C199

# CORE LOG

U. S. GEOLOGICAL SURVEY

DRILL HOLE Occidental Stake Springs Deep Core Hole 1 PAGE 1 OF 21

LOCATION 12-2S-99W, Rio Blanco County, Colo. ELEVATION 6572 KB TOTAL DEPTH 1596.6

DATE BEGUN _____ DATE COMPLETED 11/71 DRILLER _____ LOGGED BY J.R. Donnell & J.R. Dyni.

CASING _____ REMARKS: Dec. 30, 1971

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 480.0 | 481.4 | | OS, tan-dk brn, badly broken, fly larvae | |
| 481.4 | 490.0 | | Tuff (75) - w/ interbedd lean oil shale (25) core badly broken, rubbly, | |
| | | | SILTST IS OFF WHITE, pyr; OS is tan-lt brn, | |
| 490.0 | 493.± | | OS, med brn, core badly broken | |
| 493.± | 495 ± | | INTERBED Tu (75) w/ many shings + OS (25), pyr, core much broken; tu is biotitic | |
| 495 ± | 502.5 | | OS, med brn, broken-blocky | |
| 502.5 | 504.2 | | OS, med brn, contains small 1/2" sol. cavs, broken, partly brec. | |
| 504.2 | 526.2 | | OS, med brn, 3-4" sol. cav. @ 521, core much broken 1-5" any frags, | |
| | | | 5"± cav. at base | |
| 526.2 | 526.6 | | Tu SILST, wht, | |
| 526.6 | 539 | | OS, med brn, core in rubbly frags | |
| 539 | 558 | | OS, lt brn-med brn, | |
| 558 | 559 | | Wavy (?) Tuff, many dk laminae, analcitic, abund fine diss pyr | |

Drill hole

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 559 | 560.5 | | OS, med brn, large frags, sol. cavs w/septa in mid | |
| 560.5 | 563.5 | | MARST, low organic, tan - lt brn, well lam, | |
| 563.5 | 564.0 | | CORE LOSS | |
| 564.0 | 565.6 | | MRST, low organic, tan - lt brn, well lam | |
| 565.6 | 566.3 | | OS BREC, med brn, sol cavs 1/2", | |
| 566.3 | 567.6 | | OS, med brn, broken | |
| 567.6 | 567.8 | | TUF, white, irreg. contacts | |
| 567.8 | 568.3 | | OS, med. brn | |
| 568.3 | 574.8 | | MRLST, white, thin platy, little - no org. | |
| | | | BASE A-GROOVE | |
| 574.8 | 588.3 | | OS, med - dk brn, .4' OS brec @ 575.5, .1' tu @ 578.7 - wavy | |
| | | | contacts, sol. brec .2' at 579.7, blocky; series of thin tuffs below | |
| | | | 580.8 - 586.4 - also several tuff blebs - some are blue. | |
| 588.3 | 590.0 | | OS BREC, healed to partly open fracs, wht cal - filled fracs | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 590. | 597.6 | | OS, med brn, blocky, few flass | |
| 597.6 | 598.2 | | TUF (False Marker ?), some contort OS lam, fairly hazy contacts | |
| 598.2 | 603.0 | | OS, med brn, prom even lam | |
| 603.0 | 604.7 | | OS, dk brn, basal .2' has fine crinkly lams | |
| 604.7 | 607.0 | | CORE LOSS | |
| 607.0 | 610.7 | | OS, tan - dk brn, | |
| 610.7 | 611.1 | | TUF (MAH. MKR ?), contort, dk OS lays to 1". | |
| 611.1 | 619.4 | | OS, dk brn, high grade | |
| 619.4 | 619.7 | | TUF, dk brn, w/ OS stringers | |
| 619.7 | 621.0 | | MISSING (MAH. BED INTERVAL FROM DENSITY LOG) | |
| 621.0 | 625.0 | | OS, dk brn, high grade - base of Mah. bed ? | |
| 625.0 | 646.4 | | OS, med-dk brn, blocky, Sd. lav. 3" at 644.5 | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 646.4 | 647.2 | | OS + TUFS, 4 thin discont. to lenses - wht - 1/4 - 1" th; OS is | |
| | | | dk brn, rich | |
| | | | | |
| 647.2 | 668.8 | | OS, med brn, sol. cavs below 655.1 - 56.8 in lean OS, blocky; | |
| | | | .3' sol. brec w/ lacy pyr @ 661; .4' brec @ 666.5 w/ cal-healed | |
| | | | frags in 1' above. | |
| | | | | |
| 668.8 | 670.0 | | CORE LOSS | |
| | | | | |
| 670.0 | 670.0 | | .05 TUF, wavy contacts | |
| | | | | |
| 670.0 | 673.8 | | OS, med brn, partly broken in low part, blocky in upper | |
| | | | | |
| 673.8 | 674.9 | | BRECCIATED OS, | |
| | | | | |
| 674.9 | 678.3 | | OS, med brn - dk brn, blocky, loc broken | |
| | | | | |
| 678.3 | 681.3 | | OS BRECCIA, | |
| | | | | |
| 681.3 | 687.4 | | OS, lt brn - med brn, blocky, broken w/ loc brec in low 2/3. | |
| | | | | |
| 687.4 | 690.2 | | OS BREC, lt brn - tan, broken. | |
| | | | | |
| 690.2 | 691.9 | | OS, med brn - dk brn, lean, | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 691.9 | 696.0 | | TUF & OS INTB (CURLY BED), about 16 tu lays interbd w/ OS. | |
| 696.0 | 705.9 | | OS, med brn-dk brn, num. healed fracs. | |
| 705.9 | 712. | | OS, med brn-dk brn, zones of tiny (1 mm) wht dissem. xyls (cal after short ?) | |
| 712 | 715 ± | | BREC (lean OS + mrlst) | |
| | | | TOP B-GROOVE ± | |
| 715 ± | 727.3 | | MRLST, wht-lt gray, contort beds, num. tiny wht (calc ?) dissem xyls. | |
| | | | B-GROOVE | |
| 727.3 | 731.2 | | OS, med brn, v. prom. even lam, fly larvae | |
| 731.2 | 732.4 | | OS + TU INTBB, tu in thin wavy cont. lays | |
| 732.4 | 734.1 | | OS, med brn, lam, .2' brec at base | |
| 734.1 | 734. | | OS + TU (?), tu in wavy lamsets + contort lays | |
| 734 | 737. | | OS w/ few th strings of tu in up 1' | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 737.0 | 737.3 | | Tu, lt yel tan, f. grnd | |
| 737.3 | 741.8 | | OS, tan - med brn, well lam. | |
| 741.8 | 742.5 | | SOL. BREC (MBST + OS), part open fracs, wht | |
| 742.5 | 744.4 | | OS, lam, tan - lt brn, some nah cavs to 2", small frag | |
| 744.4 | 746.0 | | CORE LOSS | |
| 746.0 | 754.2 | | OS, tan - med brn, even to sli contort lam, 2 thin tufs (.1) @ 751.0, .3' contort tuf + os at 751.5 | |
| 754.2 | 755.8 | | OS, med brn - dk brn, strk bedg | |
| 755.8 | 760.6 | | OS, med brn - dk brn, scat 1" nah cavs, .3' OS brec at 759.5, strk to lam. | |
| 760.6 | 761.9 | | BREC, crumbly small frag lt yel brn, soft (OS) | |
| 761.9 | 767.7 | | OS, med brn to tan, up ½ blocky - strk, few 1-2" nah cavs; broken frag in low ½ | |
| 767.7 | 768.7 | | TUF, .3' dk well lam OS in up. ½, tuf partly contort. | |

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DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 768.7 | 776.0 | | OS, med - dk brn, blocky, low 3' is broken rubbly, much f. dissem pyr in low rubbly mat'l. | |
| 776.0 | 777.0 | | CORE LOSS (NAH CAVITY ?) | |
| 777.0 | 778.0 | | MRST BREC, v. lt tan, partly non-brec - even lam | |
| 778.0 | 784.8 | | OS, dk brn - streaky, loc. lam, many small partly filled cavs 1-4 mm + much f. dissem. pyr, 0.1' tuf @ 781.9' - pyr, fairly even contacts, blocky - thin blocky, loc broken flags. | |
| 784.8 | 785.2 | | OS BRECCIA, tan, some open flags | |
| 785.2 | 787.4 | | OS, tan - med brn, lam w/ blk strks | |
| 787.4 | 788.0 | | MRST BREC, + OS w/ fine dissem xyl cavs. | |
| 788.0 | 789.6 | | OS, brn, .1' brec at 788.9 | |
| 789.6 | 790.4 | | BREC (MRLST OR OS), lt yel tan | |
| 790.4 | 792.2 | | OS, tan - med brn, lam - sli comfort. | |
| 792.2 | 795. | | BRECCIA (MRLST OR LEAN OS), low 1.7' is soft crumbly flags | |

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DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 795. | 799.5 | | OS, med brn, .1 tuf (?) at base, lam. thin blocky | |
| 799.5 | 801.6' | | OS, blk brn, subfiss, relat. soft, waxy surfs, pyr. | |
| 801.6 | 804.6 | | OS BREC, lt gray, some lt lam marlst - part brecciation. | |
| 804.6 | 808. | | CORE LOSS | |
| 808. | 815.7 | | OS, lt brn - med brn, lam, mostly broken chunks | |
| 815.7 | 818 | | CORE LOSS | |
| 818 | 818.8 | | OS, med brn, blocky | |
| 818.8 | 822.7 | | BREC (MRLST OR LEAN OS) & some partly brec. mrlst. | |
| 822.7 | 825.6 | | OS, med brn - dk brn, blebby & strk, thin blocky, 0.3' @ 824 contains round .5 mm cavs. | |
| 825.6 | 826.2 | | BRECCIA | |
| 826.2 | 833.3 | | OS, lt brn, thin blocky & rubbly frag | |
| 833.3 | 839 | | CORE LOSS | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 839 | 840.3 | | OS, med - dk brn, many small dissem wht xyls. | |
| 840.3 | 844.1 | | MRLST BREC, crumbly soft frag + chunks | |
| 844.1 | 847.1 | | OS, dk brn, rich, blebby | |
| 847.1 | 856.5 | | OS, tan to med brn, evenly lam, blocky, some frags | |
| 856.5 | 872.1 | | OS, med gry brn, blocky, numerous zones of f. dissem wht xyls, loc. brecciated, lam, | |
| 872.1 | 873.2 | | MRLST BREC, wht, blocky | |
| 873.2 | 883.4 | | OS, tan to med brn, v. abund zones of f + grnd wht dissem to HC xyls | |
| 883.4 | 888.5 | | OS, med brn gry, scat bdgll elong xyls | |
| 888.5 | 888.9 | | TUFS (2 .1-.2' tufs) w/ .1-.2' OS between, | |
| 888.9 | 895.4 | | MRLST + LEAN OS, many even zones of shcaly or acicular bedgll wht xyls | |
| 895.4 | 899.3 | | MRLST BRECCIA, lt tan - wht, lt brn OS stringers, numerous zones tiny dissem xyls. | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

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CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 899.3 | 901.1 | | OS, med-dk gray brn, nom. sol. caus ½" in upper part | |
| 901.1 | 901.3 | | TUF, lt brn, contort, OS stringers | |
| 901.3 | 901.8 | | OS, tan-med brn, lam, many tiny dissem wht xyls | |
| 901.8 | 903.5 | | MRLST, tan-wht, lam, loc. contort, tiny pyr feath flakes in low .2'. | |
| 903.5 | 907.0 | | OS, med brn-dk brn, partly brecc, some tiny dissem. xyls, | |
| 907.0 | 914.8 | | MRLST + MRLST BREC, lt tan to wht, nom. dissem wht xyl zones | |
| 914.8 | 920.8 | | OS, med brn, loc. brecc., some dissem. xyls | |
| 920.8 | 925.5 | | MRLST BRECCIA, wht-tan, loc. high contort w/ vert bedg. | |
| 925.5 | 928.8 | | OS, med brn-dk brn, nom. wht bedg ll acicular xyls. | |
| 928.8 | 931.4 | | MRLST + MRLST BRECCIA, wht-lt tan, | |
| 931.4 | 932.8 | | OS, med brn, dissem. tiny xyls | |
| 932.8 | 934.4 | | MRLST BREC, | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 934.4 | 935.3 | | OS, med brn, largely brecc. | |
| 935.3 | 937.8 | | MRLST (80) + OS (20), wht - tan | |
| 937.8 | 946.3 | | OS, lt to most med gry brn, num. elip. bedg // xyl (?) blebs | |
| 946.3 | 951.4 | | MRLST BREC, wht - lt tan, | |
| 951.4 | 956.9 | | MRLST, wht - lt brn, | |
| 956.9 | 958.0 | | OS BRECC, lt brn - med brn | |
| 958.0 | 963.8 | | OS, med brn - dk brn, many dissem. tiny wht xyls - esp in low 1/2 | |
| 963.8 | 966.2 | | OS, tan - lt brn, contort bedg. | |
| 966.2 | 968.6 | | OS BRECC, lt brn | |
| 968.6 | 970.4 | | OS to MRLST, wht to lt brn, loc brec near base | |
| 970.4 | 973.2 | | OS, dk brn, scat sol. cavs 1/2", some 3". | |
| 973.2 | 978.2 | | MRLST TO OS, wht to dk brn, part brec. | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 978.2 | 983.3 | | OS, dk brn, scat sol. cavs to comm 1" - some to 2-3", blebby + strk | |
| | | | | |
| 983.3 | 986.5 | | OS, tan - lt brn, thin blocky to platy | |
| | | | | |
| 986.5 | 988.9 | | OS, med brn - dk brn, scat sol. cavs to 1" | |
| | | | | |
| 988.9 | 989.5 | | OS BREC, tan - lt brn, | |
| | | | | |
| 989.5 | 990.3 | | OS, tan - lt brn, many 1-3 mm xyl. cavs | |
| | | | | |
| 990.3 | 992.4 | | OS, tan - lt brn | |
| | | | | |
| 992.4 | 1025.3 | | OS, tan to dk brn, scat sol. cavs up to + 4"; below 1011.4 are num. dissem. | |
| | | | Small 1-4 mm xyl cavs; num. scat strks + blebs pyr | |
| | | | | |
| 1025.3 | 1040.0 | | OS, med brn - dk brn, strk bedg, no sol. cavs. | |
| | | | | |
| 1040.0 | 1042.5 | | OS, med brn, some scat sol. cavs to 2-3". | |
| | | | | |
| 1042.5 | 1045.0 | | CORE LOSS | |
| | | | | |
| 1045.0 | 1054.0 | | OS, tan to dk brn, few sol. cavs. | |
| | | | | |
| 1054.0 | 1058.6 | | OS, tan to lt brn, num. scat sol. cavs to 3". | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY J.R. Dyni below 1106.1

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1058.6 | 1063.0 | | CORE LOSS | |
| | | | | |
| 1063.0 | 1073.0 | | OS, tan to lt brn, few sol. cavs ½" or less. | |
| | | | | |
| 1073.0 | 1081.9 | | OS, dk brn, blebby & stk, .2' tuf at 1074.5 - contort; tu(?) lenses | |
| | | | .3' tk at 1079.4, scat sol. cavs. to 3" + more; 2" nah. agg @ 1077.3; | |
| | | | .2' tu @ 1081.0; scat tuf lenses from 1074.5 and below. | |
| | | | | |
| 1081.9 | 1089.0 | | OS, tan to lt brn, lam, few sol. cavs.; 1088.0 - wavy gray ⅜" tuf. | |
| | | | | |
| 1089.0 | 1091.0 | | CORE LOSS. | |
| | | | | Probable correlations: |
| 1091.0 | 1095.2 | | OS, gry brn, mass, strk bedg | SHELL 22X-1 |
| | | | | 1691.1 = 1095.2 } THIS CORE |
| | | | | 1717.8 = 1115.6 } |
| 1095.2 | 1095.9 | | Tu + OS, 3 tan + 1 gray tuffs ⅛-1" th interbedd w/ lam OS. | SAV. 24-1 THIS CORE |
| | | | Tuffs are contort - pinch & swell. | 2560.6 = 1279.9 |
| | | | | |
| 1095.9 | 1099.4 | | OS, yel brn, lean, lam, thin blocky to blocky, | |
| | | | | |
| 1099.4 | 1103.7 | | OS, gry brn, strkd bedg, loc lam below 01.8-02.6 | |
| | | | | |
| 1103.7 | 1106.1 | | BREC (?), broken OS, earthy & rug frags | |
| | | | | |
| 1106.1 | 1114.6 | | OS, dk gry brn, strk in up 2'; lower part even faint to mod prom lam, mostly | |

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DRILL HOLE _____

LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| | | | blocky | |
| 1114.6 | 1116.4 | | LEACHED MRLST + OS; up ½ is partly brec + leached HC dk brn OS; low ½ is tan loc contort lam + bnd marlst. | |
| 1116.4 | 1121.9 | | LEACHED OS, pitted (1-20 mm) partly brec. OS + leached HC OS (well lam); loc soft but blocky rock | |
| 1121.9 | 1130.8 | | LEACHED OS + SOME MRLST, zones of pitted + HC OS; loc. brec, strongly brec in 2' zone 1' above base, 20% rubble, remainder is blocky | |
| 1130.8 | 1137.0 | | LE (leached) OS, dk yel brn, scat nch cavs 1- + 4" - cavs lined w/ pyr, scat pyr blebs + stks, blocky | |
| 1137.0 | 1142.0 | | SOL BREC, yel brn, 60% rubble, 40% 2-5" chunks of brecciated OS, some leached HC zones | |
| 1142.0 | 1145.5 | | LE OS, med yel brn, strk, scat tan f grnd blebs + open cavs ¼" tk - 1-1½" long, blocky | |
| 1145.5 | 1146.5 | | LE B OS, brn, le bedd or HC Salines, banded (B = leached bedded or semi bedded Salines) | |
| 1146.5 | 1148.5 | | LE OS, like 1142.0-45.5 | |

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LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1148.5 | 1153.4 | | LE HC OS, yel brn, many th leached HC zoned ¼-½ th throout, loc frac, gen. blocky - tk blocky | |
| 1153.4 | 1163.1 | | LE OS, tan to yel brn, scat pyr-rimmed nah cavs 1" - +6" tk, lam, crs brecciated in lows 3. | |
| 1163.1 | 1164.3 | | MRLST, tan, blocky, partly rubbly | |
| 1164.3 | 1167.1 | | OS, dk yel brn, blocky, very abund blebs + stks of pyr, stk bedg, loc few irr cavs. | (ABUND. PYR) |
| 1167.1 | 1178.6 | | LE OS, dk gry brn, even lam, 3-4" nah cav near top; broken OS below 75.4-76.7 containing nom. nah cavs - may be several large cavs; blocky | |
| 1178.6 | 1179.6 | | LE HC OS + OS BREC; may mark saline bed; some small partly open fracs | |
| 1179.6 | 1186.2 | | LE OS, yel brn, non lam - top 1' contort lam, scat nah cavs 2" to +6"(?), dissem leached xyl + xyl agg cavs 1 - 10 mm, abund blebs pyr below 83.8-86.2 | |
| 1186.2 | 1187.1 | | OS, dk gray brn, lam | |
| 1187.1 | 1188.0 | | CORE MISSING | |
| 1188.0 | 1195.5 | | LE OS, med yel brn to dk yel brn, scat pyr-rimmed nah cavs - partly filled | |

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DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| | | | w/ pyr + leached OS 1 - 3"+, blocky to tk blocky, loc. crs brecciated | |
| | | | w/ partly open fracs; num. pyr blebs - esp betw 92.0-93.8 | |
| | | | | |
| 1195.5 | 1198.1 | | LE B(?) OS, brn, lam, some contort bedg planes - might mark leached saline beds; | |
| | | | 1/8" light gry tu (?) at 96.2'; blocky | |
| | | | | |
| 1198.1 | 1208.3 | | LE OS, med to dk yel brn, strk bedg, open to partly OS - filled nah cavs 1-3", | |
| | | | scat pyr blebs, blocky, loc rehealed crs brecciated OS | |
| | | | | |
| 1208.3 | 1211.7 | | LE B (?) OS, tan to yel brn, lam, fine pitted marly lays - may mark B salines; | |
| | | | blocky (1½ - 5" beds), tk blocky in low 1' | |
| | | | | |
| 1211.7 | 1221.0 | | LE OS, med yel brn, strk, num small tan blebs, num small sal cavs 1-10 mm, | |
| | | | few scat large nah cavs 2" - 6"+; blocky - tk blocky; low 1½' is 2 - 6" | |
| | | | broken frags | |
| | | | | |
| 1221.0 | 1222.4 | | CORE MISSING | |
| | | | | |
| 1222.4 | 1227.0 | | LE OS, bnd med yel brn to blk brn, lam, loc crs rehealed brec OS esp in | |
| | | | low 2' - may be le sal bed at base; blocky to crs broken: CORR. MKR 17 (?) | +1223.7 |
| | | | | |
| 1227.0 | 1237.3 | | OS, dk yel brn, strk bedg, blocky to tk blocky, few small ¼ - ½" nah | |
| | | | cavs | |
| | | | | |

Drill hole

GPO 846-158

# CORE LOG

U. S. GEOLOGICAL SURVEY

DRILL HOLE _____ PAGE 17 OF 21

LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICK-NESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1237.3 | 1237.8 | | OS BREC + LE HC(?) OS, num open small Gacs + tiny pits, | |
| 1237.8 | 1242.3 | | OS, dk yel brn, 2 4" + 6" nah cavs, faint lam, pyr after nah xyl aggs 1/4" | |
| | | | each betw 39.9 - 40.2, tk blocky | |
| 1242.3 | 1246.6 | | LE OS, tan + dk yel brn, crs brecciated betw 42.3 - 43.4 + 44.5 - 45.0, | |
| | | | Sev. 1-3" nah cavs, prom. banded betw 43.4-44.5, basal 1' is th beds of marly | |
| | | | OS - may make B salines; gen. tk blocky | |
| 1246.6 | 1273.0 | | LE OS, med-dk yel brn, strk bedg, gen tk blocky, scat open nah cavs 3" - 1'± | NAHCOLITE |
| | | | about 1/2', 4" nah agg at 57.2, 6" agg at 59.8, + 3" agg at 60.8 | |
| 1273.0 | 1275.2 | | OS, dk blk brn + lt brn, lam + bnd, loc strk, tk blocky | |
| 1275.2 | 1281.0 | | OS, dk yel brn, strk bedg, tk blocky, num lt tan carbonate blebs, | |
| 1281.0 | 1284.0 | | OS, dk yel brn w/ distinct gry cast, num. thin wht lam (dawsonite?), even prom | DAWSONITE(?) ZONE |
| | | | lam., blocky | |
| 1284.0 | 1290.0 | | OS, rich blk-brn, lam to stk, tk blocky | |
| 1290.0 | 1294.7 | | LEAN OS, lt yel brn, non lam, brecciated nah cavs sev. inches across, core | |
| | | | loc broken, HC or dissem nah cavs in top .6' | |

Drill hole

# CORE LOG

U. S. GEOLOGICAL SURVEY

DRILL HOLE _____

LOCATION _____ ELEVATION _____ TOTAL DEPTH _____



DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1294.7 | 1308.2 | | LE OS, dk yel brn, many lt tan carbonate blebs, blebby + mottled text.; scat nah cavs - pyr rimmed - 1" - 6"+(?), tk blocky (1 cav/1-2') | |
| 1308.2 | 1310.0 | | OS, med + lt brn, lam, basal .45' is nonlam but has many faint short tiny stzks, + 4"(?) nah cav (?) below 08.7-08.9, tk blocky | SHELL 22X-1 THIS CORE 2137.8 ≈ ± 1360.8 |
| 1310.0 | 1314.0 | | OS, rich choc. brn, strk (many black strks + lt tan strks + blebs), tk blocky | |
| 1314.0 | 1314.4 | | LE HC OS, dk brn, loc brec, v.f. xyl cavs | |
| 1314.4 | 1318.2 | | LE OS, lt gry tan + med brn, bnd, strk to lam, scat 1 - +4"(?) nah cavs, loc brec around cavs below 14.4 - 14.8 + 15.4 - 16.0, core mostly in broken chunks 2-6" tk. | |
| 1318.2 | 1320.7 | | NAH OS, dk yel brn w/ blk cast, strk, sev. scat nah cavs 3" - 1" ± crs xtln nah agg 6" dia at 22.3 + .2' tk confort f. grn tan lay of nah @ 21.2, tk blocky, loc broken core around some nah cavs | NAHCOLITE |
| 1320.7 | 1354.2 | | OS, dk yel brn, loc lt yel brn, mostly strk, tk blocky | |
| 1354.2 | 1357.7 | | OS, dk blk brn, even lam, blocky, loc few short vert fracs, few lam slump flaap of OS | |
| 1357.7 | 1360.8 | | OS, dk yel brn, blebby text, num small lt tan carbonate blebs, tk blocky | |

Drill hole

# CORE LOG

U. S. GEOLOGICAL SURVEY

DRILL HOLE _____ PAGE 19 OF 21

LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1360.8 | 1392.3 | | OS, dk yel-t dk blk brn, prom lam throughout, essentially no evid of salines | |
| | | | except below 84.2-85.0 - lt brn OS w/ contort pitted xyl & pyr-rimmed zones - | |
| | | | may mark le sal beds; 2½" pyr rose (after nah ?) at 89.3. | |
| | | | | |
| 1392.3 | 1401.7 | | LE OS, brn t dk yel brn, many 1" - +6" (?) nah cavs & zones of 1-5 mm xyl & | |
| | | | xyl agg cavs, blocky, core mostly in 1-4" tk broken chunks & lays 1-4" tk | |
| | | | | |
| 1401.7 | 1403.8 | | LE B & HC OS, gry yel brn, top .45' is le HC nah, 7-8 th yel soft earthy | |
| | | | Sol brec lays ⅛ - ½" th (prob. le nah beds) interbedd w/ lam OS. | |
| | | | | |
| 1403.8 | 1422.0 | | LE OS, mostly med yel brn, non lam - some dk stks & lt tan carbonate | |
| | | | blebs, nom. 2 - 6"+(?) nah cavs & many dissem. 1-5 mm xyl & xyl agg cavs | |
| | | | tk blocky b blocky - loc brecciated around nah cavs | |
| | | | | |
| 1422.0 | 1425.7 | | OS, med t dk yel brn, irreg. lam, some pyr blebs, banded, thick blocky | |
| | | | | |
| 1425.7 | 1443.9 | | LE OS., med yel brn, nonlam to irreg & even lam, v. abund nah cavs (¼-2") | |
| | | | w/ assoc. brecciation of OS around & near cavs; scat zones of diss xyl | |
| | | | & xyl agg cavs - some zones partly brecciated; approx. 25% of core is | |
| | | | rubbly; remainder in 2-8" layers. | |
| | | | | |
| 1443.9 | 1455.2 | | LE + NAH OS, dk yel brn, faintly. stk, some small blk pyr blebs, 1 ft. nah agg | NAHCOLITE |
| | | | at 46.5; few small nah cavs near top & some near middle; mostly tk | |
| | | | blocky; broken core (2-8" chunks) below 49.4-53.2 | |

Drill hole

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# CORE LOG

U. S. GEOLOGICAL SURVEY

DRILL HOLE _____ PAGE 20 OF 21

LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1455.2 | 1456.2 | | LE HC OS, med + dk yel brn, many tiny xyl cavs. | |
| 1456.2 | 1460.5 | | LE OS, tan + dk yel brn, bnd, scat (2/ft) 1 - 6"± nah cavs, mod irreg lam, tk blocky; broken core (2-4" chunks) below 58.2-59.1; some blk pyr around cavs. | |
| 1460.5 | 1475.4 | | OS, med rish brn, strk below 60.5-65.0; becomes blebby + strk below 65.0 - 69.1; strk below; 4' core loss below 70.0-74.0; mostly tk blocky, broken 2-5" chunks below 74.0-75.4. | |
| 1475.4 | 1475.6 | | LE HC OS, gry brn, mod content, many tiny xyl pits | |
| 1475.6 | 1485.3 | | OS, dk brn w/ blk cast, strk, tk blocky, blk pyr stringer at 80.4, tk blocky | |
| 1485.3 | 1503.5 | | OS, dk yel brn + dk gry brn, mostly faint even lam, tk blocky, minor loc content lam. | |
| 1503.5 | 1512.0 | | OS, lt, med, + dk yel brn, bnd, lam, content lam in upper 1.1' + some in low part, num. irreg blebs + stringers of pyr to ½" tk (5%±), blocky | Pyr zone |
| 1512.0 | 1533.7 | | OS, yel brn + dk yel brn, strk irreg lam, some blebby lt tan carbonate, many irreg lacy stringers pyr (5%) in zones up to .4' tk, banded, some loc high content (slump) lam, tk blocky | |
| 1533.7 | 1543.2 | | OS, as above, no pyr. | |

Drill hole

GPO 846-1F

# CORE LOG

U. S. GEOLOGICAL SURVEY

DRILL HOLE _____ PAGE 21 OF 21

LOCATION _____ ELEVATION _____ TOTAL DEPTH _____

DATE BEGUN _____ DATE COMPLETED _____ DRILLER _____ LOGGED BY _____

CASING _____ REMARKS: _____

| FROM | TO | THICKNESS | LITHOLOGIC DESCRIPTION | |
|---|---|---|---|---|
| 1543.2 | 1557.9 | | OS, dk gry brn, even faint lam, blocky, num. wht carb. lam & tiny wht xyls | |
| | | | thruout much of unit, gry vuggy f. g nodule at 54.5 | |
| | | | | |
| 1557.9 | 1565.1 | | OS, dk gry brn, uneq. lam & blebby, tk blocky, num. uneq. lam OS frags | |
| | | | in lower 3'. | |
| | | | | TOP CLAY-BEARING |
| 1565.1 | 1573.8 | | CLAYEY OS, dk brn blk, even lam, num. wht lam, few short hi ∠ frags, | OS |
| | | | split into 2-6" tk biscuits; 1/8" tk gray tuff w/ 3/8" cream layer below | |
| | | | at 66.0. Tuff may = 3/8" tuff at 2405.3 in Shell 22X-1 | |
| | | | | |
| 1573.8 | 1575.6 | | OS, tan & dk blk brn, uneq & loc hi contort lam, blocky | |
| | | | | |
| 1575.6 | 1596.6 | | CLAYEY OS, predom. med dk gray, subfissile, waxy surfaces, many wht lam. | |
| | TOTAL | | in upper 1½'; core mostly in 1-2" biscuits & some fractured rubble, loc. | |
| | DEPTH | | prom. banded tan & gray betw 85.4-86.1' | |

Drill hole

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