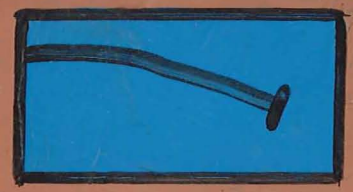
SSGF WELL ELMORE-100



JH 01/22/05

GL04341

WELL ELMORE-100, Lith. & Mineralogy Recalc. to 60-ft Intervals

	GRVL	SS/ chl/ SS	MDS & (SHS)	NOD BLK/ SHP	GG & PUR	VNITS	CB/ MDS	CB/ SS	EP	AC	PY	HM	SP	GN	CPY	CMT	EV	
100-160'			100				VS	(NO SS)										
160-220'			100				VS	(NO SS)					Tr			Tr		
220-280'			100				VS	(NO SS)										
280-340'			100				VS	(NO SS)										
340-400'		$ 35 mgr	65				VS	VS										III
400-460'		$ 61 fmgr	39				VS	VS										
460-520'		$ 78.5 fmgr		1.5			(NO MDS)	VS										
520-580' CVD?		$ 85 fmgr	7	8			VS	VS										
580-640'		$ 47 fmgr	42	3/8			M	VS								3		
640-700'			93	4/3			VS	(NO SS)										
700-760'			95.5	4/0.5			M	(NO SS)										
760-820'			84	16			W	(NO SS)			0.1							
820-880'		18 fmgr	69	13			—	—			0.2							
880-940'		$ 35 cgr	56	9			—	—			0.1							
940-1000'		$ 89 cgr	9	2			—	—			0.2							
1000-1060'		$ 33 mcgr	66	1			S	VW										
1060-1120'		17 fmgr	81	2			S	VW										
1120-1180'		$ 100 mcgr					(NO MDS)	—									CV	III
1180-1240'		$ 94 mcgr	6 (CVD?)				M (CVD?)	—			Tr		0.4	0.1				
1240-1300'		$ 84 mcgr	16				W-M	—			Tr		0.1					
1300-1360'		$ 83 mgr	16.5			0.5	W	—			Tr		0.1	Tr				
1360-1420'		ALL CAVED															CV	III
1420-1480'		93 fmgr	5			2	VW	—			Tr		0.1	Tr			CV	III
1480-1540'		82/M	18			Tr	—	—			Tr		0.1		0.2		CV	
1540-1600'		71/M	29								Tr				Tr		CV	
1600-1660'		69/M	31								Tr		Tr				CV	
1660-1720'		75/W	25									0.1					CV	
1720-1780'		46	54				M	W-M							0.2		CV	

JH 01/22/05

Well Elmore-100, Lith & Mineralogy recalc. to 60-ft. intervals

	GRVL	SD / CHT/SS	MDS & (SITS)	NOD ANH	GG & JBX	VNLTS	CB/MDS	CB/SD	EP	PC	DY	HM	SR	SN	CBY	CMT	CV
1780-1840'		ALL CAVED															CV
1840-1900'		24	76				W-M	W				0.1					CV
1900-1960'		24	76				W-M	W-M									CV
1960-2020'		23	77				W-M	W-M	(0.1)				(0.1)			(3)	CV
2020-2080'		(5) 92	8				W-M	W	1								
2080-2140'		78	12				W-M	W	0.3			0.5					
2140-2200'		69	31				W	W	0.1			Tr					CV
2200-2260'		54/S	46				W	W	Tr			Tr					CV
2260-2320'		24/M	76			(Tr)	VW	VW	Tr								CV
2320-2380'		20/S	80			0.5	VW	VW	Tr			0.5					CV
2380-2440'		48/S	51.5			0.5	—	—			(0.2)	0.7			0.1		
2440-2500'		80/S	15		1	4	—	—				5					
2500-2560'		40/M	59			1	—	—				1.3					CV
2560-2620'		53/M	46.5			0.5	—	—			0.1	0.4			Tr		CV
2620-2680'		46.5/W-M	52		0.5	1	—	—	0.3			1.2					CV
2680-2740'		33.5/W	66		Tr	0.5	W	W	0.3		0.2	0.6			Tr		
2740-2800'		56.5/W	43		Tr	0.5	W	VW	0.2		0.3	1					
2800-2860'		60/W	33			1	VW	VW	0.4		0.3	0.7			0.1		
2860-2920'		56.5/W-M	43			0.5	—	—	0.2		0.3	0.4			0.1		
2920-2980'		69/W	30.5			0.5	W	W	Tr		0.3	1.3			0.2		
2980-3040'		46/VW	54				W-M	W-M	0.2			0.1			0.2		
3040-3100'		50/W	43			1	W	W	0.2		0.2	0.8			0.2		
3100-3160'		23.5/W	75			1.5	—	—	0.7		0.3	1			0.3		
3160-3220'		16/W	82	◐		2	—	—	0.3		0.3	0.4			0.2		
3220-3280'		6/W	93	◐		1	—	—	0.3		0.4	0.5			0.1		
3280-3340'		23.5/W	75	1 & ◐		0.5	VW	VW	0.9		0.3	0.4					
3340-3400'		52/W	47			1	VW	—	1.2		0.5	0.7			Tr		

Page 2 of 4

Well Elmore-100, Lithology & Mineralogy Recalc. to 60-ft intervals

JH 01/22/05

	GRVL	SS	MDS & (SLTS)	NOD ANH	GG JUBX	VALTS	CG/MDS	CR/SS	EP	PC	PY	HM	SP	GN	CPY		
3400-3460		66.5/W	33			0.5	W	—	1.3		0.4	0.7			0.1		
3460-3520		43.5/W	56			0.5	VW	—	1.2		0.7	0.8			Tr		
3520-3580		48/VW	51			1	—	—	1.2		0.5	1.3			Tr		
3580-3640		39.5/VW	60			0.5	—	—	3.5		0.1	0.2					
3640-3700		(S) 86/VW	14			Tr	—	—	1.5		0.4	0.2					
3700-3760		76/W	23.5			0.5	—	—	1.7		0.7	1.1			Tr		
3760-3820		66.5/W	32		Tr	1.5	—	—	1.9		0.7	1.9			Tr		
3820-3880		50/W	47			1	—	—	0.6		0.4	1.1			Tr	(CV)	
3880-3940		38.5/M	61		Tr	0.5	—	—	0.7		0.8	0.8			Tr		
3940-4000		64/W	35			1	—	—	0.8		0.3	1.2			Tr		
4000-4060		69.5/W	30			0.5	—	—	0.8		0.7	0.8			Tr		
4060-4120		59/W	40			1	—	—	0.7		0.9	1			0.1		
4120-4180		73/W	27			Tr	—	—	1.2		1	0.6			Tr		
4180-4240		(S) 74/W	26				—	—	0.6		0.4	0.2			Tr		
4240-4300		(S) 71.5/W	28			0.5	—	—	0.8		0.7	0.6			Tr		
4300-4360		61/W	39			Tr	—	—	0.9		0.3	0.1			Tr		
4360-4420		65/W	35			Tr	—	—	0.9		1.2	0.1			0.2		
4420-4480		68/W	32			Tr	—	—	0.4		1.5	Tr			0.1		
4480-4540		69/M	31			Tr	—	—	0.4		1.2	0.2			0.1		
4540-4600		82/W-M	17		1	Tr	—	—	0.3		1.2	0.4			0.2		
4600-4660		63/S	36.5		Tr	0.5	—	—	0.7		0.6	0.6			0.1		
4660-4720		61/S	39			Tr	—	—	1.4		1	0.2			0.2		
4720-4780		44/W-M	56			Tr	—	—	1.5		0.5	0.4			Tr		
4780-4840		56.5/W-M	43			0.5	—	—	1.5		0.5	0.3			Tr		
4840-4900		29/W	70			1	—	—	1.4		0.5	0.5			Tr		
4900-4960		50/W	44			Tr	—	—	1.1		0.6	0.3			Tr		
4960-5020		29/W	71			Tr	(W)	—	1.5		0.3	Tr			Tr		

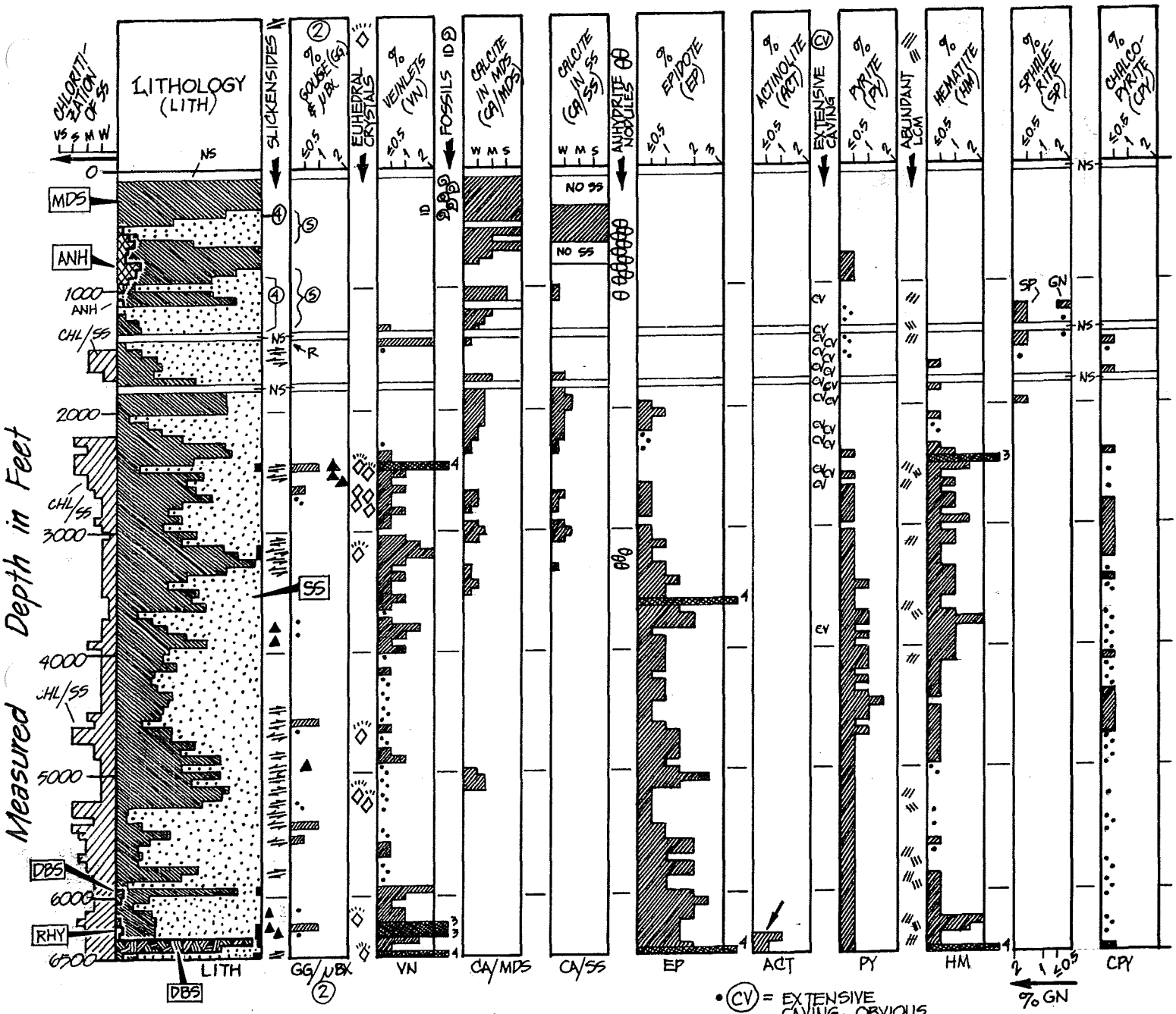
JH 01/22/05

Well Elmore-100, Lith. & Mineralogy Recalc. to 60-ft intervals

Interval	GRVL	SS	MDS & (SLTS)	NOD ANH	GS UBX	VNLTS	CA/MDS	CA/SS	EP	AC	PY	HM	SP	GN	CPY		
5020-, 5080		49/W	51			Tr	W-M	—	2.5		0.1	Tr					
5080-, 5140		22/W	78			Tr	W-M	—	1.5		0.1						
5140-, 5200		27/W	73			Tr	—	—	0.3		0.2						
5200-, 5260		40/S	60		Tr	Tr	—	—	0.2		0.3				Tr		
5260-, 5320		91/S	9		Tr	Tr	—	—	0.1		0.6						
5320-, 5380		92/W-M	8				—	—	0.2		0.3	Tr					
5380-, 5440		82/S	17		1		—	—	0.4		0.6				Tr		
5440-, 5500		62/M-S	38			Tr	—	—	1.2		0.5	Tr			Tr		
5500-, 5560		78/M	21.5		0.5	Tr	—	—	1		0.3				Tr		
5560-, 5620		83/M	16.5			0.5	—	—	1.7		0.3	0.2					
5620-, 5680		81/M-S	18.5			0.5	—	—	1.8		0.3	Tr					
5680-, 5740		85/M	15				—	—	0.7		0.4						
5740-, 5800		44/M	56			Tr	—	—	2		0.4				Tr		
5800-, 5860		55/W-M	45			Tr	—	—	2.2		0.4				Tr		
5860-, 5920		91/W-M	9			Tr	—	—	0.8		0.4	0.1					
5920-, 5980		13/M	79			(2)	—	—	1.2		0.5	0.3			Tr	(6 DBS)	
5980-, 6040		77/W-M	19			1	—	—	1.9		0.3	0.2			Tr	(3 DBS)	
6040-, 6100		87/W-M	12.5			0.5	—	—	2.5		0.3	0.1			Tr		
6100-, 6160		75/M	24		Tr	1	—	—	1.8		0.1	0.5					
6160-, 6220		72/M-S	24			1	—	—	2.2		0.2	0.3				(3 DBS)	
6220-, 6280		70/M	21		1	(3)	—	—	1.6		0.6	(2.2)			Tr		(5 RHY)
6280-, 6340		71/M	23.5		Tr	(2.5)	—	—	1.6		0.2	(1.4)			Tr		(3 RHY)
6340-, 6400		2/M	3.5			1.5	—	—	1.5	0.7	0.1	0.4			Tr	(93 DBS)	
6400-, 6460		21/M	6.5			0.5	—	—	1.8	0.2	0.2	0.3				(72 DBS)	
6460-, 6500		82/M	7.5			(3.5)	—	—	3.5	0.1	0.4	(4)			0.1	(5 DBS)	(2 RHY)

WELL ELMORE 100, SUMMARY GEOLOGIC LOG ③

J. Hulen 01/24/05 ①



• (CV) = EXTENSIVE CAVING. OBVIOUS CAVED CHIPS EXCLUDED FROM ANALYSIS.

Symbols

- • TRACE
- @ GASTROPODS
- ⌀ OSTRACODS
- ⊕ ANHYDRITE NODULES
- ◇ EUHEDRAL HYDROTHERMAL CRYSTALS
- ▲ DILATIONAL MICROBRECCIA
- SLICKENSIDES
- > GREATER THAN
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- LOST-CIRCULATION MATERIAL
- (S) LOOSE SAND IN PART
- R "REDBEDS" IN PART
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Abbreviations

ANH – ANHYDRITE
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VN – VEINLETS
W – WEAK

(FOR ADDITIONAL ABBREVIATIONS, SEE COLUMN HEADERS)

Notes

① CUTTINGS LOGGED 04/15-04/21/03

② READILY DISTINGUISHED FROM "DRILLING-PRODUCED "BIT GOUGE"

③ COMPOSITE-SAMPLE INTERVAL FOR THIS LOG TYPICALLY 60 ft (18.3 m)

④ SAND/SANDSTONE DOMINANTLY MEDIUM- TO COARSE-GRAINED; OTHERWISE VERY FINE- TO FINE-GRAINED

Vertical scale 1:14,400
(1 cm = 144 m; 1" = 1200 ft)

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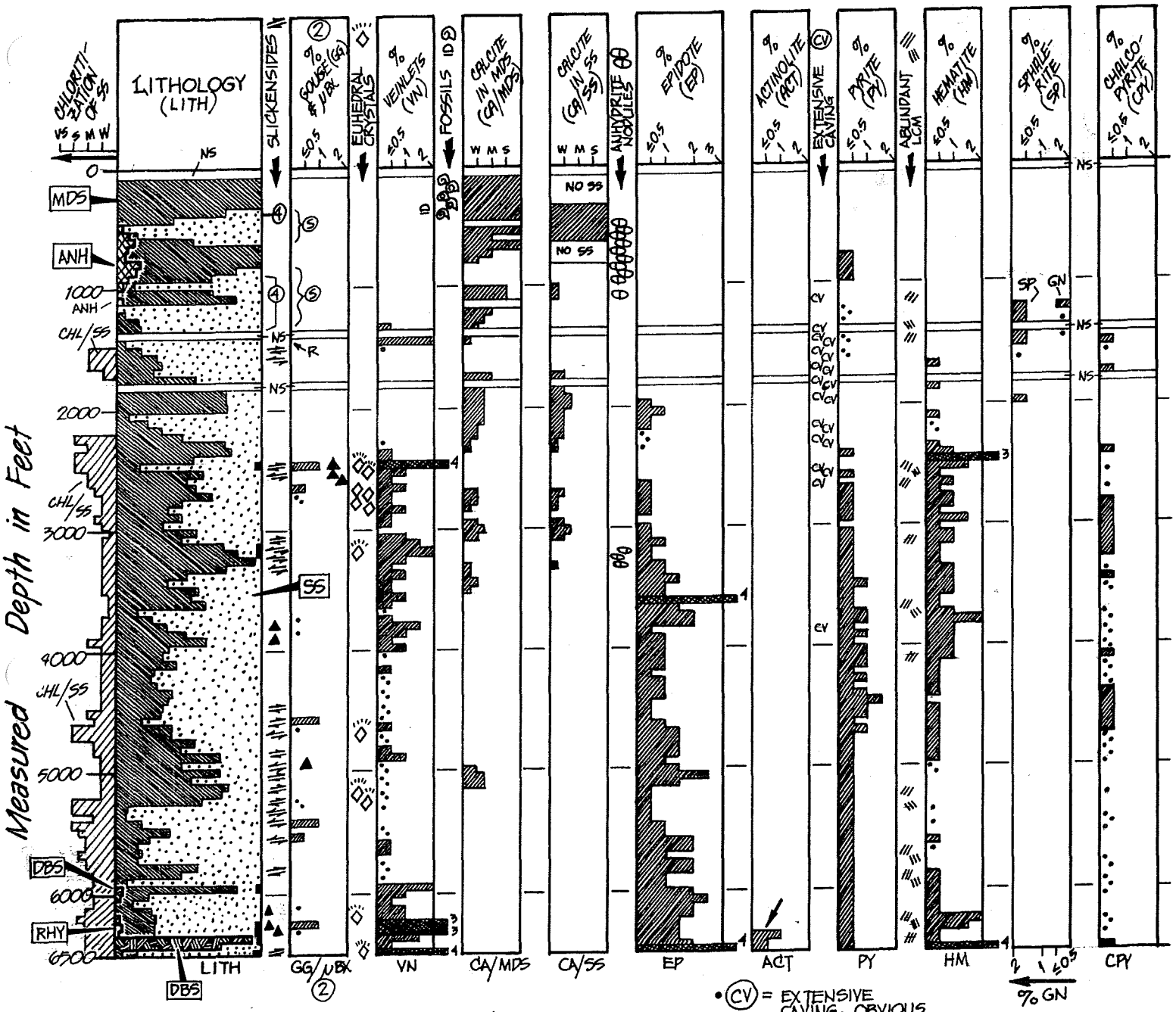
J. Hulen 01/24/05 ①



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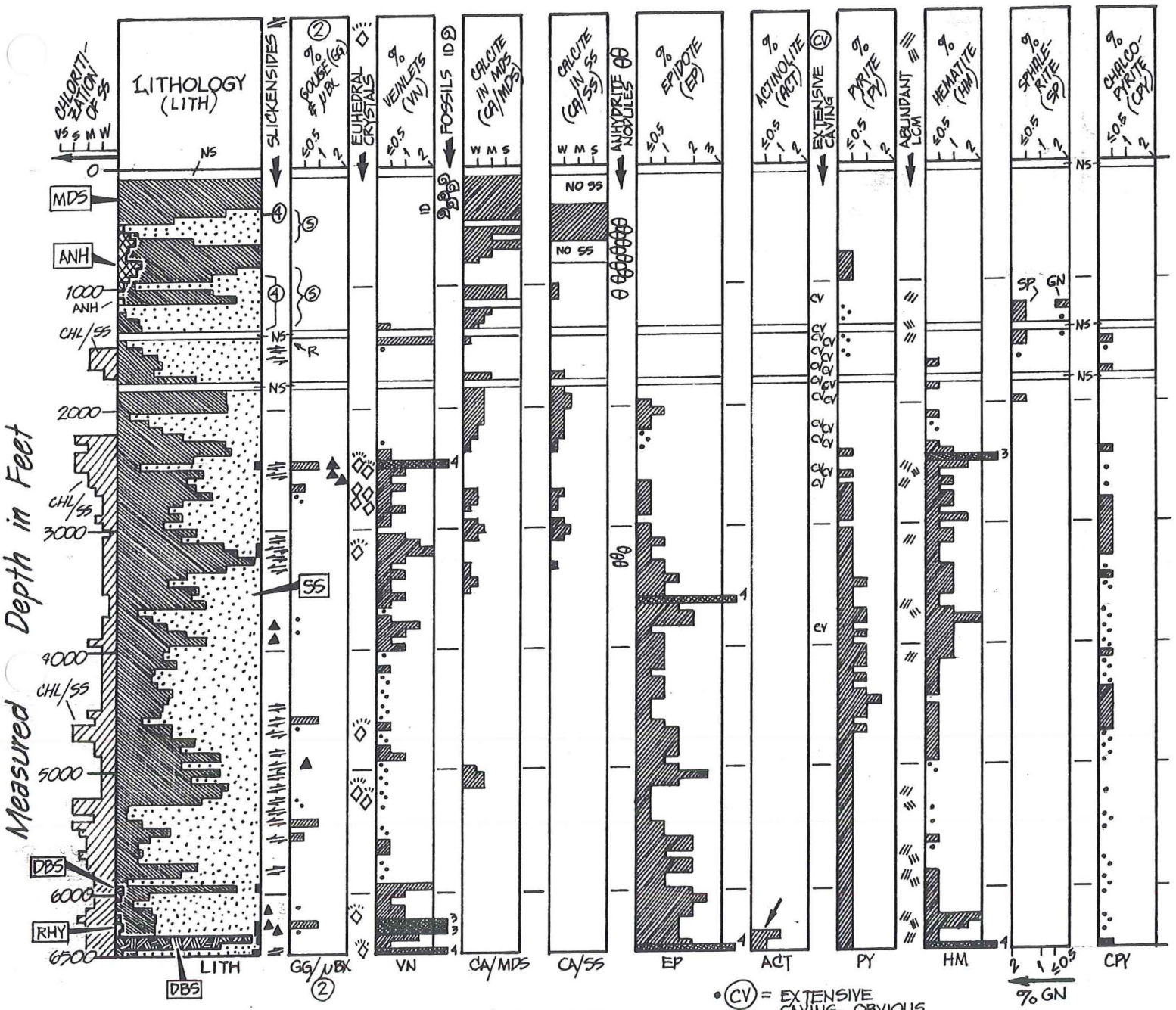
J. Hulen 01/24/05 ①



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(1 cm = 144 m; 1" = 1200 ft)

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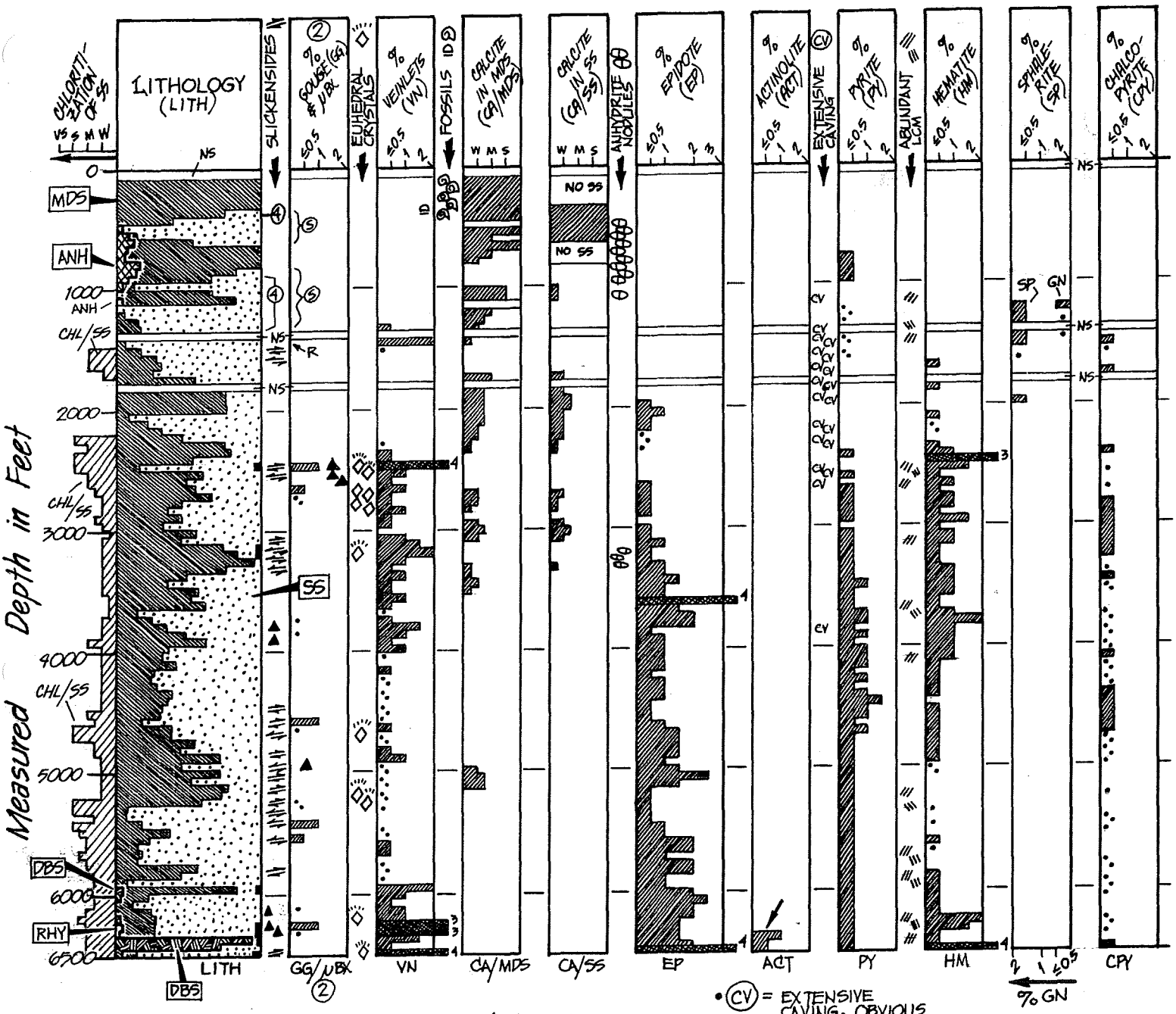
J. Hulen 01/24/05 ①



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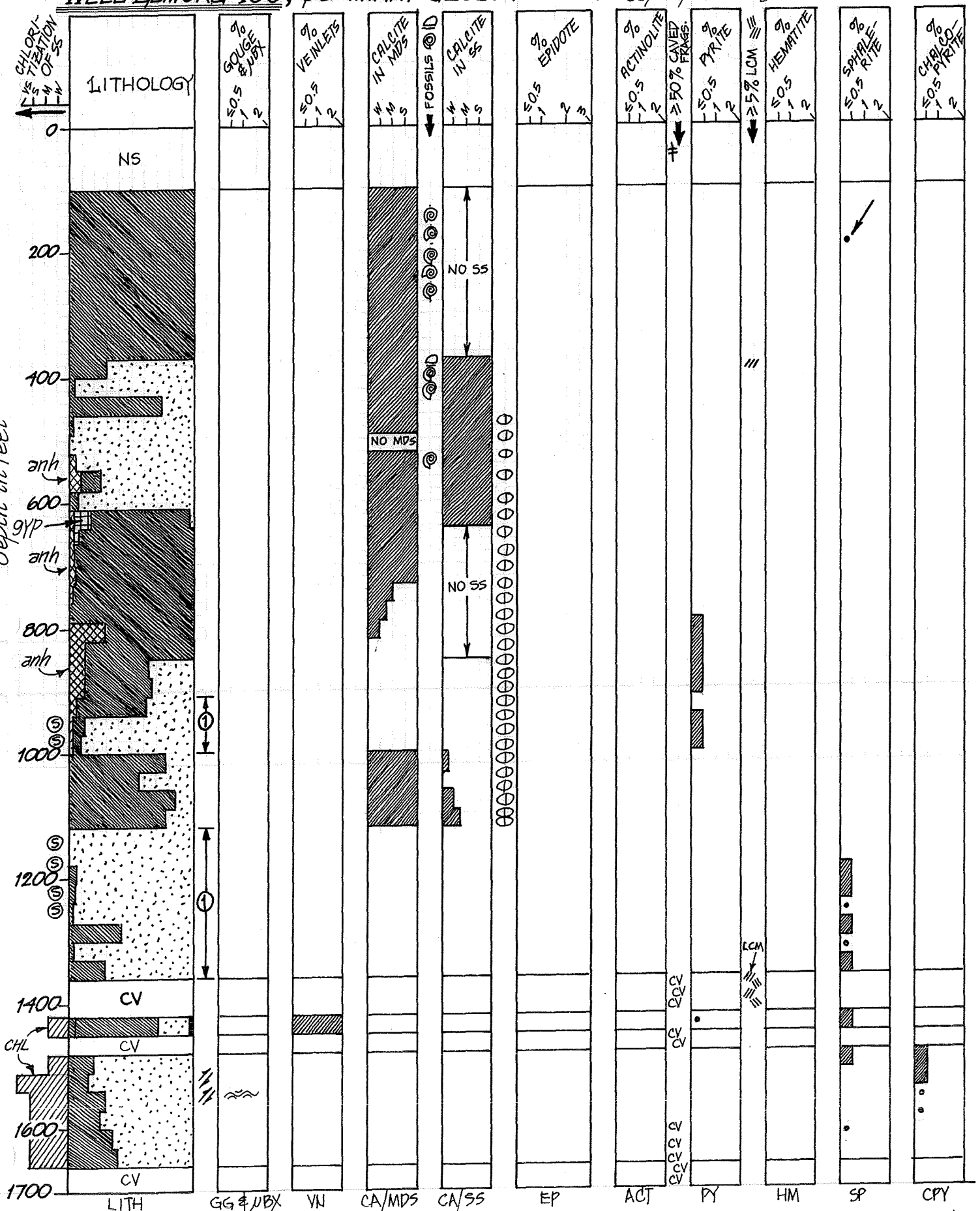
* WELL ELMORE-100, SUMMARY GEOLOGIC LOG

** J.Hulen 05/02/04 * Page 1 of 5 DRAFT



* Explanation on page 5

** Logged by JH 04/15/03 - 04/21/03

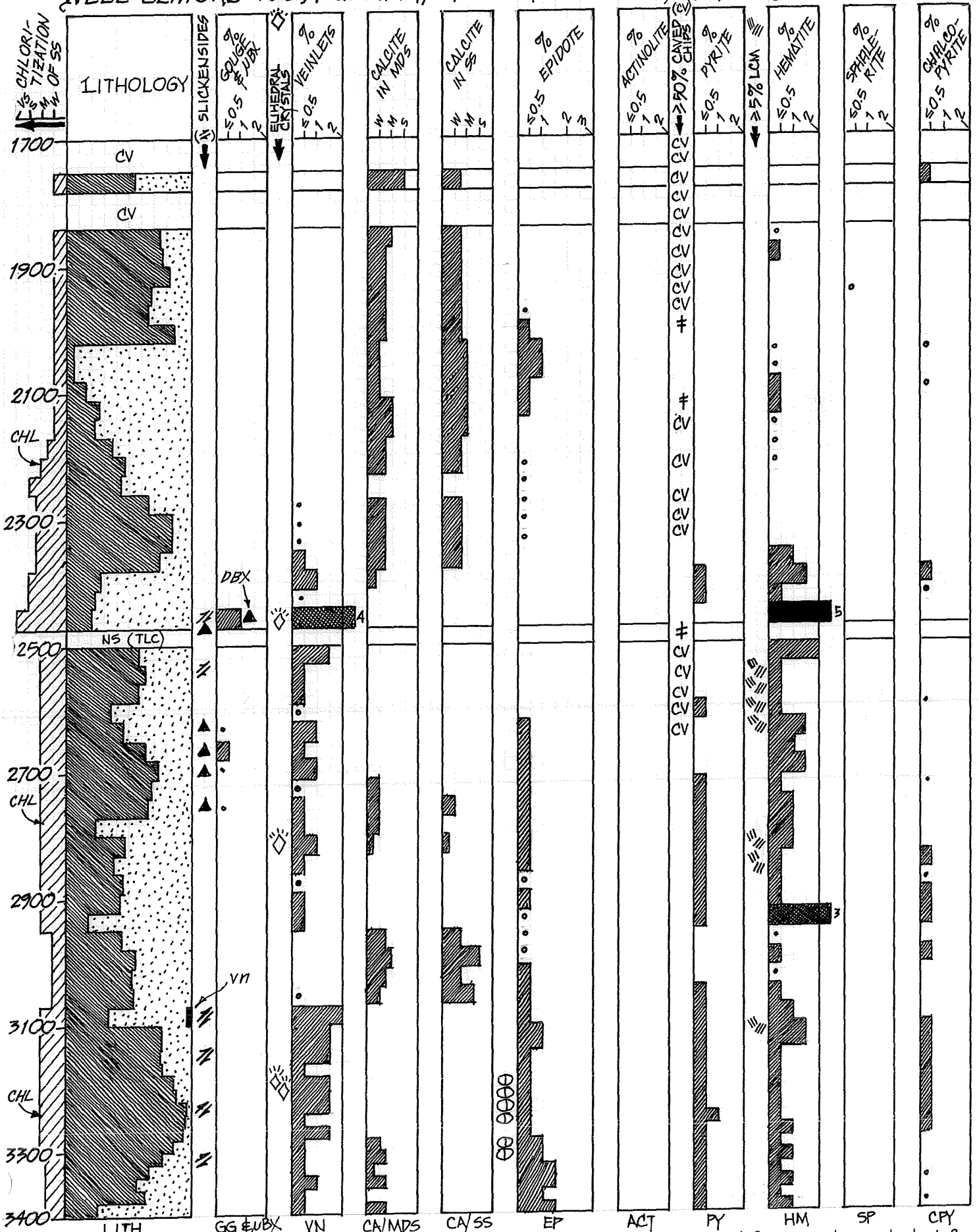
‡ Caved fragments excluded from analysis and interpretation.

① Sandstone mostly medium- to coarse-grained; elsewhere very fine- to fine-grained.

*WELL ELMORE-100, SUMMARY GEOLOGIC LOG

**J. Hulen 08/03/04

DRAFT



Measured depth in feet

*Explanation on Page 5

**Logged by JH 04/15/03 - 04/21/03

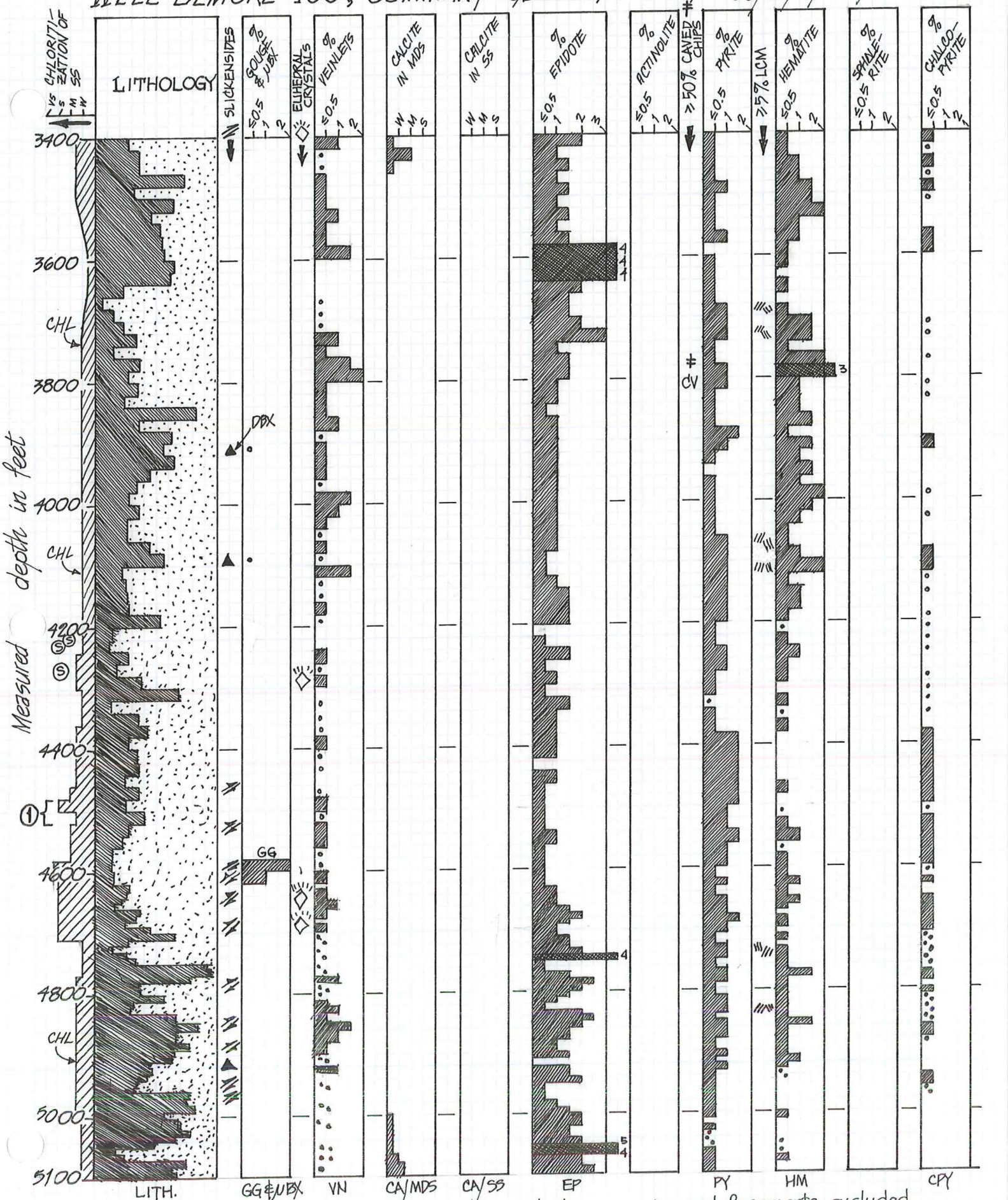
▲ - Dilational microbreccia (DBX) present

‡ Caved fragments excluded from analysis and interpretation.

*WELL ELMORE-100, SUMMARY GEOLOGIC LOG

**J. Hulen 08/06/04

DRAFT



*Explanation on page 5

** Logged by JH 04/15/03-04/21/03

① sandstone strongly silicified

‡ Caved fragments excluded from analysis & interpretation

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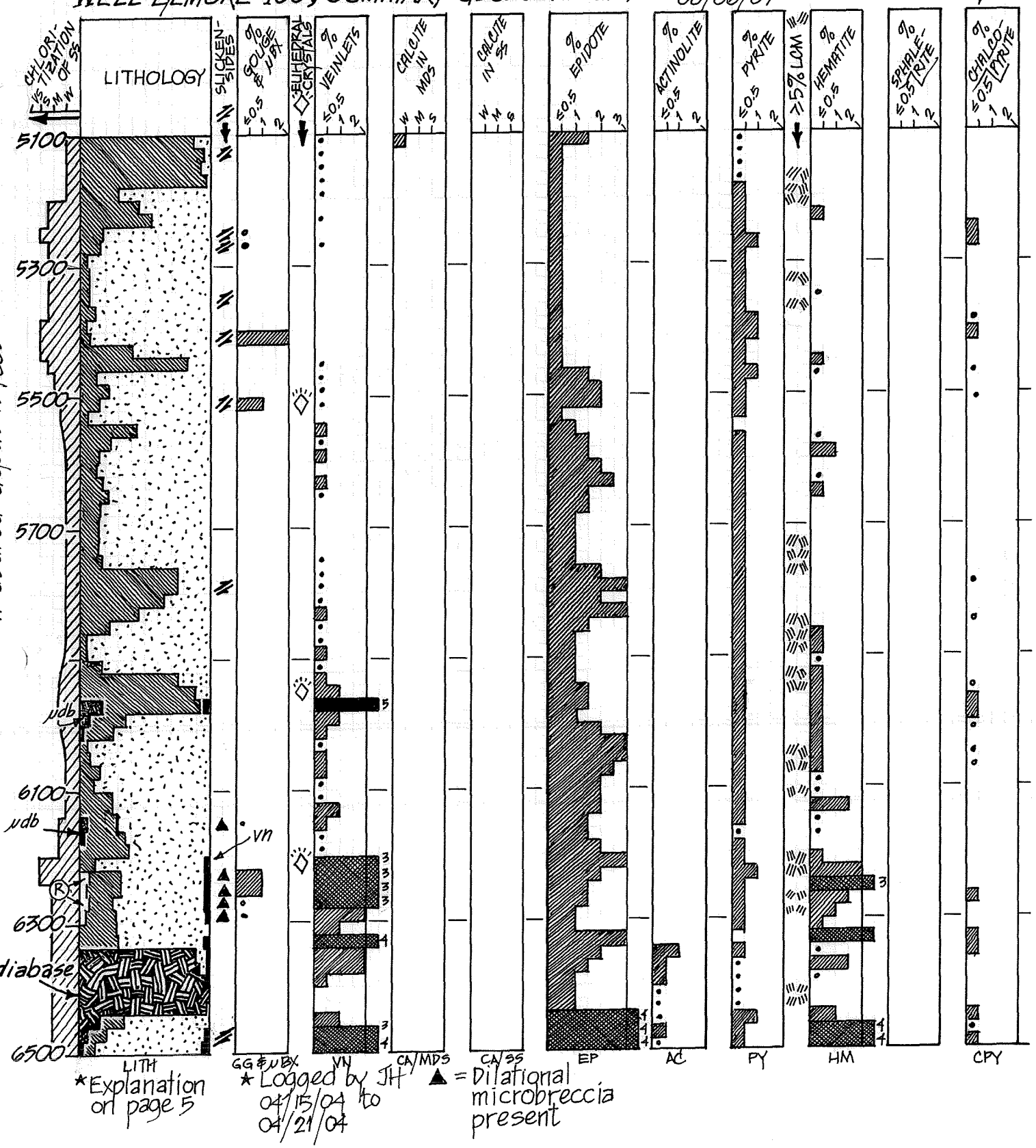

* WELL ELMORE-100, SUMMARY GEOLOGIC LOG
** J. Hulen 08/06/04
DRAFT
Page 4 of 5
CHLORITIZATION OF SS
F S M W
LITHOLOGY
SLICKENSIDES
% GOUGE & BX
≤0.5 1 2
EUHEDRAL CRYSTALS
% VEINLETS
≤0.5 1 2
CALCITE IN MDS
W M S
CALCITE IN SS
W M S
% EPIDOTE
≤0.5 1 2 3
% ACTINOLITE
≤0.5 1 2
% PYRITE
≤0.5 1 2
≥5% LOM
% HEMATITE
≤0.5 1 2
% SPHALERITE
≤0.5 1 2
% CHALCOPYRITE
≤0.5 1 2
Measured depth in feet
5100
5300
5500
5700
udb
6100
udb
vn
R
6300
diabase
6500
LITH
GG & BX
VN
CA/MDS
CA/SS
EP
AC
PY
HM
CPY
* Explanation on page 5
* Logged by JH 04/15/04 to 04/21/04
▲ = Dilational microbreccia present

WELL ELMORE-100, SUMMARY GEOLOGIC LOG

—Explanation—

Abbreviations

ac, act – actinolite
an, anh – anhydrite
ca – calcite
chl – chloritization (of sandstone)
cmt – cement
cpy – chalcopyrite
crs – coarse
cv – caving, sloughing
ep – epidote
fgr – fine-grained
gg – gouge
gr – [-grained]
hm – hematite
lith – lithology
m – medium
med – medium
mds – mudstone
μbx – microbreccia
μdb, μdbs – microdiabase
ns – no sample
py – pyrite
s – strong
sp – sphalerite
ss – sandstone
vn – veinlets
vs – very strong
vf – very fine
w – weak
w/ – with

Ⓢ "Sanded"; dissagregated to loose grains

dbx – dilational microbreccia

lcm – lost-circulation material

R – rhyolite

Borehole cement

Nodular and bedded, evaporitic anhydrite

Pebble gravel, possibly introduced (with cement?)

Symbols

◇ – Euhedral crystals
⫽ – Slickensides
% – Per cent (volume)
◐ – Anhydrite nodules
@ – Gastropod fossils
ⓔ – Ostracod fossils
• – Trace
▲ – Dilational microbreccia
≈≈ – Sheared
/// – Lost-circulation material

(R) Rhyolite; massive, microcrystalline ("felsite"), buff-white w/ sparse, <50 micron, gray-green speckles; intrusive

(μdb) Microdiabase; microcrystalline, chloritized but with some fresh plagioclase

Diabase; fine-crystalline, dark brownish- to gravish- to olive-green; some fresh pyroxene present but rock is strongly chloritized

Sandstone; mostly lithic arkose to subarkose; below 1360 ft, entirely very fine- to fine-grained; cemented w/ diagenetic calcite (initially) but this carbonate has been partially to wholly dissolved and/or replaced with calc-silicates where accessed by hydrothermal fluids (below 730 feet).

Lacustrine* mudstone and muddy siltstone, undivided; mudstone to siltstone ratio typically >3.
* & fluvial

DRAFT
J. Hulen
08/06/04

ELMORE-100 04/15/03 J. Hulen

100-130'

100% s/ty mds, matte
sl. grayish-orange
©; tr. shell fragments;
tr. med. sand;
<0.2% more coherent
<0.5 mm chips of lt. grayish-green to grenish-gray mds. & arg. slts. — a few of these are rounded

130-160'

~~100%~~ (98%) s/ty mds ©
dull lt. orange AA

(2%) discrete grains avg ½-1 mm. dia. or length, commonly rounded, lt. grayish-green ⊘ slts. & mds. — These embedded in the orng mds

160-190'

abund. cu grease

99% orange mds AA ©

1% lt. grnsh-gray mds & slts ⊘ AA

190-220'

1 CMT 30 ft

AA

(1)

* also: 1 sl. rounded 1 mm-dia chunk of dark amber
* SPHALERITE embdd. in the orange mds.

220-
250-

0.5% AA (& frags.)

100% dull lt orange semi-consol. ⓒ silty mds, sparsely micaceous.

250-
280-

0.5% AA

100% silty dull orange (lt) matte, ⓒ mds AA

280-
310-

Tr. gastr. AA

25 arg. silts → 75 silty to "clean" mds

ⓒ lt. matte sl. grsh (dull) orange ⓒ

310-
~~280~~-
340-

17 arg. silts → 83 mds

ⓒ ⓒ

↳ ~1/8 lt. yell-gray
~7/8" dull lt. orange AA unconsol., artificially combined to make a sort of "mudstone breccia"

ELMORE 100

04/16/03
J. Hulen

340–370 – 100% silty mds, lt. dull orange, © semi-consol.

370–400 – SLIM SAMPLE — probably overwashed ?

abundant ostracods

5% ostr

1% V

~15% coarse mica; probably LCM

11 arg. slts | 19 slty mds | 70 sand mostly med-gr " disagg. to single grains | view with suspicion ?

400–430 – 3 mds | 97 muddy sandstone, f-lmg – rare crs. gr.

0.5%

matte (dull) lt. sl. grayish-orange © "violently"

430–460 – smpl. is artificially mixed (soft plastic drilling and sampling process) → much dried oil & polymer (?)

guess: ~75% mds & slts | ~25% ss AA

dull orange & ©

3

APPEARANCE OF NOD AN

460-490	(3) nod AN (mostly white /xln; minor transl. gray f-mxln [rexlzd.]	(97) muddy f-mg sand & "sandstone" dull lt. orange AA (c)
490-520'	(Tr) nod AN	(100) muddy f-lmgr "sandst" (AA), dull lt. orange (c)
520-550'  Tr	(6) nod & nod/xln AN	94 muddy f-lmgr "sandst" (AA), dull lt. orange (c)
550-580' (569') "casing" tr.	(9) nod AN / 7 arg sltst / 7 slty mds (c)	77 muddy fgr ss dull lt. orange (c)

Note: this smpl & up to 460': rare in that the nodular ANH interval in the "caprock" is typically lt. yel. gray

fltng? erosion?

(4)

ELMORE 100 04/15/03 J. Huber

580-610 5 CMT

2 nod ANH & nod x/n

5% grit and pebbles & pebl fragments, the latter up to 3mm. dia. or length

93 muddy f-lmgr semi-consolidated "sandstone" dull lt. orange to grsh-orng. ©

interp.: pebbles probably suspended in muddy/sand slurry at deposition

---

610-640- COLOR CHANGE & MORE ANH

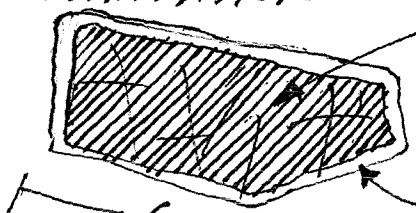
15% x/n. gypsum clear crystals & crystal-frags. blocky, rounded corners, up to at least 7 mm. in dia. or max. dimension

LARGE

3% nod ANH (& AN rims on GYP

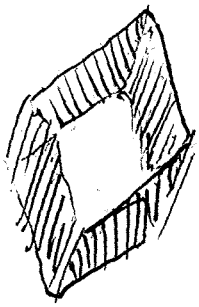
90 silty mds matte lt. yel-gray ©

2 muddy sand AA (cvd ?) ©



(5)

640-
670' | 5 anh-rimmed gyp XLS., AA | 3 nod AN | 92 mds MLYG, AA ©



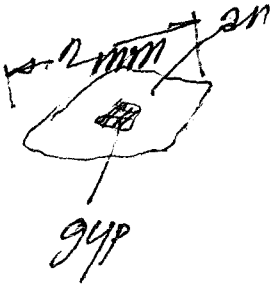
?

670-
700' : 4 nod AN | 96 mds MLYG, AA ©

700-
730' : 5 nod AN | 95 mds, ~~sparsely~~ silty to sandy MLYG ©

BECOMING LESS CALCAREOUS

730-
760' : 1 gyp | 2 ANH nod & XLn | 97 silty mds. MLYG, AA to lt., sl. brownish-gray some chips | prominently laminated. ©



760-
790' | 1 nod AN | 99 silty mds matte lt. sl. brownish-gray ©

(6)

ELMORE 100   04/16/03   J. Hulen

790-820'

30% nod. & xln. AN / 7 arg. slts / 63 slty mds

0.1 py

→ latter probably rexlzd nod. AN

→ several var.:
① white, ovoid nods warty surface vxln
② cluster of thin blades
③ clusters of blocky xls — some w/ minor pyrite.

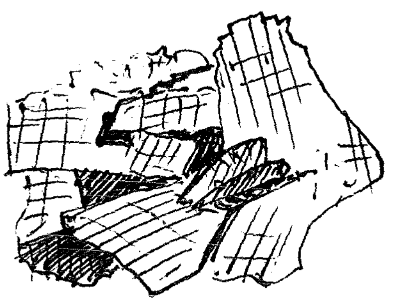
© F
lt. matte sl. brownish-gray

{ ~ 7% dull lt. orange mds. chips are probably caved }

820-850'

13 AN (AA) / 86 slty mds lt. matte, sl. brownish-gray (AA) / 1% ss fgr arg

0.1 py



|← 2mm →|

papery cluster of bladed ANH. XLS.

(7)

850-
880-

SS appears.

0.3 py

13 x/n AN (rexized. nods.) / 5 arg. slts / 47 slty mds / 35 ss mostly fmgr but a few chips m-crsgr w/ some frsd qtz. grains up to 1.5 mm.

V. FINE CUTTINGS

mostly lt. matte yellow-gray

lt. buff-gray, micaceous.

note: many anhydrite masses c/early developed in sandstone (sabkha??)

880-
910-

12 x/n AN aa / 53 slty to sparsely sand mds / 32 ss AA

0.1 py

V. FINE CUTTINGS

910-
940-

APPEARANCE OF CRS. SS

some caving ?

5 nod. AN / 5 slts / 35 mds some cv? / 17 f-mgr. ss / 38 sand w/ minor slts

crs.-grnd. qtz-rich subrnd-subang frosted grains

transl. med. gray

(8)

ELMORE 100 04/16/03 F. Hulen

940-970'

2 AN Xln.	2 slts	7 mds	89 sand ~~vf-gr~~ um-crs gr very quartz-rich-sparsely micaceous disaggregated mostly to single grains	Transl. lt-med. gray	0.2 py (sltd ss grain [cement]	
	MLYG AA					

970-
1000

1 2AN aa	1 slts AA	7 mds AA	5 ss f-mgr micaceous sl. brnsh-gray	85 sand m-crs. gr. AA	0.2 py all disagg.	

1000-
1030

1 AN aa	3 arg slts MLYG AA	74 silty mds	17 fgr ss AA	5 crs SAND grns. AA	some caving?	

9

1030–1060' | 1 AN | slts | mds | ss fgr-lmg | m-crs. free sand grains

slt. matte yellow-gray AA ©

1060–1090' | 2 AN | arg. slts | mds & slty mds | ss fmgr ©?

matte slt. yell.-gray ©

1090–1120' | 1 AN | slts AA | mds AA | ss fgr ©± slt. brnsh-gray

~~1151~~

1120–1150

- 15% LCM
- 20% cvg mds. chips

excluding likely caved chips

100% totally "clean" disaggregated (?) ss med.–crs. sand grains lt.-orange to v. lt gray & white trans'lucent overall

± to subrounded — just qtz & fsp

no lithic fragments

10

ELMORE 100 04/16/03 J. Hulen

1150-
1180-

~ 30% CAVED MDS SLTS Chips

100% SAND
m-crs. gr. AA

Tr. SPHALERITE APPEARS

1180-
1210-

7 mds & slts
prob. caved

93 m-crs. gr. disagg. sandst.
SAND lt. orange to lt. gray transl., ± to subrnd. grains all quartz & feldspar
clinging to grains or trng grain aggregates — transl. — transp. lt. yellow to amber

0.3 SP
Tr. GN

1210-
1240-

5 mds & slts
prob. caved

95 mgr. SAND
AA

"sanded sand"

0.4 SP
0.1 GN
intergran.

11

1240-1270'

3% mds ©

caved?

97% sand & ss m-crs. gr

Tr. SP

free grains pearlescent coated w/ muddy material (illitic clay)

grain aggregates cemented by the same pearlescent [& v. lt. gray to white] clay.

1270-1300'

0.2 SP

3 slts ©

some caved ?

17 mds

13 ss fgr lt brnsh-gray to gray-buff

57 sand & ss AA m-crs. gr

1300-1330'

1 AN (VVf?)

3 mds & slts. (caved?)

96 sand, AA mostly med-gr. <5% crs. gr

Tr. SP

Tr. GN

Totally disaggregated.

Logging Notes | ELMORE-100 | 04/16/03 | J. Hulen

1330-1360'

(30)% mds & slts; much prob. caved

(70) sand & ss mgr

0.1 SP
tr. gn

≤ 10% LCM; probably considerable caving

1360-1420

Mostly caved cuttings & LCM
— do not use —

1420-1450'

Better

(5) mds & slts. dom. or entirely caved — most likely

(93) ss f-lmgr lt. grnish-gray to grayish-pink to

≤ 15% strongly silicified

(2) VVF water-clear ANH or BRT cleavage blocks & plates

0.1 SP
tr. gn.

1450-1480 caved; abundant LCM

1480-1510 (20) mds & slts (80) ss, fgr, argillaceous lt. grnsh-gray & grayish-green (Tr) VVF (AN or BH) 0.2 cpy / 0.1 sp

---

1510-1540' BIG CHANGE — ROCK MUCH MORE CHLORITIC.

Extensive caving

(17) mds, med. gray-green chloritic

(83) ss, fgr, argil., med.-dk gray-green; extremely chloritic 0.2 cpy

approach to fault?

ELMORE 100 04/16/03 J. Hulen

1540-1570 — 20% caved — V/I (m) — 30 mds ⊕ s/ts med. gray-green ⊘ / 70 ss f.gr. med gray-green ⊘ — Tr. cpy

looks a bit sheared could be close to a fault

1570-1600 — 15% caved — 1, CN — 27 mds ⊕ s/ts AA ⊘ / 73 ss AA ⊘ — Tr. py

1600-1630 — 2, CN — 35 mds ⊕ s/ts AA ⊘ / 65 ss AA ⊘ — Tr. sp

1630-1660 — CN — 40 mds ⊕s/ts AA ⊘ / 60 ss AA ⊘

1660-1690 — EXTENSIVE CAVING do not use

1690–1720 EXTENSIVE CAVING	? 25 mds. & shs @	? 75 ss @		0.1 HM
1720–1750	bad smpl— do not use			
1750–1780 EXTENSIVE CAVING	?? 19 org. shs @	?? 35 mds @	?? 46 ss for @	0.2 gy
	bad sample			
1780–1810 do	bad smpl. do not use			
1810–1840 do	〃			
1840–1870		? 75 mds + shs @	? 25 ss @	Tr. HM

still bad

(46)

ELMORE-100 04/19/03 J. Hulen

1870–1900
coarse cuttings; possibility of caving

17 slts / 60 mds / 23 ss — 0.1 HM
Ⓒ± / Ⓒ± / Ⓒ± — in Ⓒ gray-green ss

matte lt. gray to sl. grnsh-gray

vf–lmg various colors (≡ cvng?)

1900–1930
(AA) cvng?

15 slts (arg) / 68 mds (slty) / 17 ss AA — 0.1 sp (CVD?)
AA Ⓒ± / Ⓒ±

1930–1960
(AA) cvng?

23 slts / 46 md / 31 ss AA / Tr. VVF — Tr. sp
Ⓒ± / Ⓒ±

1960–1990
(AA) cvng?

52 arg slts / 15 mds / 33 ss — 0.1 sp (diss)
Ⓒ±

1990–2020

EPIDOTE APPEARS — 0.1 EP (diss.)

continuum
52 arg slts / 35 mds (slty) / 13 ss AA
all AA, Ⓒ±

③ CMT
Tr alumin.
ctngs FeOx-stained.

2020–
2050'

1 slts / 1 mds / 92 sand

©F

→ ufg–lmgr, mottled vlt. grsh–orange & grnsh–gray, almost entirely disaggregated

conspicuous diss. epidote

©

1 EP
Tr. HM
Tr. cpy

2050–
2080'

all HM

1 EP
Tr. HM

2080–
~~2100~~'
2110':

7 slts matte lt. s. grnsh–gray ©F ↔ 9 md ©F | 84 ss ©

0.5 HM
0.3 EP
Tr. cpy

2110–
2140'

11 slts / 16 mds / 73 ss
© © ©

HM

0.5 HM
0.2 EP

ELMORE 100 04/19/03 F. Hulen

~~2140~~
2140' – 2170'

EXTENSIVE CAVING

~~15~~ ? 8 arg slts | 15 slty mds | ? 77 f-lmgr sand

Tr. HM

poor sample

2170' – 2200'

some caving

15 arg slts | 23 slty mds | 62 ss ufg-lmg

Tr. HM
0.1 EP

chlorite present

2200' – 2230'

EXTENSIVE CAVING

? 11 ~~mds~~ slts | 36 mds | ? 53 ss

Tr. HM
Tr. EP

poor sample

2230' – 2260'

some caving

11 slts | 33 mds | 56 ss

Tr. EP

very chloritic

2260' – 2290'

EXTENSIVE CAVING

? 67 slts + mds | ? 33 ss | Tr. VF

Tr. EP

2290-
~~2300~~
2320'
EXTENSIVE CAVING

? | 5 slts | 80 mds | 15 ss | Tr. VVF (ep, an)
©± ©+

~~0.5~~ Tr. EP

2320-
2350'
EXT. CVNG.

AA

Tr. EP

2350-
2380
MOD. CVNG

74.5 mds | 25 ss | 0.5 VVF (HM)
slts | fg
©± ©±

~~0.5~~ HM
(1)

more chloritic

2380-
2410'
MINOR CVNG
good sample.

5.5 slts | 23 mds | 71 ss | (1) ~~0.5~~ VVF (HM) an

~~1.2~~ HM
0.3 py
0.1 cpy

→ matte lt. grnsh-gray to grayish-green

→ fgr, arg., lt. grnsh-gray to lt. grayish-green

sample conspicuously CHLORITIC

(20)

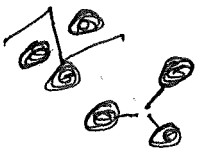
ELMORE - 100 04/19/03 J. Hulen

2410-
2440'

5 slts / 18 mds / 77 ss

0.1 HM
0.2 PY
Tr. cpy

→ mostly vfg-fg, lt. grnsh-gray, extensively disaggregated into its component grains — conspicuously chloritic



2440-
2470'

Abund. HEM & VVF
VERY CHLORITIC

5 HM

qtz encapsulating specular hematite

2 slts / 13 mds / 80 ss

gray-green

4 VVF [HM] qtz. / 1 DBX (hm-cmtd)

→ ufgr - (rarely) lmgr med gray-green v. chloritic

(minor; chloritic)

2470-
2500'

NS
NR

total lost - circ.

2500-
2530-

EXTENSIVE CAVING

58 mds + slts / AA

41.5 SS / AA

1.5 VVF (HM)

2 HM

2530-
2560

√ (TR)

EXTENSIVE CAVING & LCM

62 mds + slts / AA

37.5 SS / AA

0.5 VVF (HM)

0.5 HM

2560-
2590

EXTENSIVE CAVING & LCM

58 mds & slts / AA

41.5 SS

0.5 VVF (HM)

0.5 HM

2590-
2620

EXTENSIVE CVNG & LCM

35 mds & slts / AA

65 SS

Tr VVF (HM)

0.1 py / Tr cpy

0.3 HM

2620-
2650

EXT. CVNG. & LCM

44 mds & slts / AA

55 SS / AA

1 VVF (HM)

Tr. DBX

1.3 HM / 0.3 EP

ELMORE-100 04/19/03 J. Hullen

1.0 HM
0.3 EP

2600-2680 | 11 arg. slts / 5 mds | 3.7 ss | 0.5 VVF [HM] | 0.15 DBX HEM-CMTD.

→ matte of grnish-gray to grish-green

→ fgr, arg, mostly lt. grayish-green and ; some lt. gray-buff, SILICIFIED, and

← 1/20

2680-2710 great sample

17 slts / 55 mds | 27 ss | 1 VVF (HM) | Tr DBX HM-CMTD.

all AA

1.3 HM
0.3 EP
↓
in silicf. ss

2710-2740

looks fresher

17 slts / 52 mds | 31 ss | Tr VVF

@ F / @ F

0.2 HM
0.2 py
Tr. cpy
0.2 EP

2740-2770

64 slts + mds AA | 35.5 ss AA | 0.5 VVF [HM] | Tr DBX (HM-cmtd.)

@ F

1 HM
0.3 EP
0.2 py
Tr. cpy

23

2770-2800-

50% s/ts / 17 mds / 77 ss / 0.5 VVF (HM)

@F

fgr, @

1 HM
0.1 EP
0.3 py

2800-2830-

ABUND. LCM

11 s/ts / 35 mds / 53 ss / 1 VF (HM EP-cpy)

@F

ep

0.5 EP
1 HM
0.3 py

2830-2860-

ABUND. LCM

23 s/ts / 15.5 mds / 6/ss / 0.5 VVF (HM) (EP-HM) (cpy-HM)

AA, @

0.3 HM
0.2 EP
0.1 cpy
0.2 py

2860-2890-

45 mds + s/ts / 55 ss / Tr. VVF

AA @

0.2 HM
Tr. EP
Tr. cpy
0.2 py

2890-2920-

42.5 mds + s/ts / 57 ss / 0.5 VVF (HM) (HM-cpy-ep-anh)

0.5 HM
0.1 cpy
0.3 EP
0.3 py

ELMORE-100 04/19/03 J. Hullen

2920-2950

5,5 s/hs | 13 mds | 81 ss | 0,5 VVF (HM)

2,5 HM
0,3 cpy
0,5 py
Tr. EP

→ vfg-fg, lt. grnsh-gray to grayish-green pearlescent, ◎, ◎

BECOMING LESS ALTERED

2950-2980

7 s/hs | 35 mds | 58 ss

Tr. HM
Tr EP

2980-3010

13 s/hs | 42 mds | 45 ss

~~0,2~~
0,3 cpy
0,1 HM
Tr. EP

→ mix of matte lt. gray (◎) and matte lt. grayish-green (◎)

vfg-fg also a mix of lt. grnsh-gray & buff-white to v. lt. gray buff ◎

3010-3040

15 s/hs ◎+ MIX, AA | 37 mds ◎+ AA | 48 ss vfg-fg ◎+ MIX, AA

0,3 EP
Tr. HM

6

25

3070-
3070'

7 slts / 46 mds / 47 ss AA mix ⊘ ± vfg-fg / Tr VVF / 0.5 HM (diss) / 0.2 py / 0.1 EP / Tr. cpy

⊘ F

3070-
3100'

CONSPICUOUS CHALCOPY

ALTN INCR. AGAIN

1/ (Tr.) 23 mds / 9 slts / 66 ss / 2 VVF (QTZ-KF-, py, cpy / HM / cpy) / 0.4 cpy / 0.2 EP / 1 HM / 0.1 py

3100-
~~3130~~

abund LCM

5 slts / 71 mds / fg 23.5 ss / 1.5 VVF (HM, EP, cpy, py, AN, qtz) / 1.5 HM / 1 EP / 0.1 cpy / 0.3 py

lt-med. gray-green

3100-
3120

~~3130-
3160~~

3120-
3140'

AA

ELMORE 100 04/19/03 J. Hulen

3140-3160'

1/ (Tr)

5.5 slts / 68 mds / 25 ss / 1.5 VVF (cpy, HM, ◎-ch, ANH)

→ mix of matte gray & matte grnsh-gray ◎ chlte.

→ vfg-fgr arg'll., ◎, dom. lt. grnsh-gray (chlte) ◎

0.2 cpy
0.1 HM
0.2 py
0.2 EP

3160-3180'

6.5 slts / 70 mds / 25 ss / 0.5 VVF (HM, cpy)

aa, ◎

0.2 cpy
0.5 HM
0.1 py
0.2 ep

3180-3200'

7 slts / 78 mds* / 13.5 ss / 1.5 VVF (QTZ-ep) (HM) (cpy)

all AA ◎

0.3 cpy
0.4 HM
0.5 EP
0.2 py

~1% * with ANH ◎ 11 frothy siliceous latticework

3200-3220'

1/ (Tr) chlte.

7 slts / 80 mds* / 11.5 ss / 1.5 VVF (QTZ-ep) (cpy) (ANH)

0.3 EP
0.2 cpy
0.5 py
0.2 HM

* with ANH ◎ ~2% AA

27

dark-colored

3220-3240'

* with ANH ∩ ~3%

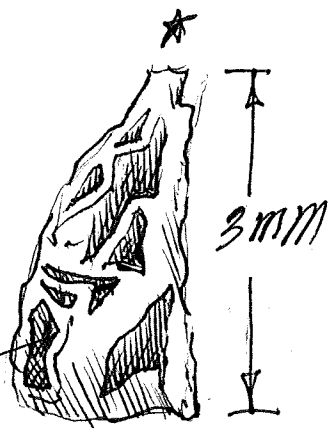
1/ (Tr) chltc.

5 slts / * 89 mds / 4.5 ss / 1.5 VN/VF (∅-EP) (HM) (cpy) (py)

matte grayish-green to flat gray

0.5 HM
0.1 cpy
0.3 py
0.2 EP

3240-3260'



5 slts / 90 * mds / 4.5 ss / 0.5 VVF

AA, AA

words rimmed by ANH & QTZ

dissolved anhydrite in grysh-grn mds.

* ANH ∩ ~4%

0.3 HM
0.7 py
0.1 cpy
0.2 EP

3260-3280'

3 slts / 87 mds / 8.5 ss / 1.5 VVF (HM) (EP) (QTZ) (HN)

AA, AA

exc. ~1/5 silicified epidotized

0.7 HM
0.5 EP
0.1 cpy
0.3 py

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Less Altered

0.7EP
0.2HM
0.1PY

3280-3300-

1 mod AN * with rexlzd colorless fx/n in mds

3 shs

82 * mds

3.5 ss f-gr ± (sil. ep)

0.5 VVF (HM) (Φ-ANH-EP)

also * with (ANH) Φ w/% in mds

→ w/ gray-green
w/ gray ©
commonly laminated.

3300-3320-

missing box? FOUND IT

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0.7HM
0.7EP
0.3PY

0.5 mod AN

also (ANH) Φ (w/% in mds) "spongy" texture

1/ (Tr)

3 shs / 73 mds

AA, but © ±

23 ss AA

0.5 VVF
- HM
- EP, then HM
- EP

29

3320-
3340-

10.5 slts / 55 mds / 34 SS / 0.5 VVF
-Ep
-Hm

→ u 2/3 matte gray
u 1/3 matte grysh-green

1.3 Ep
0.3 HM
0.5 Py

3340-
3360-

5 slts / 49 mds / 45 SS / 1 VVF
-Ep
-Hm

AA

→ fgr, H. grnsh-gray speckled with grnsh-yellow
19/20 , 1/2 silicified

0.7 HM
1.5 Ep
0.5 Py
Tr. Cpy

3360-
3380-

Minor LCM

12.5 slts / 49 mds / 38 SS / 0.5 VVF
-Ep
-Hm

AA
more argil.

0.5 HM
0.7 Ep
0.5 Py
(some slyng. in mds.)

3380-
3400-

2.5 slts / 25 mds / 74 SS / 0.5 VVF
-Hm
-Ep
-Cpy

→ AA

1.2 Ep
0.7 HM
0.5 Py
Tr. Cpy

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3400-3420'

10 slts | 17 mds | 72 SS | 1 VVF — Hm — Ep — Cpy

2 EP
0.5 HM
0.3 py
0.2 cpy

matte lt. gray to grnsh-gray ⊙ C F

vfg-fg, argill. lt. grnsh-gray speckled with greenish-yellow

pure mono-cpy units in mds.

3420-3440'

5 slts | 31 mds | 64 SS AA vfg-fg. | Tr VVF — Hm

0.5 HM
Tr. cpy
0.5 py
1 EP

AA exc C F

3440-3460'

all AA | Tr. VVF — Hm — Ep — Cpy

1 HM
0.1 cpy
1.3 EP
0.5 py

3460-3480'

15 arg slts | 67 mds | 27.5 SS Ppr | 0.5 VVF — Py — Ep — Hm

0.7 HM
0.9 Ep
0.5 Py
Tr Cpy

C F

3480-3500'

5.5 slts | 26 mds | 68 SS AA | 0.5 VVF — Hm — Ep

1.5 HM
0.1 Cpy
1 py
1.5 EP

31

3500–3520' (AA) ⌀ Tr. mnrlzd w/HM	9 slts	56 mds	34.5 ss ⌀ fgr chlk.	0.5 VVF — Hm	1.3 HM / 0.7 EP / 0.5 Py / Tr. Cp
3520–3540'	7 slts	39 mds	53 ss vfg (AA ⌀)	1 VVF (Hm)	2 HM / 1.3 Ep / 0.8 Py
3540–3560'	6.5 slts	46 mds	47 ss (AA ⌀)	0.5 ~~tr.~~ VVF — Hm	1 HM / 0.7 Ep / 0.5 Py
3560–3580'	7.5 slts	47 mds	45 ss (AA ⌀) → w/ ~~5%~~, silicfd.	0.5 VVF — Hm	1 HM / 1.5 Ep / Tr. cpy / 0.7 py
3580–3600'	2.5 slts (aa)	53 mds	43 ss ⌀	1.5 VVF — Ep ± Qtz — Hm	3.5 EP / 0.1 cpy / 0.5 Hm

→ v. lt. pinkish-buff to v. lt. grayish-grn, speckled w/ greenish-yellow ⌀

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3600–3620 — 3s/Hs / 61 mds / 36ss / —

3.5 EP / 0.1 HM / 0.1 PY

mix of matte lt. gray, grnsh-gray, & grayish-green

for. dom. mottled. pinkish-buff & grnsh-yellow in 50/50 & silicified.

3620–3640 — 9s/Hs / 52 mds / 39ss / —

all AA,

3.5 EP / 0.3 PY

HM GONE

3640–3660 — Minor LCM — 8s/Hs / 15 mds / 77ss / —

vfg, arg.

1.7 EP / 0.3 HM / 0.3 PY

3660–3680 — Minor LCM — 5 mds(+) s/Hs AA / 95 sand & ss / Tr. VVF — Ep

vfg, largely

1.3 Ep / 0.3 PY

3680–3700 — Mod. Abund. LCM — 2s/Hs / 13 mds / 85 sand & ss / Tr. VVF — Hm

AA

vfg AA

0.3 HM / 0.7 PY / 1.5 Ep

33

3700-3720'

3 s/Hs | 20 mds | 77 SS vfg

Tr VVF
- Ep
- Hm

1.3 HM
2 Ep
0.7 Py
Tr. Cpy

Ep & Hm mostly diss. intergranular in sandstone

3720-3740'

Mod. abund. LCM

4 s/Hs | 29 mds | 66 ss vfg-fg
AA,

1 VVF
- Hm
- Ep

~~3~~ ~~2~~ ~~1~~ Ep
1.5 Hm
1 Py
Tr. Cpy

Less Ep & VVF

3740-3760

Minor LCM

2 s/Hs | 13 mds | 85 ss fgr
v. lt. grn-gray to grn. buff
$ ●●●

Tr VVF
- Ep

0.7 Ep
0.~~5~~ Hm
0.3 Py

Sparkly

3760-3780'

(5.5) 6 s/Hs | 31 mds | 63 ss fgr
AA,
mostly ●●●

1.5 VVF
- Hm
- Hm. Cpy
- Ep

2 HM
1.5 Ep
Tr. cpy
0.5 Py

Sparkly

3780-3800'

▲ (Tr)

4 s/Hs | 21 mds | 73 ss fgr, mix of ● & ●
AA
mod.-str. silicified

2 VVF
- Hm
- Ep

Tr
~~VRX~~

2.5 HM
0.7 Py
1.3 Ep

3800-3820'

5 s/Hs | 29.5 mds | 65 ss
AA

0.5 VVF
- Hm

1.2 Ep
1.3 Hm
1 Py
Tr cpy

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~~3800-~~ 3820-3840

prob. Extensive caving

3.5 slts | 20 mds | 76 ss | 0.5 VVF — Hm | 1 HM / Tr. cpy / 0.7 Ep / 0.3 Py

→ matte lt. grnsh-gray to grayish-green, msv.

→ vfg-fg, mix of lt. grayish-green, lt. grnsh-gray, & lt. grnsh-buff, mostly

CHANGE mds. dom.

3840-3860' (AN)

1 nod AN | ~~3~~ 3.5 slts | 78 mds | 17 ss AA | 0.5 VVF — Hm — Ep — Py | 1 HM / 0.3 Ep / 0.5 Py

→ med.- rarely dk. grayish-green, conspicuously chloritic

spec. hm replaces some nod ANH

CHANGE BACK

3860-3880

1 slts | 35 mds AA | 63 ss AA | 1 VVF — Hm — Py | 1.3 HM / 0.7 Ep / 0.5 Py

3880-3900'

5 slts | 57 mds AA | 38 ss AA | Tr. VVF — Hm | ~~0.7~~ 1.3 Py / 0.3 HM / 0.5 EP

RX much GREENER (CHLTC.)

3900-3920

Tr

9. slts. | 47.5 mds AA | 43 ss | 0.5 VVF — Hm | Tr. DBX | 1.3 HM / 1 Ep / 0.7 Py / 0.1 Cpy

3920-3940	7 slts AA	58 mds	34.5 fgr SS AA	0.5 VVF — Hm	0.7 Hm / 0.7 Ep / 0.5 Py
3940-3960	5 slts AA	40 mds	54.5 fgr SS AA	0.5 VVF — Hm	1.5 Hm / 0.7 Ep
3960-3980	3 slts all AA	3 mds	66 fgr. SS	1 VVF — Hm — Ep	1 Hm / 1 Ep / 0.5 Py
3980-4000	27.5 ~~mds~~ + slts AA	71 SS Vfg-fg AA		1.5 VVF — Hm — Ep	2 Hm / 0.7 Ep / 0.5 Py / Tr. Cpy
4000-4020 (AN) → ptly repl. w/ spec. hem.	35 mds + slts AA	64 SS & str. SIL w/ wkg-mod. silicfd.		1 VVF — Hm — Ep	1.5 Hm / 1 Ep / 0.5 Py
4020-4040	27 mds + slts	72.5 SS AA		0.5 VVF — Hm	0.7 Hm / 0.7 Ep / 0.5 Py / Tr. Cpy

ELMORE-100 04/22/03 J. Hulen

very fine (small) cuttings

4040-4060'

27 mds (+) slts → matte, light greenish-gray to grayish-green

73 ss vfg-fgr, lt. grnish-gray, mod. sil. cmt

Tr VVF
- Hm
- Ep
- Qtz·Ep

0.3 HM
0.7 Ep
0.5 Py

4060-4080'

Mod. abund. LCM

HEM. LARGELY GONE

6.5 slts AA

38 mds

55 ss fgr, mod. sil.

0.5 VVF
- Ep
- Chl·Qtz

1 Py
0.1 HM
1 Ep

4080-4100'

▲ (Tr)

5 slts

49 mds

45 ss fg

1 VVF
- Hm
- Ch
- Ep

Tr. DBX

1 Py
0.1 cpy
1 HM
0.5 Ep

4100-4120'

much greener

1.5 slts AA

19 mds → 2% dk stn sil. ls, 3% mod. sil.

78 ss fgr

1.5 VVF
- Hm
- Ep

Mod. abund. LCM

2 HM
0.7 Py
0.1 cpy
0.5 Ep

4120-4140'

very small cuttings

25 mds (+) slts AA

75 ss AA

Tr VVF
- Hm
- Ep

1 Py
Tr. cpy
0.3 HM
1 Ep

37

4140-4160	2 slts / 25 mds / 73 ss fgr — all AA, ⊗	Tr. VVF — Hm	0.7 Hm / Tr. Cpy / 1 Py / 1.3 Ep
4160-4180	2.5 slts / 25 mds / 72 ss fgr — all AA ⊗	0.5 VVF — Hm — Py	0.7 HM / 1 Py / 1.3 Ep
4180-4200	53 mds (+) slts / 47 ss — all AA ⊗	Tr. VVF — Ep	1 Py / Tr. Cpy / 1.5 Ep / 0.5 HM
4200-4220	very small cuttings 1 slts / 13 mds ⊗ / 86 SAND ⊗ → fine-grained, lt. grnsh-gray to greenish-buff mostly disaggregated to constituent grains ●●●	—	0.1 Py / Tr. Cpy / Tr. Ep
4220-4240	12 mds (+) slts AA ⊗ / 88 SAND AA, ⊗ ●●●	—	0.1 HM / 0.2 Ep / 0.2 Py / Tr Cpy
4240-4260	2.5 slts / 25 mds / 72 ss, fgr, H. grayish-grn, w/ 1/4 ⊗ str sil, w/ 3/4 ⊗ wk-mod sil	0.5 VVF — Hm	1 HM / 1 Py / Tr Cpy / 1.3 Ep

138

ELMORE 100 04/22/03 F. Hulen

"SANDED SAND" again.

4260-4280'

19 mds (+) slts matte lt. grnsh-gray to grayish-green | 81 SAND & ss fgr lt. grnsh gray to grnsh-buff mostly some | Tr VVF

0.3 HM
0.5 Ep
0.7 Py

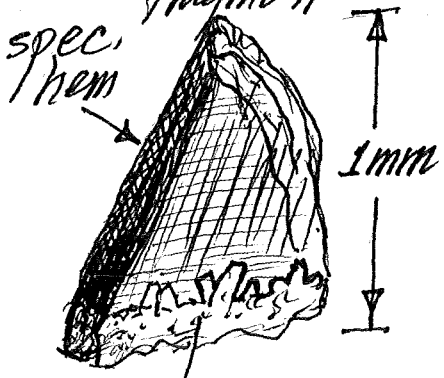
4280-4300'

3 slts | 35 mds | 61 ss vfg Py mostly

0.5 VVF
— Hm • Ep *
— Hm
— Ep • Qtz

0.5 HM
0.7 Ep
Tr. Py
0.5 Py

* vein/vug fragment



Ep (note euh. prisms projecting into hematite

≡ HM later

4300-4320'

5 slts | 4 mds | 3 ss

FRESHER-LOOKING

AA AA

0.3 Py
0.5 Ep
Tr. Cpy

4320-4340'	13 mds (+) slts AA	67 ss lt. fgr, grnsh-gray to grnsh-buff	Tr. VVF -Hm	1.5 Ep 0.2 Hm Tr. cpy Tr. py
4340-4360'	5 slts / 30 mds	65 ss all AA	Tr. VVF -Hm	0.2 Hm 0.5 py 0.7 Ep Tr cpy
4360-4380'	7 slts / 35 mds	58 ss all AA	Tr VVF Hm	0.5 Ep / 0.5 py Tr. Hm
4380-4400'	1.5 slts / 20 mds AA	72 ss fgr, lt. grayish-green 1/5	0.5 VVF -Hm -Py	1.5 Py 0.3 Cpy 0.2 Hm 1.2 Ep

These chips str. silicified & w/ more diss. py.
rest
wkly-mod. silicified.

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4400–4420 — 7 slts / 27 mds / 66 ss / Tr. VVF –Ep — 1.5 py / 0.2 cpy / 1.1 Ep

AA, ⊗

4420–4440 — 5 slts / 30 mds / 65 ss / Tr VVF –Ep — 1.5 py / 0.1 cpy

AA ⊗

4440–4460 — 3 slts / 23 mds / 75 ss / — — 1.5 py / 0.2 cpy / 0.7 Ep

AA, ⊗

→ fgr, lt. grnsh-gray, ⊗
u 2/5 ⊗⊗ str. silicified
u 3/5 ●●, wkly–mod. silicified

4460–4480 — 5 slts / 30 mds / 65 ss / Tr. VVF –Hm — 0.1 HM / 1.5 py / 0.5 EP / 0.2 cpy

AA ⊗ AA ⊗

1/ (Tr. chlte.)

4480–4500 — 5 slts / 20 mds / 75 ss — very green — 1.5 py / 0.5 EP / 0.1 cpy

all AA, all ⊗

!!

→ u 4/5 ⊗⊗ silicified

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4500-4520' | (7) #s/lts | (33) mds | (60) ss | Tr. VVF (py)(gtz) | 1 py / Tr. cpy / Tr. HM / 0.3 EP

→ matte lt-med. gray-green

→ f.gr., lt. grnsh-gray, v 3/5, silicified, v 2/5, but still quite indurated.

4520-4540' | 5.5 s/lts | 22 mds | 72 ss AA | 0.5 VVF / HM / py | 1 py / 0.2 cpy / 0.5 HM / 0.3 EP

1/ (Tr.) chlte.

→ exc. v 1/10 silicified, v 9/10 indurated

→ some pcs actually a mix of #s & #s, matrix of #s mostly lt.-med. gray-green vxln. chlorite

---

4540-4560' | (35) #s/lts | 19 mds | 77 ss AA | 0.5 VVF (HM, py) | 1.5 py / 0.2 cpy / 0.7 HM / 0.3 EP

AA, #s

4560-4580 | 2 s/lts | 13 mds | 85 ss AA | Tr. VVF | 1 py / 0.2 cpy / Tr. HM / 0.3 EP

(43)

4580-
4600'

(2) GG

5 slts | 7 mds | 86 ss | Tr VVF

0.3 EP
0.5 HM
1 py
0.1 cpy

vf/(m) chltc.

chltc sheared, dk. gray green

→ vfgr, lt-med grayish-green, very chloritic } u 1/5 ⊘ sil'ic'd
u 1/4

4600-
4620'

1 GG (2?) | 3.5 slts | 10 mds | 85 ss AA | 0.5 VVF (HM, ch)

0.5 HM
0.5 EP
0.5 py
Tr. cpy

vf/(Tr)

⊘ chloritic.

4620-
4630'

5 slts | 23 mds | 72 ss | Tr VVF

AA, ⊘ chltc

0.7 ~~0.5~~ HM
0.5 EP
0.7 py
0.1 cpy

4630-
4640'

3 slts | 22.5 mds | 74 ss vf-fg | 0.5 VVF (HM, ep)

AA ⊘, chltc

1 EP
0.5 HM
0.5 py
Tr. cpy

4640-
4650'

5.5 slts | 15 mds | 79 ss fg | 0.5 VVF (HM py) (ch)

AA ⊘ chltc

0.5 HM
0.3 py
0.7 EP
Tr. cpy

vf/(Tr)

ELMORE 100

04/20/03

J. Hullen

@ chltc

4650-4660'

Tr GG | 3 slts | 13 mds | 83 SS | 1 VVF (v. fx/n spec. kem.)

1 EP
1 py
0.7 HM
0.2 cpy

√ (Tr) chltc.

→ vfg-fg, lt.-med. grayish-green, chltc.
↳ 1/5 ⊘, 1/5 ●●
↳ str. silicified

→ med.-dk gray-green @

4660-4670'

5.5 slts | 31 mds | 63 SS | 0.5 VVF (HM, EP, py)

AA @, chltc

1.5 EP
1 py
0.2 cpy
0.3 HM

4670-4680'

3.5 slts | 29 mds | 67 SS | 0.5 VVF (chl, EP, qtz)

AA, chltc, @

1 py
0.3 cpy
(2) EP

4680-4690'

4 slts | 21 mds | fg 75 SS | Tr. VVF (HM)

AA @ chltc

(1.5)
~~1.5~~ py
0.2 HM
0.3 cpy
(1.3 EP)

4690-4700'

(2.5) 4 slts | 41 mds | 53 SS | 0.5 VVF (HM, qtz-hm)

AA, @, chltc

0.5 HM
1 EP
0.1 cpy
1 py

√ (Tr) chltc.

w/hm

0.2 HM

(45)

4700-
~~4700~~ 4710'

7 slts / 58 mds / 35 ss / Tr. VVF (HM, cal)

AA ⊘, chtc.

1 EP
~~0.1~~ Tr. HM
1 py
0.1 cpy

LIGHTER-COLORED SANDSTONE

4710-
4720'

3 slts / 25 mds / 72 ss / Tr. VVF (HM, CAL)

AA ⊘, chtc. ⊘ → fgr, rare mgr. v. lt. greenish-buff speckled w/ greenish-yellow, highly disagg-regated ⊘⊘, ●●●

1.5 EP
0.1 HM
0.3 py
Tr. cpy

4720-
~~4730~~
4730'

1 slts / 4 mds / 85 ss / —

AA ⊘, chtc

AA ⊘
fgr ● ● ●

1.5 EP
0.4 py
Tr. cpy

4730-
4740'

5 LCM
CAVING

? 27 mds
5 slts
AA ⊘

78 ss
AA ⊘
more cp (diss)

Tr VVF (HM)

2 EP
0.7 py
0.2 HM
Tr. cpy

4740-
4750'

33 mds
5 slts
AA ⊘

67 ss
AA ⊘
cp. incr.

Tr. VVF (HM)

~~0.5~~ HM
3.5 EP
0.7 py
Tr. cpy

ELMORE-100 04/20/03 F. Hulen

4750-4760'

5 slts / 86 mds / 9 ss fgr / Tr. VVF (HM)

→ dom. matte just sl. grnsh-gray

0.2 HM
0.2 EP
Tr. cpy
0.5 py

4760-4770'

11 slts / 82 mds / 7 ss (AA) / Tr. VVF (HM) (cpy)

all AA

0.4 EP
0.1 HM
Tr. cpy
0.3 py

GREENER

4770-4788'

7 slts / 69 mds / 23 ss fgr, lt-grnsh gray / 1 VVF (HM) (HM-cpy) (chl)

→ matte grayish-green

1.5 HM
1.3 EP
0.2 cpy
0.7 py

4788-4790'

√ (Tr chlte.)

4 slts / 35 mds / 63 ss / Tr. VVF (HM)

aa,

→ fgr, lt. grayish-green to greenish-buff speckled w/ grnsh-yellow

2.5 EP
0.3 HM
0.7 py
0.1 cpy

4790-4800'

11 slts / 28 mds / 61 ss / Tr. VVF (PY) (HM)

all AA

0.3 HM
2 EP
0.2 py

4800-4810'

7 slts / 49 mds / 44 ss / Tr VVF (HM) (EP-ØTZ)

all AA, Ø

0.2 HM
1.5 EP
0.3 py

4810-4820'

6.5 slts / 25 mds / 68 ss / 0.5 VVF (HM) (EP-ØTZ) (PY-ØTZ)

→ vfg-fg, lt. grnsh-gray to grayish-green

0.6 HM
1 EP
0.7 py
Tr cpy

4820-~~4840~~-4830'

Larger (1-3 mm) cuttings

9 slts / 20 mds / 70 ss / 1 VVF (HM) (CHL) (Ø-CHL-EP) (CH-HM-PY-CPY) (PY)

AA, Ø

0.5 EP
0.3 HM
0.7 py
0.1 cpy

4830-4840'

4120 (Vol.) LCM

7.5 slts / 59 mds / 33 ss / 0.5 VVF (HM)

Ø, AA

0.5 HM
1.5 EP
0.7 py
Tr. cpy

ELMORE 100 04/28/03 J. Hulen

4840-
4850-

1/1 (Tr)

1 gg
v. pearlescent lt-med grnsh-gray

5 s/ts

59 mds

34.5 ss

0.5 VVF
(HM)
(HM-φTZ)
(EP)

0.5HM
1.8 EP
0.5py
Tr. cpy

→ mix of matte gray, grnsh-gray, & grayish-green all

→ for ht, grayish-green speckled w/ greenish-yellow w/ & s/t/cld. w/ (mostly , some

---

4850-
4860-

3 s/ts

80 mds

AA,

15.5 ss
AA

1.5 VVF
(HM)
(HM-py)
(φ-AN-ch)
(φ-EP)
(φ-EP-HM)

1.3HM
2 EP
0.7py
Tr. cpy

4860-
4880-

5 s/ts

59 mds

AA

35 ss

1 VVF
(HM)
(φ-EP)
(CHL)

0.5 HM
0.7 py
0.2 cpy
1.3 EP

4880-
4890-

1/1 (m) chlte.

11 s/ts

67 mds

AA

21.5 ss

0.5 VVF
(HM)
(CHL)

0.2 HM
1 EP
0.5 py
Tr. cpy

4890-4900'

63 mds + 5 slts | 36.5 SS | 0.5 VVF, CHL, HM, 9Z-EP | 0.2 HM, 1 EP, 0.5 py

√ (Tr)

AA @

4900-4910'

63 mds + 5 slts | 37 SS | Tr VVF, 22 | 0.2 HM, 1.5 EP, 1 py

AA @

4910-4920'

5 slts | 40 mds | 55 SS | Tr VVF, 22 | Tr. DBX | 0.1 HM

▲

all @, all AA

4920-4930'

5 slts | 42 mds | 53 SS | ① VVF, HM, Ø-AN-EP | 0.7 HM, 1.5 EP, 1 py

all AA ©

4930-4940'

(spill)

nxt page

ELMORE 100 — 04/20/03 — F. Hulen

4920–4940'

5 s/ts | 38 mds | 57 ss | Tr VVF -HM -CH

→ matte lt-med. grayish-green

→ vfg-fg, lt-med. grnsh-gray

0.1 HM
1.5 EP
0.5 py

4940–4950'

√/ (Tr)

2 s/ts | 35 mds | 63 ss | Tr. VVF -EP-CH -PY

AA

1.7 EP
0.1 cpy
Tr. HM
0.5 py

4950–4960'

5 s/ts | 27 mds | 68 ss | Tr. VVF -HM -CH

AA

Tr HM
1.2 py
0.1 cpy
0.3 py

4960–4970'

CHANGE: APPEARANCE OF CALCAREOUS GRAY MDS.

0.5 EP
0.5 py
Tr cpy

√ (Tr)

3 s/ts AA | 74 mds | 23 ss AA | —

→ 3/10 matte gray-green
7/10 matte gray ©

4970-4980'

5 slts / 70 mds / 25 ss / —

AA

→ 2/5 gray ©
3/5 grsh-green

0.5 EP
0.5 py
Tr. epy

4980-4990'

5 slts / 76 mds / 19 ss / Tr VVF

AA

—AN
—CH

→ 50/50 gray © & gry-grn

1 EP
0.3 py

4990-5000'

7 slts / 50 mds / 43 ss / Tr ~~VVF~~ VVF

AA

—CH

→ 1/5 gray ©
4/5 gray-green

0.3 py
1.5 EP

5000-5010'

√ (Tr)

17 slts / 52 mds / 31 ss / Tr VVF

©F

→ mostly (©F)

2 EP
0.1 HM
0.5 py

5010-5020'

13 slts / 57 mds / 30 ss / Tr VVF

©F ©F

—EP

2 EP

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NOTE HEM. GONE

5020-5030' | 7 slts | 72 mds | 21 ss | — | 1.5 EP / 0.1 py

→ mostly lt-med matte gray
minor matte gray-green
C F

→ vfg-fg, lt. grnsh-gray speckled w/ grnsh-yellow
u 1/5 ~~ss~~ & silicified
u 4/5, wkly silicified

5030-5040' | 7 slts | 58 mds | 35 ss | — | 1.5 EP / Tr. py

→ C F mix of matte lt. gray, matte grnsh-gray & " grayish-green

---

5040-5050' | 5 slts C F | 4 mds C F | vfg-fmg 5 ss | Tr VVF | 2 EP / Tr. py

AA AA

5050-5060' | 1 slts C F | 4 mds C F | 85 ss | Tr VVF -EP | 4.5 EP / Tr HM / Tr. py

→ fgr, lt. grnsh-gray speckled w/ yellow-grn
no obvious massive silicification

53

5060-5070'	2 slts @ + AA	22 mds	76 ss AA @	Tr. VVF -Ep	3.5 Ep 0.1 py Tr. HM
5070-5080'	25 slts @	48 mds @ +	27 ss @	Tr VVF -Ch	0.1 HM 2.0 Ep 0.1 py
5080-5090'	15 slts @ +	48 mds @ +	37 ss @	—	2 ~~HM~~ Ep 0.1 py
5090-5100'	15.5 slts @ +	45 mds @ +	35 ss @	0.5 ~~Mn~~ VVF -Oz, ~~Ep~~	2.5 Ep 0.1 py
~~5100'~~ ~~5110'~~ ~~5120'~~ 5100-5120'	7 slts @ +	81 mds @ + AA	12 ss @	Tr. VVF -Ep -Ch	1.3 Ep Tr. Py
5120-5140' 1/2 (Tr)	~~ECOHS~~ 7 slts	88 mds @	5 ss	Tr VVF -Ep -Ch	0.3 Ep Tr. Py

→ matte lt-med. gray w/ 15% "spots" v. lt. blue gray, avg. ~ 0.3 mm subequant to ovoid, "fuzzy" margins → porphyroblasts of TiO_2?

54

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~~5120~~
5140'–
5160'

7 slts / 86 mds / 7 ss / Tr VVF –Ep

0.3 EP
Tr. py

"spotted"
→ matte lt.-med. gray
w/ 10-15% 0.3 mm subequant
vague bordered spots of
v. lt. gray-buff

5160'–
5180'

5 slts / 92 mds / 3 ss / Tr VVF –Ep

0.2 EP
Tr. py

"spotted"

---

py increases

5180'–
5200'

10 (vol.)
LCM

2 slts / 26 mds / 70 ss / Tr. VVF –Ep

0.4 EP
0.15 py

spotted

vfg-fg

5200'–
5220'

ROCK BECOMES VERY [GRAY-] GREEN CHLORITIC

25 LCM

45 mds + slts
matte gray-green

55 ss

0.3 py
? 0.1 EP

55

very chloritic

0.1 HM
0.2 EP
0.2 py

5220-
5240'

60%
LCM
v. poor
wash

55 mds slts / 45 ss / Tr VVF -Hm -Pz

all gray-green

5240-
5260'

√ (Tr. chltc.)

very-chloritic, v.gry green (gry-grn

0.5 py
0.1 cpy
0.2 EP

Tr GG (chltc.) / 2 slts / 19 mds / 81 ss

mgd-dk. matte gray-green

vfg-fg. med. gray-green

GREEN STILL

5260-
5280'

1 py
0.2 cpy
0.1 EP

1 (Tr)

Tr. GG / 2 slts / 13 mds / 85 ss / Tr. VVF -An -Ch

gray-green AA

5280-
5300'

u 75% LCM

0.2 EP
0.5 py

5 slts mds AA green / 95 ss vfg gray-green chlorc. / —

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very green & chloritic

5300-5320' | 7 mds + slts matte gray-green | 93 ss vfg, lt-med gray-green | 0.3 py / 0.1 Ep

5320-5340' 15 LCM | all AA | 0.3 py / 0.3 Ep

INCR. IN SILICIFICATION

5340-5360' | 7 mds + slts | 93 ss vfg-fg, lt-med gray green (chltc.); ~1/4 intensely silicfd. ~3/4 to mod. silicfd. | 0.4 py / 0.2 Ep / Tr Hm

√ (Tr)

5360-5380' 10 LCM | 11 mds & slts | 89 ss AA | 0.3 py / 0.2 Ep

very green (chloritic)

5380-5400' | 5 mds & slts gray green | 95 ss vfg-fg, gray-green mix of chips in add'l — mod. silicified | 0.7 py / Tr. cpy / 0.1 Ep

57

5400–5420' ✓✓	very green & chloritic 2 GG chltc gray-green  (X-sec)	7 mds & slts gray-green	9/ss vfg-fg med. gray-green, to mod.-stp silicified	0.7 py 0.1 cpy 1 EP
5420–5440'	green/chltc, 5 slts	35 mds	60 ss All AA,	0.5 py 0.2 EP
5440–5460'	3 slts / 78 mds gray-green	19 ss AA	Tr VVF —Ep, Qtz —Hm	0.1 HM 0.2 EP 0.3 py
5460–5480'	13 mds slts	87 ss fgr-lmgr gray-green	Tr VVF —HM	1.3 EP 0.7 py Tr cpy Tr HM
5480–5500'	much more epidote 21 mds + slts	79 ss AA more Ep	Tr. VVF —Ep —Ch	2 EP 0.5 py

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~~5480~~
5500 –
5520

1 Mtr. ~~GG~~ chtc

15 mds + slts

84 SS

Tr VVF
– Ep
– Ch

Tr. cpy
0.4 py
2 EP

V1 (Tr)

0.3 mm. in gouge

matte gray-green

vfg – fg; lt-med gray-green speckled w/ grnsh-yellow mod. silicified ~~SS~~ to

SS LESS SILICIFIED

5520 –
5540

7 slts + mds

93 SS
lt. grysh-grn to grnsh-gray weakly silcfd, mostly disagg. and

0.5 EP
0.2 py

wf-fg

5540 –
5560

5 slts

36 mds

57 SS

0.5 VVF
– Ep

0.7 EP
0.3 py

5560 –
5580

23 mds + slts

77 SS
AA
vfg-fg.

Tr VVF
– Ep
– HM

Tr. HM
1.5 EP

59

5580-5600'	15.5 ~~15~~ mds + shts	84 SS AA fgr	0.5 VVF - HM - EP - Ch	0.7 HM / 1.5 EP / 0.4 py
5600-5620'	13 mds + shts	87 SS AA fg.	—	2 EP / 0.5 py
5620-5640'	12.5 ~~13~~ mds + shts	Mortic 82 SS AA	0.5 VVF + EP, Oz - Hm	Tr. HM / 2.5 EP / 0.3 py
5640-5660'	3 shts / 19 mds	78 SS AA	Tr. VVF + EP	1.5 EP / 0.3 py / 0.1' HM
5660-5680'	17 mds + shts	83 SS AA	—	1.3 EP / 0.3 py
5680-5700'	15 mds + shts	85 SS AA		0.7 EP / 0.3 py
5700-5720'		AA		0.7 EP / 0.5 Py
5720-5740' ABUNDANT LCM		AA		0.7 EP / 0.5 py

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5740–5760'
ABUND. LCM
poor wash
17 mds + slts AA
vfg-fg 83 ss AA
Tr VVF – Ch
1 EP 0.3 py

5760–5780'
ABUND LCM
poor wash
15 slts / 60 mds
→ matte lt-med. gray-green
some pcs. "spotted" w/ 0.3 mm, indistinctly bordered, lt. gray-buff spots (TiO_2?)
25 ss
Tr. VVF – Qz
→ vfg-fgr, grayish-green speckled w/ grnsh-yellow mix of
mod. silicified
2 EP 0.3 py

5780–5800'
some LCM
1 f (Tr)
19 slts / 56 mds AA
25 ss AA
Tr. VVF – Ep, Qz
3 EP 0.5 py Tr. cpy

5800–5820'
9 slts / 56 mds AA
35 ss
Tr. VF – Ep, Qz
2 EP 0.3 py

5820–5840'
7 slts / 39 mds AA
54 ss
0.5 VVF – Ep
→ more silicification
3 EP 0.5 py

5840-
5860'

minor LCM

2 s/ts / 21 mds / 77 ss | Tr VVF
- Qz
- Ep Qz

1.5 Ep
0.3 Py
Tr Cpy

→ dom. ufgr to lmgr, shiny lt. grnsh-gray, mix of ~~ss~~ ~~sh~~ dkgrn in individual ~~gr~~ chips

---

5860-
5880'

minor LCM

5 mds / 95 ss | Tr VVF
- Hm
- Ep, Qz

~~0.1 HM~~
0.1 HM
0.7 EP
0.5 Py

5880-
5900'

Abund. LCM

(4.5) ~~5~~ mds / 95 ss | 0.5 VVF
- Hm
- Ep, Qz
- Ch (dk gray grden)

~~0.2 Tr Hm~~
0.2
0.7 EP
0.5 py

→ ufgr to lmgr, shiny mottled transl. gray & opaque gray-green, strongly silicified mostly ~~ss~~

5900-
5920'

5 s/ts / 13 mds / 82 ss | Tr. VVF
- Qz, Ep

1 Ep
Tr Hm
0.3 Py

→ vfg - fg, lt. grnsh-gray mix of ~~ss~~ ~~sh~~

(62)

ELMORE-100 04/21/03 F. Hulen

5920-5940'

Mod. Abund. LCM

5.5 s/ft | 69 mds | 25 ss

0.5 VVF
- Hm
- Ch
- Qz, Ep

0.7 Ep
0.1 Hm
0.2 Py

→ matte of grnsh-gray to grayish-green, chloritic

→ vfgr-fgr, lt. grayish-green, shiny, silicified mostly

5940-5960'

Minor LCM

13 s/ft | 74 mds | 12 ss

AR, AR

1 VVF
- Ep
- Hm
- Hm, Cpy
- Ch
- Qz-Ep

0.3 Hm
Tr. Cpy
1.5 Ep
0.3 Py

Ep (Tr)

vnlt. fragment

5960-5980'

INTENSELY VEINED → {CHLORITE, DK. GRAY-GREEN}

ALSO MICRODIABASE

1 Py
0.1 Cpy
0.5 Hm
1.3 Ep

17% Microdiabase, dark grayish-green, uxln, chloritized but some fresh plagioclase microlites obvious

7 s/ft | 69 mds | 2 ss AR

5 VVF
- Ch
- Hm
- Cpy/hm
- Ep/qtz

5980-
6000'

9 Micro-diabase

5 slts | 19 mds | 66 ss | T. VVF -Ch -Cpy -Ep, gtz

AA

0,7 Ep
0,2 HM
0,1 Cpy
0,3 Py

5 dark gray-green AA

4 lt. gray-green w/ whitish altered plagioclase microlites

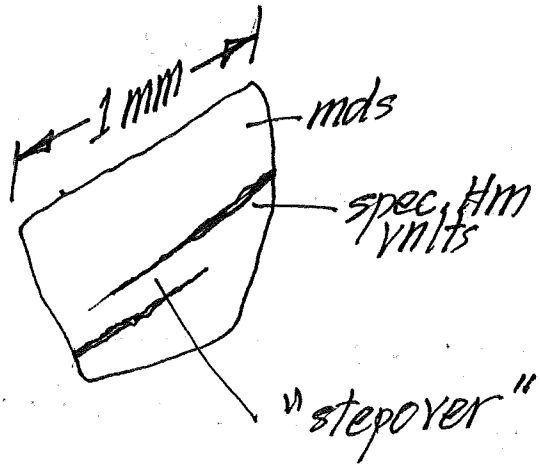
6000-
6020'

2 vdb aa

5,5 slts | 19 mds | 73 ss AA | 0,5 VVF -Ch

AA, ⊗

0,2 HM
2 EP
Tr Cpy
0,3 Py



6020-
6040'

7 mds + slts | 93 ss

Tr. VVF -Hm -Ch -Ep

3 Ep
0.3 HM
0,2 py

→ vfgr, lt. grnish-gray lightly speckled w/ dark greenish-gray (chl)

⊗

(64)

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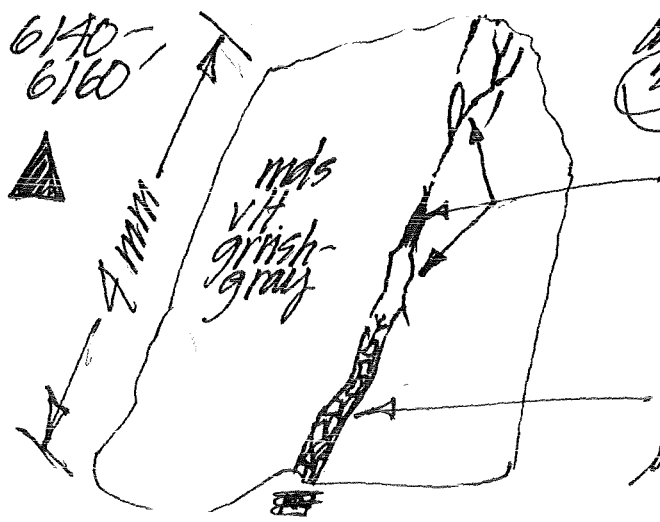
6040-6060' Minor LCM	8.5 mds + slts AA, Ø	91 ss vfgr Ø AA chl-speckled	0.5 VVF -Hm -Ch -Ep	0.4 Py / 3 Ep / 0.1 Hm / Tr Cpy
6060-6080' Minor LCM	3 slts / 13 mds AA	83.5 ss AA	0.5 VVF +Hm -Qz, Ep	0.2 Hm / 2.5 Ep / 0.3 Py / Tr Cpy
6080-6100'	11 mds + slts AA, Ø	89 ss vfgr, Ø AA	Tr VVF -Hm	0.2 Py / Tr. Hm / 2 Ep
6100-6120' Minor LCM	5 slts / 20 mds AA Ø	75 ss AA Ø	Tr VVF -Hm -Ch -Ep, Qz	2 Ep / Tr. Hm / 0.2 Py
6120-6140'	7 slts / 17 mds AA Ø	75 ss AA Ø	(1) VVF -Hm -Ch -Ep	(1.5 Hm) / 2 Ep / 0.1 Py
6140-6160'	~~4~~ slts (2.5) / 22 mds AA Ø	75 ss AA	0.5 VVF -Ch	(Tr Dex) ~~1.0 Hm~~ / 1.3 Ep / Tr Hm / 0.1 Py



(65)

MICRODIABASE PRESENT

6160-6180'

① Microdiabase AA dk. gray-green | 27 mds + slts AA | 66 ss AA fgr | Tr. VVF -Ch | 1.5 EP / Tr. HM / Tr. Py

6180-6200'

② udb AA | 5 slts | 32 mds AA | 61 ss vfg | Tr VVF -Ch -EP -HM | 2 EP / 0.3 HM / 0.2 Py

6200-6220'

very fine cuttings

very chloritic

Minor LCM

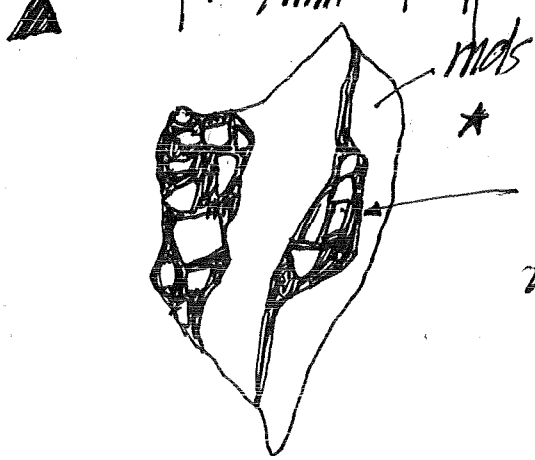
① udb AA | 2 slts | 6 mds AA | 88 ss | ~3 VVF -Ch -HM -Oz -Ep | 3 EP / 0.5 HM / 0.4 Py

6220-6240'

Minor LCM

★★★ ⑨ rhy brn, msv buff-white w/ gray-green speckles (rare) | INTENSELY ALTERED & RHYOLITE | 2 HM / 0.7 Py / 2 EP

3 slts | 15 mds | 69 ss AA | 3 VVF -HM -Ch -Hm, py -Ep | Tr. 1 ★ DBX



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RHYOLITE

6240-6260'

(7) RHYOLITE (or poss. rhy. tuff) buff-white sparsely speckled with grayish-green chlorite

(35)st. (17)mds

(60) SS

3 VVF: -Hm -Ch -Hm-Ch -Ep

1 DBX cmtd var. w/ Hm & Ch & Hm-Ch

3 HM 0.5 Pp 1.3 EP

→ vfg-fg, lt. grysh-grn, mix of [illegible] mod. silicfd

RHYOLITE

6260-6280

Mod. abund. LCM

(9) RHY or RHY TUFF AA

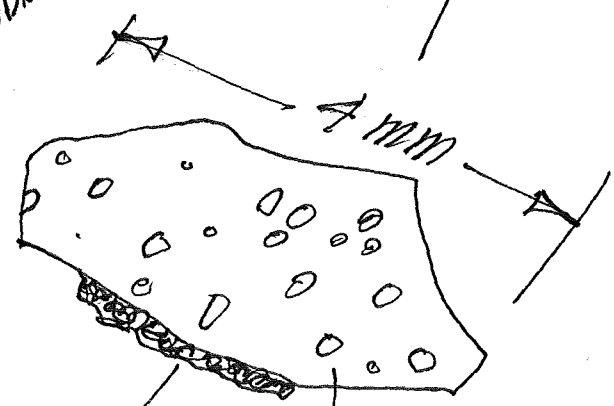
2s/ts | 13mds | 3SS

AA

Tr DBX

(3) VVF -Ch -Ep -Hm

1.5 HM 0.5 Pg 0.1 Cpy 1.5 EP



(67)

6280–6300'

Abund. LCM

▲ poor wash

5 RHY / 35 Hs / 19 mds / 7 SS AA / Tr DEX / 2 VVF

1 HM
1 EP
0.3 Py

6300–6320'

Abund. LCM

poor wash

1 rhy (CVD3) / 5 Hs / 23 mds / 70 SS / 2 VVF

0.3 HM
0.7 EP
0.3 Py

6320–6340'

good sample

2 RHY (CVD2) / 9 Hs / 13 mds / 72 SS / 4 VVF -Ch -Hm -Ep

3 HM
3 EP
0.1 Cpy

6340–6360'

★ DIABASE ★

Tr. RHY / 90 diabase / 5 Hs + mds. / 3 SS / 2 VVF -Ep -Ch -Ch-Act

1 ACT.
Tr. HM
2 EP
0.3 py
0.1 Cpy

→ f x l n, dk. brownish to grayish-green; some fresh pyroxene & (transl. grnsh-brown) ** is very chloritic.

ELMORE-100 04/21/03 F. Hulen

6360-
6380-

5 slts / 7 mds / 91 DIABASE AA / 2ss / 2 VVF -Ch -Hm -Ep -Plz / 1.3 HM 0.5 ACT 1.5 EP Tr py

→ much fresh plag. & BPXN

6380-
~~6420~~-
6400-

2.5 mds + slts / 97 DIABASE AA / 0.5 VVF -Ep / 1 EP Tr. HM 0.5 AC Tr. py

---

6400-
6420-
Mod. Abund LCM

DBS fresh-looking

all AA

1 EP Tr. ACT Tr. py

6420-
6440

DBS all AA

1 EP Tr ACT Tr py

Abund. LCM

6440-
6460

17 DBS, aa / 3 rhy AA (carved?) / 1 VVF -Hm -Ch -Ep / 1 HM 3.5 EP Tr. ACT 0.7 py 0.2 cpy

15 mds 0 slts / 64 ss

→ lt-med vfg-fg grayish-green speckled w/ dark grayish-green chl. & grnsh-yellow → mod. silicified mix of ~~AA~~ and

69

6460
6480

1/ (Tr)

7 DBS
aa

3 RHH
aa
cvd?

9 Mds
+
Mds aa

78SS
AA

3 VVF
— Hm
— Ep
— Ch

4 HM
0.1 Ac
3.5 EP
0.3 Py
Tr. Cpy

6480
6500

2 DBS
aa, cvd?

1 RHH

7 Mds
+
5 Mds
aa

86SS
AA

4 VVF
— Hm
— Ch
— Ep, Pz

4 HM
Tr. Act
3.5 EP
0.5 Py
0.1 Cpy

FIN

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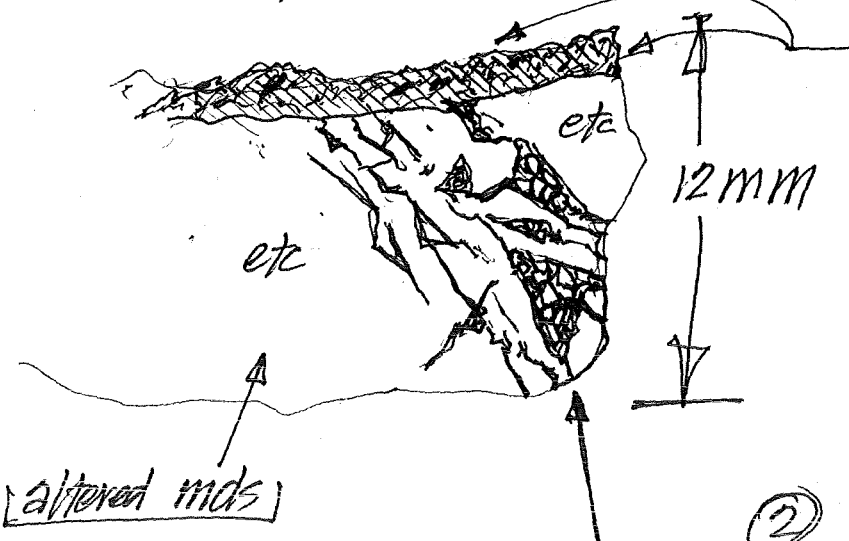
CORE

6504-6504.5' → Core disaggregated
ca 3 lb bag of fragments
from 1 mm to 70 mm in dia

Basic Rock is ~~ddd~~ mds to silty mds to argillaceous slts. lt. grayish-green, sparsely speckled w/ dark-gray-green chlorite

Rock is extensively fractured & veined; distance between fractures is 0.3–7mm, ! avg probably ca 3 mm. slx present on some fracture that are partly coated with specular hematite.



(3) tectonic crush microbreccia
clasts <0.1mm – 0.7mm subequant, commonly granulated edges, loosely cemented with fx/n – vx/n specular hematite and lesser ultravx/n quartz

(2) network of chlorite vnlts connecting ~~fe~~ angular domains of chlorite-cemented dilational microbreccia

no shearing or crushing

(1)

over

Note: domains of Type (3) crush-microbreccia and crush-breccia up to at least 35 mm wide → note also that there are angular domains of non-sheared, non-crushed, hem-chl-qtz cemented dilational microbreccia within the crush-breccia.

The crush-breccia is commonly quite porous, with interclast voids up to 2 x 1 mm in X-section, lined with hem & chlorite.

6504.'10" – 6504.'11"

CORE DISAGGREGATED

~3 lb. bag of fragments ranging from <1 mm to 50 mm in diameter (average ~5 mm)

same as above, but est. ~60% spec. HM as matrix of crush breccia / microbreccia ~5% chl.

crush breccia – cemented with chl. & hem

hem. vnlt. offsets EP-ch-qtz. vnlt.

72

EP-ch-qtz vein, crushed / fixed but intact

next page →

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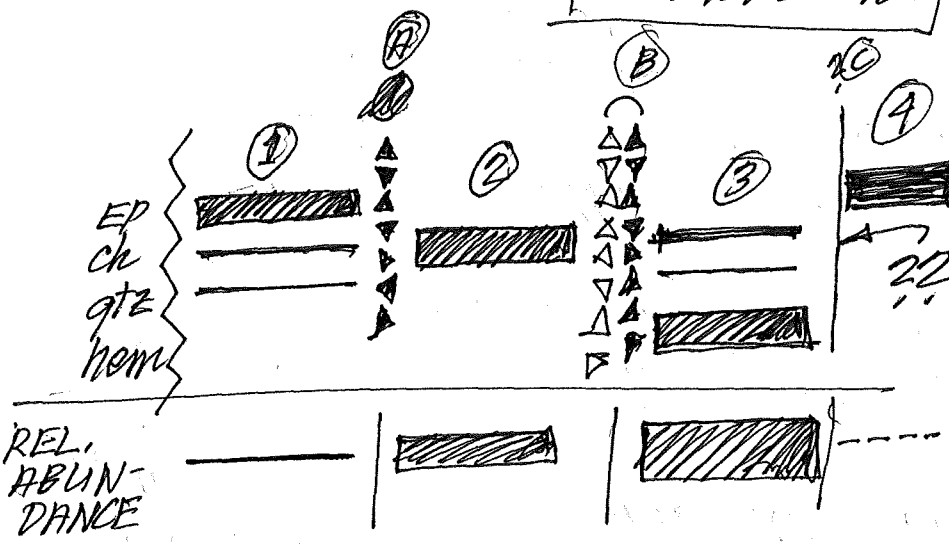

PARAGENESIS OF ROCK DISRUPTION AND MINERALIZATION

① EPIDOTE (-chl, -qtz) veinlets formed

Ⓐ Hydrothermal fracturing & brecciation

② chlorite veinlets & breccia cements deposited

Ⓑ Tectonic brecciation & fracturing accompanied by minor implosion dilational brecciation — crush breccias developed

③ crush and dilational breccias partially mineralized with specular hematite ± chlorite and with quartz.

Ⓒ minor fxing.

④ Late epidote vng

6505'–6505'4" similar to above but less crush breccia, less chloritic dilational bx

EST only ~ 1% HM & 3% CHL

6505'4" – 6505'5" core disaggregated, as above pcs. up to 50 mm avg 5–7 mm

very similar to 6504 – 6504'5"
same bx, with HM & CHL percentages

note: dilational bx domains in the HM-cmtd. crush breccia are up to 7 x 5 x 3 mm.

schematic → see previous page