasive sil
  - strongly brecciated (autobrecciated) in places into angular 1/4 to 1/2" frag pred elongate pll sch, lending agg app to rock in places
  - contains numerous (to 20%) more strongly sil grey to white bands pll fol, to 1" , ave, 1/2" often vuggy, often boudinaged to brecciated app,
  - a few weakly chl zone
  - rock is v vuggy, presumably once carb rich
  - rock is strongly frac, pred pll sch w qtz, ser, and hematite frac fil
  - contains 0.5% fg diss py, trace po
  - a few secondary qtz vn pred pll fol
  - at 290.5', 3" sil band pll fol
  - at 291', a few 1" sil bands pll fol
  - at 291.6', 3" white intensely sil bands pll fol w 1% fg diss hematite that may have been py
  - at 292.5', 2" white intensely sil band pll fol
  - at 293.7 and 295', 1" white sil band pll fol
  - at 296.3', 2" white sil band pll fol
  - from 297', to 301', locally 1/16" to 1/8" cubic hematite blebs to 1% of rock (oxidized py)
  - from 301 to 303', rock is strongly autobrecciated into 1/4" frag, locally w 1% diss py
  - at 304.5', 6" autobrecciated zone
  - from 308 to 309.5', strongly autobrecciated
  - from 309.5 to 312', becomes slightly more chl
  - from 317 to 319', qtz w minor calc vn

-from 320 to 321', qtz vn at 20 to 40 deg to the ca,  
to 30% of rock, locally w 1% diss py  
-at 322.8', 2" qtz vn  
-hole colapses at 323'

BOULDER LAKE PROPERTY BL-86-07

DIP TESTS:

@ 250° - 35°

@ 488° - 30°

STRATIGRAPHY DIPPING @  
80° N

HOLE SUMMARY BL-86-07

COLLAR LOCATION: L52W, 13+00S  
BEARING: 180°  
INCLINATION: -45°  
TOTAL DEPTH: 488'  
TARGET: Strong IP Anomaly Centered Beneath L52W,  
15+00S  
Strong VLF Anomaly Centered Beneath L52W,  
16+50S

0	-5'	OVERBURDEN
5	-25'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
25	-27'	SERICITE-CARBONATE SCHIST
27	-67.5'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
67.5	-72.7'	STRONGLY SERICITIZED, MODERATELY CARBONATIZED BASALT
72.7	-81'	MINERALIZED (4% PO, 4% PY) STRONGLY SILICIFIED, SERICITIZED 'GRAY ROCK'
81	-86.7'	MINERALIZED (3% PO, 2% PY) QUARTZ-CARBONATE (VEIN) FLOODED, INTENSELY CHLORITIZED, INTERMEDIATE TO MAFIC VOLCANIC TUFF/ OR EPICLASTIC ARGILLACEOUS EQUIVALENT (INTERFLOW HORIZON)
86	-88'	SERICITE-CARBONATE SCHIST
88	-99.5'	QUARTZ-SERICITE-CARBONATE SCHIST (SHEARED QFP)
99.5	-106.7'	STRONGLY SERICITIZED TO CHLORITIZED INTERMEDIATE TO MAFIC VOLCANIC TUFF OR EPICLASTIC ARGILLACEOUS EQUIVALENT (INTERFLOW HORIZON)
106.7	-184'	MODERATELY SERICITIZED, SILICIFIED ANDESITE TO BASALT
184	-193.5'	CHLORITE CARBONATE SCHIST (SHEARED FELDSPAR PORPHYRY)
193.5	-303'	MODERATELY SERICITIZED TO CHLORITIZED, SILICIFIED ANDESITE TO BASALT <del>193.5'</del>
303	-323'	MINERALIZED (3% PY) SERICITE-CARBONATE SCHIST
323	-323.5'	MINERALIZED (10% PO) BANDED CHERTY QUARTZ
323.5	-325.4'	MINERALIZED (10% PO) CHLORITE-SERICITE-CARBONATE SCHIST
325.4	-326.2'	MINERALIZED (10% PY) QUARTZ-SERICITE SCHIST
326.2	-334.5'	BANDED CHLORITE-SERICITE-CARBONATE SCHIST
334.5	-335.5'	FELDSPAR PORPHYRY
335.5	-351'	SERICITIZED, SILICIFIED, BRECCIATED ANDESITE TO BASALT



HOLE SUMMARY  
BL-86-07

351	-378'	MODERATELY CHLORITIZED, SERICITIZED CARBONATIZED ANDESITE TO BASALT
378	-387'	MINERALIZED (3% PO) STRONGLY SERICITIZED, CARBONATIZED INTERMEDIATE TO MAFIC VOLCANIC TUFF
387	-389'	MINERALIZED (5% PY, 5% PO) INTENSELY SERICITIZED, SILICIFIED ROCK
389	-392'	INTERMEDIATE VOLCANIC TUFF / OR EPICLASTIC ARGILLACEOUS EQUIVALENT
392	-401'	FELDSPAR PORPHYRY
401	-406'	INTERMEDIATE VOLCANIC TUFF / OR EPICLASTIC ARGILLACEOUS EQUIVALENT
406	-413.5'	FELDSPAR PORPHYRY
413.5	-419'	QUARTZ VEIN
419	-421'	INTENSELY SHEARED, SERICITIZED FELDSPAR PORPHYRY
421	-463'	INTERBEDDED ARGILLITES
463	-472'	GRAYWACKE
472	-488'	INTERBEDDED ARGILLITE AND GRAYWACKE

CLASTIC  
SEDS

D. McJure

JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-07

0 -5'  
5 -25'

OVERBURDEN

STRONGLY CHLZ, CARBZ (CALC) BASALT

- v dark green, vfg to aphanitic, strongly sch, at orien ranging from 55 to 65 deg to the ca, and an ave of 60 deg to the ca, sch is strongly kinked and crenulated, and a mod to strong S2 fol cross cutting S1, at 30 deg to the ca, as exhibited by strong cleavage on S1 sch planes
- rock is soft, strongly chlz, and strongly carbz, w 30% calc as vfg diss mineralization, and thin slips- seams pll fol, occurs amygdaloidal in places w 5% 1/8 to 1/4" stretched pll fol calc blebs
- a few secondary pred calc, some qtz calc vn pll fol to 1", ave 1/4", to 5% of rock
- a few mod serz lighter green zones, w weak pervasive ser alteration
- mod frac, pred pll S1, w pred calc, minor chl, ser frac fil
- maybe v weakly talcos in a few places, w minor talc frac fil
- sulphide content, trace vfg diss py
- at 5.5', 6" lighter green strongly serz zone
- from 6 to 7', v strong S2 sch, at cross cut orien of 30 deg to the ca,
- at 11.2', 1/4" band pll fol w 5% diss py
- at 11.3', 1/2" calc vn pll fol
- from 12.5 to 14', locally mod serz
- at 15', 1/2" qtz calc vn pll fol
- at 15.5', 1/2" oxidized carb vn pll fol
- from 15.5 to 16', sch is strongly contorted
- at 16.5', 1/2" carb vn pll fol
- at 17.5', 1/2" qtz calc vn pll fol
- at 19', 2" qtz calc vn pll fol
- at 20', 1/4" qtz calc vn pll fol
- at 20.5', 3" strongly serz zone
- from 24 to 25', locally becomes increasingly serz

25 -27'

SER-CARB SCH

- light green strongly sch at 50 deg to the ca, strongly altered, to ser, and iron/magnesium carb, comprised of a vfg to aphanitic sch ser ground mass w 40% small 1/32 to 1/16" iron-magnesium carb blebs (phenocrysts/porphyroblasts) in crude bands pll sch
- rock appears brecciated in places w ser seams brecciating carb rich rock into elongate frag pll fol

-a few secondary qtz carb (dolomite) vn to 1/2" pll fol  
-1% vfg diss py and thin py slips pll sch  
-maybe an altered porphyry

27 -67.5'

STRONGLY CHLZ, CARBZ (CALC) BASALT (KOMATIITE)  
-dark green, vfg, strongly sch at an ave orien of 60 deg to the ca, although sch is strongly crenulated and kinked in places, and contains a mod to strong S2 fol at a 30 to 50 deg cross cut orien, as exhibited by strong cleavage on S1 sch planes  
-v soft, strongly chlz, strongly carbz, (calc) w 25 to 30 % calc as diss mineralization and thin slips - seams pll sch, occ 1/8 to 1/4" stretched blebs that resemble amygdules  
-weak to mod pervasive ser alteration, to strong in a few zones  
-weakly talcos in a few areas  
-a few secondary calc, and qtz calc vn pll fol, to 2 to 3", ave 1/4" to 10% of rock  
-mod frac pred pll S1, w pred calc, some talc, chl, ser frac fil  
-sulphide content, 0.5% fg diss py and trace cpy  
-from 27 to 29', mod to strong pervasive ser alteration  
-at 28', a few 1" brecciated app calc vn  
-at 37', a few 1/8" py cubes  
-from 38 to 40', sch is intensely crenulated, rock is v soft, locally intensely serz, and contains 30% thin calc seams pll sch  
-at 40.3', 3" qtz calc vn pll fol  
-from 48 to 49', locally calc vn to 2", ave 1/4" pll fol to 50% of rock  
-from 66 to 66.5', numerous 1/4" calc qtz dolomite vn pll fol to 30% of rock  
-from 66.5 to 67.5', becomes increasingly serz arb contact w underlying strongly serz unit

67.5 -72.7'

STRONGLY SERZ, MOD CARBZ (CALC) BASALT  
-rock a vfg, light green, strongly sch at 65 deg to the ca, w a mod S2 fol at 30 deg to the ca, cross cutting S1, strongly serz, mod carbz w 10 to 15% fg diss calc blebs and thin calc seams pll fol  
-a few secondary carb bands/vn w minor qtz to 1/2" pll fol  
-rock is vuggy in places  
-mod frac pred pll S1, w calc, ser, and minor hematit py frac fil

-0.5% fg diss py and py frac fil  
-at 67.6', 1/8" semi massive py seams pll fol  
-at 70 to 70.5', a few vuggy bands pll fol  
-from 71 to 72.7', becomes grad increasingly harder silicified

72.7 -81'

MINERALIZED, STRONGLY SILICIFIED, SERZ GREY ROCK  
(INTENSELY ALTERED BASALT)  
-rock a vfg, dark greyish green, hard, strongly silicified and serz rock, grad contact w overlying unit indicates an alteration horizon as opposed to distinct lithologies  
-mod to strongly sch and banded app in places at 65 deg to the ca, w a strong S2 foliation at 35 deg cross cut orien to ca, causing kinked and crenulation of S1 sch and strong S2 cleavages on S1 sch planes  
-weakly carbz w minor diss calc and a few thin calc slips-seams pll fol  
-mod frac pll S1 and S2, w chl, ser, calc, and some py-po frac fil  
-banding app due to occ dark grey chl-ser-talc rich bands (maybe alteration halos around thin carb fil frac ) to 15% of rock and 1/4 to 1/2"  
-a few secondary qtz carb vn pred pll fol, to 1 to 2"  
-contains 8% vfg diss sulphides and thin sulphide seams pll fol, 4% po, 4% py, trace sph, trace cpy  
-at 77', 1/2" fg granular qtz calc vn pll fol  
-at 78.7', 1/2" fg granular qtz calc vn pll fol  
-at 79', 1/4" qtz calc vn pll fol w 15% diss po-py  
-at 79.3', 1" qtz carb vn pll fol w 20% py-po as thin semi massive bands in vn  
-from 79.5 to 81', vfg granular black to grey cherty qtz w minor calc vn to 2", ave 1/4 to 1/2", to 35% of rock, pll fol, w ass 20% sulphides (10% py, 10%po) as semi massive bands w qtz, locally host rock is lighter yellowish green, more ser, and contains a few thin fuchsite slips

81 -86'

MINERALIZED QTZ CARB (VN) FLOODED INTENSELY CHLZ INTERMEDIATE TO MAFIC VOLCANIC TUFF OR EPICLASTIC EQ (CHLORITIC TO SERICITIC ARG, INTERFLOW UNIT)  
-rock pred a dark green, v soft, thinly bd/banded app at 65 deg to the ca, w a strong S2 fol at highly variable orien at cross cut 80 to 90 deg to the ca, intensely chlz to serz intermediate to mafic vol tuff or argillite, w a few thin 1/4 to 1/8" ser arg and grey more siliceous arg/tuff interbeds  
-contains 35% fg granular grey to black pred qtz w some calc and dolomite vn pred pll bd but in places boudinaged to brecciated,

-from 81 to 82.5', a breccia zone, brecciated qtz carb frag and frag of light green ser bleached rock to 50% and 1 to 2", usually elongate pll fol, set in a chl ground mass/matrix, w 2% po, trace py, cpy, as blebs to 1/4" at vn margins  
-from 83.5 to 86', more banded/bd app, w 1/4 to 1/8" chl ser and qtz carb bands at 65 deg to the ca, w 5% vfg diss sulphides (3% po, 2% py, trace sph, cpy)  
-at 85', 1" banded sugary texture qtz vn w 15% diss po and 5 to 10% magnetite

86 -88'

SER CARB SCH

-rock comprised of vfg strongly sch (at 70 deg to the ca,) intensely serz ground mass, w 30% small elongate pll fol 1/16 to 1/8" dolomitic blebs and slips, resembling tuff frag, maybe a lapilli tuff, trace diss py

88 -99.5'

QTZ SER CARB SCH (SHEARED QTZ FELDSPAR PORPHYRY)

-rock is a light grey, v hard, siliceous, strongly sch at 65 deg to the ca, w a strong cleavage on S 1 sch planes (but no S2 sch orien visable)  
-composed pred of qtz (60%) as pervasive alteration and a vfg sil ground mass, w 35 to 40% recognizable qtz phenocrysts to 1/16", and 25% ser as intergranular slips and seams pll sch, and 15% dolomitic carb as slip seams pll fol and mottling around qtz phenocrysts  
-rock is v strongly frac-micro frac pll sch w pred dolomitic carb, calc, ser, and minor qtz frac fil  
-numerous secondary jet black fg sugary textured qtz vn to 1" and 25% of rock, pred pll fol at 45 deg to 55 deg to the ca,  
-89 to 89.5', 2" fg jet black sugary textured qtz vn cross cuts fol at 45 deg to the ca,  
-90 to 90.5', highly contorted to brecciated fg sugary textured jet black qtz vn to 30% of rock pred orien at 60 deg to the ca, cross cutting fol  
-at 91', 1/2" jet black qtz vn cross cuts fol sch at 50 deg to the ca,  
-from 92.5 to 93', numerous 1/4 to 1/2" jet black sugary textured qtz vn cross cuts fol at 45 deg to the ca,  
-from 93.5 to 94', jet black qtz vn to 1/2" and 30% of rock  
-from 94.5 to 95', 1" jet black qtz vn cross cuts fol at 60 to 70 deg to the ca, to 60 % of rock  
-at 98', 1" black qtz minor carb vn weakly cross cuts fol at 50 deg to the ca,

- trace diss py
- sharp contact at 99.5', at 65 deg to the ca

99.5 -103'

STRONGLY SERZ CHLZ INTERMEDIATE TO MAFFIC VOL TUFF OR EPICLASTIC EQ ARG (INTERFLOW UNIT)

- rock pred a vfg to aphanitic/argillaceous thinly banded/bd app, and sch, at 70 deg to the ca, light green ser (30% of bands) and dark green chl (50% of bands) banded intermediate tuff or arg bands to 2 to 3", ave 1/2 to 1"
- strong S2 sch cross cutting fol at 55 deg to 65 deg to the ca,
- contains 20% thin (ave 1/4", to 1 to 2" in places) vfg sugary textured granular black qtz vn pll fol usually w ass 2 to 3% fg diss po, and 1 to 2% fg diss magnetite, app exhalative in places
- weakly to mod frac, pred pll fol, w calc, chl, and ser frac fil
- at 99.8', 1" qtz vn pll fol w 3% po
- at 100.8', a few 1/2 to 1" qtz calc vn pll fol
- at 101', 1" fg sugary textured black qtz vn pll fol w 5% diss po, 2% magnetite, trace py
- at 101.5', a few 1" jet black sugary textured qtz vn w 2% po and 2% magnetite
- at 102.8', 2" qtz vn pll fol
- overall sulphide content, 2%, 1.5% po, 0.5% py trace cpy, sph, pred as vfg mineralization ass w qtz bands, some diss mineralization throughout rock and frac fil

103 -106.7'

INTERMEDIATE VOLCANIC ASH TUFF

- vfg to aphanitic/arg, soft, greyish green, strongly carbz, w 25 to 30% vfg diss calc, mod chl-ser, app bd/banded at 70 deg to the ca, w a strong S2 sch cross cutting bd at 65 deg to the ca,
- contains 1.5% py, 0.5% po, trace sph, as vfg diss mineralization and frac fil ass w calc
- at 106.5', a few 1/2" qtz calc vn pll bd

106.7 -184'

WEAKLY CHLZ, MOD SERZ, CARBZ (CALC) AND IN PLACES SIL ANDESITE TO BAS, W STRONG S2 FOLIATION

- rock pred a light green a vfg relatively soft, andesite to basalt
- mod to strongly sch at 60 to 65 deg to the ca, w a mod to strong S2 foliation cross cutting S 1 at 35 deg to the ca, sch is strongly kinked, crenulated in places, and strong S2 cleavages on S1 sch planes

- rock is weakly to mod chlz in places, mod serz in places, and weakly carbz w up to 10% vfg diss calc and thin calc seams-slips to 1/32" pll fol
- rock contains numerous (to 15%) mod sil-bleached bands pll fol to 1 to 2", and in places strongly sil zones to 1 to 2'
- mod to strongly frac pll S1 and S2, w pred calc ser, and some qtz, chl, frac fil
- amygdaloidal app in places w 1/8 to 1/4" elongate pll fol stretched calc blebs
- a few secondary qtz carb vn pred pll S1 fol
- contains 5% vfg diss biotite in places
- 0.25% vfg diss py, trace po, cpy
- from 106.7 to 108', locally mod to strongly chlz
- at 107', 2" band where thin slips of po-py to 2%
- at 107.8', 2" carb band w 3% diss po
- from 113.5', to 114.5', a few dark bluish. green 1/2" to 1" zones of weak talc alteration
- from 118 to 119', mod to strongly sil zone locally more strongly frac, w ran orien qtz calc infilled frac
- at 120', 1/2" qtz calc vn pll fol w 3" strongly sil halo
- at 126.5', 1/4" cpy bleb
- from 138 to 140', locally v strongly serz, w at 139.7' a few 1/4" zones were diss acicular black mineral (tourmaline?) blebs to 1/32" and 10% of rock
- at 141', 1" bleached sil band pll fol
- from 143 to 144.5', mod sil zone
- from 146 to 147', mod to strongly bleached, sil
- from 147.5 to 148', bleached sil zone
- at 148.5', 2" bleached sil band pll fol
- at 149', 1" bleached sil band pll fol
- at 150.5', 1" bleached sil band pll fol
- at 151.5', 1" bleached sil band pll fol
- at 152.2', 152.6', 153', 153.5', 154.2', 154.7', 154.9, 155.8', 1 to 2" bleached sil bands pll fol
- from 156.3 to 157.3', qtz calc vn w 10% chl inclusions pll S1, and strongly frac pll S2 w cpy frac fil as blebs to 1/4"
- at 157.7', 1" qtz calc vn pll fol
- at 158', 3" sil band pll fol
- at 160.5', 3" sil band at 45 deg to the ca, as halo around 1/2" qtz dolomite vn at 45 deg to the ca
- from 161 to 162', sil bands to 1" pll fol to 50% of rock
- at 163', 163.5, 164', 2" sil bands pll fol
- from 165.5', to 166.5', intensely bleached sil zone

- at 167.5', 1" sil band pll fol
- at 168.5, 169.5', 1" sil band pll fol
- at 170 to 170.5', sil band pll fol
- at 170.7' 1" qtz calc vn pll fol
- at 171.6', 2" intensely sil band pll fol
- at 173', 6" light pink strongly sil band pll fol
- from 173.5 to 174', 1/2" sil bands pll fol to 50% of rock
- at 175.3', 1" pink sil band pll fol
- at 179.5', 1" qtz calc vn pll fol
- from 181 to 184', v banded app w thin pink 1/2" sil bands pll fol to 30 % of rock
- sharp contact w underlying unit at 184'

184 -193.5'

- CHL-CARB SCH (ALTERED PORPHYRY)
- rock is a dark grey, strongly sch at 65 deg to the ca, coarse rock, composed of 60% hard grey dolomitic carb as a pervasive alteration of matrix/ground mass w ass 40% chl-ser, and as uhedral to anhedral large phenocrysts to 1/16" and 40%, set in a chl-ser-carb rich matrix
  - v porphyritic app, carb strongly resembles qtz, hard only a v weak reaction w HCL
  - rock is mod frac pred pll sch w calc, dolomite, hematite frac fil, some frac have 1/2 to 1" bleached serz alteration halos
  - only a few secondary 1/4" qtz calc vn pred pll sch
  - trace diss py
  - at 185', 1" bleached serz zone
  - at 187.7', 1" bleached serz zone
  - at 190', 1" qtz calc vn cross cuts sch at 50deg to the ca,

193.5 -303'

- MOD CHLZ TO SERZ ANDESITE TO BASALT (TUFF?) W NUMEROUS MOD TO STRONGLY BLEACHED SERZ SIL BANDS
- rock pred a med to dark green, v fg, somewhat granular app, mod to strongly sch at an ave orien of 70deg to the ca, within places a mod dev S2 fol at a cross cut orien of 35 deg to the ca,
  - mod chlz and serz, relatively soft, weakly carbz patchy carbz w 5% diss calc and in places zones where calc and dolomitic blebs to 25% of rock
  - contains 25 to 30% thin ave 1/4 to 1" to 2 to 3" in places, light grey bleached much harder mod sil and serz alteration bands pll fol often contorted often app frag
  - rock is strongly frac pred pll S1 w calc, qtz, chl, ser, and talc frac fil



- a few secondary qtz calc vn to 2 to 3", ave 1/2", pred pll fol, to 5% of rock
- sulphides, 0.5% py, trace po, cpy, sph, pred is vfg diss mineralization, occ blebs w qtz calc vn and minor frac fil
- rock appears weakly autobrecciated in places
- at 195', 1/2" grey ser carb alteration band pll fol w 5% diss py
- at 199.3', 2" yellow bleached sil serz zone
- at 199.5', 3" calc band at 0 deg to the ca,
- at 202.5', 1" qtz calc vn pll fol
- at 204.5', 6" intensely bleached serz and sil zone
- from 207 to 208', mod to strongly bleached, serz and sil,
- at 208', a few 1/4" secondary calc vn pll fol w po-py blebs to 1/8" and 2%, locally vfg diss biotite to 3%
- from 208 to 208.5', numerous 1/4" bleached serz and weakly sil bands pll fol w a few po-py blebs to 1/8"
- at 212.5', 2" bleached zone around 1/4" vuggy qtz carb vn locally at 80 deg to the ca,
- locally from 213 to 221', sch at 80 deg to the ca, ser becomes dominant alteration, locally v strongly frac pll fol w abundant hematite frac fil
- at 215', locally minor malachite staining along frac surfaces
- at 217.8', 3" qtz vn w calc pll fol
- at 218.5', 3" qtz calc vn pll fol
- from 219.5 to 220', v talc rich, as alteration around vn
- from 220 to 220.7', qtz vn pll fol
- from 220.7 to 221', intense ser talc alteration halo around thin qtz carb vn
- at 221.5', 2" intensely bleached serz zone
- at 224', 1" qtz calc vn pll fol
- at 237.8', a few 1/2" qtz calc vn pll fol
- from 250', rock becomes greyer, almost all chl is gone, pred ser alteration, w 5 to 10% diss 1/32" calc and dolomite carb blebs, in a weak rem xlline tex
- at 251.5', a few 1" sil bands pll fol
- at 259', 4" intensely bleached sil serz zone,
- at 259.5', 1" bleached serz sil band pll fol
- at 263.5 to 264', bleached serz sil zone
- at 264.5', 4" bleached serz sil zone
- at 266.5', 1" bleached band pll fol
- from 268 to 269', weak pervasive bleaching
- from 269 to 269.5', rock is strongly autobrecciated
- from 269.5 to 270', weak pervasive bleaching, w a few 1/4" calc po cpy fil frac pll fol, locally w 2% fg diss po

- from 269.5' sulphides increase to 1%, pred vfg diss po, trace py-cpy
- from 274 to 274.5', a few 1" brecciated sil alteration bands
- at 276', 276.3', 276.5', 276.8', 277.3', 1" vuggy white sil bands pll fol
- from 283.5 to 284.5', numerous 1" sil bands pll fol
- from 287 to 288', weak pervasive bleaching, w locally 2% diss py

303 -323'

MINERALIZED SER CARB SCH (ALTERED BAS)

- rock is light grey to greenish grey, v soft, strongly sch, at 75 to 80 deg to the ca, sch is strongly kinked and crenulated in places, w a mod to strong S2 sch and related frac set cross cutting S1 at 25 to 30 deg to the ca
- v strongly serz, w 20% calc as vfg diss mineralization and thin slips/seam to 1/32" pll sch
- v strongly frac pll S2 and S1, w pred calc, ser, some py, po, qtz frac fil
- a few white to grey sil bands pll sch
- a few secondary 1/4 to 1" qtz carb vn pll S1 sch although contorted to brecciated in places
- weakly chl in a few places
- weakly talcos in a few places
- sulphide content is variable, from 303 to 308', 2% py pred as vfg diss mineralization and thin slips pll sch, from 308 to 310', 3% py as vfg diss mineralization, slips pll fol, and frac fil from 310 to 313', 5% py as vfg diss mineralization, and occ 1/8 to 1/4" semi massive bands pll fol from 313 to 318', sulphides to 5%, 3% po, 2% py, trace cpy and sph, as vfg diss mineralization and thin seams pll fol, from 318 to 320', sulphides to 10%, 5% py, 5% po, as large blebs to 1/4", and vfg diss mineralization and thin slips pll sch, from 320 to 323', 1% fg diss py-po
- at 312.5', a few 1/2" brecciated app semi massive py blebs elongate pll fol

323 323.5'

MINERALIZED BANDED CHERTY QTZ (EXHALATIVE OR INTENSELY SIL ZONE)

- pred vfg sugary tex grey cherty qtz 10% po, trace sph and py as thin slips and diss mineralization pll banding at 70 deg to the ca,

-a few thin calc seams pll banding  
-strongly frac pred pll banding w po, and calc frac fil

323.5 -325.4'

MINERALIZED CHL SER CARB SCH  
-rock pred a light greyish green to dark green vfg strongly sch at 75 deg to the ca, w strong tight kinking and crenulation of sch, w a mod S2 fol cross cutting S1 at 35 to 45 deg to the ca, intensely chlz and serz rock w 10% thin calc slips and seams pll sch.  
-contains 10% vfg diss po and thin po slips pll sch, w trace cpy, py, and sph  
-at few thin secondary qtz carb bands/vn to 1/4" pll fol  
-strongly frac pll S1 and S2 w pred calc, po, and py frac fil

325.4 -326.2'

MINERALIZED QTZ SER SCH (EXHALITE OR INTENSELY SIL ZONE)  
-rock a banded, sch (at 70 deg to the ca, w a weak S2 fol cross cutting S1 at 35 deg to the ca,) ser (30% as 1/8 to 1/4" bands)-silica (60% as 1/8 to 1 to 2" bands sil zone) rich rock w 10% py as semi massive bands to 1/4" pll fol ass w qtz, and as vfg diss mineralization throughout rock, and as frac fil trace sph  
-rock is v strongly frac pll S1 and S2  
-rock is vuggy locally, w carb gone  
-indistinct contacts suggests zone of intense sil as opposed to distinct lithological unit

326.2 -334.5'

BANDED CHL - SER - CARB SCH (INTENSELY ALTERED BAS)  
-rock a med greyish green to green vfg intensely sch (at 75 deg to the ca, w strong tight kinking and crenulation of S1 sch, and mod to strong S2 fol cross cutting S1 at 35 deg to the ca,) intensely chlz (30%)serz(40% rock) w 10% vfg diss calc and occ thin bands pll sch to 1/4" of bleached carbz and sil rock  
-pred v v soft,  
-strongly frac pll S1 and S2 fol w pred calc, some chl, ser, talc frac fil  
-a few secondary qtz calc vn to 1/4" pll fol  
-from 326.2 to 327', vfg diss po and po slips pll sch to 5% of rock, trace py, cpy  
-at 326.5', 1/2" qtz carb vn pll fol

-overall sulphide content, 0.5% vfg diss po,  
trace py, cpy

334.5 -335.5'

ALTERED FELDSPAR PORPHYRY DYKE

-rock comprised of dark bluish grey anhedral to  
uhedral crystals of a v qtz app mineral but slightly  
softer than qtz, to 1/8", and 50% of rock, set in  
a vfg strongly serz and weakly sch at 75 deg to  
the ca, matrix / ground mass  
-sharp distinct contacts at 75 deg to the ca,  
-rock is mod to strongly frac at ran orien  
w calc frac fil  
-no visible sulphides

335.5 351'

SERZ AND SIL, BRECCIATED ANDESITE TO BAS

-rock pred a dark greyish green, mod sch at 70 deg  
to the ca, w a mod S2 fol at 25 to 35 deg to the ca,  
cross cutting S1, mod serz and chlz andesite bas  
with  
-numerous zone of strong sil affecting 30% of rock,  
where rock becomes dark grey, v hard, v granular  
app, composed pred of qtz and ser, zones are irr  
to 2 to 3", and usually proximal to intensely frac  
and brecciated zones  
-rock is intensely frac to brecciated in places  
by thin 1/16 to 1/2" fg qtz calc vn/seams at ran or  
brecciating rock into 1/4 to 1/2" frag, w a frag  
matrix ratio ave 80/20  
-trace diss py - po  
-at 339', 1" qtz calc vn pll fol  
-at 339.5', 1/2" qtz calc vn pll fol  
-at 340.2', 1" brecciated qtz calc vn  
-at 340.7', 1" brecciated qtz calc vn pll fol  
-at 342', 4" brecciated sil zone  
-at 342.7', 4" brecciated sil zone  
-from 343 to 347.5', brecciated sil zones to 2 to 3"  
and 50% of rock  
-from 347.5 to 348.5', intensely bleached, sil,  
and mod brecciated by thin calc-qtz seams at ran or  
to 20% of rock  
-from 349.5 to 350.5', brecciated qtz calc vn  
to 2" and 50% of rock  
-arb cont at 351', w slightly less sil and more  
sch underlying unit

351 -378'

MOD CHLZ SERZ CARBZ ANDESITE TO BAS

- rock pred a med green, vfg mod to strongly sch at 65 to 70 deg to the ca, w a weak to mod S2 fol cross cutting S1 at 35 to 45 deg to the ca, mod serz and chlz, and mod carbz w 15% vfg diss calc and thin calc slip seams pll fol, altered andesite to bas
- intensely frac to brecciated in places, w frac pll S1 and S2 fol, w calc and qtz frac fil, in places frac brecciate rock into 1/4 to 1/2" frag, w in-filled frac to 1/4" and 20% of rock
- rock is weakly to mod sil in a few places, usually proximal to brecciated zones and around major qtz carb vn
- a few secondary qtz calc vn pred pll fol to 1 to 2" ave 1/4 to 1/2",
- 0.5% vfg diss py, trace po
- at 351', 3" sil zone pll fol,
- at 351.5', 1" brecciated qtz carb vn pll fol
- at 352.3', 6" sil serz zone pll fol
- at 353.5', 3" sil zone pll fol
- at 353.8', 1" sil zone pll fol
- from 368.5 to 370.5', fg qtz calc bands to 1" and thin stringers to 1/4" pll fol strongly brecciate rock into 1/4 to 1/2" frag elongate pll fol, vn to 50% of rock
- at 371.1', 1" qtz carb vn pll fol
- from 371.1 to 371.6', highly contorted qtz vn
- at 372.8', 2" qtz calc vn pll w minor diss py
- at 373.7', numerous 1/2" calc vn pll fol w a few 1/8" py blebs
- from 376 to 378', becomes increasingly serz carbz, banded app w sulphides increasing to 2% vfg diss py

378 -387'

MINERALIZED, STRONGLY SERZ, CARBZ, (CALCITE)  
INTERMEDIATE TO MAFIC VOLCANIC TUFF

- rock is a light grey, vfg, granular app, mod to strongly sch and banded app at 70 deg to the ca, w a weak cross cutting S2 at 35 to 45 deg to the ca, strongly serz, strongly carbz, w 30% small (1/32") diss calc blebs and thin slips pll sch altered intermediate to mafic volcanic tuff
- strongly frac pll S1 and S2, pred w calc, minor qtz, po frac fil
- a few 1/8 to 1/4" secondary qtz calc vn pred pll fol
- contains 3% vfg diss po, trace py, cpy, as thin slips and seams pll sch

-weak patchy sil in places  
-from 378 to 379.5', thin (to 1/2") fg granular  
qtz calc vn pll fol to 50% of rock, w ass 3% po-py  
trace sph  
-from 382 to 383.5', weakly to mod sil

387 -389'

MINERALIZED INTENSELY SERZ SIL BANDED ROCK  
(TUFF ? - ARGILLITE?)

-rock a thinly banded/bd appearing , at 75 deg to  
the ca, dark grey, v hard, vfg to aphanitic arg  
ser-silica rich rock, w 10% sulphides (5% po, 5% py,  
trace cpy, sph, arsenopyrite) as vfg diss  
slips pll bandings/bd, frac fil, and larger semi  
massive bands to 1/2" pll fol, ass w qtz and carb  
seams  
-rock is strongly frac pll fol w pred py-po-calc  
frac fil  
-a few weakly chlz zones  
-at 388.5', 1/2" jet black qtz vn pll fol  
-bd/sch is highly contorted in places

389 -392'

THINLY BANDED, BD INTERMEDIATE TUFF OR EPICLASTIC  
ARG EQ

-rock a vfg to aphanitic/arg thinly banded/bd at  
75 deg to the ca, w a weak sch pll bd, and a mod  
to strong cross cutting S2 fol at highly variable  
orien, ave 45 deg to the ca,  
-dark to med green, w 1/16" to 1/4" mod ser bands  
to 40% and darker green chl bands to 40% w 15%  
thin calc seams pll fol  
-mod frac pll S1 and S2 fol, w pred calc frac fil  
-contains 1% vfg diss py and thin py slips pll fol

392 -401'

FELDSPAR PORPHYRY,

-rock comprised of a weakly sch (at 70 to 75 deg to  
the ca,) weakly serz dark grey aphanitic relatively  
hard sil ground mass w  
-35% small 1/16 to 1/8" dark bluish grey anhedral  
to subhedral feldspar phenocrysts, often partially  
rimed by or replaced by calc  
-rock is mod frac pred pll a v weak S2 fol at a  
cross cut orien of 35 deg to the ca,  
w pred calc and py frac fil  
-py to .5% as frac fil and vfg diss mineralization  
-resembles a porphyry, but note that there is no  
apparent chill margins

401 -406'

THINLY BANDED, BD, INTERMEDIATE VOL TUFF OR  
EPICLASTIC ARG EQ

- rock is thinly banded, bd ( to 1/4", ave 1/8" bd well dev at 85 deg to the ca, w a weak pll sch in mod cross cutting S2 fol at 45 deg to the ca,) pred dark greyish green chl (50%) and lighter greyish green ser(30%) vfg to aphanitic/arg tuff/arg sediment w 15% thin calc seams pll fol
- mod frac pred pll S1, w a few pll S2, pred calc frac fil
- some bd offset to 1/4" along frac
- contains 1% vfg diss py

406 -413.5'

FELDSPAR PORPHYRY

- rock comprised of a dark grey vfg to aphanitic weakly ser hard sil weakly sch at 75 deg to the ca, (w a weak cross cutting S2 fol at 45 deg to the ca,) ground mass w
- 35% small (to 1/8, ave 1/16") anhedral to uhedral dark bluish grey feldspar phenocrysts, often slightly elongate pll fol; usually rimed by calc and in a few places pseudomorphs by carb
- rock is v strongly frac w sets pll S1 and S2, w pred calc, ser, and py frac fil
- py to 1% as frac fil
- a few secondary qtz calc vn to 1" pll fol
- at 408.8' 1" qtz calc vn pll fol

413.5 -419'

QTZ VN (W 20% INTENSELY CHLZ SERZ SHEARED WALL ROCK FRAG)

- rock pred a dark grey vfg sugary tex qtz vn weakly fol at 70 deg to the ca,
- intensely frac w sets at 0 to 45 deg to the ca cross cutting fol, w pred coarse muscovite-ser chl, and calc frac fil
- contains 20% inclusions of intensely chlz to serz wall rock, ranging from 1/4 to 1/2" frag, to 3 to 4" zones
- from 413.5 to 414', intensely chlz sch wall rock frag
- from 414 to 415.4', qtz w 20% chl inclusions
- from 415.4 to 415.6', feldspar porphyry inclusions
- from 415.6 to 416.7', qtz w 20% chl inclusions
- from 416.7 to 416.8', intensely sheared sch contorted feldspar porphyry

-from 416.8 to 417.3', qtz  
-from 417.3 to 419', intensely sheared, sch serz altered feldspar porphyry, sch ranging from 30 to 70 deg to the ca, contains minor fuchsite  
-overall sulphide content, trace py ass w chl ser wall rock inclusions and as frac fil

419 -421' INTENSELY SHEARED SCH FELDSPAR PORPHYRY  
-ground mass intensely sch highly contorted pred ser (sch ranges from 20 to 70 deg to the ca,) w 30% remnant stretched feldspar phenocrysts  
-intensely frac pll fol w ser, chl, and some py (to 1%) frac fil

421 -463' INTERBEDDED ARG  
-rock composed of  
-70% light green vfg to aphanitic-arg thinly bd /banded soft, strongly chl to ser arg or intermediate vol ash tuff, v strongly sch and  
-30% soft, v dark green to black thinly bd chl arg  
-bd ave 1/4 to 1/2", thinly bd and interbd, at an ave orien of 65 to 70 deg to the ca, although slumped and contorted in places w good soft sediment deformation features w  
-a v strong cross cutting S2 sch at an ave orien of 55 deg to 65 deg to the ca, as exhibited by strong S2 cleavages on S1 sch planes and an S2 related frac pattern  
-rock is strongly frac, pred pll S2, w calc, chl, and ser frac fil, some offsets of bd to 1/2" along frac  
-at few secondary qtz calc vn pred pll S1  
- a few slightly coarser greywacke type interbd  
-0.5% fg diss py

463 -472' GREYWACKE  
-rock comprised of light green relatively hard sil weakly ser fg granular dirty app matrix w 30 to 40% small (to 1/4", ave 1/32 to 1/16") blebs of qtz, feldspar, and white lithic frag, and a few larger elongate pll fol 1/2" qtz, white lithic frag, and feldspar frag,  
-weakly sch and bd at 70 deg to the ca,  
-weakly frac pred pll fol w calc frac fil  
-trace fg diss py  
-a few secondary 1 to 2" qtz calc vn



-at 466.2', 2" qtz calc vn pll fol w trace fuchsite  
and py

472 -488'

DARK GREYISH GREEN ARG W A FEW GRYWK INTERBD  
-rock pred a dark grey to greenish grey thinly bd  
(1/16 to 1/4") well bd at 65 deg to the ca,  
(although slumped in places w well dev soft sed  
deformation features) arg, w numerous 2 to 3" grywk  
interbd, bd often graded, app to indicate a fining  
down hole sequence  
rock is mod frac pred at a cross cut fol of 45 deg  
to the ca, w pred calc frac fil, some offsets of  
bd to 1/4" along frac  
-minor diss biotite in places  
- a few 1" secondary qtz calc vn  
- 0.5% vfg diss py, trace sph  
-at 472.2', 4" grywk bd fines down hole  
-at 472.5', 2" grywk bd, fines down hole  
-at 475.5 to 476.5', grywk interbd  
-at 478' 1" calc vn pll bd w 1% diss po  
-from 480 to 481', grywk interbd, fines down hole  
-at 485.7', 3" grywk interbd  
-from 486.2 to 488', grywk interbd

BOULDER LAKE PROPERTY BL-86-08

## DIP TESTS:

@ 250' 33°

@ 478' 28°

STRATIGRAPHY DIPPING @ 75° N.

HOLE SUMMARY BL-86-08

COLLAR LOCATION: L4W, 18+50N  
 BEARING: 180°  
 INCLINATION: -45°  
 TOTAL DEPTH: 478'  
 TARGET: IP Anomaly Centered Beneath L4W, 15+00N

0	-3'	-OVERBURDEN
3	-8.7'	-CHLORITE-SERICITE-CARBONATE SCHIST
8.7	-10'	-QUARTZ-CARBONATE VEIN
10	-18'	ANDESITE
18	24'	-MINERALIZED (2% PY) STRONGLY SERICITIZED ANDESITE TO BASALT
24	-29'	-MINERALIZED (2% PY, 1% PO) SERICITIC ARGILLITE.
29	-50.5'	-STRONGLY SERICITIZED, CARBONATIZED ANDESITE TO BASALT.
50.5	-53'	-MINERALIZED (3% PY) SERICITIC ARGILLITE
53	-72'	-MINERALIZED (2% PY) SERICITE SCHIST
72	-108'	-MINERALIZED (3% PY) SERICITE-CHLORITE-CARBONATE SCHIST.
108	-116'	-CHLORITIZED, SERICITIZED, CARBONATIZED ANDESITE TO BASALT.
116	-123.5'	-ANDESITE TO BASALT
123.5	-125'	-MINERALIZED (10% PY) SERICITIC ARGILLITE
125	-143'	-MODERATELY CHLORITIZED, CARBONATIZED ANDESITE TO BASALT.
143	-147'	-MINERALIZED (8% PY) STRONGLY SERICITIZED ANDESITE TO BASALT.
147	-186'	-MODERATELY CHLORITIZED, CARBONATIZED, WEAKLY SERICITIZED ANDESITE TO BASALT.
186	-187.5'	-MINERALIZED (3% PY) QUARTZ-CARBONATE VEIN
187.5	-193'	-MINERALIZED (3% PY) SERICITE SCHIST
193	-214'	-STRONGLY CHLORITIZED, CARBONATIZED, SERICITIZED BASALT.
214	-216'	-QUARTZ-CARBONATE VEIN.
216	-228.3'	-MINERALIZED (8% PY) BRECCIATED, STRONGLY SERICITIZED TO SILICIFIED BASALT.
228.3	-235'	-MINERALIZED (7% PY) SERICITIZED ANDESITE TO BASALT.
235	-236'	-MINERALIZED (25% PY) BRECCIATED QUARTZ-CARBONATE VEIN.
236	-237.5'	-MINERALIZED (5% PY) SERICITIZED ANDESITE TO BASALT.
237.5	-242'	-MINERALIZED (25% PY), FUCHSITE BEARING, QUARTZ-CARBONATE (VEIN) FLOODED SERICITE SCHIST.

HOLE SUMMARY  
BL-86-08

242	-253'	-MINERALIZED (5% PY) MODERATELY SERICITIZED, CHLORITIZED ANDESITE.
253	-254.3'	-MINERALIZED (10% PY) QUARTZ-CARBONATE (VEIN) FLOODED FUCHSITE BEARING SERICITE SCHIST.
254.3	-257.3'	-SERICITE SCHIST
257.3	-265.5'	-MINERALIZED (30% PY) INTENSELY CONTORTED TO BRECCIATED, QUARTZ-CARBONATE (VEIN) FLOODED, INTENSELY SERICITIZED, SILICIFIED ROCK.
265.5	-271.4'	-MINERALIZED (3% PY) CHLORITE-SERICITE SCHIST.
271.4	-274'	-QUARTZ-CALCITE VEIN
274	-279'	-MINERALIZED (3% PY) STRONGLY CHLORITIZED CARBONATIZED BASALT.
279	-281'	-CHLORITE-CARBONATE-SERICITE SCHIST
281	-287'	-WEAKLY CHLORITIZED, STRONGLY CARBONATIZED MAFIC TO ULTRAMAFIC VOLC.
287	-289.5'	-SERICITE-CARBONATE-CHLORITE SCHIST
289.5	-295'	-MINERALIZED, (7% PY) STRONGLY CHLORITIZED CARBONATIZED BASALT.
295	-478'	-STRONGLY CHLORITIZED, CARBONATIZED, BASALT.
478'		-END OF HOLE

D. McWor

JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

BL-86-08

- 0        -3'        OVERBURDEN
- 3        -8.7'        CHL SER CARB SCH (ALTERED INTERMEDIATE TO MAFIC VOL)  
-dark green, strongly sch at 60 deg to the ca,  
and v banded app w alternating bands of hard dol-  
omitic carb to 30% and 1/16", and med to dark green  
chl (30%)-ser(30%)  
-relatively soft, maybe an altered tuff  
-a few secondary carb (Fe/Mg) vn to 1/4"  
-mod frac pred pll fol w locally hematite, calc,  
and qtz frac fil  
-numerous strongly oxidized zone where carb has  
turned orange, or vuggy where carb is gone  
-strong S2 type cleavages on sch planes  
-0.5% diss py
- 8.7       -10'        QTZ CARB VN  
-pred grey v fg sugary tex recrystallized  
app qtz w a few 1/4" calc blebs and calc frac  
fil, a few 1" inclusions of strongly chlz wall rock  
trace diss py at vn margins
- 10       -18'        ANDESITE  
-dark green relatively hard; fg, weakly to mod  
sch at 55 deg to the ca,  
-only weakly chlz, weakly serz  
-mod frac pred pll fol w hematite, and calc frac fil  
-a few secondary qtz carb vn to 1" pll fol  
-0.25% py  
-at 10.5', 1/2" calc vn at 45 deg to the ca,  
-at 11.5', a few 1/2" qtz calc vn at 45 deg to the  
ca,  
-at 12', 1/2" sugary tex black qtz vn at 50 deg to  
the ca, w a few 1/32" cpy blebs  
-from 12 to 12.5', numerous 1/4" qtz calc dolomite  
vn at 45 to 55 deg to the ca, to 20% of rock  
from 14 to 18', numerous 1/2" hematized zones, as  
halos on hematite fil frac

18

-24'

MINERALIZED, STRONGLY SERZ INTERMEDIATE TO MAFIC VOL(TUFF?)

- dark grey, vfg to aphanitic, mod to strongly sch at an ave orien of 60 deg to the ca, relatively soft, v strongly serz (ser to 80%) intermediate to mafic vol tuff
- strong S2 cleavages on S1 sch planes
- contains 5% small 1/32" carb blebs along sch planes
- weakly chl in a few places
- mod frac pll fol w py, calc and hematite frac fil
- locally numerous strongly oxidized zones
- a few secondary qtz calc vn to 1/2" pll fol
- sulphide content, 2% vfg diss py, trace po, and cpy, as occ thin seams pll fol and mineralization ass w numerous carb rich bands
- at 18.5', 1/2" qtz calc vn pll fol w 2% py as blebs to 1/16"
- from 18.8 to 19.5', strongly oxidized zone, carb is stained orange
- from 21 to 22' numerous 1/2 to 2" strongly oxidized zones
- from 22 to 23', intensely oxidized, to a hematitic-limonite clay

24

-29'

MINERALIZED SERICITIC ARGILLITE

- vfg to aphanitic/argillaceous, light grey, v thinly banded/bd (to 1/4", ave 1/16" to 1/8") and strongly sch at 60 deg to the ca, w a mod S2 fol cross cutting S1 at 30 deg to the ca,
- pred sericitic (to 80%) argillite
- sch is strongly kinked and crenulated in places
- strongly frac pred pll fol w hematite, py, ser, and some calc frac fil
- a few secondary qtz calc vn pll fol
- contains 3% vfg diss sulphides and thin elongate sulphide slips along sch planes, 2% py, 1% po, trace cpy and sph
- at 28', 1" qtz calc vn pll fol w 1" zone at vn margins where thin semi massive py bands pll fol to 1/16" and 25%
- from 28 to 29', strongly dev S2 fol cross cutting S1 at 15 to 30 deg to the ca,

29

-50.5'

VERY STRONGLY SERZ CARBZ INTERMEDIATE VOLCANIC/  
VOLCANIC TUFF

- light grey to greenish grey vfg somewhat granular app, soft, mod to strongly fol-sch at an ave orien of 60 deg to the ca, although sch is kinked and crenulated in places
- rock composed of approx., 60% sericite and 30% small (less than 1/32") blebs and thin slips pll fol of Fe/Mg carb
- occ weakly banded app pll sch w carb v ser rich bands to 1/16"
- also a few scattered 1/8 to 1/4" calc blebs that appear to be stretched amygdules
- a few strongly hematite-limonite oxidized zones
- mod frac pred pll fol, w pred calc, some hematite limonite, qtz, chl, py frac fil
- mod S2 sch visible in places cross cutting S1 at 40 to 45 deg to the ca,
- overall sulphide content, 1% pred py, trace po-cpy as vfg diss mineralization, some frac fil
- from 31 to 31.5', locally strongly oxidized, carb stained orange
- at 33', 3" strongly oxidized zone
- at 34 and 34.5', 2" oxidized zones
- from 41 to 43', locally rock strongly sil, vfg granular app, locally sch at 35 deg to the ca, and locally numerous 1" black fg sugary tex re-xlline qtz vn
- at 43 and 43.6', 3" strongly oxidized zones
- from 47 to 47.5', strongly oxidized zone

50.5

53'

MINERALIZED SERICITIC ARGILLITE

- light grey to white, v thinly bd/banded app, ser arg
- bd well dev at 65 deg to the ca, w a weak S2 sch cross cutting bd at 45 deg to the ca,
- v strongly frac both pll to and cross cutting bd at 45 deg to the ca, w hematite, chl, calc, and py frac fil
- py to 5% as frac fil and vfg diss slips along sch and bd planes
- a few secondary qtz carb vn to 1/2" pred pll fol

MINERALIZED SERICITE SCH (ALTERED INTERMEDIATE TUFF  
OR EPICLASTIC ARGILLACEOUS EQ)

- strongly sch, at highly variable orien ranging from 45 to 70 deg to the ca, pred at 60 to 65 deg to the ca, w several highly deformed zones, w tight kink folds, and strong crenulation and kinking of sch and bd
- rock pred a dark grey, vfg to aphanitic/arg pred ser in composition (to 70%) w occ bands to 25% pll fol to 1/16" of chl (15%) and carb (15%), both calc and dolomitic carb, lending strong banded/bd app to rock
- v soft
- strong S2 type cleavage planes on S1 sch planes
- rock strongly frac both pll to and cross cutting fol at 0 to 40 deg to the ca, w numerous offsets of bd along cross cutting frac up to 1/2", w pred calc, ser, some chl, qtz, py, frac fil
- at 56.3', a few 1/4" carb bands pll fol w 3% diss py
- at 57', 1" fg qtz calc band pll fol at 65 deg to the ca w 3% py
- in places strong S2 fol visible at orien ranging from 0 deg to cross cut 50 deg
- from 57 to 58.5', sch v intensely crenulated, w offsets to 1" along cross cutting frac, locally strong S2 cross cutting S1 at 30 deg to the ca,
- at 59', a few 1/4" qtz calc vn pll fol
- from 60 to 61', sch intensely deformed, crenulated w a few intense kinked folds
- at 61.5', a few 1/4" grey qtz carb vn pll contorted fol
- at 62', 2" tight kinked fold
- at 63.5', 1/4" qtz calc vn pll strong kinked fol locally numerous tight kinked folds to 1"
- rock is v grey in places, maybe weakly carbonaceous
- at 64.2', a few 1/2" fg qtz carb vn pll strongly contorted fol
- from 64.3 to 65.2', locally thin calc seams pll fol to 30% of rock
- at 65.3', 1/2" qtz calc vn pll contorted fol w 3% diss py
- at 66.5', 1/4" qtz calc vn pll fol at 50 deg to the ca, strongly offset by S2 related frac at 40 deg to the ca, locally sch is v contorted, and locally a 1/2" calc ser band pll fol w 10% diss py
- from 66.5 to 67', locally fg diss py to 5%
- at 68.8', 1" black sugary tex qtz vn at 65 deg to the ca, w minor diss cpy
- from 68, becomes increasingly chl, to 25% to 30% of rock, at expense of sericite
- at 70.5', to 71.5', v dark grey, thinly bd, locally



chl to 50%, locally vfg diss py to 10%  
-at 71.5' 3" fg sugary tex dark grey qtz vn  
w a few 1/4" py blebs  
-overall sulphide content, 2% vfg diss py and py  
ass w qtz carb bands, trace cpy  
-arb contact w underlying more carb rich unit

72

-91.5'

MINERALIZED BANDED SER CHL CARB (FE/MG CARB) SCHIST  
-as before, sch is highly variable from 45 to 70%  
to the ca, pred 60 deg, strongly kinked and crenu-  
lated in places, mod to strong S2 cleavages on  
S1 sch planes, v banded/bd app, rock composed of  
alternating bands of  
-1. vfg to aphanitic/argillaceous light grey to  
greenish grey ser(70%) dolomitic carb(30%), carb  
as small 1/32" blebs and slips hosted in sericite  
these bands to 65% of rock and  
-2. darker grey to dark greenish grey chl rich band  
pll fol to 35% of rock  
-rock is v soft  
-contains 3 to 5% diss 1/8 to 1/4" calc blebs that  
resemble stretched amygdules  
-v grey in places maybe weakly carbonaceous  
-weak S2 visible in places at a cross cut orien  
of 35 to 40 deg to the ca,  
-rock is strongly frac pll S1 and S2, w chl ser  
and calc frac fil  
-at 72.5', 1/2" grey fg granular carb(calc and dolo-  
mite) qtz vn pll fol at 65 deg to the ca,  
-at 75', 1/2" jet black sugary tex qtz vn pll fol  
-at 75.5', 1/2" qtz calc vn pll fol  
-at 76', 2" brecciated contorted black qtz calc vn  
-at 76.5', 1/4" qtz calc vn pll fol w 10% diss py  
-from 76', S2 is well dev at a cross cut orien of  
35 deg to the ca,  
-from 82 to 83', jet black to white milky qtz vn  
v strongly frac  
-from 83 to 84', sch is locally 45 deg to the ca,  
-from 87 to 91.5', sch locally 50 deg to the ca,  
-from 91 to 91.5', sugary tex grey qtz vn  
-overall sulphide content, 2%, pred fg diss py,  
trace po and cpy

91.5 -108'

MINERALIZED SERICITE CHL CARB SCHIST (INTENSELY ALTERED INTERMEDIATE TO MAFIC VOLCANIC/VOLCANIC TUFF)

-rock a light grey to greenish grey, strongly sch at 65 to 70 deg to the ca, although sch is strongly kinked and crenulated in places, and weakly banded pll sch, w chl, ser vrs carb rich bands to 1/8"

-rock composed of 40% ser, 30% chl, and 30% Fe/Mg carb

-rock is vfg, somewhat granular in places, maybe a tuff

-rock is mod frac pred pll fol w chl, ser, calc, qtz, and py frac fil

-mod to strong S2 cleavage on S1 sch planes, and S2 is weakly visible in a few places at a cross cut orien of 25 to 30 deg to the ea,

-a few (to 5% of rock) secondary qtz calc dolomite vn to 3 to 4" pred pll fol

-grad becomes more chl towards 108'

-carb bands are boudinaged in places, lending frag app to rock

-sulphide content, variable throughout unit, from 91.5 to 98', 1% py as pred vfg diss mineralization from 98 to 103', 5% py as vfg diss mineralization and from 103 to 108', 2% py

-at 92.5', 1" sugary tex qtz carb vn pll fol

-from 98.5 to 99.5', vfg granular tex dark grey to black qtz dolomite vn to 4" and 80% of rock w trace diss py cpy

-from 99.5 to 100.5', py as diss blebs to 1/8" and thin 1/16" semi massive seams pll fol to 5% of rock

-at 100.5', 1/2" sugary tex qtz vn cross cuts fol at 30 deg to the ca, w 5% py as frac fil

-from 100.5 to 102.5', 5% py as diss mineralization and occ thin 1/16" semi massive seams pll sch

-arb contact at 108', w underlying more chl unit

108 -116'

CHLORIALIZED, SERICITIZED, CARBONATIZED, ANDESITE TO BASALT TUFF

-vfg to aphanitic med to dark green strongly chlz (40%), mod to strongly ser (40%) mod to strongly carbz (20%) andesite to basalt tuff, strongly sch at 65 deg to the ca, weakly banded w alternating bands to 1/4" of carb rich vrs chl ser rich bands

-mod frac pred pll fol w chl, ser, and calc frac fil

-a few secondary 1/4 to 1/2" qtz calc vn pll fol

-1% py, ass pred w carb bands pll fol and secondary qtz carb vn

- 116        -123.5        ANDESITE TO BAS  
 -dark green, fg somewhat granular app(due to presence to 25% of small diss 1/32" carb blebs) weakly chlz weakly to mod carbz bas  
 -mod sch at 65 deg to the ca,  
 -weakly to mod frac pred pll fol w calc frac fil  
 -a few secondary qtz calc vn pll fol to 1/2"  
 -0.5% diss py cubes to 1/8"
- 123.5       -125'        MINERALIZED SER ARGILLITE  
 -thinly banded/bd (to 1/8") light grey to green sericitic argillite, bd/banding pll strong sch at 70 deg to the ca,  
 -contains 15% small diss 1/32" carb blebs in ser and 10% thin carb bands pll fol  
 -contains 10% py as vfg slips pll sch and occ semi massive bands pll fol to 1/4", some secondary frac fil  
 -mod frac pll fol w carb, py frac fil  
 -at 124.3', and 124.5', 1" qtz carb vn pll fol to 20% py as cubes and blebs to 1/4"
- 125        -143'        MOD CHLZ CARBZ (AND WEAKLY SERZ) ANDESITE TO BAS  
 -rock a med green, strongly sch, at orien ranging from 65 to 75 deg to the ca, pred 70 deg to the ca, (sch v strongly kinked and crenulated in places, mod S2 cleavage on S1 sch planes) and banded app mod to strongly chlz, mod to strongly carbz(pred calc, minor dolomite) weakly serz andesite to bas possibly a tuff  
 -pred vfg to aphanitic  
 -banding due to alternating bands of chl ser rich vrs carb rich rock, carb present to 30% in places notably from 131 to 134', numerous 1/32" to 1/16" diss carb blebs lends porphyritic app to rock  
 -mod frac pred pll fol w calc, chl, ser, and some py frac fil  
 -a few secondary 1/2" qtz carb vn pred pll fol  
 -from 125 to 127', py locally 5% as semi massive bands of diss cubes and blebs to 1/8" pll fol, vfg diss mineralization, and mineralization ass w calc seams  
 -from 127 to 131', py to 0.5% as fg diss blebs  
 -from 131', py 2% as diss blebs to 1/16", often in elongate frag app blebs in bands pll fol  
 -from 139 to 141', sch strongly kinked and crenulated locally strongly serz  
 -arb contact w underlying more mineralized and more serz unit

143

-147'

MINERALIZED STRONGLY SERZ WEAKLY CHLZ CARBZ  
 INTERMEDIATE TO MAFIC VOLCANIC/VOLCANIC TUFF  
 -vfg to aphanitic, light greyish green, mod to  
 strongly sch at 65 deg to the ca, (sch is strongly  
 kinked and crenulated in places) and banded app  
 intensely serz (ser to 60% of rock) weakly chlz  
 and carbz (both calc and dolomite as vfg diss slips  
 pll sch and occ bands to 1/4" pll sch) andesite to  
 basalt, possibly a tuff, appears bd in places  
 -mod frac pred pll sub pll fol w calc, qtz, chl,  
 ser, and py frac fil  
 -at 143.3', a few 1/4" qtz dolomite bands pll fol  
 w 5% diss py, trace fuchs site at vn rims  
 -from 144.3 to 144.7', numerous 1/4" vfg py bands  
 pll fol to 10% of rock  
 -at 146', 3" zone where numerous 1/8 to 1/4"  
 dolomitic carb minor qtz bands pll fol w ass 30%  
 sulphides, both coarse yellow cubic py and vfg dark  
 brown semi massive py  
 -overall sulphide content, 7 to 8% py, pred large  
 cubic blebs to 1/8" ass w qtz carb vn, and 2 to 3%  
 vfg diss mineralization

147

-186'

MOD CHLZ CARBZ WEAKLY SERZ ANDESITE TO BAS(TUFF?)  
 -rock a med green, vfg to aphanitic, mod chlz,  
 weakly serz, and mod to strongly carbz w 25% thin  
 seams pred pll fol of pred Fe/Mg carb, and diss  
 blebs/slips pll fol, lends banded app to rock in  
 places w carb rich vrs chl rich bands to 1/4"  
 -mod sch at 65 deg to the ca, sch is strongly kinked  
 and crenulated in places  
 -mod frac pred pll fol, w pred calc, some qtz, chl  
 ser frac fil  
 -a few secondary qtz dolomite and qtz calc vn to  
 2 to 3", ave 1/2" pll fol, to 5% of rock  
 -weak to mod S2 cleavage planes on S1 sch planes  
 -overall sulphide content, ave 1% py, trace cpy  
 as mineralization ass w thin carb bands, and vfg  
 diss mineralization,  
 -at 148.5', 1/2" qtz calc vn pll fol w a few 1/4"  
 py blebs  
 -at 149.5', 1/2" qtz calc vn pll fol w 1% diss  
 py  
 -at 158', 2" qtz calc vn pll fol w 2% diss py at  
 vn margins  
 -at 160.5', 1" qtz calc vn pll fol w 2% py  
 -at 164.4', 1" calc vn pll fol  
 -at 165.5', 1" qtz calc vn pll fol  
 -at 169', locally sch is strongly kinked and crenu-  
 lated  
 -at 173', a few 1/2" calc vn pll fol  
 -from 173 to 173.5', numerous 1/2" qtz calc vn pll  
 fol to 20% of rock w minor diss cpy

-at 174.1', 1" qtz calc vn pll fol  
-at 174.4', 1/2" qtz calc vn pll fol  
-from 175.5 to 176', contorted qtz calc vn pll fol  
w trace diss py

186 -187.5'

MINERALIZED QTZ CARB VN

-pred white qtz w a few large hard white Fe/Mg carb blebs and carb fil frac, vn is crudely orein at 45 deg to the ca,  
-strongly frac at ran orien w carb and coarse ser/muskovite, py frac fil  
-contains a few 1 to 2" intensely serz to chlz wall rock inclusions which contain py as bands to 1/2" and vfg diss mineralization  
-py content 3%

187.5 193'

MINERALIZED SER SCHIST

-rock a v thinly bd/banded app (to 1/8") strongly sch (w an S1 at 75 deg to the ca, and an S2 cross cutting S1 at 20 to 40 deg to the ca, w strong cleavages on S1 sch planes) pred white to greenish white ser rich (80%) vfg to argillaceous rock  
-a few darker green chl bands/sections  
-thin dolomitic bands to 1/8" pll fol to 25% of rock  
-rock is strongly frac pll S1 w py, carb frac fil  
-py to 3% as thin semi massive bands pll fol, frac fil, and frag app blebs to 1/2" semi massive dark brown py elongate pll fol

193 -214'

STRONGLY CHLZ CARBZ SERZ BAS (KOMATIITE?)

-rock pred a med to dark green, vfg, strongly sch at an ave orien of 70 deg to the ca, (although sch strongly kinked and crenulated in places, w strong cleavages on S2 frac planes, and S2 weakly visible cross cutting S1 at 25 deg to the ca, in places)  
-strongly chlz, strongly serz,  
-strongly carbz w 30% vfg diss pred Fe/Mg carb blebs and thin bands pll sch, minor calc, and in places small (to 1/4") elongate pll fol frag app calc blebs to 5 to 10%, maybe stretched amygdules  
-mod to strongly frac, pll S1 and S2, w pred calc minor qtz, ser, chl, and py frac fil  
-contains numerous secondary qtz dolomite vn pll fol to 1" and 10% of rock, usually w ass sulphide mineralization, weakly talc altered in a few places rock is v soft  
-at 194', 2" zone with 3% diss py  
-at 196.3', 1/4" carb band pll fol w 3% diss py  
-at 196.8', 1" ser carb altered band w 1% py  
-at 198', a few 1/8" qtz calc seams pll fol w 15% vfg py, trace cpy,

- at 198.1', 1/2" calc band pll fol w 3% py
- from 198.5', to 199.3', an intensely serz zone, w 5% py, trace cpy, as vfg diss slips pll sch and diss blebs to 1/32", occ 1/32" semi massive band pll fol and frac fil
- at 200.3', 1/2" calc dolomite band pll fol w 2% py
- at 200.5', 2" zone where calc-qtz-dolomite bands and brecciated vn pll fol to 1/4" and 50% of rock, w ass 10% fg diss py
- at 201.7', a few 1" qtz dolomite vn pll fol
- at 202.7', a few 1/2" qtz dolomite vn pll fol w 1% py
- at 203.7', 3" zone where qtz dolomite calc vn pll fol and to 1" and 50% of rock
- at 204.5', a few 1/2" qtz carb vn pll fol
- at 206', a few 1/2" qtz vn pll fol w 10% diss fg diss py as halos on vn to 1/2"
- from 205 to 208', strong S2 related fol
- at 207', 6" zone w numerous 1/2" qtz calc vn pll fol to 30%, w ass 10% vfg py in vn and as halos on vn
- from 208 to 214', becomes lighter green, more intensely serz, trace fuchsite in places
- sulphide content, highly variable, from 193 to 206', 1% py, trace cpy, as vfg diss mineralization and mineralization ass w qtz carb seams and vn and from 206 to 208.5', 3% vfg diss py and py ass w qtz carb vn, trace cpy
- and from 208.5 to 214', 1% py

214

-216'

QTZ CARB VN

- pred white qtz (80%) w 1% calc as blebs to 1/2" and frac fil in vn, vn is strongly frac, contains a few intensely altered host rock xenoliths to 2 to 3" altered to bright yellow muskovite, and dark green talc chl, a few bright green talc/fuchsite fil frac in vn, a few 1/2" py blebs, trace cpy at vn margins

216

-228.3'

MINERALIZED, BRECCIATED, SERZ TO SILICIFIED DARK GREEN BASALT (KOMATIITE)

- rock pred a vfg to aphanitic, dark blueish green strongly sch and banded app at 65 to 70 deg to the ca, w a v strong cross cutting S2 fol as sch at 25 to 30 deg to the ca,
- rock is mod to intensely serz in places, ser v well dev on S2 sch planes, ser a med dark green colour and in places to white in places
- app amygdaloidal, w 5% small 1/8" calc + or minus qtz and py blebs
- rock is v strongly frac to brecciated, w frac pll S1 and S2 causing brecciated app into 1/4" to 1/2" frag elongate pll S1, w pred ser, some talc, some talc, chl, carb, qtz, py frac fil
- a few secondary highly contorted to brecciated qtz carb vn pll sub pll S1
- sulphide content, an ave of 7 to 8%, pred py, trace cpy, as diss mineralization throughout rock and occ large bands and blebs to 1", frac fil seams to 1/8"
- rock is relatively hard, app weakly sil and in a few places
- at 216.5', a few 1/2" dark brown py blebs
- from 216.5 to 217.5', rock is strongly brecciated by thin ser and carb seams pll S1, and into elongate 1/4 to 1/2" frag, which have been mod to strongly silicified
- from 217.5 to 218.5', intensely serz and sil to a pale white colour, locally brecciated by thin py and ser seams into 1/4" frag
- at 218.5', 1/2" semi massive band pll S1 at 65 deg to the ca,

228.3

235'

MINERALIZED SERZ ANDESITE

- rock a vfg to aphanitic grey to light greenish grey v homogeneous app andesite
- mod sch at 55 deg to the ca, w a mod S2 sch cross cutting S1 at orien ranging from 30 to 60 deg to the ca,
- app weakly amygdaloidal, w 3% small 1/16" carb blebs scattered throughout rock
- mod frac pll S1 and S2, w pred calc and py frac fil
- mod serz, to strong in places,
- a few secondary qtz calc vn pred pll S1, although contorted to brecciated in places
- sulphides to 6 to 7%, 5% vfg diss py and 2% larger py blebs to 1/4", some py frac fil, trace cpy
- at 230', 1" qtz calc vn at 60 deg to the ca, w a few 1/8" seams of py
- from 234 to 235', coarsens to fg, becomes more carb rich, w 10% diss carb blebs, and v strong S1 and S2 fol

- 235      -236'      MINERALIZED BRECCIATED QTZ CARB VN  
 -pred vfg cherty grey qtz vn to 1", and boudinaged  
 /brecciated vn frag to 1" crudely fol at 65 deg to  
 the ca, w minor ass calc  
 -qtz to 60%, set in an intensely serz host, which  
 is intensely sch and sheared at 60 deg to the ca,  
 although highly contorted  
 -ser is v bright light green in places, maybe 5%  
 fuchsite present  
 -contains 25% py as semi massive bands and brecciated  
 blebs to 1/2", and diss mineralization throughout  
 rock
- 236      -237.5'      MINERALIZED SERZ ANDESITE  
 -as in from 228.3 to 235', locally vfg diss py to  
 5%
- 237.5      -242'      STRONGLY MINERALIZED, INTENSELY CONTORTED TO  
 BRECCIATED, FUCHSITE BEARING QTZ CARB(VN) FLOODED  
 SER SCHIST  
 -rock consists of an intensely contorted to brecciated  
 ser rich unit, w a prominent sch at 70 deg to the  
 ca, but contorted, ranging from 0 to 90 deg,  
 w 40% grey cherty qtz vn and brecciated qtz vn  
 frag w minor ass calc and dolomite, vn on a  
 macroscale pll 70 deg fol, but range on a microscale  
 from 0 to 90 deg to the ca, w 25% py, as thin seams  
 pll and riming vn to 1/4", and diss throughout rock  
 as secondary frac fil,  
 -sericitic matrix is v bright green in places, v  
 maybe minor fuchsite present  
 -contains 1 to 2% magnetite in places ass w qtz  
 carb vn  
 -rock is strongly frac at ran orien w qtz, py,  
 carb, and ser frac fil  
 -app strongly sil in places  
 -maybe an exhalative



242

-253'

## MINERALIZED, MOD SERZ, CHLZ ANDESITE

- rock a vfg to aphanitic, light grey to greenish grey
- mod chlz in places, mod serz in places, weakly carbz
- w 5 to 10% small diss 1/32" Fe/Mg carb blebs
- mod sch at 60 to 65 deg to the ca, w well dev
- and highly contorted S2 fol at 0 to 90 deg to the
- ca, ave 30 deg to the ca, cross cutting S1
- mod frac, w sets pll S1 and S2, w pred calc, some
- ser, and chl frac fil
- appears amygdaloidal in places w small 1/8"
- calc and occ py blebs
- contains 5% vv fg diss py
- a few secondary qtz carb vn to 2 to 3" pll S1
- at 243.3', 1/2" qtz calc vn at 45 deg to the ca
- at 248.3', 1/2" qtz calc vn at 60 deg to the ca,
- w trace fuchsite at rims
- from 248.3 to 249.5', v amygdaloidal app w 10%
- small 1/8" calc blebs
- at 249.5', 3" qtz calc vn at 80 deg to the ca.
- from 250 to 251', v strongly serz locally

253

-254.3'

MINERALIZED QTZ CARB (VN) FLOODED FUCHSITE BEARING  
SER SCHIST

- rock an intensely sch at highly contorted orien
- pred 65 to 70 deg to the ca, intensely serz unit,
- ser is v bright yellow to white to bright light green
- (w 3 to 5% fuchsite, usually proximal major qtz
- carb vn) w 30% fg white to black qtz calc vn
- to 2", ave 1/4", pred pll fol at 70 deg to the ca,
- but v contorted to brecciated in places
- rock is strongly frac at ran orien w qtz, calc,
- ser, and py frac fil
- rock contains 10% py, trace cpy, w two generations
- of py, #1, vfg dark brown diss throughout rock
- and thin seams pll fol and #2. bright yellow qtz blebs
- in vn and vn margins, and as frac fil

254.3

-257.3'

## SER SCHIST

- rock a bright green to yellowish green intensely
- ser unit, v strongly sch at 65 deg to the ca,
- and banded app w alternating bands of yellow vrs
- light green ser, sch is strongly kinked and
- crenulated in places, w a strong well dev S2 cross
- cutting S1 at 25 deg to the ca,
- numerous thin 1/4" fg calc and qtz calc bands pll
- fol to 15% of rock, occ w minor vfg diss py and
- cpy, to 1% of rock
- v soft, maybe minor talc in places,
- strongly frac pred pll S2, w ser and calc frac fil

-minor chl in places as slips on sch planes

257.3 -265.5'

STRONGLY MINERALIZED INTENSELY CONTORTED TO BRECCIATED QTZ CARB (VN) FLOODED INTENSELY SERZ SIL ROCK

- rock pred a light green, a vfg to aphanitic strongly serz and sil altered unit
- strongly sch at highly contorted at variable orien w an S1 sch at 45 to 65 deg to the ca, and at cross cutting S2 at 25 deg to the ca,
- rock is intensely frac to intensely brecciated in places, w orien pll to S1 and S2, w pred ser qtz, carb, and py frac fil
- highly contorted qtz and ass calc-dolomite vn to 30% of rock, and 1 to 2", often boudinaged and brecciated into 1/4 to 1/2" frag
- rock contains 30% sulphides, pred py, trace cpy as v v fg dark brown py and in semi massive bands to 1/4" pll fol, and diss throughout sil ser host, and secondary yellow coarser py as frac fil and diss cubes to 1/4"
- ser is bright light green in places, maybe minor amounts of fuchsite present
- a few qtz carb vn contain 5 to 10% magnetite crystals to 1/16" in crude bands pll to vn orien
- from 258 to 260', locally S1 is 45 deg to the ca, locally rock strongly brecciated into 1/4 to 1/2" frag by thin py seams pll S1 to 1/4"

265.5 -271.4'

MINERALIZED CHL SER SCHIST (INTENSELY ALTERED BAS)

- rock a v soft, vfg to aphanitic, strongly sch (at orien ranging from 60 deg at 265.5 to 45 deg at 271.4', sch is strongly kinked and crenulated)
- v strongly altered to pred ser(50%) and chl(40%)
- ser ranges in colour from bright yellow to white to pale green, maybe minor amounts of talc present
- contain 10% thin (to 1" ave 1/4") usually strongly contorted to boudinaged and brecciated calc qtz vn pll fol, usually w ass vfg dark brown py mineralization
- rock is mod to strongly frac pred pll sch w calc, chl, ser, and some py frac fil
- py to 3%, as vfg diss mineralization, mineralization ass w qtz carb seam, and occ v frag app elongate 1/4" blebs
- at 266.5', and 267', 1" vfg qtz calc vn pll fol w 5% dark brown py
- at 269', 2" qtz calc vn pll fol at 50 deg to the ca w minor bright light green talc ser fuchsite at rims
- from 269' to 270', locally sch is strongly crenulated

- 271.4 -274' QTZ CALC VN  
 -vn to 90% of unit, 60% qtz, 30% calc, w 10% strongly  
 chlz to serz brecciated wall rock frag, trace diss  
 py-cpy, minor bright light green talc and fuchsite  
 as frac fil in places
- 274 -279' MINERALIZED STRONGLY CHLZ CARBZ(CALC) BAS  
 -dark green, vfg to aphanitic, strongly chlz,  
 strongly carbz w 15 to 20% fg diss calc and 5%  
 amygdaloidal app calc blebs to 1/8" elongate pll  
 sch at 45 deg to the ca, mod dev cross cutting  
 S2 as exhibited by cleavage places on S1 and S2  
 related microfrac set at 40 to 45 deg to the ca,  
 -a few secondary qtz calc minor dolomite vn pll fol  
 usually w ass sulphide and magnetite mineralization  
 -overall sulphide content, 3% py, as mineralization  
 pred ass w qtz carb vn  
 -at 274.5', 1/2" qtz calc vn pll fol w 10% fg  
 diss py  
 -at 275.7', 1/2" qtz calc ser vn pll fol w 5% diss  
 py  
 -at 276.2', 1/2" qtz calc ser vn pll fol w 5% py  
 -at 276.7', a few 1" qtz calc vn pll fol w 15%  
 py  
 -at 277 to 279', vn or alternating bands of vfg  
 light green qtz calc pll fol to 6 to 8" ave 1"  
 to 60% of rock, w ass 10% magnetite crystals to  
 1/16" and 10% vfg py
- 279 -281' CHL SER CARB SCH(ALTERED BASALT-KOMATIITE? )  
 -light greyish green strongly sch at 65 deg to the  
 ca, (sch is weakly kinked and crenulated in places)  
 strongly altered to chl(30%), ser(40%), w 30% thin  
 (to 1/4") calc seams pll fol, occ contorted to  
 brecciated, and occ w minor qtz  
 -relatively soft, vfg to aphanitic  
 -trace diss py  
 -weakly to mod frac pll fol w calc frac fil

- 281 -287' WEAKLY CHLZ, STRONGLY CARBZ MAFIC TO ULTRAMAFIC  
ROCK  
-rock is weakly sch, weakly chlz, weakly serz  
and weakly talcos groundmass, w 30 to 40% small  
(ave 1/16", in places 1/8") hard white Fe/Mg carb  
blebs that resemble altered or replaced feldspar  
crystals, lends xlline tex/app to rock  
-where coarser large carb blebs present, are  
elongate pll fol, lending agg app to rock  
-numerous (to 5%) large (to 3 to 4", ave 1/2") qtz  
carb vn pll fol w some talc ser fuchs site frac fil  
in and around vn  
-at 283', 6" qtz magnesite vn pll fol w a few 1/4"  
talc ser fuchs site fil frac  
-at 284', 6" qtz magnesite vn pll fol w minor talc  
frac fil  
-trace diss py
- 287 -289.5' SER CARB CHL SCHIST  
-vfg, v strongly sch at 70 deg to the ca, and banded  
pll sch, composed of thin 1/16 to 1/8" alternating  
bands of light grey-green ser-chl (to 50%) and hard  
Fe/Mg carb (to 50%)  
-maybe some weak talc alteration in places  
-contains numerous (to 10% of rock) often brecciated  
qtz magnesite dolomite vn to 2" pll fol w minor  
diss py and cpy  
-only trace diss py and cpy  
-mod frac pred pll fol w ser, chl, carb frac fil  
-at 288', 2" qtz dolomite vn pll fol w trace talc  
ser-fuchs site at vn margins
- 289.5 -295' MINERALIZED, STRONGLY CHLZ, CARBZ BAS W 20% QTZ CARB  
VN IN STRONG S2 FOL  
-rock a vfg to aphanitic dark green strongly chlz  
strongly carbz (calc) w 25% fg diss calc and thin  
calc seams to 1/32" pll fol  
-v soft,  
-strongly sch at 80 deg to the ca, sch strongly  
kinked and crenulated in places w a mod to strong  
S2 visible in places cross cutting S1 at 20 to 25  
deg to the ca  
-contains 25% secondary qtz-calc-dolomite vn to 4"  
ave 1/2" usually pll sub pll fol, but v contorted  
to brecciated in places, usually w ass sulphide  
mineralization  
-rock is mod to strongly frac pred pll S1,  
w ser, py, and carb frac fil  
-secondary carb vn usually of light green fg  
ser at margins, and diss py-magnetite  
-at 290', 2" brecciated zone, brecciated by thin  
1/32" py and calc seams

- at 291', 6" zone where fg qtz carb vn pll fol to 50% of rock, w ass 5% fg py, and 2% magnetite
- at 292', 3" qtz carb vn pll fol, strongly brecciated by thin ser and chl seams
- at 292.5', 4" qtz vn pll fol
- from 293 to 295', qtz carb vn to 1/2" to 50% of rock, w ass 15% py as semi massive bands pll fol, and fg diss mineralization in both vn and host
- overall sulphide content, from 289.5 to 293', 2% py, and from 293 to 295', 15% py

295

-478'

STRONGLY CHLZ CARBZ BAS

- rock pred a dark green, vfg to aphanitic, soft, strongly chlz, weakly serz (to mod in places) strongly carbz (calc) w 15% fg diss calc blebs and 5 to 10% thin calc seams pll sch
- app weakly amygdaloidal in places, w occ 1/4" elongate calc blebs
- mod to strongly sch at 70 to 80 deg to the ca, although sch is kinked and crenulated in places w a weak S2 at orien cross cutting S1 at 25 to 45 deg to the ca,
- contains 10 to 20% thin (to 1" ave 1/4") grey to light greenish grey fg granular calc-minor qtz vn/bands pll fol, often contorted to brecciated often fragmental app, usually w ass sulphide, magnetite mineralization (2 to 3 to 10% vfg py, and 1 to 2% magnetite)
- rock is mod to strongly frac pred pll S1 and S2 w calc, chl, ser, and py frac fil
- sulphide content ave 2% py, pred ass w secondary carb and qtz carb vn, py both vfg diss dark brown and coarser yellow py, highly variable, from 1 to 5% trace cpy
- from 298 to 299', qtz calc vn w 2% diss py
- at 300', 2" fg granular carb ser vn w 10% fg diss py and 1% magnetite
- at 302', 2" white qtz calc vn at 50 deg to the ca,
- at 304', 2" brecciated qtz calc vn pll fol
- from 304 to 305', locally strong S2 fol at 45 deg to the ca,
- at 314', 3" oxidized zone
- from 295 to 320', sulphides locally 3%, and qtz carb vn is 20%, from 320 vn reduces to ave of 5 to 10% and sulphides to 1 to 2%
- at 332', 3" calc qtz vn w 5% diss py
- at 333.6', 2" qtz calc vn pll fol
- at 335', 3" bleached, strongly serz zone
- at 343', 6" fg granular light green qtz calc vn pll fol w 10% diss magnetite and 3% py
- at 348.5', 3" qtz calc vn pll fol w 10% diss magnetite and 3% py
- at 348.5', 3" qtz calc vn pll fol w 5% py
- at 349 to 349.5', contorted qtz calc vn w 2% py,

- at 354', 4" qtz calc dolomite vn pll fol
- at 354.5', 2" light green fg qtz calc ser vn pll fol w 10% py as large semi massive blebs to 1/2"
- at 367', 1" qtz calc vn pll
- at 371', 1" qtz calc vn pll
- from 375' to 378', locally brecciated and boudinaged carb qtz vn to 1/2" and 20% of rock
- at 379.5', 2" qtz calc dolomite vn pll fol
- from 382.5', to 384', qtz calc vn pll fol to 2" and 30% of rock, w ass 2% py, and 2% magnetite
- at 389', 1" qtz calc vn w 3% py
- at 390', 2" qtz calc vn pll fol
- at 392.5', 1" qtz dolomite vn pll fol
- at 393.5', 1" qtz vn pll fol w 1/4" semi massive bands
- from 396 to 396.5', contorted qtz calc vn to 30% of rock
- at 404', 1/2" qtz calc vn pll w 5% py
- at 407 and 407.7', 1/2" calc vn pll fol w 5% py
- at 411', 1" brecciated carb vn pll fol w 2% magnetite and 1% py
- at 412 and 412.5', 1" brecciated carb vn w 1% py
- at 415.5', 1" qtz carb vn w 2% py
- at 417', 1" qtz vn pll fol
- at 425', a few 1" highly contorted qtz carb vn
- at 426.5', 1" qtz carb vn w 2% py, 2% magnetite
- at 427.3', and 427.7', 1/2" qtz carb vn w 5% py
- at 435.5', 1" carb vn pll fol w 1/8" semi massive py-cpy band
- at 438.5', 2" fg qtz calc band w 1% py
- from 444.5 to 445', qtz carb vn to 3" and 80% of rock, w 2% diss py
- at 446', 2" qtz calc vn pll fol
- from 448 to 448.5', qtz calc bands pll fol to 1" and 50% of rock and 10% py
- from 450 to 453.5', highly contorted 1/4 to 1/2" calc vn pll fol to 30% locally w ass py to 3%
- from 453.5', 455', sch is v strongly kinked, and crenulated
- at 456', 1" qtz calc vn pll fol
- locally from 457 to 461', contorted qtz calc vn pll fol to 2" and 30% of rock, w 3% ass dark brown py
- from 461 to 463', highly contorted qtz calc vn to 2" and 40% of rock w ass 25% vfg py, trace cpy py is both yellow and dark brown, ass w vn and diss in locally strongly serz host rock
- at 465', 6" ser carb vn w 5% py as blebs to 1/4" and 5% magnetite as crystals to 1/16"
- at 465.5', 1" qtz calc vn w 5% py, 5% magnetite
- from 468 to 478', qtz calc vn to 10%

BOULDER LAKE PROPERTY BL-86-10

DIP TESTS:

@ 260' 40°

@ 458' 36°

STRATIGRAPHY DIPPING @ 80° N.

HOLE SUMMARY BL-86-10

COLLAR LOCATION: L40W, 21+00N  
BEARING: 180°  
INCLINATION: -45°  
TOTAL DEPTH: 458'  
TARGET: IP Anomaly Centered Beneath L40W,  
19+00N.

0	-18'	OVERBURDEN
18	-60'	GABBRO
60	-84'	MINERALIZED (2% PO, 1% PY) MODERATELY CHLORITIZED, CARBONATIZED BASALT
84	-86'	MINERALIZED (2% PY) QUARTZ VEIN
86	-97.5'	MINERALIZED (1.5% PY, 1.5% PO) MODERATELY CHLORITIZED, CARBONATIZED, WEAKLY SERICITIZED ANDESITE TO BASALT.
97.5	-102'	MINERALIZED (4% PO, 1% PY) SERICITE- CARBONATE SCHIST.
102	-106'	MINERALIZED (1% PY, 1% PO) MODERATELY CHLORITIZED-SERICITIZED, STRONGLY CARBONATIZED ANDESITE TO BASALT.
106	-111'	MINERALIZED (4% PO, 1% PY, 0.5% ASPY) SERICITE-CARBONATE SCHIST
111	-113'	MINERALIZED (1.5% PO, 1.5% PY) QUARTZ VEIN
113	-192'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
192	-222'	GABBRO
222	-256.5'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
256.5	-270.5'	MODERATELY CHLORITIZED, SERICITIZED CARBONATIZED ANDESITE TO BASALT
270.5	-271.7'	MINERALIZED (10% PY) QUARTZ-CARBONATE VEIN.
271.7	-284.5'	MODERATELY CHLORITIZED, CARBONATIZED BASALT.
284.5	-291.5'	MINERALIZED (10% PY, 5% PO) QUARTZ-CARBONAT (VEIN) FLOODED BASALT (PROBABLY IP ANOMALY
291.5	-300'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
300	-315.5'	F.G. CRYSTALLINE BASALT
315.5	-328.5'	STRONGLY CHLORITIZED, CARBONATIZED, BASALT
328.5	-359'	MINERALIZED (2% PY, 1% PO) QUARTZ - CARBONATE (VEIN) FLOODED, STRONGLY CHLORITIZED CARBONATIZED. BASALT.



HOLE SUMMARY  
BL-86-10

359	-378.5'
378.5	-380'
380	-398'
398	-430'
<hr/>	
430	-458'

MODERATELY CHLORITIZED, SERICITIZED,  
CARBONATIZED, BASALT  
MINERALIZED (1% PY, 1% PO) QUARTZ-  
CARBONATE VEIN  
MINERALIZED (1.5% PY, 0.5% PO) BANDED  
CHLORITE-CARBONATE-SERICITE SCHIST  
MINERALIZED (2% PY, 1% PO) BANDED TALC-  
CHLORITE-SERICITE-CARBONATE SCHIST  
MODERATELY CHLORITIZED, CARBONATIZED  
BASALT.

D. McMur

JUNE 20. 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-10

- 0 -18' OVERBURDEN
- 18 -60' FG TO MED G INTRUSIVE GABBRO OR EQ COARSE BAS FLOW
- dark green, fg to med g, only weakly sch at orien ranging from 40 to 50 deg to the ca, weakly chlz, weak epidote alteration of plagioclase (plagioclase to 40% of rock)
  - weakly to mod frac pred pll sch, w pred calc, some chl, hematite frac fil
  - a few secondary qtz calc vn to 1" pred pll fol
  - trace fg diss py
  - at 31' 2" vfg more strongly chlz sch zone
  - at 53', 1" qtz calc vn pll sch
  - from 53 to 60', becomes finer g to fine g
  - from 57 to 60', locally intensely chlz, v soft, strongly sch and sheared
- 60 -84' MINERALIZED MOD CHLZ; CARBZ(CALC) BAS
- rock pred a vfg, med to dark green, relatively soft, mod chlz bas, weakly serz in places, w 20% vfg diss calc and thin calc seams pll sch w in places 10 to 30% ass qtz, lending banded/bd app to rock in places
  - mod to strongly fol-sch at highly variable orien ranging from 40 to 65 deg to the ca, pred at 55 deg to the ca,
  - mod frac, pred pll sch, although other orien are present, w pred calc, some chl, py, ser, hematite frac fil
  - numerous secondary qtz calc vn pll sch to 2 to 3" and 5% of rock, as outlined below
  - some thin calc seams are strongly mineralized w 3 to 5% vfg diss py-po, trace sph and cpy, to 10 to 15% in places, and in places 5 to 10% f black ascicular magnetite
  - weak S2 sch visible in a few places cross cutting S1 at 30 deg to the ca,
  - from 60 to 60.5', vfg, sugary tex qtz vn at 50 deg to the ca, w 5% hematite
  - from 60.5 to 61', locally strongly oxidized, carb stained orange and vuggy
  - from 61 to 62', locally thin slips of py-po pll sch and vfg diss mineralization to 5% of rock

- at 64', 1/4" granular calc band pll fol w 20% acicular black mineral (?), 5% diss po, trace py, cpy, and sph
- from 62 to 65', locally vfg diss po(3%) py(2%) trace cpy as thin slips pll sch
- from 67 to 68.5', fol locally at 65 deg to the ca, locally thin 1/8 to 1/2" fg sugary tex qtz and qtz calc bands pll fol to 30% of rock, w ass 5% diss py, locally surrounding host rock intensely serz
- at 69.5', 1" qtz calc vn pll fol
- from 69.5 to 71', sch locally at 40 deg to the ca, locally 5% sulphides 4% po, 0.5% py, 0.5% cpy as thin slips pll sch and vfg diss mineralization
- at 70.8', 2" calc vn at 40 deg to the ca,
- at 71.5' a few 1" qtz calc vn pll fol
- from 72 to 72.5', 6" fg grey granular sugary tex qtz vn at 50 deg to the ca, w 1% diss py-po
- at 75', 3" sugary tex qtz calc vn at 45 deg to the ca,
- at 77', 1/2" fg sugary tex qtz calc vn w 5% diss po, trace py, cpy
- at 82', 1/2" qtz calc vn pll fol
- at 82.5', 1" qtz calc vn pll fol
- at 83', 1" fg qtz vn pll fol w 2% diss py
- overall sulphide content, 3%, 2% po, 1% py, trace cpy, and sph , as vfg diss mineralization in slips pll fol and mineralization ass w qtz calc seams

84

-86'

MINERALIZED QTZ VN

- grey fg sugary tex qtz and white massive qtz vn to 4" and 80% of rock w thin chl-ser altered host rock bands to 15%, well banded at 50 deg to the ca,
- grey fg sugary tex qtz may be intense sil of wall rock around major white massive qtz vn
- contains 2% py as cubes along frac and in white qtz vn and fg diss mineralization in grey granular qtz vn

86

-97.5'

MINERALIZED MOD CHLZ WEAKLY SERZ MOD CARBZ (CALC) ANDESITE TO BAS

- rock is a med greyish green to dark greyish green vfg relatively soft mod chlz weakly serz in places and mod carbz, w 20% fg diss calc and thin calc seams pll sch
- may be weakly sil in a few places proximal to thin granular calc qtz seams

- mod to strongly fol at 50 deg to the ca,
- mod frac pll fol w calc, minor chl, ser, py, and qtz frac fil
- weak S2 cleavage on sch planes, w an S2 related frac pattern at an orien cross cutting S1 at 30 deg to the ca,
- sulphide content, 3%, 1.5% py, 1.5% po, trace cpy sph, pred as v v fg diss mineralization and thin slips pll sch, and mineralization ass w thin qtz calc seams pll sch
- at 88.5', a few 1/4" sugary tex qtz bands pll fol w 5% diss po-py

97.5 -102'

MINERALIZED SER CARB SCH

- rock a dark grey, vfg, v strongly fol, banded-bd app, and sch, at orien ranging from 50 to 65 deg to the ca, pred at 50 to 55 deg to the ca, composed of ser(40%) and vfg diss carb(weak reaction HCL, pred Fe/Mg carb) bands/slips to 1/32" pll fol, lends banded-bd app to unit
- fol is contorted, slumped app in places
- mod frac pred pll fol w calc, py, and qtz frac fil
- a few secondary 1" qtz carb vn pll fol
- contains 5% vv fg diss pred po(4%) py(1%) and trace cpy, sph, and occ thin sulphide seams pll fol
- contain 1 to 2% vfg diss magnetite and thin magnetite slips pll fol
- relatively hard, maybe weakly sil
- at 97.5', 1/2" black vfg qtz vn pll fol w 5% large brown fibrous app blebs(sph?)
- at 100.5', a few 1/2" jet black qtz vn pll fol w 30% large fibrous brown sph? blebs, and trace arseno-py
- from 101.5 to 102', jet black qtz vn, fg and sugary tex, to 1" and 50% of rock, w 5% blebs to 1/8" of po, minor py and magnetite.

102 -106'

MINERALIZED, WEAKLY TO MOD CHL-SER ALTERED, STRONGLY CARBZ (CALC) ANDESITE TO BAS

- rock a light greyish green, v fg weakly to mod chlz and serz, and strongly carbz w 25 to 30% vfg diss calc and thin calc seams to 1/32" pll mod sch at 60 deg to the ca,
- sch strongly kinked and crenulated in places, w a weak S2 fol cross cutting S1 at 30 deg to the ca,
- mod frac pred pll S1 w calc frac fil

- a few secondary qtz calc vn pred pll fol
- overall sulphide cont, 2%, 1% po, 1% py, trace cpy, trace arseno-py, pred as mineralization ass w thin qtz carb bands pll fol, some vfg diss mineralization
- at 102.3', 2" fg sugary tex qtz calc dolomite vn pll fol w 2% diss py-po-arseno-py
- at 102.6', 2" jet black sugary tex qtz vn pll fol around which sch is highly contorted
- at 103', 2" black sugary tex qtz vn w minor ass calc
- from 103 to 104', sch is highly contorted around a few 1/4" fg black qtz vn, w 3 to 5% fg diss py po

106 -111'

MINERALIZED SER CARB SCH (ALTERED INTERMEDIATE TUFF OR EPICLASTIC EQ SEDIMENT)

- dark grey, vfg granular app, thinly banded/bd app and strongly sch at orien ranging from 40 to 60 deg to the ca, an ave of 55 deg to the ca,
- composed pred of ser(60%) w 30% fg diss blebs to 1/32" and thin seams pll fol of pred Fe/Mg carb, minor calc and chl
- sch is strongly crenulated in places
- contains 5% thin secondary qtz calc vn pll sch
- mod frac pred pll fol, w a weak S2 related frac set cross cutting S1 at 30 deg to the ca,
- contains 5% diss sulphides in thin sulphide slips pll sch, 4% po, 0.5% py, 0.5% arseno-py, trace cpy
- contains 1 to 2% fg diss magnetite
- at 108', 1" fg sugary tex black qtz vn pll fol w a few 1/8" py-po-sph blebs
- from 108 to 109', sch locally at 40 deg to the ca,

- 111 -113' MINERALIZED RE-XLLINE QTZ VN OR INTENSELY SIL ROCK  
-pred a banded, at 45 deg to the ca, fg sugary tex  
qtz, re-crystallized, ranging in color from jet  
black to white to green, w minor ass calc, and ser  
chl  
-strongly frac pred pll banded at 45 deg to the ca,  
w qtz, Fe/Mg carb, and sulphide frac fil  
-contains 3% sulphides (1.5% py, 1.5% po, trace cpy,  
sph,) as vfg diss mineralization and frac fil
- 113 -192' MOD CHLZ, MOD CARBZ, (CALC) BAS  
-rock a med to dark green, vfg mod to strongly sch  
at an ave orien of 55 deg to the ca, sch is strongly  
kinked and crenulated in places, a weak S2 cleavage  
on sch planes in places, w an S2 related frac set  
cross cutting S1 at 30 to 40 deg to the ca,  
-mod chlz, mod carbz (calc) w 20% vfg diss calc and  
thin calc seams pll fol  
-mod frac pred pll S1, w pred calc, hematite frac  
fil  
-a few secondary qtz calc vn pll fol to 1 to 2",  
ave 1/2", to 5% of rock  
-sulphide content, variable, from 113 to 145',  
0.5% py, trace cpy and po, as mineralization ass  
w carb bands and vn and minor vfg diss mineralization  
and from 145 to 192', 1% py, trace po, cpy, as above  
-locally from 113 to 118', weakly serz  
-at 113.5', 3" oxidized zone where the carb is  
stained orange  
-at 114.3', a few 1/4" calc vn pll fol w 1% diss  
py  
-at 115', 1" vfg granular qtz band pll fol w 2% diss  
po, trace cpy and py  
-at 115.5', 2" qtz band at 45 deg to the ca, w 2%  
diss po, trace cpy and py  
-at 118.5', a few 1/4" qtz bands pll fol, locally  
v bd app  
-at 124.8', 1.5" vfg qtz dolomite calc vn at 55 deg  
to the ca, w 5% diss magnetite, 2% py  
-at 125.3', 2" qtz calc vn pll fol w 5% diss magnetite,  
2% py,  
-from 127.5', to 128', fuchsite (5%) bearing banded  
dolomite vn pll fol  
-at 132', locally S2 fol strong cross cutting S1  
at 35 deg to the ca,  
-at 135 to 136', locally S2 fol strong cross cutting  
S1 at 35 deg to the ca,  
-from 137 to 138', S2 fol strong at 20 to 40 deg  
to the ca, cross cutting S1, w strong crenulation  
of S1

-at 138.1', 1" qtz vn pll fol w 3% diss py, trace  
po  
-at 142', 1/2" calc vn pll fol w 2% diss py  
-at 142.5', 1/2" calc qtz vn pll fol w 1% diss py  
-from 145.5 to 145.7', qtz vn w minor calc pll fol  
w 2% py  
-from 146 to 146.5', 6" zone where 1/4" calc seams  
pll fol to 30%, w ass 1% py  
-at 148.3', 1" qtz vn pll fol  
-at 149.6', a few 1/4" qtz calc vn pll fol w 1%  
diss py  
-from 150.5 to 151', 1/2" to 1" fg granular qtz  
calc vn pll fol to 30% of rock, w 5% ass fg diss  
py  
-at 151.5', 1/2" qtz calc vn pll fol w 3% diss py  
-at 153', 1" qtz calc vn pll fol  
-from 153 to 153.5', numerous 1/4" qtz calc seams pll  
fol to 20% of rock w 2% ass fg diss py  
-sch gradually steepens down hole, by 155 deg as pred  
60 deg to the ca,  
-at 155.8', a few 1/4" calc vn pll fol w 5% diss  
py  
-at 156.4', 1.5" qtz calc vn pll fol w 1% py as  
blebs to 1/16" at vn margins  
-at 157', 1/4" qtz calc vn pll fol w 5% fg diss  
py  
-from 157 to 158', thin 1/8 to 1/4" qtz calc vn pll  
fol to 25 % of rock w 2% ass f diss py  
-at 159.4', a few 1/4" qtz calc vn pll fol w 2%  
py  
-at 161', 2" qtz vn cross cuts locally highly con-  
torted fol at 50 deg to the ca, w 1% diss py cubes  
to 1/16"  
-from 161 to 161.5', locally intensely chlz, locally  
diss py cubes to 1/8" and 2%  
-from 161 to 165', locally sch is v strongly  
crenulated  
-from 170.5 to 172', thin highly contorted qtz calc  
seam to 1/4" at 70 deg to the ca, and 30% of rock  
locally  
-from 172 to 173', qtz-magnesite-calc vn and breccia-  
ted vn frag to 3", ave 1/2 to 1", to 60% of rock  
w ass 3% diss py, locally surrounding host rock is  
intensely chlz  
-at 176', 2" qtz calc vn pll fol  
-at 176.6', 1" qtz calc vn pll fol w 1% diss py  
-from 176.7 to 177.3', numerous brecciated frag to  
of qtz carb vn to 1", locally sch highly contorted  
at 0 to 90 deg to the ca, and rock is intensely  
chl ser altered, and v soft

- from 177.3 to 178', lamprophyric dyke, strongly sch sheared contacts and sch at 85 deg to the ca, rock composed of 40% small 1/16" iron carb blebs set in a ser(40%) biotite (20%) strongly sch ground mass
- at 179.5', a few 1/2" contorted qtz calc vn
- at 181.6', a few 1/2" qtz carb vn pll fol
- from 181.8 to 182.3', 6" lamprophyric dyke, as above (note that all lamprophyric dykes are cored by qtz carb vns and could be some type of alteration package)
- at 184', 1/2" qtz calc dolomite vn pll fol w 2% py
- at 188.7', 1/2" calc vn pll fol w minor diss py
- at 189.5', 2" calc vn pll fol
- from 190 to 192', grad coarsens, weak rem xlline tex app, however, no sharp contact w underlying unit

192

-222'

FG XLLINE BAS OR INTRUSIVE GABBROIC EQ

- rock is fg, dark green, weakly to mod sch at 55 deg to the ca, weakly chlz, weakly carbz w 10% diss calc as replacement of or alteration of plagioclase where mod sch
- from 200 to 218', plagioclase visible to 40% of rock, w weak epidote alteration
- rock is weakly frac pred pll fol w calc, chl, some hematite frac fil
- mod magnetic in places w diss magnetite crystals to 1/16", but distribution is v sporadic, ranging from 0 to 5%
- a few secondary qtz calc vn to 2 to 3", pred pll fol
- 0.5% f diss cubic py
- contacts poor defined, w more sch, f basalt units both above and below
- at 192.5', 1/2" calc vn pll fol
- at 194.3', 3" contorted calc qtz epidote altered plagioclase vn pll fol
- at 194.5', to 195', numerous 1/4" calc w minor qtz vn pll fol to 30% of rock
- at 195.5' 2" qtz calc vn pll fol
- from 195.7 to 196.3', contorted qtz calc vn w pll fol to 30% of rock



- from 198.3', 3" qtz calc vn pll fol,
- at 201.2', 3" qtz calc vn pll fol
- at 201.6', 1" qtz calc vn pll fol
- at 213.5', 1/2" calc vn pll fol
- at 217', 3" qtz calc vn pll fol
- from 221 to 221.5', 1 to 2" qtz calc vn pll fol to 45% of rock, w minor diss cpy
- at 221.6 and 221.8', 1" qtz calc vn pll fol

222 -256.5'

- MOD CHLZ, MOD TO STRONGLY CARBZ(CALC)BAS
- rock a med green, vfg, mod to strongly sch at 60 deg to the ca, mod chlz, relatively soft, and mod to strongly carbz w calc to 25 to 30% of rock as vfg diss pervasive alteration and thin elongate blebs to 1/8" that resemble stretched amygdules and thin slips and seams pll fol
  - rock is mod frac pred pll fol w calc frac fil
  - a few secondary qtz calc vn to 1/2" pll fol
  - sulphide content, 0.25% py, ass pred w secondary carb seams, v minor fg diss mineralization
  - at 222.5', 1/2" qtz calc vn pll fol
  - at 226.4', a few 1/2" qtz calc vn pll fol
  - at 228.5', a few 1/4" qtz calc vn pll fol w 1% diss py
  - at 233', 1/4" qtz calc vn pll fol w 3% py as blebs to 1/8"
  - at 235.2', 1/4" qtz calc vn pll fol w 1% py
  - at 236.5', 1/2" harder dolomite vn pll fol
  - at 243.7', a few 1/4" hard, Fe/Mg carb vn pll fol w trace py
  - at 245.5', 1/4" calc vn w a few 1/16" py blebs
  - from 249 to 250', sch locally crenuated
  - at 250', 1/2" qtz calc vn pll fol
  - at 252.5', a few 1/4" calc vn pll fol
  - from 250 to 256.5', becomes lighter green, weakly ser
  - at 256.4', 1/2" qtz calc vn w 1% py

256.5 -270.5'

- MOD CHLZ, SERZ, CARBZ(CALC) ANDESITE TO BASALT
- rock is a light green to greyish green, v fg to aphanitic, mod to strongly sch at 60 to 65 deg to the ca, v soft, mod to strongly chl-ser altered, mod carbz w calc as thin slips pll sch and elongate blebs to 1/8" (stretched amygdules and boudinaged seams) and vfg diss mineralization, to 25% of rock
  - weak S2 as exhibited by cleavage on sch planes and visible on places cross cutting S1 at 50 deg to the ca,

- mod frac pred pll sch w calc, chl, and ser, frac fil
- numerous (to 10% of rock) secondary fg granular Fe/Mg carb and calc, and qtz calc bands to 1/4" pll fol, often boudinaged into frag app elongate blebs
- at 258.7', 1/2" fg qtz dolomite vn w 0.5% diss py
- at 259.5', 1/2" dolomite vn pll fol w 1% py
- at 260', 1" dolomite vn pll fol
- at 260.5', a few 1/4" dolomite - ser bands pll fol
- at 262.5', 1/2" qtz calc vn pll fol
- from 264 to 264.5', 1/4" qtz calc vn pll fol to 30% of rock, w py to 2%
- from 268.2 to 268.6', fg sugary tex re-crystallized qtz vn w minor ass dolomite and 10% py, trace as thin seams of vfg mineralization pll banded in vn, frac fil in vn, and vfg diss mineralization, py in places app nodular
- overall sulphide content 0.25% py, ass pred w thin qtz carb vn, and occ diss cubes

270.5 -271.7'

MINERALIZED BANDED QTZ CARB VN

- rock comprised of 70% qtz carb banded/vn at a crude orien of 55 to 60 deg to the ca, although very contorted to brecciated in places, w 20% thin intensely ser chl altered host rock bands and brecciated frag
- qtz ranges from white to jet black, fg re-crystallized and sugary tex, w minor ass calc
- sulphides to 10% as thin bands to 1/8" pll fol vfg diss mineralization in vn, 9% py, minor po cpy, and sph

271.7 -284.5'

MOD TO STRONGLY CHLZ CARBZ (CALC) ANDESITE TO BAS

- med green, vfg, strongly sch at 65 deg to the ca, soft, mod to strongly chlz, weakly serz and in a few places, mod carbz w 15% diss calc slips pll sch
- weakly to mod frac, pred pll sch w calc frac fil
- a few secondary qtz calc vn to 2" pred pll fol
- overall sulphide content, 0.5% fg diss py, trace po and cpy
- at 278', 3" brecciated qtz dolomite vn pll fol w intense 1/4" sil alteration halo, and 5% ass vfg diss py-po, trace cpy,

- at 278', 3" brecciated qtz dolomite vn pll fol w intense 1/4" sil alteration halo, and 5% ass vfg diss py-po, trace cpy,
- at 279', 1/2" qtz carb vn pll fol
- at 282', 3" vfg sugary tex qtz vn pll fol w 2% fg py
- at 282.3', a few 1/4" qtz calc vn pll fol w 3% py

284.5 -291.5'

MINERALIZED, QTZ CARB(VN) FLOODED, MOD CHLZ, CARBZ (CALC) ANDESITE TO BAS

- rock pred a med green, vfg, strongly sch at 60 to 65 deg to the ca, mod chlz to weakly serz, mod carbz w 15% diss calc and thin calc slips pll fol, altered andesite to bas, w numerous large strongly mineralized qtz carb vn and qtz carb rich sections
- weakly sil proximal major vn, as outlined below
- from 284.5 to 285.7', qtz calc vn to 2" and 80% of rock at 60 deg to the ca, although v contorted to brecciated in places, w ass 5% sulphides as vfg diss mineralization and occ semi massive seams pll fol, and frac fil, pred py, trace sph, locally host rock is intensely serz and sil
- from 285.7 to 287', chlz carbz bas, as above, w trace diss py
- from 287 to 288', fg granular sugary tex re-crystallized qtz w minor ass calc and dolomite vn at 60 deg to the ca, to 2 to 3", and 80% of rock, w ass 15% sulphide mineralization (15% po, 1% cpy, 1% py, trace sph, and trace magnetite) as vfg diss mineralization in vn, and occ semi massive 1/8" bands at vn margins
- from 288 to 288.5', dark green intensely chlz bas w 20% fg diss py and py cubes to 1/8", 1% po
- from 288.5 to 289', 6" sugary tex qtz calc vn w 3% py as cubes to 1/8" along frac in vn
- from 289 to 290', bas
- from 290 to 291.5', qtz calc vn to 3" and 80% of rock at orien ranging from 30 to 65 deg to the ca, w 15% ass sulphides (10% py, 5% po, trace cpy, and sph) as vfg diss mineralization and frac fil in vn

291.5 -300'

MOD CHLZ CARBZ(CALC) BAS

- med to dark green, vfg, mod sch at 60 deg to the ca,
- mod chlz, mod carbz, w 15 to 20% vfg diss calc and thin calc slips/seams to 1/32" pll fol
- mod frac pred pll fol w calc, minor chl frac fil
- 10% thin (to 1/2" ave 1/4") secondary qtz calc vn pll fol, often v contorted to boudinaged/brecciated
- sulphide content, trace fg diss py
- at 292.5', 1/2" qtz calc vn pll fol
- at 293.5', a few 1/2" qtz calc vn pll fol
- at 298.5', a few 1/2" qtz calc vn pll fol
- at 299.8', 1/2" qtz calc vn pll fol

300 -315.5'

FG XLLINE PORPHYRITIC BAS

- rock a fg, med green, only weakly sch at 60 to 65 deg to the ca, xlline app bas, w a vfg weakly chlz ground mass, and 40 to 45% small 1/32" to 1/16" anhedral to subhedral white plagioclase crystals that are partially altered to and replaced by Fe/Mg and calc carb
- a few 1/8" phenocrysts of plagioclase
- a few vfg to aphanitic more strongly chlz bands pll fol to 2 to 3"
- weakly frac pred pll fol w calc frac fil
- a few secondary 1/4 to 1" calc and qtz calc vn pll fol
- v diabase app in places
- at 302.5', 1" yellow dolomite vn pll fol
- at 303', a few 1/4" qtz calc vn pll fol
- at 303.8', 2" fg more strongly chlz
- at 304.4', 3" fg more strongly chlz zone
- at 305', 1/2" calc vn pll fol
- at 306 to 306.5', fg more chlz zone, w a few thin 1/4" contorted qtz calc vn to 15% of rock
- at 310.5', 1/2" calc qtz vn pll fol
- at 313', 1" qtz calc vn pll fol
- at 313.5', 1" qtz calc vn at 0 deg to the ca,
- at 313.8', 1" qtz calc vn pll fol

-from 313 to 1315.5', becomes fg, more chl carb altered, more bas app  
-overall sulphide content 0.25% fg diss py

315.5 -328.5'

MOD TO STRONGLY CHLZ, CARBZ, (CALC) BAS  
-dark green vfg strongly sch at 65 to 70 deg to the ca, mod to strongly chlz, mod to strongly carbz w 25% fg diss calc slips pll sch  
-mod frac pred pll fol w calc and chl frac fil  
-numerous (to 10%) secondary qtz calc vn to 1 to 2", ave 1/4", often w minor ass py-po  
-weakly serz in a few places  
-from 319 to 319.5', thin granular qtz calc vn pll fol to 30% of rock  
-from 323.5 to 324', 1/4" contorted qtz calc vn  
-from 326 to 328.5', becomes lighter green, weakly serz  
-overall sulphide content 0.5% fg diss py

328.5 -359'

MINERALIZED, QTZ CARB VN RICH, STRONGLY CHLZ, CARBZ, (CALC) BAS  
-rock a dark green, vfg to aphanitic, soft, mod to strongly sch at 65 to 70 deg to the ca, although sch is kinked, crenulated in places, and in places mod dev S2 fol cross cuts S1 at 35 deg to the ca, w a strong cleavage on S1 sch planes and an S2 related frac set  
-strongly chlz,  
-mod carbz w 15% thin calc seams pll fol  
-contains 20% thin 1/8" to 1" secondary fg granular qtz carb(both calc and dolomite) bands/vn pll fol although often contorted to brecciated/boudinaged into elongate frag pll fol lending agg app to unit in places  
-these bands usually contain 5% to 20% fg diss py po, w trace cpy and sph, to an ave 3% sulphides in unit 2% py, 1%po, w 1% fg diss py-po throughout rock  
-rock is mod to strongly frac pll S1 and S2, w pred py, calc, some qtz, chl, ser frac fil,  
-minor (1 to 2%) diss magnetite crystals to 1/16" and a few qtz carb bands  
-from 328.5 to 328.8', 4" qtz calc vn at 65 deg to the ca,  
-at 336', 4" qtz calc vn, 4" qtz calc vn pll fol  
-at 345', 2" qtz calc vn pll fol

359

-378.5'

MOD CHLZ, TO SERZ, MOD CARBZ (CALC) BAS

- rock a med to dark greyish green, vfg, mod sch at 60 to 65 deg to the ca, although sch is weakly kinked, and crenulated in places, relatively soft mod chlz, to weakly serz in places, w mod carbz, as 15% fg diss calc and thin calc slips pll fol, a few 1/8 to 1/4" elongate calc blebs pll fol that resemble amygdules
- mod frac pred pll fol w calc, minor chl, ser, and talc frac fil
- contains 10% thin (to 1/2" ave 1/4") dark grey fg granular pred Fe/Mg carb, minor qtz calc vn pll fol
- weak S2 fol visible in a few places cross cutting S1 at at 25 to 35 deg to the ca,
- overall sulphide content, 0.5% fg diss py and py ass w qtz calc bands trace po
- at 359.5', a few 1/4" qtz carb bands pll fol w 1% diss py
- at 361.7', a few 1/4" qtz calc vn pll fol w 1% diss py
- from 365 to 366.2', locally thin 1/4" qtz calc band pll fol to 35% of rock
- at 370.2', 1" qtz carb vn pll fol
- at 370.5', 1/2" contorted qtz calc vn pll fol
- at 372', 1/4" fg carb band w 5% diss py-po
- at 374.7', a few 1/4" boudinaged qtz carb bands pll fol w 1% py
- at 375.5', 1/2" carb band pll fol brecciated and boudinaged by thin ser - chl seams
- at 376.5', 1/2" qtz carb band pll fol
- at 377', a few 1/4" carb bands w 5% diss py
- at 378', 1" qtz vn pll fol

378.5

-380'

MINERALIZED QTZ CARB VN

- rock pred band/vn of grey to white qtz (50%) w 30% ass hard pink to white dolomite/ankerite, minor calc, and 15% thin strongly chlz to serz bands of wallrock
- contains 2% sulphides as mineralization at vn margins and diss in vn, 1% py, 1% po, trace cpy
- vn is crudely orien at 65 deg to the ca, strongly frac at ran orien, w ser and talc frac fil

380 -398'

BANDED CARB-CHL-SER SCH (INTENSELY ALTERED MAFIC VOLCANIC)

- rock comprised of thin alternating bands banding-fol and ass strong sch at 60 to 65 deg to the ca, band ave 1/4", range from 1/16 to 1", of,
- 60% dark grey to greenish grey vfg soft strongly sch pred chl w minor ser, minor talc, and minor diss Fe/Mg carb, and
- 40% white to grey pred Fe/Mg carb, vfg granular, w minor ass ser and qtz
- carb bands look primary in places, and resemble secondary vn in places, often are brecciated to boudinaged into elongate frag pll fol
- rock is mod to strongly frac pred pll fol, w calc, ser, talc, chl, and py frac fil
- carb bands are occ mineralized, w overall sulphide content in unit to 2%, 1.5% py, 0.5% po, trace cpy and sph, as diss mineralization in carb bands and minor diss mineralization throughout rock

398 -402'

BANDED, BRECCIATED, INTENSELY CARBZ ROCK, OR FE/MG CARB VN

- rock pred a vfg granular dark grey hard Fe/Mg carb in crude 1/4" to 1/2" bands pll sch / fol at 65 deg to the ca, and separated by thin light green to brown ser seams that also brecciate rock in places to 5% of rock and occ by thin fg grey granular qtz stringers that brecciate rock, to 5%
- a few major secondary qtz carb vn to 2 to 3"
- sulphide content, 1%, pred py and trace po, as fg diss mineralization in secondary qtz carb vn, and frac fil in carb bands
- rock is intensely frac pred pll fol w ser and qtz frac fil
- from 398 to 398.5', rock is strongly brecciated by numerous thin 1/16" qtz stringers

402 430'

MINERALIZED BANDED CHL TALC SER CARB SCH (INTENSELY ALTERED BAS-KOMATIITE)

- rock a v strongly fol, banded and sch at 65 to 70 deg to the ca, w a mod dev S2 sch cross cutting S1 at 0 to 20 deg to the ca, as exhibited by cleavage on S1 sch planes, and S2 related frac set

- rock comprised of bands of v soft, dark greyish green to black
- chl - talc, occ w minor ser, to 40% of rock and
- fg granular grey hard Fe/Mg carb and ser bands
- ser carb bands occ w 5 to 10% ass qtz
- ser carb bands strongly boudinaged to brecciated in places
- rock is strongly frac pll S1 and S2, w chl, ser, calc, qtz, and talc frac fil
- a few large secondary qtz carb vn pll S1
- many fg grey carb ser bands and qtz carb bands are mineralized w up to 10 to 15% vfg diss py and po, and occ w 2 to 3% magnetite
- overall sulphide content, 3%, 2% py, 1% po, trace cpy, pred as mineralization ass w carb bands and vn

430 -439.5'

STRONGLY CHLZ BAS

- rock a dark green, vfg to aphanitic, strongly chlz soft bas
- weakly to mod sch at 65 to 70 deg to the ca,
- only weakly carbz w 5% diss calc slips
- mod frac pred pll sch w pred calc frac fil
- numerous secondary qtz calc vn to 6 to 8", ave 1 to 2", to 10% of rock
- overall sulphide content, 0.5% fg diss py, trace cpy
- at 431.3', 1" calc vn pll fol, w a few 1/2" bleached app ser rich bands pll fol, and occ semi massive py blebs to 1/4"
- from 432 to 432.5', 1/2" qtz vn pll fol to 25% of rock
- at 435', 1" qtz calc vn pll fol
- from 436 to 437', qtz calc vn to 2" to 40% of rock,
- from 437 to 438', qtz calc vn pll fol w minor cpy at margins
- at 439.4', 2" qtz calc vn pll fol



439.5 -458'

MOD CHLZ, MOD CARBZ, (CALC) BAS (KOMATIITE)  
-fg med to dark green, soft, strongly sch at 70 deg  
to the ca,  
-mod chlz, weakly talcos, mod to strongly carbz,  
w 25% to 30% small elongate slips of calc to 1/32"  
and thin calc seams pll fol  
-mod to strongly frac pred pll fol, w calc, some talc,  
ser frac fil  
-a few secondary qtz calc vn pll fol to 2", ave 1/4  
to 1/2"  
-0.5% fg diss py, trace cpy  
-at 442', 1/2" qtz calc vn  
-at 445', 1" qtz calc vn pll fol  
-at 449.5', 4" brecciated qtz calc vn pll fol w  
trace cpy

BOULDER LAKE PROPERTY BL-86-11

DIP TESTS

@ 250' - 40°

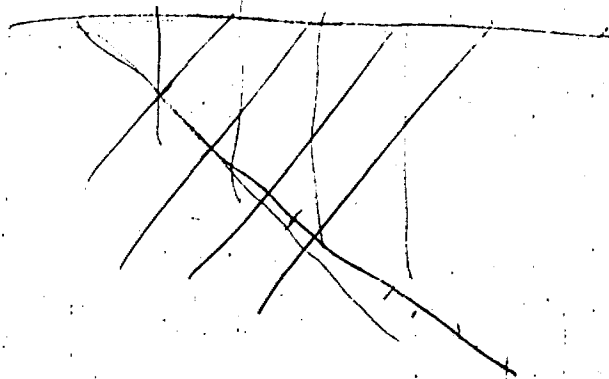
@ 488' - 30°

STRATIGRAPHY DIPPING @ 80°N

HOLE SUMMARY BL-86-11

COLLAR LOCATION: L76W, 14+00N  
BEARING: 180°  
INCLINATION: -45°  
TOTAL DEPTH: 488'  
TARGET: Strong IP Anomaly Centered Beneath  
L76W, 11+50N

0	-59'	OVERBURDEN
59	-110'	REDDISH BROWN REGOLITHIC CLAY
110	-136'	F.G. SCHISTOSE BASALT OR EQUIVALENT INTRUSIVE GABBRO
136	-139'	BRIGHT ORANGE REGOLITHIC CLAY
139	-142'	F.G. BASALT
142	-158'	ORANGE REGOLITHIC CLAY
158	-208'	STRONGLY CHLORITIZED BASALT
208	-241.5'	STRONGLY CHLORITIZED, MODERATELY CARBONATIZED BASALT
241.5	-265'	F.G. CRYSTALLINE BASALT OR EQUIVALENT INTRUSIVE GABBRO
265	-364'	STRONGLY CHLORITIZED, CARBONATIZED ANDESITE TO BASALT
364	-429.2'	QUARTZ-CARBONATE (VEIN) FLOODED, STRONGLY SERICITIZED CARBONATIZED ROCK
429.2	-431'	QUARTZ-CARBONATE VEIN
431	-488'	STRONGLY CHLORITIZED TO SERICITIZED CARBONATIZED QUARTZ-CARBONATE (VEIN) FLOODED BASALT



D. McAvoy

JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-11

- 0 -59' OVERBURDEN
- 59 -110' REDDISH BROWN REG CLAY (W A FEW REM BAS FRAG)  
-rock pred a v soft bright orange to reddish brown to reg clay w a few rem recognizable fg sch (at ave orien 60 deg to ca) chl'z bas frag  
-from 87 to 89', fg dark green bas, mod sch at 60 deg to ca
- 110 -136' FG TO MED G STRONG SCH BAS OR INTRUSIVE EQ GABBRO  
-rock a dark green, strongly sch, at 40 to 50 deg to the ca, ave orien 45 deg to ca, mod chl'z fg to med g bas or intrusive eq gabbro  
-xline texture poor dev overprinted by sch, but composed of approx., 60% mod chl'd ferro mags and 40% white altered (kaolinite) plagioclase  
-weakly to mod oxidized, partially altered to reg clay in places  
-mod frac pred pll sch, frac are vuggy (once carb filled), now hematite-limonite filled w some chl  
-no visible sulphides
- 136 -139' BRIGHT ORANGE REG CLAY  
-v soft, bright orange, intensely altered rock to reg clay, w a weak remnant sch at 45 deg to the ca,
- 139 -142' FG BASALT  
-dark green, mod sch at 50 deg to the ca, mod chl'z mod frac (frac are vuggy, once carb fil)
- 142 -158' ORANGE REG CLAY (WITH REMNANT FRAG OF BAS, AND QTZ)  
-pred soft, bright orange, intensely oxidized altered reg clay, w a remnant strong sch at 45 deg to the ca,  
-a few green remnant chl'z bas frag, and from 155' to 158', numerous vfg sugary texture white qtz vn frag
- 158 -208' STRONGLY SCH CHL'Z BAS  
-rock a dark green, strongly sch at orien ranging from 40 deg to 70 deg to ca, pred at 65 to 70 deg to the ca, sheared appearing, strongly chl'z, soft, strongly frac (pred pll sch) altered bas frac are vuggy, pred chl fil w a few calc fil frac towards 208', minor hematite frac fil  
-a few secondary qtz calc vn pred pll fol to 1 to 2" ave 1/4 to 1/2"  
-sch strongly contorted in places  
-from 158 to 178', fol at 40 to 50 deg to ca, steepens to 65 to 70 deg at 178'  
-at 201', 2" qtz calc vn pll fol  
-at 207.8' 1" qtz calc vn pll fol  
-trace diss py  
-arb contact at 208' with underlying less sch less chl'z unit.

STRONGLY CHL'Z, MOD CARB'Z (CALC) AND. TO BAS  
 -rock a dark green, vfg, w a few fg section, mod  
 sch (at orien ranging from 60 to 70 deg to the ca,  
 pred 70 deg to the ca,) soft, strongly chl'z,  
 mod carbz, with 15 to 20% thin calc seams to 1/16"  
 pll fol, and minor (5%) vfg diss calc in places  
 -mod frac pred pll sch w calc, chl, minor hem frac fi  
 -a few secondary qtz calc vn to 4 to 5", ave 1/2 to  
 1", pred pll fol  
 -a few mottled app zones, where clots blebs to 1/16"  
 and 10 to 15% of yellow FE/MG carb (porphyroblasts?)  
 and ass 15 to 20% diss biotite  
 -at 208', 2" qtz calc vn pll fol  
 -at 208.5', 1" grey qtz minor calc vn pll fol  
 -at 209.2', 1.5" grey qtz vn pll fol  
 -at 211', 1" qtz minor calc vn pll fol  
 -at 213', a few contorted 1" qtz minor calc vn  
 -at 213.8', 3" mottled app zone w weak ass epidote  
 alteration  
 -from 218', to 219', white qtz vn pll fol w minor  
 ass calc as frac fil in vn  
 -from 221.5', to 223', mottled zone, locally w 20 to  
 30% diss biotite and thin bio bands pll sch, and 25%  
 small 1/16" iron/magnesium carb porphyroblasts,  
 locally w 1% fg diss py, trace po  
 -at 224.8', 1/2" qtz calc vn pll fol  
 -at 225.7', 2" biotite rich (30%) zone  
 -at 232.5', 1" qtz calc vn pll fol w minor py and cpy  
 at rims  
 -from 232.5' to 234', locally intensely frac pll fol  
 w calc infil frac to 35% of rock, w ass 2% diss py  
 -at 234.2', 1" qtz calc vn pll fol  
 -at 234.7', 2" qtz calc vn pll fol  
 -at 235', 4" qtz calc vn pll fol  
 -at 235.6', a few 1/2" qtz calc vn pll fol locally  
 w minor py and cpy at vn margins  
 -at 239.5', 1" qtz calc vn pll fol w a few 1/4"  
 cpy blebs  
 -overall sulphide content, 0.5% py, trace po and  
 cpy, pred as mineralization ass w qtz carb bands  
 and v minor diss mineralization  
 -arb contact w underlying slightly coarser, xlline  
 app unit

241.5 -265'

FG XLLINE BAS OR INTRUSIVE EQ GABBRO

- rock a fg xlline app med green bas or gabbro
- weakly sch at orien ranging from 50 to 60 deg to the ca,
- relatively soft, strongly chl'z
- only v weakly carb'z w a few thin calc slips pll fol and in places minor (less than 5%) fg diss calc
- mod frac pred pll sch although numerous other orien are present, w pred calc, some qtz, chl, hem, and epidote frac fil
- a few (to 5% of rock) secondary qtz calc vn pred pll fol
- weakly porphyritic, w a few 1/8" saussuritized plagioclase phenocrysts
- a few vfg to aphanitic zones
- at 243.5', 2" mottled calc epidote vn at 0 deg to the ca
- at 246.5 to 247.2', vfg to aphanitic zone
- at 250', 1" contorted brecciated qtz calc epidote vn
- from 252 to 256', strongly frac, pred pll sch w a cross cutting secondary sch at 45 deg to the ca, locally thin 1/4" qtz calc vn/bands pll fol to 10% of rock
- at 257.8', 1" qtz vn pll fol
- at 258.5', a few 1/4" qtz calc epidote vn pll fol
- at 259.6', 1" qtz calc epidote vn pll fol
- from 260 to 260.5', locally py blebs in 1/4" calc seam to 1/8" and 2%
- at 262', 1" qtz calc vn pll fol
- from 263 to 265', becomes increasingly sch, calc rich,
- overall sulphide content, 0.5% py, trace po, cpy, as mineralization ass w calc seams and calc fil frac, v minor fg diss mineralization.

## STRONGLY CHL'Z CARBZ ANDESITE TO BASALT

- rock a med green to dark green in places, strongly sch, at orien ranging from 60 to 70 deg to the ca, (sch is strongly kinked, crenulated in places) and banded appearing pll sch, relatively soft
- strongly chl'z, strongly carbz, w 25 to 30% calc as thin 1/32 to 1/16" seams pll sch and vfg diss mineralization, calc seams are boudinaged and brecciated in places, resembling tuff frag, vfg and to basalt
- mod frac, pred pll sch, although other orien are present, w pred calc, minor qtz, chl, ser, and py frac fil
- numerous (to 10 to 15% of rock) thin (1/8" to 3 to 4", ave. 1/4") secondary qtz calc and minor harder dolomite - ankerite vn pll fol, again often boudinaged and brecciated into elongate frag pll fol lending frag app to unit
- minor (less than 1%) diss magnetite crystals to 1/16" in places
- sulphide content, variable, from 265' to 278', 1% py, trace po, and cpy, as mineralization ass w thin calc seams and calc fil frac, minor vfg diss mineralization
- from 278' to 293', 2% py, trace cpy, and po as mineralization ass pred w qtz calc vn and thin calc seams pll fol
- from 293', to 364', 0.5% py, trace po, cpy, as mineralization ass w qtz calc seams, and minor fg diss mineralization
- at 265', 1" fg granular calc vn pll sch w 2% py
- at 272.5', 3" qtz calc vn pll fol
- at 274', qtz calc vn cross cuts fol at 60 deg to the ca
- from 274 to 274.5', sch is strongly kinked and crenulated
- at 275.5', 1" granular qtz calc vn pll fol
- at 277.8', 3" fg granular qtz calc vn pll fol w 2% diss py
- at 279.5', 1/2" qtz calc vn pll fol w 3% py as blebs to 1/8"
- at 279.7', a few 1/4" qtz calc vn pll fol
- at 281', 2" qtz calc vn pll fol and 2% py locally minor diss biotite around vn
- at 283', 1/2" qtz calc vn pll fol w 2% py
- at 284', 1/2" fg granular qtz calc vn pll fol w 5% py and 5% magnetite
- at 284.6', 1/2" fg granular qtz calc vn w 10% fg py
- at 285.6', 1" calc minor qtz vn pll fol w 5% diss py

- at 287.5', 1" calc-qtz vn pll fol w 3% py, 3% magnetite
- at 290.2', 1" bright pink fg granular qtz carb vn at 80 deg to the ca, w 2% py at rims
- at 290.4' to 291', qtz calc vn at 65 deg to the ca,
- from 291' to 292', numerous 1/2" calc vn pll fol w 2% py
- from 292', to 292.5', fg granular grey qtz calc dolomite vn to 2" and 80% of rock w 5% diss py 2% magnetite
- at 302.5', 4" zone where fg qtz carb vn pll fol to 80% of rock, w 5% diss magnetite crystals to 1/16" and 2% py
- at 303', 1/2" carb vn w 5% py blebs to 1/4"
- from 303.8 to 304.3', 6" zone where qtz dolomite calc vn to 80% of rock, w 2% magnetite and 2% py
- at 306', a few 1/2" qtz calc vn pll fol
- at 317.5', 1/2" qtz calc vn pll fol w a few diss 1/16" magnetite crystals
- from 320 to 321', 3% diss magnetite
- from 322 to 323', v porphyroblastic, w 25% 1/16" iron/magnesium carb porphyroblasts
- from 324.5 to 327.5', 2% diss magnetite crystals
- from 327.5 to 329.5', v porphyroblastic w 20% 1/8" FE/MG carb porphyroblasts
- from 330.5 to 331', porphyroblastic w 20% 1/16" FE/MG carb blebs
- at 333.5', 1" calc dolomite vn pll fol
- from 334 to 345', v fragmental app, w 20% carb blebs elongate pll fol
- at 337.7', 1" calc dolomite vn pll fol
- at 348', 1" qtz calc vn pll fol
- at 349.5 to 350.3', numerous 1/4" qtz calc vn pll fol w 3% diss py
- at 350.3', 1" qtz calc dolomite vn pll fol w 1% py
- at 353 to 356.3', elongate carb blebs pll fol to 20% of rock, v frag app
- at 357.5', 3" fg qtz calc dolomite vn w 2% py
- from 361.5 to 362.8', numerous 1 to 2" qtz calc dolomite vn pll fol to 60% of rock w minor ass diss py
- at 363.7', 3" qtz calc vn pll fol
- from 358', alteration becomes increasingly ser, and carb becomes increasingly iron/magnesium rich



QTZ CARB (VN) FLOODED, BANDED, STRONGLY SER'Z  
CARBZ ROCK (ALTERED BASALT)

- rock exhibits a highly variable app due to varying intensities of alteration and sch, but pred a light green, soft, fg, (remnant fg xlline texture) strongly sch, at highly variable orien ranging from 55 to 75 deg to the ca, w an ave. orien of 65 deg to the ca, and, w a mod to strong S2 sch cross cutting S1 at 30 to 60 deg to the ca, strongly banded app (pll S1) w carb rich bands vs ser rich bands
- v soft, v strongly serz, and strongly carbz, w 25 to 30% vfg diss pred iron/magnesium carb, some calc in bands and as pervasive alteration
- some talc alteration, as thin darker green to bluish green talc rich bands pll fol
- strongly frac pll S1 and S2, w pred calc, some qtz, chl, ser, talc, sulphide frac fil
- secondary qtz carb vn to 2 to 3", ave. 1/4 to 1/2" pred pll fol, but usually v contorted to brecciated to 20% of rock
- sulphide content, ave. 1%, 0.75% py, 0.25% po, and trace cpy, pred as mineralization ass w qtz carb vn and vfg diss mineralization
- rock is porphyritic in places, w 5% small (to 1/16") dark green translucent ferromagnesium crystals (chloritoid ?)
- at 366.5', 1" calc vn pll fol
- at 368.5', 5" jet black vfg sugary textured qtz vn at 60 deg to the ca, vn is strongly frac w calc, chl, and talc frac fil, and 0.5% diss py
- at 369.3', 369.4', and 369.6', 1" jet black sugary textured qtz calc vn pll fol locally at 65 deg to the ca,
- at 370.5', 1/2" qtz calc vn pll fol w a few 1/16" cpy blebs
- from 374.5 to 377', thin dark grey fg sugary textured qtz calc vn pll fol to 1/2" and 30% of rock w ass 5% sulphides and sulphide frac fil in vn (3% py, 1.5% po, 0.5% cpy)
- from 377 to 378.5', jet black fg sugary textured qtz vn to 2" at random or brecciate rock, host frag 1 to 2" are intensely altered to talc, chl, ser, and carb, w 1% diss py
- from 379 to 379.5', 6" jet black sugary textured qtz vn w a few 1/4" py - po blebs
- from 383.9 to 384.4', numerous highly contored 1/2" calc-ser-dolomite bands from 45 to 90 deg to the ca, w 3% diss sulphides (2% py, 1% po)
- from 384.4 to 384.6', 3" qtz calc vn w 1% py-po

- from 384.4 to 386', v banded app, fol locally at 45 to 50 deg to the ca, locally 1% diss py
- at 388.3', 1" brecciated black qtz carb vn pll fol at 55 deg
- at 389.6' 1" brecciated black qtz carb vn at 60 deg
- at 393', 3" brecciated black qtz calc vn pll fol
- from 397 to 400', strongly oxidized, all carb is stained bright orange
- at 400', 3" qtz vn at 25 deg to the ca,
- from 403.5', to 405', white fg granular dolomite minor qtz ser bands to 1/2" and 70% of rock
- from 407 to 407.5', white dolomite bands pll fol at 65 deg to the ca, to 1/4" and 60 % of rock
- from 410', 414', v strongly banded at 70 deg to the ca, w alternating 1/8 to 1/4" dolomite rich vs ser rich bands, carb locally to 50% of rock
- at 421', 1" qtz calc vn pll fol,
- from 421 to 424', dolomite minor qtz ser vn pll fol at 70 deg to the ca, to 1 to 2" and 60% of rock locally w 5% thin bright light green fuchsite slips

429.2 -431'

QTZ CARB VN

- pred grey vfg sugary textured qtz, w 30% ass med g xlline calc, and 5% chl inclusions, crudely fol at 70 deg to the ca, and no visible sulphides

431 -488'

STRONGLY CHL'Z TO SERZ, CARBZ, QTZ CARB VN RICH BASALT

- rock pred a soft light to med green, strongly chlz and serz, and strongly carbz, w 25% diss calc and thin calc slips/seams pll sch
- v strongly sch at ave orien 65 deg to the ca, although highly variable from 60 to 80 deg to the ca, w a strong S2 sch at 0 to 20 deg to the ca, cross cutting the S1, as exhibited by the related frac sets and cleverages on S1 sch plains
- strongly frac, pll S1 and S2, w pred calc, some ser, talc, qtz, dolomite, py frac fil
- secondary qtz calc and qtz dolomite vn to 3 to 4" ave 1/4 to 1/2" pred pll S1, to 25 to 30% of rock
- strongly banded app in places w ser-carb rich vs chl rich bands pll fol

sulphide content is variable, as outlined below

- from 431 to 434', 3% sulphides, 1.5% po, 1.5% py trace cpy, trace sph, pred ass w qtz carb vn, and some minor diss mineralization
- at 431.1', 2" black qtz vn pll fol
- from 431.3 to 431.5', numerous 1/2 to 1" dolomite vn pll fol w ass 5% diss po, trace py, cpy
- at 431.6', 1" brecciated black qtz vn pll fol
- at 431.7', 432', thin carb bands to 80% of rock
- at 432.3', 3" brecciated black qtz vn w 3% diss po-py-cpy
- from 433 to 434', carb bands pll fol to 70% of rock w 3% diss py-po
- from 434 to 436', contorted to brecciated white to grey cherty qtz and beige dolomite vn to 6", ave 2 to 3", pred pll fol but highly contorted, w ass 3% diss magnetite crystals to 1/16", and 1% fg diss po, surrounding wall rock is intensely chlz looks exhalative, maybe a thin interflow horizon
- from 436 to 438', altered basalt, w 0.5% diss py
- from 438 to 441.5', grey cherty qtz and beige dolomite vn to 2 to 3", ave 1", pll fol, to 40% of rock, w ass 5% diss magnetite crystals and 5% sulphides (3% po, 2% py, trace sph, cpy) as vfg diss mineralization in vn and thin 1/16" seams at vn margins, surrounding wall rock is intensely chlz
- from 441.5 to 454', sulphides 0.5%, pred po, trace py and cpy, ass pred w thin qtz carb vn
- at 447', 3" banded dolomite vn pll fol
- at 447.5', 1/2" dolomite vn pll fol w 5% diss py-po-cpy
- at 449.2', 1" qtz carb vn pll fol
- from 450 to 450.5', carb vn pll fol to 1" and 50% of rock
- at 450.6', 2" contorted qtz carb vn
- at 452', 3" qtz calc vn pll fol
- at 453', 1" qtz calc vn pll fol
- from 454 to 456.5', dolomite vn w minor ass qtz to 70% of rock w ass 1% diss py, strongly frac, w locally talc frac fil
- from 458 to 459', thin grey qtz calc vn pll fol to 1" and 40% of rock w 3% diss py-po
- from 459', 0.5% py-po
- from 462.4', 3" qtz calc vn pll fol

- at 462.7', 2" qtz calc vn pll fol
- at 463.5', a few 1/2" qtz calc vn pll fol
- from 464 to 464.5', qtz carb vn pll fol to 70% of rock,
- at 468.3', a few 1" calc qtz vn pll fol
- from 477 to 478', 2" qtz calc vn at 0 deg to the ca
- from 478.5 to 479.2', numerous 1" qtz calc vn pll fol to 40% of rock

BOULDER LAKE PROPERTY BL-86-12

## DIP TESTS:

① 250' 38°

② 471' 31°

STRATIGRAPHY DIPPING  
③ 75° N.HOLE SUMMARY BL-86-12

COLLAR LOCATION: L4W 11+50N  
 BEARING: 180°  
 INCLINATION: -45°  
 TOTAL DEPTH: 471'  
 TARGET: IP Anomaly Centered Beneath L4W, 9+00N

0	-10'	OVERBURDEN
10	-34.5'	CHLORITE-CARBONATE-SERICITE SCHIST
34.5	-51.5'	STRONGLY CARBONATIZED, MODERATELY CHLORITIZED SERICITIZED ANDESITE TO BASALT
51.5	-55'	ANDSITE TO BASALT
55	-68'	STRONGLY CARBONATIZED, MODERATELY CHLORITIZED, SERICITIZED ANDESITE TO BASALT
<u>68</u>	-73'	STRONGLY CARBONATIZED, MODERATELY CHLORITIZED BASALT
73	-82'	MINERALIZED (3% PY) QUARTZ-CARBONATE (VEIN) FLOODED STRONGLY CHLORITIZED, CARBONATIZED BASALT
<u>82</u>	-116'	MINERALIZED (4% PY, 1% PO) QUARTZ-CARBONATE (VEIN) FLOODED INTENSELY SERICITIZED ROCK, WITH STRONG S1, S2, SCHISTOSITIES
116	-155'	STRONGLY CARBONATIZED, MODERATELY SERICITIZED, CHLORITIZED ANDSITE TO BASALT
155	-190'	MODERATELY CHLORITIZED, CARBONATIZED, WEAKLY SERICITIZED BASALT.
190	-285.5'	MODERATELY CHLORITIZED, CARBONATIZED BASALT
285.5	-313'	MODERATELY CHLORITIZED, STRONGLY CARBONATIZED BASALT
313	-339'	STRONGLY CHLORITIZED, CARBONATIZED BASALT
339	-355.5'	SERICITE-CARBONATE SCHIST
355.5	-364'	MODERATELY CHLORITIZED, SERICITIZED, CARBONATIZED ANDESITE TO BASALT
<u>364</u>	-372.5'	MINERALIZED (3% PY) QUARTZ-CARBONATE (VEIN) FLOODED CHLORITE-CARBONATE-SERICITE SCHIST
372.5	-374.5'	QUARTZ-CARBONATE VEIN
374.5	-389'	SERICITE-CARBONATE SCHIST
389	-402'	BANDED, MINERALIZED (3% PY) INTENSELY SERICITIZED CARBONATIZED ROCK
<u>402</u>	-471'	STRONGLY SERICITIZED, MODERATELY CARBONATIZED ANDESITE TO BASALT

D. M. W. R.

JUNE 20, 86.

DESCRIPTIVE GEOLOGY NOTES

HOLE BL-86-12

- 0 -10' OVERBURDEN
- 10 -34.5' CHL-SER-CARB(CALC) SCHIST(INTENSELY ALTERED ANDESITE TO BAS)
- rock is soft, med green, vfg, strongly sch at an ave. orien of 60 deg to the ca, w a mod to strong S2 fol as exhibited by cleavages on sch planes and microfrac set at a cross cut orien of 45 deg to the ca,
  - v strongly altered, to ser(40%), calc,(30%) and chl(20%), calc is vfg diss blebs to 1/8" in chl ser ground mass, in places amygdaloidal app
  - numerous secondary calc and qtz calc (w minor harder Fe/Mg carb) vn to 2 to 3" ave 1/4 to 1/2", pred pll fol and to 10% of rock
  - locally strongly oxidized in places w alteration of carb to siderite/hematite
  - mod frac pll S1 and S2, w pred calc, minor ser hematite, and chl frac fil
  - sch is strongly kinked and crenulated in places
  - sulphide content, ave 1% py, pred as vfg diss mineralization in carb vn where present to 3 to 5%, and minor frac fil, and minor vfg diss mineralization in host
  - carb vn contain minor magnetite in places
  - from 10 to 12', v strongly oxidized, w carb staining bright orange
  - from 13 to 14', strongly oxidized, w orange carb bands to 50% of rock
  - from 16 to 18', ser locally 60% of rock
  - at 20.5', 1" calc ser band pll fol w 5% py
  - from 21 to 22', numerous highly contorted qtz calc vn sub pll fol to 2", ave 1/2", to 40% of rock
  - at 24.5', 1/2" qtz-dolomite vn pll fol w 5% py
  - at 25', 1/2" siderite vn/band w 5% diss magnetite
  - at 26', a few siderite vn pll fol
  - from 26 to 29.5', strongly oxidized, and v intensely sheared/sch w sideritic bands and diss blebs to 50% of rock
  - at 29.5', 3" qtz calc vn pll fol
  - from 30 to 31', numerous elongate carb blebs to 1/4" lends frag app to rock, but probably stretched anygdules, locally rock app weakly autobrecciated
  - at 32', 3" calc qtz vn pll fol at 60 deg to the ca

- at 32.5', 5" calc-dolomite vn pll fol w 2% diss py blebs to 1/16" and 5% magnetite crystals to 1/8" vn is v strongly frac at a cross cut orien of 45 deg to the ca, w qtz and chl frac fil
- at 33.7', 1/2" qtz calc vn at 60 deg to the ca, w 3% diss py blebs to 1/8" and 5% magnetite
- at 34', 1" qtz calc vn pll fol w 3% py, 5% magnetite
- at 34.5', 1" light green sericite carb band pll fol w 10% py, 5% magnetite
- arb contact w underlying less chl rich unit

34.5      -51.5'

VERY STRONGLY CARBZ (CALC)MOD CHLZ-SERZ ANDESITE TO BAS

- rock a dark greyish green, vfg to aphanitic, mod to strongly sch at an ave orien of 55 deg to the ca, although sch is strongly kinked and crenulated in places
- strongly altered, w a vfg to aphanitic chl(40%) ser(20%) ground mass w 40% calc as irregular blebs to 1/4" and elongate pll fol (stretched amygdules) and thin boudinaged seams pll fol, and vfg diss pervasive alteration
- rock is soft
- a few more chl - ser rich zones
- numerous secondary qtz calc vn to 1" pred pll fol to 5% of rock
- mod frac pred pll fol w calc, minor chl and ser frac fil
- mod S2 fol visible in a few places cross cutting S1 at 35 to 40 deg to the ca,
- sulphide content, 1% vfg diss py, trace cpy, and minor mineralization ass w carb vn and as frac fil
- at 35.5', 1" calc qtz vn pll fol
- at 36.3', 1" contorted calc vn pll fol
- at 39', locally sch is strongly crenulated
- at 40', 4" zone where numerous 1" calc vn pll fol to 50% of rock
- from 40 to 41.5', numerous highly contorted 1/2" calc band to 30% of rock
- at 41.5', 2" calc vn pll fol
- from 46 to 51.5', more strongly chl(to 40% to 50%)
- at 49.5', 1/2" calc vn pll fol, locally sch is strongly crenulated, w a well dev S2 cross cutting S1 at 45 deg to the ca,
- at 50', 1/2" contorted qtz vn pll fol
- from 50.5 to 51.5', locally calc bands to 1/2" to 30% of rock



- 51.5      -55'      ANDESITE TO BASALT  
 -fg somewhat granular app weakly sch at 60 deg to the ca, weakly chl - ser altered, v weakly carbz (w less than 5% calc) andesite to bas dark grey, weakly frac pll fol w calc frac fil  
 -0.5% fg diss py and py frac fil
- 55          -68'      STRONGLY CARBZ(CALC) MOD CHLZ, SERZ, ANDESITE TO BASALT  
 -vfg to fg (weak rem app xlline tex) dark grey to greenish grey mod to strongly sch, sch at an ave orien of 55 deg to the ca, although kinked and crenulated in places, mod chlz, weakly serz, and v strongly carbz w 40% calc as vfg diss pervasive mineralization and thin slips and seams pll fol  
 -weak to mod dev S2 cross cutting S1 at 40 to 45 deg to the ca, w cleavages on S1 sch planes  
 -mod frac pred pll S1 and S2, w pred calc, minor qtz chl, ser and hematite frac fil  
 - a few secondary 1 to 2" qtz calc vn pll fol  
 - a few oxidized zones  
 -sulphide content, 0.5% diss py and py ass w carb vn  
 -from 55', to 56', locally 10% small carb blebs look porphyroblastic  
 -from 59 to 60', locally strongly oxidized, carb stained orange  
 -at 60', 1/2" calc vn pll fol  
 -at 61', 2" calc vn pll fol  
 -locally at 61.5', 2 to 3% fg diss magnetite  
 -at 63' 6" zone where 1/2" calc vn to 30% of rock  
 -at 64.5', 2" brecciated qtz calc vn pll fol
- 68          73'      STRONGLY CARBZ, MOD CHLZ, AMYGDALOIDAL BAS.  
 -strongly sch at 60 deg to the ca, although sch si v kinked and crenulated in places  
 -dark green, vfg to aphanitic, v strongly carbz w 30% vfg diss calc and 10 to 15% small elongate 1/8" calc blebs that are stretched amygdules  
 -mod chlz, weakly serz,  
 -mod frac pred pll fol  
 -a few secondary 1/4 to 1/2" qtz calc vn pll fol  
 -0.5% diss py

73

-82'

MINERALIZED, QTZ CARB(VN) FLOODED STRONGLY CHLZ  
CARBZ BAS

- rock pred a dark green, vfg to aphanitic, v soft v strongly sch at 60 deg to the ca, although sch is strongly kinked and crenulated in places
- v strongly chlz, strongly carbz w 20% vfg diss calc and amygdaloidal app calc blebs to 1/8" mod serz in places
- strong S2 sch cross cuts S1 at 40 deg to the ca, -rock contains 30% irregular vns or alteration bands of vfg granular qtz-calc-dolomitic carb usually w minor ser and chl lending light green colour, usually v contorted to brecciated and frag to 1 to 2", and usually w an ass vfg diss sulphide mineralization to 5 to 10%, pred py, w trace po and cpy, and often w 3 to 5% diss magnetite as crystals to 1/16"
- these vn or alteration bands are often boudinaged and brecciated into frag, lending agg app to rock in places, usually are more strongly affected by S2 fol, and are strongly microfrac pll S2 w qtz carb, and py frac fil
- overall sulphide content, 3% py, trace po and cpy, pred ass w qtz carb bands/vn, w minor diss mineralization and chlz bas

82

-116'

MINERALIZED, QTZ CARB(VN) FLOODED INTENSELY SERZ  
ROCK, W STRONG S2 FOL (PRECURSOR PROBABLY BASALTIC)

- rock a light greyish green, soft, intensely serz (w weak to mod chl alteration in a few places, and weak pervasive calc alteration) strongly to intensely sch altered andesite to bas
- sch at 60 to 65 deg to the ca, w a strong S2 as exhibited by cleavages on sch planes and microfrac cross cutting S1 at 35 to 40 deg to the ca,
- v strongly frac pll S1 and S2 w pred calc, qtz, chl, ser, and py frac fil
- contains 25 to 30 % bands pll fol (although usually strongly contorted to brecciated) to 1 to 2" ave 1/4 to 1/2" of vfg granular app Fe/Mg carb and calc, w minor qtz, resemble alteration bands as opposed to distinct vn
- alteration bands/vn are usually intensely frac, strongly affected by S2 fol, w qtz, carb, py, and ser frac fil
- alteration zones/vn are usually strongly mineralized w an ave of 5%, and to 10% in places, vfg diss py, trace cpy and po, and 1 to 2% magnetite,
- alteration zone/vn are brecciated into frag in places, lending agg app to rock
- rock contains 5% small 1/8" calc blebs that resemble rem stretched amygdules

- overall sulphide content, ave 5% (4% py, 1% po trace cpy and sph) pred as vfg diss mineralization ass w carb alteration bands, some minor vfg mineralization in sch ser rock
- from 82 to 83', massive white qtz calc vn
- at 84', 1" oxidized zone where carb is stained orange
- at 85', locally S2 sch is v well dev cross cutting S1 at 40 deg to the ca,
- from 85.3 to 86', locally v strongly oxidized, carb stained orange, to 40% of rock
- at 93', locally 1" carb band w 25% fg py
- at 93.5', 1.5" carb band w 10% py
- from 93 to 98', locally carb bands to 4" and 60% of rock w 4 to 5% diss py and py micro frac fil within the bands
- at 99.5', locally strong oxidized alteration halos around carb fil frac
- at 99.8', locally 1" carb band w 10% py, 3% magnetite
- from 100 to 100.5', locally carb bands w cross cutting S2 ass qtz to 80% of rock w 15% diss py
- at 101', 4" carb band w 15% diss py, trace po and magnetite
- at 101.5', 3" zone w 80% carb bands and 10% py
- at 104.5', 2" carb band w 10% py
- at 106', 10% py and 2" carb band
- at 109', 3" qtz carb band w 1" intense carbonatized halo w ass 10% po-py-cpy
- at 109.5', 2" qtz carb vn
- at 109.8', 110', 110.4', 1" qtz carb vn w 10% po, greater than py, greater than cpy
- at 110.5', 1" qtz carb vn w 10% po, 5% py, and 2% magnetite
- at 111', 2" carb vn w 10% py-po
- at 111.5', 1" carb band w 10% py
- at 112', 2" carb vn w 10% py-po
- from 109 to 112', sulphides ave 8%, 4% po, 4% py, trace cpy
- at 114.5', 3" qtz carb vn w 10% py
- at 115.5', 4" carb vn w 10% py

STRONGLY CARBZ, MOD SERZ, CHLZ, ANDESITE TO BAS  
-vfg to aphanitic, light greyish green, relatively soft, mod sch at 60 deg to the ca,  
-strongly serz, mod chlz, strongly carbz (calc) w 10 to 15% fg diss calc and 10% small 1/8" calc blebs that resemble amygdules, and occ thin seams pll fol to 10 %  
-numerous secondary qtz calc vn pred pll sub pll fol although highly contorted to brecciated in places  
-mod frac pred pll fol w calc, minor chl, qtz and py frac fil  
-weak S2 fol that cross cuts orien to 30 deg to the ca  
-weakly oxidized in places  
-bleached app in places  
-overall sulphide content, 1% py, trace cpy as frac fil, vfg diss mineralization, and mineralization ass w carb vn  
-at 119', 3" brecciated vn frag of qtz-calc-dolomite  
-at 119.5', 2" band pll fol of intensely carbz rock w 10% diss py  
-at 120', 1/2" dolomite ser band pll fol w 10% diss py  
-from 121.5', 122', numerous 1/4" contorted qtz calc dolomite vn pll fol to 10% of rock w ass 5% diss py and occ 1/4" semi massive py bands  
-from 123 to 124.5', locally strongly oxidized w carb stained orange  
-at 128', 1" qtz calc vn pll fol w 3% diss py, minor magnetite  
-at 129', a few contorted 1/16" py seams  
-at 129.7', 1" zone w 2% diss py  
-at 130.8', 1/2" zone w 3% diss py  
-at 132.8', 1/4" calc py band  
-at 133.2', 1/2" qtz calc vn pll fol  
-at 133.5', qtz carb vn w 5% diss py pll fol  
-at 133.8', 1/2" qtz calc vn at 50 deg to the ca, w trace diss cpy  
-at 134.2', 1/4" qtz dolomite band pll fol w 5% diss py  
-from 142 to 142.5', calc vn pll fol to 30% of rock  
-at 143', 1" brecciated frag of dolomite  
-at 143.2', 2" calc vn pll fol  
-at 143.7', 6" zone where numerous fg granular highly contorted to brecciated qtz calc vn w 5% diss py, minor magnetite  
-at 146.5', a few 1/2" qtz calc vn pll fol  
-at 148.8', a few 1/2" calc vn pll fol w 2% diss py  
-at 149.5', to 151.5', locally strongly oxidized  
-at 152', 2" qtz calc vn pll fol  
-from 152 to 155', strongly oxidized

-from 153 to 155', strong S2 fol cross cutting S1 at 45 deg to the ca,

155 -190'

MOD TO STRONGLY CHLZ, MOD CARBZ, WEAKLY SERZ BAS  
-med green, vfg to fg in places, relatively soft, mod to strongly sch at an ave orient of 65 deg to the ca, w a weak S2 fol cross cutting S1 at 30 to 45 deg to the ca.  
-mod to strongly chlz, mod serz, and mod carbz (calc) w 10 to 15% small diss 1/32" calc blebs and thin 1/16" calc seams pll fol  
-mod frac pred pll fol although other orient are present, w pred calc, minor qtz, chl, ser, and py frac fil  
-numerous secondary calc and qtz calc vn to 2 to 3" ave 1/2" , pred pll fol, and to 5% of rock  
-a few more strongly bleached app zones  
-from 156 to 156.5', strongly oxidized  
-at 156.6', 1/2" qtz calc vn pll fol  
-at 157', 1" qtz calc vn at 40 deg to the ca,  
-at 158', 1/2" qtz calc vn at 70 deg to the ca,  
-from 158.5 to 159.5', qtz calc vn to 1" pll fol to 30% of rock locally w minor diss py and cpy surrounding host rock is intensely chlz  
-from 160 to 162.5', qtz calc vn, usually v brecciated and contorted but crudely pll fol, to 1" and 30% of rock, surround host rock is intensely chlz, sulphides locally 2%, pred py, w trace po, as blebs to 1/4" in vn and wall rock  
-from 162.5 to 163', intensely sheared, sch, and altered to chl-ser-carb  
-from 163 to 163.5', 6" qtz calc vn, sugary tex recrystallized, w trace diss py-cpy  
-from 163.5 to 164', v strongly chl-ser altered  
-at 164', a few 1" qtz calc vn at 55 to 70 deg to the ca,  
-at 165', numerous 1/2" calc vn pll fol to 50% of rock  
-at 166.5', a few 1/2" calc vn pll fol  
-at 167.5', 1" qtz calc vn at 60 deg to the ca,  
-at 168.5', 1/2" qtz calc vn w numerous 1/4" py blebs  
-at 169', 6" zone where ser is v bright light green, app fuchsitic

- from 169 to 170', locally v strongly serz
- at 173.5', 1/2" calc vn pll fol
- at 185', 1/2" calc vn w 5% magnetite
- at 185.7', 1" highly contorted carb vn w 5% diss magnetite
- at 187.3', 1/2" contorted dolomite vn w 3% magnetite and 3% py
- at 187.8', 1" carb vn w thin cross cutting qtz seams, w 3% py, 2% magnetite
- at 189', 1/4" semimassive py band pll fol

190

-285.5'

MOD TO STRONGLY CHLZ, MOD TO STRONGLY CARBZ (CALC)  
 AMYGDALOIDAL BAS

- dark green, vfg to aphanitic, mod to strongly sch at an ave orien of 65 deg to the ca,
- mod to strongly chlz, mod serz, in a few places and mod to strongly carbz w 15% vfg diss calc, 15% thin 1/32" to 1/16" calc seams pll sch, and 5% small amygdaloidal app calc blebs often elongate pll fol
- weakly to mod frac, pred pll fol, w calc, minor qtz chl, ser frac fil
- numerous (to 5% of rock) secondary calc and qtz calc vn pred pll fol although contorted to brecciated in places
- mod S2 as exhibited by cleavages on sch planes at a cross cut orien of 30 deg to the ca,
- minor (2 to 3%) diss magnetite in a few places
- from 190 to 191.7', qtz carb vn, pred fg sugary tex qtz w white hard dolomite and minor calc, vn contains 25% thin jet black chl seams, which brecciate vn, and minor bright green fuchsitic seams, vn contains minor tourmaline
- at 197', 10% diss magnetite at vn margins and 25% f diss py
- from 193.8 to 194.5', secondary highly contorted to brecciated qtz calc vn to 1" and 30% of rock
- at 195.5', 1" qtz calc vn pll fol w 5% py, 3% magnetite
- at 196', 1" qtz calc vn w 1% py trace magnetite
- from 199.5 to 201.5', qtz carb vn to 90% of rock including a coarse g qtz calc vn from 199.5 to 200.5'
- at 200.5', 1" zone w 10% py
- from 200.6 to 200.9', chlz bas

- from 200.9 to 201.2', 3" calc vn w numerous py bands to 1/4"
- at 201.1 to 201.5', 4" calc vn w py bleb to 1/2" at vn margins
- overall sulphide content in vn unit, 2% py minor cpy
- at 202.5', 3" strongly carbz(Fe/Mg carb) zone
- at 206.5', 1" qtz calc vn pll fol
- from 206 to 208', locally sch is strongly kinked and crenulated
- from 210 to 211', dolomitic carb vn brecciated by 30% thin qtz ser stringers
- from 211 to 212', qtz dolomite vn to 1" and 30% of rock
- at 214.5', 1" dolomite vn brecciated by thin qtz stringers
- from 217.5', to 218', qtz calc vn w 20% f diss magnetite, 3% py
- at 218.2', 1" calc vn w minor py -magnetite at margins
- at 221.5', qtz calc vn pll fol w 20% f magnetite 5% py,
- at 223', 1" qtz carb vn w 5% py, 5% magnetite
- at 224', 1" cherty banded app qtz vn pll fol
- from 224 to 225.5', strongly frac at a cross cut orien of 25 deg to the ca,
- at 225.5', 4" qtz calc vn w 5% magnetite, 5% py
- from 226 to 226.5', a few 1/4" to 1/2" calc vn pll fol w 10% diss py
- at 228.5', 1/2" qtz calc vn w 5% py, 2% magnetite
- at 230.8', and 231', 1" calc vn pll fol
- from 233 to 235', qtz calc vn to 1" pll fol and 40% of rock w 1% py, trace magnetite
- at 239', a few 1/2" qtz calc vn pll fol w 10% magnetite, 5% py
- at 239.5 and 239.8', 1/2" qtz calc vn pll fol w 5% magnetite and 3% py
- at 242.6', a few 1/2" qtz calc vn w 10% magnetite 2 to 3% py
- at 244', 2" calc vn pll fol
- from 244 to 244.5', boudinaged and brecciated carb vn to 40% of rock
- at 246', 1" highly contorted qtz calc vn w 5% magnetite, 2% py, 1% cpy
- at 247.5', a few 1/2" qtz calc vn pll fol w 2% py, trace cpy
- at 248.6', a few qtz calc vn to 1/4" w 5% magnetite 3% py,
- at 250', 250.5', and 251', grey hard granular qtz calc vn to 2" and highly contorted, w 10% magnetite 5% py
- at 252', a few 1/2" qtz calc vn pll fol

- at 253', a few 1" qtz calc vn pll fol
- from 258 to 259.5', locally strongly oxidized
- from 263 to 263.5', locally qtz calc vn pll fol to 1/2" and 40% of rock
- at 264', a few 1/2" qtz calc vn pll fol
- from 267.5 to 268.5', numerous 1" qtz calc vn at 50 to 70 deg to the ca, often contorted to brecciated w 3% ass py, trace magnetite, locally well dev S2 frac set cross cutting S1 at 30 deg to the ca,
- at 268.7', 1/2" grey fg granular carb vn pll fol w 10% magnetite, 5% py
- from 269.5 to 270.2', several 2" qtz calc vn pll fol to 60% of rock w ass 2% py
- at 271', 1" qtz calc vn pll fol w 1% py
- at 276.5', 4" zone where numerous fg qtz calc bands pll fol w 5% py and 3% magnetite
- at 278.5', a few contorted 1/4" carb bands w 3% magnetite and 10% diss py
- at 279', 1/2" contorted qtz calc vn w 5% py and 3% magnetite
- from 279.5 to 280', qtz calc vn to 2" and 80% of rock w 1% py
- at 280.3', 1/2" qtz calc vn w 5% py and 5% magnetite
- at 280.7', 1/2" qtz calc vn w 3% py, and 1% magnetite, locally diss magnetite in host is 2 to 3%

285.5 -313'

MOD CHLZ, STRONGLY CARBZ(CALC) FG BAS

- med green, mod sch at 65 to 70 deg to the ca, w a weak S2 fol sub pll S1 at 35 to 40 deg to the ca,
- relatively soft, mod chlz, strongly carbz w 25% fg diss calc blebs and thin calc seams pll fol
- weak rem fg zlline tex
- weakly frac pred pll fol w calc, hematite, ser, chl, and py frac fil
- a few secondary qtz calc vn pred pll fol, to 1", usually w 1 to 2% fg diss py
- overall sulphide content, 0.5% py, pred as mineralization ass w carb vn and as frac fil, trace cpy
- from 287 to 289', locally abundant hematite frac fil
- from 290 to 290.5', locally 5% f diss magnetite crystals to 1/16"
- at 306', 1/2" qtz vn w 3% diss py
- from 310 to 311', a few 1" qtz calc vn pll fol w trace diss py
- from 311 to 313', sch becomes stronger, kinked and crenulated



-at 312', a few 1" calc vn pll fol  
-arb contact w underlying more strongly chlz, and  
fg unit

313

-339'

STRONGLY CHLZ, CARBZ(CALC) BAS

-dark green, vfg to aphanitic, mod sch at 65 to 70  
deg to the ca, strongly carbz, (calc) w 20% fg diss  
calc and 10% thin calc seams pll fol, and strongly  
chlz

-strongly frac pred pll fol w calc, minor qtz, ser  
chl, and py frac fil

-app amygdaloidal w 5% diss elongate pll fol 1/8"  
calc blebs

-numerous secondary qtz calc dolomite vn to 2 to 3"  
ave 1/2", to 10% of rock, often contorted to  
brecciated in places, and usually w ass 3 to 5%  
diss py and minor magnetite

-overall sulphide content, 2% py, trace cpy,  
as mineralization ass w qtz carb vn, and minor diss  
mineralization in host rock

-at 313', 1" calc vn pll fol w 3% diss py

-from 313.5 to 314', 1/2" qtz calc vn to 30% of  
rock w 1% diss py

-from 314 to 314.8', qtz calc chl vn, pred qtz  
brecciated by thin 1/16" calc and chl seams

-at 315.5', 1/16" semi massive cpy seam pll fol

-at 317', 1" qtz calc vn pll fol w 5% diss py

-at 317.5', 1/2" qtz calc vn pll fol w 3% diss py

-from 318 to 319', locally 3 to 5% magnetite  
as frac fil and diss blebs to 1/16" in host rock

-at 319.8', 1/2" calc vn pll fol

-at 319.9', 1/2" calc vn pll fol w 3% magnetite  
and 1% py

-at 320', 1/2" highly contorted calc seam w 5% py  
trace cpy and magnetite

-at 321', 1/2" calc vn pll fol w 1% py

-at 322.2', 1" calc vn w 1% py, 1% magnetite

-from 323.5', to 324', 1/2" qtz calc vn

-from 324.2' to 325', qtz calc vn to 80% of rock  
w 2% py, and 1% magnetite

-at 327', a few 1" qtz calc vn sub pll fol w 5%

py, and 2% magnetite, vn have cross cutting intensely  
frac halos

-from 328 to 328.5', 1/2" qtz calc vn pll fol to  
20% of rock w 1% ass py and trace magnetite

-at 329', 3" zone of intensely sch, ser dolomite  
altered rock, w trace fuchsite

-at 331.5', a few 1" qtz calc vn pll fol

-at 331.7', 1/4" carb vn pll fol w 10% py

-from 331.5 to 332', qtz calc dolomite vn to 3"  
and 90% of rock

-at 333.5', 4" zone where qtz dolomite vn pll fol  
to 1/2" and 80% of rock

-at 334', 2" qtz calc vn pll fol  
-at 336', 2" qtz calc vn pll fol w 2% py  
-from 337.5', to 339', thin calc band to 30% of rock  
w minor fuchsite

339

-355.5'

SERICITE-CARBONATE (FE/MG CARB) SCHIST (INTENSELY ALTERED MAFIC ROCK)

-rock a dark grey to green, intensely sch at 65 to 70 deg to the ca, w sch strongly kinked and crenulated in places  
-intensely altered to ser(60%) -carb(40%), carb pred Fe/Mg carb, relatively hard, w minor calc occurs as elongate blebs pll fol to 1/8", ave 1/32" in sericitic ground mass, lending a strong clastic or frag app to rock  
-rock is mod to strongly frac pll fol w carb, ser, qtz frac fil  
-numerous (to 10% of rock) thin secondary qtz dolomite vn to 1/2" pll fol  
-contains 1% fuchsite as thin slips and seams pll fol  
-v banded app in places, w 1/8" ser rich vrs carb rich bands  
-maybe an altered tuff, as contains distinct interbeds in places  
-weak S2 as exhibited by cleavages on S1 sch planes  
-contains 0.25% vfg diss py, trace cpy  
-at 341.6', 1/2" qtz calc vn pll fol  
-at 341.8', 1/2" qtz vn pll fol  
-from 342.5 to 343', distinct interbd, of similar lithology,  
-at 343.5', 1/2" qtz dolomite vn pll fol w 2% thin fuchsite slips in vn and at vn margins  
-from 343.9 to 344.5', distinct zone where fuchsite to 10% as thin slips pll fol, locally w numerous 1/2" qtz vn at 343.9', 341.2', 344.2', and surrounding host rock intensely bleached and carbz, locally py 1%  
-at 346', a few contorted to brecciated qtz dolomite vn to 1/2" w 3% ass fuchsite as diss slips at vn margins  
-at 347', 1/2" highly contorted to brecciated dolomite vn pll fol w fuchsite slips at rims  
-arb contact w underlying less carb rich and less banded app unit

355.5 -364'

MOD CHLZ-SERZ-CARBZ ANDESITE TO BAS

- rock vfg to aphanitic, med green, mod sch at 65 deg to the ca,
- mod to strongly altered, to chl(40%) ser(30%) and carb (pred Fe/Mg carb, to 20%)
- weakly banded app, w ser-carb vrs chl-carb rich bands to 1/4"
- mod frac pred pll fol w calc, minor chl, ser, and qtz frac fil
- app tuffaceous in places, w 1/8" carb blebs elongate pll fol, but maybe stretched amygdules
- contains 3 to 4 distinct light grey bleached intensely ser fg granular app interbd to 3 to 4" often w minor diss fuchsite, and py to 1%
- a few secondary qtz carb vn pll fol
- overall sulphide content 0.5% py, trace cpy
- at 355.5', to 356', light grey ser fg granular app interbd, sharp conformable contacts, w 1% diss py as blebs to 1/8"
- at 357.5 to 357.8', 4" fg grey ser carb rich interbd w sharp conformable contacts
- from 357.8 to 358.8', qtz calc vn strongly brecciated by numerous thin ser seams
- from 358.8 to 359', locally intensely chlz, v soft,
- at 361', 3" grey ser-carb rich interbd w 1% py
- at 362', 3" ser carb rich interbd w 1% py

364 -372.5'

MINERALIZED CHL-CARB-SER SCHIST W 30% QTZ CARB VN

- rock strongly sch at 70 deg to the ca,
- rock v strongly altered to pred ser, (40%) chl(20%) and carb(20% Fe/Mg carb and 20% calc)
- w 30 to 40% secondary highly contorted qtz carb (carb both dolomitic and calc ) vn to 1 to 2", pred pll fol but usually highly contorted to brecciated
- overall sulphide content, 3% py, as mineralization ass w vn and as thin seams pll fol
- at 364.8', 2" qtz vn pll fol
- at 365', 1" qtz calc vn pll fol w 2% py,
- at 366', a few 1/4" semi massive py bands pll fol
- at 368', 2" qtz calc vn pll fol
- from 368 to 370.5', vn to 6" and 70% of rock w ass 5% diss py and occ 1/8" semi massive py bands pll fol

- 372.5 -374.5' QTZ CARB VN  
 -from 372.5', to 373.8', strongly frac white qtz  
 -from 373.8 to 374.5', strongly frac dolomite,  
 w qtz and ser frac fil  
 -rock contains trace py
- 374.5 -389' SER CARB SCHIST (INTENSELY ALTERED BAS)  
 -rock a med grey, vfg, v soft, v strongly sch at  
 65 deg to the ca, w a strong S2 sch cross cutting  
 S1 at 40 deg to the ca, as exhibited by strong  
 cleavages on S1 sch planes and microfrac  
 -intensely altered, composed pred of ser (60%)  
 and vfg diss blebs of dolomitic carb to 30%, often  
 in crude bands to 1/4" pll fol  
 -mod to strongly frac, w set pll S1 and S2, w pred  
 calc, some ser, qtz and py frac fil  
 -contains a few secondary dolomitic carb and qtz vn  
 pll fol  
 -contains 0.5% diss py  
 -from 374.5 to 376', locally sch is intensely cont-  
 orted, ranges from 40 to 65 deg to the ca,  
 -at 378.8', a few 1/4" chl seams pll fol w 1%  
 py  
 -from 380 to 381', locally strongly banded app w  
 carb rich vrs ser rich bands to 1/4", w occ carb  
 bands containing up to 5% py  
 -at 381.2', a few 1/4" brecciated dolomitic vn w  
 py blebs to 1/4"  
 -from 388.3 to 389', qtz vn,
- 389 -402' BANDED, MINERALIZED, INTENSELY SERZ, CARBZ, (FE/MG  
 CARB) ROCK (ALTERED ANDESITE TO BAS)  
 -rock a vfg, med to dark grey, composed of  
 alternating bands of grey fg somewhat granular app  
 hard dolomitic carb w minor ass qtz, to 50% of  
 rock, bands to 1/2", ave 1/8 to 1/4", and  
 light grey to pink to green ser rich bands to 1/4"  
 -strongly fol and sch at 70 deg to the ca,  
 although highly contorted to brecciated in places,  
 w an intense S2 fol present pred at 0 deg to the  
 ca, although varies from 0 to 30 deg to the ca,  
 -difficult to distinguish secondary carb vn from  
 carb bands, but in places carb resembles vn, often  
 in strongly contorted to brecciated bands/vn  
 -rock is intensely micro frac pll S2 pred at 0 deg  
 to the ca, and strongly frac pll S1, w pred dolomitic  
 carb, some qtz, ser and py frac fil  
 -sulphide content, highly variable, from 389' to  
 391.5', 1% py as diss blebs to 1/8" and minor diss  
 mineralization in carb bands

-from 391.5 to 395', where hard qtz dolomitic carb vn to 70% of rock, py to 15% as vfg mineralization and frac fil in vn, w trace po, cpy, and sph  
-from 395 to 402', py to 2% as diss blebs to 1/8" and minor diss mineralization.

402

-471'

STRONGLY SERZ, MOD TO STRONGLY CARBZ ANDESITE TO BAS

-pred a light grey to green, mod to strongly sch at an ave orien of 70 deg to the ca, although it varies from 65 to 80 deg to the ca, w strong kinking and crenulation of S1 sch, and a mod to strongly dev S2 fol cross cutting S1 at 30 deg to the ca, as exhibited by micro frac and an S2 cleavage on S1 sch planes

-v strongly serz (to 60% of rock) and mod to strongly carbz to 30% carb as fg diss blebs to 1/8", minor diss mineralization throughout rock, and thin slips and seams pll fol, carb is pred calc

-rock is strongly frac pll S1 and S2, w pred calc, minor qtz, py, ser, and chl frac fil

-contains numerous (to 5% of rock) secondary qtz calc vn to 1 to 2" pred pll fol

-rock is banded app in places w ser rich vrs carb rich bands to 1/4" pll fol

-overall sulphide content, 0.5% py, trace cpy as diss mineralization and mineralization ass w carb bands

-at 409', 1" carb vn pll fol

-at 410', 1" carb vn pll fol

-from 413 to 415', v banded locally w 1/2 to 1" carb bands pll fol to 40% of rock

-at 417', 1" granular qtz-calc-dolomite vn pll fol w 5% diss py, trace cpy

-at 418.2', 1/2" qtz calc vn pll fol w 2% py

-at 419', 1" qtz calc vn pll fol w 1% py

-at 422', 1" qtz vn pll fol

-from 428 to 430', locally S2 sch is v strong, cross cutting at S1 at 30 deg to the ca,

-at 430', a few 1/2" qtz calc vn

-at 433.6', 1" qtz calc vn pll w 2% py

-at 435', a few 1/2" qtz calc vn pll fol

locally sch is strongly kinked and crenulated

-from 436.5 to 437', qtz calc vn to 2" pll fol to 60% of rock

-at 437.8', 1/4" cpy blebs along calc seams

-at 442', 6" zone where qtz calc vn pll to 10% of rock w 10% ass fg diss py

-from 446 to 446.5', locally v banded app, at 80 deg to the ca, w 60% thin calc and dolomitic carb bands pll fol

-at 447.5', 1" qtz calc vn pll fol w 2% py  
-at 449.5' a few 1/2" coarse calc vn pll fol w 1%  
py  
-from 451.5', to 452.3', grey qtz vn, v strongly frac  
pll S2 at 30 deg to the ca,  
-at 452.3', rock is locally oxidized, carb stained  
orange

ONTARIO GEOLOGICAL SURVEY  
ASSESSMENT FILES  
RESEARCH OFFICE  
JUL 24 1986  
RECEIVED



Ministry of Northern Affairs and Mines

Report of Work

#222/86



42B01NE0009 12 MUSKEGO

900

Mining Act

Name and Postal Address of Recorded Holder  
**UTAH MINES LTD** *Keith & Muskego* T-793  
 5 BIRCH ST. NORTH, TIMMINS, ONTARIO, P4N 6C8

Summary of Work Performance and Distribution of Credits

Total Work Days Cr. claimed 4312	Mining Claim			Mining Claim			Mining Claim		
	Prefix	Number	Work Days Cr.	Prefix	Number	Work Days Cr.	Prefix	Number	Work Days Cr.
for Performance of the following work. (Check one only)  <input type="checkbox"/> Manual Work <input type="checkbox"/> Shaft Sinking Drifting or other Lateral Work. <input type="checkbox"/> Compressed Air, other Power driven or mechanical equip. <input type="checkbox"/> Power Stripping <input checked="" type="checkbox"/> Diamond or other Core drilling <input type="checkbox"/> Land Survey	P	796557	140	P	825410	120	P	825418	120
		796558	140		825411	129		825419	120
		825404	120		825412	89		825420	120
		825405	120		825413	140		825421	120
		825406	120		825414	120		825422	120
		825407	120		825415	120		825423	120
		825408	120		825416	120		825424	120
		825409	120		825417	180		825425	120

All the work was performed on Mining Claim(s): 825406, 825409, 825423, 825424, 825424, 825425, 825426, 825427, 825430

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

SEE ENCLOSED INFORMATION SHEET

**RECORDED**  
 JUN 23 1986  
*cf*

PORCUPINE MINING DIVISION  
**RECEIVED**  
 JUN 23 1986

ONTARIO GEOLOGICAL SURVEY  
 ASSESSMENT FILES  
 RESEARCH OFFICE  
 JUL 24 1986  
**RECEIVED**

Date of Report: June 23, 1986  
 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, c/o Utah Mines Ltd, 5 Birch St. North, Tim. Ont.

Date Certified: June 23, 1986  
 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	Names and addresses of owner or operator together with dates when drilling/stripping done.	Work Sketch (as above) in duplicate
Power Stripping	Type of equipment and amount expended. Note: Proof of actual cost must be submitted within 30 days of recording.		
Diamond or other core drilling	Signed core log showing: footage, diameter of core, number and angles of holes.		
Land Survey	Name and address of Ontario land surveyor.	Nil	Nil

UTAH MINES LTD  
REPORT OF WORK  
JUNE 23/86

( 2 )

MINING CLAIM NUMBERS

WORK DAYS CREDIT

P 825426	120
825427	120
825428	120
825429	120
825430	120
825431	100
825432	100
825433	100
825434	100
825435	100
852420	100
852421	62
852422	72
	<hr/>
TOTAL	<u>4312</u>



UTAH MINES LTD  
REPORT OF WORK  
JUNE 23, 1986

( 3 )

REQUIRED INFORMATION:

1. All 10 holes were drilled by NOREX DRILLING, P.O. Box 88, Porcupine, PON 1CO, on the following dates;

BL-86-01	January 17-19, 1986
BL-86-02	January 20-21, 1986
BL-86-03	January 26-28, 1986
BL-86-06	February 9-11, 1986
BL-86-07	February 12-13, 1986
BL-86-08	January 24-26, 1986
BL-86-10	February 1-04, 1986
BL-86-11	February 13-16, 1986
BL-86-12	January 22-24, 1986

2. All holes were drilled 'BQ' wireline.

3. Enclosed are drill hole summaries, signed drill logs, drill sections, and hole location maps.

# UTAH MINES LTD.

MINERAL EXPLORATION

5 BIRCH STREET, NORTH, TIMMINS, ONTARIO P4N 6C8

(705) 264-7221

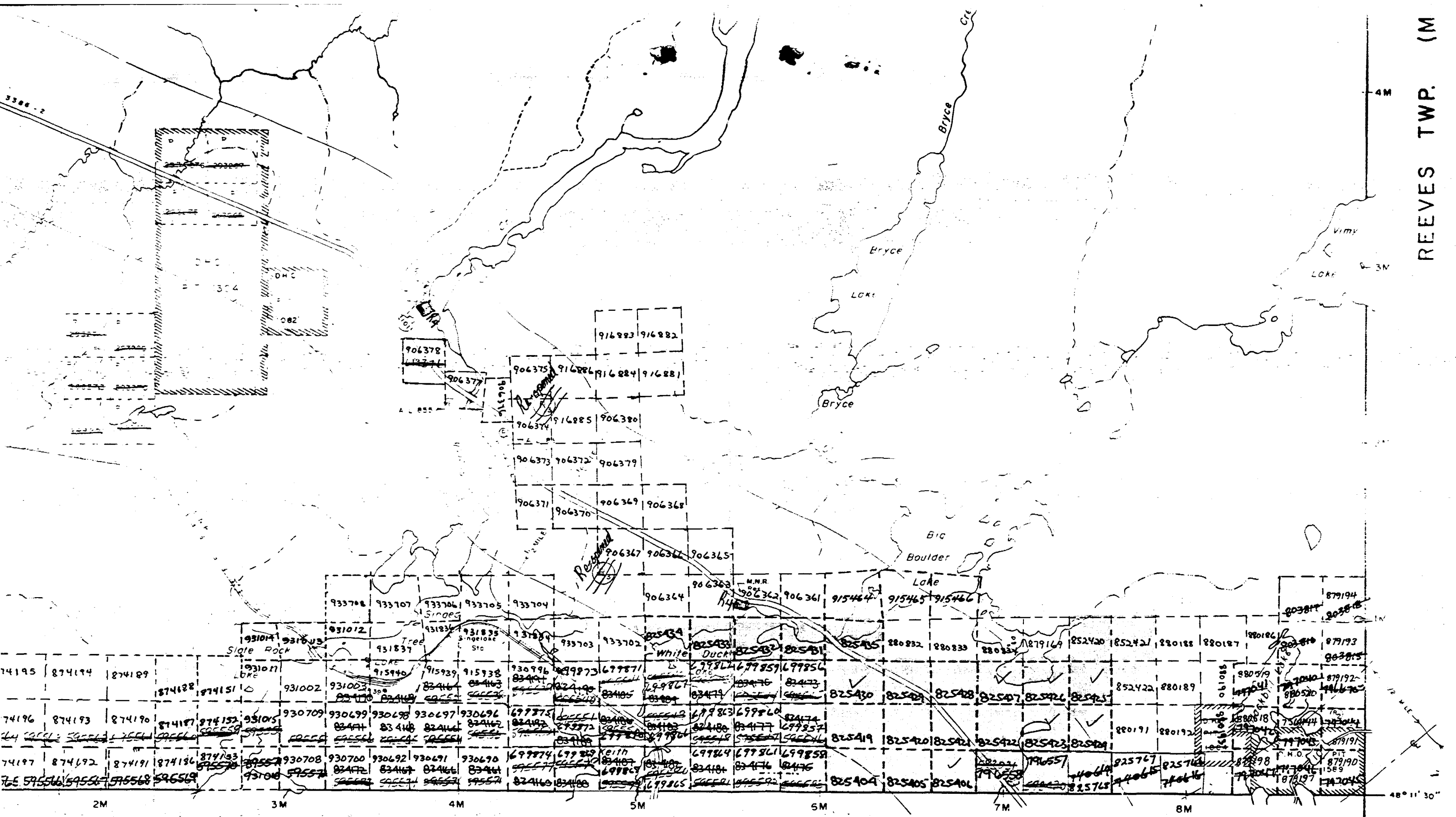
I Duncan Forbes McIvor, am a Professional Geologist, and;

- Graduated from the University of Waterloo with a B.A.Sc. in 1982.
- Have practised my profession in the Timmins area since 1982.



DUNCAN FORBES MCIVOR

REEVES TWP. (M



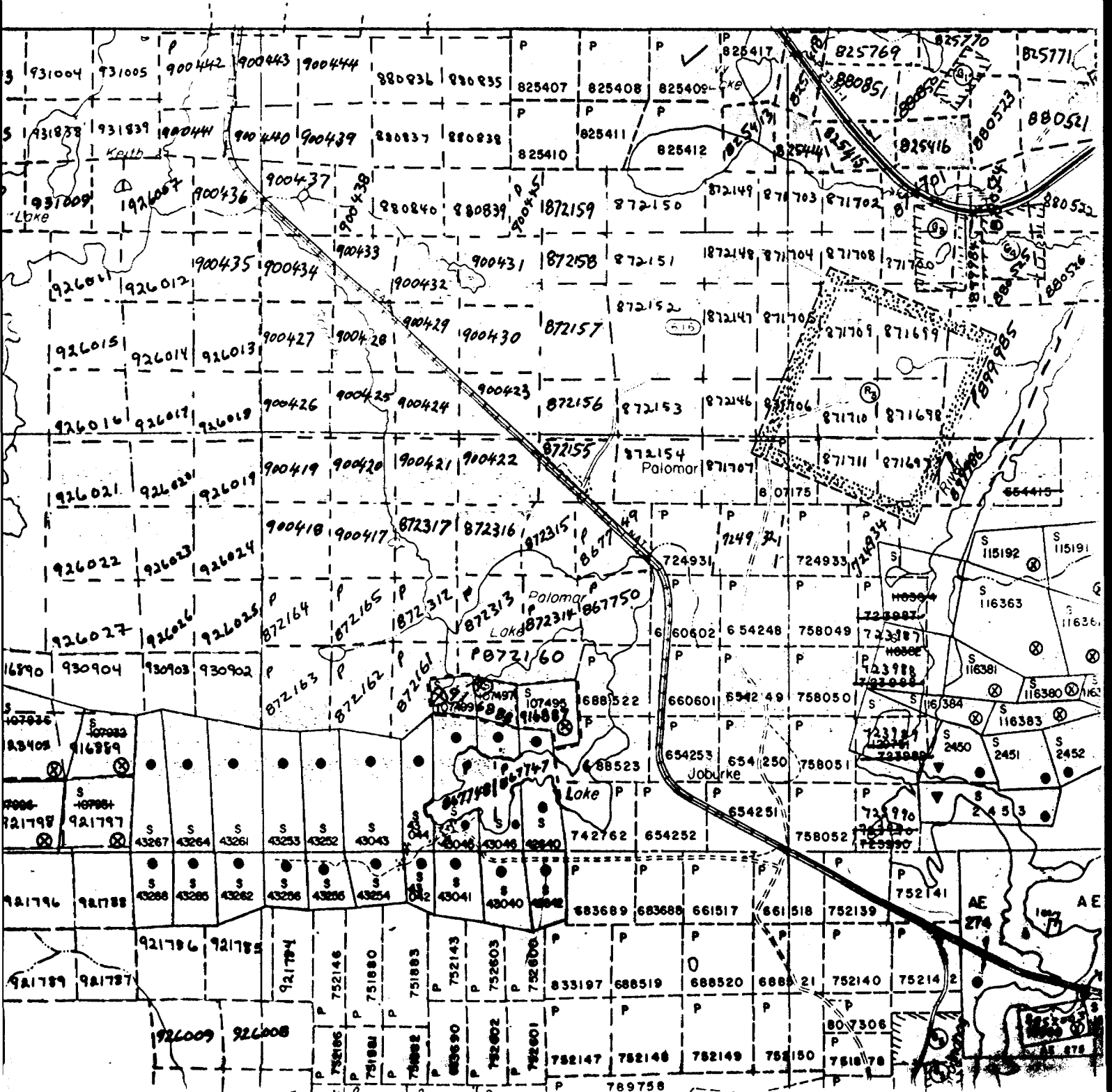
KEITH TWP. (M - 962)

Muskego Twp.

82° 12' 50" Approx.

Keith Twp.

MUSKEGO TWP.



REFERENCE

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.+S. - MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(1) MNR RES			S.R.O.	133263
(2) SEC 36/80		7/2/80	S.R.O.	188543

SAND AND GRAVEL

- (1) M.T.C. PIT
- (2) M.T.C. PIT 50.15
- (3) M.T.C. PIT 50.16
- (4) M.T.C. PIT 1085
- (5) GRAVEL FILL 77587
- (6) M.N.R. PIT 3A1 (M.O.E. WASTE DISP. SITE)

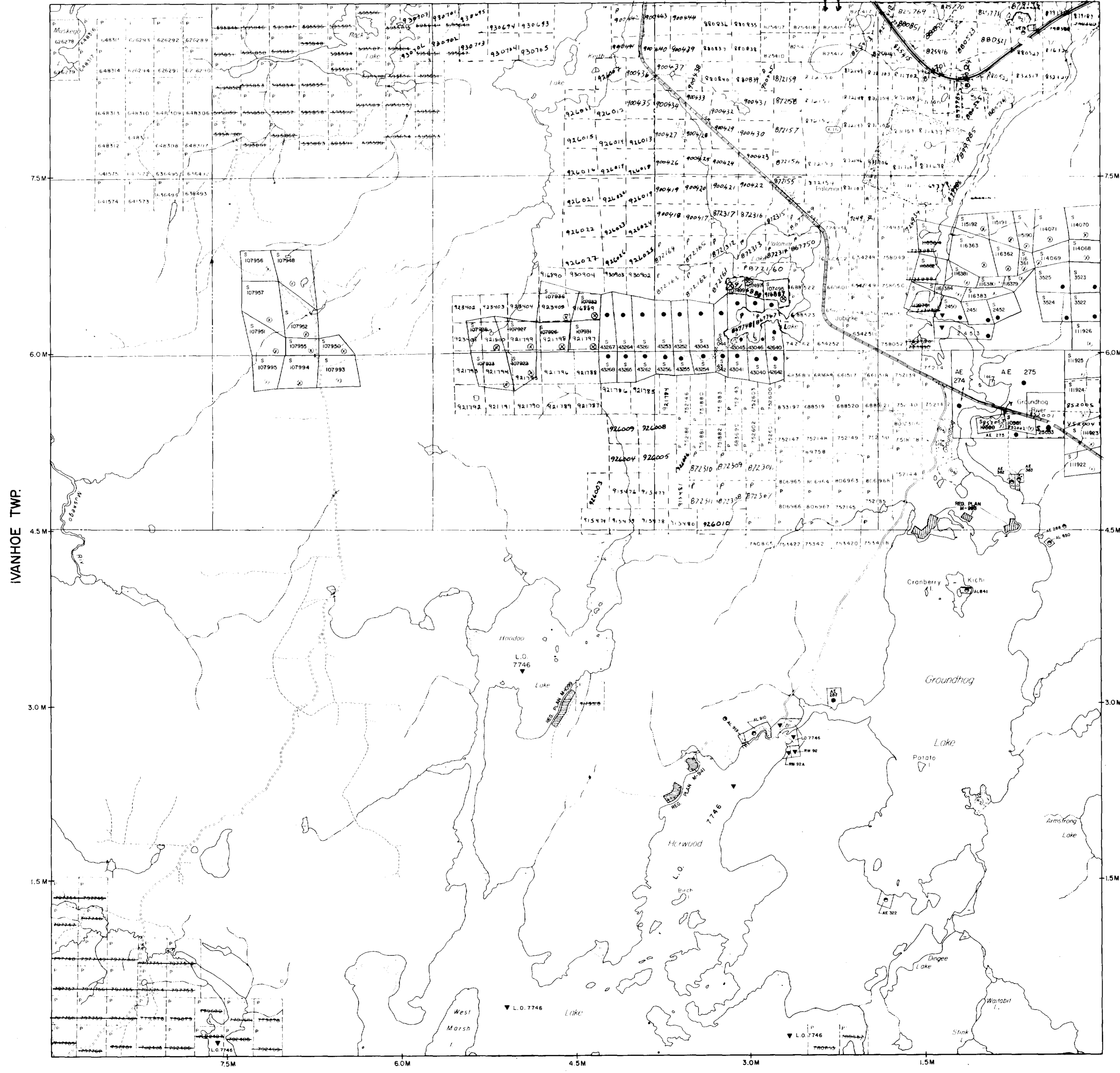
NOTES

SURVEY LINES SHOWN THIS ARE FOR CONTROL ONLY. CLAIMS CLASSIFIED AS BEING IN UNSUBDIVIDED TERRITORY. — March 7, 1947.  
Surveyor General

FLOODING

Flooded areas on Hoodoo & Horwood Lakes and Groundhog R. to contour elev. 1117' L.O. 7746 File: 75156

MUSKEGO TWP.



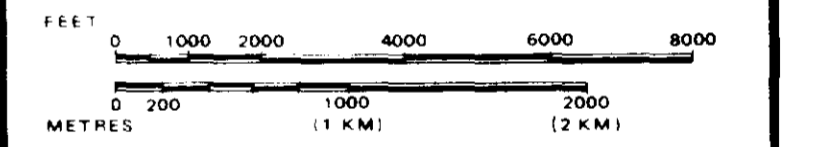
LEGEND

- HIGHWAY AND ROUTE NO.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
- TOWNSHIPS, RANGE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
- LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS, ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STRIAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORLINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	◐
LEASE, SURFACE & MINING RIGHTS	◑
" SURFACE RIGHTS ONLY	◒
" MINING RIGHTS ONLY	◓
LICENCE OF OCCUPATION	OC
ORDER-IN-COUNCIL	OC
RESERVATION	○
CANCELLED	○
SAND & GRAVEL	○

SCALE: 1 INCH = 40 CHAINS



TOWNSHIP  
**KEITH**  
M.N.R. ADMINISTRATIVE DISTRICT  
CHAPLEAU  
MINING DIVISION  
PORCUPINE  
LAND TITLES / REGISTRY DIVISION  
SUDBURY

Ministry of Natural Resources  
Land Management Branch  
Ontario

Date: APRIL 1985  
Number: G-3238



188 - M

MUSKEGO TWP

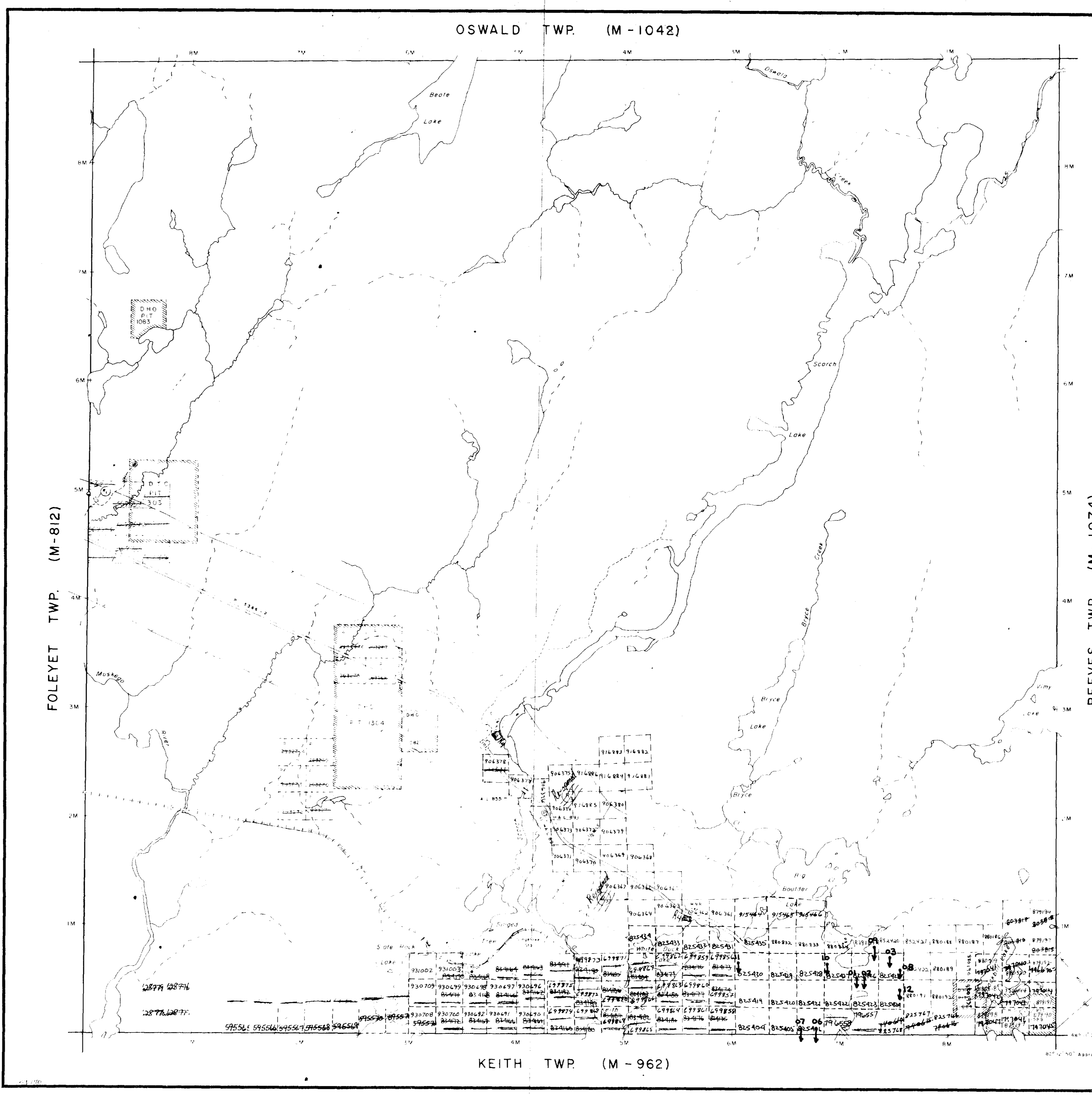
188 - M

OSWALD TWP. (M-1042)

FOLEYET TWP. (M-812)

REEVES TWP. (M-1074)

KEITH TWP. (M-962)



THE TOWNSHIP OF  
**MUSKEGO**  
 DISTRICT OF SUDBURY  
 PORCUPINE MINING DIVISION  
 SCALE: 1-INCH 40 CHAINS

**LEGEND**

PATENTED LAND	● or (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	—
PATENTED for S.R.O.	—

**NOTES**

400' surface rights reservation around the shores of all lakes and rivers.

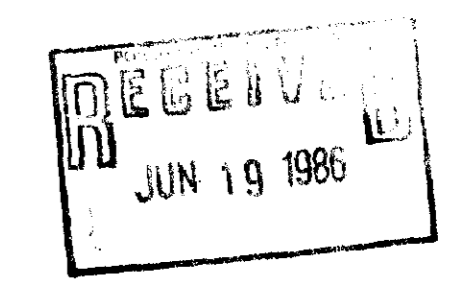
Subdivision of this township into lots and concessions was annulled march 9, 1962.

Areas withdrawn from staking under Section 43 of the Mining Act (R.S.O. 1970)

Order No.	File	Date	Disposition
0. 80/81	163002	AUG 3, 1972	S.R.O.
		4/8/81	S.R.O. Reopened
	163006	DEC 27, 1972	S.R.O.
	100509	MAY 6, 1978	S.R.O. Reopened

*Ay* Re-opened for prospecting

**SAND AND GRAVEL**  
 M.T.C. Canal Reserve Oct. 10, 1979.



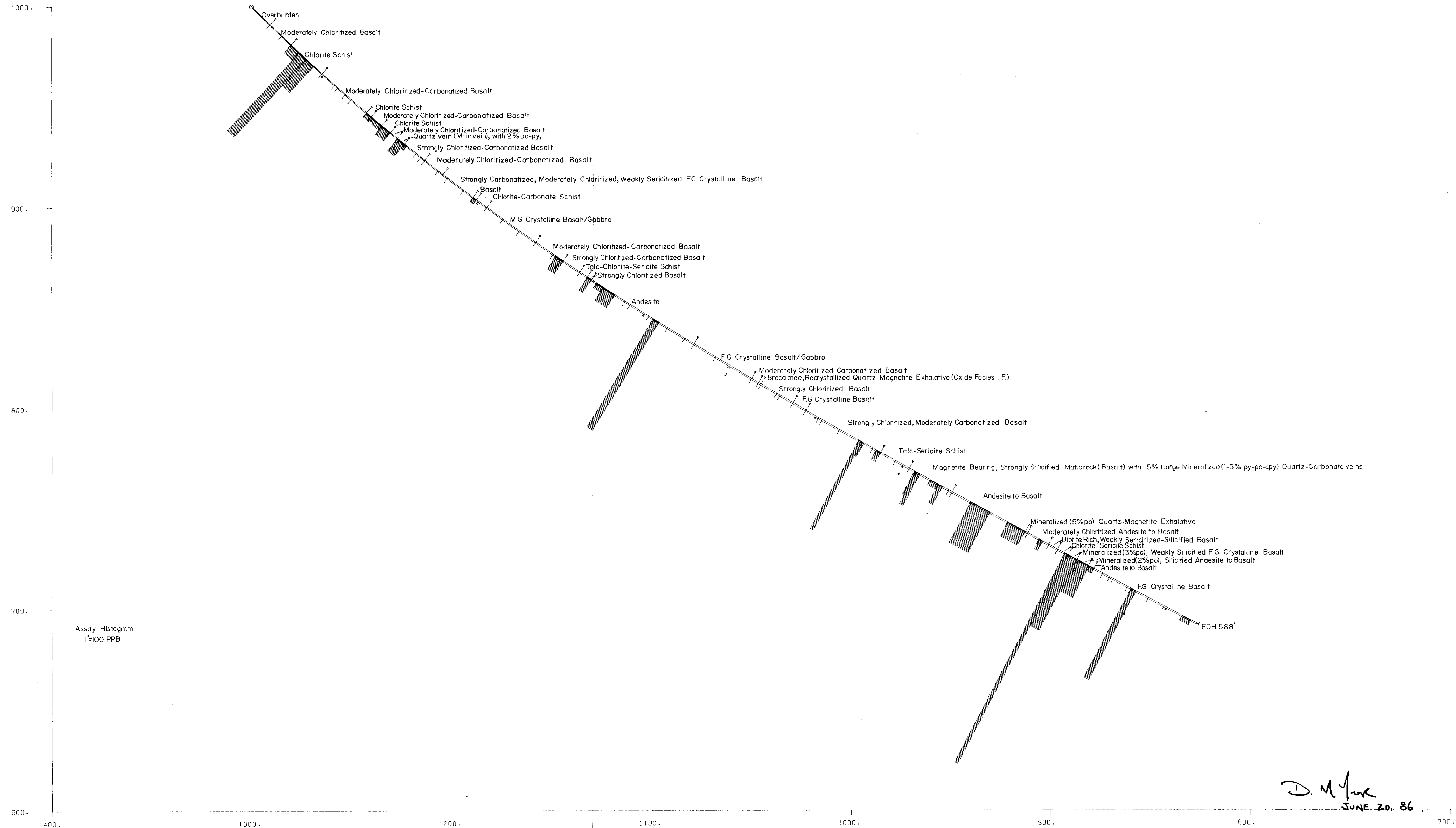
PLAN NO. **M-881**

ONTARIO  
 MINISTRY OF NATURAL RESOURCES  
 LAND AND MINING BRANCH





50-FOOT MARKERS	
ASSAY MARKERS	
ANNOTATION MARKERS	
LOST CORE MARKERS	



*D. M. Fox*  
JUNE 20, 86

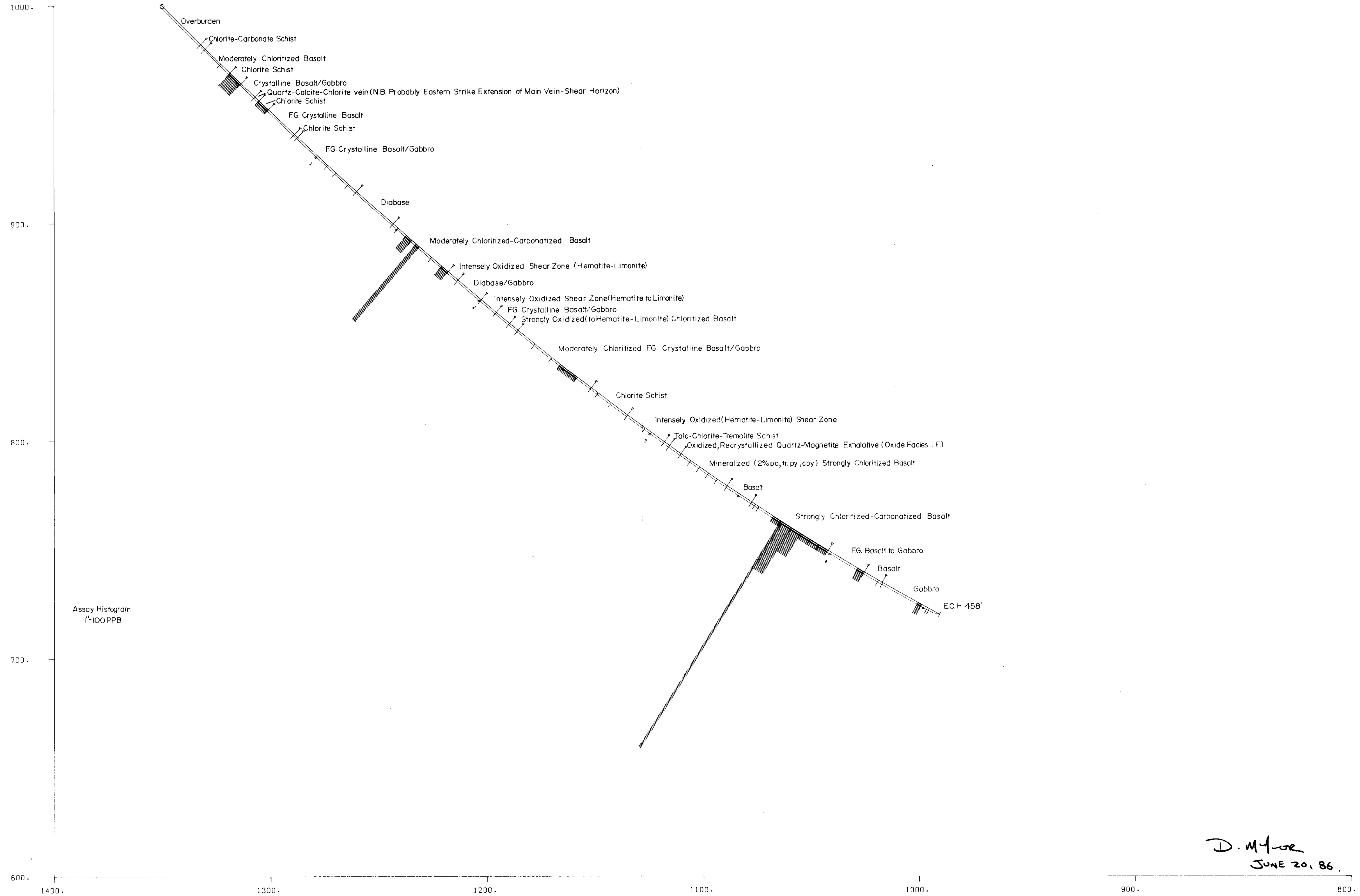


230

Date:	25-MAR-86	UTAH MINES LTD BOULDER LAKE	Font:	1 IN = 25 FT
Survey'd by:			Project:	NORTH/SOUTH SECTION
Apprv'd by:			Survey type:	DIAMOND DRILL HOLE
Chk'd by:				BL-86-01
Draw'n by:	NORTHERN GEOTECH			



50-FOOT MARKERS	
ASSAY MARKERS	
ANNOTATION MARKERS	
LOST CORE MARKERS	

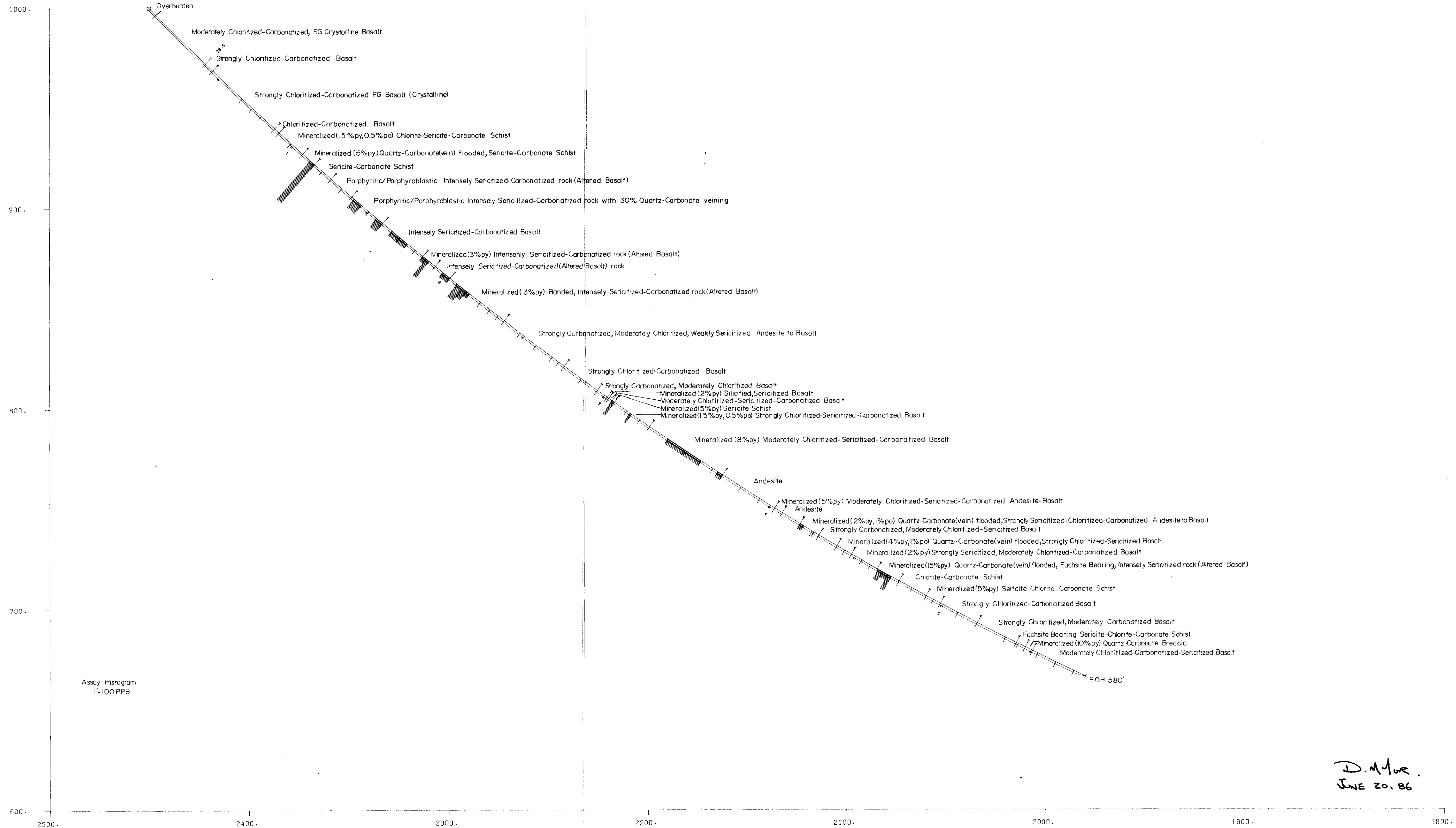
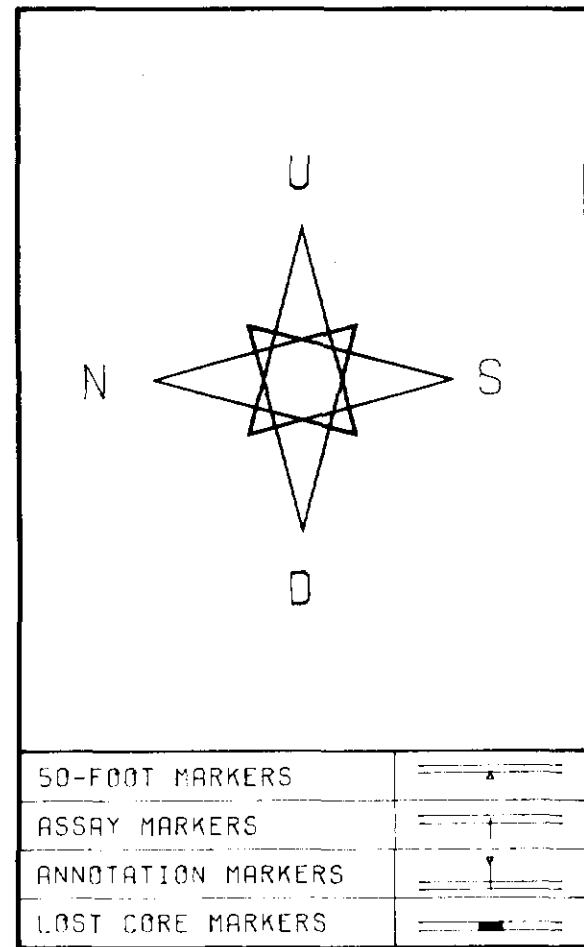


D. M. LOR  
JUNE 20, 86.



240

Date:	25-MAR-86	<b>UTAH MINES LTD</b>  BOULDER LAKE	Foot:	Scale:	1 IN = 25 FT
Survey'd by:			Project:	NORTH/SOUTH SECTION	
Apprv'd by:			Survey type:	DIAMOND DRILL HOLE	
Chk'd by:				BL-86-02	
Draw'n by:	NORTHERN GEOTECH			Dwg. no.:	



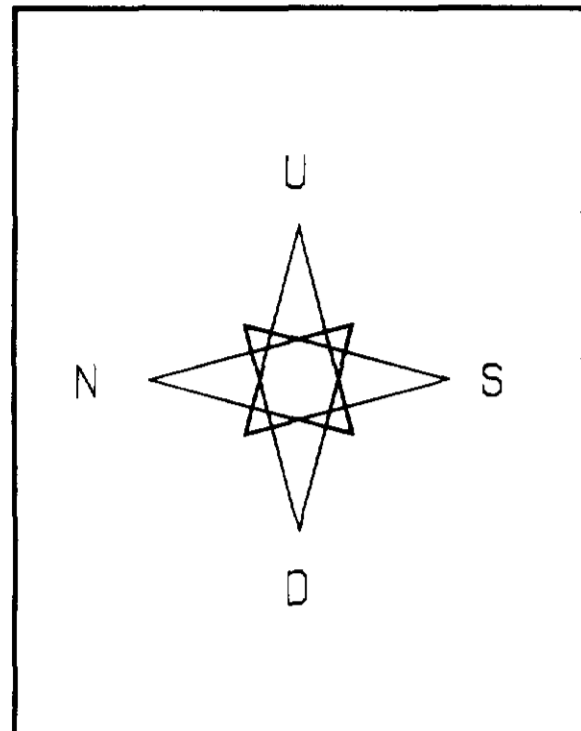
Assay Histogram  
1" = 100 PPB

D.M. Mor.  
JUNE 20, 86

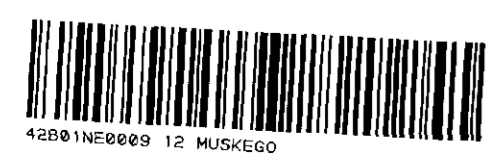
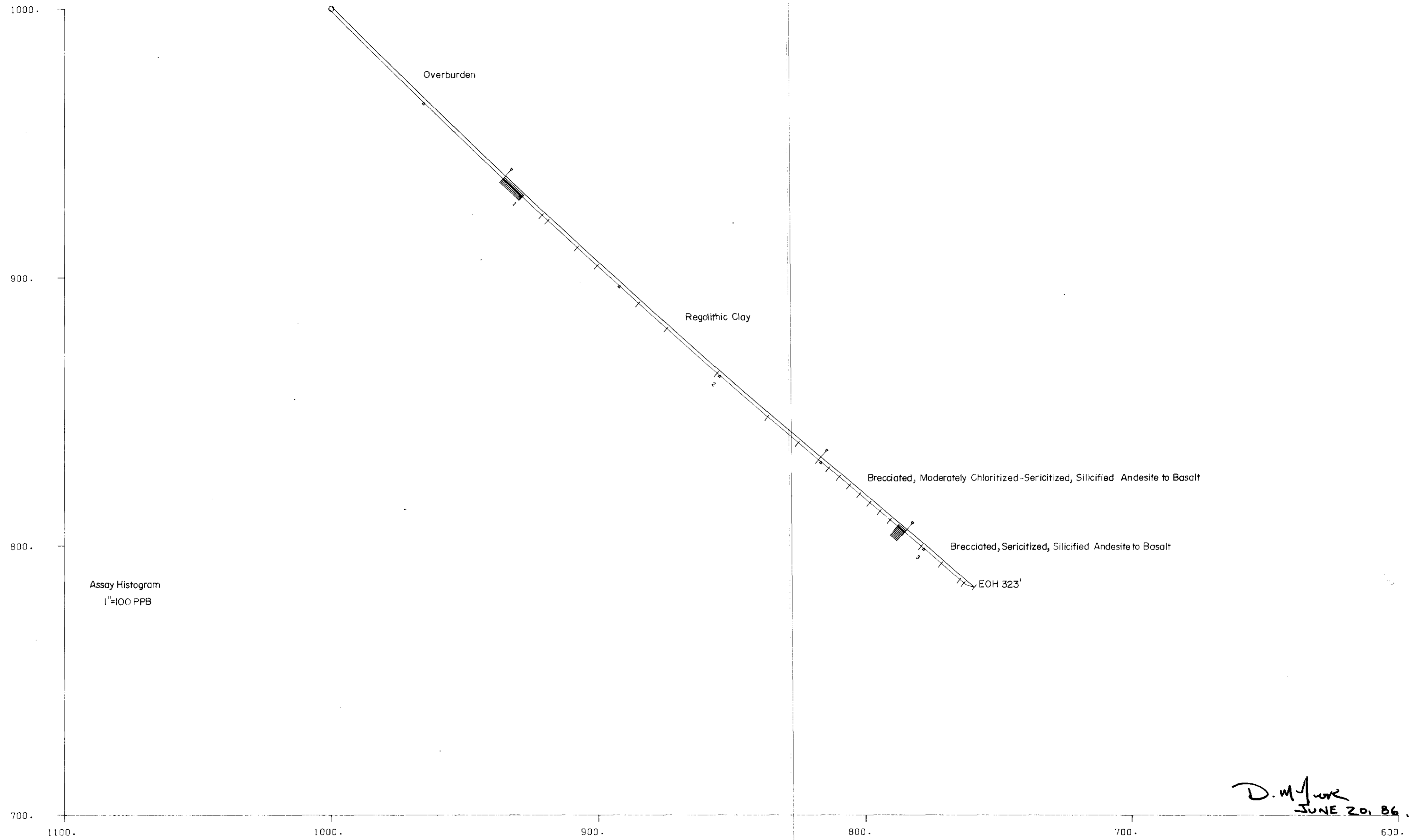


250

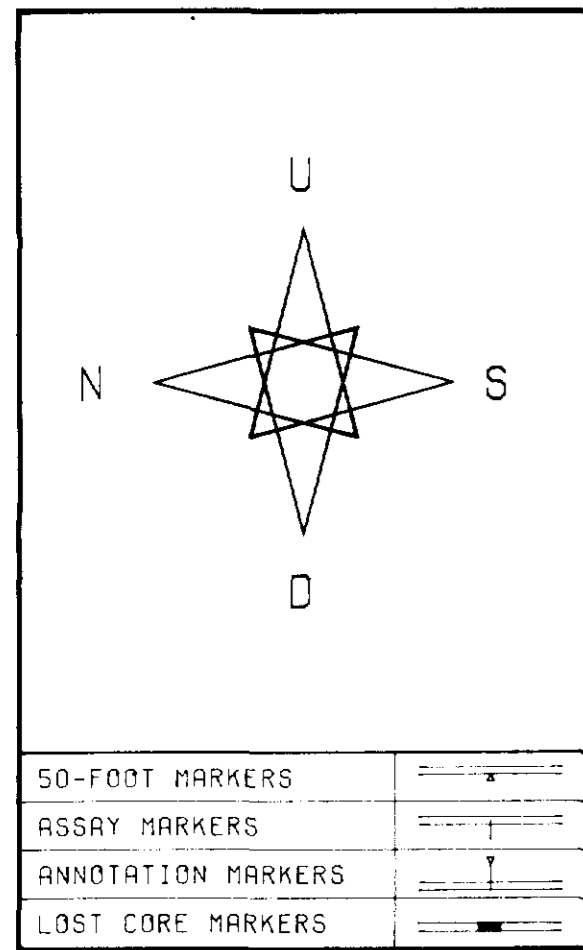
Date:	25-MAR-86	UTAH MINES LTD	Scale:	1 IN = 25 FT
Drawn by:	NORTHERN GEOTECH		Project:	NORTH/SOUTH SECTION
Checked by:			Survey type:	DIAMOND DRILL HOLE
Approved by:				BL-86-03
		Boulder Lake	File loc:	
			Dwg. no:	



50-FOOT MARKERS	
ASSAY MARKERS	
ANNOTATION MARKERS	
LOST CORE MARKERS	

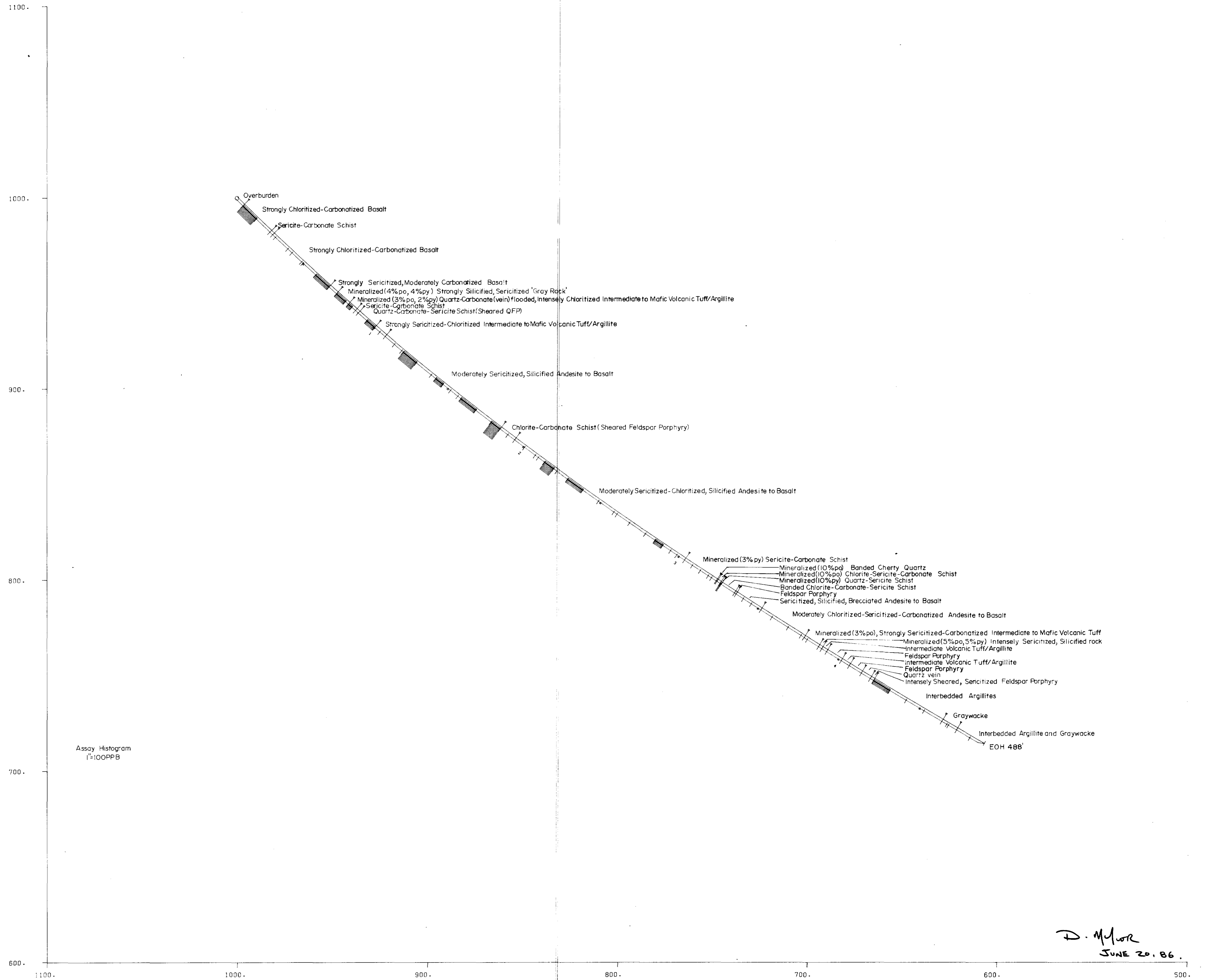


Date	26-MAR-86	<b>UTAH MINES LTD</b>  BOULDER LAKE	Foot	Scale	1 IN = 25 FT
Srvy'd by			Project	NORTH/SOUTH SECTION	
Apprv'd by			Survey type	DIAMOND DRILL HOLE	
Chk'd by				BL-86-06	
Dr'n by	NORTHERN GEOTECH			File loc	
				Dwg no	



Legend:

50-FOOT MARKERS	
ASSAY MARKERS	
ANNOTATION MARKERS	
LOST CORE MARKERS	



D. McWor  
JUNE 20, 86.



Date	26-MAR-86	UTAH MINES LTD	Scale	1 IN = 25 FT
Draw'n by	NORTHERN, GEOTECH		Project	NORTH/SOUTH SECTION
Draw'n by	NORTHERN, GEOTECH		Survey type	DIAMOND DRILL HOLE
Draw'n by	NORTHERN, GEOTECH		Survey type	BL-86-07

1100.

1000.

900.

800.

700.

600.

1900.

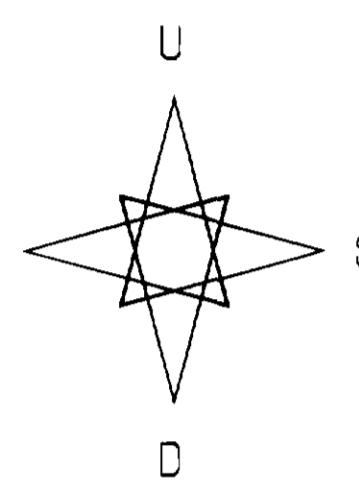
1800.

1700.

1600.

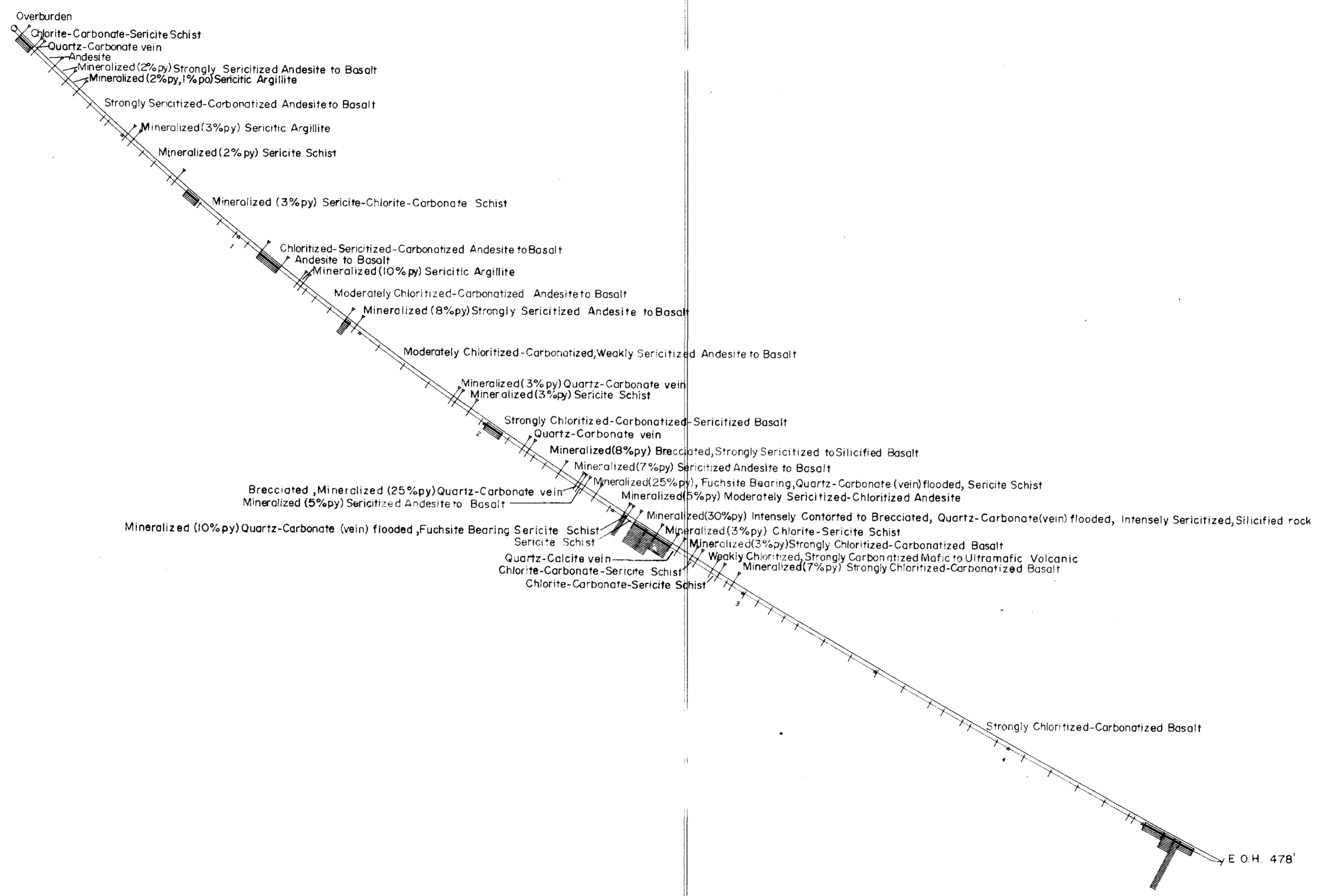
1500.

1400.



50-FOOT MARKERS	
ASSAY MARKERS	
ANNOTATION MARKERS	
LOST CORE MARKERS	

Assay Histogram  
1"=100 PPB



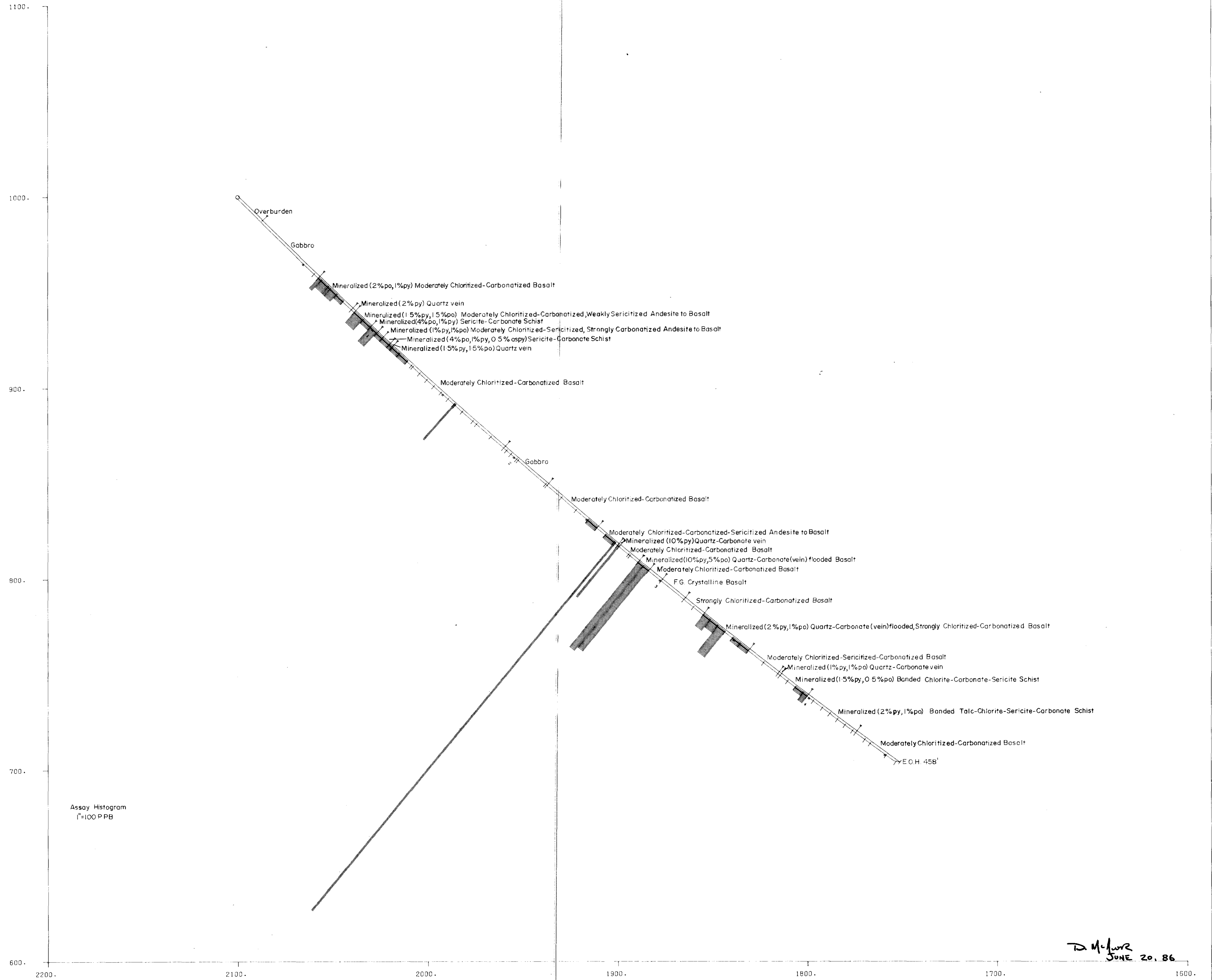
*D. M. Hor*  
 JUNE 20, 1986



Date	26-MAR-86	<b>UTAH MINES LTD</b>  BOULDER LAKE	Foot	1 IN = 25 FT
Draw'n by	NORTHERN GEOTECH		Project	NORTH/SOUTH SECTION
Draw'n by	NORTHERN GEOTECH		Survey type	DIAMOND DRILL HOLE
Draw'n by	NORTHERN GEOTECH		File loc	BL-86-08
Draw'n by	NORTHERN GEOTECH		Dwg no	

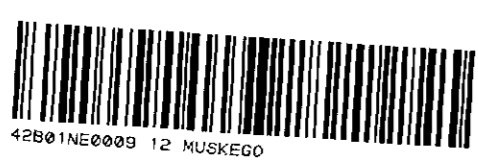
Legend for markers:

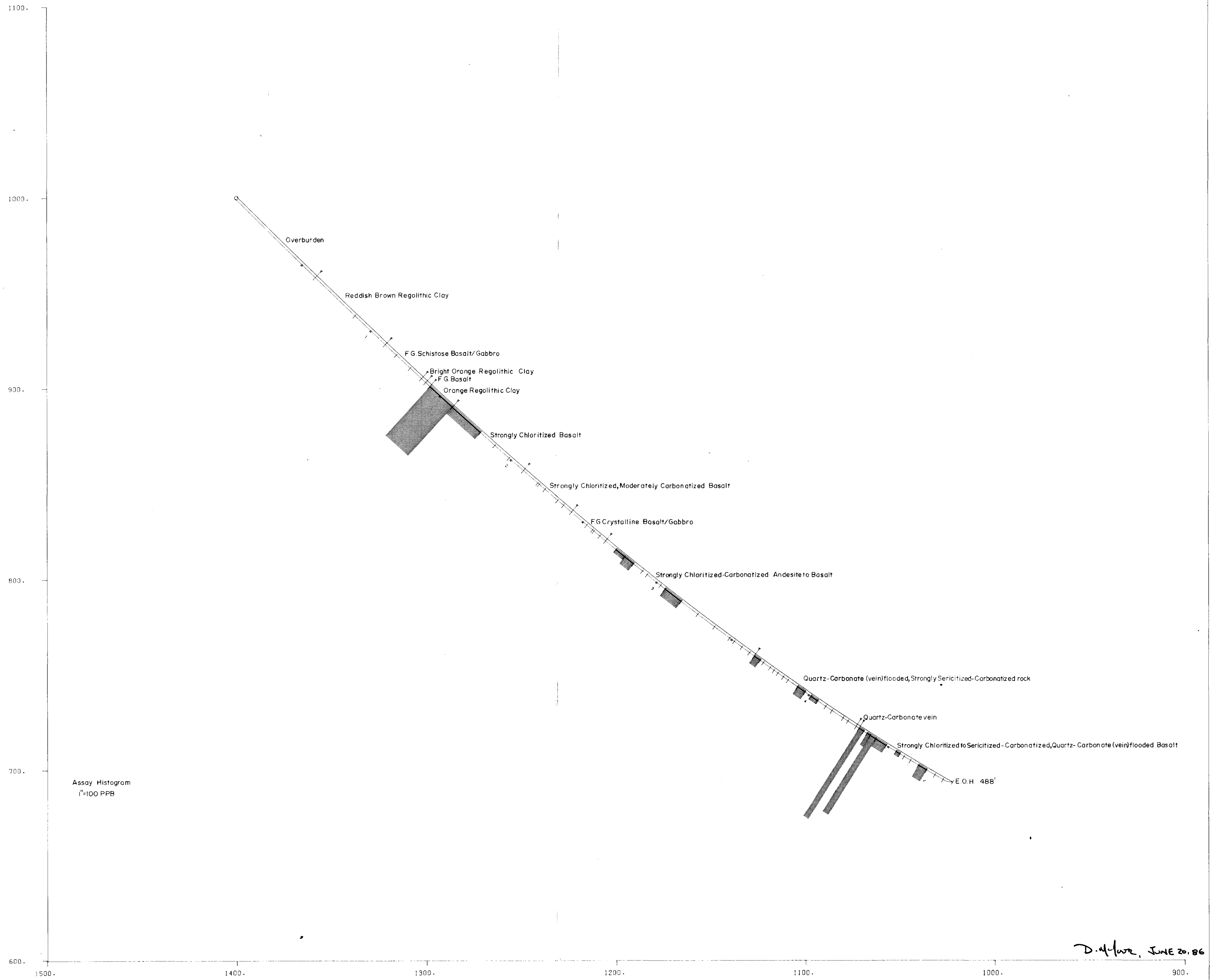
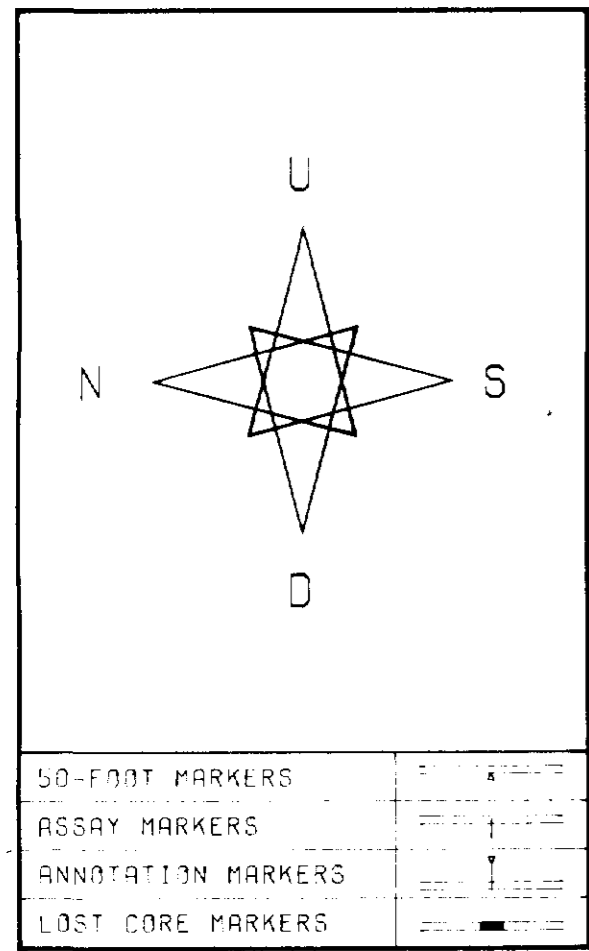
50-FOOT MARKERS	
ASSAY MARKERS	
ANNOTATION MARKERS	
LOST CORE MARKERS	



D. McJannet  
JUNE 20, 86

Date	26-MAR-86	UTAH MINES LTD	Foot	Scale	1 IN = 25 FT
Drawn by	NORTHERN GEOTECH		Project	NORTH/SOUTH SECTION	File No.
Checked by			Survey type	DIAMOND DRILL HOLE	Dwg No.
Approved by				BL-86-10	
Boulder Lake					



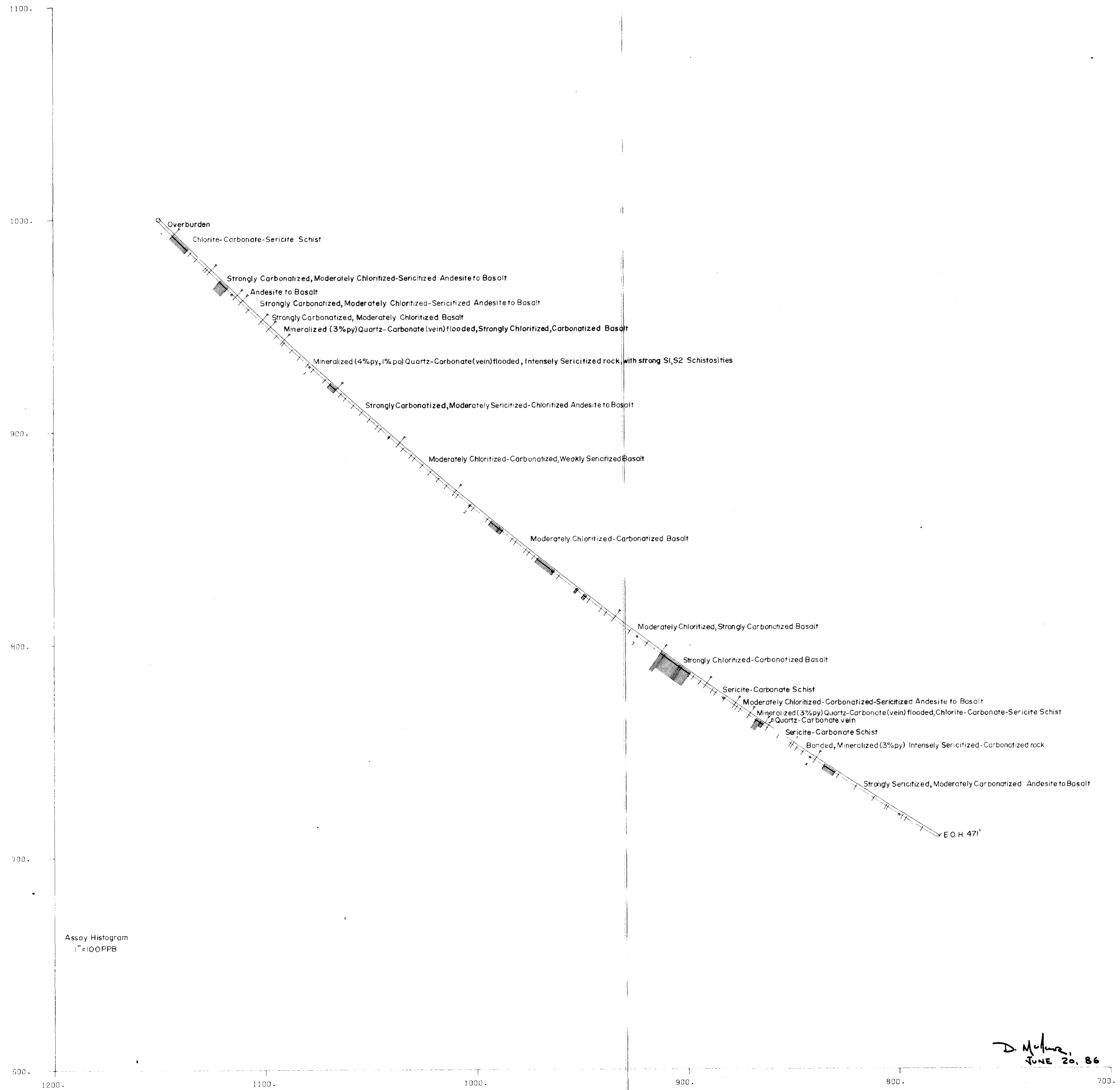


D. M. Love, JUNE 20, 86

Date:	26-MAR-86	<b>UTAH MINES LTD</b> BOULDER LAKE	Foot:	Scale:	1 IN = 25 FT
Draw'n by:	NORTHERN GEOTECH		Project:	NORTH/SOUTH SECTION	
Checked by:			Survey type:	DIAMOND DRILL HOLE	
Appr'd by:				BL-86-11	
File no.:			Dwg. no.:		



50-FOOT MARKERS  
 ASSAY MARKERS  
 ANNOTATION MARKERS  
 LOST CORE MARKERS



D. McLean  
 JUNE 20, 86

Date	26-MAR-86	UTAH MINES LTD	Foot	Scale	1 IN = 25 FT	
Survey'd by			Project	NORTH/SOUTH SECTION		
Appr'd by			Survey type	DIAMOND DRILL HOLE	File loc	
Draw'n by	NORTHERN GEOTECH			BL-86-12	Drawn	

