

Clean Harbors Environmental Services, LLC Lone Mountain Facility Waynoka, Oklahoma

RCRA/HSWA Permit Renewal Application

Volume 3

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VOLUME 3

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APPENDIX 3.1

LINEAMENT ANALYSIS



RESOURCE ANALYSIS and MAPPING

Consultants in Resource Management

150 S. RIDGE RD.

STILLWATER, OK 74074

405-372-5810

MEMORANDUM

Date September 28, 1987

To Mr. Roy Murphy, USPCI

From Mr. Mark Gregory, Resource Analysis and Mapping

Subject Remote Sensing Lineament Analysis for Lone Mountain Facility

Project Site Characterization 3187108

The proper utilization of computer-assisted remote sensing technology can produce computer processed images which reveal subtile surface features of the earth. Surface features such as lineaments, drainage patterns and anomalous soil tones and vegetation patterns often provide information about subsurface geologic phenomena. In that regard, an analysis of Landsat digital data was performed on a study area centered on Township 22 N, Range 15 W, Section 33 in northwest Major County, Oklahoma.

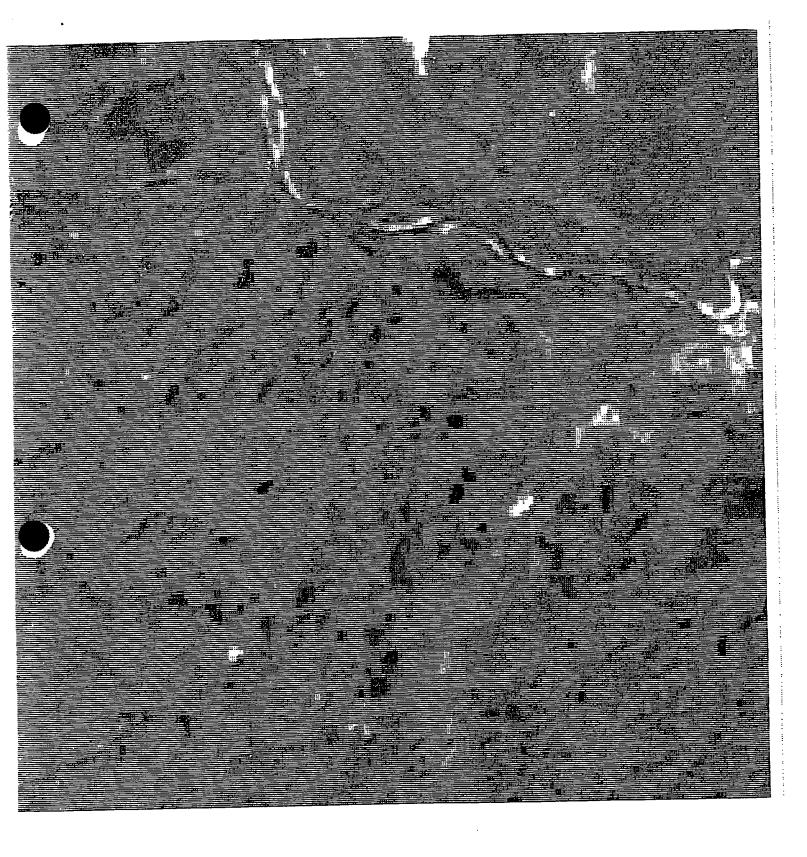
Landsat digital data over the study area was acquired on 1600 bpi magnetic computer tapes from the EROS Data Center in Souix Falls, South Dakota. The EROS Data Center is a division of NOAA/Department of Commerce. The data was originally gathered by the Landsat Multispectral Scanner (MSS) on September 11, 1979 (scene identification number 82169316293X0). Landsat MSS digital data has a ground resolution of 57 meters by 79 meters or approximately 1.1 acres. The data over the study area had zero percent cloud cover and a good to excellent band quality for all four spectral bands. This particular date of data was utilized for the analysis because of its high spectral quality, cloud-free condition, and time or season of the year. The September date results in a low sun angle which helps to accentuate surface structure and a time of near-dormant vegetation growth (vigorous vegetation conditions can mask surface structure conditions).

Analysis of the digital satellite data was performed at the Center for Applications of Remote Sensing at Oklahoma State University. The NASA developed software ELAS was utilized for the digital analysis while image processing and interpretation was performed on a Comtal image processor. Analysis began with reformatting the EROS format digital tapes into ELAS format data. Geo-reference coordinates were gathered from reference points within the digital data and cooresponding locations on USGS 7.5' maps. Of the 42 reference points originally gathered, 34 points were utilized to geo-reference the data to a Universal Transverse Mercator (UTM) coordinate system. These final 34 points resulted in a residual mean square error of 31 meters. In other words, locational error within the geo-referenced data is at a maximum \pm 31 meters (which for MSS data is an excellent/small amount of possible error). During the geo-referencing process, the data was also resampled to a 50 meter spot size. Geo-referencing to a UTM coordinate system allows for accurate referencing of the data to USGS maps and thereby accurate location and mapping of specific points, locations and mapped features.

MEMORANDUM Mr. Roy Murphy, USPCI Page 2

Analyses performed on the referenced data for enhancement of linear features included: 1) ratio of band 5 by band 7; 2) computing the mean of all four spectral bands; and 3) high-pass filter of band 7. These analyses were chosen because of the establishment of these techniques within the scientific literature for enhancement of surface features (such as lineaments) and/or elimination of the effects of vegetation cover within the multispectral data. A non-linear contrast stretch function was applied to the results of the three analyses and the four individual bands to further enhance linear features present in the data. The analyses and the individual bands were then viewed on a Comtal image processor and linear features were mapped directly on the image processor. Finally, black and white electrostatic printer/plots were produced at varying scales with grey-scale patterns to represent the composite result of the analyses.

Enclosed is an invoice for the services rendered in this analysis. I hope that the costs and products delivered meet your expectations. If I can ever be of service to you again, please do not hesitate to contact me.



LINEAMENT ANALYSIS LANDSAT IMAGE T23N-R15W

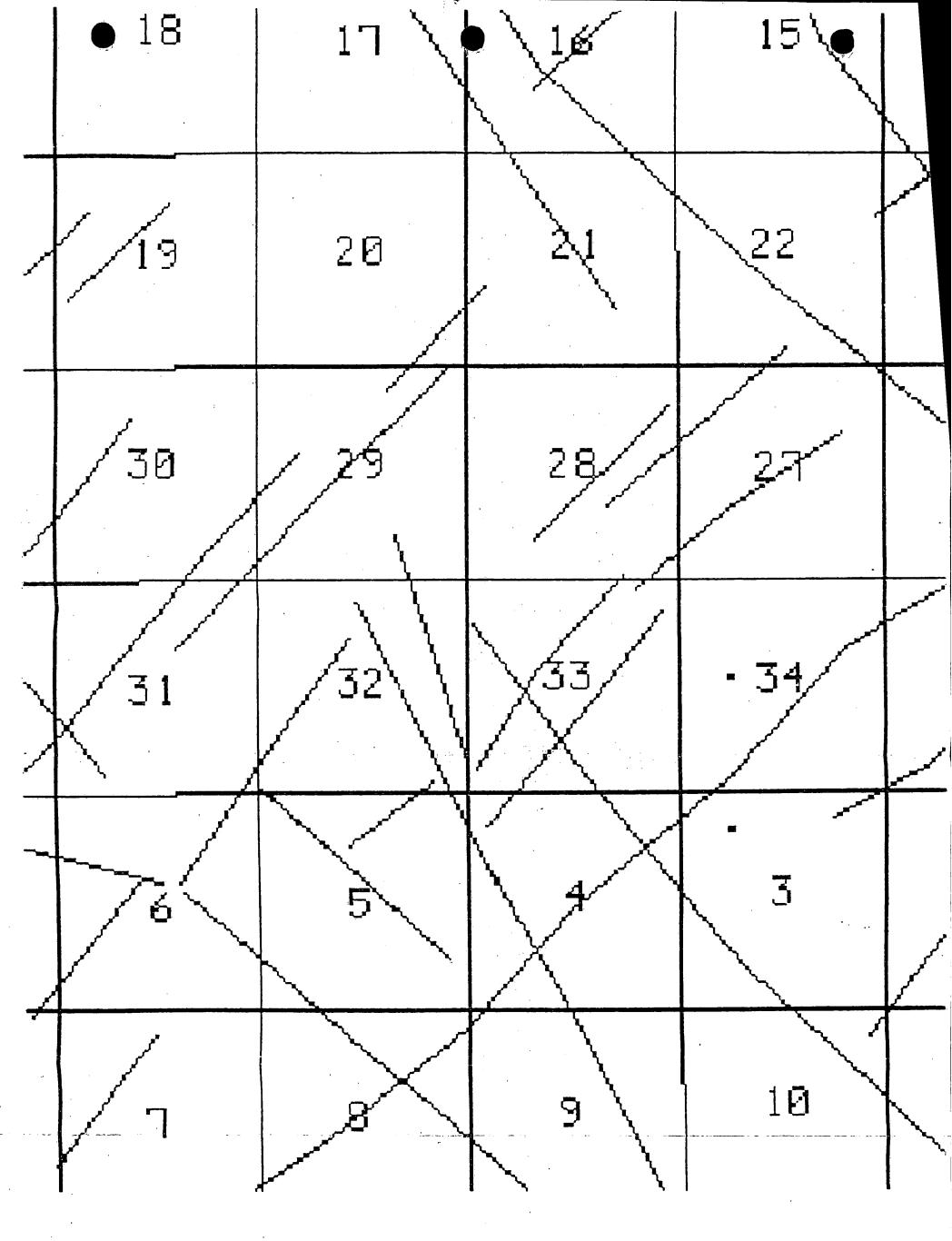
		T23N/ R1/W	123N/ 315W						ر
		::	18	:7 \	18	12/	11 \\	A YS	. <i>-</i>
•		24	/19	20	24	22	25	24	
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LINEAMENT ANALYSIS

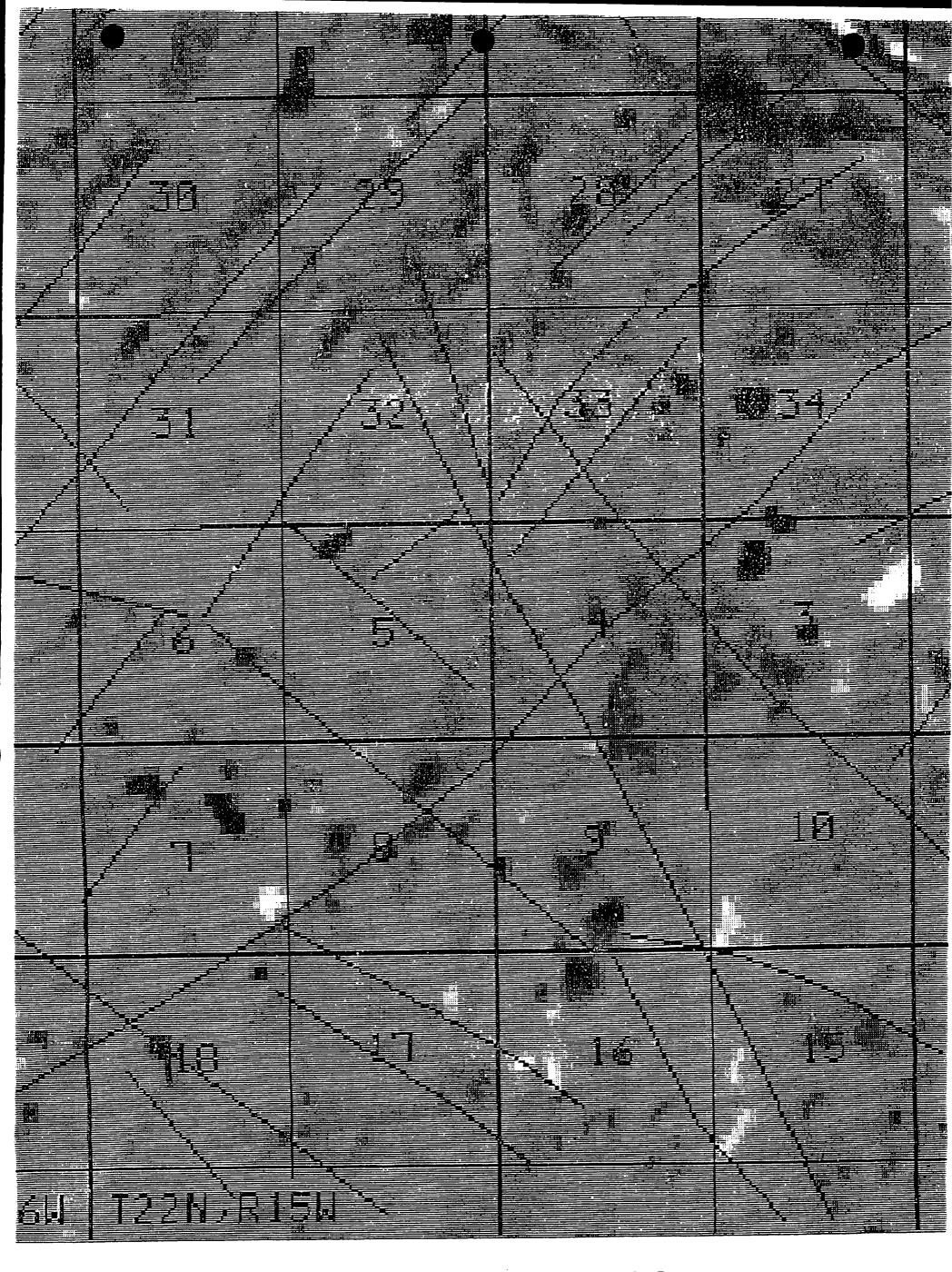
TOWNSHIP AND RANGE SYSTEM

WITH INTERPRETED LINEAMENTS

T23N-R15W



LINEAMENT ANALYSIS
TOWNSHIP AND RANGE SYSTEM WITH
INTERPRETED LINEAMENTS
T23N-R15W



LINEAMENT ANALYSIS
LANDSAT IMAGE WITH SUPERIMPOSED LINEAMENTS
T23N-R1W



APPENDIX 3.2

SOIL BORING AND MONITORING WELL GEOLOGIC LOGS



Well Construction Logs

TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO. A

CONTRACTOR/DRILLER: BOYLES BROTHERS DRILLING METHOD: WATER ROTARY

LOCATION: 9272.0 E - 13947.IN

SURFACE ELEV.: 1370.8

BORING SIZE 6.25"

CASING DETAILS:

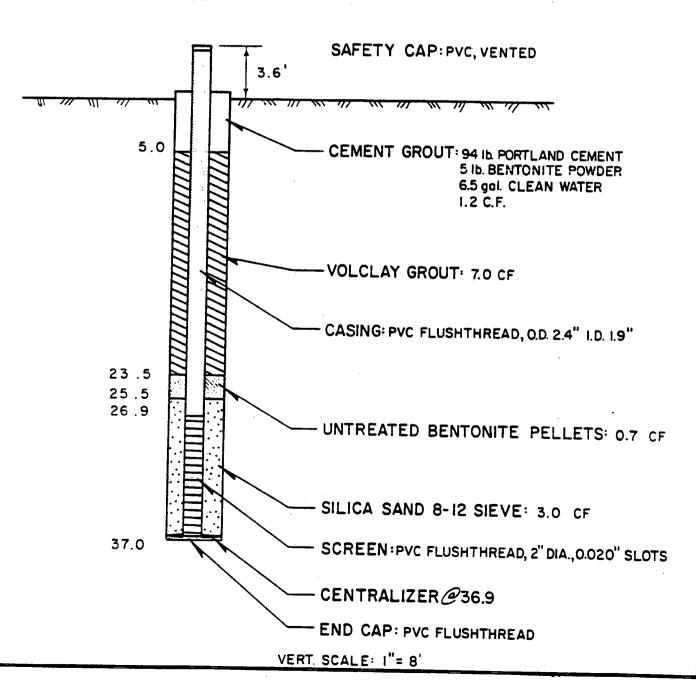
WATER ELEV. 8.3 DATE: 9/22/87

DATE DRILLED: 8/14/87

CASING ELEV.: 1373.62

BORING DEPTH: 370'

REMARKS: SOURCE WELL



TRACER WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO. : A-I

DATÉ DRILLED: 8/11/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV.: 8.9' DATE: 9/22/87

LOCATION: 9271.9 E - 13952.1N

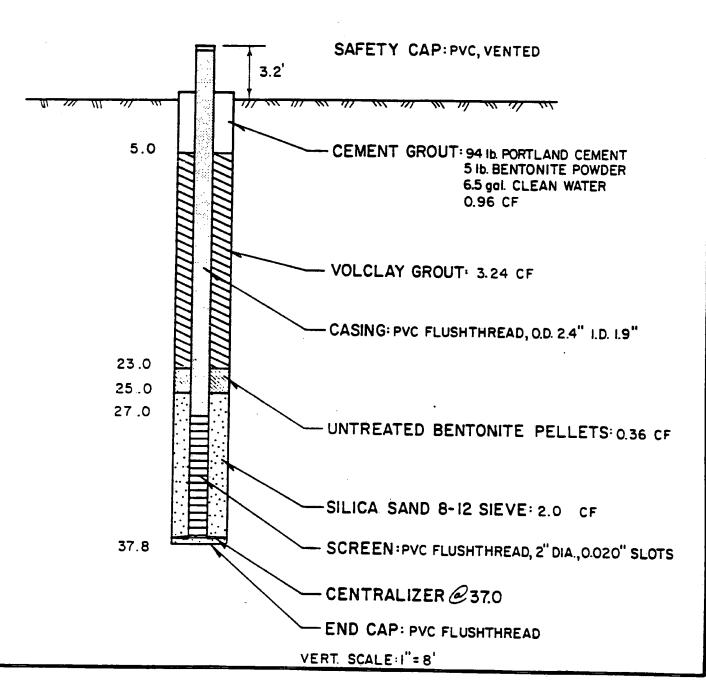
SURFACE ELEV.: 1370.6

CASING ELEV.: 1373.83

BORING SIZE: 6.25"

BORING DEPTH: 37.8

CASING DETAILS:





TRACER WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: A-2

DATE DRILLED: 8/12/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

CASING ELEV.: 1373.75

DRILLING METHOD: WATER ROTARY

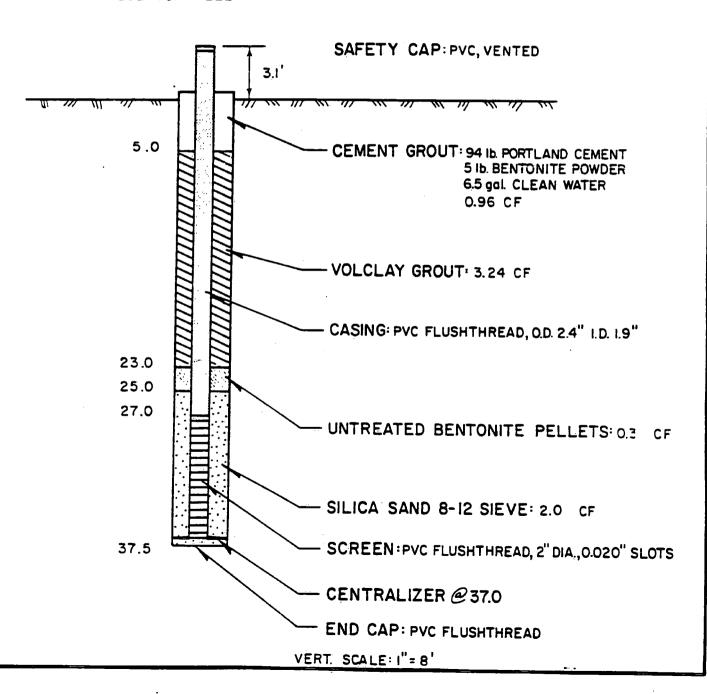
WATER ELEV: 10.4 DATE: 9/22/87

LOCATION: 9275.6E - 13950.5 N

SURFACE ELEV.: 1370.6

BORING DEPTH: 37.5'

BORING SIZE: 6.25" CASING DETAILS:



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE 1

WELL NO.: A-3

DATE DRILLED: 8/13/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9276.9E - 13946N

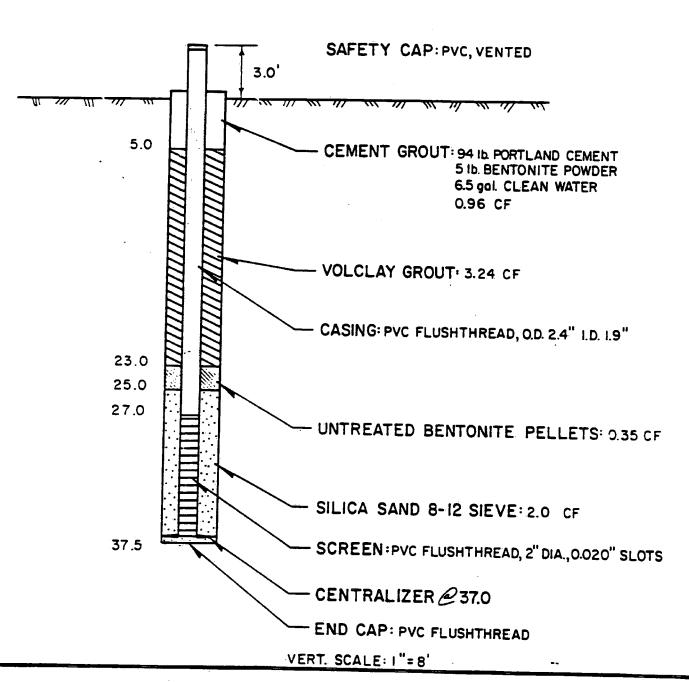
SURFACE ELEV.: 1370.6

BORING SIZE : 6.25" CASING DETAILS:

WATER ELEV: 14.4' DATE: 9/22/87

CASING ELEV.: 1373.66

BORING DEPTH: 37.5



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO. : B

DATE DRILLED: 8/19/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV: 63.4 DATE: 9/22/87

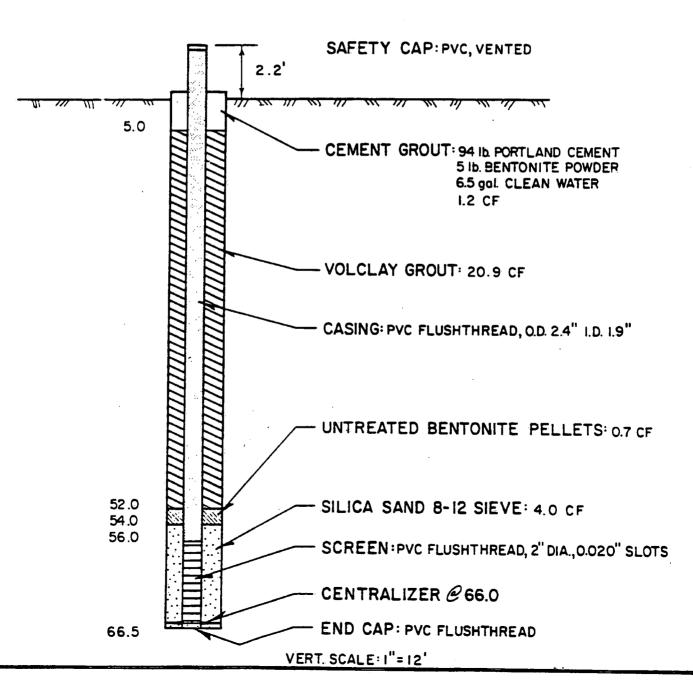
LOCATION: 92973 E - 13971.3 N

SURFACE ELEV.: 1370.4 BORING SIZE: 7.25" CASING ELEV.: 1372.58

CASING DETAILS:

BORING DEPTH: 66.5

REMARKS: SOURCE WELL



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO.: B-1

DATE DRILLED: 8/6/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV.: 60.6 DATE: 9/22/87

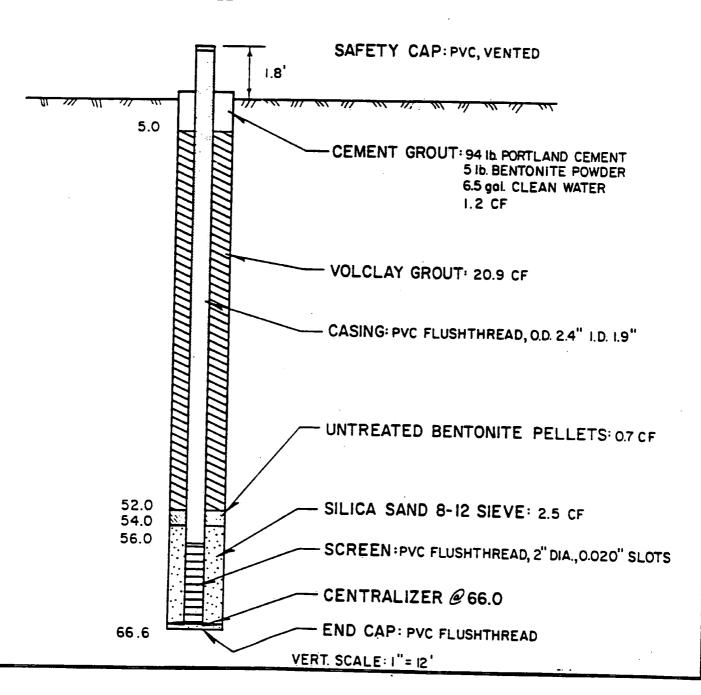
LOCATION: 9297.4 E - 13976.2 N

SURFACE ELEV.: 1370.6 BORING SIZE : 6.25"

CASING ELEV: 1372.45

CASING DETAILS:

BORING DEPTH: 66.6'



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO.: B-2

DATE DRILLED: 8/19/87

WELL NO. B-2

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9300.9 E - 13974.7 N

SURFACE ELEV.: 1370.4

BORING SIZE: 7.25"

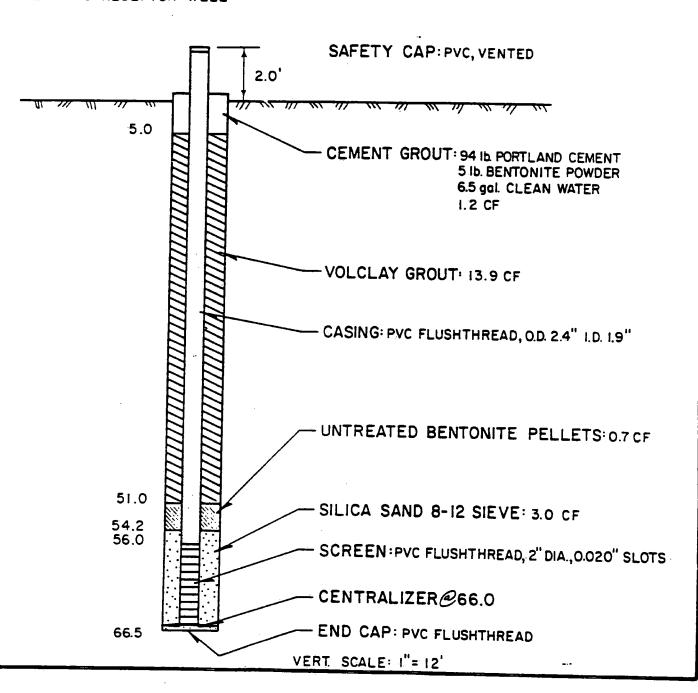
CASING DETAILS:

WATER ELEV: 60.7

DATE: 9/22/87

CASING ELEV.: 1372.38

BORING DEPTH: 66.5'



TRACER WELL SCHEMATIC

PROJECT NO:3187108

WELL NO. B-3

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9302.5 E - 13970.4N

SURFACE ELEV.: 1370.5 BORING SIZE: 6.25"

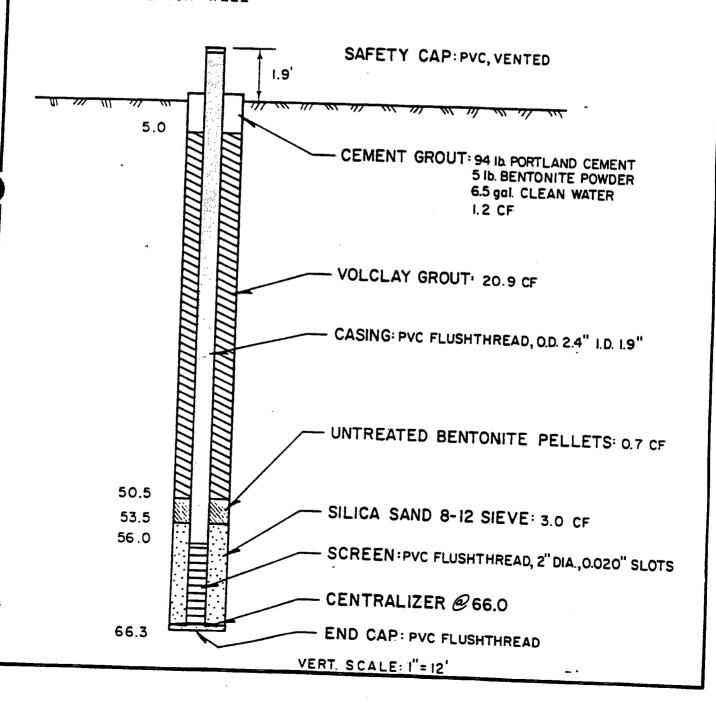
CASING DETAILS:

PAGE I

DATE DRILLED: 8/20/87

WATER ELEV: 60.8' DATE: 9/22/87

CASING ELEV.: 1372.37 BORING DEPTH: 66.3'



TRACER WELL SCHEMATIC

PROJECT NO:3187108

DATE DRILLED: 8/7/87

WELL NO.: C

CONTRACTOR/DRILLER: BOYLES BROTHERS DRILLING METHOD: WATER ROTARY

WATER ELEV.: 9.0'

DATE: 9/22/87

PAGE !

LOCATION: 9315.4 E - 13988.4 N

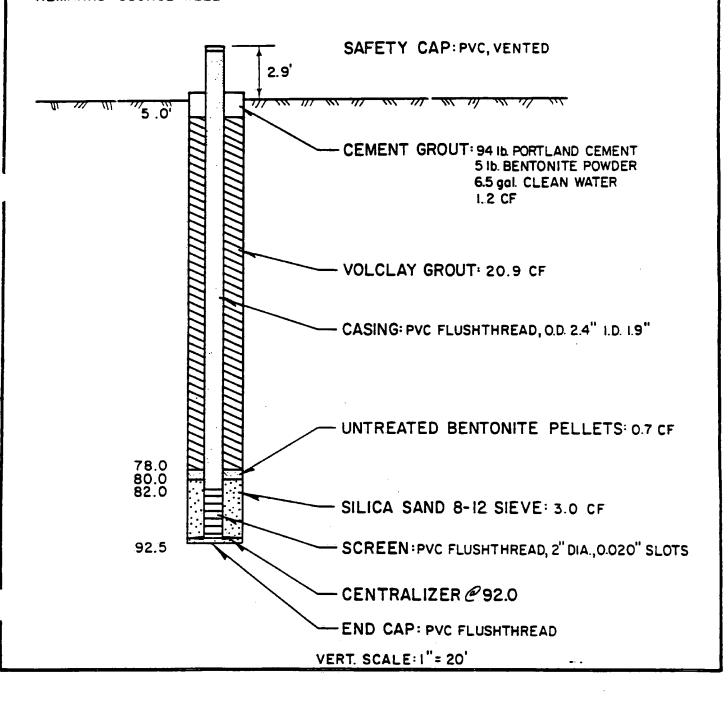
SURFACE ELEV .: 1370.4

CASING ELEV.: 1373.25

BORING DEPTH: 92.5

BORING SIZE: 7.25" CASING DETAILS:

REMARKS: SOURCE WELL



TRACER WELL SCHEMATIC

PROJECT NO.:3187108

PAGE |

WELL NO.: C-I

DATE DRILLED: 7/29/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

WATER ELEV: 6.3 DATE: 9/22/87

DRILLING METHOD: WATER ROTARY LOCATION: 9315.6 E - 13993.4 N

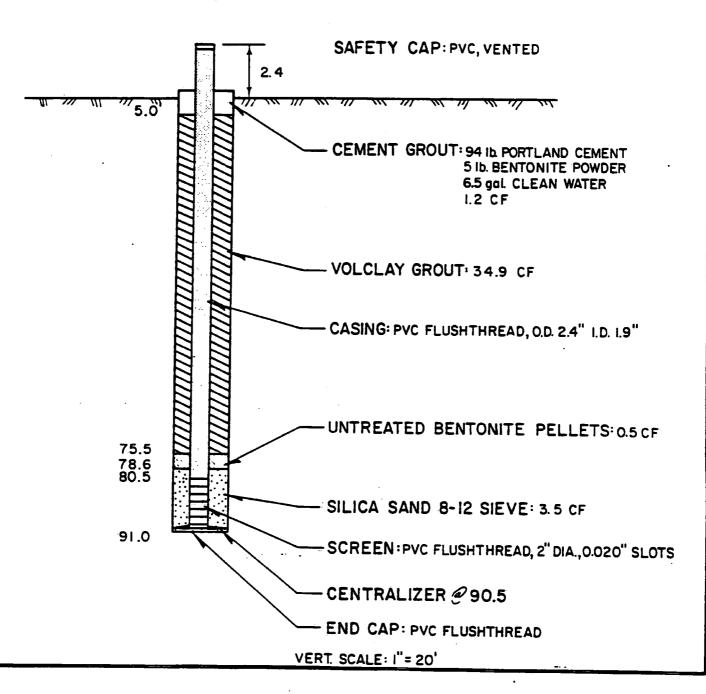
SURFACE ELEV.: 1370.3

CASING ELEV.: 1372.67

BORING SIZE : 7.25"

BORING DEPTH: 91.0'

CASING DETAILS:



TRACER WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: C-2

DATE DRILLED: 8/4/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

WATER ELEV: 5.3

DATE: 9/22/87

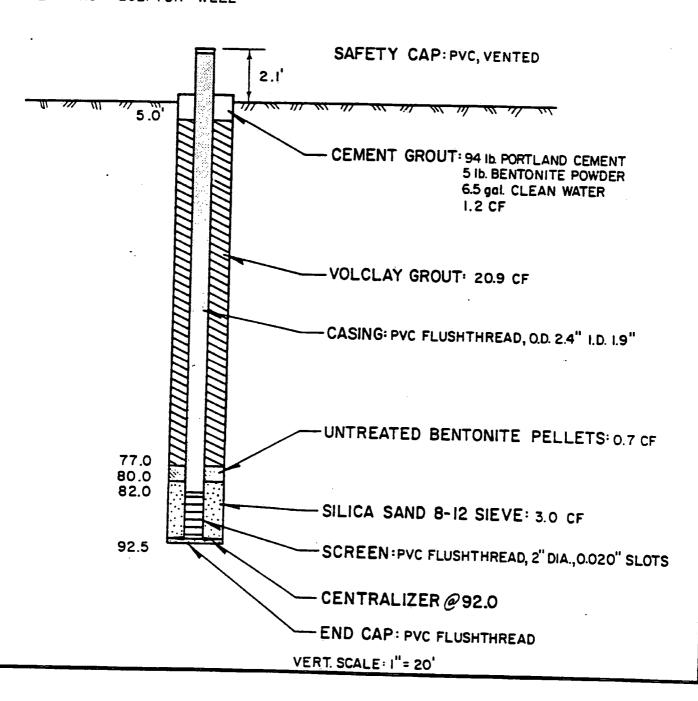
DRILLING METHOD: WATER ROTARY LOCATION: 9319.1E - 13991.6 N

CASING ELEV: 1372.33

SURFACE ELEV.: 1370.2

BORING DEPTH: 92.5

BORING SIZE: 7.25"
CASING DETAILS:



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO. C-3

DATE DRILLED: 8/5/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV: 7.2

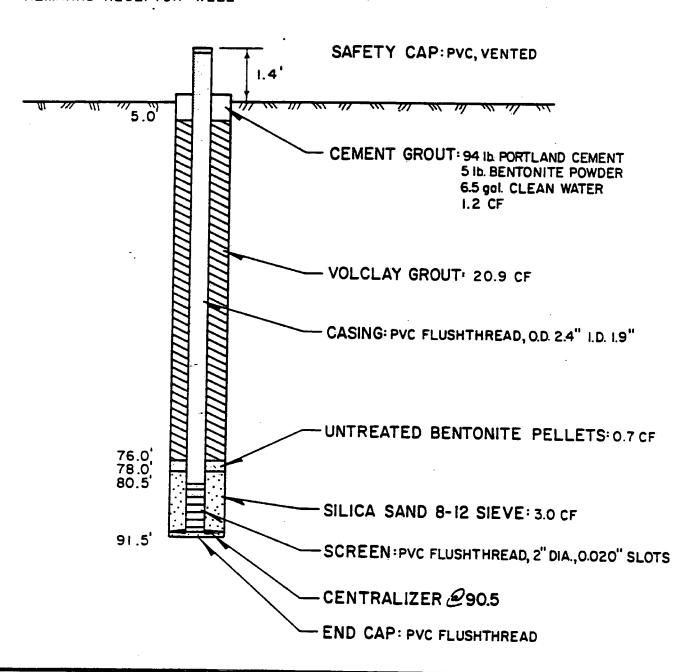
DATE: 9/22/87

LOCATION: 9320.4 E - 13988.6 N

SURFACE ELEV.: 1370.4

CASING ELEV.: 1371.81 BORING DEPTH: 91.0'

BORING SIZE: 7.25" CASING DETAILS:



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO.: D

DATE DRILLED: 8/11/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV.: 0.1 DATE: 9/22/87

LOCATION: 9333.5E - 14005.7N

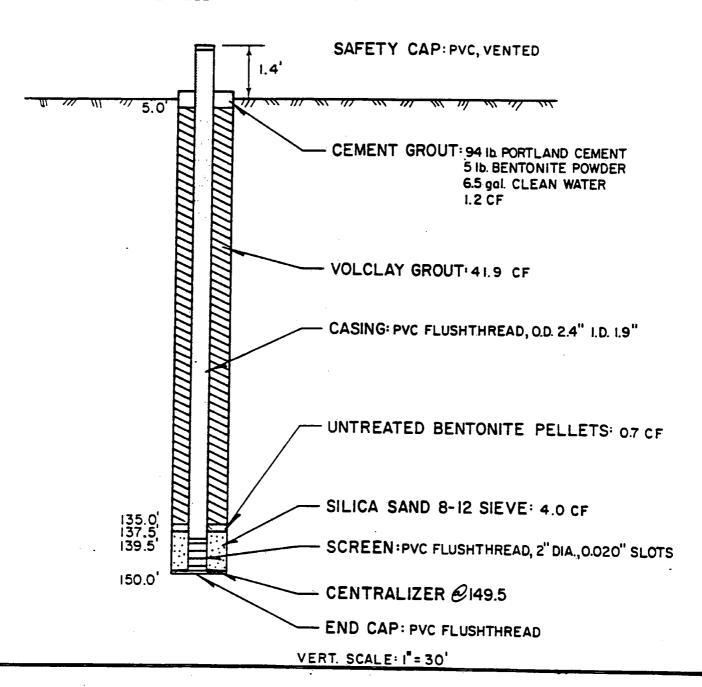
CASING ELEV.: 1371.52

SURFACE ELEV.: 1370.1 BORING SIZE: 7.25"

BORING DEPTH: 150'

CASING DETAILS:

REMARKS: SOURCE WELL



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO. : D-I

DATE DRILLED: 7/23/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

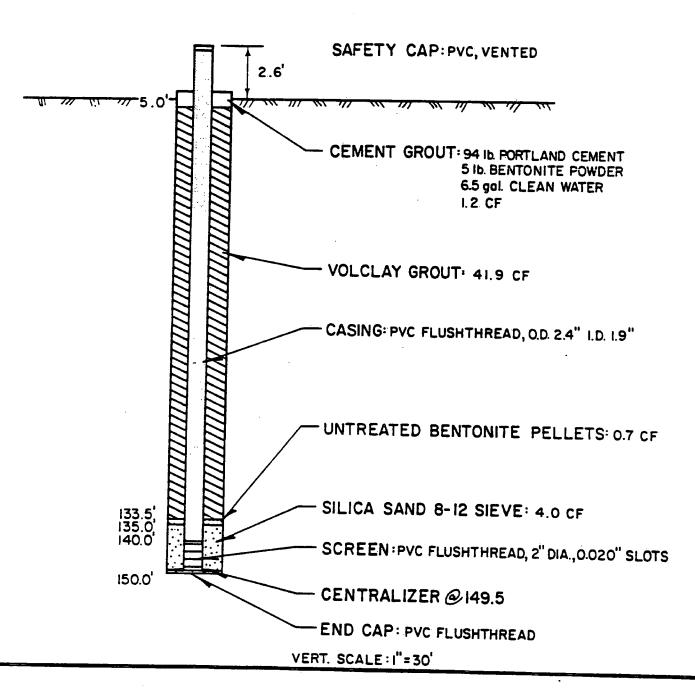
WATER ELEV.: 3.9' DATE: 9/22/87

LOCATION: 9333.1E - 14010.8 N

SURFACE ELEV: 1369.9 BORING SIZE: 7.25"

CASING DETAILS:

CASING ELEV.: 1372.52 BORING DEPTH: 150'



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO.: D-2

DATE DRILLED: 8/13/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV: O.I'

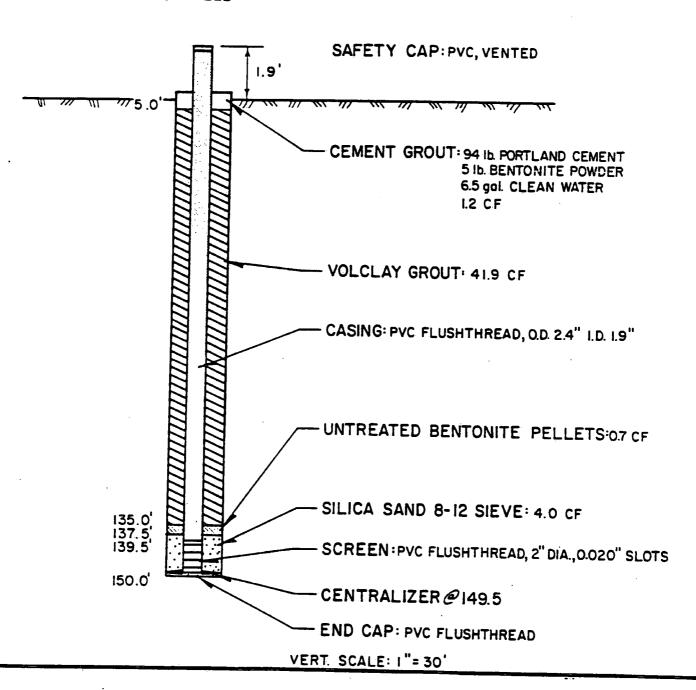
DATE: 9/22/87

LOCATION: 9336.9 E - 14009.4 N

SURFACE ELEV.: 1370.2

CASING ELEV.: 1372.15 BORING DEPTH: 150'

BORING SIZE: 7.25" CASING DETAILS:



TRACER WELL SCHEMATIC

PROJECT NO:3187108

PAGE I

WELL NO.: D-3

DATE DRILLED: 8/14/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

WATER ELEV: 0.1' DATE: 9/22/87

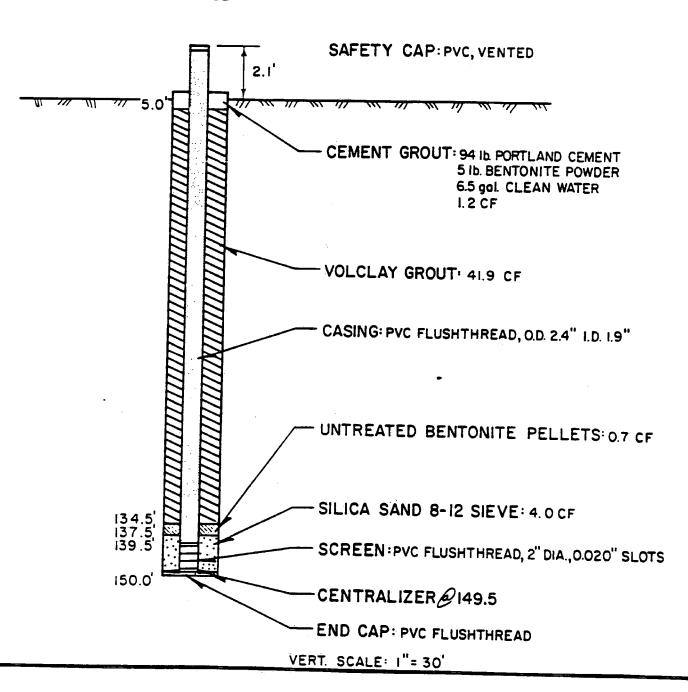
LOCATION: 9338.2E - 14004.9 N

CASING ELEV: 1372.25

SURFACE ELEV.: 1370.1 BORING SIZE: 7.25"

CASING DETAILS:

BORING DEPTH: 150'



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO : MW CH-D

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 7312.0 E - 13942.1 N

SURFACE ELEV: 1392.9'

BORING SIZE: 10" & 12"

CASING DETAILS:

DATE: 8/26/87

LOGGER: PETER BAYLEY

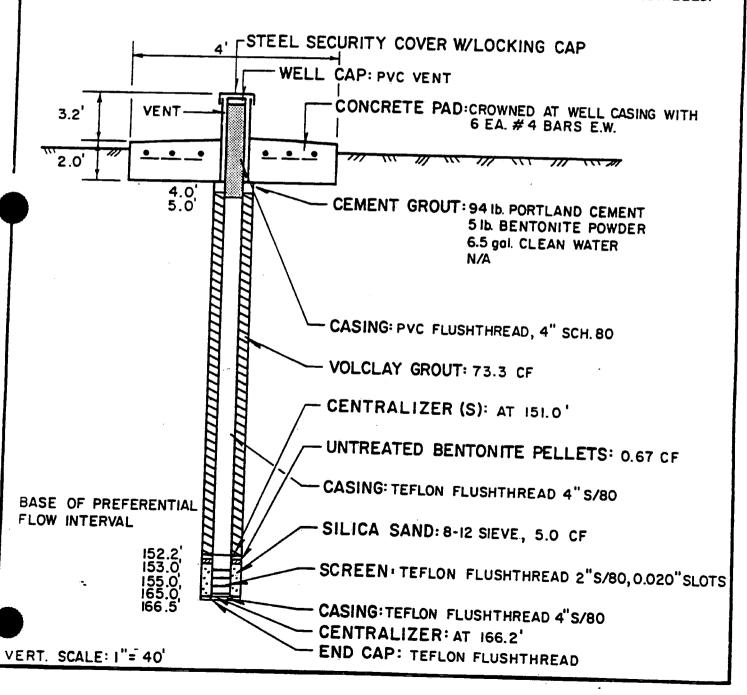
WATER ELEV.: 12.58 DATE: 8/29/87

PAGE I

CASING ELEV.: 1396.1'

BORING DEPTH: 166.5

REMARKS: WAS ORIGINALLY DRILLED AS MW K-164. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW I-A

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 8716.8 E - 10488.9 N

SURFACE ELEV: 1451.4

BORING SIZE: 6.25"

DATE: 7/9/87

LOGGER: PETER BAYLEY

WATER ELEV. +0.89

DATE:8/29/87

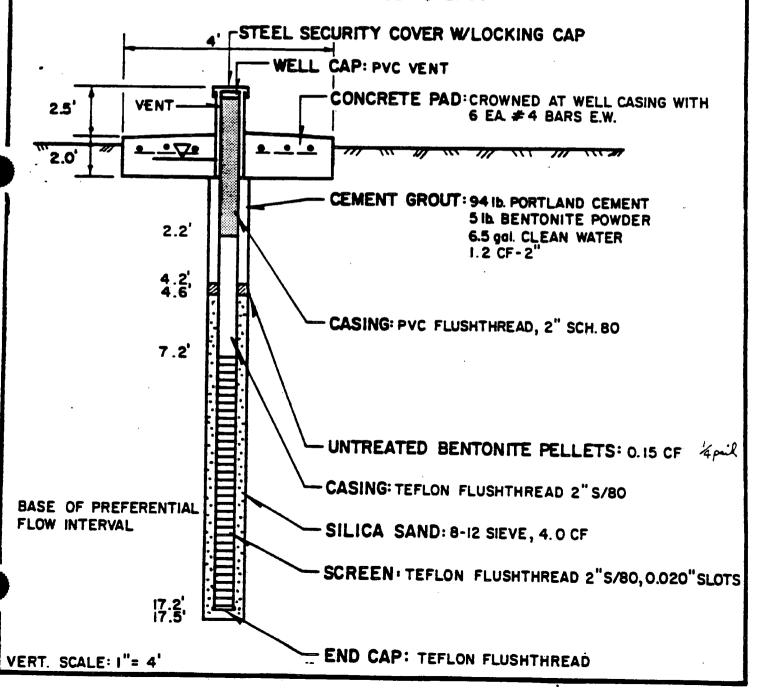
CASING ELEV.: 1453.82

BORING DEPTH: 17.5

CASING DETAILS: cap, 10'screen TFE, 5'TFE 5'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MWA-17. BUMPER GUARDS TO BE INSTALLED.

WATER LEVEL MAY CONTAIN DRILLING FLUIDS.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW I-B

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 8739.2 E - 10482.1 N

SURFACE ELEV: 1449.3

BORING SIZE: 7.25"

CASING ELEV: 1452.3'

LOGGER: PETER BAYLEY

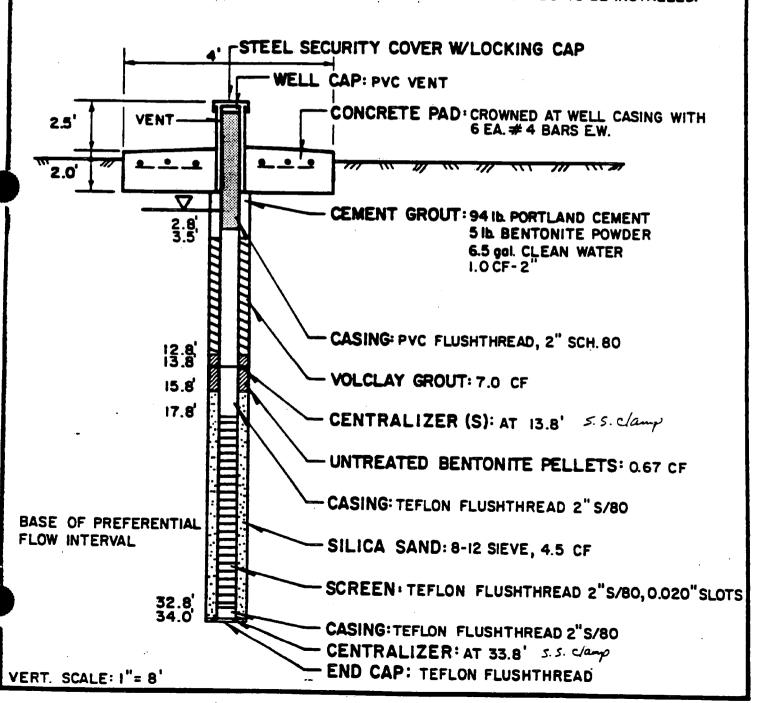
WATER ELEV. 1.14 DATE: 8/29/87

BORING DEPTH: 34.0'

DATE: 8/27/87

CASING DETAILS: Cap, I'THE 10'Screen, 5'Screen, 70'THE, 5'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW A-50. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW I-C

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 8753.8' E- 10481.2' W

SURFACE ELEV: 1449.1

BORING SIZE: 7.25"

DATE: 8/26/87

LOGGER: PETER BAYLEY

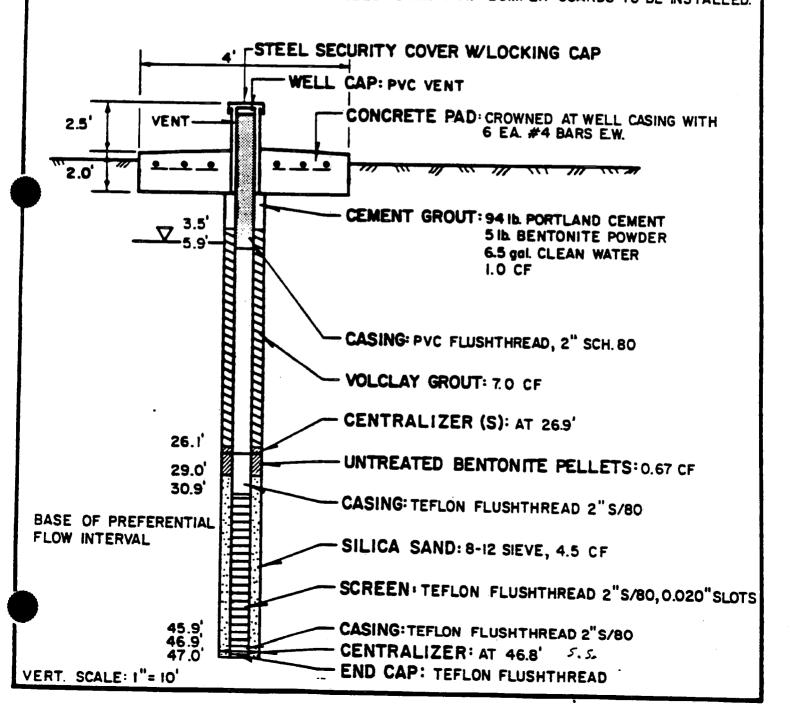
WATER ELEV. 5. 42' DATE: 8/28/87

CASING ELEV.: 14516

BORING DEPTH: 47.0'

CASING DETAILS: cap, I'THE, 10' screen 5' screen 2-10'THE, 5'THE, PVC

REMARKS: WELL WAS ORIGINALLY DRILLED AS MW A-47. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW 2-A

DATE: 7/10/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV. 12.19 DATE: 8/30/87

LOCATION: 8082.1 E- 11318.9 N

SURFACE ELEV.: 1464.4

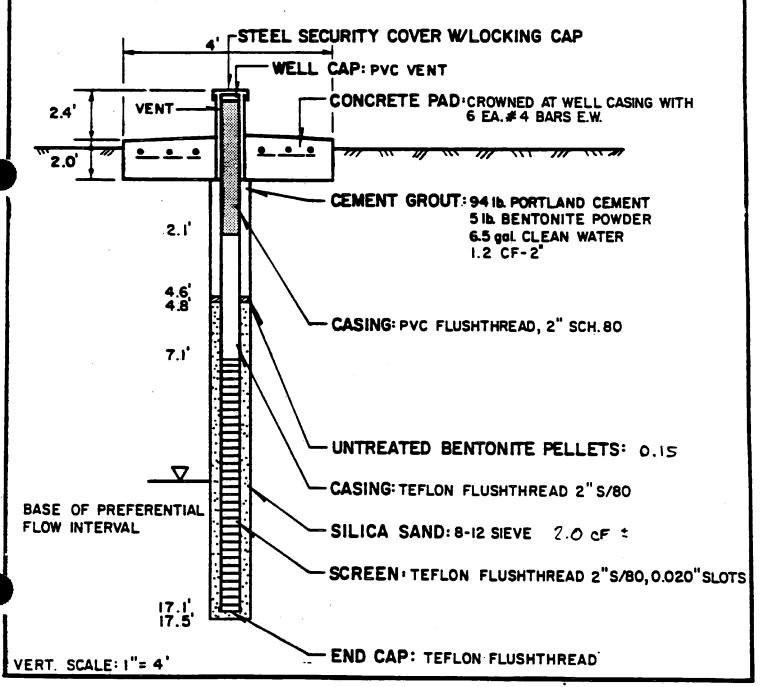
CASING ELEV.: 1466.4'

BORING SIZE: 6.25"

BORING DEPTH: 17.5'

CASING DETAILS: Cap, 10'screen, 5'TFE, 5'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW B-17. BUMPER GUARDS TO BE INSTALLED. reinstalled



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO. : MW-2-B

DATE: 8/20/87

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV. 22.59 DATE: 8/30/87

LOCATION: 8084.6 E- 11303.7 N

CASING ELEV.: 1468.3

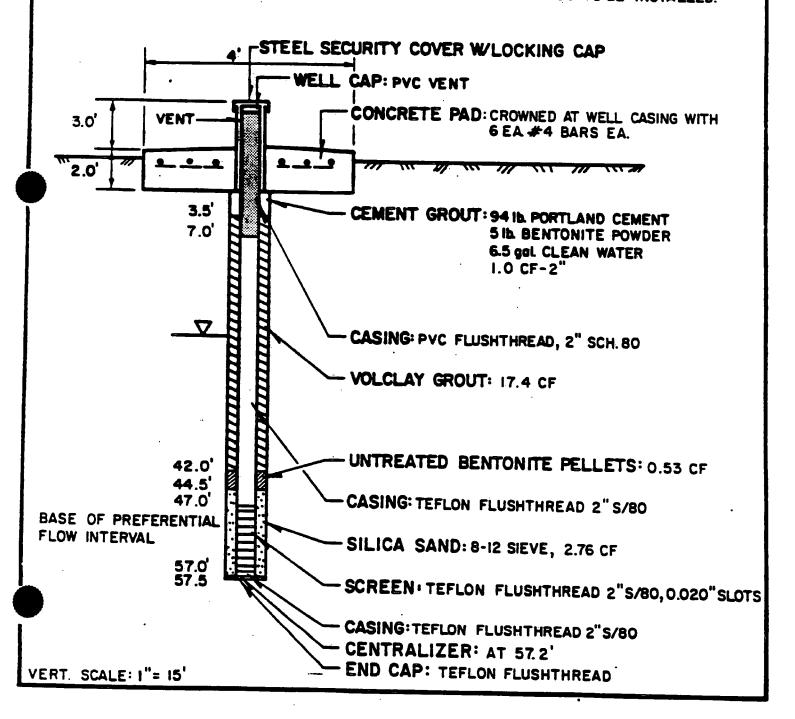
SURFACE ELEV: 1465.3

BORING SIZE: 6.25"

BORING DEPTH: 57.5'

CASING DETAILS: cap. 10' screen, 4-10' TFE 10' PVC ?

REMARKS: WAS ORIGINALLY DRILLED AS MW 8-57. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NQ:3187108

PAGE I

WELL NO.: MW 2-C

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 8082.1 E - 11318.9 N

SURFACE ELEV: 1464.4

BORING SIZE: 7.25"

DATE: 8/22/87

LOGGER: PETER BAYLEY

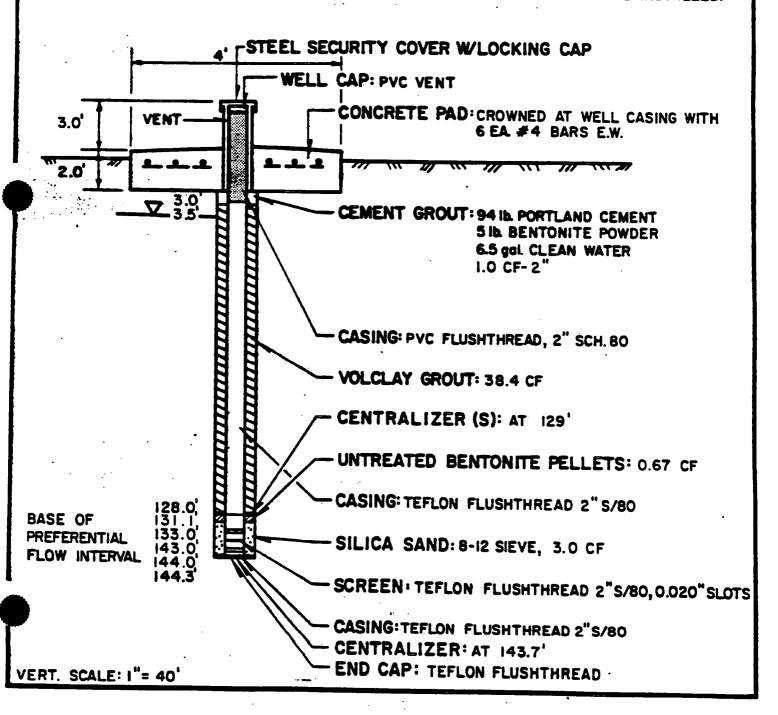
WATER ELEV. 8.28 DATE: 8/30/87

CASING ELEV.: 1467.4'

BORING DEPTH: 144.3

CASING DETAILS: cap, I'TEE, 10'screen, 13-10'TER, 5'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW 8-144. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW 3-A

DRILLING METHOD: WATER ROTARY

LOCATION: 7781.3 E- 12549.5 N

SURFACE ELEV.: 1414.9

BORING SIZE: 7.25"

DATE: 8/22/87

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

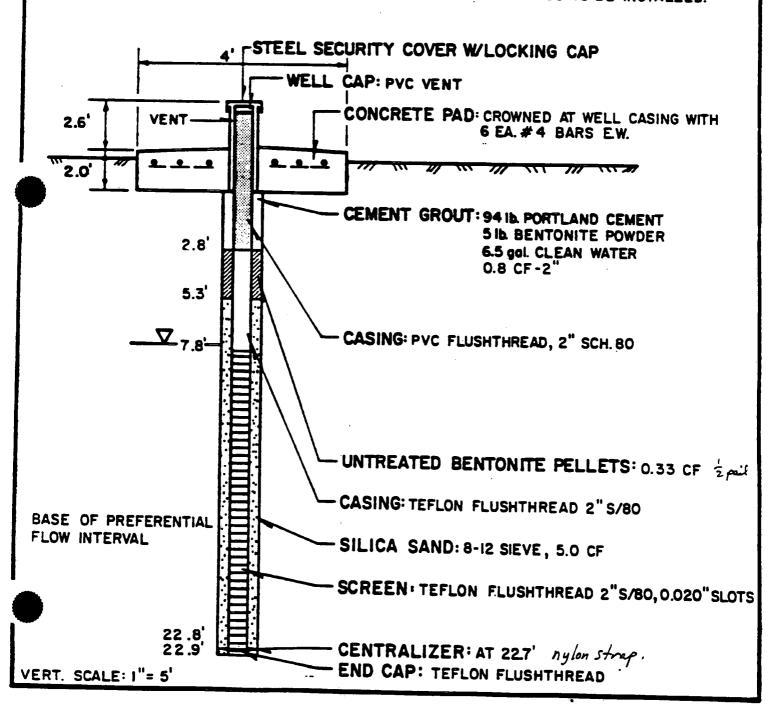
WATER ELEV. 7.69' DATE: 8/30/87

CASING ELEV.: 1417.48'

BORING DEPTH: 22.9'

CASING DETAILS: cap, 10'screen, 5'screen, 5'TFE, 5'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW D-23. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW 4-BI

DATE: 8/27/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV. 4.04 DATE: 8/29/87

LOCATION: 9452.2 E - 10735.3 N

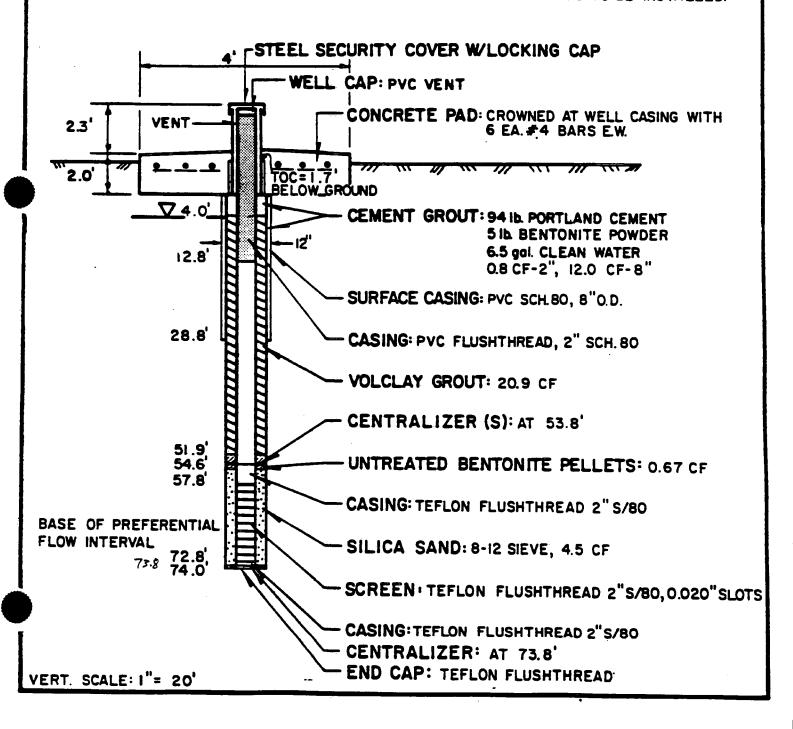
CASING ELEV.: 1427.0'

SURFACE ELEV : 1424.8' BORING SIZE: 7.25" & 12"

BORING DEPTH: 74.0'

CASING DETAILS: cap. I'TFE, 10'SCR, 5'SCL, 4+0'TFE, 5'TFE, PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW E-74. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW 5-B2

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9559.7 E - 11568.3 N

SURFACE ELEV.: 1394.5

BORING SIZE: 7.25" & 12"

WATER ELEV. 2.37

LOGGER: PETER BAYLEY

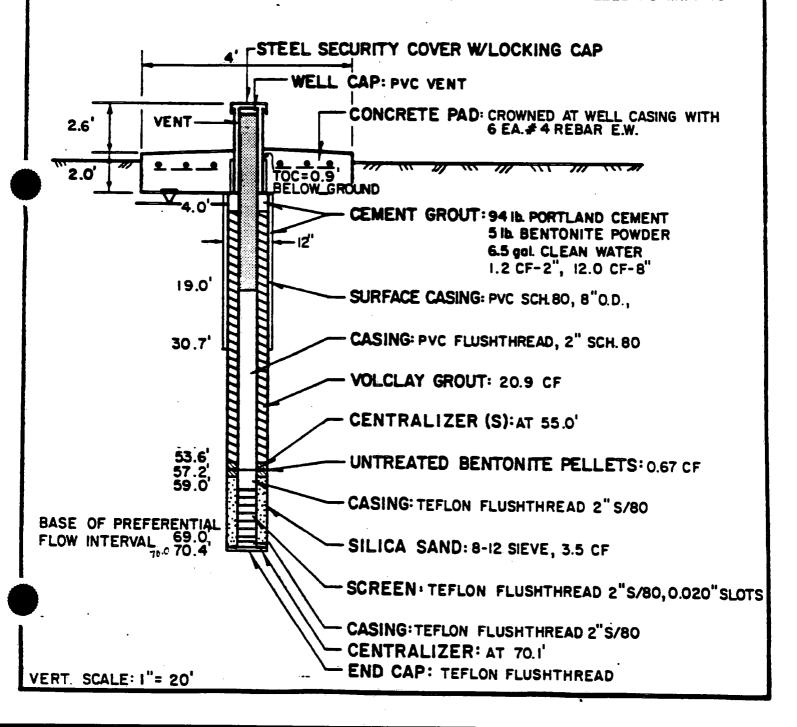
DATE: 8/25/87

CASING ELEV.: 1397.1

BORING DEPTH: 70.4

CASING DETAILS: COP. I'THE 10'SCR. 4-10'THE PVC

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW F-70.



MONITORING WELL SCHEMATIC

PROJECT NO.3187108

PAGE I

WELL NO. : MW6-A

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9456.2 E - 11713.3 N

SURFACE ELEV: 1394.2'

BORING SIZE: 7.25"

CASING DETAILS: COP. 10'SCR S'TEE. PUC

DATE: 8/21/87

LOGGER: PETER BAYLEY

WATER ELEV. 9.21

CASING ELEV.: 1397.2'

BORING DEPTH: 23.6'

REMARKS: WAS ORIGINALLY DRILLED AS MWG-23. BUMPER GUARDS TO BE INSTALLED. STEEL SECURITY COVER W/LOCKING CAP WELL CAP: PVC VENT

CONCRETE PAD: CROWNED AT WELL CASING WITH VENT-3.0' 6 EA #4 BARS E.W. CEMENT GROUT: 94 IL PORTLAND CEMENT 5 IL BENTONITE POWDER 6.5 gol CLEAN WATER 2.4 CF-2" CASING: PVC FLUSHTHREAD, 2" SCH. 80 8.0 ∇ 10.5, 13.0 UNTREATED BENTONITE PELLETS:0.14 CF CASING: TEFLON FLUSHTHREAD 2" S/80 BASE OF PREFERENTIAL FLOW INTERVAL -SILICA SAND: 8-12 SIEVE, 3.60 CF SCREEN: TEFLON FLUSHTHREAD 2"S/80, 0.020"SLOTS

CENTRALIZER: AT 23.0'

END CAP: TEFLON FLUSHTHREAD

MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW 6-BI

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 9101.8 E - 11774.7 N

SURFACE ELEV: 1394.1

BORING SIZE: 7.25"8 12"

DATE: 8/27/87

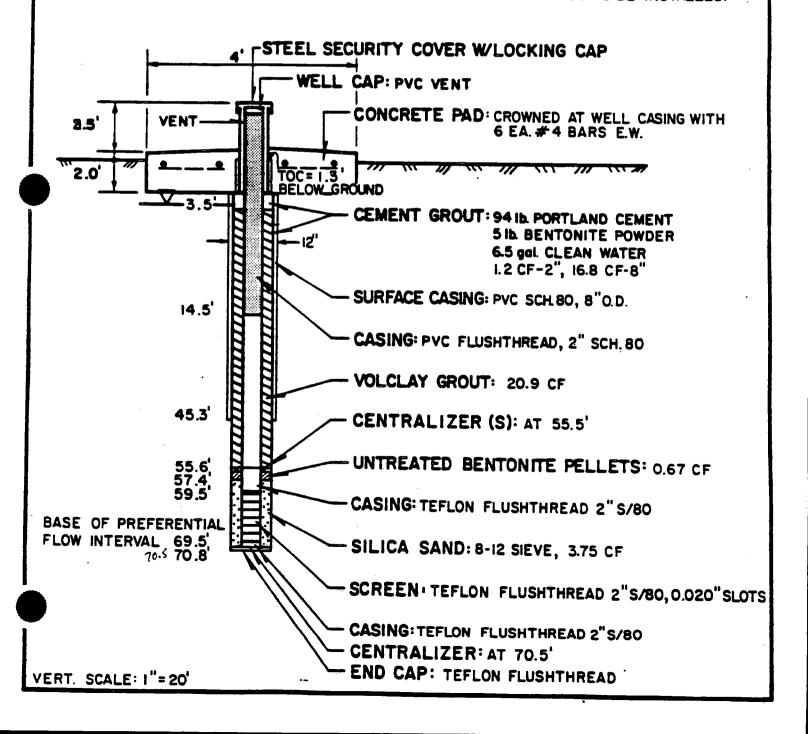
WATER ELEV. 2.77

CASING ELEV.: 1397.4

BORING DEPTH: 70 8

CASING DETAILS: COP I'THE 10' SCR, 4-10 THE, S'THE, PYC

REMARKS: WAS ORIGINALLY DRILLED AS MW H-71. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW 6-C

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9440.2 E-11737.7 N

SURFACE ELEV: 1394.2'1

BORING SIZE: ZOF"

BORING SIZE: 7.25"

DATE: 8/26/87

LOGGER: PETER BAYLEY

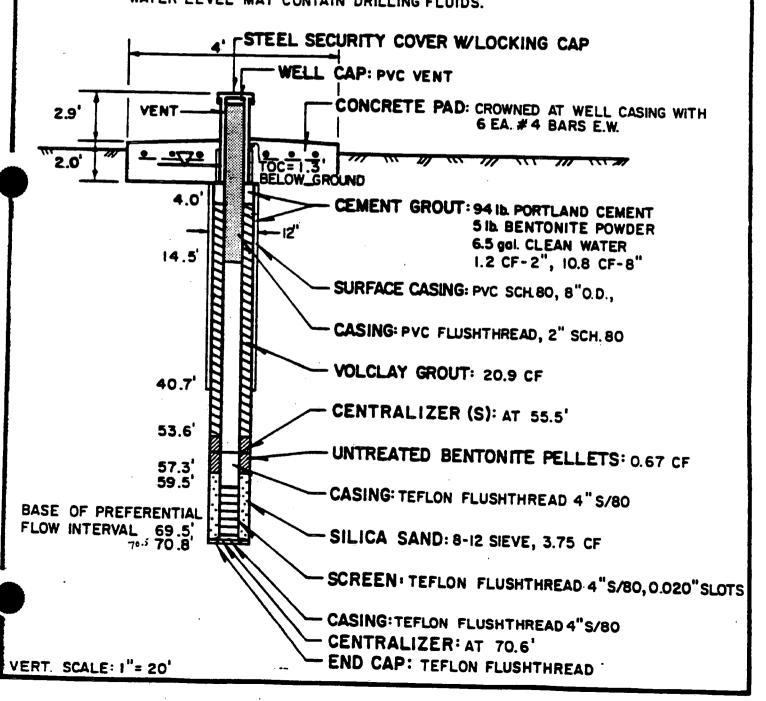
WATER ELEV. + 0.67 DATE: 8/30/87

CASING ELEV.: 1397.1

BORING DEPTH: 70.8'

CASING DETAILS: cap. I'TEE. IC'SCR. 4-10'TEE. B'TEE. PUC

REMARKS: WAS ORIGINALLY DRILLED AS MW G-71. BUMPER GUARDS TO BE INSTALLED WATER LEVEL MAY CONTAIN DRILLING FLUIDS.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO. : MW 8-AI

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 9110.8 E - 11759.4 N

SURFACE ELEV.: 1394.5

BORING SIZE: 7.25"

DATE: 8/27/87

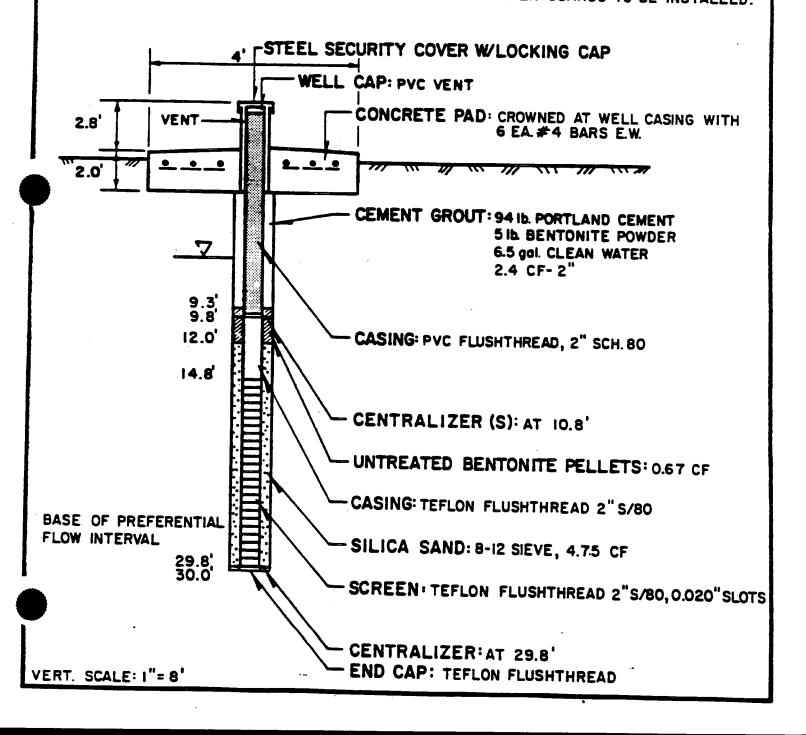
WATER ELEV. 5.33' DATE: 8/30/87

CASING ELEV.: 1397.3'

BORING DEPTH: 30.0'

CASING DETAILS: cop, 10'sch. 5'SCR, 5'TFE, PUC

REMARKS: WAS ORIGINALLY DRILLED AS MW H-30. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO.: MW 10-A

DATE: 8/26/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV.: 7.88 DATE: 8/30/87

PAGE I

LOCATION: 9717.2 E- 14484.3 N

CASING ELEV.: 1368:9'

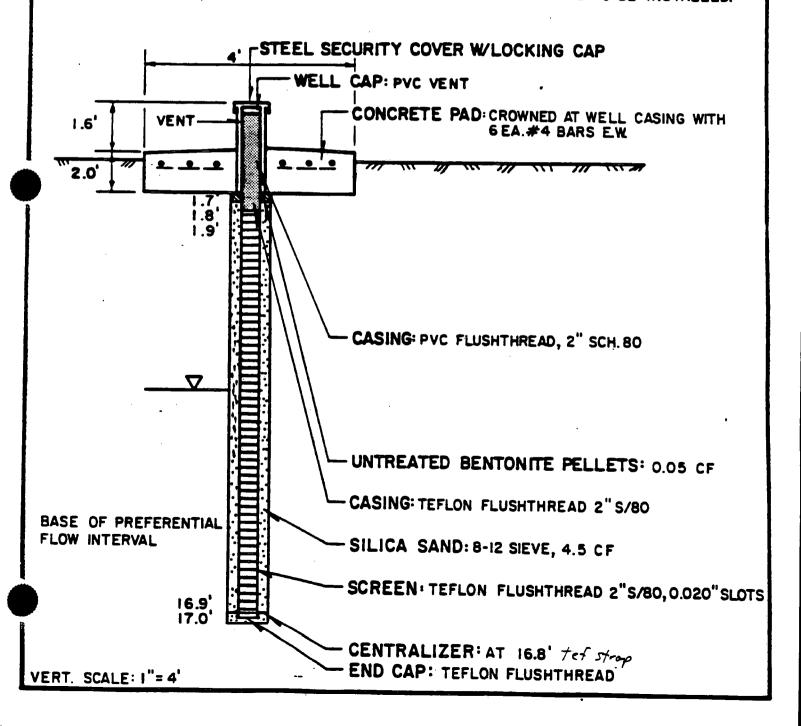
SURFACE ELEV: 1367.3'

BORING DEPTH: 17 0'

BORING SIZE: 7.25"

CASING DETAILS: Cap. 10' SCR. 5'SCR, 5'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW J-17. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW 10-B

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9716.5 E- 14499.0'N

SURFACE ELEV: 1367.3

BORING SIZE: 7.25"

DATE: 8/22/87

LOGGER: PETER BAYLEY

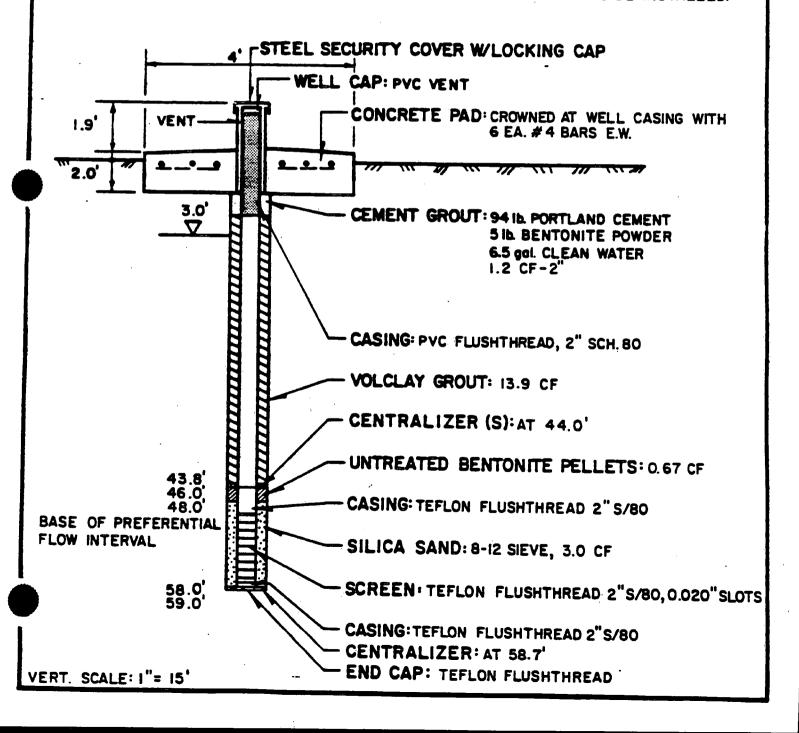
WATER ELEV. 6.60' DATE: 8/30/87

CASING ELEV: 1369.2

BORING DEPTH: 59.0'

CASING DETAILS: cap . I'TEE . 10'SCR , 4-10'TEE , 5'TEE , PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW J-59. BUMPER GUARDS TO BE INSTALLED.



PROJECT NO.: 3189032

WELL NO .: MW 11-A5

CONTRACTOR/DRILLER: A.W. POOL

DRILLING METHOD: AIR CORE & ROTARY

LOCATION: 9,499.1 E - 12,894.4 N

SURFACE ELEV .: 1420.73'

BORING SIZE: 6"

DATE: 6-12-89 LOGGER: D. ADAMS

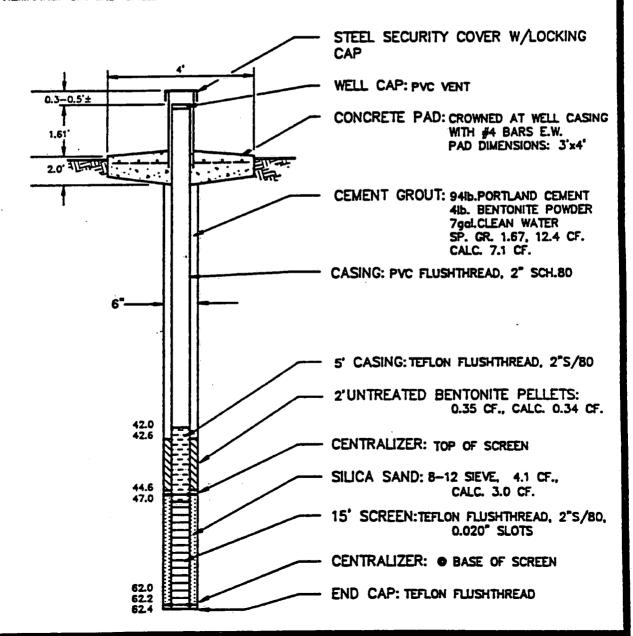
(HAS NOT REACHED STATIC WATER ELEV .:

CASING ELEV .: 1422.34'

BORING DEPTH: 62.4"

CASING DETAILS: 15' TEFLON SCREEN, 5' TEFLON BLANK, PVC TO SURFACE

REMARKS: DRY WHEN DRILLED 6-8-89, LET STAND



PROJECT NO.: 3189032

WELL NO .: MW 11-A6

CONTRACTOR/DRILLER: A.W. POOL

DRILLING METHOD: AIR CORE & ROTARY

LOCATION: 9.331.2 E - 12.893.1 N

SURFACE ELEV.: 1420.90'

BORING SIZE: CORE 5". REAM TO 6"

DATE: 6-12-89 LOGGER: D. ADAMS

WATER ELEV.: (HAS NOT REACHED STATIC

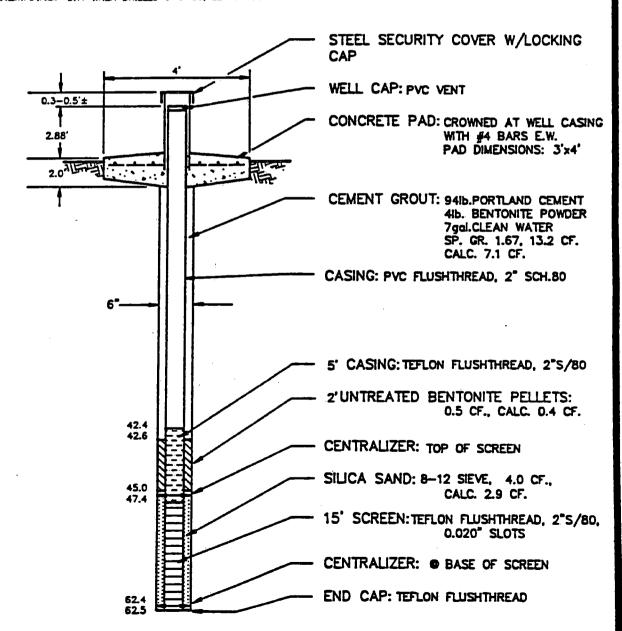
LEVEL AS OF 8-21-89)

CASING ELEV.: 1423.78'

BORING DEPTH: 62.5' (63.0')

CASING DETAILS: 15' TEFLON SCREEN, 5' TEFLON BLANK, PVC TO SURFACE

REMARKS: DRY WHEN DRILLED 6-6-89, LET STAND



PROJECT NO.: 3189032

WELL NO .: MW 17

CONTRACTOR/DRILLER: A.W. POOL DRILLING METHOD: AIR CORE & ROTARY LOCATION: 8.669.9 E - 12.895.8 N

SURFACE ELEV.: 1420.70'

BORING SIZE: 6"

DATE: 6-12-89 LOGGER: D. ADAMS

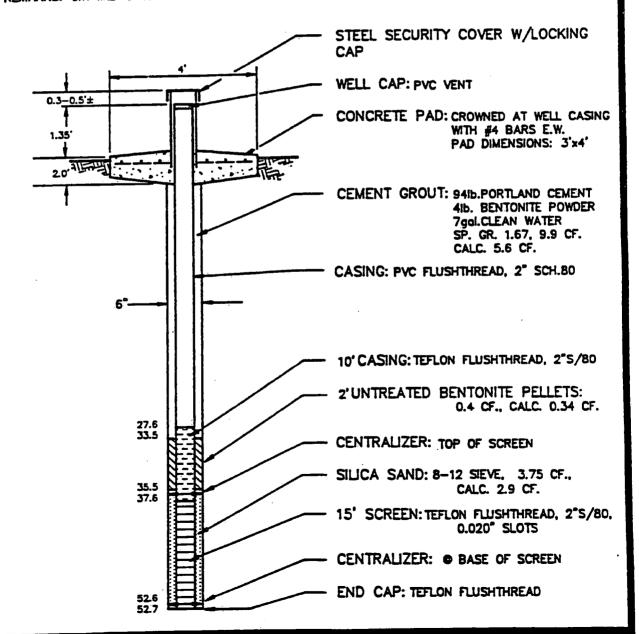
WATER ELEV.: (HAS NOT REACHED STATIC

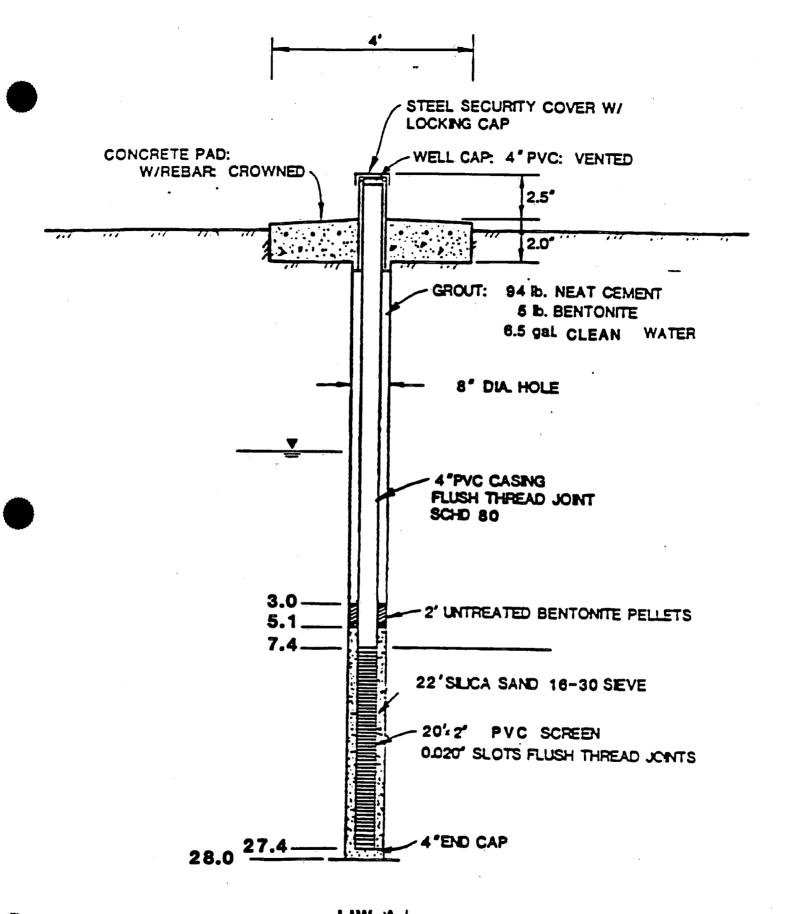
LEVEL AS OF 8-21-89)

CASING ELEV.: 1422.05° BORING DEPTH: 54.7 (52.7)

CASING DETAILS: 15' TEFLON SCREEN, 10' TEFLON BLANK, PVC TO SURFACE

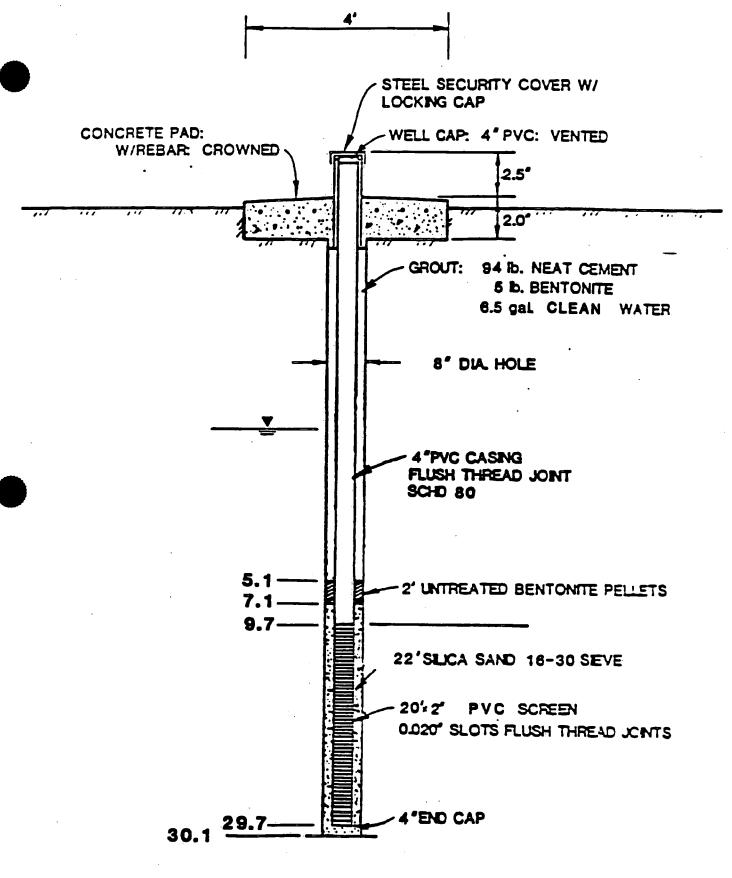
REMARKS: DRY WHEN DRILLED 6-7-89, LET STAND





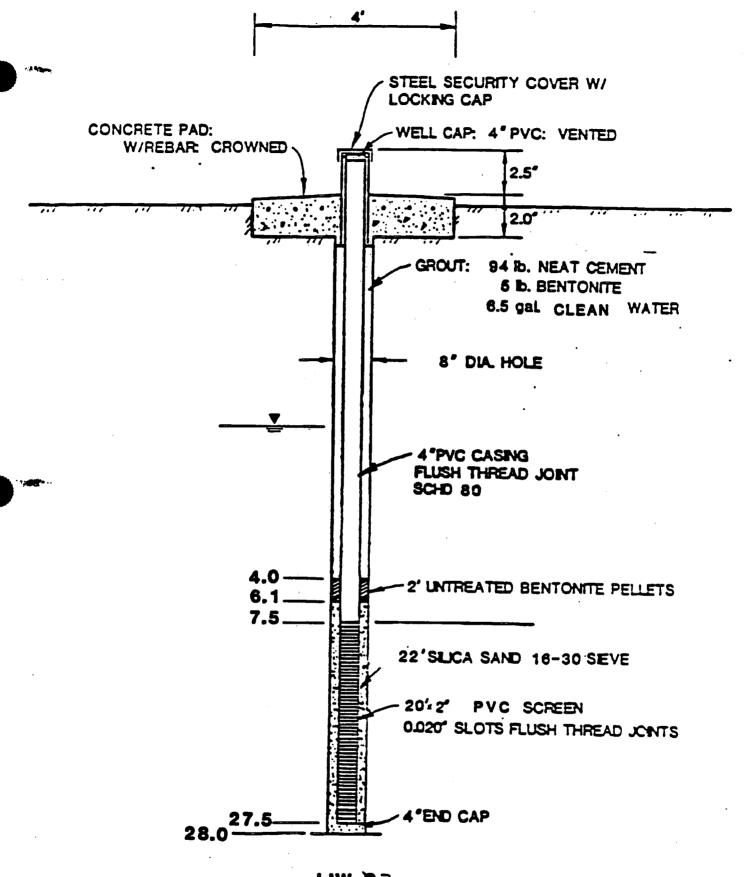
LIW-X

MONITORING WELL CONSTRUCTION



LIW-B 2

MONITORING WELL CONSTRUCTION



FIM-£3

MONITORING WELL CONSTRUCTION

LAND IRRIGATION WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: LIW-4

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: AIR ROTARY

LOCATION: 7537.7 E - 15851.9 N

SURFACE ELEV.: 1396.59

BORING SIZE: 8.25"

CASING DETAILS:

DATE DRILLED: 5/19/87

LOGGER: PETER BAYLEY

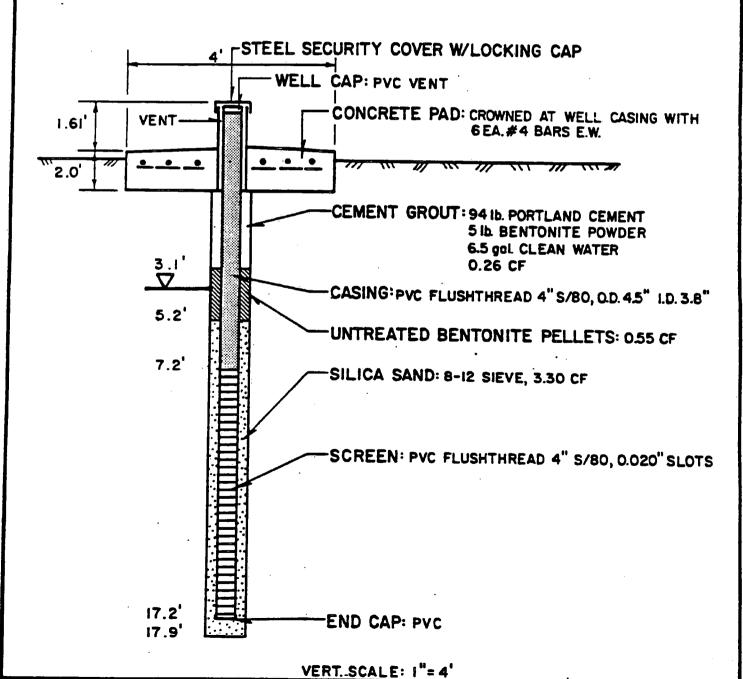
WATER ELEV. 4.21

DATE: 6/2/87

CASING ELEV.: 1398.20'

BORING DEPTH: 17.9"

REMARKS: BUMPERS GUARDS TO BE INSTALLED.



LAND IRRIGATION WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: LIW-5

VELL NO. · LIW- 5

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: AIR ROTARY

LOCATION: 8607.6 E- 15871.9 N

SURFACE ELEV: 1371.29

BORING SIZE: 8.25"

CASING DETAILS:

DATE DRILLED: 5/20/87

LOGGER: PETER BAYLEY

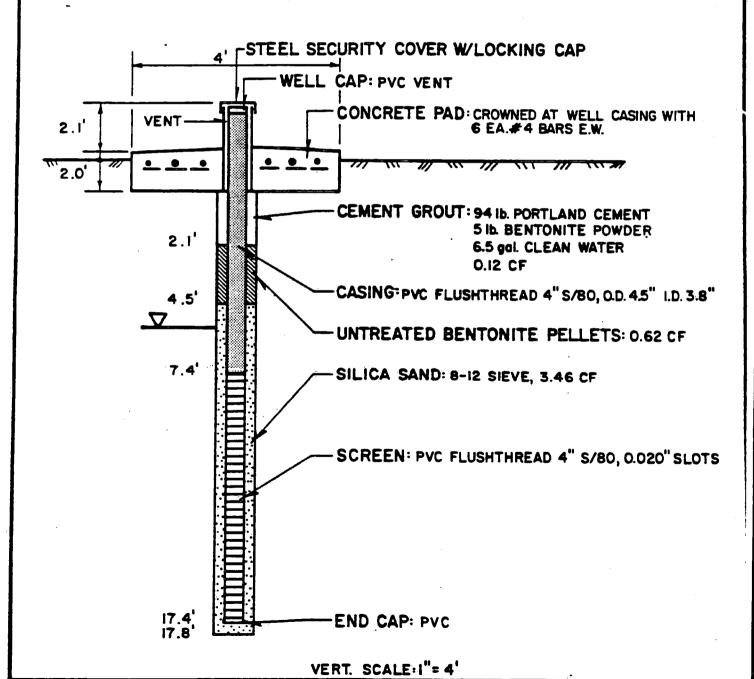
WATER ELEV. 5.66

DATE: 8/30/87

CASING ELEV.: 1373.37'

BORING DEPTH: 17.8'

REMARKS: BUMPER GUARDS TO BE INSTALLED.



LAND IRRIGATION WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: LIW-6

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: AIR ROTARY

LOCATION: 8495.8 E-147173 N

SURFACE ELEV.: 1380.60'

BORING SIZE: 8.25"

CASING DETAILS:

DATE DRILLED: 5/20/87

LOGGER: PETER BAYLEY

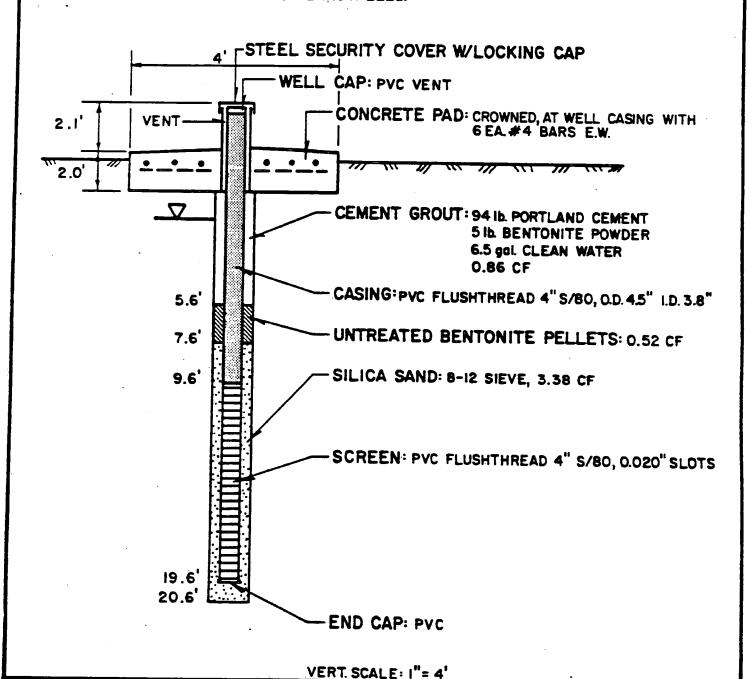
WATER ELEV.: 1.0'

DATE: 6/2/87

CASING ELEV.: 1382.73'

BORING DEPTH: 20.6'

REMARKS: BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO.: MW CH-A

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 7305.6 E-13,936.6 N

SURFACE ELEV.: 1394.8

BORING SIZE : 10"

CASING DETAILS:

DATE: 9/02/87

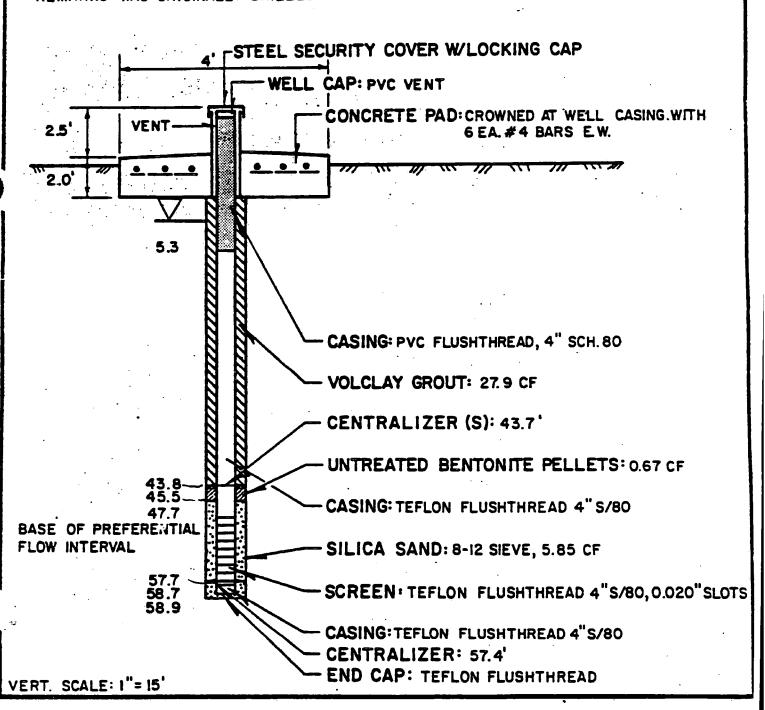
WATER ELEV. : 2.83 DATE: 9/23/87

PAGE !

CASING ELEV.: 1395.9'

BORING DEPTH: 58.9

REMARKS: WAS ORIGINALLY DRILLED AS MW K-59. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO : MW CH-B

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 7310.8 E- 13,936.3 N

SURFACE ELEV.: 1394.9

BORING SIZE: 10"

CASING DETAILS:

DATE: 9/3/87

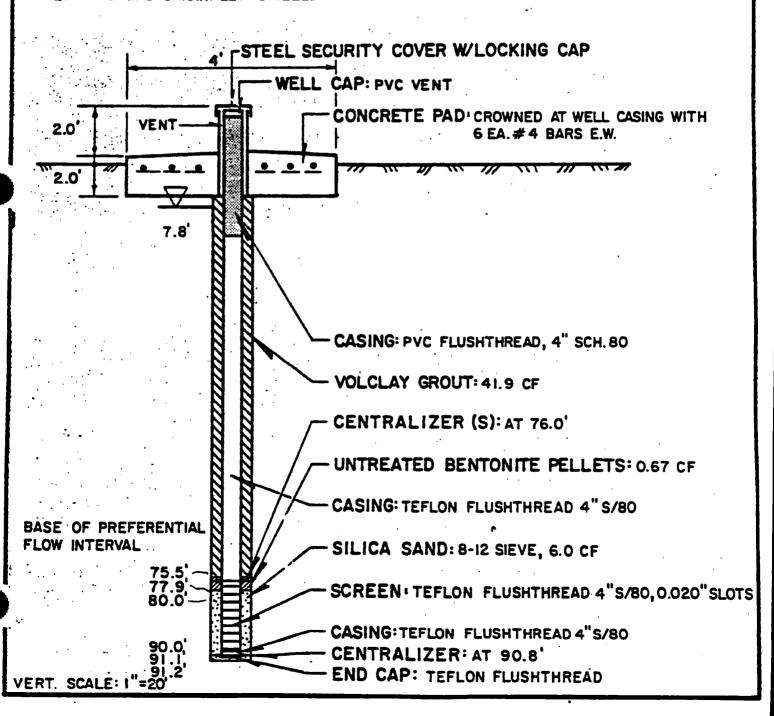
WATER ELEV. 2.19 DATE:9/23/87

PAGE I

CASING ELEV.: 1396.0

BORING DEPTH: 91.2

REMARKS: WAS ORIGINALLY DRILLED AS MW K-91. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW CH-C

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 7305.9 E- 13,942.2 N

SURFACE ELEV.: 1394.1

BORING SIZE: 10"

CASING DETAILS:

DATE: 9/1/87

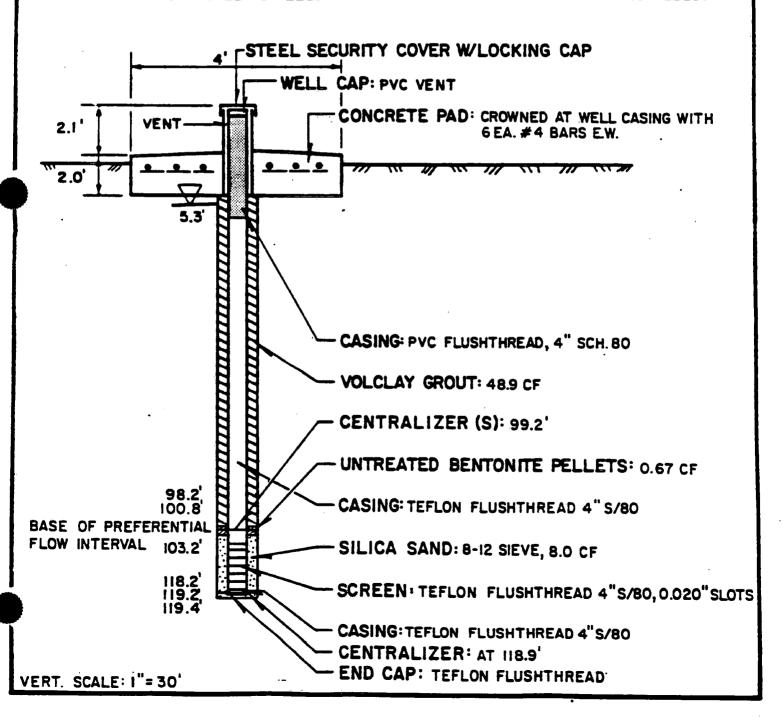
LOGGER: PETER BAYLEY

WATER ELEV.: 3.60 DATE: 9/23/87

CASING ELEV.: 1395.1

BORING DEPTH: 119.1

REMARKS: WAS ORIGINALLY DRILLED AS MW K-119'. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO.: MW CH-E

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 7323.6 E - 1393.5 N

SURFACE ELEV: 1394.7'

BORING SIZE:9" & 16"

CASING DETAILS:

DATE: 10/13/87

LOGGER: PETER BAYLEY

WATER ELEV. NA. WELLS WERE WATER ROTARY

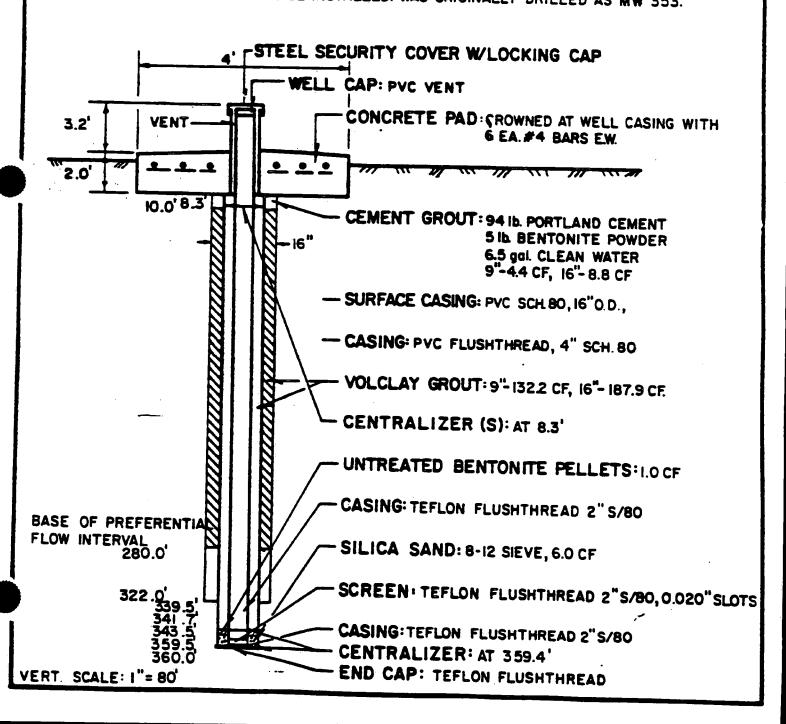
PAGE I

DRILLED AND NOT DEVELOPED TO DATE

CASING ELEV.: 1397.9'

BORING DEPTH: 360.0'

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW 353.



MONITORING WELL SCHEMATIC

DATE: 2/8/88

CASING ELEV.

LOGGER: PETER BAYLEY

WATER ELEV. N/A WELLS WERE WATER ROTARY

DRILLED AND NOT DEVELOPED TO DATE.

PAGE

PROJECT NO.:3187108

WELL NO: MW CH-F

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

SURFACE ELEV .:

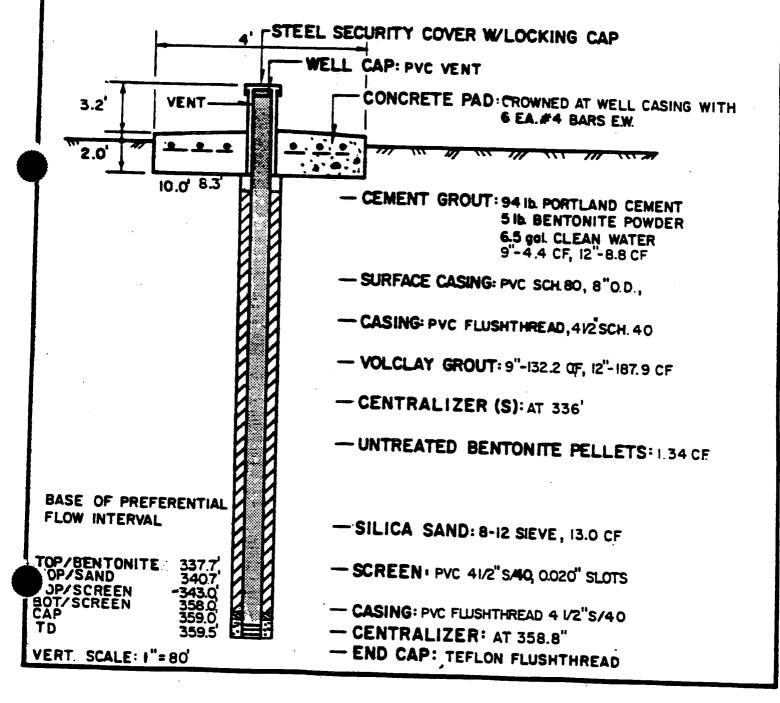
LOCATION: TO BE SURVEYED

BORING SIZE: 12"& 9 3/4"

BORING DEPTH: 359.5' (364.2') CASING DETAILS: PLACED 10" CASING TO ALLOW CONSTRUCTION OF WELL. 10" CASING REMOVED

AS VOLCLAY ADDED TO ANNULUS.

REMARKS: BUMPER GUARDS TO BE INSTALLED AFTER CONCRETE PAD



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW I-D, Reinstalled

DATE: 9/17/87

WELL NO. WHAT D, Remaidined

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV.: 8.58' DATE: 10/7/87

LOCATION: 8769.4 E-10488.6 N

CAS

CASING ELEV.: 1453.9'

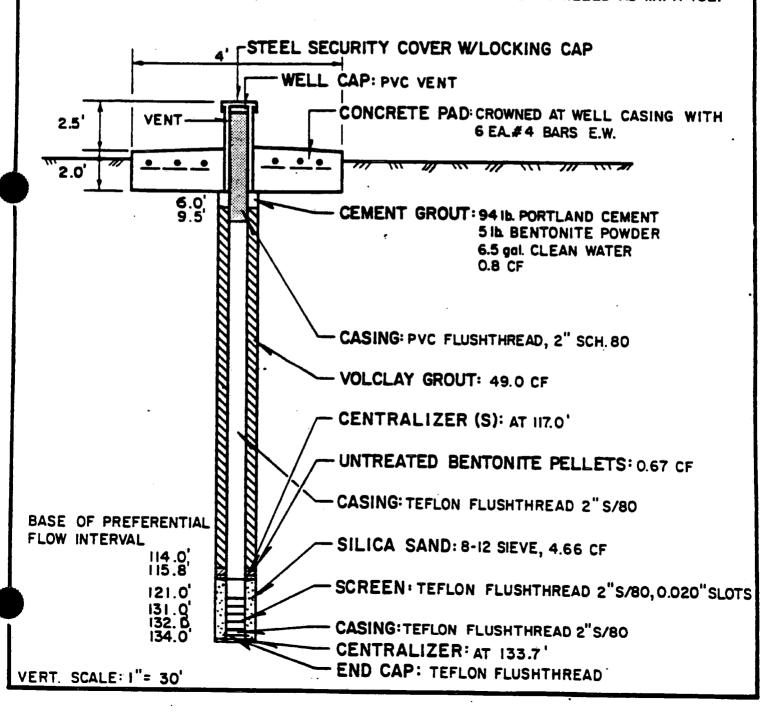
BORING SIZE: 7.25"

SURFACE ELEV: 1451.5'

BORING DEPTH: 134.0'

CASING DETAILS: Caf. TFE, 10'screen, 12-10'TFE, 5'TFE

REMARKS: BUMPER GUARDS, TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW A-132.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO.: MW 3-B

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 7793.5 E - 12558.1 N

SURFACE ELEV: 1414.3'

BORING SIZE: 7.25"

DATE: 8/29/87

LOGGER: PETER BAYLEY

WATER ELEV. 9.15' DATE: 8/30/87

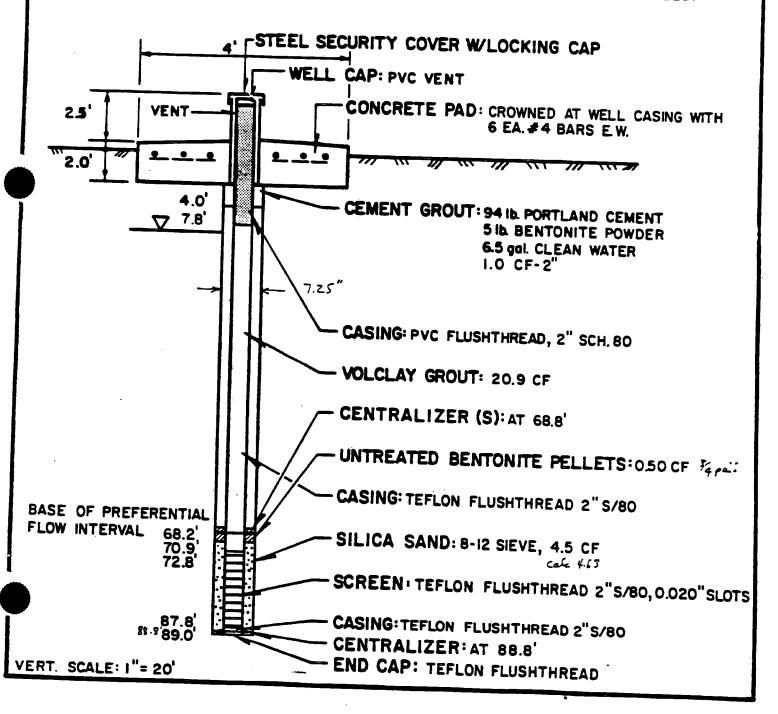
PAGE |

CASING ELEV.: 1416.4'

BORING DEPTH: 89.0'

CASING DETAILS: COP, ITFE. 10'SON, 5'SCR, 6-10'TFE, 5'TFE, 10' PUC

REMARKS: WAS ORIGINALLY DRILLED AS MW D-89. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

DATE: 8/29/87

PAGE 1

WELL NO. : MW 3-C

CONTRACTOR/DRILLER: BOYLES BROTHERS

LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV. 3.09' DATE: 8/30/87

LOCATION: 7806.2 E- 12565.4 N

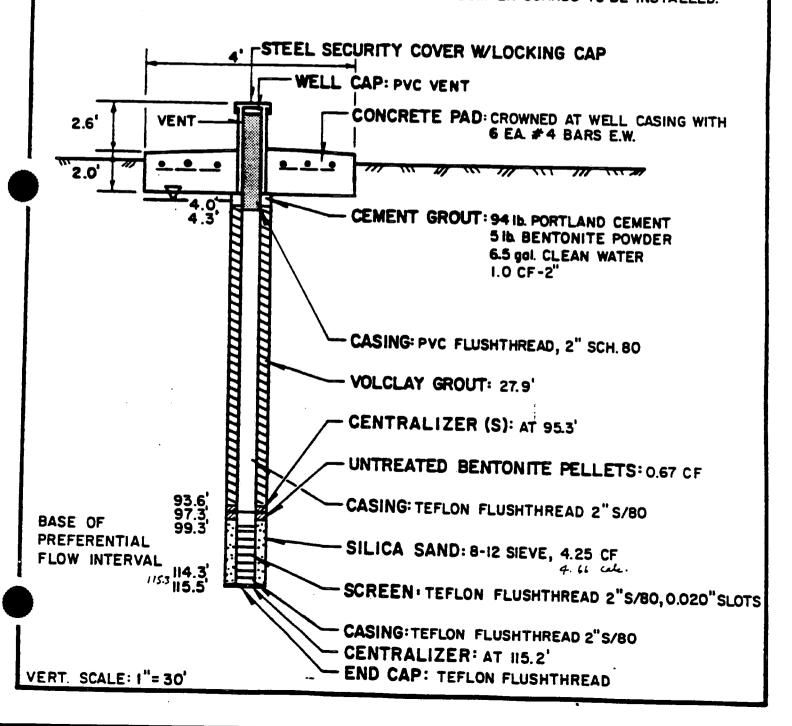
CASING ELEV: 1416.2

SURFACE ELEV: 1413.6 BORING SIZE: 7.25"

BORING DEPTH: 115.5'

CASING DETAILS: COP. I'THE, 10'SCR, 5'SCR, 9-10'THE, 5'THE, PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW D-IIG. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: MW 4-AL

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 9463.2 E - 10726.4 N

SURFACE ELEV: 1423-6

BORING SIZE: 7.25"

DATE: 8/28/87

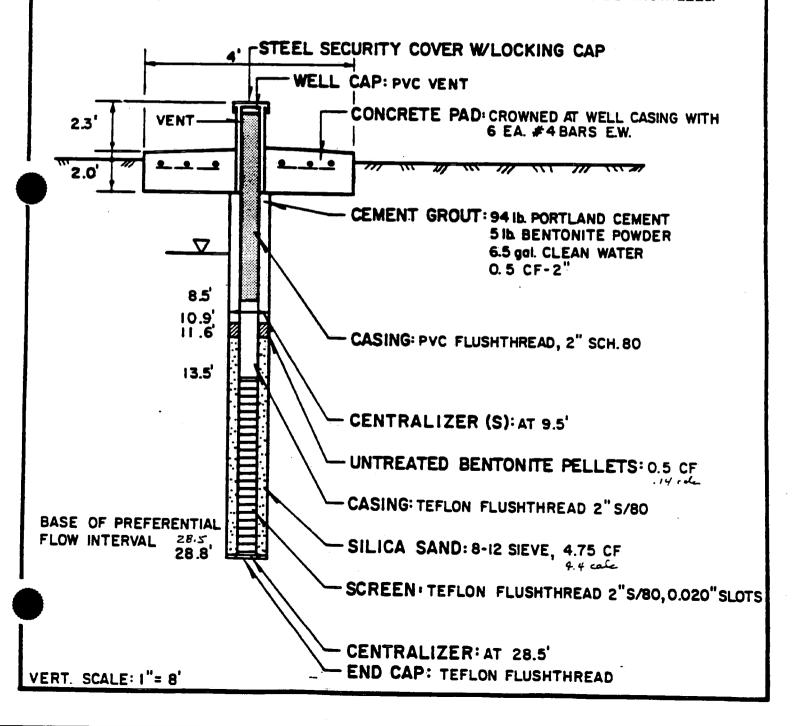
WATER ELEV. 4.96 DATE: 8/29/87

CASING ELEV: 1825-89

BORING DEPTH: 28.8

CASING DETAILS: Cap. 70'sCR, 5'SCR, 5'TFE, 10'PVC

REMARKS: WAS ORIGINALLY DRILLED AS MW E-29. BUMPER GUARDS TO BE INSTALLED



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO: MW 4A-2

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 9336.2 E - 10834.0 N

SURFACE ELEV: 1420.9

BORING SIZE: 10.0" & 7.25"

CASING DETAILS: 8" SURFACE CASING DURING INSTALLATION, THEN PULLED.

DATE: 11/13/87

WATER ELEV. N/A. WELLS WERE WATER

ROTARY DRILLED AND NOT DEVELOPED TO DATE.

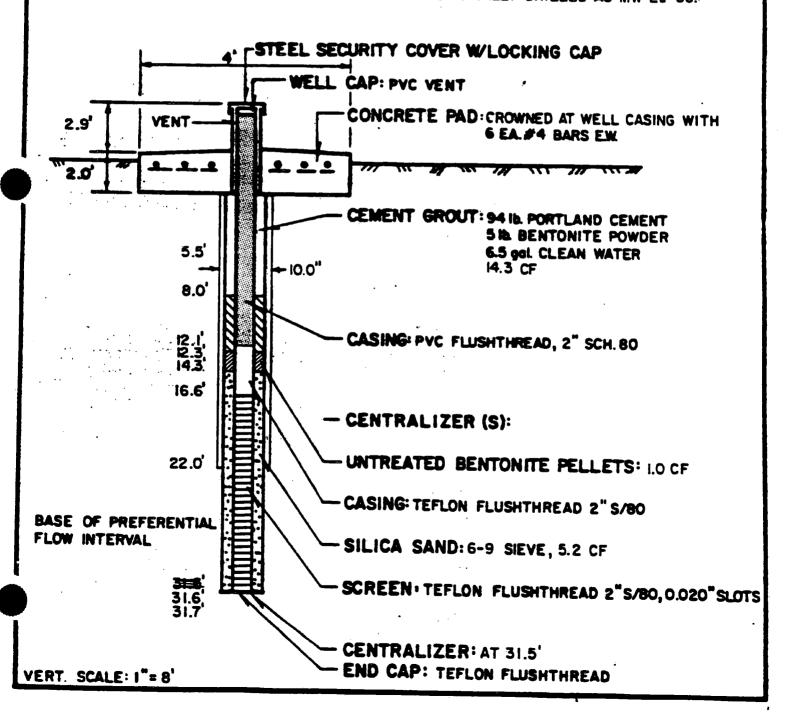
PAGE I

CASING ELEV.: 1423.8

BORING DEPTH: 31.7

Cap, 10'SCR, 5'SCR S'TFE, PVC

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW Eg-30.



MONITORING WELL SCHEMATIC

PROJECT NO:3187108

WELL NO: MW 4A-3

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9444.2 E-10528.0 N

SURFACE ELEV.: 1427.1'

BORING SIZE: 7.25"

CASING DETAILS: cap, 10' 5CK, 5'SCR, 5'TFE, PVC

DATE: 11/17/87

LOGGER: PETER BAYLEY

WATER ELEV. NA. WELLS WERE WATER ROTARY

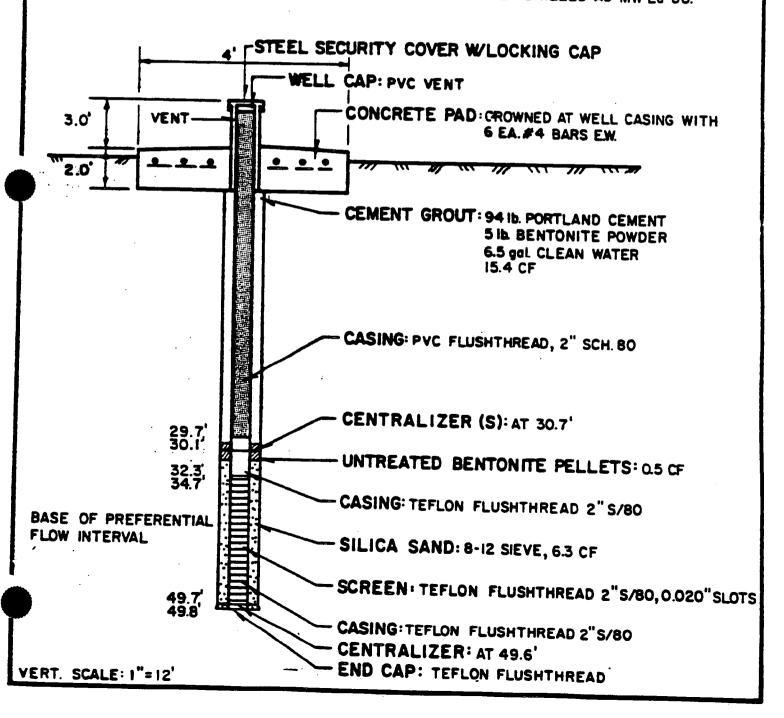
PAGE I

DRILLED AND NOT DEVELOPED TO DATE.

CASING ELEV.: 1430.1'

BORING DEPTH: 49.8

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW Eg-50.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

DATE: 10/15/87

WELL NO.: MW 48-2

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9363.9 E-10807.3 N

SURFACE ELEV: 1417.8

BORING SIZE: 12"& 7.25"

LOGGER: PETER BAYLEY

WATER ELEV. NA. WELLS WERE WATER ROTARY

PAGE I

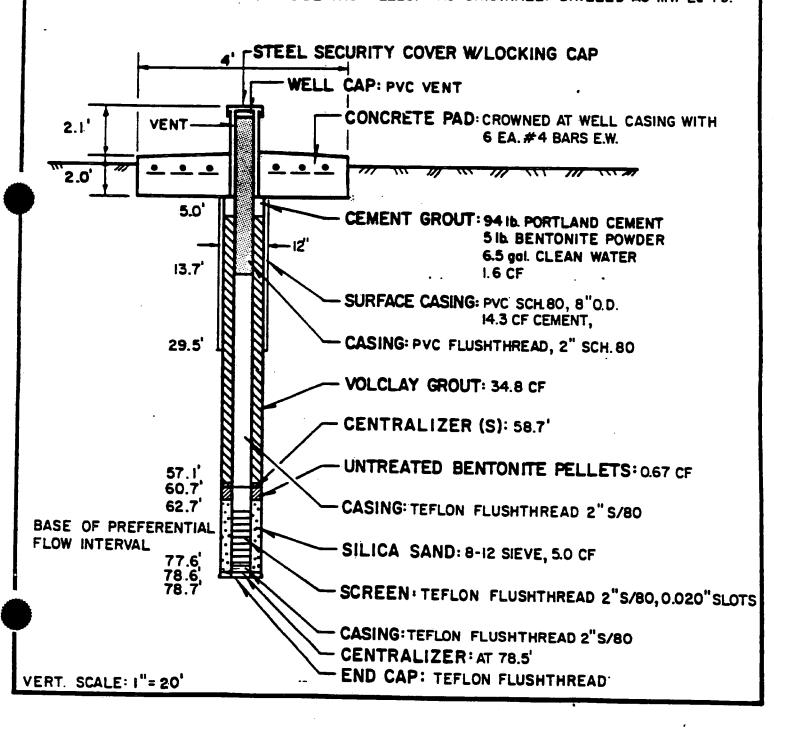
DRILLED AND NOT DEVELOPED TO DATE.

CASING ELEV.: 1420.9

BORING DEPTH: 78.7'

CASING DETAILS:

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW Eq-79.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

DATE: 8/29/87

PAGE I

WELL NO: MW4-C

CONTRACTOR/DRILLER: BOYLES BROTHERS

LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

WATER ELEV.: 0.73' DATE: 8/30/87

LOCATION: 9438.9 E- 10741.9 N SURFACE ELEV: 1423.9'

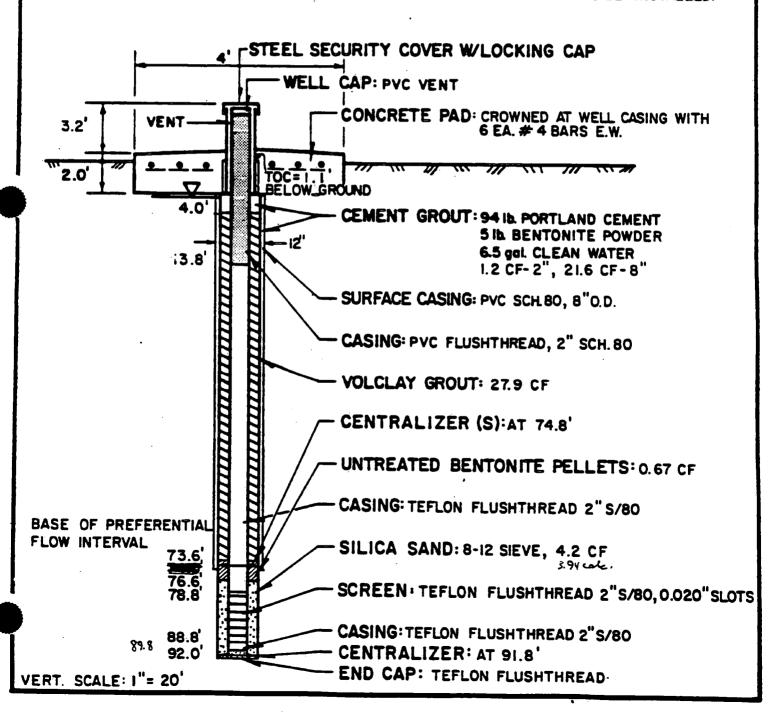
CASING ELEV.: 1427.1'

BORING SIZE: 7.25"

BORING DEPTH: 92.0'

CASING DETAILS: COP. I'THE, 10'SCR, 6-10'THE, 5'THE. PYC

REMARKS: WAS ORIGINALLY DRILLED AS MW E-92. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO: MW 5A-I

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9694.2 E - 11390.8 N

SURFACE ELEV: 1394.6'

BORING SIZE: 7.25"

CASING DETAILS:

DATE: 11/5/87

LOGGER: PETER BAYLEY

WATER ELEV. . N/A. WELLS WERE WATER ROTARY

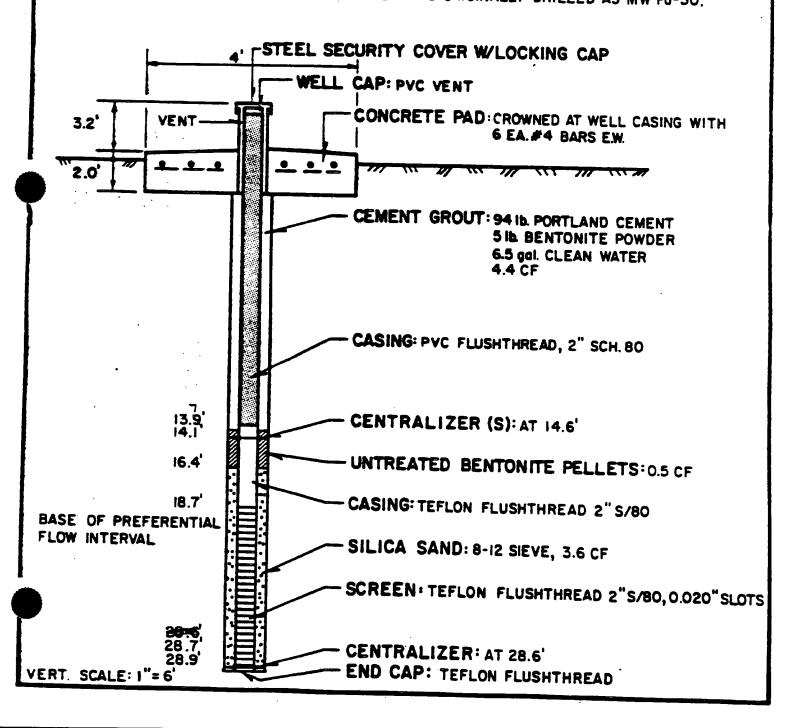
PAGE 1

DRILLED AND NOT DEVELOPED TO DATE.

CASING ELEV.: 1397.8'

BORING DEPTH: 28.9'

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW FO-30.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO: MW5-A2

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9569.4 E- 11555.4 N

SURFACE ELEV.: 1395.2'

BORING SIZE: 6.25"

CASING DETAILS: Cap. IC'SCR, S'TFE, PVC

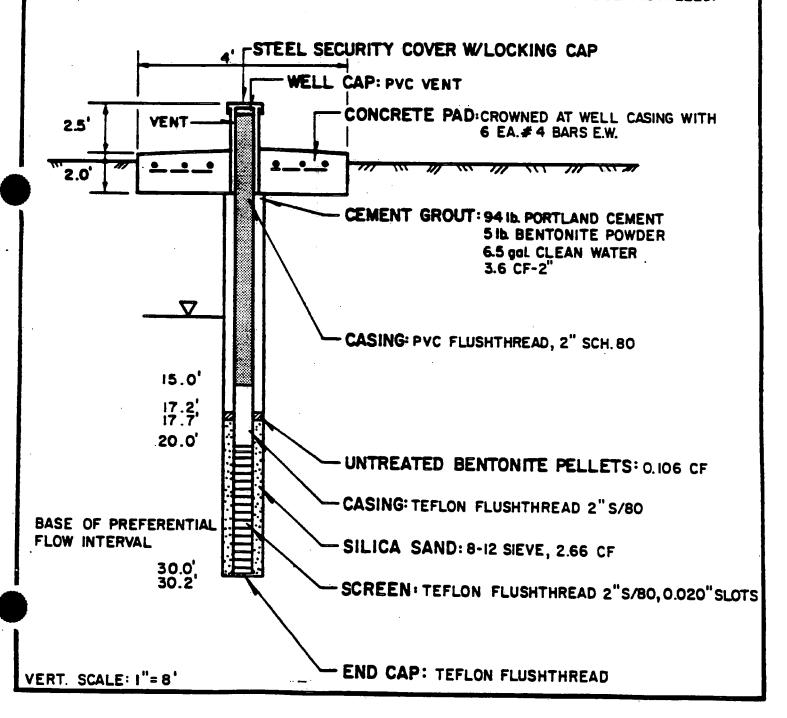
DATE: 8/19/87

LOGGER: PETER BAYLEY

WATER ELEV. 9.77 DATE: 8/29/87

CASING ELEV.: 1397.7' BORING DEPTH: 30.2'

REMARKS: WAS ORIGINALLY DRILLED AS MW F-30. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NQ:3187108

WELL NO.: MW 5B-I

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9664.4 E-11431.1 N

SURFACE ELEV.: 1394.7'
BORING SIZE: 7.25" 8 12"

CASING DETAILS:

DATE: 10/15/87

LOGGER: PETER BAYLEY

WATER ELEV. NA. WELLS WERE WATER ROTARY

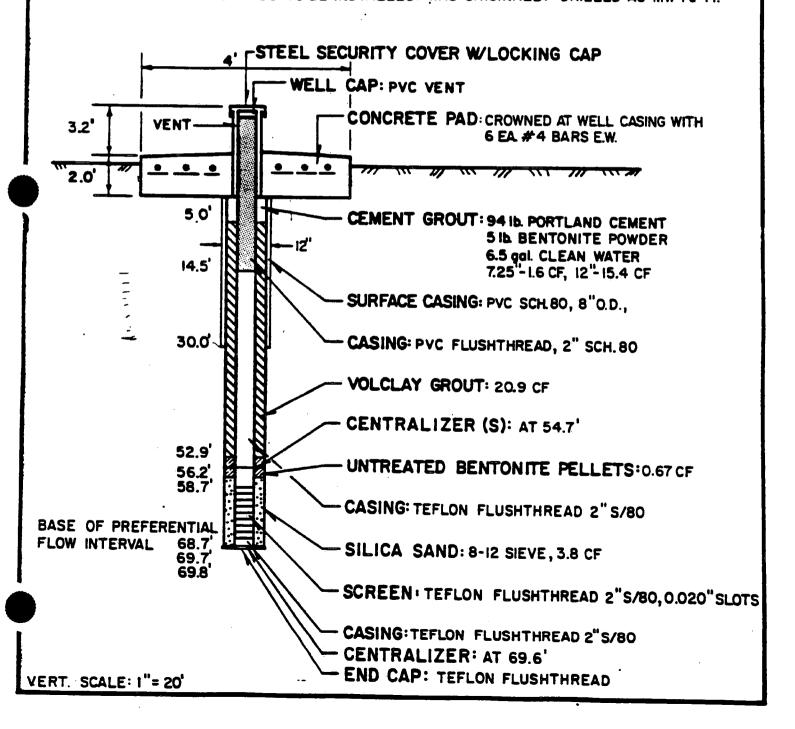
PAGE I

DRILLED AND NOT DEVELOPED TO DATE.

CASING ELEV.: 1397.9

BORING DEPTH: 69.8

REMARKS: BUMPERS GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW Fo-71.



MONITORING WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO.: MW 6-B)

DATE: 8/29/87

CONTRACTOR/DRILLER: BOYLES BROTHERS

LOGGER: PETER BAYLEY

PAGE I

DRILLING METHOD: WATER ROTARY

WATER ELEV. 1.49

LOCATION: 9448.4 E-11724.6 N

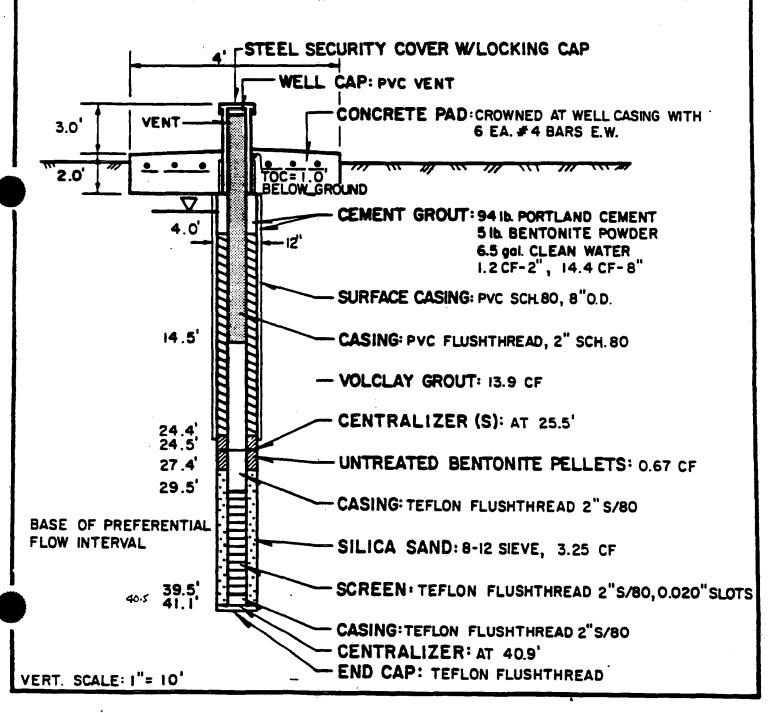
CASING ELEV.: 1397.3

SURFACE ELEV: 1394.3 BORING SIZE: 7.25" & 12"

BORING DEPTH: 41.1

CASING DETAILS: cap I'TFE 10'SCR 10'TFE, S'TFE PUC

REMARKS: WAS ORIGINALLY DRILLED AS MWG-41. BUMPER GUARDS TO BE INSTALLED.



MONITORING WELL SCHEMATIC

PROJECT NO:3187108

WELL NO. MW 8A-2

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9006.9 E - 11921.6 N

SURFACE ELEV.: 1396.2

BORING SIZE: 7.25"

CASING DETAILS:

DATE: 11/4/87

LOGGER: PETER BAYLEY

WATER ELEV. N/A. WELLS WERE WATER ROTARY

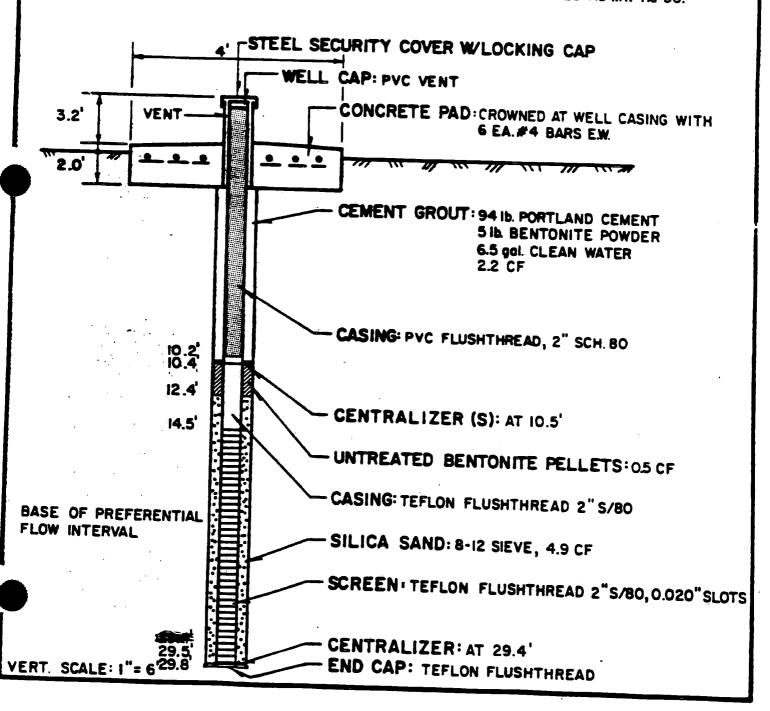
PAGE I

DRILLED AND NOT DEVELOPED TO DATE.

CASING ELEV: 1399.4

BORING DEPTH: 29.8

REMARKS: BUMPER GUARDS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW Ho-30.



MONITORING WELL SCHEMATIC

PROJECT NO:3187108

WELL NO.: MW 8B-2

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 9034.1 E- 11879.9 N

SURFACE ELEV: 1395.7

BORING SIZE: 12" & 7.25"

CASING DETAILS:

DATE: 10/16/87

WATER ELEV. N/A. WELLS WERE WATER

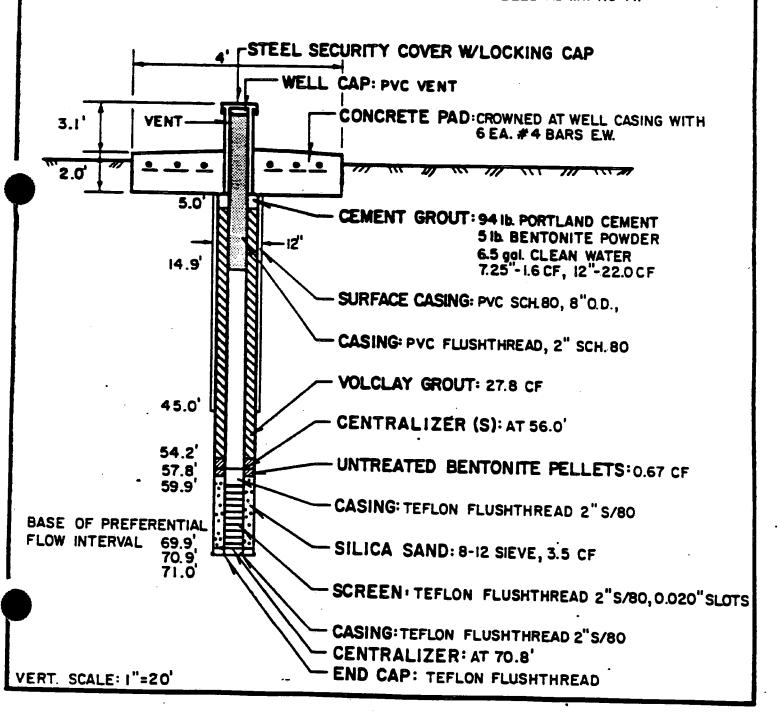
ROTARY DRILLED AND NOT DEVELOPED TO DATE.

PAGE I

CASING ELEV.: 1398.8

BORING DEPTH: 71.0'

REMARKS: BUMPERS TO BE INSTALLED. WAS ORIGINALLY DRILLED AS MW Ho-71.



PROJECT NO.: 3178108

WELL NO .: MW 11-A1

CONTRACTOR/DRILLER BOYLES BROS. DRILLING METHOD: WATER ROTARY LOCATION: 9606.8 E - 12280.7 N

SURFACE ELEV.: 1420.36 BORING SIZE: 7.25°

CASING DETAILS:

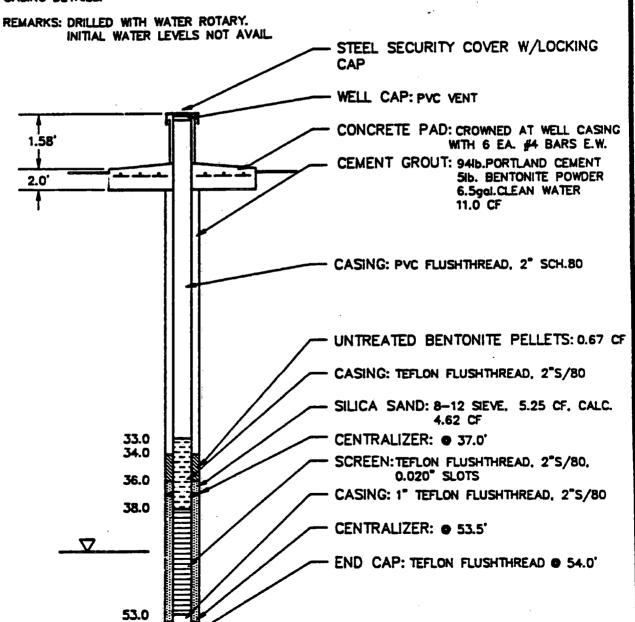
DATE: 5/10/88

LOGGER: Y. BIYIKOGLU

WATER ELEV.: 44.79 DATE: 6/3/88

CASING ELEV.: 1421.94

BORING DEPTH: 54'



PROJECT NO.: 3187108

WELL NO .: MW 11-A2

CONTRACTOR/DRILLER: BOYLES BROS. DRILLING METHOD: WATER ROTARY LOCATION: 9606.9 E - 12467.2 N

SURFACE ELEV.: 1420.61

BORING SIZE: 7.25

CASING DETAILS: SHOWN BELOW ON SCHEMATIC

REMARKS: DRILLED WITH WATER ROTARY.

36.0 36.6

38.8

41.0

56.0 57.0 DATE: 5/11/88

LOGGER: Y. BIYIKOGLU

WATER ELEV.: 47.78 DATE: 6/3/88

UNTREATED BENTONITE PELLETS: 0.67 CF

CALC. 4.67 CF

SCREEN: TEFLON FLUSHTHREAD, 2"S/80,

CASING: TEFLON FLUSHTHREAD, 2"S/80

END CAP: TEFLON FLUSHTHREAD • 57.0'

SILICA SAND: 8-12 SIEVE, 5.0 CF.

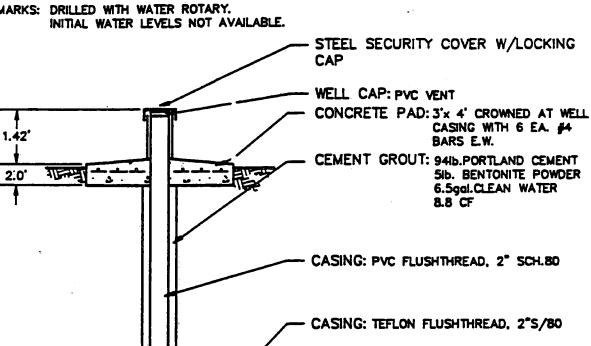
0.020" SLOTS

CENTRALIZER: ● 40°

CENTRALIZER: • 56.5'

CASING ELEV.: 1422.03

BORING DEPTH: 57.0



PROJECT NO.: 3187108

WELL NO.: MW 11-A3

CONTRACTOR/DRILLER: BOYLES BROS. DRILLING METHOD: WATER ROTARY LOCATION: 9606.8 E - 12600.5 N

SURFACE ELEV.: 1420.50 BORING SIZE: 7.25

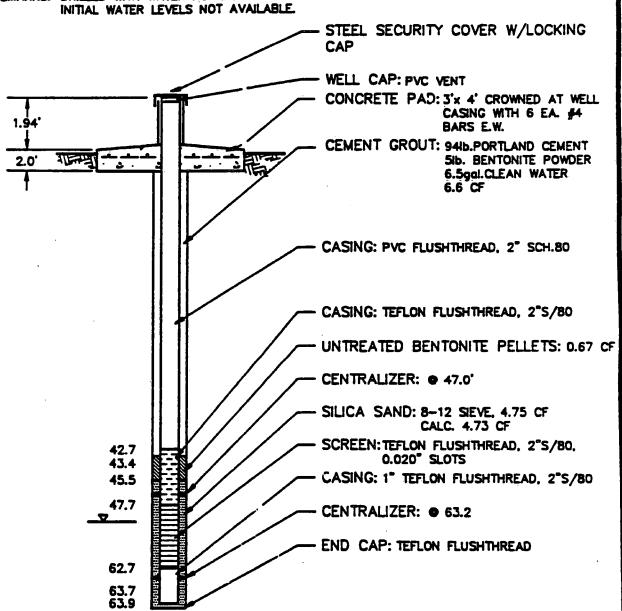
CASING DETAILS: SHOWN BELOW ON SCHEMATIC

REMARKS: DRILLED WITH WATER ROTARY.

DATE: 4/21/88 LOGGER: R. DWIVEDI

WATER ELEV.: 49.34 DATE: 6/3/88

CASING ELEV.: 1422.44 BORING DEPTH: 63.9



PROJECT NO.: 3187108
WELL NO.: MW 11-A4

CONTRACTOR/DRILLER: BOYLES BROS. DRILLING METHOD: WATER ROTARY LOCATION: 9606.8 E - 12801.9 N

SURFACE ELEV.: 1420.28 BORING SIZE: 7.25

CASING DETAILS: SHOWN BELOW ON SCHEMATIC

REMARKS: DRILLED WITH WATER ROTARY.

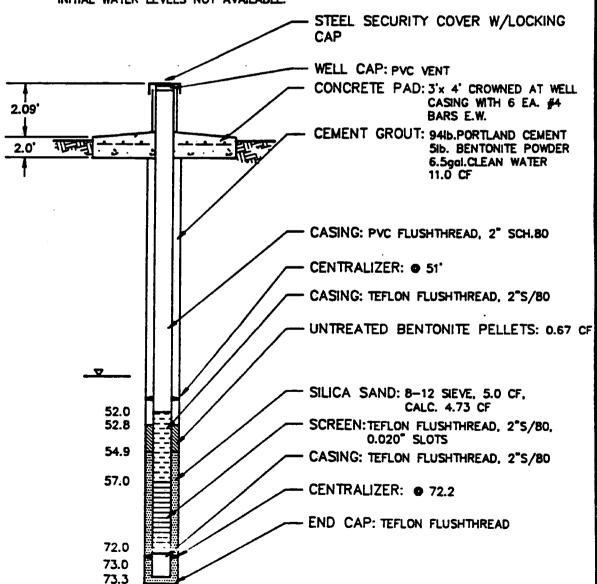
INITIAL WATER LEVELS NOT AVAILABLE.

DATE: 4/13/88 LOGGER: R. DWIVEDI

WATER ELEV.: 48.03 DATE: 6/3/88

CASING ELEV.: 1422.37

BORING DEPTH: 73.3'



PROJECT NO.: 3187108 WELL NO .: MW 11-B1

CONTRACTOR/DRILLER: BOYLES BROS. DRILLING METHOD: WATER ROTARY LOCATION: 9607.3 E - 12350.9 N

SURFACE ELEV.: 1420.78' BORING SIZE: 7.25"

CASING DETAILS: SHOWN BELOW ON SCHEMATIC

REMARKS: DRILLED WITH WATER ROTARY.

DATE: 5/6/88 LOGGER: Y. BIYIKOGLU

WATER ELEV.: 81.69' DATE: 6/3/88

CASING ELEV.: 1421.91 BORING DEPTH: 83.0

INITIAL WATER LEVELS NOT AVAILABLE. STEEL SECURITY COVER W/LOCKING CAP WELL CAP: PVC VENT CONCRETE PAD: 3'x 4' CROWNED AT WELL CASING WITH 6 EA. #4 1.13 BARS E.W. CEMENT GROUT: 9416.PORTLAND CEMENT 516. BENTONITE POWDER 2.0 6.5gal.CLEAN WATER 11.0 CF SING: PVC SCH 80, 8" DIA. FROM 26' TO 46' SURFACE CASING: (NOT RECOVERED) 26.0 VOLCLAY GROUT: 10.47 CF CASING: TEFLON FLUSHTHREAD, 2°S/80 37.0 40.0 UNTREATED BENTONITE PELLETS: 0.67 OF 46.0 CENTRALIZER: • 71.0' SILICA SAND: 8-12 SIEVE, 4.0 CF, **CALC. 3.34 CF** SCREEN: TEFLON FLUSHTHREAD, 2"S/80. 0.020° SLOTS CASING: TEFLON FLUSHTHREAD, 2°S/60 66.0 70.0 CENTRALIZER: • 82.3 72.0 END CAP: TEFLON FLUSH HREAD

PROJECT NO.: 3187108 WELL NO.: MW 11-B2

CONTRACTOR/DRILLER: BOYLES BROS. DRILLING METHOD: WATER ROTARY LOCATION: 9607.2 E -12731.7 N

SURFACE ELEV.: 1420.65

BORING SIZE: 7.25°

CASING DETAILS: SHOWN BELOW ON SCHEMATIC

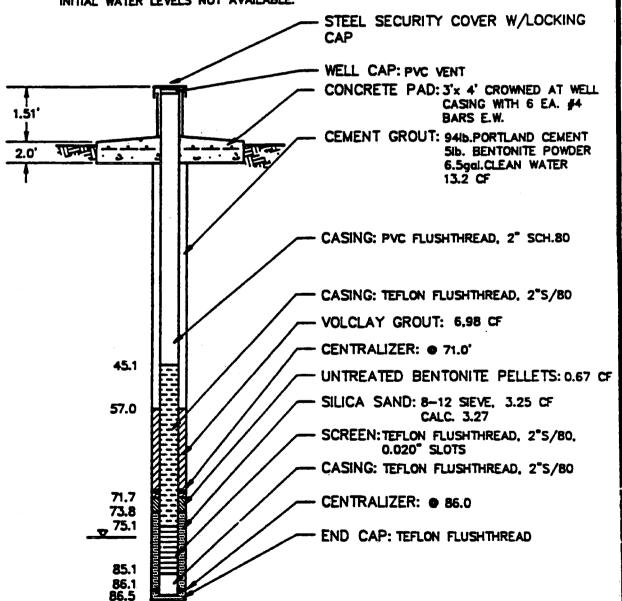
REMARKS: DRILLED WITH WATER ROTARY.

INITIAL WATER LEVELS NOT AVAILABLE.

DATE: 4/20/88 LOGGER: R. DWIVEDI

WATER ELEV.: 77.27 DATE: 6/3/88

CASING ELEV.: 1422.16 BORING DEPTH: 86.5



PROJECT NO.: 3187108

WELL NO.: MW 11-C

CONTRACTOR/DRILLER: BOYLES BROS.
DRILLING METHOD: WATER ROTARY
LOCATION: 9606.5 E - 12527.1 N

SURFACE ELEV.: 1420.51 BORING SIZE: 7.25

CASING DETAILS: SHOWN BELOW ON SCHEMATIC

REMARKS: DRILLED WITH WATER ROTARY.

DATE: 5/3/88

LOGGER: R. BIYIKOGLU

WATER ELEV.: 108.75 DATE: 6/3/88

CASING ELEV.: 1422.0 BORING DEPTH: 120.0

INITIAL WATER LEVELS NOT AVAILABLE. STEEL SECURITY COVER W/LOCKING CAP WELL CAP: PVC VENT CONCRETE PAD: 3'x 4' CROWNED AT WELL CASING WITH 6 EA. #4 BARS E.W. CEMENT GROUT: 9416.PORTLAND CEMENT 2.0 516. BENTONITE POWDER 6.5gal.CLEAN WATER 13.2 CF SURFACE CASING: PVC SCH. BO, B" DIA. INSTALLED FOR CONSTRUCTION THEN REMOVED CASING: PVC FLUSHTHREAD, 2" SCH.80 39.0 VOLCLAY GROUT: 17.45 CF. CALC. 13.86 CF 42.0 47.0 CASING: TEFLON FLUSHTHREAD, 2"S/80 UNTREATED BENTONITE PELLETS: 0.67 CF CENTRALIZER: • 98.0' SILICA SAND: 8-12 SEVE. 4.5 CF NOTE: HOLE WAS DRILLED SCREEN: TEFLON FLUSHTHREAD, 2°S/80, TO 120', FILLED FROM 0.020" SLOTS 120' TO 110' WITH VOL-CASING: TEFLON FLUSHTHREAD, 2"S/80 CLAY (3.49 CF). CENTRALIZER: • 109.5' 93.0 97.0 **9**99.0 END CAP: TEFLON FLUSHTHREAD **VOLCLAY GROUT: 3.49 CF** 109.0 110.0 120.0

PROJECT NO.: 3187110

WELL NO.: MW-18

CONTRACTOR/DRILLER STEWART - WHITE

DRILLING METHOD: AUGER

LOCATION: 8764.7 E -12856.8 N ORIG. SURFACE ELEV.: 1412.9

BORING SIZE: 9"

CASING DETAILS: Cap. 2-10'SCR. 5'TFE, PVC

DATE: 8/86

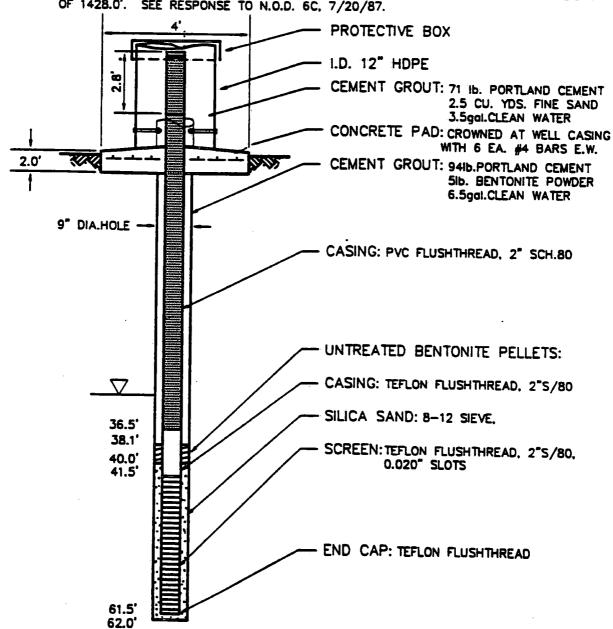
LOGGER: PETER BAYLEY

WATER ELEV.: 33.06' 12/29/86

PRESENT HDPE ELEV.: 1419.0' PRESENT PVC ELEV.: 1418.47'

BORING DEPTH: 62.0'

REMARKS: WELLS RAISED TO STATED HEIGHT AND WILL BE RAISED TO A FINAL WELL HEAD HEIGHT OF 1428.0'. SEE RESPONSE TO N.O.D. 6C, 7/20/87.



PROJECT NO.: 3187110

WELL NO.: MW-19

CONTRACTOR/DRILLER STEWART WHITE

DRILLING METHOD: AUGER

LOCATION: 8916.4 E -12861.3 N ORIG. SURFACE ELEV.: 1412.7' BORING SIZE: 9"

CASING DETAILS: cap. 2-10'SCR. S'TEE, PUL

DATE: 8/86

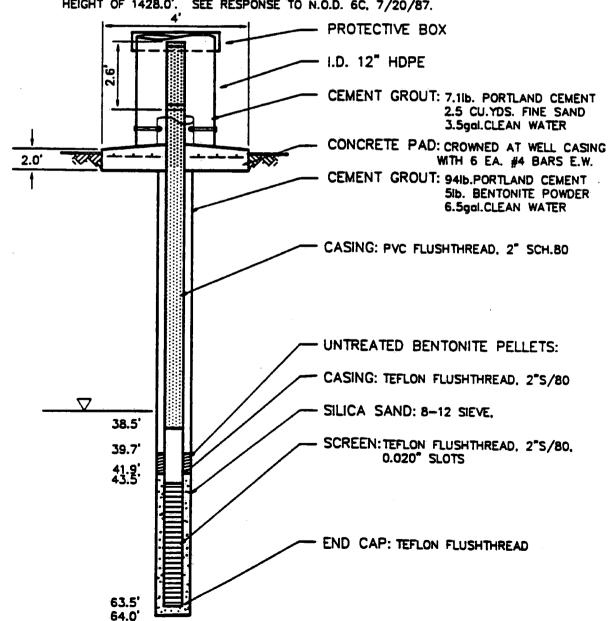
LOGGER: PETER BAYLEY

WATER ELEV.: 36.4' 12/29/86

PRESENT HDPE ELEV.: 1419.0'

PRESENT CVC ELEV.: 1418.36' BORING DEPTH: 64.0'

REMARKS: WELLS RAISED TO STATED HEIGHT AND WILL BE RAISED TO A FINAL WELL HEAD HEIGHT OF 1428.0'. SEE RESPONSE TO N.O.D. 6C, 7/20/87.



PROJECT NO.: 3187110

WELL NO.: MW-20

CONTRACTOR/DRILLER STEWART WHITE

DRILLING METHOD: AUGER

LOCATION: 8920.7 E -12695.5 N ORIG. SURFACE ELEV.: 1413.5' BORING SIZE: 9"

CASING DETAILS: cap. 2-10'SCR 5'TFE, PVC

DATE: 8/86

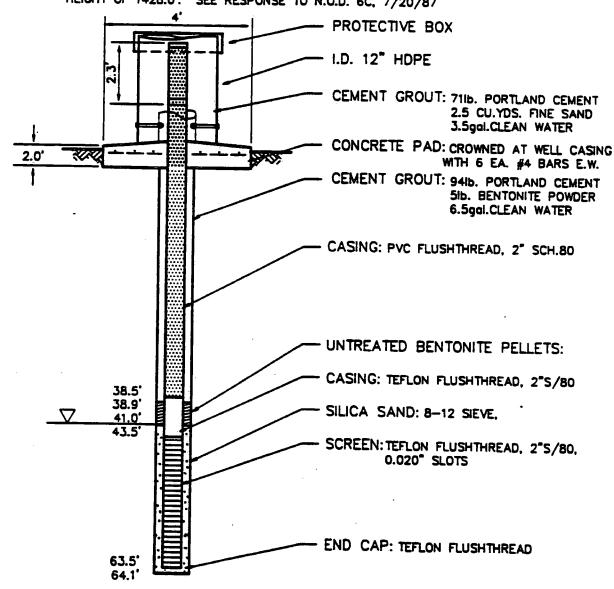
LOGGER: PETER BAYLEY

WATER ELEV.: 40.6' 12/29/86

PRESENT HDPE ELEV.: 1419' PRESENT PVC ELEV .: 1418.44'

BORING DEPTH: 64.1

REMARKS: WELLS RAISED TO STATED HEIGHT AND WILL BE RAISED TO A FINAL WELL HEAD HEIGHT OF 1428.0'. SEE RESPONSE TO N.O.D. 6C, 7/20/87



PROJECT NO.: 3187110

WELL NO .: MW-21

CONTRACTOR/DRILLER STEWART - WHITE

DRILLING METHOD: AUGER

LOCATION: 8921.2 E - 12525.9 N ORIG. SURFACE ELEV.: 1413.2'

BORING SIZE: 9"

CASING DETAILS: COY 2-10' SCR. S' TEE

DATE: 8/86

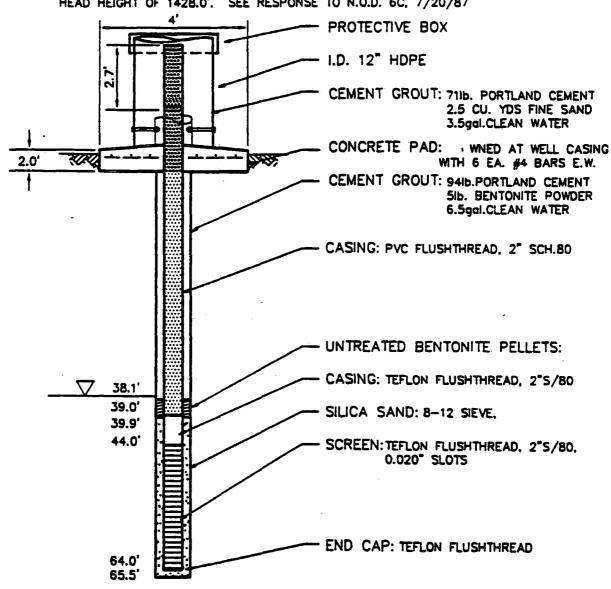
LOGGER: PETER BAYLEY

WATER ELEV.: 38.0' 12/29/86

PRESENT HDPE ELEV .: 1419.0' PRESENT PVC ELEV .: 1418.45'

BORING DEPTH: 65.5

REMARKS: WELLS RAISED TO STATED FEIGHT AND WILL BE RAISED TO A FINAL WELL HEAD HEIGHT OF 1428.0'. SEE RESPONSE TO N.O.D. 6C, 7/20/87



OBSERVATION WELL SCHEMATIC

PROJECT NO.3187108

WELL NO. : OW-I

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: WATER ROTARY

LOCATION: 8305.9 E- 10292.7 N

SURFACE ELEV.: 1616.8'

BORING SIZE: 8.25"

CASING DETAILS:

PAGE !

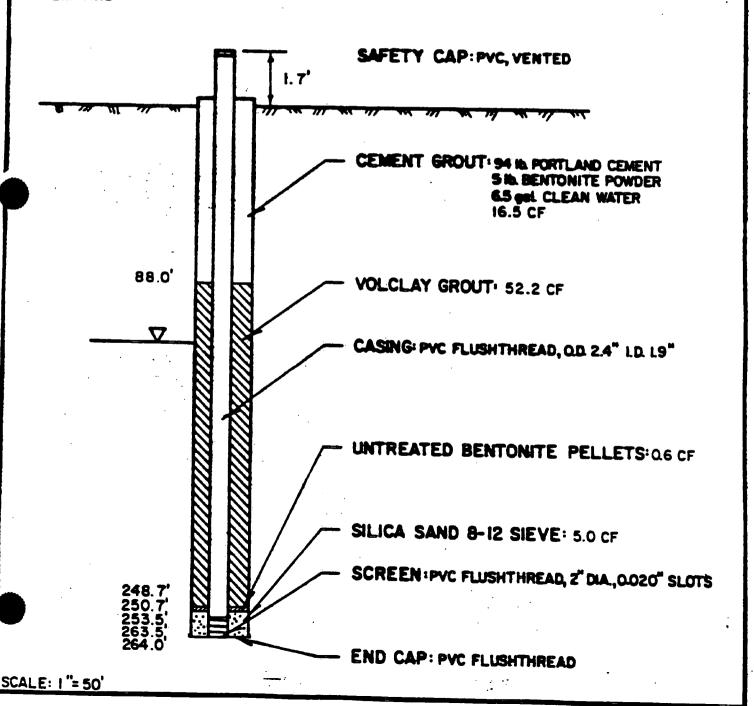
DATE: 9/24/87

WATER ELEY: 117.6' DATE: 12/11/87

CASING ELEV.: 1618.5

BORING DEPTH: 264.0'

REMARKS:



OBSERVATION WELL SCHEMATIC

PROJECT NO:3187108

WELL NO: OW-2

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 7775.5 E - 11217.3 N

SURFACE ELEV.: 1607.4'
BORING SIZE: 8.25"

CASING DETAILS:

DATE: 10/2/87

LOGGER: PETER BAYLEY

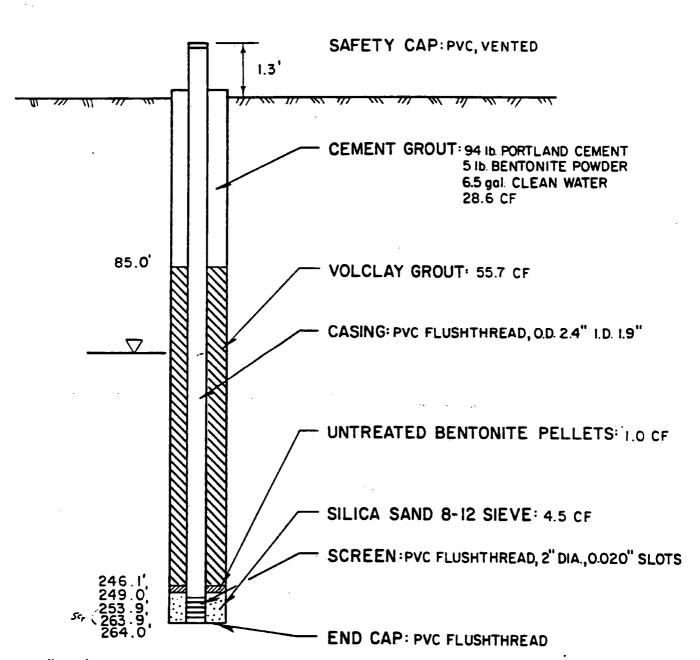
WATER ELEV: 130.5' DATE: 12/11/87

PAGE I

CASING ELEV.: 1608.7

BORING DEPTH: 264.0

REMARKS:



SCALE: 1"= 50'

OBSERVATION WELL SCHEMATIC

PROJECT NO.:3187108

WELL NO :: 0W-6 (MW-22)

CONTRACTOR/DRILLER - STEWART, WHITE .

DRILLING METHOD: AIR ROTARY

LOCATION: 8188.4E-12602.1 N

SURFACE ELEV: 1392.35 BORING SIZE: 9"

CASING DETAILS:

38.2

DATE: 8/86

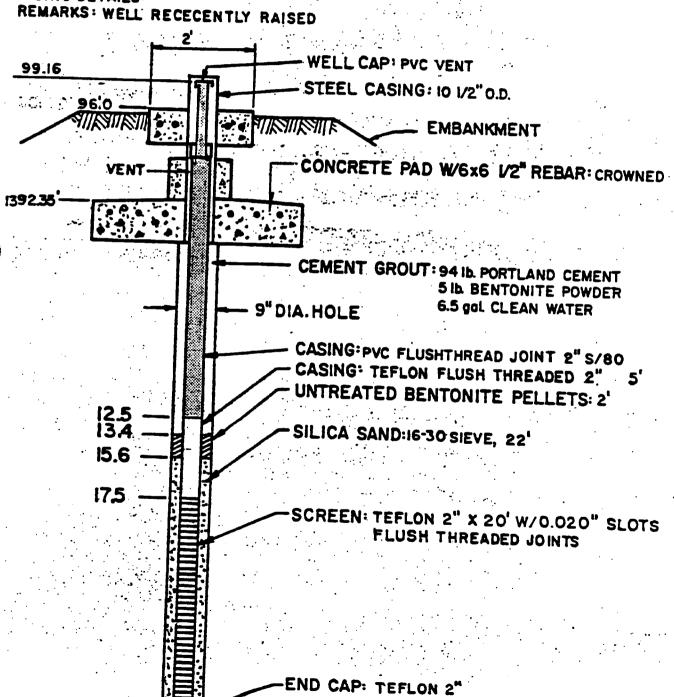
LOGGER: PETER BAYLEY

PAGE I

WATER ELEV.

CASING ELEV.: 1399.16

BORING DEPTH: 38.2



OBSERVATION WELL SCHEMATIC

PROJECT NO:3187108

7

PAGE I

WELL NO.: OW-7

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: AIR ROTARY LOCATION: 7334.2 E - 13922.9 N

SURFACE ELEV.: 1394.1'
BORING SIZE: 8.25"
CASING DETAILS:

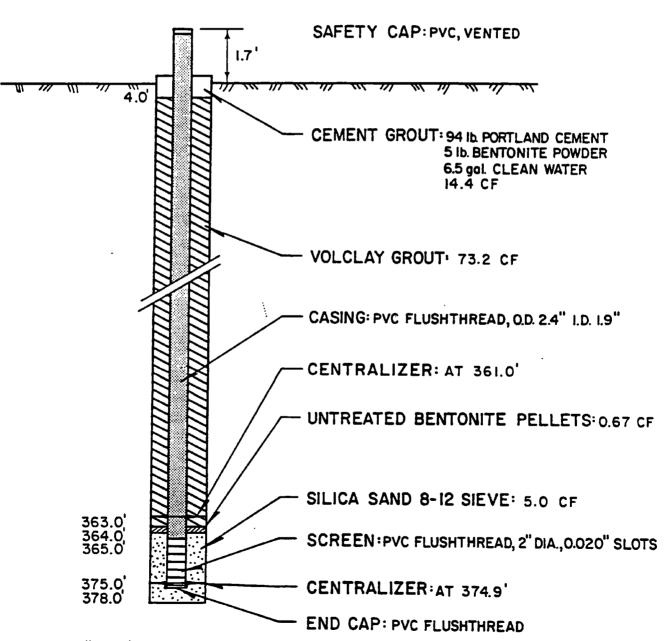
DATE DRILLED: 7/11/87

LOGGER: PETER BAYLEY

WATER ELEV.: 189.8 DATE: 9/2/87

CASING ELEV.: 1395.8'
BORING DEPTH: 378.0'

REMARKS:



VERT. SCALE: I"= 20'

OBSERVATION WELL SCHEMATIC

PROJECT NO:3187108

WELL NO.: OW-8

CONTRACTOR/DRILLER: BOYLES BROTHERS

DRILLING METHOD: WATER ROTARY

LOCATION: 9572.5 E - 11130.0 N

SURFACE ELEV: 1395.7

BORING SIZE: 7.25"

CASING DETAILS:

PAGE I

DATE: 11/18/87

LOGGER: PETER BAYLEY

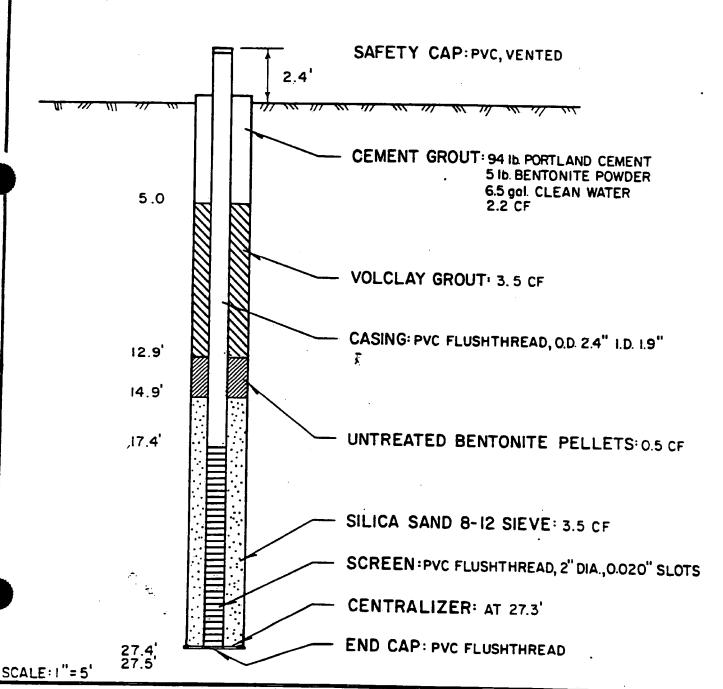
WATER ELEV: WELLS WERE WATER ROTARY

DRILLED AND NOT DEVELOPED TO DATE.

CASING ELEV.: 1398.1

BORING DEPTH: 27.5'





RECONNAISANCE WELL SCHEMATIC

PROJECT NO.:3187108

PAGE I

WELL NO.: RW-3

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: AIR ROTARY

LOCATION: 9578 E - 13546 N

SURFACE ELEV.: 1372.02'

BORING SIZE: 8.25"

CASING DETAILS:

DATE DRILLED: 5/12/87

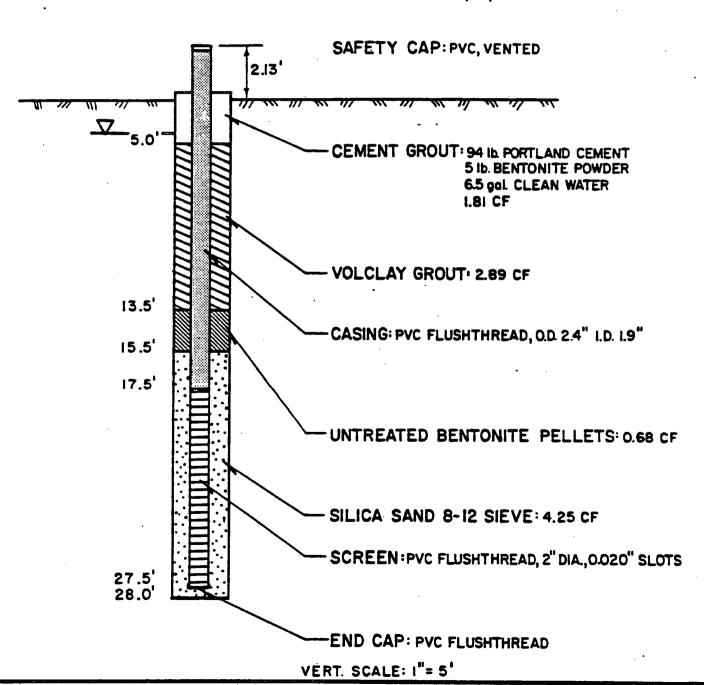
WATER ELEV: 4.45

DATE:8/20/87

CASING ELEV: 1374.15

BORING DEPTH: 28.0'

REMARKS: TEMPORARY PENDING CONSTRUCTION CELLS 12, 13, 14 & 15



RECONNAISANCE WELL SCHEMATIC

PROJECT NO:3187108

WELL NO. RW-4

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: AIR ROTARY

LOCATION: 9571 E - 13993 N

SURFACE ELEV: 1367.94

BORING SIZE : 8.25"

CASING DETAILS:

DATE DRILLED: 7/7/87

WATER ELEV: 2.66

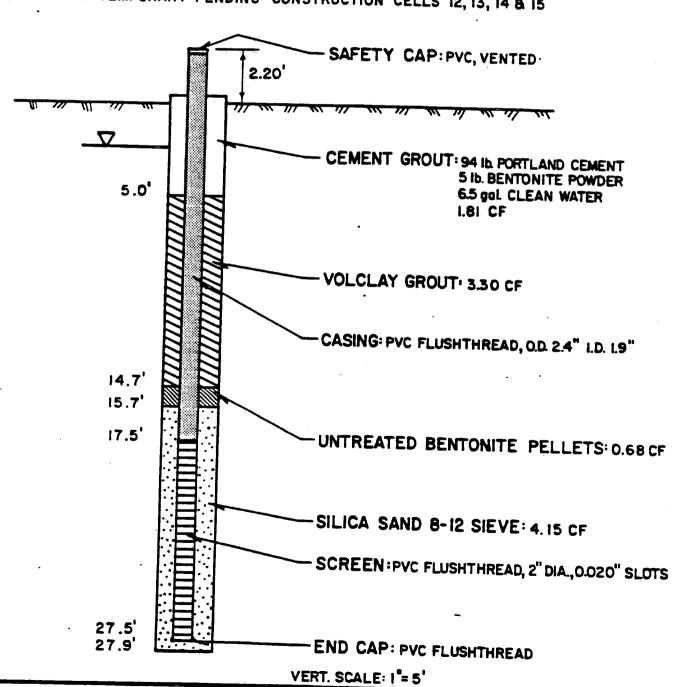
DATE: 8/20/87

PAGE I

CASING ELEV.: 1370.14

BORING DEPTH: 27.9'

REMARKS: TEMPORARY PENDING CONSTRUCTION CELLS 12, 13, 14 & 15



RECONNAISANCE WELL SCHEMATIC

PROJECT NO:3187108

WELL NO.: RW-5

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: AIR ROTARY LOCATION: 8968 E-13306 N SURFACE ELEV: 1378.95

BORING SIZE : 8.25" CASING DETAILS:

DATE DRILLED: 5/20/87

WATER ELEV: 2.70

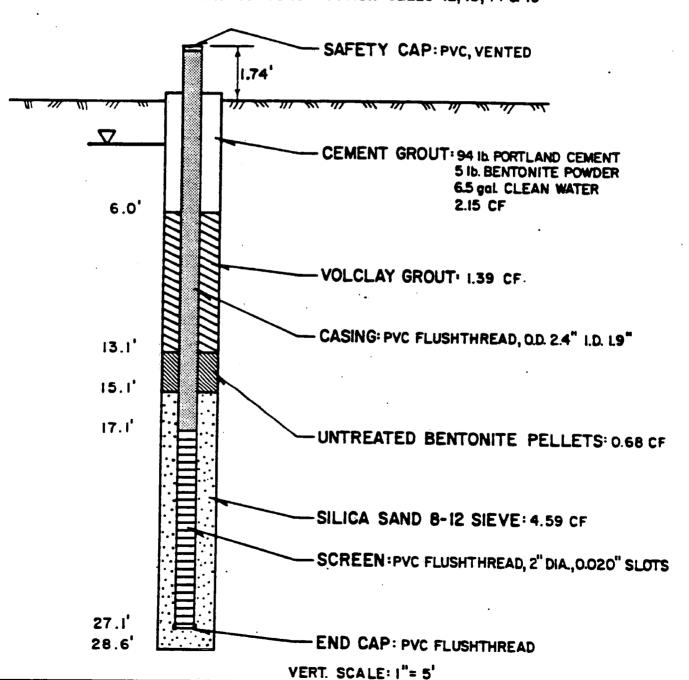
DATE: 8/20/87

PAGE I

CASING ELEV.: 1380.69'

BORING DEPTH: 28.6'

REMARKS: TEMPORARY PENDING CONSTRUCTION CELLS 12, 13, 14 & 15



<u>U. S. P. C. I.</u>

RECONNAISANCE WELL SCHEMATIC

PROJECT NO:3187108

WELL NO.: RW-6

CONTRACTOR/DRILLER: BOYLES BROTHERS LOGGER: PETER BAYLEY

DRILLING METHOD: AIR ROTARY

LOCATION: 8974 E- 14031 N

SURFACE ELEV.: 1372.60'

BORING SIZE : 8.25" CASING DETAILS:

DATE DRILLED: 6/1/87

WATER ELEV.: 0.72

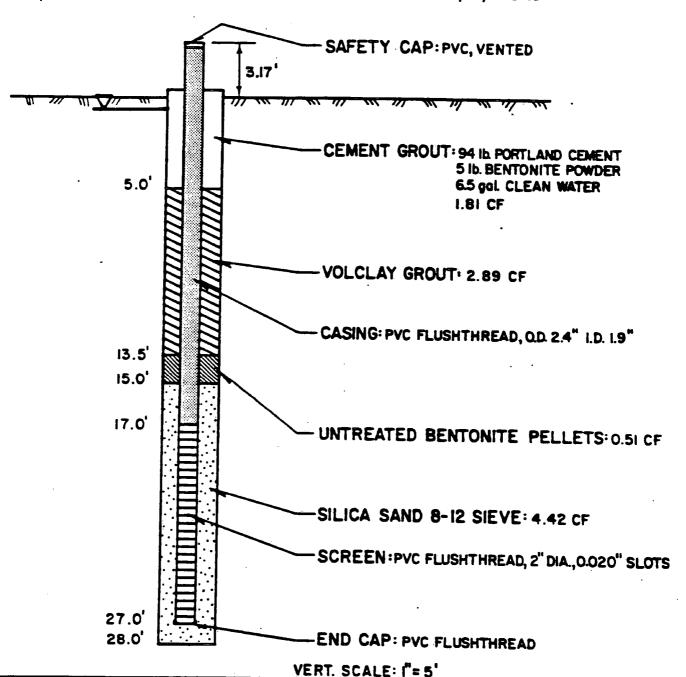
DATE: 8/20/87

PAGE I

CASING ELEV.: 1375.77'

BORING DEPTH: 28.0'

REMARKS: TEMPORARY PENDING CONSTRUCTION CELLS 12, 13, 14 8 15



PIEZOMETER SCHEMATIC

PROJECT NO.: 3189032

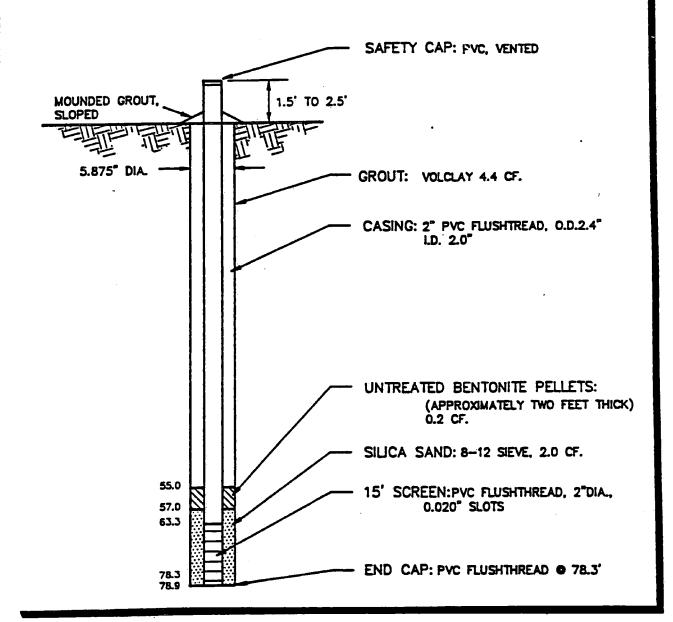
WELL NO.: TP 1
CONTRACTOR/DRILLER A.W. POOL DRILLING METHOD: AIR ROTARY & CORE LOCATION: 8,574.5 E - 12,384.4 N SURFACE ELEV .: NOT MEASURED

BORING SIZE: 5.875 CASING CETAILS: ALL PVC

DATE: 6-12-89 LOGGER: D. ADAMS WATER ELEV .: NONE WHEN DRILLED

CASING ELEV.: 1397.17 BORING DEPTH: 78.9' (100.0')

REMARKS: CONSTRUCTION DATA FOR INFORMATION ONLY.



U. S. P. C. I. PIEZOMETER SCHEMATIC

DATE: 5-31-89

PROJECT NO.: 3189032

WELL NO.: TP 2

CONTRACTOR/DRILLER A.W. POOL

DRILLING METHOD: HOLLOW STEM AUGER

LOCATION: 8.474.5 E - 12,238.9 N

SURFACE ELEV .: NOT MEASURED

BORING SIZE: 7.25°

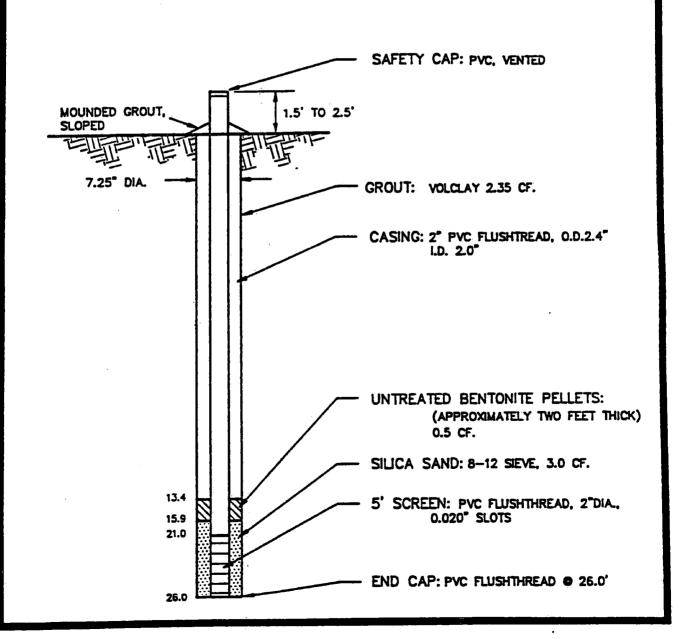
CASING DETAILS: ALL PVC

CASING ELEV.: 1394.31' BORING DEPTH: 26.0'

WATER ELEV .: NONE WHEN DRILLED

LOGGER: D. ADAMS

REMARKS: CONSTRUCTION DATA FOR INFORMATION ONLY.



U. S. P. C. I. PIEZOMETER SCHEMATIC

PROJECT NO.: 3189032

WELL NO.: TP 3

CONTRACTOR/DRILLER A.W. POOL DRILLING METHOD: HOLLOW STEM AUGER

LOCATION: 8,420.2 E - 12,159.6 N SURFACE ELEV.: NOT MEASURED

BORING SIZE: 7.25°

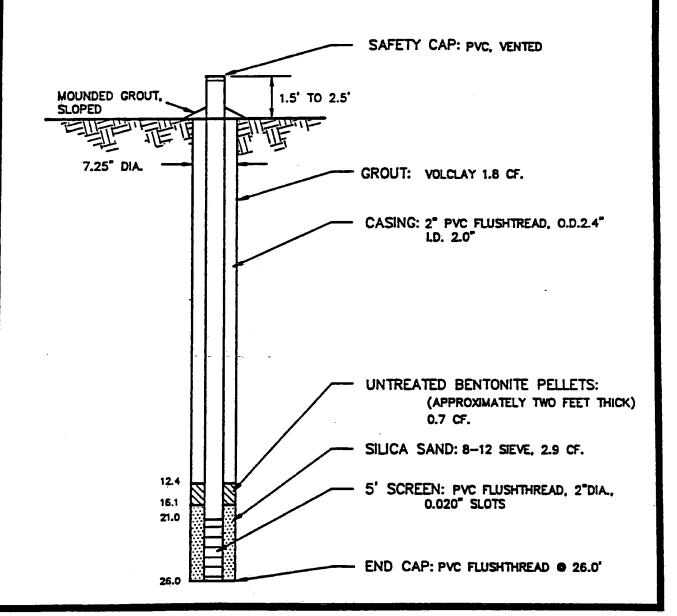
CASING DETAILS: ALL PVC

REMARKS: CONSTRUCTION DATA FOR INFORMATION ONLY.

DATE: 5-31-89 LOGGER: D. ADAMS

WATER ELEV .: NONE WHEN DRILLED

CASING ELEV.: 1401.24° BORING DEP1:1: 26.0°



U. S. P. C. I. PIEZOMETER SCHEMATIC

PROJECT NO.: 3189032

WELL NO .: TP-4

CONTRACTOR / DRILLER A.W. POOL DRILLING METHOD: AIR ROTARY & CORE

LOCATION: 8.084.7 E - 12.479.9 N SURFACE ELEV .: NOT MEASURED

BORING SIZE: 5.875

CASING DETAILS: ALL PVC

DATE: 6-6-89

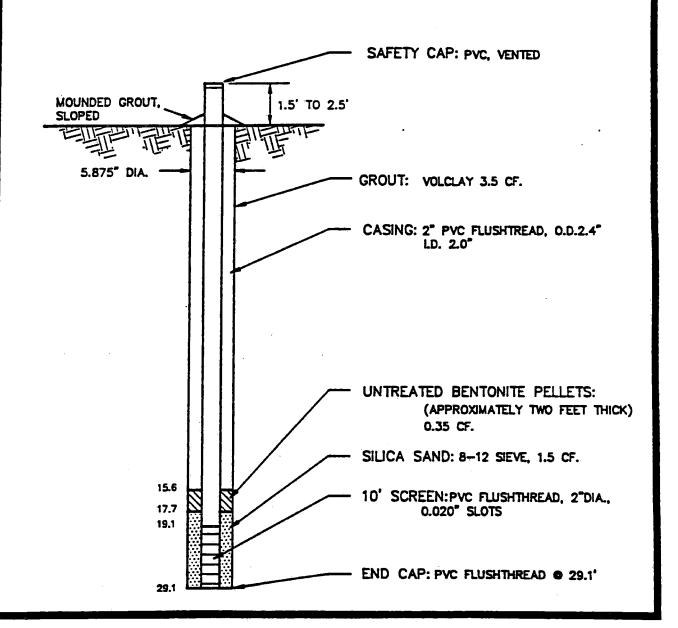
LOGGER: D. ADAMS

WATER ELEV .: NONE WHEN DRILLED

CASING ELEV .: 1401.64"

BORING DEPTH: 29.1°

REMARKS: CONSTRUCTION DATA FOR INFORMATION ONLY.



U. S. P. C. I. PIEZOMETER SCHEMATIC

PROJECT NO.: 3189032

WELL NO .: TP 5

CONTRACTOR/DRILLER A.W. POOL DRILLING METHOD: AIR ROTARY & CORE

LOCATION: 8,163.7 E - 12,515.1 N SURFACE ELEV.: NOT MEASURED

BORING SIZE: 5.875"
CASING DETAILS: ALL PVC

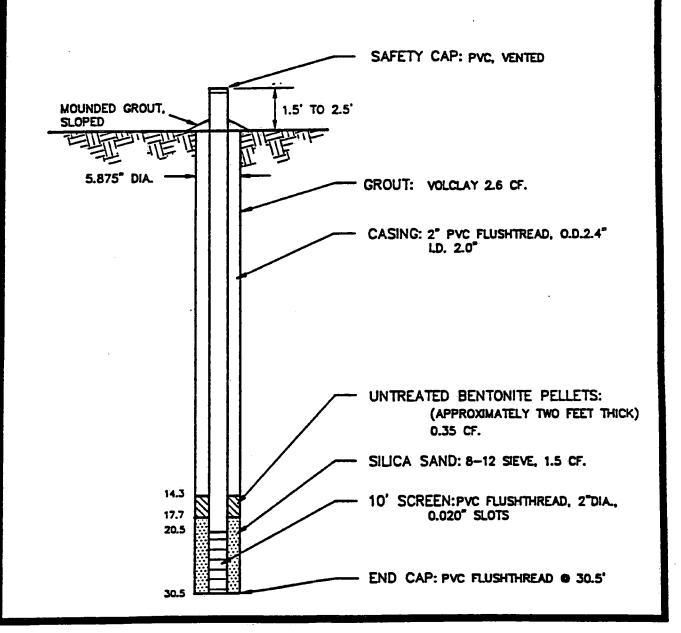
CASING DETAILS: ALL PVC

DATE: 6-6-89 LOGGER: D. ADAMS

WATER ELEV .: NONE WHEN DRILLED

CASING ELEV.: 1393.78' BORING DEPTH: 30.5'

REMARKS: CONSTRUCTION DATA FOR INFORMATION ONLY.



U. S. P. C. I. PIEZOMETER SCHEMATIC

PROJECT NO.: 3189032

WELL NO .: TP 6

CONTRACTOR/DRILLER A.W. POOL

DRILLING METHOD: AIR ROTARY & WATER INJECTED

LOCATION: 8,265.3 E - 12,684.1 N

SURFACE ELEV .: NOT MEASURED

BORING SIZE: 5.875

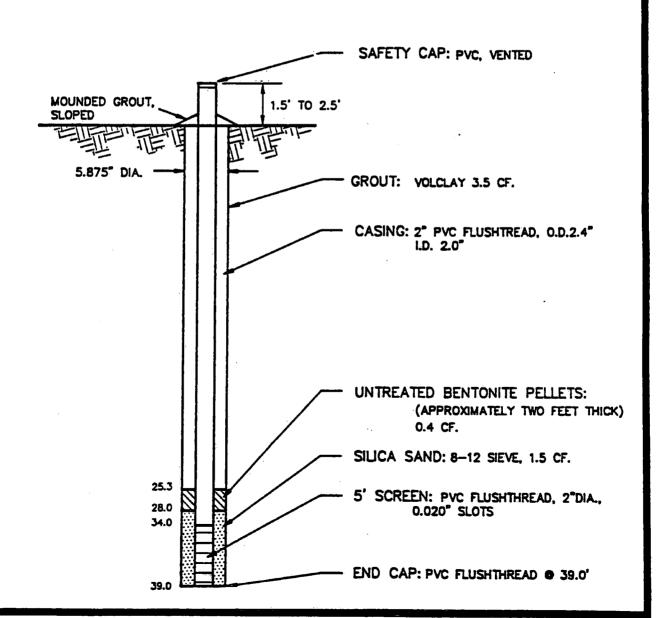
CASING DETAILS: ALL PVC

REMARKS: CONSTRUCTION DATA FOR INFORMATION ONLY.

DATE: 6-6-89 LOGGER: D. ADAMS

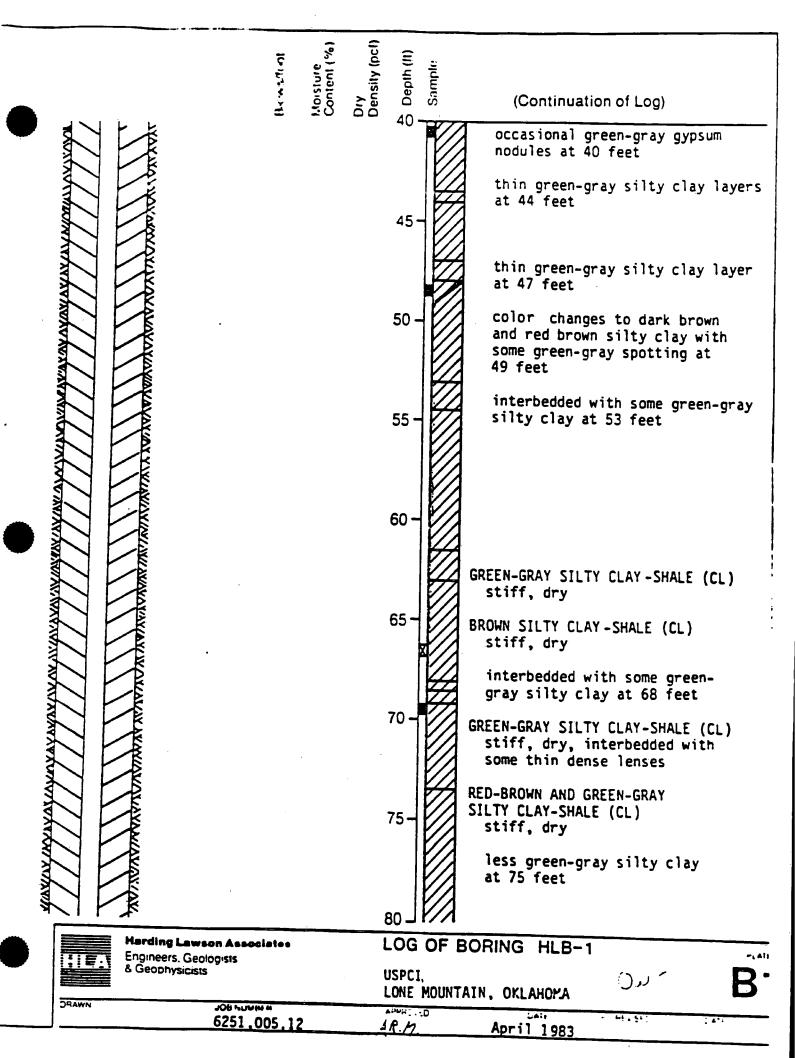
WATER ELEV .: NONE WHEN DRILLED

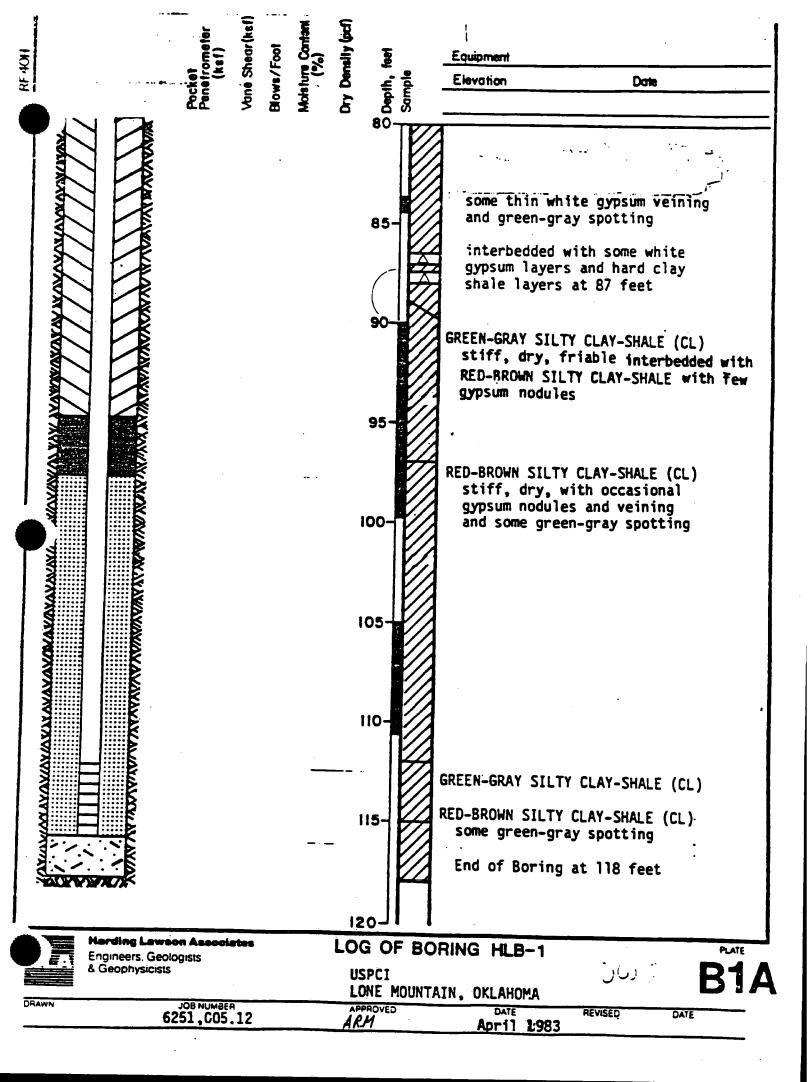
CASING ELEV.: 1396.43 BORING DEPTH: 39.0'



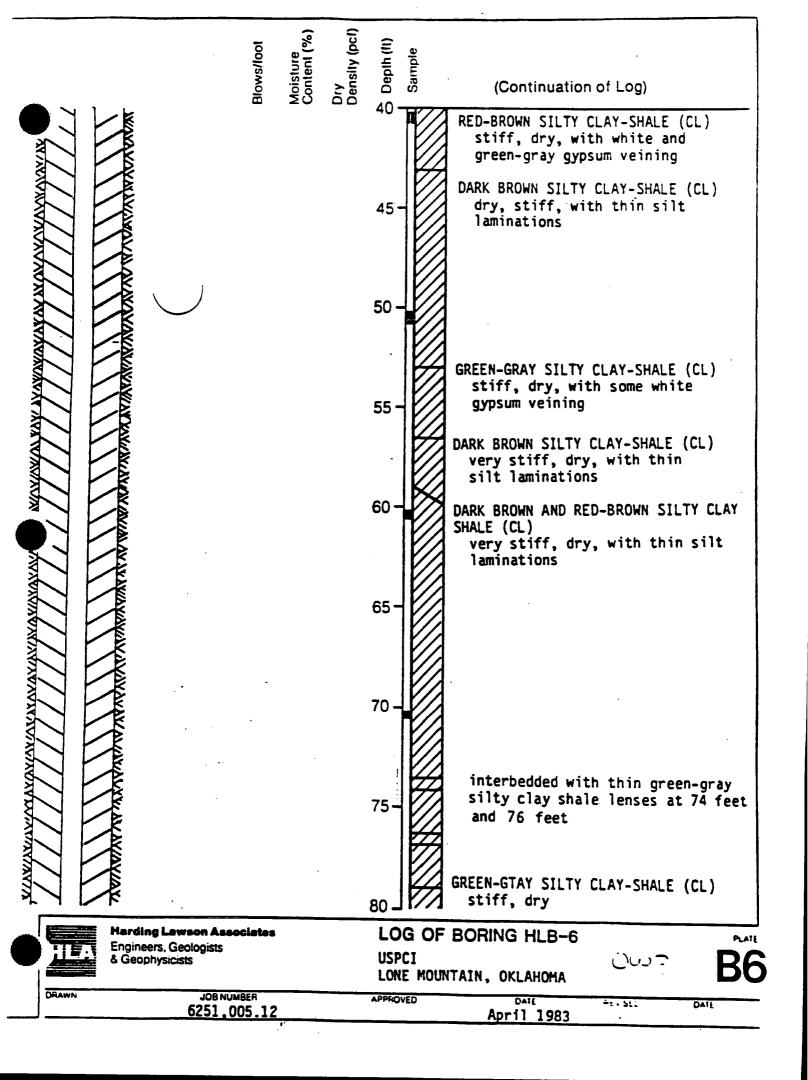
Soil Boring Logs

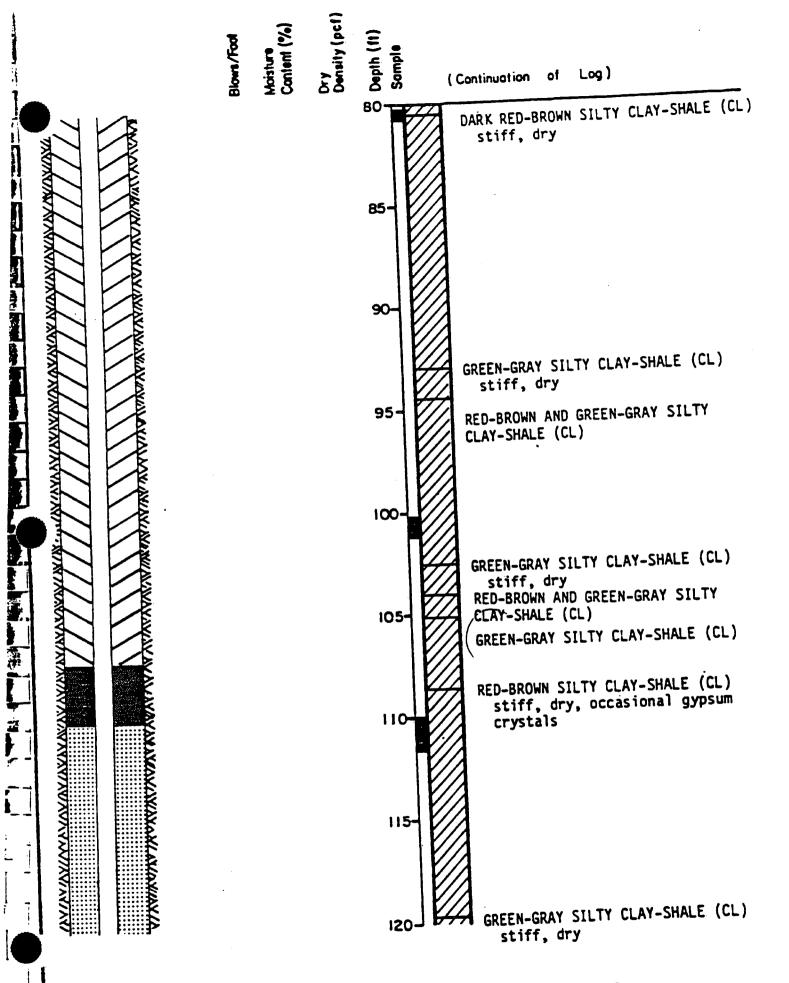
Dry Density (pcf) Moisture Content (%) ROTARY AIR AND WASH Depth (II) Blows/fool Equipment_ WELL CONSTRUCTION Date <u>03/22/83</u> 1451 Elevation___ HLB-1 RED-BROWN SILTY CLAY (CL) stiff, moist near surface, with white gypsum crystals and some wood fragments INTERBEDDED WITH THIN GREEN-GRAY 5 SILTY CLAY (CL) lense stiff, dry RED-BROWN SILTY CLAY-SHALE (CL) low plasticity, stiff, dry 10interbedded with thin greengray gypsum layer at 11 feet RED-BROWN SILTY CLAY-SHALE (CL) stiff, dry, friable, with thin silt laminations 15 20 -GREEN-GRAY SILTY CLAY-SHALE (CL) stiff, dry, with white gypsum vei RED-BROWN AND DARK BROWN SILTY CLAY-SHALE (CL) stiff, dry, with some 25 green-gray clay and white gypsum veining interbedded with thin greengray gypsum layers 26.5 to 28 fee 30 GREEN-GRAY SILTY CLAY (CL) soft, moist DARK BROWN SILTY CLAY-SHALE (CL) stiff, dry, friable 35. GREEN-GRAY SILTY CLAY (CL) stiff, dry RED-BROWN SILTY CLAY-SHALE (CL) stiff, dry, with some greengray silty clay interbeaded

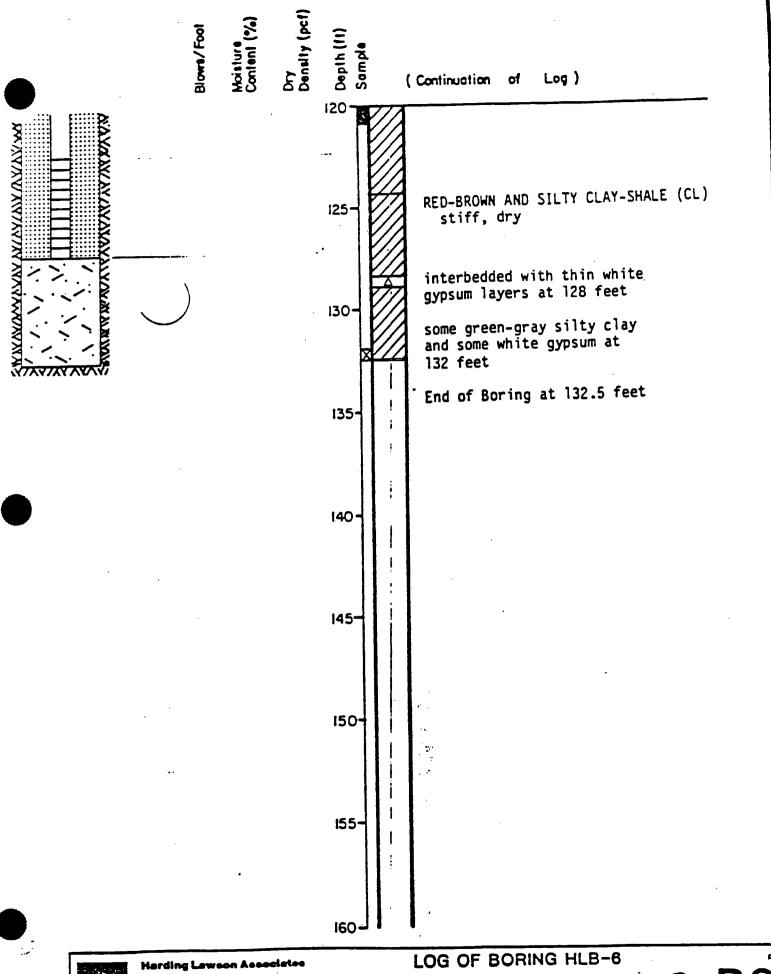




Dry Density (pcf) Depth (ft) Blows/foot ROTARY AIR Equipment__ WELL CONSTUCTION Date 03/15/83 Elevation 1466 HLB-6 RED-BROWN SILTY CLAY-SHALE (CL) stiff, moist, with few gypsum crystals moist at 2.5 feet interbedded with thin white gypsum layers at 5 feet moist at 7.5 feet 10 RED-BROWN SILTY CLAY-SHALE (CL) stiff, dry, with gypsum veining BLUE-GRAY, GREEN-GRAY SILTY CLAY (CL) very stiff, dry 15 RED-BROWN SILTY CLAY-SHALE (CL) stiff, moist, with some gray spotting and thin silt laminations 20 GREEN-GRAY SILTY CLAY-SHALE (CL) stiff, dry RED-BROWN CLAY-SHALE (CL) 30-35-GREEN-GRAY SILTY CLAY-SHALE (CL)







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& Geophysicists

USPCI LONE MOUNTAIN, OKLAHOMA

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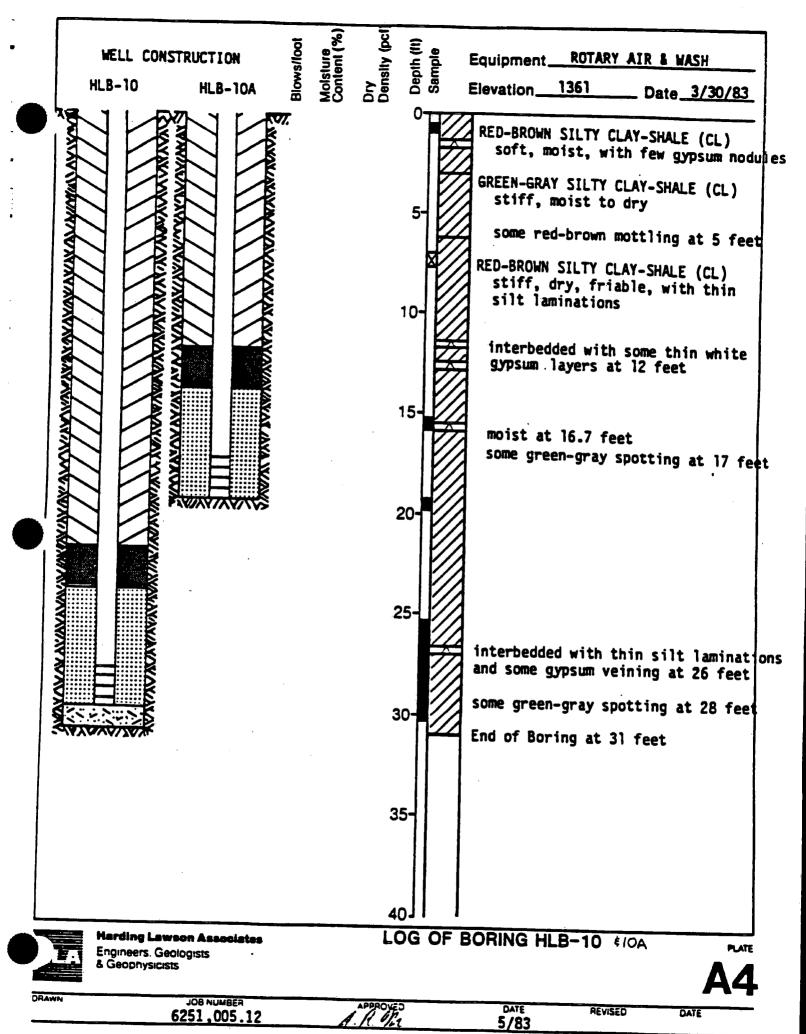
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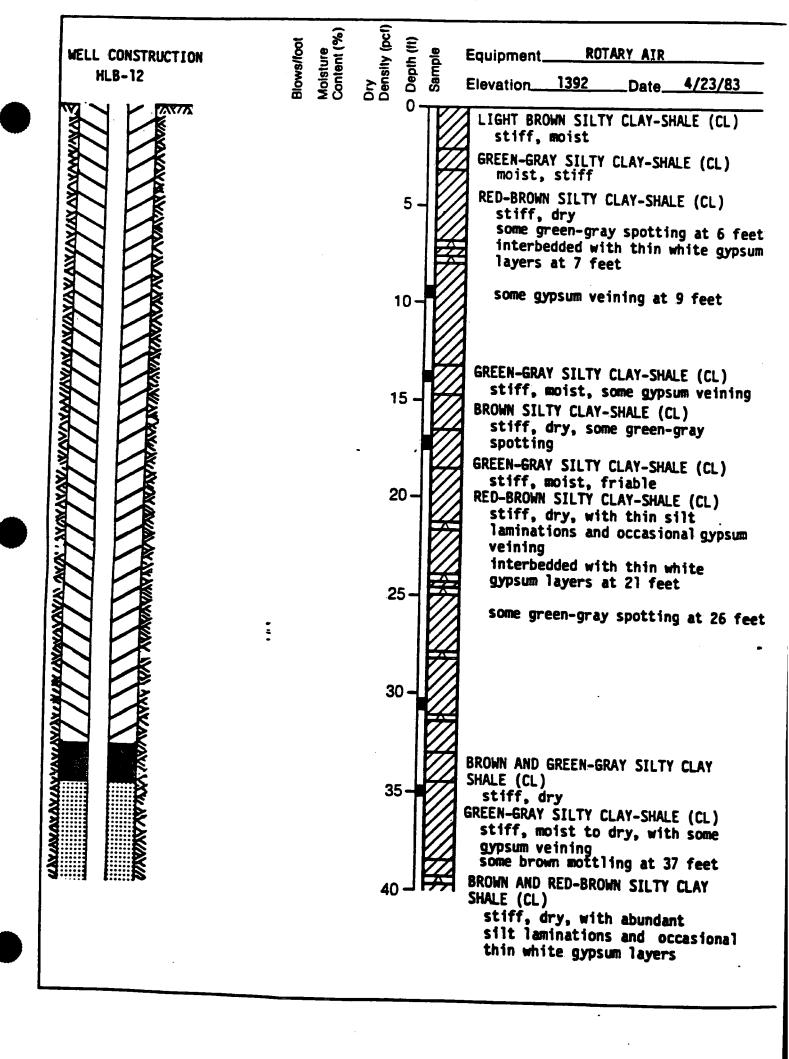
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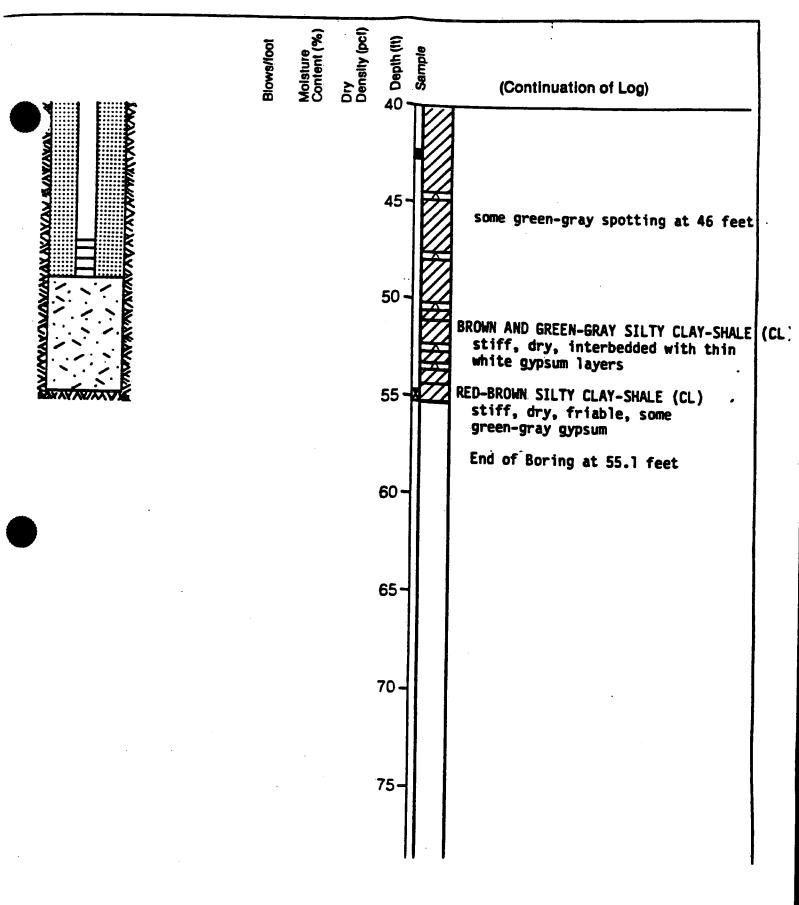
APPROVED

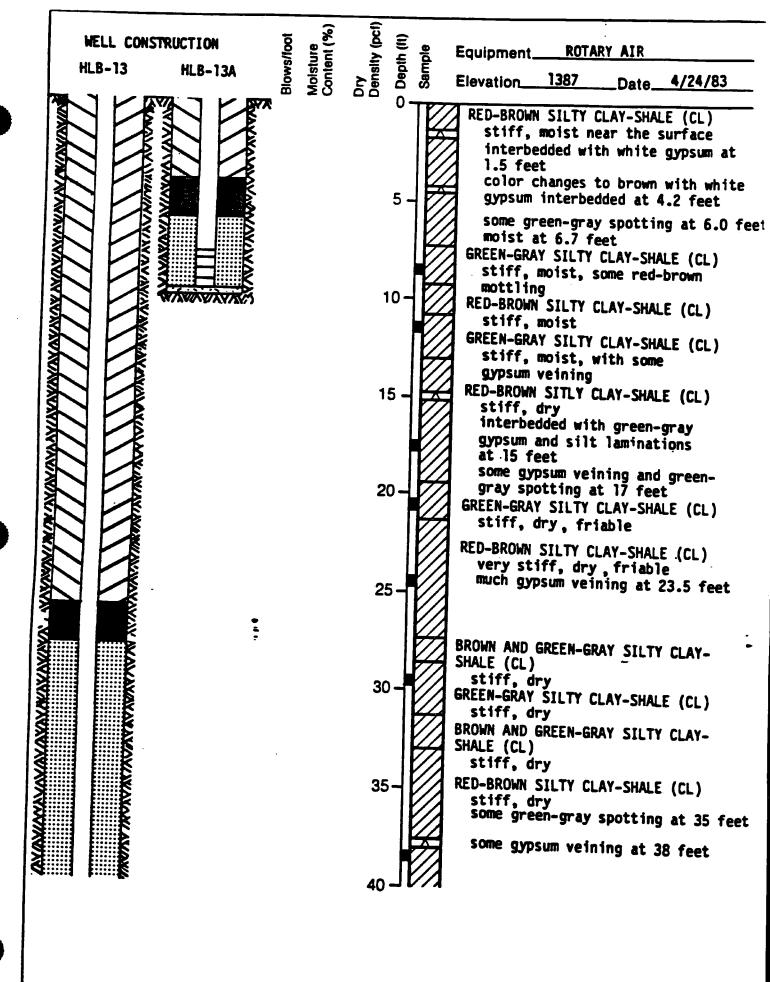
Anril 1 927

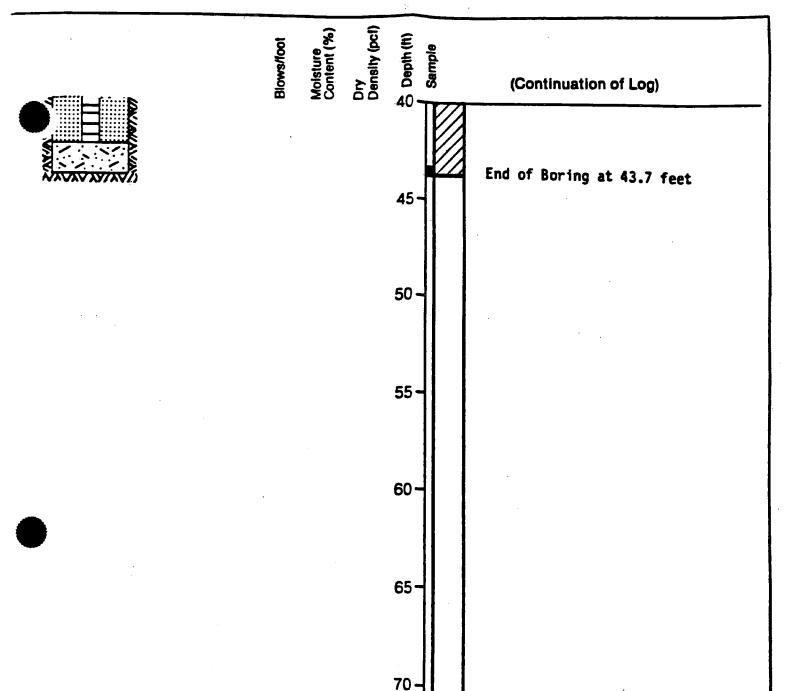
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Harding Lawson Associates

Engineers, Geologists & Geophysicists

LOG OF BORING HLB-13

USPCI

75-

PLATE

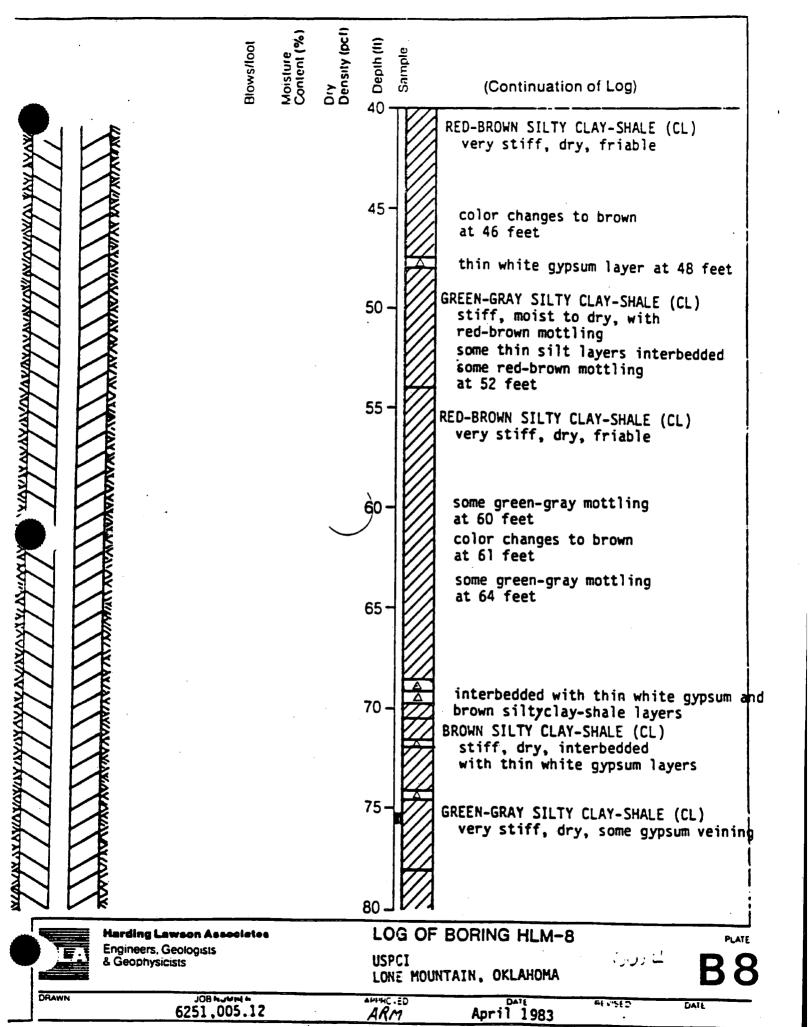
LONE MOUNTAIN, OKLAHOMA JOB NUMBER 6251,005.12

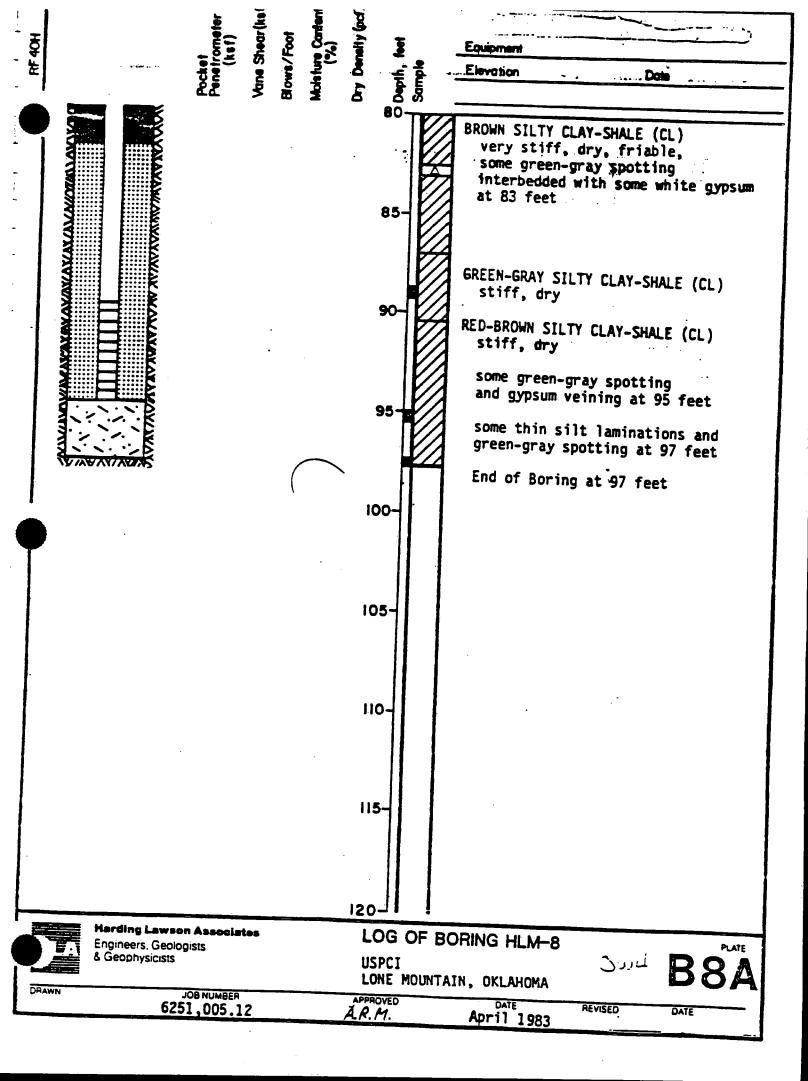
DATE 5/83

REVISED

DATE

WELL CONSTRUCTION HLM-8	Blows/foot Moisture Content (%)	Dry Density (pcf)	Equipment
SANATA MANANA MA		5 ·	RED-BROWN SILTY CLAY (CL) stiff, moist, with some gypsum nodules interbedded with thin white gypsum and red-brown clayey silt layers at 3.5 feet
CACARANA CAC		10-	RED-BROWN SILTY CLAY-SHALE (CL) very stiff, dry, friable, with gypsum veining GREEN-GRAY SILTY CLAY-SHALE (CL)
		15 -	RED-BROWN SILTY CLAY-SHALE (CL) stiff, dry, friable
		20-	GREEN-GRAY SILTY CLAY-SHALE (CL) stiff, dry, some red-brown mottling RED-BROWN SILTY CLAY-SHALE (CL) very stiff, dry, friable color changes to brown at 21 feet
THE		25 –	BROWN AND GREEN-GRAY SILTY CLAY-SHALE (CL) stiff, moist to dry GREEN-GRAY SILTY CLAY-SHALE (CL)
TANKAK AKAKAK AKAKAKAK AKAKAKAK AK		30 –	RED-BROWN SILTY CLAY-SHALE (CL) very stiff, dry, friable
WANTER AND	·	35 –	some thin white gypsum layers at 31 feet some green-gray gypsum at 33 feet GREEN-GRAY SILTY CLAY-SHALE (CL)
		40 –	with very silty layer 36.2-36.8 feet BROWN AND RED-BROWN SILTY CLAY SHALE (CL)
		••	GREEN-GRAY SILTY CLAY-SHALE (CL) stiff, dry to moists some gypsum interbedded





LOG

BORING NO. IM-1

LAIDLAW ENVIRONMENTAL

USCS CODE ISOLATED INTE O.0" to 25' Fill: red day (10R 4/3) w/10X green clay, slightly moist 25' to 4.0" Red Claystone: (10R 3/4 & 10R 4/8), slightly moist, w/10X green claystone: (10B 6/2) 4.0" to 8.0" Red claystone: ned - dx reddish brown (10R 4/8 & 10R 3/4), non calcareous, dry BOSE Nanut X, V Litural in - bothern line Serien claystone: (10B 6/2), w/40X red claystone as above Vistr - 999 Serien	CLIENT:	USPCI LONE MO	UNTAIN		JOB NO.: 96	321-09-93
DRILLED BY: A.W. POOL DRILLER: WAYNE CALDMELL METHOD: AIR ROTARY START DATE: 1-18-95 COMP. DATE: 1-19-95 SURFACE ELEVATION: 1985.84 FEET DESCRIPTION DESCRIPTION DESCRIPTION GRAPHIC LOG USCS CODE Fill COT to 2.5' Fil: red diay (IDR 4/3) w/IOX green clay, slightly noist WELL PROCESSION: (IDR 3/4 & IDR 4/6), slightly noist A.5' to 8.0' Red Claystone: (IDR 3/4 & IDR 4/6), slightly noist WAYNEX green daystone: (IDR 8/2) A.5' to 8.0' B.O' to 10.0' Breen daystone: (IDB 8/2), w/40'X red claystone as above R. St. 999 S. NEL - 999 S. NEL	PROJECT:	CELL 5 INTER	IM MEASURE	LOCATION	: WAYNOKA, OKLA	НОМА
WELL DPT DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED INTE OUT to 2.5' Fill, red day (IOR 4/3) w/IOX green clay, slightly moist. 2.5' to 4.0' Red Claystone; (IOR 3/4 & IOR 4/8), slightly moist, w/IOX green daystone; (IOR 6/2) 4.0' to 8.0' Red claystone; (IOR 6/2), w/40x red claystone as above 8.0' to IO.0' Breen daystone; (IOR 8/2), w/40x red claystone as above 10 IO.7' to 19.0' Red claystone; (IOR 8/4) Abd; gypsum, fragments I/4' dien, from If to IL5' Samples well below I3' ISOL to 20.0' Samples well below I3' ISOL To 4.0' Samples well below I3' ISOL	ORILLED E	BY: A.W. POOL	DRILLER: W	AYNE CALDWEL	L METHOD: AIF	ROTARY
WELL DAN DOWERS TOTAL DEPTH: 52.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED INTE O.O' to 2.5' Fill, red clay (10R 4/3) w/IOX green clay, slightly most Fill 2.5' to 4.0' Red Claystone; (10R 3/4 & IOR 4/8), slightly most. w/IOX green claystone (10G 6/2) 4.0' to 8.0' Red claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2), w/40X red claystone as above Row Graphic Code of the claystone; (10G 8/2) 10 10 10 10 10 10 10 10 10 1	START DA	TE: 1-18-95	OMP. DATE: 1-19-5	95 SURFACE	ELEVATION: 1385	.84 FEET
DESCRIPTION DESCRIPTION OUT 10 25 Fill: red clay (10R 4/3) w/10X green clay, slightly moist 2.5' to 4.0' Red Claystone: (10R 3/4 £ 10R 4/8), slightly moist, w/10X green daystone: (10G 8/2) 4.0' to 8.0' Red claystone: moist and - dx reddish brown (10R 4/8 £ 10R 3/4), non calcareous, dry BOZE NUMB X, V BOZE NUMB X, V Illustria: bottom list X, V Red claystone: (100 8/2), w/40X red claystone as above Vistria - 999 Red claystone: (10R 8/4) Abdt gyosum, fragments 1/4' dian, from if to 115' Samples moist at 13'. Hole producing mist of water. 15- 15- 15- 15- 15- 15- 15- 15	LOGGED B	Y: DAN DOWERS	TOTAL DEP			
Fill: red day (10R 4/3) w/IOX green clay, slightly moist 2.5" to 4.0" Red Claystone: (10R 3/4 £ 10R 4/8), slightly moist, w/IOX green daystone (106 8/2) 4.0" to 8.0" Red claystone: med - dx reddish brown (10R 4/8 £ 10R 3/4), non calcareous, dry BOZS. NUMB 10 8.0" to 10.0" Green daystone: (105 8/2), w/40X red claystone as above Scrien - 999 10 10.0" to 18.0" Red claystone: (10 R 3/4) Abdt gypsum, fragments 1/4" diam, from IT to 11.5" Samples well below 13" 15- 18.0" to 20.0" Series daystone: (10R 8/2) Samples well below 13" 18.0" to 20.0" Series daystone: (10R 8/2) Samples well below 13" 18.0" to 20.0" Series daystone: (10R 8/2) Samples well below 13" 18.0" to 20.0" Series daystone: (10R 8/2)		т	DESCRIPTION			GW SAMPLES/
19.0° to 20.0° 19.0° to 20.0° 19.0°	-	2.5' to 4.0' Red Claystone: (10R 4.0' to 8.0' Red claystone; med non calcareous, dry 8.0' to 10.0' Green claystone; (10 Red cl	3/4 & 10R 4/8), slightly mois ne (10G 8/2) — dk reddish brown (10R 4/8 G 8/2), w/40% red claystone 3/4) hts 1/4" diam, from 11" to 11.5"	e & 10R 3/4).	BOZE Name X, V Riser-999 Scrien-999 - Reiserheight-9 Sirfuel 999 Bidrail 999 Bidrail	In Pri
20-	15-	19.0° to 20.0° Green daystone: (106	8/2)		· * .	Fortan Comp. les

BORING NO. IM-1

CLIENT: L	JSPCI LONE M	OUNTAIN	<u> </u>	JOB NO.: 96	321-09-93
PROJECT:	CELL 5 INTE	RIM MEASURE	LOCATION	N: WAYNOKA, OKLA	HOMA
DRILLED B	Y: A.W. POOL	DRILLER:	WAYNE CALDWE		
START DAT	E: 1-18-95	COMP. DATE: 1-19-	95 SURFACE	ELEVATION: 1385	.84 FEET
LOGGED BY	: DAN DOWER	S TOTAL DE	PTH: <i>52.0 FEET</i>	BGS	
WELL DIAGRAM DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV
25— 30— 35—	23.0' to 33.0' Red claystone; as 10% w/gypsum at 3	as above, w/approx. 25% recommon above, dry to damp			ISOLATED INTERV
					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
40-	39.0' to 42.0'	106 6/2), damp to moist s above (106 6/2), dry cutting ottom 1"	s, mottled,	C	
NUMBER: 98321-0	19-93				

LOG

BORING NO. IM-1

LAIDLAW ENVIRONMENTAL

Page 3 of 3

CLIENT: USA	PCI LONE M	OUNTAI	'N		JOB NO.: 9632	21-09-93
PROJECT: C	· · · · · · · · · · · · · · · · · · ·			LOCATION: A	WAYNOKA, OKLAHO	
DRILLED BY:			DRILLER: WAYN		METHOD: AIR F	
START DATE:	1-18-95	COMP. I	DATE: 1-19-95	SURFACE EL	EVATION: 1385.8	4 FEET
LOGGED BY: L	DAN DOWER	s	TOTAL DEPTH:	52.0 FEET BG	GS	
WELL DIAGRAM DPT		ם	ESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
45-	42.0' to 52.0' Red claystone; dr Trace gypsum from 4 10% gypsum from 4 Total Depth =	m 42' to 52'	o' to 50'		CL	IM-1 30'-42' DRY

LOG

BORING NO. IM-2

LAIDLAW ENVIRONMENTAL

CLIENT	: <i>U</i>	SPCI LONE M	OUNTAIN	V		JOB NO.:	9632	1-09-93
PROJEC	T:	CELL 5 INTE	RIM MEA	SURE	LOCATION:	WAYNOKA, OK	LAHO	IMA
DRILLE	D BY	': A.W. POOL	·	DRILLER: WAY	NE CALDWELL	METHOD:	AIR R	ROTARY
START	DAT	E: 1-19-95	COMP. D	ATE: 1-23-95	SURFACE E	LEVATION: 13	85.45	FEET
LOGGE	BY:	DAN DOWER	S	TOTAL DEPTH	37.5 FEET BO	3 <i>S</i>		
WELL DIAGRAM	DPT		DE	SCRIPTION		GRAPHIC LO USCS CODI		GW SAMPLES/ ISOLATED INTERV.
	5-	Q.O' to 4.0' Fill; red clay w/st 4.0' to 18.0' Red claystone; (IOR 4/8), dry	en clay, damp to moist			FILL	
	10-	W/30% green clay Dry Trace gypsum at		9/2) at 8', dry			CL	1₩-2.10 0°-10°
	15—	Dry Wet, 20% gypsum Producing water a	nt 15° to 18°					
		18.0' to 22.0' Green daystone;	(106 8/2), da	simp to dry	·		CL	IM-2.18 10'-18'
	20-					<u>//////</u>	1	
OB NUMBER:	98321-	09-93		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			

LOG

BORING NO. IM-2

LAIDLAW ENVIRONMENTAL

Page 2 of 2

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CLIENT: USPCI LONE	MOUNTAIN	JOB NO.: 9632	1-09-93
PROJECT: CELL 5 INT		ON: WAYNOKA, OKLAHO	
DRILLED BY: A.W. POOL	The state of the s		
START DATE: 1-19-95	_ 		FEET
LOGGED BY: DAN DOWE	RS TOTAL DEPTH: 37.5 FEE	ET BGS	· · · · · · · · · · · · · · · · · · ·
WELL DIAGRAM DPT	DESCRIPTION	GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
Green daysto 22.0' to 37.0' Red claystone 25— 20% gypsum fr	ne; damp to dry	CL	ISOLATED INTERV.
Damp from 32.4 Damp from 32.4 S% white gypsu Dry	to 35° n from 34.5° to 35°		1M-2.30 20'-30'
	e: (106 8/2), dry - 37.5 Feet BGS	CL.	1M-2 30'-37.5' DRY

LOG

BORING NO. IM-3

LAIDLAW ENVIRONMENTAL

CLIENT: L	JSPCI LONE MOUNT	AJN		JOB NO.: 9632	21-09-93
PROJECT:	CELL 5 INTERIM N	MEASURE	LOCATION: W	IAYNOKA, OKLAHO	OMA
DRILLED B	Y: A.W. POOL	DRILLER: WAYN	E CALDWELL	METHOD: AIR F	ROTARY
START DAT	TE: 1-23-95 COM	P. DATE: 1-24-95	SURFACE EL	EVATION: 1386.0	O FEET
LOGGED BY	: DAN DOWERS	TOTAL DEPTH:	17.0 FEET BGS	5	
WELL DIAGRAM DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
10— 15— 20—	0.0° to 5.5° Fill: red day, (10R 3/4, 10 5.5° to 18.5° Red claystone; (10R 3/4), 10% white gypsum from 13.5° Green claystone; (106 8/2) Total Depth = 17.0 Fee	damp To 14'		FILL	1₩-3.10 0'-10'

BORING NO. IM-4

CLIENT: U	SPCI LONE M	OUNTAIN		JOB NO.:	9632	1-09-93
	 	RIM MEASURE	LOCATION: W	L		
DRILLED BY	: A.W. POOL	DRILLER: WAY	NE CALDWELL	METHOD:		
START DATE	E: 1-24-95	COMP. DATE: 1-25-95	SURFACE ELE	EVATION: 13	85.98	FEET
LOGGED BY:	DAN DOWER	S TOTAL DEPTH	1: 17.0 FEET BGS	5		<u> </u>
WELL DIAGRAM DPT		DESCRIPTION		GRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTERV
10- 10- 20-	3.0' to 17.0' Red claystone; slightly 5% gypsum at 5.5' Trace green clays Damp Scattered gypsum Dry Scattered gypsum Top of green clays Total Depth = 1	from 14.5' to 15'	noist		CL	1M-4.17° 7'-17'

BORING NO. IM-5

O.O.' to 3.0' Fill: red day (10R 3/4), danp 3.0' to 3.75 Green day: (10R 9/2) 80%, becomes 100% at 3.5' 3.75 to 8.6' Red claystone: (10R 3/4), dry Stightly damp Trace white gypsum at 8', dry 10— Abdt white gypsum from 11' to 11.5'; stightly damp CL Thin gypsum zone at 15', dry Green daystone (108 8/2) begins at 18.5' Total Depth = 17.0 Feet 86S									<u> </u>
DRILLED BY: A.W. POOL START DATE: 1-25-95 COMP. DATE: 1-28-95 SURFACE ELEVATION: 1388.01 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 17.0 FEET BGS WELL DATE: 1-25-95 COMP. DATE: 1-28-95 SURFACE ELEVATION: 1388.01 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 17.0 FEET BGS GRAPHIC LOG GW SAMPLES/ USCS CODE GW SAMPLES/ ISOLATED INTERV DESCRIPTION GRAPHIC LOG GW SAMPLES/ ISOLATED INTERV 10- Abdt white gypsum at 8', dry 10- Abdt white gypsum from if to 11.5', slightly damp Trace white gypsum from if to 11.5', slightly damp CL Thin gypsum zone at 15', dry Green daystone (106 8/2) begins at 18.5' Total Depth = 17.0 Feet BSS				<u>.</u>		J	0B NO.:	9632	1-09-93
START DATE: 1-25-95 COMP. DATE: 1-26-95 SURFACE ELEVATION: 1388.01 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 17.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE GN SAMPLES/ DISC, ATED INTERV 3.0" to 3.15" Offen day: (100 8/2) 80K, becomes 100X et 3.5" 3.75" to 8.5" Red claystone: (100 3/A), day Trace white gypsun at 8", dry 10— Abdt white gypsun at 8", dry Breen daystone it 15", dry Green daystone it 15", dry Dreen daystone it 105 8/2) begins at 8.5" Total Depth = 17.0 Feet BSS CL JH-5 Total Depth = 17.0 Feet BSS			RIM MEA	SURE	LOCATION:	WAYI	NOKA. OK	LAHO	DM A
DESCRIPTION DESCRIPTION DESCRIPTION GRAPHIC LOG GW SAMPLES/ 150LATED INTERV D.G. to 3.0" Pil: red day (10R 3/4), damp 3.0" to 3.15" Description CL Trace white gypsum at 8', dry 10— Abdt white gypsum fron II' to IL5', slightly damp CL Green daystone 11G6 8/21 begins at 8.3" Total Depth = 17.0 Feet 86S		METHOD. AIN NOTAN							
MELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE GW SAMPLES/ ISOLATED INTERV 0.0° to 3.0° FB; red clay (IOR 3/4), damp 3.0° to 3.75° Freen clay; (IOB 6/2) 60%, becomes IO0% at 3.5° 3.75° to 16.5° Red claystone; (IOR 3/4), dry Trace white gypsum at 8°, dry 10 Abdt white gypsum from IT to 11.5°, sightly damp [5— Thin gypsum zone at 15°, dry Green claystone (IOS 6/2) begins at 18.5° Total Depth = 17.0 Feet BSS CL JIM-5 Total Depth = 17.0 Feet BSS							TION: 13	86.01	FEET
DESCRIPTION DESCRIPTION USCS CODE USCS CODE ISOLATED INTERV O.0." to 3.0" Fill. 3.0" to 3.75" Free day (106 8/2) 80%, becomes 100% at 3.5" 3.75" to 85" Red claystone: (10R 3/4), day Trace white gypsun at 6', dry 10— Abdt white gypsun fron IT to 11.5", sightly damp CL Green daystone: 1106 6/2) begins at 8.5" Total Depth = 17.0 Feet BGS		': DAN DOWER:	5	TOTAL DEPTH:	17.0 FEET B	GS			
Fill. 3.0" to 3.75" Breen clay; (108 8/2) 80%, becomes 100% at 3.5" 3.75" to 18.95" Red claystone: (10R 3/4), dry Slightly damp Trace white gypsum at 8", dry 10— Abdt white gypsum from 1" to 11.5", slightly damp Thin gypsum zone at 15", dry Green claystone: (108 8/2) begins at 19.5" Total Depth = 17.0 Feet 865			DE	SCRIPTION					GW SAMPLES/ ISOLATED INTERV.
20 B NUMBER: 98321-09-93	5	O.O' to 3.O' Fill; red day (10R 3.0' to 3.75' Green day; (10G 3.75' to 19.9' Red daystone; (11 Slightly damp Trace white gypsum Abdt white gypsum Thin gypsum zone a Green daystone (11 Total Depth = 17	3/4), damp 8/2) 80%, be OR 3/4), dry from 11' to 11 at 15', dry	comes 100% at 3.5' 5', slightly damp				FILL	IM-5

LOG

BORING NO. IM-6

LAIDLAW ENVIRONMENTAL

					121-09-93
PROJECT:	CELL 5 INTE	RIM MEASURE	LOCATION:	WAYNOKA, OKLAH	IOMA
RILLED BY	Y: A.W. POOL	DRILLER: W.	ILLIE CARRASCO	METHOD: AIR	ROTARY
START DAT	E: 1-26-95	COMP. DATE: 1-27-	95 SURFACE E	LEVATION: 1387.1	4 FEET
OGGED BY:	: DAN DOWER	S TOTAL DEP	TH: 18.0 FEET BO	35	
WELL IAGRAM DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTER
5	1.0' to 17.9' Red claystone: (I Moist — wet from Damp to 5' Dry Trace scattered (I 20% green claystone) Dry Thin gypsum zone Dry from 9.5' to 13 20% gypsum from 1 Cuttings getting m thin zone (2"), dry Scattered white gr	gypsum from 8.5' to 7', damp one from 8' to 8.5' from 11' to 11.2' 12.5' to 13' oist from 13' to 13.2', moist to wo y to damp from 13.2' to 14.5' ypsum at 18', dusty, dry (106 8/2) begins at 17.9'		CL CL	IM-8.18 7'-18'

LOG

BORING NO. IM-7

CLIENT: USPCI LONE M	OUNTAIN	JOB NO.: 9632	1-09-93
PROJECT: CELL 5 INTE		ATION: WAYNOKA, OKLAHO	
DRILLED BY: A.W. POOL	DRILLER: WILLIE CA		
START DATE: 1-27-95	COMP. DATE: 1-30-95 SURI	FACE ELEVATION: 1386.47	FEET
LOGGED BY: DAN DOWER	S TOTAL DEPTH: 38.0	FEET BGS	
WELL DIAGRAM DPT	DESCRIPTION	GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
DIAGRAM DP O.0' to 2.0' FIII; red clay (IOI 2.0' to 17.4' Red claystone; (becomes more and Trace gypsum at Dry to 12' BOX gypsum from Dry from 12' to 17. 40% gypsum from 15— Trace gypsum at 17.4' to 21.9' Green clay; (IOG 6 Becomes stiff at 1	R 3/4, 10R 4/8), damp to moist (10R 3/4, 10R 4/8), trace gypsum at 2', poist at 3', then dry to slightly damp m at 8' 11.5' to 11.8' 5' 14' to 14.5'		
OB NUMBER: 98321-09-93			

LOG

BORING NO. IM-7

LAIDLAW ENVIRONMENTAL

Page 2 of 2

CLIENT:	USPCI LONE M	OUNTAIN		JOB NO.: 9632	21-09-93
PROJECT:	CELL 5 INTE	RIM MEASURE	LOCATION: W	AYNOKA, OKLAH	
DRILLED B	Y: A.W. POOL	DRILLER: W.	ILLIE CARRASCO	METHOD: AIR	ROTARY
START DA	TE: 1-27-95	COMP. DATE: 1-30-	95 SURFACE EL	EVATION: 1386.4	7 FEET
LOGGED B	Y: DAN DOWER	S TOTAL DEP	TH: <i>38.0 FEET BG</i>	<i>s</i>	
WELL DIAGRAM DP	Г	DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV
30-	21.9' to 37.9' Red claystone; 50% gypsui: from Trace damp red Slightly damp fro 5% green claysto	one from 32" to 32.5", dry		C.L.	IM-7.27.5 17.5°-27.5°
-	Trace grasum at				
-	Top of green cla	y (106 8/2) at 37.9', dry		CL	1M-7.38 27.5'-38'
-	Total Depth	- 38.0 Feet BGS			
40-	-				
) 8 NUMBER: 983	0.00-03	•			

USPCI LOG BORING NO. IM-8

		CECT (CME M	 			105.110	0630	1-00-03
		SPCI LONE M			l :	JOB NO.:		
		CELL 5 INTE	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	LOCATION: P			
		: A.W. POOL		DRILLER: WILLI	1			
 				DATE: 1-31-95	<u></u>		87.86	FEET
LOGGED	BY:	SHAWN LEPH	PERT	TOTAL DEPTH:	19.0 FEET BG	<u> </u>	_	
WELL DIAGRAM	DP T		0	ESCRIPTION		GRAPHIC LO USCS COD		GW SAMPLES/ ISOLATED INTERV.
10	5 1 1 1 1 1 1 1 1 1	Trace gypsum from 1:2.1' to 2.5' 80% green clayst 2.5' to 4.0' Red claystone; di 4.0' to 18.9' Red claystone, and 100% red claystone 90% red claystone 80% red claystone Red claystone, dr Minor gypsum at 13 10% gypsum from 1:	one, 40% reamp olst miner gy ne, dry e, 10% green y	n claystone, damp			Cr Cr	I₩-8.19
20)- -	Green daystone Total Depth = 1	9.0 Feet BG)S				7'-I9'
OB NUMBER: 98	321-0							
								·

LOG

BORING NO. IM-9

		11211011112111					0204 00 03
		SPCI LONE M			T - 2 - 2		6321-09-93
		CELL 5 INTE	RIM ME		LOCATION: W		
<u> </u>		: A.W. POOL	<u> </u>	DRILLER: WILL	,	METHOD: A.	
			!	DATE: 1-31-95	<u> </u>		O.U FEE!
	BY:	SHAWN LEPI	PERT	TOTAL DEPTH:	IS.U FEE BGS		011 041 50 1
WELL DIAGRAM	DPT		מ	DESCRIPTION	ļ	GRAPHIC LOG USCS CODE	
	4	0.0' to 4.0'	<u> </u>			/////	
			ne, 10% gree	en claystone, damp			
	7	•			t		Cr
	\dashv						
	4	Moist					
1	_	4.0' to 19.0' Red claystone, d	amp				
	5-	Minor gypsum fro	m 5' to 8', c	liry	t		
	+	Red claystone; d	iamo from 8'	to 7*	}		
	4	70% red claystor	ne, 30% gree	en claystone from 7° to 9°,	, damp		
					t		
					Ł		
	7	Red claystone, d	amp from 9'	to 13'	F		
	10-			•	Į,		
[4				t		
1							CL
	٦						
	\dashv	Gypsum at 13.5', s	ninor green	claystone to 18', dry	t		
	4				· · · · · · · · · · · · · · · · · · ·		
]],	15-				F		
	וטן				t		
	\dashv	Red claystone; 2	5% gypsum 1	rom 18' to 17'			
	4	Dry			F		
			00 •				
		Red claystone, 20	uz green ci	aystone from 18' to 19'	t		
	+	Total Depth =	19.0 Feet	BGS			1 M− 9.19 7' − 9'
2	0-						٦-١
I POB NUMBER: 9	i 18321-	09-93					
							

LOG

BORING NO. IM-10

CLIENT	USPCI LONE M	MOUNTAIN		JOB NO.: 963	121-09-93
	: CELL 5 INTE		LOCATION:	WAYNOKA, OKLAH	
<u> </u>	BY: A.W. POOL		YNE CALDWELL		
	DATE: 2-8-95	COMP. DATE: 2-6-95	· · · · · · · · · · · · · · · · · · ·		
	BY: DAN DOWER		H: 19.0 FEET BO		
1.5.4	T			GRAPHIC LOG	GW SAMPLES/
DIAGRAM)PT	DESCRIPTION		USCS CODE	ISOLATED INTERV
	0.0' to 2.5'			//////	
		/ (IOR 3/4), w/ 30% green clay, d	amp, plastic		
			·	///// cr	
					_
	2.5' to 18.8' Red claystone; ((IOR 3/4)			
	Very damp to we	t from 4' to 4.5'			
		nd harder with depth			
	7				
	Slightly damp				
	Slightly damp to	dry			
1					
					·
	7				
10)-				
				Cr.	
	7				
	Gypsun from 13' to	o 13.3°			
} .	_				
45	.]				
15-	' 7				
	Gypsúm from 18° to	0 18.5°, dry and dusty	. •		
.	4				
	7				
-	18.8' to 19.0'	(100.0/2)	<u></u>	CL CL	JM-10.19
20-	Green claystone: Total Depth =				7'-9'
 B NUMBER: 983	 321-09-93				
			·		

BORING NO. IM-11

CLIENT: USECLLONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE DORILLED BY: A.M. POOL START DATE: 2-6-95 COMP. DATE: 2-7-95 SURFACE ELEVATION: 1388.32 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 19.0 FEET BGS WELL DPT DESCRIPTION GRAPHIC LOG USCS CODE 100- to 4.0' Fill: red day (IDR 3/4), 10% green clay, trace white gypsum, dano 107- to 4.0' Fill: red day (IDR 3/4), 10% green clay, trace white gypsum, dano 108- to 4.0' Fill: red day (IDR 3/4), seed dano to very dans, plastic Slightly dano to dry from 4.5' to 7' Dry 10- 10- 10- 10- 10- 10- 10- 10- 10- 10-	PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL START DATE: 2-6-95 COMP. DATE: 2-7-95 SURFACE ELEVATION: 1388.32 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 19.0 FEET BGS WELL DPT DESCRIPTION GRAPHIC LOG USCS CODE GRAPHIC LOG USCS CODE GRAPHIC LOG USCS CODE GRAPHIC LOG USCS CODE JOURNAL AS' to 18.5' AS' to 18.5' AS' to 18.5' Dry Dry 10- 50X white gypsum from 15' to 13.5' Dry to sightly deare 15- SoX white gypsum from 16.5' to 83.7' Dry to sightly deare 16.5' to 18.0' Dry to sightly deare 16.5' to 18.1' Dry to sightly deare	0.75:-			0101=:=		····-				
DRILLED BY: A.W. POOL START DATE: 2-6-95 COMP. DATE: 2-7-95 SURFACE ELEVATION: 1388.32 FEET TOTAL DEPTH: 19.0 FEET BGS WELL DOT DESCRIPTION DESCRIPTION GRAPHIC LOG UNCS CODE GRAPHIC LOG UNCS CODE GRAPHIC LOG UNCS CODE JOAN DATE: 2-7-95 DESCRIPTION DESCRIPTION OCT to 4.0' Fill red day (10R 3/4), 10X green cits, trace white gypsus, damp 4.0' to 18.5' A.0' to 18.5' Dry CL SOX white gypsus from 13' to 13.5' JOAN DATE: 2-7-95 SOX white gypsus from 13' to 13.5' JOAN DATE: 2-7-95 SOX white gypsus from 19.5' to 19.7' Dry to sightly damp This is to 19.5' Dry Liss' to 19.0' Liss' to 19.0' CL JM-1118 T-49' TH-1118 T-49'	DRILLED BY: A.W. POOL START DATE: 2-6-95 COMP. DATE: 2-7-95 SURFACE ELEVATION: 1388.32 FEET TOTAL DEPTH: 19.0 FEET BGS WELL OPT OCT: to 4.0' Fill: red day; (108 3/4), 10% green clay, trace white gypsum, damp A.D to 18.5' Bed claystome: (108 3/4), and damp to very damp, plastic Slightly damp to dry from 4.5' to 7' Dry 10- 50% white gypsum from 19.5' to 13.5' Soft white gypsum from 19.5' to 13.5' Total Depth = 19.0 Feet 86S		-					.	L		
START DATE: 2-8-95 COMP. DATE: 2-7-95 SURFACE ELEVATION: 1388.32 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 19.0 FEET BGS WELL DPT DESCRIPTION GRAPHIC LOG USCS CODE GN SAMPLES/ ISOLATED INTER- O.O. to 4.0' Filt. red diay (IOR 3/4), IOX green clay, trace white gypoun, damp 4.0' to 18.5' Red claystone: (IOR 3/4), mod damp to very damp, plastic Stightly damp CL 50% white gypoun from 18' to 13.5' 50% white gypoun from 18.5' to 16.7' Dry to stightly damp CL 185' to 18.0' Creen daystone: (IOG 8/2), stightly damp CL 185' to 18.0' Creen daystone: (IOG 8/2), stightly damp CL 185' to 18.0' 185' to 18.0' CL 185'	START DATE: 2-6-95 COMP. DATE: 2-7-95 SURFACE ELEVATION: 138.32 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 19.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED IN 0.0**To 4.0** Filt red day (10R 3/4), 10X green clay, trace white gypsum, damp 4.0** to 18.3* Red claystone: (10R 3/4), and damp to very damp, plestic Saghity damp to dry from 4.5* to 7* Dry 10- 50X white gypsum from 13* to 13.5* 50X white gypsum from 8.5* to 8.7* Dry to sightly damp 15- Sox white gypsum from 8.5* to 8.7* Dry to sightly damp 16- Total Depth = 19.0 Feet BGS		_		RIM MEA						
DESCRIPTION DESCRIPTION GRAPHIC LOS GW SAMPLES/ ISOLATED INTER OPT DESCRIPTION GRAPHIC LOS GW SAMPLES/ ISOLATED INTER OUCL' to 4.0" Fill red clay (IOR 3/4), IOX green clay, trace white gypous, damp 4.0" to 18.5" Red claystone; (IOR 3/4), mod damp to very damp, plastic Slightly damp to dry from 4.5" to 7" Dry 10— 50X white gypoum from 15' to 13.5" Dry to sightly damp 18.5" to 19.0" Dry to sightly damp	WELL DIAGRAM DPT DESCRIPTION DESCRIPTION DESCRIPTION GRAPHIC LOG USCS CODE GN SAMPLE ISOLATED IN A.O' to IB.S' Red claystone; IOR 3/4), IOX green clay, trace white gypsum, damp 4.O' to IB.S' Red claystone; IOR 3/4), mod damp to very damp, plastic Sightly damp to dry from 4.5' to 7' Dry 10- 5.0X white gypsum from ID' to I3.5' SOX white gypsum from ID' to I3.5' Total Depth = IS.O. Feet BGS						Ţ.				<u> </u>
DESCRIPTION GRAPHIC LOS USCS CODE GW SAMPLES/ ISOLATED INTER Out to 4.0" Fill red diay (IOR 3/4), IOX green cisy, trace white gyposus, damp 4.0" to 18.5" Red claystone; (IOR 3/4), mod damp to very damp, plastic Slightly damp to dry from 4.5" to 7" Dry CL SOX white gyposus from 15" to 13.5" SOX white gyposus from 19.5" to 19.7" Dry to slightly damp (CL IM-ILI9 7-45"	DESCRIPTION GRAPHIC LOG USCS CODE C.O. to 4.0' Filt: red clay (IOR 3/4), IOX green clay, trace white gypsum, damp 4.0' to I8.5' Red claystone; (IOR 3/4), and damp to very damp, plastic Sightly damp to dry from 4.5' to 7' Dry SOX white gypsum from 13' to 13.5' 50X white gypsum from 15.5' to 83.7' Dry to sightly damp Total Depth = 19.0 Feet BGS	· · · · · · · · · · · · · · · · · · ·							VATION: 13	88.32	PFEET
DIAGRAM DIA	DIAGRAM DISCS CODE ISOLATED IN O.C. to 4.0° Fill red day (10R 3/4), 10% green clay, trace white gyosus, damp 4.0° to 18.3° Red claystone; (10R 3/4), mod damp to very damp, plastic Signity damp to dry from 4.5° to 7' Dry 10- 50% white gyosum from 10° to 13.5° Sox white gyosum from 10° to 13.5° 15- Sox white gyosum from 18.5° to 19.7° Dry to signity damp 18.9° to 19.0° Green claystone; (10G 9/2), signity damp Total Depth = 19.0 Feet 86S	LOGGED	BY:	DAN DOWER.	5	TOTAL DEPT	H: 19.0 FEET !	BGS			T
Filt; red day (IOR 3/4), IOX green day, trace white gypsum, damp 4.0' to IS.9' Red claystone; IIOR 3/4), mod damp to very damp, plastic Slightly damp to dry from 4.5' to 7' Dry 50X white gypsum from I3' to I3.5' 15— 50X white gypsum from I9.5' to I8.7' Dry to slightly damp IIS.9' to IS.0' Green daystone; (IOG 8/2), slightly damp	Filt: red day (10R 3/4), 10X green clay, trace white gypsum, damp 4.0' to 18.3' Red clays trone: (10R 3/4), mod damp to very damp, plastic Slightly damp to dry from 4.5' to 7' Dry CL 50X white gypsum from 13' to 13.5' 15— 50X white gypsum from 16.5' to 16.7' Dry to sightly damp 18.5' to 19.0' Green daystone: (10G 8/2), sightly damp Total Depth = 19.0 Feet 86S		PT		DE	ESCRIPTION					GW SAMPLES/
		15-		4.0° to 18.9° Red claystone; (I Slightly damp to company to slightly damp to company to slightly damp to sli	OR 3/4), moc ry from 4.5° from 13° to 13 rom 18.5° to	I damp to very damp, to 7" 15.7"				CL	J#-ILI9

LOG

BORING NO. IM-12

LAIDLAW ENVIRONMENTAL

CLIENT: U	SPCI LONE M	OUNTAIN	/	. <u> </u>	l.in	B NO.:	96.32	1-09-93
	CELL 5 INTE			LOCATION:				
	: A.W. POOL		DRILLER: WAYN		- 1-			ROTARY
START DATE	E: 2-7-95	L	 	SURFACE E				
LOGGED BY:	DAN DOWER	s ·	TOTAL DEPTH:					<u> </u>
WELL DIAGRAM DPT		DE	SCRIPTION			RAPHIC LO		GW SAMPLES/
	Fill; dark green plants of the fill; dark green plants of 7.0° 50% dark green ci 7.0° to 18.9° Red claystone; da wet, producing wat 18.9° to 19.0° Green claystone; (1 Total Depth = 15	estic clay from ay, 50% red comp er at 18' to 19	laystone (IOR 3/4)				CL	1 M− 12.19 7 ⁻ −19

BORING NO. IM-13

CLIENT: USPCI	LONE MOUNTAI			JOB NO.:	9632	1-09-93
PROJECT: CELL			LOCATION: W			
DRILLED BY: A.W	·	DRILLER: WAYN		METHOD:		
START DATE: 2-		DATE: 2-7-95		EVATION: 13	86.89	FEET
LOGGED BY: DAN		TOTAL DEPTH:				
WELL DIAGRAM DPT	۵	ESCRIPTION		GRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTERV.
5—————————————————————————————————————	to 5.0' red clay, moderately to v to 7.0' claystone: (10R 3/4), da	n D			FILL CL	
Red	to 17.8° claystone; damp tered gypsum from 10° to	10.5', dry				
	mes damp below 15" gypsum from 15" to 15.5"				CL	
Green	to 18.0" daystone: (106 8/2), d otal Depth = 18.0 Feet B				CL	1M−13.18 7°−18°
10B NUMBER: 98321-09-93	 	·			·	

LOG

BORING NO. IM-14

LAIDLAW ENVIRONMENTAL

PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL START DATE: 2-8-95 COMP. DATE: 2-8-95 SURFACE ELLOGGED BY: DAN DOWERS TOTAL DEPTH: 18.0 FEET BG WELL DIAGRAM DPT DESCRIPTION O.0' to 5.0' Fill; 80% red clay (10R 3/4), 20% green clay, damp Very damp to wet, plastic 5 5.0' to 15.0 Red claystone: dry to slightly damp	LEVATION: 1387.33	ROTARY
START DATE: 2-8-95 COMP. DATE: 2-8-95 SURFACE EL LOGGED BY: DAN DOWERS TOTAL DEPTH: 18.0 FEET BG WELL DIAGRAM DPT DESCRIPTION O.O' to 5.0' Fill; 80% red clay (10R 3/4), 20% green clay, damp Very damp to wet, plastic 5-5-5.0' to 15.0	GRAPHIC LOG USCS CODE	GW SAMPLES/
WELL DIAGRAM DPT DESCRIPTION O.O' to 5.0' Fill; 80% red clay (IOR 3/4), 20% green clay, damp Very damp to wet, plastic 5 5.0' to 15.0	GRAPHIC LOG USCS CODE	GW SAMPLES/
WELL DIAGRAM O.O' to 5.0' Fill; 80% red clay (10R 3/4), 20% green clay, damp Very damp to wet, plastic 5 5.0' to 15.0	GRAPHIC LOG USCS CODE	
O.O' to 5.0' Fill; 80% red clay (IOR 3/4), 20% green clay, damp Very damp to wet, plastic 5 5.0' to 15.0	USCS CODE	
Fill; 80% red clay (IOR 3/4), 20% green clay, damp Very damp to wet, plastic 5.0' to 15.0	FILL	
0.1' gypsum at 13' 0.1' gypsum at 14.5' Gypsum from 15' to 15.5' 15.5' to 17.8' Red claystone 17.8' to 18.0' Green daystone; (106 6/2), dry Total Depth = 18.0 Feet 8GS	CL GP	IM-14.18 7'-18'

LOG

BORING NO. IM-15

CALDEAN C	MATHOMETAL						
CLIENT: (USPCI LONE M	OUNTAI	N		JOB NO.:	9832	1-09-93
PROJECT:		RIM MEA	,	LOCATION:			····
ļ	Y: A.W. POOL		DRILLER: WAYN	, , , , , , , , , , , , , , , , , , , 			
START DA	TE: 2-8-95	COMP. E		SURFACE E		386.81	FEET
LOGGED BY	T: DAN DOWER	<u> </u>	TOTAL DEPTH:	17.5 FEET BO	55		,
WELL DPT		Di	ESCRIPTION		GRAPHIC I USCS CO		GW SAMPLES/ ISOLATED INTERV.
10- 10- 20-	5.5' to 17.3' Red claystone; dr Red claystone wit 0.1' gypsum at 10: 0.1' gypsum at 14.5 0.1' gypsum at 14.5 Total Depth =	y h trace gyp:	sum from 6° to 7°, slightly	damp		CL CL	1 M− 15.17.5 7'−17.5'
OB NUMBER: 98321-	-na-a2	<u>.</u>					

LOG

BORING NO. IM-16

LAIDLAW ENVIRONMENTAL

DIAGRAM USCS CODE ISOLATE 0.0" to 4.0" Fil: red city (IOR 3/4), damp 4.0" to 5.0" Seeen claystone: (IOR 9/2), damp, slightly plastic 5.0" to 8.0" Red claystone: slightly damp CL 10.0" to 18.0" Red claystone: slightly damp CL 11.0." to 18.0" Red claystone: damp Trace gypsum at 12.5", wet Met. producing water at 13" to 19.6" CL ISO." to 19.6"	-93	96321-09	JOB NO.: 96			N	IOUNTAI	ISPCI LONE M	Γ: L	CLIEN
DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY				: WA	LOCATION:	SURE	RIM MEA	CELL 5 INTE	CT:	PROJE
DESCRIPTION GRAPHIC LOG USCS CODE O.O.* to 4.0* Fill: red day (IDR 3/4), damp 4.0* to 5.0* Freen daystone: (IDS 8/2), damp, slightly plastic Soff to 8.0* Red claystone: (IDR 3/4), slightly damp CL 8.0* to 19.0* Freen daystone: slightly damp CL 100 IQU' to 19.0* Red claystone: daystone: slightly damp CL ISO, to 19.0* Red claystone: daystone: da	RY					DRILLER: WAYN	•	: A.W. POOL	DBY	DRILLE
WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG GW S/ S/ ISOLATE O.0° to 4.0° Filt red day (IOR 3/4), damp 4.0° to 5.0° Green daystone: (IOG 6/2), damp, sightly plastic 5.0° to 8.0° Algorithms (IOR 3/4), slightly damp CL 8.0° to IO.0° Green daystone: slightly damp CL 10.0° to 19.0° Red claystone: slightly damp CL 15.0° Trace gypsum at 12.5°, wet Met, producing water at 13° to 19.8° ISON to 19.8°	E T	87.40 FE	/ATION: 1387.	ELEV	SURFACE I	DATE: 2-9-95	COMP. D	E: <i>2-9-95</i>	DAT	START
DESCRIPTION DESCRIPTION USCS CODE SOLATE O.O' to 4.0' FE; red day (IOR 3/4), damp FE; red day (IOR 3/4), damp FILL O.O' to 5.0' Green daystone: (IOB 8/2), damp, sightly plastic S.O' to 8.0' Red daystone: slightly damp CL 10 IO.O' to 19.0' Red claystone: damp Trace gyosun at 12.5', wet wet, producing water at 13' to 19.8' ISOLATE DESCRIPTION USCS CODE ISOLATE CL CL CL S.O' to 5.0' Red claystone: sightly damp CL IO.O' to 19.0' Red claystone: slightly damp CL ISOLATE CL IO.O' to 19.8'				3 <i>GS</i>	19.6 FEET B	TOTAL DEPTH:	S	: DAN DOWER) BY	LOGGE
Fill. 4.0' to 5.0' Green disystone: (106 8/2), damp, sightly plastic 5.0' to 8.0' Red claystone: (10R 3/4), slightly damp CL 8.0' to 10.0' Green daystone: sightly damp CL 10 10.0' to 18.0'' Red claystone: damp Trace gypsun at 12.5', wet wet, producing water at 13' to 19.8'' 15— 15.0' to 19.6' CL	SAMPLES/ ATED INTER					ESCRIPTION	D.	· · · · · · · · · · · · · · · · · · ·	DPT	
20 Green claystone: (106 8/2), damp	M−18.19.8 C'−19.8'	CL CL	C.L			ntiy damp	(10G 8/2), damp slightly damp no 2.5', wet er at 13' to 1	4.0' to 5.0' Green claystone: 5.0' to 8.0' Red claystone: (1 10.0' to 19.0' Red claystone: dai Trace gypsum at 12 Wet, producing wat Wet, producing wat Green claystone: (1	10	

LOG

BORING NO. IM-17

CLIENT:	USPCI LONE M	OUNTAIN		, ** <u>****</u> ***	JC	B NO.:	9832	1-09-93
ROJECT:	CELL 5 INTE	RIM MEASURE		LOCATION:	WAYN	OKA, OF	CLAHO	DMA
RILLED E	Y: A.W. POOL	DRILLER	: WAYN	E CALDWELL	. ME	THOD:	AIR F	ROTARY
TART DA	TE: 2-9-95	COMP. DATE: 2-	9-95	SURFACE E	ELEVA	TION: 13	387.00	FEET
OGGED B	Y: DAN DOWER	S TOTAL E	DEPTH:	9.6 FEET B	GS			
WELL DPT	г	DESCRIPTION	N			RAPHIC LO USCS COD		GW SAMPLES/ ISOLATED INTER
5	Gypsum from 7° to	(10G 8/2), dry OR 3/4), damp 7.2' (10G 8/2), damp to moist above					CL CL CL	IM-17.19.8
20-	Green daystone: (I			/		·	الت	0.–13.8.
	I DUMI DEDIG # 15	au feri 665					l l	

LOG

BORING NO. IM-18

LAIDLAW ENVIRONMENTAL

CLIENT: (USPCI LONE M		<u> </u>		JOB NO.:	9632	1-09-93
PROJECT:	CELL 5 INTE	RIM MEA	SURE	LOCATION: A	MAYNOKA, OK	LAHO	IMA
RILLED B	Y: A.W. POOL		DRILLER: WAYN	E CALDWELL	METHOD: A	AJR R	OTARY
TART DAT	TE: 2-9-95	COMP. [DATE: 2-9-95	SURFACE EL	EVATION: 131	B7.70	FEET
OGGED BY	: DAN DOWER	5	TOTAL DEPTH:	19.0 FEET BG	5		
WELL IAGRAM DPT		ום	ESCRIPTION		GRAPHIC LO USCS CODE	-	GW SAMPLES/ ISOLATED INTER
5-	4.0' to 4.5' Green claystone: 4.5' to 7.0' Red claystone: (i) Gypsum from 7' to 7.5' to 8.0' Red claystone 8.0' to 10.0' Green claystone: 10.0' to 17.0' Red claystone: de	damp OR 3/4), dry 7.5				FILL CL GP CL CL	
	Gypsum from 17' to	17.3'	·			GP	1
	17.3' to 18.9' Samples wet from	18' to 19'				CL	
20-	18.9' to 19.0' Green claystone: Total Depth =		és		1,1,1,1,1,1,1	CL	1M-18.19 0°-19°
NUMBER: 98321							·

LOG

BORING NO. IM-19

LAIDLAW ENVIRONMENTAL

PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL START DATE: 2-9-95 COMP. DATE: 2-9-95 SURFACE ELEVATION: 1387.75 FEET LOGGED BY: DAN DOWERS DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION LOCATION: WAYNOKA, OKLAHOMA METHOD: AIR ROTARY SURFACE ELEVATION: 1387.75 FEET GRAPHIC LOG GRAPHIC LOG GRAPHIC LOG GW SAMPLES/	CLIENT: /	USPCI LONE MOUNTA	1 7A/	· · · · · · · · · · · · · · · · · · ·	100.110		
DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY				1			
START DATE: 2-9-95 COMP. DATE: 2-9-95 SURFACE ELEVATION: 1387.75 FEET			F	<u> </u>			
DOC DAY DOWERS TOTAL DEPTH. 18.6 FEET BGS GRAPHIC LOG GH SAMPLES/ ISOLATED INTER							
MELL DPT DESCRIPTION GRAPHIC LOG GN SAMPLES/ ISOLATED INTER				· · · · · · · · · · · · · · · · · · ·		387.75	FEET
DIAGRAM DIAGRAM DISCRIPTION DISCRIPT	LOGGED BY	: DAN DOWERS	TOTAL DEPTH:	18.6 FEET B	GS		
Fill: red clay (IOR 3/4), 20% green clay			DESCRIPTION				GW SAMPLES/ ISOLATED INTERV
NUMBER: 98321-09-93	10-	Fill: red day (IOR 3/4), 203 4.5' to 8.0' Green daystone: (IOG 8/2), 8.0' to 8.0' Red claystone: (IOR 3/4), d 8.0' to 1L0' Green daystone: (IOG 8/2), IL0' to 17.0' Red claystone: damp Gypsum at 12.5' Gypsum at 12.5' Red claystone 18.5' to 18.6' Green daystone: dry to damp Total Depth = 18.6' Feet E	damp damp damp			CL CL	

LOG

BORING NO. IM-20

LAIDLAW ENVIRONMENTAL

CLIENT: (USPCI LONE MO	JOB NO.: 98321-09-93					
PROJECT:	CELL 5 INTER	RIM MEASURE		LOCATION:	WAYNOK	4 OKLAHO	IMA
DRILLED B	Y: A.W. POOL	DRILLER	R: WAYN	E CALDWELL	. METH	IOD: AIR F	ROTARY
START DAT	TE: 2-9-95	COMP. DATE: 2-	9-95	SURFACE E	ELEVATIO	N: 1387.6	OFEET
LOGGED BY	Y: DAN DOWERS	TOTAL E	DEPTH:	19.0 FEET B	GS		
WELL DIAGRAM DPT		DESCRIPTION	N		4	HIC LOG	GW SAMPLES/ ISOLATED INTER
10-15-	0.0° to 4.0° Fill; red clay (IOR 4.0° to 4.5° Green claystone; dans 7.0° to 10.0° Green claystone; dans 10.0° to 17.0° Red claystone; dry Gypsum from 14° to 1 Damp to moist from 1 17.5° to 18.8° Red claystone 18.8° to 19.0° Green claystone; (IO Total Depth = 19.0°	(106 8/2), damp Try to slightly damp to slightly damp 14.2' 14.2' to 18.8'				CL CL CL	0'-19' 1M-20.19

LOG

BORING NO. IM-21

LAIDLAW ENVIRONMENTAL

SLIENT: (USPCI LONE M	JOB NO	JOB NO.: 96321-09-93			
PROJECT:	CELL 5 INTE	RIM MEASURE	LOCATI	ON: WAYNOKA,	OKLAH	DMA
DRILLED B	Y: A.W. POOL	DRILLER:	WAYNE CALDY	VELL METHO	: AIR I	ROTARY
START DAT	TE: 2-9-95	COMP. DATE: 2-9	-95 SURFAC	E ELEVATION:	1387.9	4 FEET
OGGED BY	: DAN DOWER	5 TOTAL DE	PTH: 19.0 FEE	T BGS		
WELL DET		DESCRIPTION		GRAPHIC USCS C		GW SAMPLES/ ISOLATED INTER
5-	0.0' to 4.5' Fill; red day (10F 4.5' to 5.0' Green daystone 5.0' to 7.5' Red claystone; da Gypsum from 7.5' to 8.0' to 9.0' Red claystone 9.0' to 12.0' Green daystone; dry Trace of gypsum a Gypsum from 17' to 17.5' to 18.9' Red claystone 18.9' to 19.0' Green daystone Total Depth = 15	damp to dry			CL CL CL CL	0'−19'

LOG

BORING NO. IM-22

LAIDLAW ENVIRONMENTAL

CLIENT:	USPCI LONE M	OUNTAI	N .	·	J0B NO.:	9832	1-09-93
PROJECT:	WAYNOKA, OKLAHOMA						
DRILLED B	METHOD: AIR ROTARY						
START DAT	TE: 2-9-95	COMP. E	DATE: 2-9-95	SURFACE E	LEVATION: 1	 3 <i>87.0</i> 6	FEET
LOGGED BY	Y: DAN DOWER	S	TOTAL DEPTH:	19.0 FEET B	G S		
WELL DIAGRAM DPT		DE	ESCRIPTION		GRAPHIC L USCS COL		GW SAMPLES/ ISOLATED INTERV
10— 15— 20—	O.O' to 4.0' Fill; red day (IOR 4.0' to 5.0' Green daystone; 5.0' to 7.0' Red daystone; (II 7.0' to 7.5' Green daystone; dry 13.0' to 19.0' Red claystone 6ypsum from 18' to 17.0' to 18.9' Red claystone 18.9' to 19.0' Green daystone; (II Total Depth = 19	(106 8/2), so OR 3/4), dry (106 8/2), dry to slightly (17')	to slightly damp			CL CL CL CL	0'-19'

BORING NO. IM-23

BORING NO. IM-24

								
CLIENT:	JOB NO.: 96321-09-93							
					WAYNOKA, OKLAHOMA			
DRILLED E	METHOD: AIR ROTARY							
	TE: 2-13-95		DATE: 2-13-95	<u> </u>		85.26	FEET	
LOGGED B	Y: DAN DOWER	5	TOTAL DEPTH:	17.0 FEET BG	S	-		
WELL DP	т	ום	ESCRIPTION		GRAPHIC LO USCS COD	-	GW SAMPLES/	
	0.0° to 1.0° Fill: gypsum, clay, 1.0° to 4.0° Fill: red clay (10F) 4.0° to 18.5° Red claystone; (1 claystone, damp	gravel, fill f 3/4), plasti OR 3/4), tra imp 10.1	rom parking lot c, damp ce - scattered (10%) gre	en		-	GW SAMPLES/ ISOLATED INTERV.	
20-								
NUMBER: 98321-	-09-93	· · · · · · · · · · · · · · · · · · ·				ł		

LOG BORING NO. IM-25

LAIDLAW ENVIRONMENTAL

CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL START DATE: 2-13-95 COMP. DATE: 2-14-95 SURFACE E LOGGED BY: DAN DOWERS WELL DIAGRAM DPT DESCRIPTION 0.0' to L0' Fill: gravelly clay, gypsum, gravel from parking tot, red clay, damp to moist 1.0' to 5.0' Fill: red day (10R 3/4), moist to damp	LEVATION: 1385.69	BOTARY
DRILLED BY: A.W. POOL START DATE: 2-13-95 COMP. DATE: 2-14-95 SURFACE E LOGGED BY: DAN DOWERS TOTAL DEPTH: 17.0 FEET BG WELL DIAGRAM DPT DESCRIPTION 0.0' to L0' Fill: gravelly clay, gypsum, gravel from parking lot, red clay, damp to moist 1.0' to 5.0'	METHOD: AIR RELEVATION: 1385.69 GS GRAPHIC LOG USCS CODE FILL	GW SAMPLES/
START DATE: 2-13-95 COMP. DATE: 2-14-95 SURFACE E LOGGED BY: DAN DOWERS TOTAL DEPTH: 17.0 FEET BG WELL DIAGRAM DPT DESCRIPTION 0.0' to L0' Fill: gravelly clay, gypsum, gravel from parking lot, red clay, damp to moist 1.0' to 5.0'	GRAPHIC LOG USCS CODE	GW SAMPLES/
WELL DIAGRAM DPT DESCRIPTION O.O' to LO' Fill: gravelly clay, gypsum, gravel from parking lot, red clay, damp to moist 1.0' to 5.0' TOTAL DEPTH: 17.0 FEET BG	GRAPHIC LOG USCS CODE	GW SAMPLES/
WELL DIAGRAM DPT DESCRIPTION O.O' to LO' Fill; gravelly clay, gypsum, gravel from parking lot, red clay, damp to moist 1.0' to 5.0'	GRAPHIC LOG USCS CODE	
O.O' to LO' Fill: gravelly clay, gypsum, gravel from parking lot, red clay, damp to moist 1.0' to 5.0'	USCS CODE	
Fill: gravelly clay, gypsum, gravel from parking lot, red clay, damp to moist 1.0' to 5.0'		
5.0' to ti.9' Red claystone: (IIOR 3/4), dry to slightly damp Damp Gypsum from IO.5' to IO.7' Thin gypsum at I4' 15 IB.8' to I7.0' Green claystone: (IOG 8/2), damp Total Depth = I7.0 Feet BGS	T.	3M-25.17 7∵-17″

LOG

BORING NO. IM-26

LAIDLAW ENVIRONMENTAL

TLIEN!:	USPCI LONE M	NIATAUO			JOB N	10.: 9	9632	1-09-93
PROJECT:	CELL 5 INTE	RIM MEASURE		LOCATION:				<u> </u>
DRILLED E	Y: A.W. POOL	DRIL	LER: WAYN	E CALDWELL				ROTARY
START DA	TE: 2-14-95							
	Y: DAN DOWER			17.0 FEET B				·
WELL DPT		DESCRIP	TION		GRAPH	IC LOG		GW SAMPLES/
				<u> </u>				
-	0.0' to 0.3' Concrete: in park	ing tot		/	A2-A2-A2-A2-A2-A2-A2-A2-A2-A2-A2-A2-A2-A	2 A 2 A 2	CONC	
-	0.3' to 4.0'				• • • • •			
-	Fill: red clay (10A	3/4), moist						
					• • • • •		FILL	
	1				• • • • •	. • • .		
-	4.0' to 18.8'				/////	•		
5-	Red claystone; (!	OR 3/4), damp to dry						
	Trace of gypsum a	at 5.5'						
	İ				V////		ļ	
-								
10-								
							CL	
								•
-								
	black do san						1	
	wet from 13' to 17', (produces water at 13	' to 17'					
15-		·						
				ţ	////			
					/////			
一十	18.8° to 17.0°				4444	4,		•••
	Green daystone; (1)			/				1 M- 26.17 7' - 17'
	Total Depth - 17	u reet BGS						
20-								
1 1				İ				

LOG

BORING NO. IM-27

LAIDLAW ENVIRONMENTAL

LOG

BORING NO. IM-28

LAIDLAW ENVIRONMENTAL

CLIENT:	USPCI LONE MO	DUNTAIN	<u> </u>	<u> </u>	JOB NO.: 96.	321-09-93
PROJECT:	CELL 5 INTER	RIM MEAS	URĒ	LOCATION:	WAYNOKA, OKLAH	HOMA
DRILLED B	BY: A.W. POOL	а	RILLER: WAYN	E CALDWELL	METHOD: AIR	ROTARY
START DA	TE: 2-15-95	COMP. DA	TE: 2-16-95	SURFACE E	LEVATION: 1388.	37 FEET
LOGGED B	Y: DAN DOWERS	5 T	OTAL DEPTH:	19.0 FEET BG	îS	
WELL DIAGRAM DPT	т	DES	CRIPTION	-	GRAPHIC LOG USCS CODE	GW SAMPLES/
10— 15— 20—	5.5' to 18.8' Red claystone; (10 Damp to dry 10% gypsum from 18: 10% gypsum from 18: 18.8' to 19.0' Green claystone; (10 Total Depth = 19	08 3/4), dry, ha	day, plastic, damp		FIL	

LOG

BORING NO. IM-29

LAIDLAW ENVIRONMENTAL

CLIENT: USPCI	LONE MOUNTAI	N		JOB NO.: 96.	321-09-93
PROJECT: CELL	5 INTERIM MEA	SURE	LOCATION: W	YAYNOKA, OKLAH	
DRILLED BY: A.W.	POOL	DRILLER: WAYN		METHOD: AJR	
START DATE: 2-1	16-95 COMP. C	DATE: 2-16-95	SURFACE EL	EVATION: 1387.	25 FEET
LOGGED BY: DAN	DOWERS	TOTAL DEPTH:	18.0 FEET BGS	5	
DIAGRAM DPT	ام	ESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
5— 5.5 to Red ciz Damp 10— 30% gyt Become: 15— Gypsum 17.8 to 1 Green ci	17.8' aystone: damp to dry psum from 11.8' to 12' s dry below 14' from 15' to 15.1'			FIL CL	IM-29.18 7'-18'

LOG

BORING NO. IM-30

LAIDLAW ENVIRONMENTAL

CLIENT	: L	SPCI LONE M	OUNTA	IN		JOB NO.:	9632	1-09-93		
PROJEC	PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA									
DRILLE	D BY	: A.W. POOL	•••	DRILLER: WAYN						
START	DAT	E: 2-16-95	COMP.	DATE: 2-16-95	SURFACE E	LEVATION: 13	386.8	4 FEET		
LOGGE	BY	: DAN DOWER	5	TOTAL DEPTH:	18.0 FEET B	G <i>S</i>				
WELL DIAGRAM	DPT			ESCRIPTION		GRAPHIC L USCS COD	_	GW SAMPLES/ ISOLATED INTERV		
·		Q.0' to 4.0' Fill: 50% red clay Fill: red clay from 4.0' to 17.8' Red claystone; (1	2' to 4'	and 50% green clay (106	8/2), damp		FILL			
	5-			 to 7', frags up to 1/2" diam	n.					
	10-	Wet from 9' to 12'					CL			
		Damp to dry					:			
1	15-									
	1	17.8' to 18.0' Green claystone; ((106 8/2), d	and	Л		Cr	1₩-30.18 7'-18'		
20	0-	Total Depth =	18.0 Feet B	GS				, -10		
NUMBER: 90	8321-C	9-93								

LOG

BORING NO. IM-31

LAIDLAW ENVIRONMENTAL

CLIENT: USECLEONE MOUNTAIN LOCATION: MAYNOKA, OKLAHOMA											
DRILLED BY: A.M. POOL START DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE ELEVATION: 1388.54 FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS WELL DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE ELEVATION: 1388.54 FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS WELL DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE ELEVATION: 1388.54 FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS GN SAMPLES/ SOLATED INTER 10.0 to 7.0' Pirst 7 not legged 10.1 to 17.0' Red dispitone: dry 10.1 to 17.0' Pert of surface in the su											
START DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE ELEVATION: 1986.54 FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED INTER 1.07 to 17.0* Feet 1.70* Fe					WAYNOKA, OKLAH	OMA					
DESCRIPTION SAPPLES OF SAPPLIC LOG USCS CODE OD' to 7.0' First 7 not ligged 1.0' to 10.0' Red desystore; dry 10x gybsus from 5' to 18', dry Dry Very wet from 18' to 17' Green daystone begins at 17' Total Depth = 17.0 Feet 86S Total Depth = 17.0 Feet 86S											
MELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE SW SAMPLES/ ISOLATED INTER 1.0' to 17.0' First 7' not logged 7.0' to 17.0' Red claystone: dry 100 Dry Dry CL Wet 15 Very wet from 16' to 17' Green claystone begins at 17' Total Depth = 17.0 Feet BGS 1H-3.17' 7'-17'			· · · · · · · · · · · · · · · · · · ·	5 SURFACE EL	EVATION: 1386.5	4 FEET					
DIA GRAM DIA DESCRIPTION DESCRIPTION USCS CODE ISOLATED INTER 1.0' to 17.0' Pest 1' not logged 1.0' to 17.0' Red daystone: dry 104. gypsum from 5' to 18', dry 105. Dry Dry CL Wet 15. Very wet from 18' to 17' Green disystone begins at 17' Total Depth = 17.0 Feet 86S	rogged B.	Y: SHAWN LEPH	PERT TOTAL DEPT	H: 17.0 FEET BG	S						
First 7" not logged 7.0" to 17.0" Red claystone: dry 104 105 Very wet from 16" to 17" Green claystone begins at 17" Total Depth = 17.0 Feet 86S	WELL DIAGRAM DPT	r	DESCRIPTION								
	5	0.0' to 7.0' First 7' not logge 7.0' to 17.0' Red claystone: dr. 10% gypsum from 9 Dry Wet Very wet from 18' to Green claystone be	y to 18', dry egins at 17'		USCS CODE	ISOLATED INTERV					
NUMBER: 98321-09-93	20-					·					
NUMBER: 98321-09-93											
	NUMBER: 98321-	09-93]					

LOG

BORING NO. IM-32

LAIDLAW ENVIRONMENTAL

CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL START DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE E LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 19.5 FEET BO WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' 80% green claystone, 20% red claystone, damp 5.5' to 19.5' Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7' to 9.5', damp Red claystone, damp Red claystone, damp	LEVATION: 1388.55	OMA ROTARY
DRILLED BY: A.W. POOL START DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE E LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 19.5 FEET BO WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' 80% green claystone, 20% red claystone, damp 5.5' to 19.5' Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7' to 9.5', damp Red claystone, damp	METHOD: AIR F	GW SAMPLES/
START DATE: 2-20-95 COMP. DATE: 2-20-95 SURFACE E LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 19.5 FEET BO WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' 80% green claystone, 20% red claystone, damp 5.0' to 5.5' 80% green claystone, 40% red claystone, damp 5.5' to 19.5' Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7' to 9.5', damp Red claystone, damp	GRAPHIC LOG USCS CODE	GW SAMPLES/
WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' 80% green claystone, 20% red claystone, damp 5.0' to 5.5' 80% green claystone, 40% red claystone, damp 5.5' to 19.5' Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7' to 9.5', damp Red claystone; minor green claystone from 7' to 9.5', damp	GRAPHIC LOG USCS CODE	GW SAMPLES/
DESCRIPTION O.O' to 5.0' 80% green claystone, 20% red claystone, damp 5.0' to 5.5' 80% green claystone, 40% red claystone, damp 5.5' to 19.5' Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7' to 9.5', damp Red claystone, damp	GRAPHIC LOG USCS CODE	
DESCRIPTION 0.0' to 5.0' 80% green claystone, 20% red claystone, damp 5.0' to 5.5' 80% green claystone, 40% red claystone, damp 5.5' to 19.5' Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7' to 9.5', damp Red claystone, damp	USCS CODE	
5.0° to 5.5° 80% green claystone, 40% red claystone, damp 5.5° to 19.5° Red claystone; minor gypsum, damp Red claystone; minor green claystone from 7° to 9.5°, damp Red claystone; minor green claystone from 7° to 9.5°, damp		
Gypsum at 14.5', damp Red claystone Gypsum at 17', damp Red claystone Green claystone Green claystone begins at 19.5 Total Depth = 19.5 Feet 8GS	ď	I₩-32.20 7'-19.5'

LOG

BORING NO. IM-33

LAIDLAW ENVIRONMENTAL

CLIENT: (JSPCI LONE M	OUNTAIN	V	<u> </u>	JOB NO.:	9632	1-09-93	
ROJECT:	CELL 5 INTE	RIM MEA	SURE	LOCATION:	WAYNOKA, O	KLAHC	DMA	
DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY								
TART DAT	E: 2-20-95	COMP. D	ATE: 2-20-95	SURFACE E	LEVATION: 1	391.99	FEET	
OGGED BY	: SHAWN LEPF	PERT	TOTAL DEPTH:	23.0 FEET B	GS	_		
WELL AGRAM DPT		DE	SCRIPTION		GRAPHIC L USCS COL		GW SAMPLES/ ISOLATED INTER	
15- 15- 20-	0.0' to 2.5' 80% red claystons 2.5' to 5.0' 90% red claystons; da Wet from 7.5' to 10 Minor gypsum from Damp from 12.5' to Light red to brown Dry from 15' to 20' Gypsum from 17.5' t 18.0' to 21.0' Red claystone Damp from 20' to 2 Gypsum from 21' to	e, 20% green of the control of the c	claystone, damp				ISOLATED INTER	
	Red claystone Green claystone be Total Depth = 2		s		<u> </u>	CL	IM-33.22 10'-23'	
25- UMBER: 98321-	09-93			· .				

LOG

BORING NO. IM-34

LAIDLAW ENVIRONMENTAL

START DATE: 2-21-95 COMP. DATE: 2-21-95 SURFACE ELEVA LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 15.0 FEET BGS	METHOD: AIR ROTARY
DRILLED BY: A.W. POOL START DATE: 2-21-95 COMP. DATE: 2-21-95 SURFACE ELEVA LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 15.0 FEET BGS WELL DIAGRAM DPT 0.0' to 8.0'	
START DATE: 2-21-95 COMP. DATE: 2-21-95 SURFACE ELEVA LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 15.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION	ATION: 1384.41 FEET
WELL DIAGRAM DPT DESCRIPTION G	
DIAGRAM DPT DESCRIPTION 0.0' to 8.0'	
	GRAPHIC LOG GW SAMPLES/ USCS CODE ISOLATED INTERV.
Red claystone and clay from 2.5' to 5' 5 — Clay and limestone gravel from 5' to 8' 8.0' Blue green claystone layer over red claystone, minor green claystone, damp 10 — Interbedded gypsum from 11' to 13.5' Damp Green claystone begins at 15' Total Depth = 15.0 Feet BGS	CL CL IM-34.15 8'-15' DRY

USPCI LOG

BORING NO. IM-35

LAIDLAW ENVIRONMENTAL

					-	
CLIENT: L	JSPCI LONE M	OUNTAIN	············	· ,	JOB NO.: 96	
	CELL 5 INTE		 		NAYNOKA, OKLA	
	Y: A.W. POOL			E CALDWELL	<u> </u>	
<u> </u>					EVATION: 1385	.46 FEET
LOGGED BY	: SHAWN LEPI	PERT TO	TAL DEPTH:	16.5 FEET BG	<u>s</u>	
WELL DIAGRAM DPT		DESC	RIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
-	2.5° to 18.5°	e, very wet (bene inor green daysto			F	ILL
5-	Custs with a light Minor green clays	coating of tan so	il from 5° to 7°			
10-	⊩nor gypsum from	n 9.5" to 12"				EL .
-	50% gypsum from	12' to 13'				
15-	Green daystone t		· · · · · · · · · · · · · · · · · · ·			
	Total Depth -	18.5 Feet BGS				1M-35.19.5 7'-18.5'
20- DB NUMBER: 98321-	-09-93					

LOG

BORING NO. IM-36

LAIDLAW ENVIRONMENTAL

<u> </u>		_			
	USPCI LONE MOUNTA			JOB NO.: 9632	
PROJECT:	CELL 5 INTERIM ME	LOCATION: WA	YNOKA, OKLAHO	DMA	
	Y: A.W. POOL	E CALDWELL	METHOD: AIR F		
START DA	TE: 2-22-95 COMP.	DATE: 2-22-95	SURFACE ELE	VATION: 1385.14	FEET
LOGGED BY	Y: SHAWN LEPPERT	TOTAL DEPTH:	16.0 FEET BGS		-
WELL DIAGRAM DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV
10— 15— 20—	O.0' to 0.5' Peat O.5' to 1.0' Sand I.0' to 2.5' Red claystone; damp 2.5' to 3.0' Blueish claystone; minor green of the claystone; minor green of the claystone from 5' to 7' Gypsum layer near 9.5' Minor green claystone from 9.5' Minor green claystone from 9.5' Gypsum layer at 13.5', damp Green claystone begins at 18' Total Depth =18.0 Feet 86	5' to 12'		CL CL	IM-38.18 7'-18'

LOG

BORING NO. IM-37

LAIDLAW ENVIRONMENTAL

PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 2-22-95 COMP. DATE: 2-23-95 SURFACE ELEVATION: 1386.00 FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS MELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE GW SAMPLES/ ISOLATED INTERV. 4.0' to 4.5' Screenia- brown claystone 4.5' to 1.0' Red dispstone: dance Gypsum layer at 6' Moor green claystone from 6' to 1' Moor green claystone from 6' to 1' Moor green claystone from 6' to 1' Total Depth = 17.0 Feet BSS 114-37.17 Total Depth = 17.0 Feet BSS	CLIENT: USPCI LONE MOUNTAIN	JOB NO.: 9632	1-09-93
DRILLED BY: A.W. POOL START DATE: 2-22-95 COMP. DATE: 2-23-95 SURFACE ELEVATION: 1386.00 FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOS GW SAMPLESY. FB; red desystone, abort gypsum from 0' to 2.5; damp 4.5' to 4.5' Greenish - Drown claystone Red desystone from 6' to 1' Minor green claystone from 6' to 1' Minor green claystone from 6' to 1' Damp Minor green claystone begins at 11' Total Depth - 17.0 Feet B6S 1M-37,17 7'-17'		AYNOKA. OKLAHO	IMA
NELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG GN SAMPLES/ DESCRIPTION GRAPHIC LOG USCS CODE A.C. to 4.5' Filt red disystone, ninor gyosum from 0' to 2.5, damp 4.5' to 17.7 Red claystone damp Byosum lays at 6' Minor green claystone from 8.5' to 14.5' Damp Green claystone begins at 17' Total Depth = 17.0 Feet BSS IM-37.17 7'-47'			
WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE GW SAMPLES/ ISOLATED INTERV. A.3" to 4.5" Fil: red daystone, niner gypsum from 0" to 2.5", damp A.5" to 4.5" Greenish – brown daystone A.5" to 17.0" Red claystone: damp Gystam layer at 6" Minor green daystone from 8" to 7" ID— Moor green daystone from 8.5" to 14.5" Damp Green daystone begins at 17" Total Depth = 17.0 Feet 86S IM-37.17 7'-47"	START DATE: 2-22-95 COMP. DATE: 2-23-95 SURFACE ELE	EVATION: 1386.00	PEET
DESCRIPTION DESCRIPTION USCS CODE SOLATED INTERV. DOI: 10.4.0" Fil; red daystone, sinor gypsum from 0' to 2.5, damp 4.5' to 17.0" Red claystone: damp 6-ysum layer at 6' Minor green claystone from 8' to 7' Damp Green daystone begins at 17' Total Depth = 17.0 Feet 86S	LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 17.0 FEET BGS	•	:
Fill: red disystone, ninor gypsum fron 0' to 2.5', damp 4.0' to 4.5' Greenish - brown disystone 4.5' to 17.0' Red claystone; damp 6 yosum layer at 6' Minor green disystone from 8' to 7' Minor green disystone from 9.5' to 14.5' Damp Green disystone begins at 17' Total Depth = 17.0 Feet BBS			GW SAMPLES/ ISOLATED INTERV.
DB NUMBER: 96321-09-93	4.0' to 4.0' Fill: red claystone, minor gypsum from 0' to 2.5', damp 4.0' to 4.5' Greenish - brown claystone 4.5' to 17.0' Red claystone: damp Gypsum layer at 8' Minor green claystone from 8' to 7' Minor green claystone from 9.5' to 14.5' Damp Green claystone begins at 17' Total Depth = 17.0 Feet B6S	FILL	1M−37.17
· · · · · · · · · · · · · · · · · · ·	OB NUMBER: 98321-09-93		

LOG

BORING NO. IM-38

LAIDLAW ENVIRONMENTAL

CLIENT: L	JSPCI LONE MOUNTAI	N		JOB NO.: 96	321-09-93
ROJECT:	CELL 5 INTERIM MEA	SURE	LOCATION: P	YAYNOKA, OKLA	HOMA
RILLED B	Y: A.W. POOL	DRILLER: WAYN	E CALDWELL	METHOD: AI	RROTARY
START DAT	E: 2-23-95 COMP. [DATE: 2-23-95	SURFACE EL	EVATION: 1384	1.28 FEET
OGGED BY	: SHAWN LEPPERT	TOTAL DEPTH:	15.5 FEET BG:	s	
WELL DPT	D	ESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTER
_	0.0' to 0.5' Concrete pad 0.5' to 8.0' Red claystone: damp			()	DNC .
5-	Minor green claystone from 2.	.5' to 5'			c.
	6.0' to 7.0' Tan claystone; damp 7.0' to 15.5' Red claystone; damp, minor gr	een claystone from 7° to	9.5*		i.L
10-					
15—	Green daystone begins at 15.5				
	Total Depth = 15.5 Feet Bö)			1M-38.15.5 7'-15.5'
		•			
20-					
UMBER: 98321-0	09-93				

LOG

BORING NO. IM-39

LAIDLAW ENVIRONMENTAL

5		(0001 / 0015)						105 115	00.55	4 00 00		
	CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA											
		/	HIM ME	·		`						
		Y: A.W. POOL	T			E CALDWELL		METHOD:	-			
		E: 2-23-95	<u> </u>	T				VATION: 13	84.09	B FEET		
—	BY	: SHAWN LEPI	PERT	TOTAL D	EPTH:	16.0 FEET E	3GS		· · · · · · · · · · · · · · · · · · ·	<u></u>		
WELL DIAGRAM	DPT			DESCRIPTION	4			USCS COD		GW SAMPLES/ ISOLATED INTERV		
				· - v , ·								
	_	0.0° to 5.0°					12.5	<u> </u>	1			
		Concrete pad		/\frac{\tag{1}}{\cdot \cdot \c		CONC						
		0.5" to 2.5" Fill; red clayston	e, minor blu	e claystone and	l gypsum, da	amp .			FILL			
	╡	·			<u></u>							
	\dashv	2.5' to 8.0' Red claystone; m	inor gypsum	and green clay	ystone, dam	Þ			1			
	4							/////				
	5-								CL			
	7											
	+	6.0' to 7.0'					1		-			
	+	7.0' to 18.0'			-	· · · · · · · · · · · · · · · · · · ·	1/		CL			
		Red claystone; da	amp, 10% gy	osum from 7° to	9.5'							
										•		
	7											
}	10-											
	4											
							1		CL			
	7	10% gypsum from 1:	2' to 15'	•								
	4											
	4											
	5—											
'	7	Green daystone b	edins at IR'					/////				
	+	Total Depth =					//	1///		IM-39.18		
	4									7'-18'		
	7											
20)-											
B NUMBER: 96	3321-0	9-93										
										1 000 1 1		

USPCI LOG BORING NO. IM-40

LAIDLAW ENVIRONMENTAL Page 1 of 1

CLIENT	USPCI LONE M	OLINIT A 1	· · · · · · · · · · · · · · · · · · ·		JOB NO.: 9632	21_00_03
				I OO TION		
	CELL 5 INTE	HIM ME	1	<u> </u>	METHOD: ATE	
	Y: A.W. POOL	2042	DRILLER: WAYN	· · · · · · · · · · · · · · · · · · ·	METHOD: AIR F	
		<u> </u>		1	EVATION: 1385.6	D FEE!
 	Y: DAN DOWER	<u> </u>	TOTAL DEPTH:	17.U FEET BG		<u> </u>
DIAGRAM DPT		ם	ESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
5- 10-	0.0' to 3.0'	one (IOG 6/	office, mixed red (90%) and of	nd green	FILL	ISOLATED INTERV.
	Gypsum from 14° to	14.2				
15-				Ł		
				Į.		
		//aa:	,]
+	Green daystone: Total Depth =			-	///// CL	1 M- 40.17
	 					7:-17:
20-				ŀ		
				-		
OB NUMBER: 98321-	-09-93		·			
						1

LOG BORING NO. IM-41

LAIDLAW ENVIRONMENTAL

CLIENT: (USPCI LONE M	OUNTAI	'N		JOB NO.: 9	6321-09-93	
PROJECT:	CELL 5 INTE	RIM ME	ASURE	LOCATION:	WAYNOKA, OKL	AHOMA	
DRILLED B	Y: A.W. POOL	•	DRILLER: WAYN	E CALDWELL	METHOD: A	TR ROTARY	
START DAT	TE: 2-27-95	COMP.	DATE: 2-27-95	SURFACE EL	EVATION: 138	4.86 FEET	
LOGGED BY	: DAN DOWER	5	TOTAL DEPTH:	16.0 FEET BG	S		<u></u>
WELL DIAGRAM DPT		۵	ESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMF ISOLATED	
10- 15- 20-	Gypsum from 14' to Gypsum from 14' to 15.0' to 15.8' Red claystone 15.8' to 18.0' Green claystone: (Total Depth = 1	OR 3/4), dan	no, gypsum from 5° to 5.1°			GL	

USPCI LOG BORING NO. IM-42

LAIDLAW ENVIRONMENTAL Page 1 of 1

CLIENT: 4	ISPCI LONE MOUNT	A 7A/	···· - · · · · · · · · · · · · · · · ·	IOP NO : GOT	21_00_03
	 -	 		JOB NO.: 963	
	CELL 5 INTERIM M	- 		WAYNOKA, OKLAH	
	Y: A.W. POOL	DRILLER: WAYN			
	E: 2-27-95 COMF		<u> </u>	'	59 FEET
	: DAN DOWERS	TOTAL DEPTH:	18.5 FEET BG	5	
DIAGRAM DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV
10— 15— 20—	5.0' to 18.3' Red claystone Trace gypsum at 13' Dry Trace gypsum from 14.5' to 15 18.3' to 18.5' Green claystone; (106 8/2) Total Depth = 18.5 Feet	, d ry	ciay	FILL	IM-42J8.5 7'-18.5

LOG

BORING NO. IM-43

LAIDLAW ENVIRONMENTAL

DIAGRAM DIAGRAM USCS CODE ISOLATED INTER	CLIENT: L	JSPCI LONE MOUNTAI	N	 	JOB NO.:	9632	1-09-93
START DATE: 2-28-95 COMP. DATE: 2-28-95 SURFACE ELEVATION: 1385.35 FEET	PROJECT:	CELL 5 INTERIM MEA	SURE	LOCATION:	WAYNOKA, OK	LAHO	MA
WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG GW SAMPLES/ DOC to 3.0" FB: 80% red clay (10R 3/4), 20% green clay (10G 6/2)	DRILLED B	Y: A.W. POOL	DRILLER: WAYN	E CALDWELL	METHOD:	AIR R	OTARY
WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE SOLATED INTER O.O. to 3.0' Fill: 80% red clay (IOR 3/4), 20% green clay (IOG 8/2) 3.0' to 18.3' Red claystone: (IOR 3/4) 5- Gypsum from 8' to 8.2' Dry Damp to exist from 10' to 18.3' 10- Damp to exist from 10' to 18.3'	START DAT	TE: 2-28-95 COMP. [DATE: 2-28-95	SURFACE E	LEVATION: 13	<i>85.35</i>	FEET
DIAGRAM DPT	LOGGED BY	: DAN DOWERS	TOTAL DEPTH:	18.5 FEET BG	5		
Fill: 80% red clay (10R 3/4), 20% green clay (106 8/2) 3.0" to 18.3" Red claystone; (10R 3/4) 5- Gypsum from 8" to 8.2" Dry Damo to moist from 10" to 18.3" CL		٥	ESCRIPTION				GW SAMPLES/ ISOLATED INTERV.
18.3' to 18.5' Green claystone: (106 8/2) Total Depth = 18.5 Feet BGS	10-	Fill: 80% red clay (10R 3/4), 3.0° to 18.3° Red claystone; (10R 3/4) Gypsum from 8° to 8.2° Dry Damp to moist from 10° to 18.3° Green claystone; (10G 8/2)				CL	

LOG

BORING NO. IM-44

LAIDLAW ENVIRONMENTAL

CLIENT:	USPCI LONE MOUNTAI	'N		JOB NO.:	9632	1-09-93
PROJECT:	CELL 5 INTERIM ME	ASURE	LOCATION: 4	WAYNOKA, OK		
	Y: A.W. POOL	DRILLER: WAYN				
START DA	TE: 2-28-95 COMP. 1	DATE: 2-28-95	SURFACE EL			
· · · · · · · · · · · · · · · · · · ·	Y: DAN DOWERS	TOTAL DEPTH:				
WELL DIAGRAM	0	ESCRIPTION		GRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTERV.
_	0.0' to 0.3'			10 CA - CA - CA	CONC	
_	Concrete; parking lot		/		2010	
_	0.3' to 3.0' FIII; red day (IOR 3/4), damp				FILL	
_	3.0' to 14.0' Red claystone: (10R 3/4), dr)	,				
5-						
	Gypsum from 8' to 8.1' Dry					
					CL	
10-	Gypsum from 10' to 10.2'				,	
		·				
	Gypsum from 14' to 14.5'			14/14	GP	
15—	14.5' to 18.3' Red claystone				CL	
	16.3' to 18.5' Green daystone; (106 6/2), da Total Depth = 18.5 Feet BG				CL]M−44 7`−18.5`
20-						
NUMBER: 98321-0	09-93					
	<u></u>					

BORING NO. IM-45

LAIDLAW ENVIRONMENTAL Page 1 of 1

CLIENT: L	ISPCI LONE MOUNTAI	'N		JOB NO.:	9632	1-09-93
	CELL 5 INTERIM MEA		LOCATION:			
	Y: A.W. POOL	DRILLER: WAYN	·	METHOD:		
START DAT	E: 2-28-95 COMP. [DATE: 3-01-95	SURFACE EL			
	: DAN DOWERS	TOTAL DEPTH:	1			
WELL DIAGRAM DPT	اط	ESCRIPTION		GRAPHIC LO		GW SAMPLES/
		 			<u> </u>	
	0.0" to 8.0" Fill; red day (10R 3/4) w/ 103	K green day (106 8/2), d	amp to moist			
	·				FILL	
5-		_				
	8.0' to 18.8' Red claystone; (10R 3/4), dry	<u>*</u>			-	
10-						
	10% gypsum from 12.5" to 13"				CL	
15-						
	10% gypsum from 18.5° to 17°					
20-	18.8' to 19.0' Green daystone; (10G 6/2), day Total Depth = 19.0 Feet 86:		/	(11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	CL	1M-45.19 7'-19'
NUMBER: 98321-0	9-93					

LOG

BORING NO. IM-46

LAIDLAW ENVIRONMENTAL

	HATTOTINE TALE				
·	USPCI LONE MOUNTA		Т.	JOB NO.: 963	
	CELL 5 INTERIM ME		J	VAYNOKA, OKLAH	
· · · · · · · · · · · · · · · · · · ·	Y: A.W. POOL	DRILLER: WAYN		METHOD: AIR	
	TE: 3-06-95 COMP.		<u> </u>	· · · · · · · · · · · · · · · · · · ·	B7 FEET
LOGGED BY	T: DAN DOWERS	TOTAL DEPTH:	19.0 FEET BGS	<i>S</i>	
WELL DPT		DESCRIPTION	··	GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
5-	O.0' to 5.5' Fill; red day (IOR 3/4), plass 5.5' to 15.0' Red claystone; (IOR 3/4), h Damp Dry from 9.5' to 15.5' Dry to damp from 15.5' to 19. 15.5' to 18.9' Red claystone 18.9' to 19' Green claystone; (IOG 8/2) Total Depth = 19.0 Feet	ard, damp to dry		FIL CL	
OB NUMBER: 98321-	-09-93				1

USPCI LOG

BORING NO. IM-47

LAIDLAW ENVIRONMENTAL

Page Fof 1

CLIENT:	USPCI LONE M	OUNTAIN			JOB NO	.: 9632	21-09-93
PROJECT:	CELL 5 INTE	RIM MEASURE	·	LOCATION:	WAYNOKA,	OKLAHO	OMA
DRILLED B	Y: A.W. POOL	DRILL	ER: WAYN	E CALDWELL			ROTARY
START DA	TE: <i>3-06-95</i>	COMP. DATE:	3-06-95	SURFACE E			
	: DAN DOWER			19.0 FEET B			
WELL DPT		DESCRIPT	rion		GRAPHIC USCS C		
WELL DPT	0.0° to 5.0°	0% green clay, damp OR 3/4), damp (106 8/2), damp	FION				GW SAMPLES/ ISOLATED INTER
20-	18.9° to 19.0° Green daystone; (1					4	1M-47.19 7'-19'
UMBER: 98321-0	Total Depth = 15 09-93	.U Feet BGS					

LOG

BORING NO. IM-48

LAIDLAW ENVIRONMENTAL

CLIENT: (JSPCI LONE MOUNTA.	IN		JOB NO.:	9632	1-09-93
PROJECT:	CELL 5 INTERIM ME	ASURÉ	LOCATION:	WAYNOKA, OK	CLAHO	DMA
DRILLED B	Y: A.W. POOL	DRILLER: WAYN				
START DAT	E: 3-08-95 COMP.	DATE: 3-08-95	SURFACE E	LEVATION: 13	87.96	FEET
LOGGED BY	: DAN DOWERS	TOTAL DEPTH:	20.5 FEET B	GS		· · · · · · · · · · · · · · · · · · ·
WELL DIAGRAM DPT	2	ESCRIPTION		GRAPHIC LO		GW SAMPLES/ ISOLATED INTER
	0.0' to 4.5' Fill: red day (IOR 3/4), w/ IO	1% green clay (106 8/2), d	amp		FILL	
5-	4.5' to 5.5' Green daystone; (10G 6/2), (damp to dry			CL	
-	5.5' to 8.5' Red claystone; (10R 3/4), da	mp to dry			GT	,
10-	8.5' to 11.0' Green daystone; damp				CL	
15-	11.0° to 20.0° Red claystone Gypsum from 12° to 12.2°					
	5% gypsum from 16° to 17°				CL	
20	Wet cuttings from 19.5' to 20.5' 20.0' to 20.5' Green claystone: (106 6/2), we Total Depth = 20.5 Feet Bo	t	19.5- 20.5		CL	1M-48.20.5 7'-20.5'
NUMBER: 98321-0	9-93					

USPCI LOG

BORING NO. IM-49

LAIDLAW ENVIRONMENTAL Page 1 of 1

<u>-</u> -	USPCI LONE M				JOB NO.:	9632	1-09-93
	CELL 5 INTE			<u> </u>	WAYNOKA, OK	LAHC	DMA
	Y: A.W. POOL		DRILLER: WAYN				<u> </u>
			TE: 3-08-95	SURFACE E	LEVATION: 13	86.58	FEET
GGED BY	Y: DAN DOWER:	5 1	OTAL DEPTH:	19.0 FEET BG	SS	<u> </u>	
GRAM DPT		DES	CRIPTION		GRAPHIC LO USCS CODI		GW SAMPLES/ ISOLATED INTERV
10- 15- 20-	IBD' to 19.0 Green daystone; (I	OR 3/4), damp	duced more amo	mit of water		CL	1M-49.19 7'-19'

LOG

BORING NO. IM-50

LAIDLAW ENVIRONMENTAL Page 1 of 1

· · · · · · · · · · · · · · · · · · ·		SPCI LONE M		IN	· · <u> </u>	JOB NO.:	9632	1-09-93
		CELL 5 INTE			LOCATION:	WAYNOKA, OF		
DRILLED	В	'; A.W. POOL		DRILLER: WAYN				
START D	DAT	E: <i>3-09-95</i>	COMP.	DATE: 3-09-95	SURFACE E			
· · · · · · · · · · · · · · · · · · ·		DAN DOWER		TOTAL DEPTH:				
WELL 5	DP T			ECCDIDITION.		GRAPHIC L		GW SAMPLES/
DIAGRAM	۱ ۳۰			ESCRIPTION		uscs con		ISOLATED INTERV
	+	0.0' to 4.0'						-
	4	Fill; red day (10f	3/4), damp	•]	
·	•							
	٦						FILL	-
	\dashv							
	\perp					• • • • • •		
		4.0' to 17.8' Red claystone; (I	DR 3/4), dr			//////		
;	5-	, ,		,			1	
	4						1	
		50% gypsum from					1	
		Slightly damp (ge	nerally dry)	from 7" to 17.8"			1	
	\dashv							
								•
10								
							CL	
							C.	
[Gypsum from 12' to	12.1					
	\dashv							
15	\dashv	•						
		Gunsum from 10' A.	10.5					
		Gypsum from 18' to	18.1					
	7							
.	卡	Green daystone; (106 B/2) di	amp to dry			CL	
	`	Total Depth = 1						I M- 50.18 7' - 18'
•	7							
20-	4							
[B NUMBER: 983	 21-0	9 -9 3						
							1	

LOG

BORING NO. IM-51

LAIDLAW ENVIRONMENTAL

CLIENT: (USPCI LONE MOUNTA	AIN		JOB NO.:	9832	1-09-93
PROJECT:	CELL 5 INTERIM ME	EASURE	LOCATION:	WAYNOKA, OF	CLAHO	DMA
DRILLED B	Y: A.W. POOL .	DRILLER: WAYN	IE CALDWELL	METHOD:	AIR F	ROTARY
START DAT	TE: 3-9-95 COMP.	DATE: 3-9-95	SURFACE E	LEVATION: 13	388.4	3 FEET
LOGGED BY	: DAN DOWERS	TOTAL DEPTH:	19.0 FEET BO	35		
WELL DIAGRAM DPT		DESCRIPTION		GRAPHIC LO		GW SAMPLES/
10-	0.0' to 3.0' Fill; red day (10R 3/4), dar 3.0' to 5.0' Red claystone: (10R 3/4), d 5.0' to 8.0' Green daystone: (10R 3/4), d 8.5' to 9.0' Green daystone: (10R 3/4), d 8.5' to 9.0' Green daystone: (10R 3/4), d Trace gypsum at 12'	damp to dry damp to dry amp			CL CL	
1 1	Green daystone: (106 6/2), c				CL	1 M- 51.19
20-	Total Depth - 19.0 Feet 8	G S				7° - 19°
NUMBER: 98321-0	9-93	····				

LOG

BORING NO. IM-52

LAIDLAW ENVIRONMENTAL

CLIENT: USPCILIONE	CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93						
PROJECT: CELL 5 IN		LOCATION: WAY					
DRILLED BY: A.W. POOL			METHOD: AJR A				
START DATE: 3-10-95							
LOGGED BY: DAN DOWE							
151			GRAPHIC LOG	GW SAMPLES/			
DIAGRAM DPT	DESCRIPTION		USCS CODE	ISOLATED INTERV.			
				·			
0.0' to 5.0'		• •					
Fill; red day v	// 10% green clay, damp	• •	• • • • • •				
		• •	• • • • •				
		•	FILL				
		• •					
		•	• • • •				
5-		• •	• • • •				
5.0' to 7.0' Red claystone	; (10R 3/4), damp to dry			·			
Trace of gyps	um from 6' to 7."		Ct.				
7.0' to 7.5'			CI CI	.			
Green daysto 7.5' to 18.5'	ne; dry			1			
Red claystone	: damp						
10-							
			Cr Cr				
-							
15—		V//					
Green dayston	e begins at 18.5"						
	= 18.5 Feet BGS			IM-52.18.5			
		ļ		7'-18.5'			
20-							
IOB NUMBER: 98321-09-93							

USPUI

LOG

BORING NO. IM-53

LAIDLAW ENVIRONMENTAL

LIENT:	USPCI LONE MOUNTA	JOB NO.: 96321-09-93			
ROJECT:	CELL 5 INTERIM ME	ASURE	LOCATION: W	AYNOKA, OKLA	HOMA
RILLED B	Y: A.W. POOL	DRILLER: WAYN	NE CALDWELL	METHOD: AJA	ROTARY
TART DA	TE: 3-15-95 COMP.	DATE: 3-18-95	SURFACE EL	EVATION: 1410.	85 FEET
DEGED B	Y: SHAWN LEPPERT	TOTAL DEPTH:	65.5 FEET BG	5	
WELL DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTER
5- 10- 15- -	O.0' to 10.0' Fill; red claystone, w/ 20% g Green claystone (fill) from 3.5 Red claystone (fill) from 3.5 Red claystone; damp Minor blue claystone to 12.5' Dry from 15' to 18' Green claystone; dry 18.5' to 21.5' Red claystone; dry 18.5' to 24.5' Green claystone; wet	?.5" to 3.5", dry " to 7.5", w/ wood chips, di	•	CL CL	In-23.22
25-	24.5' to 29.5' Red claystone; damp			CL CL	
MBER: 98321-	09-93				

LOG

BORING NO. IM-53

LAIDLAW ENVIRONMENTAL

Page 2 of 3

CLIENT: USPCI LONE MOUNTAIN	JOB NO.: 98321-09-93						
PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA							
DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWEL	L METHOD: AIR ROTARY						
START DATE: 3-15-95 COMP. DATE: 3-18-95 SURFACE	ELEVATION: 1410.85 FEET						
LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 65.5 FEET	BGS						
WELL DIAGRAM DPT DESCRIPTION	GRAPHIC LOG GW SAMPLES/ USCS CODE ISOLATED INTERV.						
	777777						
	CL CL						
30— 29.5' to 30' Green claystone; dry	CL CL						
30.0° to 34.0°							
Red claystone; dry	///// a						
34.0' to 38.5'							
35— Green daystone; dry							
-							
38.5' to 45.0' Red claystone; dry							
Minor gypsum from 38.5' to 41.5'							
40-							
	CL						
45							
45.0° to 49.0° Green claystone:	IM-53.45 22'-45'						
	\////\\ _a .						
·	(//// cr						
49.0' to 52.0' Red claystone; damp	CL CL						
Red claystone: damp							
08 NUMBER: 98321-09-93							

LOG

BORING NO. IM-53

LAIDLAW ENVIRONMENTAL

Page 3 of 3

CLIENT: U	SPCI LONE MOL	JOB NO.: 9632	21-09-93		
PROJECT:	CELL 5 INTERI	M MEASURE	LOCATION:	WAYNOKA, OKLAHO	OMA
DRILLED BY	: A.W. POOL	DRILLER: WA	YNE CALDWELL	METHOD: AIR F	ROTARY
START DAT	E: 3-15-95 C	OMP. DATE: 3-18-9	5 SURFACE E	LEVATION: 1410.85	FEET
OGGED BY:	SHAWN LEPPE	RT TOTAL DEPT	H: 65.5 FEET B	GS	
WELL DAGRAM DPT		DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTER
			•	77777	
				Cr	
	Gypsum vein from 52	to 52.5'		GP] ·
	52.5' to 85.5' Red claystone: damp 10% gypsum from 52.5				
55-					
60-				cr	
			:		
65-	Top of green claysto	AF E'			
	Total Depth = 85.				1₩-53.85.5
					45'-85.5
70-					
75-					
 UMBER: 98321-09	9 - 93				
		<u> </u>			

LOG

BORING NO. IM-54

LAIDLAW ENVIRONMENTAL

CLIENT: USPCI LONE	MOUNTAIN	JOE	3 NO.: 9632	1-09-93
PROJECT: CELL 5 INT	TERIM MEASURE	LOCATION: WAYNO	KA, OKLAHO	MA
DRILLED BY: A.W. POOL	DRILLER: WAYN	E CALDWELL ME	THOD: AIR R	OTARY
START DATE: 3-20-95	5 COMP. DATE: 3-22-95	SURFACE ELEVAT	ION: 1410.14	FEET
LOGGED BY: DAN DOWE	TOTAL DEPTH:	83.0 FEET BGS		
DIAGRAM DPT	DESCRIPTION		APHIC LOG SCS CODE	GW SAMPLES/ ISOLATED INTERV.
Fill: scattered Fill: red clay (1) Red clay w/ 20 15 15.0' to 19.9' Red claystone: Wet, produces w 19.9' to 24.5' Green claystone 25 24.5' to 35.0'	green clay (10%) mixed through, damp to 10R 3/4), wet, sticky, soft, plastic OX green clay, wet damp to dry water at 19' to 20' e: (10G 8/2), damp (10R 3/4), damp to dry	0 . 0	CL	I=-54.20 10 −20

LOG

BORING NO. IM-54

LAIDLAW ENVIRONMENTAL

Page 2 of 2

CLIENT:	USPCI LONE MOUNTA.	JOB NO.: 983	21-09-93		
PROJECT:	CELL 5 INTERIM ME	ASURE	LOCATION:	NAYNOKA. OKLAH	OMA
DRILLED B	Y: A.W. POOL	DRILLER: WAYN	E CALDWELL	METHOD: AIR	ROTARY
START DA	TE: 3-20-95 COMP.	DATE: 3-22-95	SURFACE EL	EVATION: 1410.14	FEET
LOGGED BY	Y: DAN DOWERS	TOTAL DEPTH:	83.0 FEET BO	55	
WELL DIAGRAM DPT	C	DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV
45-	35.0' to 38.0' Green claystone; (10G 8/2), 38.0' to 43.1' Red claystone; (10R 3/4), dr Gypsum from 38' to 38.2' 43.1' to 48.5' Green claystone; (10G 8/2) 48.5' to 82.5' Red claystone; (10R 3/4), da	y to slightly damp		Ct.	1M-54.43.5 20'-43.5'
65- 70-	5% gypsum from 80° to 82° 82.5° to 83.0° Green claystone: (106 8/2), di Total Depth = 83.0 Feet 8	<u></u>		CT.	1M-54.83 44'-83'

LOG

BORING NO. IM-55

LAIDLAW ENVIRONMENTAL

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LOG

BURING NO. IM-55

LAIDLAW ENVIRONMENTAL

Page 2.01.2

CLIENT:	CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93							
	T: CELL 5 INTE			LOCATION: W				
DRILLED	BY: A.W. POOL	<u> </u>	DRILLER: WAYN			IR ROTARY		
START D	DATE: 3-22-95	COMP. D	ATE: 3-23-95	SURFACE ELE	EVATION: 140	08.08 FEET		
LOGGED	BY: DAN DOWER	S	TOTAL DEPTH:	80.0 FEET BG	5			
WELL DIAGRAM	DPT	DE	SCRIPTION		GRAPHIC LOC USCS CODE	1		
	Moist from 38' to Wet from 37' to 410' to 43.0' Green claystone Damp from 42' to 43.0' to 59.5' Red claystone: claystone	(106 8/2), we 43'	at			CL 1M-55		
65- 65-	59.5' to 80.0' Green daystone: Total Depth =	(106 8/2), slig				CL 1M-5 42'-		
DB NUMBER: 983								

LOG

BORING NO. IM-56

LAIDLAW ENVIRONMENTAL

CLIENT:	USPCI LONE MOUNTA	IN	······································	JOB NO.:	9832	1-09-93		
PROJECT:	PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA							
DRILLED	BY: A.W. POOL	DRILLER: WAYN	E CALDWELL	METHOD:	AIR R	OTARY		
START DA	ATE: 3-24-95 COMP.	DATE: 3-24-95	SURFACE E	LEVATION: 13	394.24	1 FEET		
LOGGED BY: DAN DOWERS TOTAL DEPTH: 27.0 FEET BGS								
WELL DP	т	DESCRIPTION		GRAPHIC LO USCS COD		GW SAMPLES/ ISOLATED INTER		
5	Q.O' to 8.0' Fill; gravel for parking lot w. Red clay (fill), plastic, moist Green clay w/ 20% red clay				FILL			
10-	12.0" to 12.5"				CL.			
15-	Green daystone: (106 6/2), 12.5' to 15.5' Red daystone	damp	/		٦.			
	15.5' to 18.0' Green daystone: (10G 6/2),	dry			CL			
20-	18.0° to 28.5° Red claystone; (10R 3/4), dr	у						
-	20% gypsum from 2° to 22°				CL			
25-	Wet from 25' to 28.5'				CL			
30-	Green daystone: (IOG 8/2), a Total Depth - 27.0 Feet					1M-58.27 10'-27'		
NUMBER: 9832	1-09-93							

LOG

BORING NO. IM-57

LAIDLAW ENVIRONMENTAL

					_	
ļ	USPCI LONE MOUNTAI	JOB NO.: 98321-09-93				
	CELL 5 INTERIM MEA	SURE	LOCATION:	WAYNOKA, OKL		
	Y: A.W. POOL	DRILLER: WAYN		METHOD: 4		
START DAT	TE: 3-29-95 COMP. [·	85.82	FEET
LOGGED BY	Y: DAN DOWERS	TOTAL DEPTH:	17.0 FEET BG	S		
WELL DIAGRAM DPT	Þ	ESCRIPTION		GRAPHIC LOU USCS CODE		GW SAMPLES/ ISOLATED INTERV.
5	9.0' to 18.9' Red claystone: (10R 3/4), w/ 50% - 70% gypsum from 11' to Dry 20% gypsum from 15' to 15.5' Dry 18.9' to 17.0' Green claystone Total Depth = 17.0 Feet B	<5% green claystone to 1	14°, damp to dry		CL CL	

LOG

BORING NO. IM-58

LAIDLAW ENVIRONMENTAL

Page 1 of 1

WELL NO. RFI-13

CLIENT: USPCI LONE MOUNTAIN					OB NO.:	9832	1-09-93	
PROJECT:	PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA							
DRILLED BY	Y: A.W. POOL	DRILLER: WAYN	E CALDWELL	М	ETHOD:	A]R R	ROTARY	
START DAT	E: 3-29-95 COMP. (DATE: 3-29-95	SURFACE E	LEVA	TION: 13	87.58	B FEET	
LOGGED BY	: DAN DOWERS	TOTAL DEPTH:	18.5 FEET BG	S .	M.P. ELE	Ξ∨.: 1	390.02 FEET	
WELL DPT	٥	ESCRIPTION			BRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTERV.	
	0.0' to 8.0' Fill; red day w/ 20% green cl 8.0' to 18.4' Red claystone; (10R 3/4), dr Trace of green claystone fro 20% gypsum from 13' to 14' Dry - damp from 15' to 18' 18.4' to 18.5' Green claystone; (10G 6/2), dr Total Depth - 18.5 Feet B	n 7' to B', damp				CL	1M-58.18.5 7'-18.5'	
20-								
0B NUMBER: 98321-	09-93							

USPCI LAIDLAW ENVIRONMENTAL

LOG

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BORING NO. IM-58 WELL NO. RFI-13

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93 LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 5 INTERIM MEASURE METHOD: AIR ROTARY DRILLER: WAYNE CALDWELL DRILLED BY: A.W. POOL START DATE: 3-29-95 | COMP. DATE: 3-29-95 | SURFACE ELEVATION: 1387.58 FEET TOTAL DEPTH: 18.5 FEET BGS LOGGED BY: DAN DOWERS GRAPHIC LOG GW SAMPLES/ WELL DESCRIPTION OPT USCS CODE ISOLATED INTERV. DIAGRAM 0.0' to 8.0' FIII; red clay w/ 20% green clay mixed in, damp FILL 8.0' to 18.4' Red claystone: (10R 3/4), dry Trace of green claystone from 7' to 8', damp 10-CL 20% gypsum from 13' to 14' 15-Dry - damp from 15' to 18' 18.4' to 18.5' 1M-58.18.5 7'-18.5' Green claystone: (106 6/2), dry Total Depth - 18.5 Feet BGS 20-IOB NUMBER: 98321-09-93

LOG

BORING NO. IM-59

LAIDLAW ENVIRONMENTAL

CLIENT: USB	CI LONE MOUNTAI	N/		JOB NO.:	9832	1-09-93
	ELL 5 INTERIM MEA		LOCATIONS			
DRILLED BY: A	_	DRILLER: WAYN	LOCATION:			
	3-29-95 COMP. D	· · · · · · · · · · · · · · · · · · ·				
ļ 						
LOGGED BY: D	IAN DUWERS	TOTAL DEPTH:	17.5 FEET BG			ı
DIAGRAM DPT	DI	ESCRIPTION		GRAPHIC LO USCS COD		GW SAMPLES/
5	0.0° to 5.0° FIII: red clay (IOR 3/4), damp Wet from 4° to 5° 5.0° to 11.5° Red claystone; damp to dry Ory from 7° to 17.4°				FILL	
	Sypsum from 11.5° to 12°				GP	1
- R	2.0° to 15.0° led claystone				CL	
G	ypsum from 15° to 15.5°			//////	GP	
1 -	5.5° to 18.0° led claystone		/		CL GP	1
1/e	ypsum from 18° to 18.5°		/	//////	CL	
	3.5' to 17.4' ed claystone				CL	1M-59.17.5
	7.4' to 17.5'	•				7'-17.5'
- \	reen Claystone; (10G 8/2), di					
20-	Total Depth - 17.5 Feet B0	35				
DB NUMBER: 98321-09-	93					

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LAIDLAW ENVIRONMENTAL

LUG

BURING NO. IM-OU

Page 1 of I

WELL NO. RFI-14

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL METHOD: AIR ROTARY DRILLER: WAYNE CALDWELL START DATE: 3-29-95 | COMP. DATE: 3-29-95 | SURFACE | ELEVATION: 1386.25 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 18.5 FEET BGS WELL GRAPHIC LOG GW SAMPLES/ DIAGRAM DESCRIPTION USCS CODE ISOLATED INTERV. 0.0' to 4.0' FIII; Red clay w/ occasional blue and green clay, damp FILL 4.0' to 18.3' Red claystone; damp to dry Wet from 5' to 6' 10-CL Gypsum from 12' to 12.1' 15-Gypsum from 15° to 15.1° Wet from 17' to 18.5', produced water at 17' to 18.5' 18.3' to 18.5' 1M-80.18.5 Green daystone; (106 8/2) 7'-18.5' Total Depth = 18.5 Feet B6S 20-IOB NUMBER: 96321-09-93

USPCI LAIDLAN ENVIRONMENTAL

LOG

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BORING NO. IM-60

WELL NO. RFI-14

JOB NO.: 96321-09-93 CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY COMP. DATE: 3-29-95 SURFACE ELEVATION: 1386.25 FEET START DATE: 3-29-95 LOGGED BY: DAN DOWERS TOTAL DEPTH: 18.5 FEET BGS M.P. ELEV.: 1388.90 FEET WELL GRAPHIC LOG GW SAMPLES/ DIAGRAM DPT DESCRIPTION USCS CODE ISOLATED INTERV. Fill: Red clay w/ occasional blue and green clay, damp FILL 4.0' to 18.3' Red claystone; damp to dry Wet from 5' to 8' 10-CL Gypsum from 12' to 12.1' 15-Gypsum from 15' to 15.1' Wet from 17" to 18.5" 18.3' to 18.5' IM-60.18.5 Green daystone; (10G B/2) 7'-18.5' Total Depth = 18.5 Feet BGS 20-OB NUMBER: 98321-09-93

LOG

BORING NO. IM-61

LAIDLAW ENVIRONMENTAL

CLIENT		SPCI LONE M		N .		JOB NO.:	9632	1-09-93
		CELL 5 INTE			LOCATION: P	YAYNOKA, OK	LAHO	IMA
		: A.W. POOL		DRILLER: WAYN	IE CALDWELL	METHOD:	AIR R	ROTARY
START	DAT	E: <i>3-31-95</i>	COMP.	DATE: 3-31-95	SURFACE EL	EVATION: 13	94.36	FEET
		: DAN DOWER		TOTAL DEPTH:	**********************************			
WELL DIAGRAM	DPT		0	ESCRIPTION		GRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTERV.
	5	O.O' to 7.O' Fill; red clay and Red clay (fill), pi 7.0' to 14.5' Red claystone; (astic, soft,	moist			FILL	
	15	Gypsum from 14.5 15.0° to 18.0° Red claystone 18.0° to 17.5° Green claystone: 17.5° to 23.5° Red claystone:	:damp	nt .			CL	1
	25-	Gypsum from 23.5 24.0° to 28.9°					GP CL	
		28.9' to 27.0' Green daystone: Total Depth of				<u>//////</u>	CL] 1M-81.27 10'-27'
	35-	-09-93						

LOG

BORING NO. IM-62

LAIDLAW ENVIRONMENTAL

PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAY	JOB NO.: 98321-09-93 YNOKA, OKLAHOMA
DRILLED BY: A.W. POOL START DATE: 3-31-95 COMP. DATE: 3-31-95 SURFACE ELEV LOGGED BY: DAN DOWERS TOTAL DEPTH: 14.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION 0.0° to 5.0° Fill; red clay, plastic, gravel from parking lot, noist 6.0° to 8.0° Green daystone (106 8/2), plastic, soft, moist 8.0° to 13.5° Red claystone; (10R 3/4), damp to dry 10- 10- 10- 10- 11- 12- 13.5° to 14' Green daystone; (106 8/2) Tatal Depth = 140 Enet BGS	YNOKA, UKLAHUMA
START DATE: 3-31-95 COMP. DATE: 3-31-95 SURFACE ELEV LOGGED BY: DAN DOWERS TOTAL DEPTH: 14.0 FEET BGS WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' Fill: red day, plastic, gravel from parking lot, moist 5 6.0' to 8.0' Green daystone (106 8/2), plastic, soft, moist 2.0' to 13.5' Red claystone; (10R 3/4), damp to dry 10- 10- 10- 10- 13.5' to 14' Green daystone: (106 8/2) Tatal Depth a 14.0 Feet BGS	WETHOD, AZD BOTABY
WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' Fill; red day, plastic, gravel from parking lot, moist 5 5.0' to 8.0' Green daystone (106 8/2), plastic, soft, moist 8.0' to 13.5' Red claystone; (10R 3/4), damp to dry	METHOD: AIR ROTARY
WELL DIAGRAM DPT DESCRIPTION 0.0' to 5.0' Fill; red clay, plastic, gravel from parking lot, moist 5 6.0' to 8.0' Green claystone (106 8/2), plastic, soft, moist 8.0' to 13.5' Red claystone; (10R 3/4), damp to dry 10- 13.5' to 14' Green claystone; (10G 8/2) Total Donoth a 14.0 Enet BGS	
5.0' to 8.0' Green daystone: (106 8/2), plastic, soft, moist 8.0' to 13.5' Red claystone: (10R 3/4), damp to dry	
Fill; red day, plastic, gravel from parking lot, moist 5.0' to 8.0' Green daystone (10G 8/2), plastic, soft, moist 8.0' to 13.5' Red claystone: (10R 3/4), damp to dry 10- 13.5' to 14' Green daystone: (10G 8/2) Total Daystone: (10G 8/2)	GRAPHIC LOG GW SAMPLES/ USCS CODE ISOLATED INTERV.
20 20	

USPCI LOG

BORING NO. IM-63

LAIDLAW ENVIRONMENTAL Page 1 of 2

CLIENT: /	JSPCI LONE M	QUNTAIN			JOB NO.:	9832	1-09-93
	CELL 5 INTE		95	LOCATIONS	WAYNOKA, OK		
	Y: A.W. POOL			E CALDWELL			
	· 			· · · · · · · · · · · · · · · · · · ·	LEVATION: 13		
-	: DAN DOWER			48.0 FEET B			
WELL DPT	T		IPTION		GRAPHIC LO		GW SAMPLES/
	0.0' to 8.0' Fill; red clay w/ g mixed through, da 8.0' to 18.5' Red claystone; (I Damp to dry 18.5' to 19' Green claystone; (II 10' to 22' Red claystone; (II 10' gypsum from 2 23' to 25' Red claystone	lypsum gravel, plassmp OR 3/4), slightly p	stic, occasional gre	en clay	USCS CODE		ISOLATED INTERV

LOG BORING NO. IM-63

LAIDLAW ENVIRONMENTAL Page 2 of 2

CLIENT	: <i>U</i>	SPCI LONE M	OUNTAI	N	· · · · · · · · · · · · · · · · · · ·	JOB NO.: S	9632	1-09-93
PROJEC	Т:	CELL 5 INTE	RIM ME	SURE	LOCATION:	WAYNOKA, OKL	AHO	MA
DRILLE	DBY	': A.W. POOL		DRILLER: WAYN	E CALDWELL	METHOD: 4	IR R	COTARY
START	DAT	E: 3-31-95	COMP.	DATE: 4-01-95	SURFACE EL	EVATION: 13	95.57	FEET
LOGGED	BY:	DAN DOWER	s	TOTAL DEPTH:	48.0 FEET B	<i>55</i>		· · · · · · · · · · · · · · · · · · ·
WELL DIAGRAM	DPT			ESCRIPTION		GRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTERV.
		10% gypsum from	25' to 28'				CL	
		26.0' to 28.0' Red claystone					CL	
	70	28.0° to 33.0° Green daystone	(10G 8/2),	dry				IM-83.28 0'-28'
	30-						CL.	
		33.0' to 44.0' Red claystone; d	ry					
	35							
		Gypsum at 38'						
	40						CL	
	40-	Damp from 40° to	42*					
	45-	20% gypsum from 44.5' to 47.9' Red claystone; di	· · ·	;			GP CL	1
	+	47.9' to 48.0'		·	Γ		CL	JM-63 28'-48'
	50-	Green daystone: Total Depth -		BGS				26 - 48 DRY
OB NUMBER:	96321-	-09-93			•			

LOG

BORING NO. IM-64

LAIDLAW ENVIRONMENTAL

CLIENT: U	ISPCI LONE M	OUNTAI	V		JOB NO.:	9632	1-09-93
PROJECT:	CELL 5 INTE	RIM MEA	SURE	LOCATION:	WAYNOKA, OK	CLAHO	DM A
DRILLED BY	r: A.W. POOL		DRILLER: WAYN	IE CALDWELL	METHOD:	AIR F	OTARY
START DAT	E: 5-09-95	COMP. C	ATE: 5-09-95	SURFACE E	LEVATION: 13	3 <i>87.5</i> 9	FEET
LOGGED BY	: DAN DOWER	5	TOTAL DEPTH:	40.0 FEET B	GS		
WELL DIAGRAM DPT		DE	ESCRIPTION	·	GRAPHIC LOUSCS COD		GW SAMPLES/ ISOLATED INTERV.
08 NUMBER: 96321-	0.0' to 5.0' Fill; red day, (10) 5.0' to 8.0' Red claystone; Dr 8.0' to 10.0' Green daystone Trace gypsum Wet from 18.5' to 19 19.3' to 25.5' Green daystone: Tight, waxy, dry to	y to slightly (106 6/2), sl	damp ightly damp vater			CL	1M-84.19.5 7`~19.5`

LOG

BORING NO. IM-64

LAIDLAW ENVIRONMENTAL

Page 2 of 2

CLIENT: L	ISPCI LONE M	OUNTAI	N		JOB NO.:	9632	1-09-93
PROJECT:	CELL 5 INTE	RIM MEA	SURE	LOCATION:	WAYNOKA, OK		
DRILLED B	Y: A.W. POOL		DRILLER: WAYN	E CALDWELL	METHOD:	AIR F	BOTARY
START DAT	E: 5-09-95	COMP. C	ATE: 5-09-95	SURFACE E	LEVATION: 13	87.59	9 FEET
LOGGED BY	: DAN DOWER	S	TOTAL DEPTH:	40.0 FEET B	GS .		
WELL DIAGRAM DPT		DE	ESCRIPTION		GRAPHIC LO USCS COD		GW SAMPLES/ ISOLATED INTERV.
30- - - 35-	Gypsum from 29' (30.0' to 38.0' Red claystone 10% gypsum from 3 38.5' to 37.0' Red claystone 20% gypsum from 3 8.0' to 39.9' Red claystone 39.9' to 40.0' Green claystone; Total Depth =	ghtly damp to 30.	to dry		USCS COD	CL CL GP CL CL	IM-84.40 20.5-40
)B NUMBER: 96321-	09-93						

LOG

BORING NO. IM-65

LAIDLAW ENVIRONMENTAL

CLIENT: U	SPCI LONE MOUNTAI	N		JOB NO.:	9632	1-09-93
PROJECT:	CELL 5 INTERIM MEA	SURE	LOCATION:	WAYNOKA, OK	CLAHO	IMA
DRILLED BY	': A.W. POOL	DRILLER: WAYN				
START DAT	E: 5-11-95 COMP. [DATE: 5-11-95	SURFACE E	LEVATION: 13	94.08	BFEET
LOGGED BY:	: DAN DOWERS	TOTAL DEPTH:	12.0 FEET BO	55		
WELL DIAGRAM DPT	٥	ESCRIPTION		GRAPHIC LO USCS COD		GW SAMPLES/ ISOLATED INTERV
10- 15- 20-	Q.0' to 7.0' Fill; red day, damp from 0' to 7.0' to 11.9' Red claystone; (10R 3/4), dam Damp to moist 11.9' to 12.0' Green claystone; (10G 8/2), dam Total Depth = 12.0 Feet 86	amp to moist			CL	315. 315.

LOG

BORING NO. IM-66

LAIDLAW ENVIRONMENTAL

	LITTIONICITI		·	·	
CLIENT:	USPCI LONE M	OUNTAIN		JOB NO.: 9632	1-09-93
<u> </u>	: CELL 5 INTE	·- · · · · · · · · · · · · · · · · · ·		YNOKA, OKLAHO	
DRILLED	BY: A.W. POOL	DRILLER: WAY		METHOD: AIR R	
<u> </u>	ATE: 5-11-95	COMP. DATE: 5-11-95		VATION: 1394.25	FEET
LOGGED	BY: DAN DOWER	S TOTAL DEPTH	12.1 FEET BGS	4	
DIAGRAM D	DPT	DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
	7.0' to 12.0' Red claystone; da Damp 12.0' to 12.1' Green daystone; s Total Depth =	siightly plastic, damp		FILL	9 − 17 1 • − 86

LOG

BORING NO. IM-67

Page 1 of 1

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY COMP. DATE: 7-11-95 SURFACE ELEVATION: 1393.83 FEET START DATE: 7-11-95 TOTAL DEPTH: 26.5 FEET BGS LOGGED BY: DAN DOWERS GRAPHIC LOG GW SAMPLES/ WELL DESCRIPTION DPT USCS CODE ISOLATED INTERV. DIAGRAM 0.0' to 8.0' FIII; red day, dry from 0' to 2' Damp from 2' to 6' FILL 8.0° to 11.5° Red claystone: (10R 3/4), dry 20% gypsum from 7' to 8' CL 1L5' to 12.5' CL Green daystone: (106 8/2), damp 12.5' to 15.7' Red claystone; dry, dusty CL 10% gypsum from 15' to 15.7' 15.7' to 18.0' Green daystone: (106 8/4), damp CL 18.0' to 28.3' Red claystone; damp, trace gypsum from 18' to 20' 20 CL 5% gypsum from 23.5' to 24' 25 28.3' to 28.5' 1M-87.28.5 Green daystone; (106 8/4), damp to wet 18'-28.5' Total Depth - 26.5 Feet BGS 30 JOB NUMBER: 98321-09-93

LOG

BORING NO. IM-68

A LAIDLAW COMPANY

CLIENT: L	JSPCI LONE MOUNTAIN		JOB NO.: 963	21-09-93
PROJECT:	CELL 5 INTERIM MEASURE	LOCATION:	WAYNOKA, OKLAH	OMA
DRILLED B	Y: A.W. POOL DRILLER:	WAYNE CALDWELL	METHOD: AIR	ROTARY
START DAT	E: 7-11-95 COMP. DATE: 7-12	2-95 SURFACE E	LEVATION: 1386.8	5 FEET
LOGGED BY	TOTAL DE	EPTH: 38.0 FEET B	GS	
WELL DIAGRAM DPT	DESCRIPTION		GRAPHIC LOG USCS CODE	GW SAMPLES/ ISOLATED INTERV.
10- 15- 20- 30- 35-	0.0' to 8.0' Fill; red clay, dry from 0' to 2' Moist from 2' to 8' 8.0' to 17.3' Red claystone; (10R 3/4), damp 20% gypsum from 11' to 12' 5% gypsum from 12 to 14' 5% gypsum from 15.5' to 18' 17.3' to 23.0' Green claystone; (10G 8/4), damp to dry 2% xyline gypsum from 17.5' to 23' 23.0' to 27.0' Red claystone; plastic, damp from 23' to 28' Wet from 28' to 27' 27.0' to 28.0' 50% gypsum 28.0' to 37.9' Red claystone; as above, wet from 28' to 34' Damp to moist from 34' to 37.9'		CL CL	1 14-8 8.17.5 7'-17.5'
40-	37.9' to 38.0' Green claystone; damp Total Depth = 38.0 Feet 86S			18'-38.0'
B NUMBER: 98321-	-09-93			

LOG

BORING NO. IM-69

PROJECT: CELL 5 INTERIM MEA SURE DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 7-12-95 COMP. DATE: 7-13-95 SURFACE ELEVATION: 1385.86 FEET OGGED BY: DAN DOWERS TOTAL DEPTH: 38.0 FEET BGS WELL JAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE GRAPHIC LOG USCS CODE 10.0' to 5.0' Filt; red disy, damp, soft, plestic	CLIENT:	USPCI LONE M	OUNTAIN		JOB N	10.: <i>9832</i>	1-09-93
START DATE: 7-12-95 COMP. DATE: 7-13-95 SURFACE ELEVATION: 1385.86 FEET OGGED BY: DAN DOWERS TOTAL DEPTH: 38.0 FEET BGS WELL 1AGRAM DPT DESCRIPTION GRAPHIC LOG GW SAMPLES/ ISOLATED INTERN DESCRIPTION GRAPHIC LOG GW SAMPLES/ ISOLATED INTERN 0.0' to 5.0' to 8.0' Wassive white gypsen, dry, dusty 0.0' to 17.5' Red claystone: (IOR 3/4), damp 10- 17.5' to 22.0' Green daystone: (IOG 8/2), wet (nakes water) to 16' CL 20- Demp, plastic from 8' to 22' 22.0' to 37.3' Red claystone: damp to dry to 25' Wet from 26' to 37.3' Met from 26' to 37.3' Bereen daystone: (IOS 6/2), damp Ereen daystone: (IOS 6/2), damp Ereen daystone: (IOS 6/2), damp Ereen daystone: (IOS 6/2), damp	PROJECT:	CELL 5 INTE	RIM MEASURE	LOCATIO	N: WAYNOKA	. OKLAHO	MA
### DESCRIPTION GRAPHIC LOG GN SAMPLES/ #### DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED INTERV #### DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED INTERV ###################################	DRILLED B	Y: A.W. POOL	DRILLER:	WAYNE CALDW	ELL METH	OD: AIR R	OTARY
DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED INTERN	START DA	TE: 7-12-95	COMP. DATE: 7-13	3-95 SURFACE	E ELEVATIO	N: <i>1385.86</i>	FEET
DESCRIPTION USCS CODE ISOLATED INTERN 0.0" to 5.0" Fill. 5.0" to 8.0" Massive white gypsum, dry, dusty 8.0" to 17.5" Red claystone; (10R 3/4), damp 10- 1-2% gypsum from it to 12" CL 17.5" to 22.0" Demo, plastic from 8" to 22 20.0" to 37.6" Red claystone; damp to dry to 25" Wet from 26" to 37.9" Series claystone; damp to dry to 25" Wet from 26" to 37.9." CL Breen claystone; (106 8/2), descp	LOGGED B	Y: DAN DOWER	S TOTAL DE	EPTH: 38.0 FEE	T BGS		
Fill: red clay, damp, soft, plastic 5.0' to 8.0' Massive white gypsum, dry, dusty 8.0' to 17.5' Red claystone: (IOR 3/4), damp 10- 17.5' to 22.0' Green daystone: (IOR 8/2), wet (nakes water) to 18' 20- 20- 22.0' to 37.8' Red claystone: damp to dry to 25' Wet from 26' to 37.5' Wet from 26' to 37.5' Series claystone: (IOR 8/2), damp CL 11-08.38 11-08.38 11-08.38 11-08.38 15-38.0'	WELL DIAGRAM DPT		DESCRIPTION				GW SAMPLES/ ISOLATED INTERV
35— Green claystone; (106 8/2), damp CL 1M-89.38 18'-38.0'	10-	5.0' to 8.0' Massive white gyr 6.0' to 17.5' Red claystone; (i i-2% gypsum from 17.5' to 22.0' Green claystone; Damp, plastic from 22.0' to 37.8' Red claystone; da	osum, dry, dusty IOR 3/4), damp II' to 12' (106 8/2), wet (makes water in 18' to 22'	er) to 18°		FILL GP	I M−8 9.18
	35-	<u> </u>					

LOG BORING NO. IM-70

Page 1 of 1

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY COMP. DATE: 7-14-95 | SURFACE ELEVATION: 1393.15 FEET START DATE: 7-13-95 LOGGED BY: DAN DOWERS TOTAL DEPTH: 15.0 FEET BGS WELL. GRAPHIC LOG GW SAMPLES/ DESCRIPTION DIAGRAM USCS CODE ISOLATED INTERV. 0.0' to 5.5' Fill; red day, moist to wet FILL CL. Green daystone: (106 8/2), damp Red claystone: (IOR 3/4), damp CL 10-10.0° to 13.5° Green daystone; (106 6/2), damp CL Red claystone; dry, 10% gypsum from 13.5' to 14' CL 14.8' to 15.0' JM-70.15 Green daystone: damp 7-15.0" Total Depth - 15.0 Feet BGS 20-OB NUMBER: 98321-09-93

LOG BORING NO. IM-71

Page 1 of 1

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93 LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 7-14-95 COMP. DATE: 7-14-95 | SURFACE ELEVATION: 1394.07 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 18.0 FEET BGS WELL GRAPHIC LOG GW SAMPLES/ DPT DESCRIPTION DIAGRAM USCS CODE ISOLATED INTERV. 0.0' to 5.0' FIII; sandy gypsum gravel and red clay, damp FILL 5.0' to 8.0' Red claystone; damp to dry 8.0' to 7.0' CL Green daystone: damp 7.0' to 12.0' Red claystone, dry, dusty CL 10 12.0' to 13.0' CL Green daystone; damp 13.0' to 15.8' Red claystone; dry, dusty CL 15-15.8' to 18.0' IM-7L18 Green daystone; damp 0'-18.0' Total Depth - 18.0 Feet BGS 20 OB NUMBER: 98321-09-93

LOG

BORING NO. IM-72

Page 1 of 1

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 7-14-95 COMP. DATE: 7-14-95 | SURFACE ELEVATION: 1393.42 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 15.5 FEET BGS WELL GRAPHIC LOG GW SAMPLES/ DPT DESCRIPTION DIAGRAM USCS CODE ISOLATED INTERV. 0.0' to 5.0' Fill; red clay, trace gypsum, damp FILL 6.0' to 8.0' Red claystone CL 8.0' to 7.0' Green claystone; damp CL 7.0' to 12.0" Red claystone, dry CL 10-12.0° to 12.5° CL Green daystone 12.5" to 15.4" Red claystone; moist to wet CL 15. 15.4' to 15.5' CL JM-72.15.5 Green daystone; noist to wet 0'-15.5' Total Depth - 15.5 Feet BGS IOB NUMBER: 96321-09-93

LOG

BORING NO. IM-73

LIENT	: <i>U</i>	SPCI LONE M	OUNTAI	'N		JOB NO.:	9832	1-09-93
ROJEC	CT:	CELL 5 INTE	RIM ME	ASURE	LOCATION:	WAYNOKA, OK	CLAHO	IMA .
RILLE	DBY	': A.W. POOL		DRILLER: WAY	NE CALDWELL	METHOD:	AIR F	ROTARY
TART	DAT	E: 7-18-95	COMP.	DATE: 7-18-95	SURFACE E	LEVATION: 13	388.4	BFEET
OGGE	D BY:	: DAN DOWER	S	TOTAL DEPTH	: 41.0 FEET BO	S		
WELL AGRAM	DPT		D	ESCRIPTION	and and a second	GRAPHIC LO		GW SAMPLES/ ISOLATED INTER
	20	0.0' to 5.5' Fill; red clay, tra 5.5' to 19.7' Red claystone; d 1% gypsum from 1 Dry and dusty from 1 19.7' to 24.5' Green claystone; d Wet from 26' to 4	amp to dry 3' to 18' on 17' to 20' dry to damp				CL CL	IM-73.20 No sample, dry 0'-20.0'
	40-			· · · · · · · · · · · · · · · · · · ·				
	45-	40.8' to 41.0' Green claystone: Total Depth = Hole making w	41.0 Feet 6	36S			√ CL	7 1M-73.41 20'-41.0'

LOG

BORING NO. IM-74

A LAIDLAW COMPANY

CLIENT: /	JSPCI LONE M	DUNTAT	N		JOB NO.:	9832	1-09-93
	CELL 5 INTE		- i	LOCATION:	WAYNOKA, OK		
 	Y: A.W. POOL	TATE MEA	DRILLER: WAYN	L			
		COMP F	DATE: 7-19-95				
	: DAN DOWER:		TOTAL DEPTH:				r tan lan f
WELL			<u>-</u> .		GRAPHIC LO		GW SAMPLES/
DIAGRAM DPT		Di	ESCRIPTION		USCS COD	ISOLATED INTERV.	
10- 15- 10- 30- 35- 40- 45-	Damp to dry from 9.5' to 11.0' Green claystone; 11.0' to 19.9' Red claystone; dr 6ypsum from 14' to 10% gypsum from 1 10% gypsum from 1 19.9' to 24.0' Green claystone; dr 24.0' to 27.0' Red claystone; dr 27.0' to 28.0' Massive white gyp 28.0' to 39.9' Red claystone; dry Moist at 38' Damp from 38' to 4 39.9' to 40.0' Green claystone Total Depth =	th 20% gree 8' to 9.5' damp, slightly y to damp > 14.5' 5' to 18' 'to 18' to slightly sum	n claystone, trace 1% gyr	osum, damp		CL CL CL CL CL	IM-74.20 No water sample dry 0'-20.0'

LOG

BORING NO. IM-75

A LAIDLAW COMPANY

PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL START DATE: 7-20-95 COMP. DATE: 7-20-95 SURFACE EL LOGGED BY: DAN DOWERS WELL DIAGRAM DPT DESCRIPTION 0.0' to 3.0' Fill: gypsum gravel	· · · · · · · · · · · · · · · · · · ·	OTARY
DRILLED BY: A.W. POOL START DATE: 7-20-95 COMP. DATE: 7-20-95 SURFACE EL LOGGED BY: DAN DOWERS WELL DIAGRAM DPT DESCRIPTION 0.0' to 3.0' Fill; gypsum gravel 3.0' to 8.0' Fill; red clay, damp, plastic 8.0' to 9.0' Green claystone; damp, slightly plastic 9.0' to 13.0' 9.0' to 13.0'	METHOD: AIR R LEVATION: 1394.68 GS GRAPHIC LOG USCS CODE FILL	B FEET GW SAMPLES
NELL DIAGRAM DPT DESCRIPTION O.0' to 3.0' Fill; gypsum gravel 3.0' to 8.0' Fill; red clay, damp, plastic 6.0' to 9.0' Green claystone; damp, slightly plastic 9.0' to 13.0' So' to 13.0'	GRAPHIC LOG USCS CODE FILL	GW SAMPLES/
WELL DIAGRAM O.O' to 3.0' FIII; gypsum gravel 3.0' to 8.0' FIII; red clay, damp, plastic 5- 8.0' to 9.0' Green claystone; damp, slightly plastic 9.0' to 13.0'	GRAPHIC LOG USCS CODE	
DIAGRAM O.O' to 3.0' FIL: gypsum gravel 3.0' to 8.0' FIL: red clay, damp, plastic 8.0' to 9.0' Green claystone: damp, slightly plastic 9.0' to 13.0'	FILL	
3.0' to 8.0' Fill: red clay, damp, plastic 8.0' to 9.0' Green claystone: damp, slightly plastic 9.0' to 13.0'		
13.0' to 14.0' Green daystone; damp, slightly plastic 14.0' to 17.0' Red claystone; damp, slightly plastic 17.0' to 19.0' Green claystone; damp, slightly plastic 19.0' to 27.9' Red claystone; damp Becomes wet at 20' 27.9' to 28.0' Green claystone Total Depth = 28.0 Feet BGS	CL CL	IM−75.28 0°−28.0°

LOG

BORING NO. IM-76

IENT: L	ISPCI LONE M	DUNTAIN			JOB NO.:	9632	1-09-93
ROJECT:	CELL 5 INTE	RIM MEASURE		LOCATION:	WAYNOKA, OK	LAHO	MA
SILLED B.	Y: A.W. POOL	DRILL	ER: WAYN	E CALDWELL	METHOD:	AJR R	OTARY
TART DAT	E: 7-20-95	COMP. DATE:	7-20-95	SURFACE E	EVATION: 13	92.45	FEET
GGED BY	: DAN DOWER:	TOTA	L DEPTH:	28.5 FEET BO	55		·
MELL AGRAM DPT		DESCRIPT	TION		GRAPHIC LO USCS CODE		GW SAMPLES/ ISOLATED INTER
5- 10- 15- - 20- - 30-	0.0° to 7.0° Fill; red clay, dam 7.0° to 11.0° Red claystone; da 11.0° to 12.0° Green claystone; 12.0° to 15.0° Red claystone 15.0° to 17.0° Green claystone; da Moist to wet from Damp from 20° to 10% gypsum from 2 Wet from 24° to 26 28.4° to 28.5° Green claystone; Total Depth =	damp to day damp, plastic mp to 19' 19' to 20' 24'				CL CL CL	IM-78.28.5 0'-28.5

LOG

BORING NO. IM-77

	(COST LOVE M								
 	JSPCI LONE M						?1-09-93 		
 	CELL 5 INTE	RIM MEA	 	·	WAYNOKA. C				
	Y: A.W. POOL		DRILLER: WAYN	,			R ROTARY		
 			DATE: 7-21-95	<u> </u>		393.82	? FEET		
LOGGED BY	: DAN DOWER	<u>s</u>	TOTAL DEPTH:	28.5 FEET E	3GS				
WELL DIAGRAM DPT		Di	ESCRIPTION		GRAPHIC USCS CO		GW SAMPLES/ ISOLATED INTER		
-	0.0' to 8.0' FW; red clay, dam	Þ				•			
						•			
-	• •					FILL			
						•			
5-						•	,		
	6.0' to 7.0'				1/////	CL	1		
	Green claystone: 7.0' to 13.0'	damp		/	1/////	 "	1		
	Red claystone; dr	y				1			
10-						7			
						CL			
					Y/////	1			
1 4	12.014.44.00					1			
	13.0' to 14.0' Green daystone:	tamp		,		CL			
15-	14.0' to 17.0' Red claystone; dry	,				1			
					<i>\/////</i>	CL			
+	Thin gypsum zone	at 18.5]			
	Green daystone; o	lamp			V/////	CL			
	19.0' to 28.3'					1-			
20	Red claystone; dar	np			<i>\/////</i>	1			
						7			
	•		•		<i>\/////</i>	1			
						ا ہ [
25-	20% gypsuin from 2	4.5" to 25"	•		V/////	1			
]			
				•		7			
-						1			
-	28.3' to 28.5' Green claystone; de	9mp				رد	1 M- 77.28.5		
30-	Total Depth = 2		is				0'-28.5'		
		-2-					-		
 NUMBER: 98321-0	19-93								
		-							

SOIL BORING/WELL LOG

Page I of I

BORING NO. LMC5 AB1

WELL NO.

Union Pacific Corporation					
CLIENT: USPCI, LONE	MOUNTAIN	JOB NU	IMBER: 98124	1	
PROJECT: CELL 5 RFI		LOCATION: LONE MTN, OKLA	НОНА		
DRILLED BY: A.H. POOL	DRILLER: WAYNE CAL	LOWELL METHO	D: AIR & HU	DROTARY	-
DATE START: 9/11/92	DATE COMP: 9/16/92	REF. EL.:	TOTAL	EPTH: 21	
LOGGED BY: ERIC TAYLOR	APPROVED BY:	DEPTH	TO WATER:		
WELL DPT S GRAPHIC	I DES	CRIPTION	ОУМ	SAMPLE NUMBER	SAMPLE ANAL.
10-	I 13.0'- 21.0', Claystone: 100% to no observed sat, intervals, bid brown (10R 3/4), spotted paid gypsum veins (<1/4" thick), no	s exhibit properties of lean clay	n angle		
25	Bottom of boring: 21 feet belo Borehole diameter: 8" to 6' 8 6" to 15' 86 4" to 21' 86 Boring abandoned with neat of Borehole diameter: 4.25" Cement mix: 7 sacks Portland 5% bentonite powder 53 gal. water 1-1 mix	ow grade Gement (0-42° @30 degrees) type II cement			
55-					
108 MUNIBER 96124					

SUIL BURING/WELL LUG

BURING NU. LMC5 DUI

Page 1 of 2

WELL NO.

JOB NUMBER: 98124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL DRILLED BY: A.W. POOL METHOD: AIR ROTARY **DATE START: 8/25/92** DATE COMP: 8/25/92 REF. EL.: TOTAL DEPTH: 81 DEPTH TO WATER: 15 LOGGED BY: ERIC TAYLOR APPROVED BY: BLOWS GRAPHIC LOG SAMPLE WELL SAMPLE DPT DESCRIPTION ASTM CODE COMP NUMBER ANAL. 0.0'- 18.0', Engineered Fill: 100% fines, h dry stringth, n dintincy, m tghnss, m reddish brn (IOR3/4) npo, n organics, mst, homo, grades to claystone bedrock at 18 feet below grade. 0 NO 18.0'- 81.0', Claystone: 100% fines, firm to hard, dry to moist, wet 20at 25-28 feet below grade, blocky fracture, mottled, moderate reddish brown (IOR3/4) to pale green (IOG6/2), subhorizontal to high angle gypsum veins (<1/4" thick), no HCL reaction, crushed, moistened and worked samples exhibit properties of lean clay (see above description for engineered fill) 25-30-35-CL 50-60 JOB NUMBER: 96124

SOIL BORING/WELL LOG

BORING NO. LMC5 DD1

Page 2 of 2

WELL NO.

CLIENT: USPCI, LONE MOUNTAIN JOB NUMBER: 98124 PROJECT: CELL 5 RFI LOCATION: LONE MTN, OKLAHOMA DRILLED BY: A.W. POOL METHOD: AIR ROTARY DRILLER: WAYNE CALDWELL **DATE START: 8/25/92** DATE COMP: 8/25/92 REF. EL.: TOTAL DEPTH: 81 LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: 15 BLOWS WELL GRAPHIC LOG DPT SAMPLE. SAMPLE DESCRIPTION OVM COMP ASTM CODE NUMBER ANAL. 65-70-75-80-Bottom of boring: 80 feet below grade Boring abandoned with neat cement (0-80') Borehole diameter: 4.75" 85-6 sacks cement 60 Ds. bentonite 90 gal. water 90-95-100-105-110-115-120-JOB NUMBER: 96124

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DUIL BUNING/WELL LUG

BUKING NU. LMCD DUZ

Page 1 of 2

WELL NO.

A Subsidiary of Union Pacific Corporation JOB NUMBER: 98124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MIN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL **METHOD: AIR ROTARY** DRILLED BY: A.W. POOL TOTAL DEPTH: 80 DATE START: 8/25/92 DATE COMP: 8/25/92 REF. EL.: DEPTH TO WATER: 15 APPROVED BY: LOGGED BY: ERIC TAYLOR GRAPHIC LOG SAMPLE SAMPLE WELL DPT DESCRIPTION ASTM CODE NUMBER COMP ANAL. Я 0.0'- 16.5', Engineered Fill: 100% fines, h dry strngth, n dintney, m tghnss, m reddish bin (10R3/4) npo, n organics, mst, homo, grades th claystone bedrock at 18 feet below grade. 0 NO 18.0'- 81.0', Claystone: 100% fines, firm to hard, dry to moist, 20no observed sat, intervals, locky fracture, mottled, moderate reddish brown (10R3/4) to pale green (10G6/2), subhorizontal to high angle gypsum veins (<1/4" thick), no HCL reaction, crushed, moistened and worked samples exhibit properties of lean clay (see above description for engineered fill) 25-30-35-40-45. 50-55-60-JOB NUMBER: 96124

SOIL BORING/WELL LOG

BORING NO. LMC5 DD2

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WELL NO.

A Subsidiary of Union Pacific Corporation JOB NUMBER: 98124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE HTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL DRILLED BY: A.W. POOL METHOD: AIR ROTARY TOTAL DEPTH: 80 REF. EL.: **DATE START: 8/25/92** DATE COMP: 8/25/92 DEPTH TO WATER: 15 LOGGED BY: ERIC TAYLOR APPROVED BY: BLOWS SAMPLE GRAPHIC LOG SAMPLE WELL OVM DESCRIPTION DPT ASTH CODE NUMBER ANAL. COMP 65 70-80-Bottom of buring: 81 feet below grade Boring abandoned with neat cement (0-81') Borehole diameter: 4.75" 85-Cement mix: 8 sacks cement 80 lbs. bentonite 120 gal. water 90-95-100-105-110-115-120-JOB NUMBER 96124

SOIL BORING/WELL LOG

BORING NO. LMC5 NL-0B1

Page 1 of 2

WELL NO.

CLIENT: USS	CT ONE 1	401154T :	7.1.1		100 111110	CD: 0010.4		
CLIENT: USP		L	ER: 96124	· · · · · · · · · · · · · · · · · · ·				
PROJECT: CELI				LOCATION: LONE H				
DRILLED BY: A.W. PO	00L		DRILLER: WAYNE CAL	LDWELL	METHOD:	AIR & MUC	ROTARY	
DATE START: 8/27/	/92	DATE CO	MP: 8/27/92	REF. EL.:		TOTAL D	EPTH: 80	
LOGGED BY: ERIC T			APPROVED BY:		DEPTH TO	WATER:		
	GRAPHIC L		DES	CRIPTION	•	OVM	SAMPLE NUMBER	SAMPLE ANAL.
50- 30- 35- 40- 35- 60- 8 MUMBER 96124		13.0 moor moor moor moor moor moor moor moo	D'- 13.0', Engineered Filt: 10 plat, m reddish brn (10R3/4) plat, m reddish brn (10R3/4) plate reddish brown (10R3/4) plate reddish brown (10R3/4) plate description for enginem drill cuttings. D' - 29.5', Claystone: 100% plate description for enginem drill cuttings. D' - 29.5', Claystone: 100% plate description (27-28'), HCL resorganics, appears and hard to higher moisture contents of 6/2), green coloration and sub horiz vertical gypowed samples exhibit propermottled (35-37', 39.5-46')	fines, stiff to hard, dry to a 3/4) to pale green (100 es exhibit properties of keered fill) no core recover ene (100 6/2), action, h dry stringth, no codes more like lean clay in (10R 3/4), homo, trom associated with gypsum, n sum veins (<1/4"thick), m ritles of lean clay (see FO") If fines, mst-wet, slightly reaction, h dry stringth, it ars and handles more like the content. I fines, dry - mst, stiff to in (10R 3/4) spotted with gration associated with grational gration associated with grational grati	mst, homo. o moist, 6 6/2), crushe ean clay (see y, descrip. t. dintney, m pis than claystol - mst, ottled pale g o HCL reacti st, iil descrip.). fissile, homo, n dintney, e lean clay ti hard, ypsum, exten	t, ne en on,		

SOIL BORING/WELL LOG

BORING NO. LMC5 NL-OB1

Page 2 of 2

WELL NO.

JOB NUMBER: 96124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DRILLED BY: A.W. POOL DATE COMP: 8/27/92 TOTAL DEPTH: 80 **DATE START: 8/27/92** REF. EL.: LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: BLOWS GRAPHIC LOG SAMPLE SAMPLE WELL DPT DESCRIPTION OVH ASTH CODE NUMBER COMP ANAL. 65-70-75-Cr 74.5' - 75.0', Claystone: 100% fines, dry - mst, m. stiff to stiff, homo, pale green (106 6/2), no HCL reaction, h dry stringth, n dintincy CL m pist, npo, no organics, appears and handles more like lean clay than claystone due to higher moisture content. 80-75.0' - 80.0', Claystone: 100% lines, dry - mst, stiff to hard, interbedded reddish brown (IOR 3/4) and pale green (IOG 6/2), no HQL reaction, h dry stringth, n dintney, m pist, npo, no organics, extensive sub horizontal gypsum veins (<1/4" thick), pale green material appears and handles more like lean clay than claystone 85 due to higher moisture content. Bottom of boring: 80 feet below grade Borehole diameter: 12.25" to 13" 6.25" 13' to 80' 90-Boring abandoned with neat cement (0-80') Cement mix: 13 sacks Portland type II cement 130 lbs bentonite powder 195 gallons water 95 Removed 13 feet casing 100-105 110-115 120-JOB HUMBER: 96124

SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-OB2

WELL NO.

Union Pacific Cor	rporati	on .												
CLIENT:	IENT: USPCI, LONE MOUNTAIN								JOB NUMBER: 98124					
PROJECT:	CELL	. 5 RFI				LOCATION: LONE	MTN, OKLAHO	MA						
DRILLED BY:	A.H. PO	0L			DRILLER: WAYNE CA	LOWELL	METHOD:	AIR & MU	DROTARY					
DATE START:	9/21/6	92		DATE CO	MP: 8/29/92	REF. EL.:		TOTAL D	EPTH: 85					
LOGGED BY: E	RIC T	AYLOR			APPROVED BY: DEPT				D WATER:					
WELL COMP	DPT	GRAPH ASTH	_	1	DES	ОУН	SAMPLE NUMBER	SAMPLE ANAL.						
	5 10 15 20 25 30 35 40 45 50 55 50			IL 47. pal m. p. l. L. eett ob.	0'- 13.0', Engineered Fill: III plst, m reddish brn (10R3/ 0'- 25.0', Claystone: 100x derate reddish brown (10I istened and worked sampl ove description for engine psum veins (<1/4" thick, 2 .0' - 30.0', Claystone: 100 mo, pale green (10G 6/2), IL reaction, 2 feet of reco indes more like lean clay to intent0' - 47.0' Claystone: 100 intent0' - 47.0' Claystone: 100 intent0' - 47.0' Claystone: 100 intent0' - 47.0' Claystone: 100 intent0' - 47.0' Claystone: 100 intent0' - 47.0' Claystone: 100 intent0' - 47.0' Claystone: 100 intent0' - 48.5', Claystone: 100 intent0' - 49.5', C	fines, stiff to hard, dr. R 3/4) spotted pale gree exhibit properties o cered fill), extensive substantially spotted pale gree fill), extensive substantially spotted to hard, or core, no organically strong due to the contained saturated with gypsum verifical gypsum veins attracted, high angle times, dry – wet, ms reddish brown (10R 3/4) contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft, wet, clay integers of the contained saturated ery soft	y to moist, een (106 6/2), f lean clay (se b horizontal ghtly fissile, n dintncy, no nanics, appears higher moisture tracture tred paie green m, no HCL react the paie green m, no HCL react tif to hard, 4) spotted with th gypsum, all cervals.	and lion.						

SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-0B2

WELL NO.

JOB NUMBER: 96124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DATE COMP: 9/29/92 REF. EL.: **DATE START: 9/21/92** TOTAL DEPTH: 85 LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: GRAPHIC LOG SAMPLE WELL SAMPLE DPT DESCRIPTION OVH COMP ASTH CODE NUMBER ANAL. 75 75.0' - 77.5', Claystone: 100% fines, wet, soft, homo, pale green (10G 6/2), no HCL reaction, h dry stringth, n dintincy, m pist, npo, no organics, appears and handles more like lean clay than claystone due to higher moisture content. 80-77.5' - 85.0', Claystone: 100% fines, dry - wet, m stiff to hard, reddish brown (IOR 3/4), spotted to mottled pale green (IOG 6/2), h dry strigth, n dintincy, m plst, npo, no organics, common sub horizontal gypsum veins (<1/4" thick), pale 85 green material appears and handles more like lean clay than claystone due to higher moisture content. Bottom of boring: 85 feet below grade Borehole diameter: 6" to 14" 90-6", 14 to 80" Boring abandoned with neat cement (0-85') Cement mix: 19 sacks Portland type II cement 35 lbs bentonite powder 190 gallons water 95 Pulled 14" of 8" and 80"of 6" casing 100-105 110-115 120-XOB NUMBER: DE124

SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-OB3

WELL NO.

Union Pacifi	Corpor	ation	1					"	141	J.		
CLIENT	: US	PC:	I, LON	EM	10U	NTAIN		JOB NUM	BER	96124		
PROJEC	T: CE	LL	5 RFI		-		LOCATION: LON	E MTN, OKLAH	OMA			
DRILLED B	Y: A.W.	P00	L			DRILLER: WAYNE CAL	LDWELL	METHOD	: AI	R & MUD	ROTARY	
DATE STA	RT: 9/1	8/92			DAT	TE COMP: 9/21/92	REF. EL.:		T	OTAL DI	EPTH: 35	
LOGGED BY	ERIC					APPROVED BY:		DEPTH 1	O M	TER:		
WELL COMP	DPT	BLOWS	GRAPH ASTM			DES	CRIPTION			OVM	SAMPLE NUMBER	SAMPLE ANAL.
	55— 10— 15— 20— 30— 35— 40— 55—					0.0'- 13.0', Engineered Filt: 10 m plst, m reddish brn (10R3/4) moderate reddish brown (10R moistened and worked sample above description for engineing gypsum veins (<1/4" thick), s (<1.14" thick), s (<1.15" thick)	fines, stiff to hard, of 3/4) spotted pale (see exhibit properties ered fail), common sut aturated clay (21-2) (30-30.5'), no organism claystone due to 30.5-31'). If fines, m stiff to hard thick) common, block and claystone due to 3/4), spotted to mossociated with gypsicological common, block and claystone die to mossociated with gypsicological common, block and claystone to mossociated with gypsicological common, block and claystone to mossociated with gypsicological common, block and grade and grad	dry to wet, preen (106 6/2) of lean clay (so horizontal 3'). ret, sl. fissie, n dintincy, no mics, appears a higher moisture of the distriction o	ee e			
JOB HUMBER: 96124	60-											

SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-0B4

WELL NO.

MW-RFI-2

JOB NUMBER: 98124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN. OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL **HETHOD: AIR & MUD ROTARY** DRILLED BY: A.W. POOL REF. EL.: TOTAL DEPTH: 80 DATE COMP: 10/5/92 **DATE START: 9/18/92** APPROVED BY: DEPTH TO WATER: LOGGED BY: ERIC TAYLOR GRAPHIC LOG SAMPLE SAMPLE WELL OVM DPT DESCRIPTION ASTH CODE NUMBER COMP ANAL. ᆸ 0.0'- 13.0', Engineered Fill: 100% fines, h dry stringth, n dintincy, m pist, m reddish brn (10R3/4) npo, n organics, dry - mst, homo. CL 13.0'- 26.0', Claystone: 100% fines, stiff to hard, dry, moderate 15 redaish brown (IOR 3/4) spotted (<1") pale green (IOG 6/2), crushed moistened and worked samples exhibit properties of lean clay (see above description for engineered fill), occ gypsum vein (<1/4" thick). CL 25 26.0' - 31.0', Claystone: 100% fines, m stiff, mst, slightly fissile, homo, pale green (10G 6/2), rare gypsum inclusions, CL no HCL reaction, h dry stringth, n dintincy, m plst, no organics, 30appears and handles more like lean clay than claystone due to higher moisture content. 31.0' - 45.0' Claystone: 100% fines, stiff to hard, dry - mst, blocky fracture, reddish brown (IOR 3/4), homo, tre mottled pale green (10G 6/2), green coloration associated with gypsum, no HCL reaction, npo, sub horiz. - vertical gypsum veins. (<1/4"thick), mst. worked samples exhibit properties of lean clay (see Fill descrip.). CL 45.0 = 46.0°, Claystone: 100% fines, m stiff, mst-wet, reddish brown (10R 3/4), homo, no HCL reaction, npo, first observed rd-brn interval CL exhibiting in-situ characteristics of lean clay (see Fill descrip.). 46.0' - 50.0', Claystone: 100% fines, mst-wet, slightly fissile, homo. 50pale green (IOG 6/2), no HCL reaction, m stiff, h dry strngth, CL m pist, npo, no organics, appears and handles more like lean clay than claystone due to higher moisture content. 50.0" - 52.0", Claystone: 100% fines, wet, soft, reddish brown w/ 55 pale green streaks (<1" thick), h dry strngth, m pist, npo, CL 52.0' = 80.0', Claystone: 100% fines, dry-mst, mostly dry and hard, common gypsum veins (<1/4" thick), 2" gypsum vein at 60', saturated gypsum veins at 54.5', 61', 62', 63', saturated 60 interval at 65-67' associated with gypsum veins. 108 NUMBER 96124

SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-0B4

WELL NO.

MW-RFI-2

JOB NUMBER: 96124 CLIENT: USPCI, LONE MOUNTAIN PROJECT: CELL 5 RFI LOCATION: LONE MTN, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY **DATE START: 9/18/92** DATE COMP: 10/5/92 REF. EL.: TOTAL DEPTH: 80 LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: BLOWS GRAPHIC LOG WELL SAMPLE SAMPLE DPT DESCRIPTION COMP ASTM CODE NUMBER ANAL. 80-Bottom of boring: 80 feet below grade Borehole diameter: 12.25" to 20" 6.25", 20 to 80" Boring completed as groundwater monitoring well (10-5-92) 85-Screen type: tellon, diameter: 2", Interval: 80-60' BG Casing type: teflon, diameter: 2", Interval: 60-55" BG Casing type: PVC, diameter: 2", Interval: 55-2' AG Filter pack: 10/20 sand Interval: 80-58' BG Surface seal: bentonite pellets, Interval: \$6-58' BG 90-Neat cement:8 gal.H2O/sack cement, Interval: 56'-0' BG 95-100-105-110-115-120-JOB NUMBER: 96124



SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-OB5

WELL NO.

CLIENT:	HERCT											
	U3F C1,	LONE	MOU	NTAINA		JOB NUMB	JOB NUMBER: 96124					
PROJECT:	CELL 5	RFI			LOCATION: LON	E MTN, OKLAHO	1A					
DRILLED BY:	A.W. POOL			DRILLER: WAYNE CA	LOWELL	METHOD:	AIR & HU	ROTARY				
DATE START:	9/21/92		DAT	E COMP: 9/29/92	REF. EL.:		TOTAL D	EPTH: 75				
LOGGED BY: E	ERIC TAYL	OR ·		APPROVED BY:		DEPTH TO	WATER:	ATER:				
WELL COMP	BLOWS	GRAPHIC ASTM CO	- 1	DE	SCRIPTION		ОУМ	SAMPLE NUMBER	SAMPLI			
	30 15 10 15 17 17 17 17 17 17 17 17 17 17 17 17 17		CL CL CL	13.0'- 25.0', Claystone: 100: moderate reddish brown' (If moistened and worked samp above description for enging gypsum veins (<1/4" thick. 25.0' - 30.0', Claystone: 100 homo, pale green (106 6/2) HCL reaction, 2 feet of rechandles more like lean clay content. 30.0' - 47.0' Claystone: 10 saturated gypsum veins at when dry, reddish brown (If (106 6/2), green coloration npo, extensive sub horiz (<1/4" thick) from 30-35'. 47.0' - 49.5', Claystone: 10 pale green (106 6/2), no HC m plst, npo, no organics, two pale green (106 6/2), green coloration for this interval elther wet gypsum veins or obvious transitions between linterval.	K fines, stiff to hard, IR 3/4) spotted pale les exhibit properties ered fill), extensive 23–24'). DX fines, m stiff, mst., h dry stringth, m pist overy from core, no c than claystone due to the claystone due to massociated with gyps vertical gypsum veins of saturated, high angular fines, dry — wet, m reddish brown (IQR contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft, wet, clay in soft contained saturated very soft contained satura	dry to moist, green (106 6/2), of lean clay (see sub horizontal su	on.					

SOIL BORING/WELL LOG

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BORING NO. LMC5 NL-OB5

WELL NO.

CLIENT: US	SPCI	LONE	MOUNT	AIN	<u> </u>	JOB NUMBE	R: 96124		- -
PROJECT: CE				,	LOCATION: LONE				
DRILLED BY: A.W.			. —	DRILLER: WAYNE CA		METHOD:		ROTARY	
DATE START: 9/			DATE C	OMP: 9/29/92	REF. EL.:	1 1		EPTH: 75	
LOGGED BY: ERIC			l	APPROVED BY:		DEPTH TO			
WELL DPT			LOG		COLOTION	1		SAMPLE	SAMPLE
COMP	BLOWS	ASTH CO			CRIPTION		OVH	NUMBER	ANAL.
65- 70- 75- 80- 85- 100- 105- 115- 115- 120-			В	ottom of boring: 75 feet be orehole diameter: 8" to 14" 6", 14 to 70' oring abandoned with neat ement mix: 18 sacks Portlar 35 lbs bentonite po 160 gallons water Pulled 14" of 8" and	cement (0-75') nd type II cement owder				

SOIL BORING/WELL LOG

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BORING NO. LMC5 SL-OB1

WELL NO.

CLIENT:	USI	PCI	, LONE	MOI	UNTAIN		JOB NUHB	ER: 9612	4	
PROJECT	: CEI		RFI			LOCATION: LONE	HTN, OKLAHO	MA		
DRILLED BY:					DRILLER: WAYNE C				D ROTARY	
DATE START	: 8/2	7/92		DA	ATE COMP: 8/27/92	REF. EL.:	_ 	TOTAL	DEPTH: 80	··· - .
LOGGED BY:	ERIC	TAY	LOR		APPROVED BY:	_i	DEPTH TO	WATER:	.=	
WELL	DPT	0	GRAPHIC ASTM CO		OE	SCRIPTION		ОУН	SAMPLE NUMBER	SAMPLE ANAL.
JOB NAMBER: 96124	50 10 35 40 45 50 55 60			a a a a a a	0.0'- 13.0', Engineered Filt m pist, m reddish brn (10R3 to claystone bedrock at 18 to claystone bedrock at 18 to claystone bedrock at 18 prown (10R3/4) to pale great and worked sammabove description for engine 18.0'- 18.0', Claystone: 100 no observed saturated intervals, block observed sat. Intervals, block pale green (10G 6/2) spots associated with gypsum, no samples exhibit properties horizontal to high angle gy 25.0'- 28.0', Claystone: 10 homo, pale green (10G 6/2) m pist, npo, no organics, apthan claystone due to high 28.0'- 48.0', Claystone: 10 saturated intervals, blocky pale green (10G 6/2) spots associated with gypsum, no worked samples exhibit properties horizontal to high angle gy 25.0'- 28.0', Claystone: 10 homo, pale green (10G 6/2) spots associated with gypsum, no worked samples exhibit properties of the pale green (10G 6/2), no H m pist, npo, no organics, apclaystone due to higher mo 49.0'- 80.0', Claystone: 10 stiff to hard, blocky fractumottled (55-80'), pale green gypsum, no HCL reaction, cexhibit properties of lean coveins (<1/4' dia.) common.	(4) npo, n organics, mst feet below grade. (4) ines, stiff to hard, dry blocky fracture, mottled een (106 6/2), subhorize, no HCL reaction, crushed bloss exhibit properties o meered fill) (5 fines, m stiff, mst to v. rvals, slightly fissile, hor h dry stringth, n dintro- handles more like lean cla- lean (10 1" diameter), green HCL reaction, crushed, of lean clay (see Fill de osum veins (<1/4" thick) OX fines, mst to wet, slightly pears and handles more er molsture content OX fines, stiff to hard, in fracture, reddish brown (10 1" diameter), green HCL reaction, crushed, perties of lean clay (see OX fines, mst, slightly file CL reaction, h dry string pears and handles more isture content. OX fines, mst, slightly file CL reaction, h dry string pears and handles more isture content. OX fines, mst, possible s re, reddish brown (10R 3- re, reddish brown (10R 6/2) rushed, moistened and w	to moist, I, moderate recontal to high areed, I lean clay (see mst, Ino, pale green I, mo, (10R 3/4) Coloration Individual incomposite and Incomposite and Incomposite	idishingle e w/ worked		

SOIL BORING/WELL LOG

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BORING NO. LMC5 SL-OB1

WELL NO.

CLIENT: USPCI, LONE MOUNTAIN JOB NUMBER: 98124 PROJECT: CELL 5 RFI LOCATION: LONE MTN, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDHELL METHOD: AIR & MUD ROTARY **DATE START: 8/27/92** DATE COMP: 8/27/92 REF. EL.: TOTAL DEPTH: 80 LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: BLOWS WELL GRAPHIC LOG DPT SAMPLE SAMPLE DESCRIPTION OVM COMP ASTM CODE NUMBER ANAL. 65-80-Bottom of boring: 81 feet below grade Borehole diameter: 12.25" to 13" 6.25" to 80" Boring abandoned with neat cement (0-80') Cement mix: 15 sacks Portland type II cement 150 lbs bentonite powder 225 gallons water Pulled 13" of 8" casing 80. 95-100-105-110-115 120-JOB NUMBER: 96124

SOIL BORING/WELL LOG

1010

BORING NO. LMC5 SL-OB2

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WELL NO.

CLIENT:			, LONE	MOI	UNTA	ĪN			JOB NUMB	ER:	96124		
PROJECT							LOCATION:	LONE MT	N, OKLAHO	MA		-	
DRILLED BY:						DRILLER: WAYNE CA	L	· I	METHOD:		QUH 3	ROTARY	
DATE START	: 8/2	7/92		0/	TE COI	MP: 8/27/92	REF. EL.:				TAL DE		 Goʻ
LOGGED BY:	ERIC	TAY	LOR	<u> </u>		APPROVED BY:			DEPTH TO			-	
WELL	1	OMS	GRAPHIC	LOG						\Box		SAMPLE	SAMPLE
СОМР	DPT	BLO.	ASTH CO			DES	CRIPTION				OVM	NUMBER	ANAL.
JOB MUMBER: 96124	50 15 40 50 55 60			a a a a	13.6 no bro gyp moi about 18.0 no bro gyp moi about 18.0 no gyp moi about 18.0 no gyp moi ass sam hor 25.1 hom m p tha 28.1 hom m p tha 28.1 sat pall ass wor about 18.0 no gyp m p tha Bot Bor Bor Bor	o'- 13.0', Engineered Filt III olst, m reddish brn (10R3/ claystone bedrock at 18 for	fines, stiff to had locky fracture, men (106 6/2), sut of HCL reaction, or es exhibit proper ered fill) fines, m stiff, mst vals, slightly fissing the strong to had strong to had supported fill to had supported fill to the sum veins (1/4" to the sum v	rd, dry to notitled, monorizont crushed, ities of le t to v. ms le, homo, dintncy, i ean clay ard, dry green co ished, mo Fill desc hick). et, slighti h dry st s more lik thard, mst brown (1 green co ished, mo y (see F	omolst, noderate red al to high an clay (se it, pale green mpist, npo, than claysto to mst, no n (10R 3/4) ploration istened and rip.), sub loration istened and ill descrip.). Ile, homo, n dintncy, e lean clay	idish ngle e e work	eđ		

JOB HUMBER 96124

SOIL BORING/WELL LOG

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MW-RFI-1

BORING NO. LMC5 SL-0B4

Page 1 of 2

WELL NO.

JOB NUMBER: 96124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DRILLED BY: A.W. POOL DATE COMP: 9/4/92 REF. EL.: TOTAL DEPTH: 80 DATE START: 9/2//92 LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: GRAPHIC LOG SAMPLE SAMPLE WELL DPT DESCRIPTION OVM COMP ASTM CODE NUMBER ANAL. ᆸ 0.0'- 13.0', Engineered Fill; 100% fines, h dry stringth, n dintincy, m pist, m reddish brn (10R3/4) npo, n organics, dry - mst, homo. 10-13.0'- 26.0', Claystone: 100% fines, stiff to hard, dry to moist, moderate reddish brown (IOR 3/4), blocky fracture, no HCL reaction, npo, crushed, moistened and worked samples exhibit properties of leah of lean clay (see above description for engineered fill). CI 20-25-28.0' - 28.0', Claystone: 100% fines, m stiff, mst to wet. slightly fissile, homo, pale green (IOG 6/2), no HCL reaction, h dry strigth, in dintincy, in pist, no organics, appears and handles 30more like lean clay than claystone due to higher moisture content 28.0' - 40.0' Claystone: 100% fines, stiff to hard, mst, blocky fracture, reddish brown (IOR 3/4), mottled pale green (10G 6/2), green coloration associated with gypsum, no HCL reaction, 35 npo, sub horiz. - vertical gypsum veins (<1/4"thick), mst. worked samples exhibit properties of lean clay (see Fill descrip.). 40.0 - 75.0', Claystone: 100% fines, stiff to hard, dry, blocky fracture, reddish brown (10R 3/4), moist, worked samples exhibit properties of lean clay (see Fill descrip.) CL 50 55 60-

SOIL BORING/WELL LOG

BORING NO. LMC5 SL-UB4

Page 2 of 2

WELL NO.

MW-RFI-1

JOB NUMBER: 96124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI METHOD: AIR & MUD ROTARY DRILLER: WAYNE CALDWELL DRILLED BY: A.W. POOL TOTAL DEPTH: 80 **DATE COMP: 9/4/92** REF. EL.: **DATE START: 9/2//92** DEPTH TO WATER: LOGGED BY: ERIC TAYLOR APPROVED BY: BLOWS SAMPLE SAMPLE GRAPHIC LOG OVM WELL OPT DESCRIPTION NUMBER ANAL. COMP ASTM CODE 75.0' - 80.0', Claystone: 100% fines, mst - wet, m stiff to hard, interbedded reddish brown (IOR 3/4) and pale green (IOG 6/2), no HQL reaction, h dry stringth, n dintincy, m plst, npo, no organics. extensive sub horizontal gypsum veins (<1/4" thick), pale 80green material appears and handles more like lean clay than claystone due to higher moisture content. Bottom of boring: 80 feet below grade 85-Borehole diameter: 12.25" to 16" 6.25", 16 to 80" Boring completed as groundwater monitoring well (10-5-92) Boring backfilled with bentonite pellets (50 lbs.) and hole plug (6 sacks) from 80 to 40' 90-Screen type: tellon, diameter: 2", interval: 40 to 20'BG Casing type: tetlon, diameter: 2", interval: 20 to 15'86 PVC, diameter: 2", interval: 15 to -2'86 Filter pack: 10/20 interval: 40 to 18'8G 95-Surface seat bentonite petets. Interval: 18 to 16'BG neat cement. Interval: 18 to 0' BG 100-105-110-115-120-JOB NUMBER: 96124

SOIL BORING/WELL LOG

Page I of 2

BORING NO. LMC5 VI

WELL NO.

JOB NUMBER: 9824 CLIENT: USPCI. LONE MOUNTAIN LOCATION: LONE MTN. OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DRILLED BY: A.W. POOL TOTAL DEPTH: 80 DATE COMP: 8/27/92 REF. EL.: **DATE START: 8/27/92** DEPTH TO WATER: 25 LOGGED BY: ERIC TAYLOR APPROVED BY: SAMPLE GRAPHIC LOG SAMPLE WELL. DPT DESCRIPTION NUMBER COMP ASTM CODE ANAL. 쩝 0.0'- 13.0', Engineered Filt 100% fines, h dry stringth, h dintincy, m pist, m reddish brn (IOR3/4) npo, n organics, mst. homo, grades to claystone bedrock at 18 feet below grade. 10-13.0'- 16.0', Claystone: 100% fines, stiff to hard, dry to moist, α 15no observed sat. Intervals, blocky fracture, mottled, moderate reddish brown (IOR 3/4) to pale green (IOG 6/2), subhorizontal to high angle fractures filled with gypsum (<1/4" thick), no HCL reaction, crushed. α moistened and worked samples exhibit properties of lean clay (see above description for engineered fill) 20-0 16.0'- 18.0', Claystone: 100% fines, m stiff, mst to v. mst. α no observed saturated intervals, slightly fissile, homo, pale green (10G 6/2), no HCL reaction, h dry strngth, n dintney, m pist, npo, no organics, appears and handles more like lean clay than claystone 25due to higher moisture content α 18.0' - 25.0', Claystone: 100% fines, stiff to hard, dry to mst, no observed sat. Intervals, blocky fracture, reddish brown (IOR 3/4) w/ pale green (IOG 6/2) spots (to 1" diameter), green coloration 30 associated with gypsum, no HCL reaction, crushed, moistened and worked samples exhibit properties of lean clay (see Fill descrip.), sub horizontal to high angle fractures (<1/4" thick) filled with gypsum 25.0' - 28.0', Claystone: 100% fines, mst to wet, slightly fissile. 35 homo, pale green (106 6/2), no HCL reaction, h dry stringth, n dintincy m pist, npo, no organics, appears and handles more like lean clay α than claystone due to higher moisture content 28.0' - 46.0', Claystone: 100% fines, stiff to hard, mst, possible 40saturated intervals, blocky fracture, reddish brown (IOR 3/4) w/ pale green (106 8/2) spots (to 1" diameter), green coloration associated with gypsum, no HCL reaction, crushed, moistened and worked samples exhibit properties of lean clay (see Fill descrip.). 45 0 46.0' - 49.0', Claystone: 100% fines, mst, slightly fissile, homo, CL pale green (106 6/2), no HCL reaction, h dry stringth, n dintincy, m pist, npo, no organics, appears and handles more like lean clay 50 claystone due to higher moisture content. 49.0' - BO.0', Claystone: 100% fines, mst, possible sat, intervals, stiff to hard, blocky fracture, reddish brown (IOR 3/4) spotted to mottled (55-80'), pale green coloration (10G 6/2) associated with 55 gypsum, no HCL reaction, crushed, moistened and worked samples exhibit properties of lean clay (see Fill descrip.) gypsum filled . fractures (<1/4' dia.) common. 60 JOB NUMBER: 06124

SOIL BORING/WELL LOG

Page 2 of 2

BORING NO. LMC5 V1

WELL NO.

CLIENT: USPCI, LONE MOUNTAIN JOB NUMBER: 96124 LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DATE COMP: 8/27/92 **DATE START: 8/27/92** REF. EL .: TOTAL DEPTH: 80 LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: 25 BLOWS WELL GRAPHIC LOG SAMPLE **DPT** SAMPLE DESCRIPTION MVO COMP ASTM CODE NUMBER ANAL. 85 70 75 80-0 Bottom of boring: 81 feet below grade Borehole diameter: 12.25" to 11.5" 8", 11.5 to 80' 85-Boring abandoned with neat cement (0-80') Cement mix: 15 sacks Portland type II cement 50 ibs bentonite powder 120 gallons water 90-95-100-105 110-115-120-JOB NUMBER 96124

SOIL BORING/WELL LOG

Page 1 of 2

BORING NO. LMC5 V2

WELL NO.

CLIENT: USPCI, LONE MOUNTAIN PROJECT: CELL 5 RFI DRILLED BY: AM: POOL DRILLER MAYNE CALDMELL METHOD: AIR 6 MUD ROTARY DOSED BY: ERIC TAYLOR APPROVED BY: DESCRIPTION MELL OPT So GRAPHIC LOG COMP OPT SO GRAPHIC LOG OPT SO GRAPHIC LOG COMP OPT SO GRAPHIC LOG OPT S	CLIENT: LIEBOL LONG	MOUNTAIN		100 1000	ED: 00:0 :		
DRILLED BY: A.M. POOL DRILLER: MAYNE CALDMELL METHOD: ALR & MUD ROTARY DATE START: 8/27/92 DATE COMP: 8/27/92 DATE COMP: B/27/92 DESCRIPTION DESCRIPTION DOYN SAMPLE SAMPLE ANAL. OVN SAMPLE SAMPLE ANAL. DO'- 13.0°, Engineered Fit: 100% fines, a dirt to hard, dry to mobit, no plast, a reddish bron (100% 1/4) inpo, n organics, dry - mst, home. DO'- 13.0°, Engineered Fit: 100% fines, a stiff to hard, dry to mobit, noderate reddish bron (100% 1/4) inpo pain green (100% 67/2), crushed, moststered and worked samples exholor propriets of bean day (see moststered and worked samples exholor propriets of bean day (see moststered and worked samples exholor propriets of bean day (see moststered and worked samples exholor propriets of bean day (see moststered and worked samples exholor propriets of bean day (see moststered and worked samples exholor propriets of bean day (see moststered with propriets of bean day (see moststered with propriets of bean day (see more samples exholor propriets) of bean day (see more samples and bean day than clays) some down to reddish bronn (100% 1/4), home, the notice pale green look of the charge of the charge (see fit) days and the control of the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the day and the charge of the charge (see fit) days the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the charge of the charge (see fit) days and the day and the charge of the charge (see fit) days and the samples sentitly propriets of lean clay (see fit) dascir).		MUUNIAIN	10017101				
DATE START: 8/27/92 DATE COMP DATE COMP APPROVED BY: DESCRIPTION DESCRIPTION OVM SAMPLE ANAL. DOWN SAMPLE ANAL. DOWN SAMPLE ANAL. DOWN DESCRIPTION OVM SAMPLE ANAL. OVM				·			
APPROVED BY: DEPTH TO MATER: WELL OPT & RATIN CODE DESCRIPTION DESCRIPTION OVW SAMPLE SAMPLE OF NAME AND CODE OUT 13.0'. Engineered Fix 100% fines, a stiff to hard, dry to most, moderate reddish brown (10R 31/4) npb, n organics, dry - mst, holeo. 13.0'-25.0'. Claystone: 100% fines, stiff to hard, dry to most, moderate reddish brown (10R 31/4) to pale green (106 6/2), drystened, moststened and wormed samples enable properties of leen day like and the dry to most, from or in cuttings. 25- 25- 26- 27- 28- 28- 28- 28- 28- 28- 28				METHOD:			
MELL COMP OPT G G GRAPHIC LOG ASTM CODE DESCRIPTION OVM SAMPLE NUMBER OVM SAMPLE NUMB			REF. EL.:		TOTAL DE	EPTH: 80	
13.0" – 25.0", Claystone: IOOX fines, allf to hard, dry to moist, moderate reddish brown (IOR3/4) npo, n organics, dry – mst, holdo. 13.0" – 25.0", Claystone: IOOX fines, allf to hard, dry to moist, moderate reddish brown (IOR 3/4) to pale green (IOG 6/2), crushed, moistened and worked samples exhibit properties of lean clay (see above description for engineered fill no core recovery, descrip. 15.				DEPTH TO	WATER:		
13.0" – 25.0", Claystone: IOOX fines, allf to hard, dry to moist, moderate reddish brown (IOR3/4) npo, n organics, dry – mst, holdo. 13.0" – 25.0", Claystone: IOOX fines, allf to hard, dry to moist, moderate reddish brown (IOR 3/4) to pale green (IOG 6/2), crushed, moistened and worked samples exhibit properties of lean clay (see above description for engineered fill no core recovery, descrip. 15.	WELL DPT GRAPHIC		CRIPTION		OVM	,	1
a pist, in reddish brin (10R3/4) npo, n organics, dry - mst, homo. 13.0" - 25.0", Claystone: 100X fines, stiff to hard, dry to moist, moderate reddish brown (10R 3/4) to pale green (106 8/2), drushed, moistened and worked samples exhibit properties of lean clay (see above description for engineered fill) no core recovery, descrip. 10- 10- 10- 10- 10- 10- 10- 10					-	MOMBER	ANAL.
	5- 10- 15- 130- 35- 30- 45- 140- 45- 150- 150- 150- 150- 150- 150- 150- 15	O.0'- 13.0', Engineered Filt 10 In pist, in reddish brin (10R3/4) 13.0'- 25.0', Claystone: 100% if moderate reddish brown (10R moistened and worked samples above description for enginee from drill cuttings. 25.0' - 29.5', Claystone: 100% if ractures (25-28'), slightly fist motited r.brin (27-28'),HCL real no organics, appears and hand due to higher moisture content 29.5' - 45.0' Claystone: 100% blocky fracture, reddish brown (10G 6/2), green coloration as: npo, sub horiz vertical gypsu worked samples exhibit propert A/A mottled (35-37', 39.5-40') 45.0' - 48.0', Claystone: 100% if pale green (10G 6/2), no HCL real npist, npo, no organics, appear claystone due to higher moistur 48.0' - 74.5', Claystone: 100% if blocky fracture, reddish brown pale green (10G 6/2), grin colors sub horiz, gypsum filled fracture.	ines, stiff to hard, dry to 3/4) to pale green (10G s exhibit properties of letered fill) no core recovery fines, m stiff, mst to wet, sile, homo, pale green (11 ction, h dry stringth, n dilles more like lean clay tiffnes, stiff to hard, dry (10R 3/4), homo, tro mo sociated with gypsum, no am filled fractures (<1/4' lies of lean clay (see Fill) lies of lean clay (see Fill) lies, mst—wet, slightly filles, mst—wet, slightly filles, and handles more like e content.	sat. Sat.			ANAL
	9 NUMBER 96124						

SOIL BORING/WELL LOG

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BORING NO. LMC5 V2

WELL NO.

JOB NUMBER: 98124 USPCI, LONE MOUNTAIN CLIENT: LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DRILLED BY: A.W. POOL DATE COMP: 8/27/92 TOTAL DEPTH: 80 REF. EL.: **DATE START: 8/27/92** APPROVED BY: DEPTH TO WATER: LOGGED BY: ERIC TAYLOR WELL GRAPHIC LOG SAMPLE SAMPLE OVM DPT DESCRIPTION ASTM CODE NUMBER COMP ANAL. ᆈ 70-75-74.5' - 75.0', Claystone: 100% fines, dry - mst, m. stiff to stiff, homo, pale green (106 6/2), no HCL reaction, h dry stringth, n dintincy α m pist, npo, no organics, appears and handles more like lean clay than claystone due to higher moisture content. 80-75.0' - 80.0', Claystone: 100% fines, dry - mst, stiff to hard. interbedded reddish brown (IOR 3/4) and pale green (IOG 6/2), no HQL reaction, h dry stringth, n dintincy, in pist, npo, no organics, extensive sub horizontal gypsum filled fractures (<1/4" thick), pale green material appears and handles more like lean clay than claystone 85due to higher moisture content. Bottom of boring: 80 feet below grade Borehole diameter: 12.25" to 13' 8", 13 to 80' 90-Boring abandoned with neat cement (0-80') Cement mix: 13 sacks Portland type II cement 50 lbs bentonite powder 120 gallons water 95-100-105-110-115 120-JOB NUMBER 98124

SOIL BORING/WELL LOG

Page 1 of 2

BORING NO. LMC5 V3

WELL NO.

JOB NUMBER: 96124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI DRILLER: WAYNE CALDWELL METHOD: AIR & MUD ROTARY DRILLED BY: A.W. POOL DATE COMP: 9/4/92 REF. EL.: TOTAL DEPTH: 80 **DATE START: 9/2//92** LOGGED BY: ERIC TAYLOR APPROVED BY: DEPTH TO WATER: OMS GRAPHIC LOG SAMPLE WELL SAMPLE DPT DESCRIPTION OVM ASTM CODE NUMBER COMP ANAL. ᆈ 0.0'- 13.0', Engineered Filt 100% fines, h dry stringth, n dintincy, m pist, m reddish brn (IOR3/4) npo, n organics, dry - mst, homo. 13.0'- 26.0', Claystone: 100% fines, stiff to hard, dry to moist, moderate reddish brown (IOR 3/4), blocky fracture, no HCL reaction, npo, crushed, moistened and worked samples exhibit properties of lean of lean clay (see above description for engineered fill). 20 25 26.0' - 28.0', Claystone: 100% fines, m stiff, mst to wet. α slightly fissile, homo, pale green (IOG 6/2), no HCL reaction, h dry stringth, in dintincy, in pist, no organics, appears and handles more like lean clay than claystone due to higher moisture content 28.0' - 40.0' Claystone: 100% fines, stiff to hard, mst, blocky fracture, reddish brown (IOR 3/4), mottled pale green (10G 6/2), green coloration associated with gypsum, no HCL reaction, 35 npo, sub horiz. - vertical gypsum filled fractures (<1/4"thick), mst. worked samples exhibit properties of lean clay (see Fill descrip.). 40.0 - 75.0', Claystone: 100% fines, stiff to hard, dry, blocky fracture, reddish brown (IOR 3/4), moist, worked samples exhibit properties of lean clay (see Fill descrip.) 60 IOB NUMBER: 08124

SOIL BORING/WELL LOG

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BORING NO. LMC5 V3

WELL NO.

JOB NUMBER: 98124 CLIENT: USPCI, LONE MOUNTAIN LOCATION: LONE MTN, OKLAHOMA PROJECT: CELL 5 RFI METHOD: AIR & MUD ROTARY DRILLER: WAYNE CALDWELL DRILLED BY: A.W. POOL TOTAL DEPTH: 80 **DATE COMP: 9/4/92** REF. EL.: **DATE START: 9/2//92** APPROVED BY: DEPTH TO WATER: LOGGED BY: ERIC TAYLOR SAMPLE SAMPLE GRAPHIC LOG WELL OVM DESCRIPTION **DPT** NUMBER ANAL. **ASTM CODE** COMP ᆈ 75.0° - 80.0', Claystone: 100% fines, mst - wet, m stiff to hard, interbedded reddish brown (IOR 3/4) and pale green (IOG 6/2), no HQL reaction, h dry strngth, n dintney, m pist, npo, no organics, extensive sub horizontal gypsum filled fractures (<1/4" thick), pale 80green material appears and handles more like lean clay than claystone due to higher moisture content. Bottom of boring: 80 feet below grade (BG) 85-Borehole diameter: 12.25" to 16' 8", 16 to 80" Boring completed as groundwater monitoring well (10-5-92) Boring backfilled with bentonite pellets (50 lbs.) and hole plug (6 sacks) from 80 to 40' 90-Screen type: teflon, diameter: 2", interval: 40 to 20'86 Casing type: teflon, diameter: 2", interval: 20 to 15'BG PVC, diameter: 2", Interval: 15 to -2"BG Filter pack: interval: 40 to 18'BG 95-Surface seat bentonite pellets, interval 18 to 18'86 neat cement, interval: 16 to 0' BG 100-105-110-115 120-JOB NUMBER: 98124



COMMENTS OVM readings taken in breathing zone
all readings were 0.0 to 1.0 ppm
Organic Vapor Monitor

PROJECT NO. __COTES OF WELL NO. _MWEAB LOCATION _USPCI / LONE MOUNTAIN GEOLOGIST _E._AWRENCE DATE STARTED _3-26-92 DATE COMPLETED _3-26-92 TOTAL DEPTH _20.0 ft DRILLER _A.W. POOLE DRIG. CO.

DEPTH (11)	SPLIT SPOON/	ANALYTICAL SAMPLE	BLOW COUNTS/6in	OVM SAMPLE	9000 MOFILE SALES A SA	LITHOLOGIC	u.s.c.s.	DESCRIPTION	wEL 2.5'★	L INST	ALLATION DATA	DEPTH (A)
-	30	A		X	Ø 4 0 0	0000	GP	GRAVEL, SILT and gypsum nodules (road base)			< Bentonite Seal	
	80		-	M			CL	SILTY CLAY, dark red 2.5yr3/6, w/ clay mottled olive gray (green) 5y5/2, wet			—2" PTFE Casing.	
5 -	0			X V		60606060606060606060606060606060606060	GP	NO RECOVERY, cobble in core barrel			< 8" Borehole	-5
10 -				\mathbb{N}	-	20 20 20 20 20 20 20 20 20 20 20 20 20 2		GYPSUM NODULES and COBBLES, large gypsum cobbles from 4.0' to 15.0', apparently still in road base			Sand ← Grave: Pack (16-30)	- 10
15 -	10					0000000000					2" PTFE. 0.010 Slot Screen	- 15
20	18			$\left\langle \right\rangle$		22	CL 3B	CLAY, olive gray 5y5/2			·	20
								CLAYEY SILTSTONE, dark red 2.5yr3/6, w/ olive gray (green) specks, no gypsum, dry Total Depth 20.0 feet	20.0'-		PAGE	

U.S POLLUTION CONTROL INC.

GEOLOGIC/CONTRUCTION LOG

WELL NO. MW-6A2

Remedial Services

Remedial Service	!S			 					
CLIENT: USPC					l			96277	
PROJECT: MW-				LOCATION: L					
DRILLED BY: A	.W. POOL	, INC.	DRILLER: WAY	NE CALDWELL	MET	HOD:	AIR	ROTARY	
DATE START:	2/16/92	DATE	COMP: 12/17/92	SURF. EL: 139	5.90	7	D (f	t):20.0	
LOGGED BY: A.	ıC	·L···	APPROVED BY	CAD	DEP	тнт	O WA	TER (ft):	NA
WELL ELEVATION COMP (ft msi)	DEPTH (ft)	DESCR	RIPTION		GRAPHI USC C		OVM PPM	SAMPLE NUMBER	BLOW COUNTS
1398.58 1398.03 1398.90 1398.9	5	O.O to 2. FILL CLAY 2.0 to 5. Dry. I trace 5.0 to 9. SILT, veins 12.0 to 17 Dry. I trace 12.0 to 17 Dry. I gyps	D SURFACE 0 (1395.90 - 1393.5 SOILS, Loose, dry 1 7, some slit. 0 (1393.90 - 1391.9 Red (10R-4/4/8) si 2 gypsum present in 0 (1391.90 - 1386.9 olive Gray (5Y-4/4 trace gypsum present in 1.0 (1386.90 - 1383.9 Red (10R-4/4/2) sii 2 gypsum present in 1.0 (1383.90 - 1378.9 colive Gray (5Y-4/4 trace gypsum present in 2.0 (1383.90 - 1378.9 colive Gray (5Y-4/4 trace gypsum present in 2.0 (1378.90 - 1375.9 Red (10R-4/4/8) sii sum present in veins.9 continued at 20.0 Fee	red - brown O) Ity CLAY, veins. O) /2) Clayey ent in 90) ty CLAY, veins. .90) /2) clayey ent in veins 90) ty CLAY, trace . (100% recovery)		FILL CL CL	-0.0 -0.0	FIGU	NA NA



DRILLING METHOD (s) _AIR ROTARY

SAMPLING METHOD (s) _CORE BARREL

WELL DEVELOPMENT DATE _N/A

METHOD (s)/GALLONS PURGED _N/A

COMMENTS OVM readings taken in the breathing zone all readings were from 0.0 to 0.5 ppm

OVM - Organic Vapor Monitor

PROJECT NO
WELL NO. MW6A2
LOCATION USPCI / LONE MOUNTAIN
GEOLOGIST _E, LAWRENCE
DATE STARTED 3-25-92
DATE COMPLETED 3-26-92
TOTAL DEPTH 20.0 ft
DRILLER _A.W. POOLE DRLG. CO
UNILLER A.M. I DOLL DALO. CO

Γ	_	ž ×	P.E.	چ	ш	HE	ADSPACE	O O			WE	LL INS	STALLATION DATA	
	DEPTH (11)	SPLIT SPOON	ANAL Y TICAL SAMPL	BLOW COUNTS/6in	OVM SAMPLE	VALUE	200 PROFILE 800 PROFILE 800	LITHOLOGI	U.S.C.S.	DESCRIPTION	2.9		CONCRETE PAD	DEPTH (ft)
15		65 60 33 0	AN	189			- 20 - 40 - 80 - 80		ML CL	SILTY CLAY, grey-green & reddish-brown, w/ gypsum nodules and trace gravel CLAY, light grey. 5y6/1 SILTY CLAY, dark red brown, 2.5yr3/4, w/ green clay mottling & gypsum nodules, dry No Recovery No Recovery SILTY CLAY, light grey (greenish), 5y6/1, dry CLAYEY SILT, red-brown w/ grey-green clay specks & mottling, trace gypsum as veins CLAYEY SILT, dark red-brown 2.5yr3/4, w/ trace green clay specks, gypsum not present, appears dry, although water produced at ~17' bis	*		2" PTFE Casing Bentonite Seal Brehole Gravel Pack (16-30)	5 15
200										(below land surface) Total Depth=20.0 feet	20.0' -		FIGURE 1.	- 20



COMMENTS OWM readings taken in the preatiting gone DATE COMPLETED 13-25-92

all readings were from 0.0 to 0.5 com
OVM - Organic Vacit Ministry
DRILLER AW 900 E 0913 C

=	<u> </u>	%	¥	lu9/	ш		ADSFACE READING	2			WEL	L INS	STAL	LATION DATA		
DEPTH (11)	SPLIT SPOUN	RECOVERY%	ANALYTICAL SAMPLE	BLOW COUNTS/6in	OVM SAMPLE	VALUE	- 200 - 400 - 600 800	LITHOLOGIC COLUMN	U.S.C.S.	DESCRIPTION	2.1			CONCRETE PAD	DEPTH (ft)	
	60	\dashv			X X				Ç	FILL Material, Silty Clay, readish— brown, whighen clay mottling and gypsum negules				-2" PTFE Casing -Bentonite Seal		
5 -										NO SAMPLE					-5	
	55				$\langle $				ML	CL4 (E - SILT. grey, 5y5/1			*	÷8'' Borehole		•
10 -	90				\langle					CLAYEN SILT, grey, 5v5/1 CLAYE: SILT, red-brown w/ grey-green clay mortling and banding, gypsum nodules and veins			◀	Fend Grave: Pack (16-30: Steve	-10	
15	:00								CL	CLAYER SILT, dark red, 2.5yr4/6, wilgreen clay mottling and gypsum in veins SILT: CLAY, agnt grey, 5y7/1, gypsum in veins			*	-2" PTFE, 0.010 Slot Screen	- 15	
20										SILT: 014% redaish brown, w/ grey- green mattling, less gypsum present Tatal Depth=20.0 feet	20.0'-				20	,

DRILLING METHOD (s) _______ SAMPLING METHOD (s) ______ WELL DEVELOPMENT DATE _____ METHOD (s)/GALLONS PURGED ______

COMMENTS This is a composite too, see description DATE COMPLETED 4-24

1.74 respinos taken in the preating zone a readings were 0.0 com

DRILLER 4-W POOL DRIL

PROJECT NO. __ITTE IC

WELL NO. __MWIGHA!

LOCATION __SECT LONE MOUNTAIL

GEOLOGIST _= NEWLINHGERABHT NO MILLER, INC.

DATE STARTED __4-24-90

DATE COMPLETED __4-24-90

TOTAL DEPTH __66.5 ft

DRILLER __4 W_POOL_DRIG. CC

14:111 (11) SPL11 (20)(017	AIM YH	BLON CONNTS/6in	OVM SAMPI F	200 400 ROFILE 600 ROFILE 800	LITHOLOG COLUMN		DESCRIPTION	WELL IN		LATION DATA - CONCRETE PAD	UEPTH (H)
5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ć			-		CL	FILL MATERIAL-SILTY CLAY, red 2.5yr 4/6, w/ minor green clay mottling throughout, ary			-8" Borehole -2" PVC Casing	-10
20 -										←Cement Grout	- 20
30-	,						Same as above with minor gypsum present		THE PROPERTY OF	—2" PVC Casing	- 30
37	O									PAGE	1 OF 2

DRILLING METHOD (s) ______ SAMPLING METHOD (s) _____ BLEE BLEE E______ WELL DEVELOPMENT DATE _____ METHOD (s)/GALLONS PURGED _____

COMMENTS This is a composite to see description DATE COMPLETED 4-3

Our readings taken in the preatring zone DRILLER A.W. POOL DR

PROJECT NO. __ITTE CO WELL NO. _NNTE = AT LOCATION __SECT T LONE MOUNTAIN. GEOLOGIST _IE NEW_IN-GERAGHT + D MI_LEF. IND DATE STARTED _4-24-92 DATE COMPLETED _4-24-92 TOTAL DEPTH _66.5 ft DRILLER _A.W. POOL DRUG. CO

2	≥ ,	SAMPLE	'Gin	ш	ı	ADSPACE READING	υ			WELL INSTALLATION DATA	E
(1) 1144I	Wednesday	ANALY HEAL SAL	U9/SIMAND MO18	OVM SAMPLE	AALUE	- 200 400 600 800	LTTHOLOGIC COLUMN	U.S.C.S.	DESCRIPTION		1) 1114 11
45-	100							BR	CLAYEY SILTSTONE, dark readish brown 2.5yr3/4, minor green clay mottling and gypsum nodules present throughout, dry	Bentonite Seal 2" PTFE Casing	- 45 - 50
	:00							BR BR	small grain gravel from 51.5-71.7 SILTY CLAYSTONE, gray 5y5/1, minor gypsum, waxy, dry CLAYEY SILTSTONE, reddish brown 2.5yr 4/4, minor green clay mottling and 1/4-1/2" gypsum lenses present, friable to brittle, dry		- 55
60 -	:00	}								Slot Screen	65
70-		-	į							66.5'	- 70
										·	75

DRILLING METHOD (s) _______ SAMPLING METHOD (s) _______ WELL DEVELOPMENT DATE ______ METHOD (s)/GALLONS PURGED ______

COMMENTS This is a compassite tool see description

G. Mireadings taken in the preagning gone
all readings were 1.0 pcm

PROJECT NO. __ITHE CO WELL NO. __MWIGHA2 LOCATION __USEDI / LONE MOUNTAIN. GEOLOGIST _S MEMLIN-GEFAGHTY & MILLER, INC. DATE STARTED __4-22-92 DATE COMPLETED __4-22-92 TOTAL DEPTH _65 4 ft DRILLER _A W. POOL DRUG CO

		<u>}</u> ,,	1	Ę	w	H.E.	ADSPACE	Ü			WELL INSTALLATION DATA	3
(1)	101 111 111	SPULL SPOULY	ANALYTICAL SAMPLE	BLOW COUNTS/6m	OVM SAMPLE	VALUE	200 	1	U.S.C.S.	DESCRIPTION	2.3' CONCRETE PAD	DEPTH (
25		Sign 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	V						CL	FILL MATERIAL—SILTY CLAY, red 2.5yr 4/6, w/ minor green clay mottling throughout, dry Same as above with minor gypsum present		- 10 - 15 - 20 - 25
		:00									- BASE	10F 2

DRILLING METHOD (s) ______ SAMPLING METHOD (s) _____ STEE ELEFEL WELL DEVELOPMENT DATE _____ METHOD (s)/GALLONS PURGED _____

COMMENTS This is a composite optised description DATE COMPLETED 4-22

OWN readings taken in the preathing zone TOTAL DEPTH 65.4 ft

DRILLER 4.W. POOL DRICE

PROJECT NO. __COME G2

WELLINO. _MW12-AC
LOCATION _USPCI_1_ONE MOUNTAIN

GEOLOGIST _E_MEW_IN-GERAGET & DMI_LER. INC.

DATE STARTED _4-22-92

DATE COMPLETED _4-22-92

TOTAL DEPTH _65.4 ft

DRILLER _AW, POOL DRLG. CO

18 (9) (9)	SPLTT SPOOM/ RECOVERY\$	ANALY LICAL SAMPLE	BI ON COUNTS/Gin	OVM SAMPLE	VAI UE ST	ADSPACE PEADING OOM OOD OOO	11HOLOGIC COLUMN	U.S.C.S.	DESCRIPTION	WELL INSTALLATION DATA	DFPTH (11)
	100	NIV	*)		200 400 600 800		BR BR		- Bentonite Seal	45
0-									slightly moist from 50-51	2" PTFE Casing	- 50
55 -									1/4-1/2" gypsum lenses present from 54-57.5 dipping approximately 15 degrees		- 5 5
50-				\bigvee				BR	CLÁYEY SILTSTONE, dark reddish brown 2.5yr3/4, minor green clay and gypsum present, friable, dry	Slot Screen	60
65 -									≒naurated brittle, dry from 63.5–65	65.4'	65
70-			-								-70
5-						-				·	- 75

DRILLING METHOD (s) _______ SAMPLING METHOD (s) ________ WELL DEVELOPMENT DATE _N/4 METHOD (s)/GALLONS PURGED _N/4

COMMENTS This is a composite too, see description

OVM readings taken in the preathing zone
at readings were 0.0 ppm

FILL MATERIAL – SILTY CLAY, red 2.5yr 4/6, w/ minor green clay mottling 15 20 20 Cement Grout 25 Same as above with minor gypsum present Same as above with minor gypsum	OI, PTH TEO	S(111 SD) (17)		ANALYTICAL SAMPLE	BLOW COUNTS/6m	OVM SAMPIF	200 - 400 -	LITHOLOGIC	U.S.C.S.	DESCRIPTION	₩ELL I	NSTALLATION: DATA	DEPTH (III)
	20 -		Z				7		CL	4/6. w/ minor green clay mottling throughout, dry Same as above with minor gypsum		2" PVC Casing	- 15

DRILLING METHOD (s) _______ SAMPLING METHOD (s) _______ SAMPLING METHOD (s) _______ SAMPLING METHOD (s) ______ METHOD (s)/GALLONS PURGED _______

COMMENTS

This is a composite log, see, description

OVM readings taken in the breathing zone
all readings were 0.0 ppm

PROJECT NO. __ICTBGS

WELL NO. _MATSHET

LOCATION __ISPCI / LONE MOUNTAIN:

GEOLOGIST _E _MEW_IN-GEPLSHTN S MILLER, INS

DATE STARTED __4-23-92

DATE COMPLETED __4-23-92

TOTAL DEPTH __76.0 ft

DRILLER _A.W. POOL DRLG. CO

=	<u> </u>	%	SAMPLE	ug,	ш)	ADSPACE A READING	ည			WELL INSTALLATION DATA	٦
(1) 111 (1)			AHALYTICAL SA	BLOW COUNTS/6in	OVM SAMPLE	AALUE	- 200 - 400 - 600 - 800	LITHOLOGIC COLUMN	U.S.C.S.	DESCRIPTION		0EPTH (11)
45	9	90				•			BR	CLAYEY SILTSTONE, reddish brown 2.5yr 4/4, minor green clay mottling and gypsum nodules present throughout, dry slight moisture observed from 40-41.5		- 45
۰٥٥ ا	}	-								postposed group elong shight mareture	- Bentonite Seal	- 50
55	<u></u>	00								increased green clay, slight moisture, waxy	2" PTFE Casing	- 55
60										prittle and dry from 60.8–62.5	Sand Pack (16-30)	- 60
65 -	30	0			V				BR	SILTY CLAYSTONE, gray, 5y5/1, minor gypsum, dry	2" PTFE, 0.010 Slot Screen	- 65
70-	90					-				CLAYEY SILTSTONE, reddish brown, 2.5yi 4/4, minor green clay mottling and gypsum present, dry gray, 5y5/1, becoming reddish brown and gray from 70.2-76, minor gypsum present, dry	1 1 1 1 1	- 70
5 -	_	-			4				\dashv	·		75
											76.0'——	
			٠								PAGE 2	0F 2

COMMENTS This is a composite to, see description

5/M readings taken in the preathing gone
a readings were from 0.0 to 0.2 ppm

			NMP! F	/6in	E E		ADSPACE MREADING	일			WELL INSTALLATION DATA	Ξ
	Cle 11 Choose	RECOVERY\$	ANAI YTICAL SAMPLE	BI OW COUNTS/6in	OVM SAMPLE	VALUE	200 400 PROFILE 600 800	LITHOLOGIC COLUMN	U.S.C.S.	DESCRIPTION	l I	DEP1H (f
5	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CUITIMES					-		C	FILL MATERIAL-SILTY CLAY, red 2.5yr 4/6, w/ minor green clay mottling throughout, dry	8" Borehole	5 10
20 -											-Cement Grout	20
30-	.									Same as above with minor gypsum present from 39-41.1		30
	:0	0									PAGE 10	35 OF 2

SAMPLING METHOD (s) _________ WELL DEVELOPMENT DATE N/4 METHOD (s)/GALLONS PURGED _____

COMMENTS This is a composite log, see description Gym readings taken in the breathing zone

all readings were from 0.0 to 0.2 ppm

PROJECT NO
WELL NO. 14W12-52
LOCATION USECS / LONE MOUNTAIN
GEOLOGIST _ 5. NEWLIN-GERASHIY & MILLER, INC
DATE STARTED 4-21-92
DATE COMPLETED 4-21-92
TOTAL DEPTH 76.8 ft
DRILLER A.W. POOL DRLG. CO

	<u> </u>	SAMPLE	Bın	Щ	HE.	ADSPACE RÉADING	<u>ე</u>			WELL INSTALLATION DA	Ξ Ξ
DEPTH TO	SPLIT SPURM RECOVERY	ANALYTICAL SAMPL	BLON COUNTS/6in	OVM SAMPL	VALUE	200 400 PRUFILE 600 800	LITHOLOGIC COLUMN	U.S.C.S.	DESCRIPTION		ОЕРТН
45 -	100							CL BR	SILTY CLAYSTONE, reddish brown 2.5y 4/4, minor green clay mottling and gypsum nodules present throughout, dry	INN	- 45
- ٥در										- Bentonite	- 50
55 -	:00							BR	CLAYEY SILTSTONE, red 2.5yr4/6, friable, dry	Seal 2" PTFE (Casing - 55
60-								BF		(16-30)	k -60
65 -	100							8F	2.5yr3/4, 1/4"-3/4" thick gypsum lenses present dipping from 5-30 degrees, dry	— 2" PTFE.	-65
70-								B		Slot Scre	
75	100				-				3/4, minor bedding planes, friable, dry SILTY CLAYSTONE, gray 5y5/1, minor gypsum present, dry CLAYEY SILTSTONE, reddish brown 2 3/4, minor gypsum, dry	5yr	75
	1								SILTY CLAYSTONE, reddish brown 2.5 3/4, massive, waxy, dry	^{76.8}	PAGE 2 OF



SOIL BORING/WELL LOG

LOG BORING NO. MW 14-A1

Page 1 of 2

WELL NO. MW 14-A1

CLIENT: USPCI-LONE MOUNTAIN FACILITY JOB NUMBER: 96302-02 LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 14 WELL INSTALLATIONS DRILLED BY: A.W. POOL DRILLER: GERALD COLPITTS METHOD: AIR ROTARY **DATE START: 9/22/93** DATE COMP: 9/25/93 REF. EL.: GRD EL 1420 ft MSL TOTAL DEPTH: 61.0 LOGGED BY: JPG APPROVED BY: CAD DEPTH TO WATER: 49.7 (NOT STATIC) BLOWS GRAPHIC LOG DPT WELL OVM SAMPLE SAMPLE DESCRIPTION COMP (ft) USCS CODE (DOm) NUMBER ANAL. Engineered Fill Material: SILTY CLAY, reddish brown, 5YR 4/4, 0.0 minor greenish mottling throughout, dry, moderately soft to brittle, trace amounts of gypsum present. 0.0 15-Q.0 CL 20. 0.0 0.0 30-0.0 0.0 JOB NUMBER: 96302-|02

SOIL BORING/WELL LOG

Page 2 of 2

BORING NO. MW 14-A1

WELL NO. MW 14-A1

CLIENT:			-LONF	м	OUNTAIN FACILITY		JOB NUMB	ER: 96302	2-02	
					NSTALLATIONS	LOCATION: WAYNO			<u> </u>	· · · · · · · · · · · · · · · · · · ·
DRILLED BY:					DRILLER: GERALD C	 	METHOD:		RY	
DATE START	: 9/2	2/93] [ATE COMP: 9/25/93	REF. EL.: GRD EL 14	20 ft MSL	TOTAL D	EPTH: 61.0	
LOGGED BY:	JPG	-		1.	APPROVED BY: CAD	<u> </u>	DEPTH TO	WATER: 4	19.7 (NOT S	STATIC)
WELL	DPT	BLOMS	GRAPHIC		DE	SCRIPTION	<u> </u>	OVM	SAMPLE	SAMPLE
СОМР	(ft)	를	uscs c	UDE				(ppm)	NUMBER	ANAL.
	45—			CL BR BR	Engineered Fill Material: ! minor greenish mottling the of gypsum present. CLAYEY SILTSTONE: redding friable to brittle, greenist gypsum lenses and nodule at 44.8 feet, 90 to 100x SILTY CLAYSTONE: Bight of moist at 47.8 feet, slightly recovery. CLAYEY SILTSTONE: redding brittle, high angle gypsum thickness, nodules and hominor to abundant green at 52.2 feet otherwise dry. If slightly soft, very slightly apparent, reddish mottling core recovery. SILTY CLAYSTONE: reddish brittle in part, dry, high and from 57.5 to 60.0 feet, nut.	sh brown, 2.5 YR 3/4, dry in mottling throughout, mind is throughout, wery slightly core recovery within interest of the state of the s	ce amounts or y moist real. phtly x core hard, ch in int, it at	0.0		
	65-				SCREEN TYPE: PTFE, DIAME INTERVAL: 49.0' T FILTER PACK: 18–30 SILICA SURFACE SEAL: BENTONITE	1.0° Below Land Surface '8" to TD ER: 2", INTERVAL: -2.5' T 2", INTERVAL: 44.0' TO 4 TER: 2", SLOT SIZE: 0.01 0 59.0° BLS SAND, INTERVAL: 47.0' ' PELLETS, INTERVAL 44. gal. water/sack cement) 4.0° BLS	(BLS) 10 44.0° BLS 19.0° BLS 10 inches 10 61.0° BLS 10 70 47.0° B	LS		

SOIL BORING/WELL LOG

Page I of 2

BORING NO. MW 14-A2

WELL NO. MW 14-A2

Union Pacific								50. 0030		
					UNTAIN FACILITY			ER: 96302		
				_IN	STALLATIONS	LOCATION: WAYNOK				
DRILLED BY	: A.W. 	POOL		-,	DRILLER: GERALD CO		METHOD:			
DATE START	T: 9/2	0/93		D.	ATE COMP: 9/23/93	REF. EL.: GRD EL 142			EPTH: 60.5	
LOGGED BY:	JPG				APPROVED BY: CAD		DEPTH TO	WATER: 4	19.5 (NOT	_
WELL COMP	OPT (ft)	BLOWS	GRAPHIC USCS C		DES	CRIPTION		(ppm)	SAMPLE NUMBER	SAMPLI
	5 - 10 - 15 - 20 - 1 - 35 - 12			α	Engineered Fill Material: Simnor greenish mottling thriggypsum present.		s. 5YR 4/6,	0.0		

SOIL BORING/WELL LOG

Page 2 of 2

BORING NO. MW 14-A2

WELL NO. MW 14-A2

Union Pacific		oration	1						110.	1-144	17 72	•
CLIENT:	U:	SPC	I-LON	E M	IOUNTA	IN FACILITY		JOB NUMB	ER: 8	96302	-02	
PROJEC	T: C	ELL	14 WEL	L	INSTAL	LATIONS	LOCATION: WAYNOK	A, OKLAHOM	14			
DRILLED BY	r: A.W	. POO	L			DRILLER: GERALD CO	OLPITTS	METHOD:	AIR R	ROTAR	Y	
DATE STAR	T: 9/	20/93	3		DATE CO	MP: 9/23/93	REF. EL.: GRD EL 142	0 ft MSL	TOT	AL DE	PTH: 60.5	
LOGGED BY	: JPG					APPROVED BY: CAD		DEPTH TO	WATE	ER: 4	9.5 (NOT S	STATIC)
WELL COMP	DP'	15	GRAPH) USCS			DES	CRIPTION		1.		SAMPLE NUMBER	SAMPLE ANAL.
.08 NUMBER 96302	40- 45- 50- 55- 65- 70- 02			BA BAR	CL SILT SURI	EEN TYPE: PTFE, DIAMET INTERVAL: 48.6' TO 'ER PACK: 16–30 SILICA ! FACE SEAL: BENTONITE I	oughout, dry to slightly mm present. In brown, 2.5 YR 3/4, dry, ling which becomes abund 8 feet, minor gypsum lensicere recovery. In brown, 2.5 YR 3/4, dry, with mottling, minor gypsum ness, 100% core recovery are gray, 5Y 8/2, dense to molst, gypsum not visually ery. In brown, 2.5 YR 4/6, waxy, slightly moist at 58.2 feet hughout and abundant from odules throughout with gy 1.5 feet, 100% core recovery. In the state of the sta	dant es and httiy Maxy, Maxy		0.0		

USPCI Remedial Services A Subsidiary of

SOIL BORING/WELL LOG

Page I of 2

BORING NO. MW 14-B1

WELL NO. MW 14-B1

Union Pacific Corporation	·	MEEL IN	O. 1911	14" 01	
CLIENT: USPCI-LONE	MOUNTAIN FACILITY	JOB NUMBER	: 96302	-02	
PROJECT: CELL 14 WELL	INSTALLATIONS LOCATION: WAYN	NOKA, OKLAHOMA			
DRILLED BY: A.W. POOL	DRILLER: GERALD COLPITTS	METHOD: AI	R ROTAR	ΙΥ	
DATE START: 9/21/93	DATE COMP: 9/24/93 REF. EL.: GRD EL	1420 ft MSL T	OTAL DE	PTH: 71.0	
LOGGED BY: JPG	APPROVED BY: CAD	DEPTH TO W	ATER: 5	LB (NOT S	TATIC)
WELL DPT SHORTHIC GRAPHIC COMP (ft) H USCS CO				SAMPLE NUMBER	SAMPLE ANAL.
COM (11) B 0303 C			(UDIII)	HOMBER	ANAL.
					:
			1		
M M I H	Engineered Fill Material: SILTY CLAY, reddish br minor greenish mottling present, trace to minor i		6.0		
	gypsum present.				
		•			
			0.0		
15-			0.0		
	<u>.</u>				}
20-			0.0		
M M 1 1 1 1 1 1 1 1 1					,
25-			0.0		
30-			0.0		
35-	Fill material moist at 38 feet		0.0		
	+		60		
			-		
40	CLAYEY SILTSTONE: reddish brown, SYR 4/4, dry minor greenish mottling mainly associated with g	, massive, waxy,			
	nodules throughout, minor root traces from 45 to	46 feet, 10%	0.0		
	to 50% core recovery.				
MARSER: 96302-02	7				

SOIL BORING/WELL LOG

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BORING NO. MW 14-B1

WELL NO. MW 14-B1

· · · · · · · · · · · · · · · · · · ·	ration				· · · · · · · · · · · · · · · · · · ·				
CLIENT: US	SPCI	-LONE	МО	UNTAIN FACILITY	·	JOB NUMB		2-02	
PROJECT: CE	ELL 1	14 WELL	IN	STALLATIONS	LOCATION: WAYNOK	A, OKLAHOM	A		
DRILLED BY: A.W	. POOL			DRILLER: GERALD C	OLPITTS	METHOD:	AIR ROTAI	RY	
DATE START: 9/	21/93		04	ATE COMP: 9/24/93	REF. EL.: GRD EL 142	0 ft MSL	TOTAL D	EPTH: 71.0	
LOGGED BY: JPG				APPROVED BY: CAD		DEPTH TO	WATER: 5	LB (NOT S	TATIC)
WELL DPT	10	GRAPHIC USCS CO		DES	SCRIPTION		OVM)	SAMPLE NUMBER	SAMPLE
50- 55- 60- 70- 75- 85- 85-			BR BR BR BR BR	SCREEN TYPE: PTFE, DIAME INTERVAL: 53.7' T FILTER PACK: 18–30 SILICA SURFACE SEAL: BENTONITE	throughout, low angle (Onness and veinlets throughout, 80% core recovery. In BOX core recovery. In brown SYR 4/4, friable, greenish mottling, minor gy. Ive gray, SY 6/2, massive, of gypsum, 100% core recovery. In brown, 2.5YR 3/4, waxy sh mottling associated with the fall of 63.5 feet, 100% core recovery. Ive gray, SY 6/4, massive, the gray, SY 6/2, massive, the gray, SY 6/4, massive, the gr	out, root very ypsum dry to overy. to friable, h gypsum covery. saxy, brittle, oox core very low y moist at ive, core (BLS) 0 48.7' BLS 3.7' BLS 0 inches 0 7' TO 5L7' Bi	0.0	AUTOEA	ACIAL

SOIL BORING/WELL LOG

Page I of 2

BORING NO. MW 14-B2

WELL NO. MW 14-B2

CLIENT: USPCI-LONE MOUNTAIN FACILITY JOB NUMBER: 96302-02 LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 14 WELL INSTALLATIONS DRILLED BY: A.W. POOL DRILLER: GERALD COLPITTS METHOD: AIR ROTARY **DATE START: 9/21/93** DATE COMP: 9/24/93 REF. EL.: GRD EL 1420 ft MSL TOTAL DEPTH: 71.5 LOGGED BY: JPG APPROVED BY: CAD DEPTH TO WATER: 515 (NOT STATIC) BLOWS GRAPHIC LOG WELL DPT SAMPLE OVM SAMPLE DESCRIPTION COMP (ft) USCS CODE (mag) NUMBER ANAL. Engineered Fill Material: SILTY CLAY, reddish brown, 5YR 4/6 0.0 to 2.5YR 4/6, dry, minor greenish mottling throughout, dominant from 30 to 35 feet, minor gypsum present. 0.0 0.0 CL 20-0.0 25-0.0 30-0.0 Fill material moist at 38 feet 35 0.0 CLAYEY SILTSTONE: red, 2.5YR 3/4, dry, massive in part, wary, BR minor greenish mottling, minor gypsum throughout, root traces at 44.8 feet, 20% core recovery. 0.0

SOIL BORING/WELL LOG

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BORING NO. MW 14-B2

WELL NO. MW 14-B2

JOB NUMBER: 96302-02 CLIENT: USPCI-LONE MOUNTAIN FACILITY LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 14 WELL INSTALLATIONS DRILLER: GERALD COLPITTS METHOD: AIR ROTARY DRILLED BY: A.W. POOL DATE COMP: 9/24/93 REF. EL.: GRD EL 1420 ft MSL TOTAL DEPTH: 71.5 **DATE START: 9/21/93** APPROVED BY: CAD DEPTH TO WATER: 515 (NOT STATIC) LOGGED BY: JPG SAMPLE SAMPLE DPT GRAPHIC LOG WELL **DESCRIPTION** (ft) USCS CODE (mag) NUMBER ANAL. COMP ᇳ CLAYEY SILTSTONE: red, 2.5YR 3/4, dry, massive in part, waxy. 0.0 BR minor greenish mottling, minor gypsum throughout, root traces at 44.8 feet, 20% core recovery. CLAYEY SILTSTONE: dark reddish brown, 2.5YR 3/4, very slightly BR moist, friable in part, trace greenish mottling, waxy in part, 0.0 gypsum lenses and veinlets throughout, 50% core recovery. CLAYEY SILTSTONE: reddish browm, 2.5YR 4/4, dry to very 50 slightly moist, waxy, trace greenish mottling, minor gypsum BR tenses, 40% core recovery. 0.0 BR SILTY CLAYSTONE: light olive gray, 5Y 6/2, very slightly moist, 55 dense to slightly soft, gypsum not visually apparent, 100% core recovery. BR 0.0 CLAYEY SILTSTONE: reddish brown, 2.5YR 4/4, dry, waxy, dense, brittle, high angle gypsum lenses 1/8 to 1/4-inch thick throughout, minor greenish mottling at 56.0 feet, 100% core recovery. BR 60 SILTY CLAYSTONE: reddish brown, 2.5YR 4/4, massive, dull wary, massive, trace green mottling, minor gypsum lenses and nodules throughout, 80% core recovery. 0.0 BR SILTY CLAYSTONE: light gray, 2.5Y 6/0, slightly reddish 65. mottling with increasing mottling from 613 to 617 feet, very slightly moist at 62.5 feet otherwise dry, trace gypsum, 80% core recovery. 0.0 RR SILTY CLAYSTONE: reddish brown, 2.5YR 4/4, massive, dull waxy, greenish mottling with gypsum lenses at 66.7, 67.0, and 70 70.0 feet, minor mottling throughout, 100% core recovery. 00 TOTAL DEPTH OF BORING: 7L5' Below Land Surface (BLS) BOREHOLE DIANETER: 6-7/8" to TD CASING TYPE: PVC, DIAMETER: 2", INTERVAL: -2.5' TO 48.7' BLS 75 PTFE, DIAMETER: 2", INTERVAL: 48.7' TO 53.7' BLS SCREEN TYPE: PTFE, DIAMETER: 2", SLOT SIZE: 0.010 inches INTERVAL: 53.7" TO 68.7" BLS FILTER PACK: 16-30 SILICA SAND, INTERVAL: 517' TO 715' BLS SURFACE SEAL: BENTONITE PELLETS, INTERVAL 48.7' TO 51.7' BLS : NEAT CEMENT (5 gal water/sack cement) : INTERVAL: 0' to 48.7 ' BLS 80 FLUID LEVEL NOT STATIC, WELL DEVELOPMENT CONTINUING JOB NUMBER: 06302-102



DRILLING METHOD (s) _ATE POTATE

SAMPLING METHOD (s) _CORE BARFEL

WELL DEVELOPMENT DATE _N/A

METHOD (s)/GALLONS PURGED _N/A

COMMENTS This is a composite log, see description

OVM readings taken in the breathing zone

all readings were from 0.0 to 0.5 ppm

DATE COMPLETED 3-2

TOTAL DEPTH 57.0 it

WELL NO. MW22
LOCATION USECT / LONE MOUNTAIN
GEOLOGIST ELLAWRENCE
DATE STARTED 3-24-92
DATE COMPLETED 3-27-92
TOTAL DEPTH 57.0 it
DRILLER A.W. POOLE DRUG. CO

PROJECT NO. _______

ОЕРТН (11)	SPLIT SPOON/ RECOVERY%	ANAL Y TICAL SAMPLE	BLOW COUNTS/6in	OVM SAMPLE	- 200 - 400 - 400 - 600 - 800 - 800	LITHOLOGIC COLUMN	U.S.C.S.	DESCRIPTION	WELL INS	CONCRETE PAD	DEPTH (11)
5 -	50						CL				-5
10 -	60				•			•		B'' Borehole d = 1990	- 10
15 -	84							FILL MATERIAL—SILTY CLAY, reddish brown 5tr4/4, w/ green clay mottling, dry		2" PVC Casing	- 15
20 -	100									Cement Grout	- 20 -
25	95									PAGE 1	- 25



COMMENTS This is a composite log, see description

O'M readings taken in the preathing zone
all readings were from 0.0 to 0.5 ppm

DATE COMPLETED 3-27

TOTAL DEPTH 57.0 ft

DRILLER A.W. POOLE DR

PROJECT NO. __COTE.36

WELL NO. _MW22
LOCATION _USPCI / LONE MOUNTAIN

GEOLOGIST _E. LAWRENCE

DATE STARTED _3-24-92

DATE COMPLETED _3-27-92

TOTAL DEPTH _57.9 it

DRILLER _A.W. POOLE DPLG. CC

	È a	,		- E	L			ADSPACE READING	U			WELL INSTALLATION DATA	<u> </u>
DEP 1H (II)	SPL11 SPOON	RECOVERT	ANAL Y I I CAL SAMPLE	BLOW COUNTS/6in	AVM CAMPIE	DAM SAME	VALUE	- 200 - 400 - 600 - 800	HOLOG COLUMN	U.S.C.S.	DESCRIPTION		DEPTH (11)
35 -	95									CL	SAME AS ABOVE	2" PVC Casing	- 3!
										ML	FILL MATERIAL-CLAYEY SILT, reddish brown 5yr4/4, w/ green clay mottling, dry CLAYEY SILT, reddish brown 5yr4/4,	< Bentonite Seal	[3
40-	90							ž		BF	w/ green clay specks and gypsum veins, dry	2" PTFE Casing	4
45-	·· <u>-</u>									BF	SILTY CLAYSTONE, reddish brown 2.5yr4/6, w/ green clay mottling, indurated, brittle	Sund ≪ Grave Pack (16-30)	- 4
50 -	85				X						gypsum nodules at 48.6', very hard, dry large (3'' diam.)gypsum nodule at 49.3'	وجو و 2" PTFE, 0.010	- 5
	96									CL		Slot Screen	
55 -					\mathbb{N}						green clay mottling, dry CLAYSTONE, light gray 5y6/1 CLAYSTONE, reddish brown 2.5yr4/6, w/ green clay mottling, dry		5
								· · ·			NOTE: This log was composited from two boreholes drilled 3/24-3/25 and 3/27. The boreholes were drilled 8 feet apart. The original borehole was abandoned on 3/27.	57.0° — PAGE 2	1

USPUI

LOG

BORING NO. PT-3

LAIDLAW ENVIRONMENTAL Page 1 of 1

CLIENT: L	ISPCI LONE M	JOB NO.:	JOB NO.: 96321-09-93				
PROJECT:	CELL 5 INTE	WAYNOKA, OKL	AHO	MA			
DRILLED B	Y: A.W. POOL	METHOD: A	METHOD: AIR ROTARY				
START DAT	E: 2-1-95	COMP. DA	TE: 2-1-95	SURFACE EL	EVATION: 138	35.74	FEET
LOGGED BY	: SHAWN LEPH	PERT T	OTAL DEPTH:	21.0 FEET BG	S		
WELL DIAGRAM DPT	DES		GRAPHIC LOG USCS CODE		GW SAMPLES/ ISOLATED INTERV.		
5	0.0' to 7.0' Fill; red claystone 7.0' to 18.0' Red claystone; w	/minor gypsum r	odules, gypsum veins	and veinlets		FILL	
20-	18.0° to 21.0° Green daystone;	w/trace red ck	systone	***************************************		ČL	PT-3.20
JOB NUMBER: 98321	Cored to 20.0	2LO Feet BGS Feet BGS	· <u></u>				1179.20

USPCI

LOG

BORING NO.

LAIDLAW ENVIRONMENTAL

Page 1 of 1

WELL NO. PZ-1

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 3-14-95 | COMP. DATE: 3-14-95 | SURFACE ELEVATION: FEET TOTAL DEPTH: 25.0 FEET BGS M.P. ELEV.: 1398.30 FEET LOGGED BY: SHAWN LEPPERT WELL GRAPHIC LOG GW SAMPLES/ DESCRIPTION DPT USCS CODE ISOLATED INTERV. DIAGRAM 0.0' to 25' Fill; red daystone (50%), some sand, very wet STATE OF THE PROPERTY OF THE P FILL 2.5° to 9.5° Red claystone; damp, minor gypsum to 5' CL Major gypsum vein at 8.5°, dry 9.5' to 17' 10-Green daystone; dry CL 15-17.0' to 17.5' ČL Tan - red claystone, dry 17.5' to 21.0' CL Red claystone; damp, minor gypsum to 20" 20-Dry 21.0' to 22.0' CL Green daystone CL 22.0' to 23.0' Red claystone; damp 23.0' to 25.0' 25 Green daystone: damo WL-2 Total Depth = 25.0 Feet BGS 13'-25' 30 IOB NUMBER: 96321-09-93

USPCI

LOG

BORING NO.

LAIDLAW ENVIRONMENTAL Page 1 of 1

WELL NO. PZ-2

DIAGRAM O.0. to 2.5: Fill: tan clay, wet 2.5' to 8.0" Green claystone; damp Minor gypsum from 7.5' to 10' 10 5x green claystone; damp Minor gypsum and green claystone from 15.5' to 17.5 IS to 25.0" Minor gypsum from 17.5' to 25' Minor gypsum from 17.5' to 25' Minor gypsum from 22.5' to 25' 25 25.0' to 30.5' Green claystone; damp CL Minor gypsum from 22.5' to 25' 25 25.0' to 30.5' Green claystone; damp CL CL CL CL CL CL CL CL CL C	CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93										
START DATE: 3-13-95 COMP. DATE: 3-13-95 SURFACE ELEVATION: FEET LOGGED BY: SHAWN LEPPERT TOTAL DEPTH: 39.0 FEET BGS M.P. ELEV.: 1410.05 FEE WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE SOLATED IN 0.0° to 2.5° Fill: tan clay, wet Care diagnorm minor gypsum from 7.5° to 10° St. green claystone; damp 15.5° to 25.0° Met from 12.5° to 15° 15 Is to 15.5° Breen claystone; damp 15.5° to 25.0° More gypsum from 17.5° to 20° Minor gypsum from 17.5° to 20° Minor gypsum and green daystone from 15.5° to 17.5 io 30.5° Green claystone; damp 15.5° to 25.0° to 30.5° Green daystone; damp 15.5° to 25.0° to 30.5° Green daystone; damp 15.5° to 25.5° Bed claystone; damp 15.5° to 25.5° Bed claystone; damp 15.5° to 25.5° Bed claystone; damp 15.5° to 30.5° To 30.5° Green daystone; damp	PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA										
WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE GW SAMPLI SOL ATED IN O.0 to 2.5' Fill: tan clay, wet 2.5' to 8.0' Green claystone; wet CL St green claystone; damp Minor gypsum from 7.5' to 10' Wet from 12.5' to 15.5' Green claystone; damp Minor gypsum and green daystone from 15.5' to 17.5 IS to 15.5' to 25.0' Minor gypsum and green daystone from 15.5' to 17.5 Green claystone; damp Minor gypsum from 17.5' to 20' Minor gypsum from 17.5' to 20' CL St green claystone; damp Minor gypsum from 17.5' to 20' Minor gypsum from 17.5' to 20' CL St green claystone; damp Minor gypsum from 17.5' to 20' CL Bed claystone; damp CL Green claystone; damp CL Green claystone; damp CL Green claystone; damp Minor gypsum from 22.5' to 25' 25.0' to 30.5' Green claystone; damp CL GRAPHIC LOG GW SAMPLI CL CL CL CL GRAPHIC LOG GW SAMPLI CL CL CL GRAPHIC LOG GW SAMPLI CL CL CL CL GRAPHIC LOG GW SAMPLI CL GW SAMPLI CL CL GRAPHIC LOG GW SAMPLI CL CL GRAPHIC LOG GW SAMPLI CL CL CL GRAPHIC LOG GRAPHIC LOG GW SAMPLI CL CL CL CL CL CL CL CL CL	DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY										
WELL DIAGRAM DPT DESCRIPTION GRAPHIC LOG USCS CODE ISOLATED IN O.O. to 2.5' Filt; tan clay, wet 2.5' to 8.0' Green claystone; damp Minor gypsum from 7.5' to 10' S% green claystone; damp Is5' to 25.0' Red claystone; damp Minor gypsum and green claystone from 15.5' to 17.5 IS to 15.5' to 25.0' Red claystone; damp Minor gypsum and green claystone from 15.5' to 17.5 IS gypsum from 17.5' to 20' Minor gypsum from 22.5' to 25' Z5.0' to 30.5' Green claystone; damp CL S8. Green claystone; damp CL S8. Green claystone; damp CL S8. Green claystone; damp IS5' to 25.0' Red claystone; damp CL S8. Green claystone; damp CL Red claystone; damp CL S8. Green claystone; damp CL Red claystone; damp CL Red claystone; damp CL Red claystone; damp CL Red claystone; damp CL Red claystone; damp CL	START DATE	E: 3-13-95 COMP. D	ATE: 3-13-95	SURFACE E	LEVATION: /	FEET					
DESCRIPTION USCS CODE ISOLATED IN O.O. to 2.5' Fill; tan clay, wet 2.5' to 8.0' Green claystone; damp Minor gypsum from 7.5' to 10' 10- S% green claystone; damp Minor gypsum and green claystone from 15.5' to 17.5 ISS to 25.0' Red claystone; damp Minor gypsum and green claystone from 15.5' to 17.5 IOM gypsum from 17.5' to 20' Minor gypsum from 22.5' to 25' Minor gypsum from 22.5' to 25' CL Solution is an included in the claystone from 15.5' to 17.5 CL Solution is an included in the claystone from 15.5' to 17.5 IOM gypsum from 22.5' to 25' Solution is an included in the claystone from 15.5' to 17.5 IOM gypsum from 22.5' to 25' Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp CL Solution is an included in the claystone from 15.5' to 17.5 IOM gypsum from 22.5' to 25' Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp CL Solution is an included in the claystone from 15.5' to 17.5 IOM gypsum from 22.5' to 25' Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp CL Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp CL Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp CL Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp Minor gypsum from 22.5' to 25' Solution is an included in the claystone from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular from 15.5' to 17.5 Red claystone; damp w/ piper popular f	OGGED BY:	SHAWN LEPPERT	TOTAL DEPTH:	39.0 FEET B	GS M.P. EL	EV.: 1	410.05 FEET				
Filt ten clay, wet 2.5' to 8.0' Green claystone; wet CL 8.0' to 15.0' Red claystone; damp Minor gypsum from 7.5' to 10' Six green claystone; damp 15' to 15.5' Green claystone; damp 15.5' to 25.0' Red claystone; damp 15.5' to 25.0' Red claystone; damp Minor gypsum from 17.5' to 20' Minor gypsum from 17.5' to 25' 25.0' to 30.5' Green claystone; damp CL 30.5' to 35.5' Red claystone; damp CL 31.5' to 35.5' Red claystone; damp CL 32.5' to 30.5' Red claystone; damp CL			GW SAMPLES/ ISOLATED INTERV								
25.0' to 30.5' Green daystone; damp 30.5' to 35.5' Red claystone; damp, w/ minor gypsum	5 1 1 1 1 1 1 1 1 1	2.5' to 8.0' Green claystone; wet 6.0' to 15.0' Red claystone; damp Minor gypsum from 7.5' to 10' 5% green claystone from 10' to Wet from 12.5' to 15' 15' to 15.5' Green claystone; damp 15.5' to 25.0' Red claystone; damp Minor gypsum and green clayst 10% gypsum from 17.5' to 20'				CL					
30.5' to 35.5' Red claystone: damp, w/ minor gypsum						CL					
国士国 1 33 コ	35-		gypsum			CL					
35.5' to 38' Green daystone 36' to 38' Red claystone; damp 38.0' to 39.0' Green daystone	40-	Green claystone 36' to 38' Red claystone; damp 38.0' to 39.0'				CL	25'-37'				
Total Depth = 39.0 Feet BGS Bottom 2 feet caved in B NUMBER: 96321-09-93		Total Depth = 39.0 Feet Bo Bottom 2 feet caved in	GS								

USPCI

LOG

BORING NO.

LAIDLAW ENVIRONMENTAL

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WELL NO. RFI-8

CLIENT: L	ISPCI LONE MOL	INTAÏN		JOB	NO.: 9632	1-09-93
PROJECT:	CELL 5 INTERI	M MEASURE	LOCATION:	WAYNOK	A, OKLAHO)MA
DRILLED BY	Y: A.W. POOL	DRILLER: WA	'NE CALDWELL	MET	HOD: AIR R	ROTARY
START DAT	E: 2-3-95 C	DMP. DATE: 2-3-95	SURFACE E	LEVATION	DN: 1385.76	FEET
LOGGED BY	: SHAWN LEPPE	TOTAL DEPTH	1: 18.0 FEET B	GS M.	P. ELEV.: 1	389.24 FEET
DIAGRAM DPT		DESCRIPTION		1	PHIC LOG	GW SAMPLES/ ISOLATED INTER
	0.0° to 5.0° Red claystone fill, da 5.0° to 7.5° 70% red claystone, 3 10.0° to 10.0° 90% red claystone, 3 11.0° to 15.5° 80% red claystone, 20	0% green claystone, minor gyp: 1% green claystone 0% gypsum, dry	sum, damp		CL CL	
	15.5° to 17.5° 90% red claystone, 10	% green claystone			CL	
	17.5' to 18.0' Green daystone, dam Total Depth = 18.0 Hole reemed to 7 Well completed with	Feet BGS		1111	CL	RF1-8.18 7'-18'
20- B NUMBER: 98321-	09-93	· · · · · · · · · · · · · · · · · · ·				

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LAIDLAW ENVIRONMENTAL

LOG

BORING NO.

Page 1 of 1

WELL NO. RW-1

JOB NO.: 98321-09-93 CLIENT: USPCI LONE MOUNTAIN LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 5 INTERIM MEASURE DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY DRILLED BY: A.W. POOL COMP. DATE: 4-13-95 | SURFACE ELEVATION: 1385.93 FEET START DATE: 4-13-95 TOTAL DEPTH: 19.3 FEET BGS M.P. ELEV.: 1388.21 FEET LOGGED BY: GENE WALKER GRAPHIC LOG GW SAMPLES/ WELL DPT DESCRIPTION USCS CODE ISOLATED INTERV. DIAGRAM 0.0' to 4.0' Fill: red day FILL 4.0' to 17.8' Red claystone Gypsum from 8.5' to 7' Mixed w/ gray claystone from 8' to 9' Wet from 8' to 11.5' 10-CL Dry from 11.5' to 17.8' 15-17.8° to 19.3° Green daystone CL Total Depth - 19.3 Feet BGS 20-OB NUMBER: 98321-09-93

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LAIDLAW ENVIRONMENTAL

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WELL NO. RFI-9

CHIDENII E	MATHOMAFIA		· · · · · · · · · · · · · · · · · · ·								
CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA											
PROJECT:	CELL 5 INTE	RIM MEA									
	Y: A.W. POOL		DRILLER: WAYN		1_	ETHOD: 4					
START DAT	E: 3-28-95		ATE: 3-28-95								
LOGGED BY	: SHAWN LEP	PERT	TOTAL DEPTH:	17.6 FEET BG	<u>s</u>	M.P. ELE	V.: 1.	388.96 FEET			
WELL DIAGRAM DPT		DE	ESCRIPTION			SRAPHIC LO		GW SAMPLES/ ISOLATED INTERV.			
	Gypsum from 5.5 8.0' to 7.0' Red claystone 7.0' to 8.0' Red claystone; a 8.0' to 17.8' Red claystone; o	ninor gypsum, to 8' ninor green co iamp to 17.8', pro	damp laystone, damp duced water at 11' to 17.1				CL GP CL	RF1-9.17.5 7'-17.8'			
20-											
08 NUMBER: 9832	 21 -09- 93										

USPCI LAIDLAW ENVIRONMENTAL

LOG

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BORING NO.

WELL NO. RFI-10

JOB NO.: 96321-09-93 CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA METHOD: AIR ROTARY DRILLED BY: A.W. POOL DRILLER: DAN DOWERS START DATE: 3-30-95 COMP. DATE: 3-30-95 SURFACE ELEVATION: 1386.59 FEET M.P. ELEV.: 1389.07 FEET TOTAL DEPTH: 18.5 FEET BGS LOGGED BY: SHAWN LEPPERT GRAPHIC LOG GW SAMPLES/ WELL DIAGRAM DESCRIPTION ISOLATED INTERV. USCS CODE 0.0' to 4.5' Fill; red day, w/ occasional green day, damp to wet FILL 4.5' to 7.5' 5. Red claystone: (IOR 3/4), damp to dry CL 7.5' to 10.0' Green daystone: (106 6/2), damp to dry 10-10.0' to 18.4' Red claystone, damp to dry CL 15-20% gypsum from 15.5' to 18' Damp from 18' to 18.4' CL RF]-10.18.5 18.4' to 18.5' 8.5'-18.5' Green daystone: (106 8/2), damp to dry Total Depth = 18.5 Feet BGS 20 OB NUMBER: 98321-09-93

USPCI

LAIDLAW ENVIRONMENTAL

LOG

BORING NO.

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WELL NO. RFI-11

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93 LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 3-30-95 | COMP. DATE: 3-30-95 | SURFACE | ELEVATION: 1387.35 FEET M.P. ELEV.: 1390.09 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 18.5 FEET BGS WELL GRAPHIC LOG GW SAMPLES/ DESCRIPTION DPT USCS CODE ISOLATED INTERV. DIAGRAM 0.0' to 5.0' Fill; red day (10R 3/4), plastic, damp FILL 5.0' to 18.3' Red claystone: (IOR 3/4), damp to dry Trace of gypsum from 7' to 8' 10-CL 80% gypsum from 12.5' to 13' 15-80% gypsum from 18' to 18.3' 18.3' to 18.5' RF1-11.18.5 Green daystone; dry 8.5'-18.5' Total Depth - 18.5 Feet BGS 20-IOB NUMBER: 96321-09-93

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LAIDLAW ENVIRONMENTAL

LOG

BORING NO.

Page 1 of 1

WELL NO. RFI-12

JOB NO.: 96321-09-93 CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 3-30-95 COMP. DATE: 3-30-95 SURFACE ELEVATION: 1387.02 FEET LOGGED BY: DAN DOWERS TOTAL DEPTH: 18.5 FEET BGS M.P. ELEV.: 1389.90 FEET WELL GRAPHIC LOG GW SAMPLES/ DPT DESCRIPTION DIAGRAM USCS CODE ISOLATED INTERV. 0.0' to 5.0' Fill: red day (IOR 3/4), sticky, plastic, moist FILL 5.0' to 18.4' Red claystone: (10R 3/4), stiff to hard, damp to dry 10-CL 15-Gypsum from 18" to 17" (20%) CL 18.4' to 18.5' RF]-12.18.5 8.5'-18.5' Green daystone: (106 8/2), dry Total Depth = 18.5 Feet BGS 20-OB NUMBER: 98321-09-93

USPCI

LOG

BORING NO.

LAIDLAW ENVIRONMENTAL

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WELL NO. RFI-15

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 96321-09-93 LOCATION: WAYNOKA, OKLAHOMA PROJECT: CELL 5 INTERIM MEASURE DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY COMP. DATE: 4-14-95 SURFACE ELEVATION: 1387.72 FEET START DATE: 4-14-95 LOGGED BY: GENE WALKER TOTAL DEPTH: 19.0 FEET BGS M.P. ELEV.: 1388.96 FEET WELL GRAPHIC LOG GW SAMPLES/ DPT DESCRIPTION DIAGRAM USCS CODE ISOLATED INTERV. 0.0° to 4.0° Fill; red day FILL 4.0' to 8.0' Fill; gray/red clay 5-FILL 8.0' to 18.9' Red claystone 10-CL 15-18.9' to 19.0' CL Green daystone 20-Total Depth = 19 Feet BGS IOB NUMBER: 96321-09-93

USPCI

LOG

BORING NO.

LAIDLAW ENVIRONMENTAL

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WELL NO. RFI-16

CLIENT	: <i>U</i> :	SPCI LONE MOU	NTAI	N			JOB NO.:	9832	1-09-93
PROJEC	T:	CELL 5 INTERIM	1 MEA	SURE	LOCATION:	WAY	NOKA, OK	LAHO	DMA
DRILLE	D BY	: A.W. POOL		DRILLER: WAY	NE CALDWELL		METHOD:	AIR F	ROTARY
START	DAT	E: 5-10-95 CC	MP. C	ATE: 5-10-95	SURFACE E	ELEV	ATION: 13	86.28	BFEET
LOGGED	BY:	SHAWN LEPPER	?T	TOTAL DEPTH	38.0 FEET E	3 <i>G\$</i>	M.P. EL	EV.: 1	389.11 FEET
WELL DIAGRAM	DPT		DE	ESCRIPTION			GRAPHIC LO		GW SAMPLES/ ISOLATED INTERV.
				<u>. </u>		 			
	+	0.0' to 4.0'							
	4	FIII; red day (10R 3/4), dry to	damp		• •	• • • • • •	FILL	
	1	Very damp at 4'.					• • • • • •		;
	5-	4.0' to 1LO' Red claystone: (10R 3	(/4) dry	to slightly damn		7/			
	7	ned oldystone, (lon-c	,, - , 0, 9	to sugnery design					
								CL	
	10-								
	#	5% gypsum from 11' to	12'	· · · · · · · · · · · · · · · · · · ·		1		GP	
	\exists	12.0° to 17.5° Red claystone							
	15-							CL	
		17.5' to 23.0' Green claystone; (106	B/2) d	ry to slightly dage		1			
	20-	· ·	V/ 21, U	y to sagnity daup				CL	
								-	
	+	23.0' to 38.0'			·	//			
	25-	Red claystone; slightly	damp t	o becoming moist					
		Trace gypsum at 25°							
	4	More damp from 27° to	38.						
3	10								
101—1014								CL	
	7								
	5								
	~	Trace gypsum at 38'							AF1-18
	1	Green daystone begin				\mathbb{Z}			28.–36.
4	0-	Total Depth = 38.0	Feet B	GS					
41						ļ			
OB NUMBER: 91	N-1628	9 – 93							
	0321-0	g-3 3				<u> </u>			

USPCI A LAIDLAW COMPANY

LOG

BORING NO.

WELL NO. RFI-17

Page 1 of 1

CLIENT: USPCI LONE MOUNTAIN JOB NO.: 98321-09-93 PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLED BY: A.W. POOL DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY START DATE: 7-19-95 COMP. DATE: 7-20-95 SURFACE ELEVATION: 1388.90 FEET TOTAL DEPTH: 43.0 FEET BGS M.P. ELEV.: 1393.74 FEET LOGGED BY: DAN DOWERS GRAPHIC LOG WELL GW SAMPLES/ DPT DESCRIPTION DIAGRAM USCS CODE ISOLATED INTERV. 0.0' to 8.0' Fill: red clay, damp, plastic FILL CL 8.0' to 9.0' Green daystone; damp 10-9.0' to 22.4' Red claystone; dry to slightly damp 1-5% gypsum from IF to 12" 15. CL 5% gypsum from 18.5" to 17" Trace gypsum from 17' to 22.4' 20 22.4' to 27.0' RF]-17.23 Green daystone; damp 0-230 CL 27.0' to 42.8' Red claystone; moist to wet CL Very wet from 39' to 40' CL 42.8' to 43.0' Green daystone; wet Total Depth = 43.0 Feet BGS IOB NUMBER: 98321-09-93

LOG

BORING NO. ST-1

A LAIDLAN COMPANT Page 1611	
CLIENT: LONE MOUNTAIN	JOB NO.: 96328-30
PROJECT: Stress Test/Dewatering LOCATION: I	Waynoka, Oklahoma
DRILLED BY: A.W. Pool DRILLER: W. Caldwell	METHOD: Air Rotary
START DATE: 6/3/98 COMP. DATE: 6/3/98 SURF. EL.: 143	9.19 FT. TD: 80 FT. BGS
LOGGED BY: D. Dowers MEAS. PT. EL.: FT.	D. T. WATER: Dry FT. BGS
WELL DIAGRAM DPT DESCRIPTION	GRAPHIC LOG USCS CODE ANALYSIS
0O-4' Fill, red clay, occ gyp gravel, damp-plastic, moist	Fill
5 4'-6' Red claystone	CL
6'-7' Green claystone, damp	CL CL
10'-13' Common thin gyp zones, dry, dusty	X X X X X GYP
15 14'-14.5' Green claystone, sli damp	CL
14.5'-17' Red claystone, sli damp	CL
20 17'-18.5' Green claystone, sli damp	CL GYP
25 IB.5'-20' Red claystone, sil damp-dry	CL CL
20'-20.5' Common gyp	
30 21'-30' Dry, dusty	
35 34'-35' Red claystone, damp, sli moist	Ci.
35-27 Sees dispates all date day to be	1////
35-37 Green daystone, sil damp-dry, tr gyp 37'-41' Red claystone, dry	CL CL
45 41'- 4L5' Thin green claystone	
41.5'-55' Red claystone, occ gyp, dry, dusty	
50=	(///// ct
55 55'-59' Green claystone, dry	CL CL
60 59'-84' Red claystone	\////\\
	Cr Cr
65 B4'-84.5' Green claystone, dry	CL CL
70 84.5'-89' Red claystone, dry	
70'-70' Pod playstone As any day dusty	1////
75 Red claystone, tr gyp, dry, dusty	Ct
80 78'-80' Green claystone	
	CL
Total Depth 80 Ft 85 Drill rods dry when pulled from hole	
90-	
B NUMBER: 98328-30	

CLIENT: LONE MOUNTAIN	JOB NO.: 96328-30)
PROJECT: Stress Test/Dewatering LOCATION: W	aynoka, Oklahoma	
DRILLED BY: A.W. Pool DRILLER: W. Caldwell	METHOD: Air Rotar	y 5"hole
START DATE: 6/3/96 COMP. DATE: 6/3/96 SURF. EL.: 1437	7.31 FT. TD: 80 FT.	BGS
LOGGED BY: D. Dowers MEAS. PT. EL.: FT.	D. T. WATER: Dry F	T. BGS
WELL DESCRIPTION	GRAPHIC LOG USCS CODE	ANALYSIS
0 = 0-4.5' Fill, red clay, soft, plastic, moist, occ green clay & 4-4.5'	Fill	
5 4.5'-14' Red claystone, occ tr gyp, gyp zone & 8-8.5'		
10=	///// cL	
1514'-15' Green claystone, damp-dry	CL CL	
20 15'-17' Thin red/green claystone, interbedded, dry		
	///// CL	
25=	CL CL	
30 27'-27.5' Green claystone 27.5'-30' Red claystone	CL CL	
35 30'-33' Green clay, damp, plastic, sli moist	CL CL	
33'-37' Red claystone, damp	Cr	
40 37'-53' Red claystone, dry, dusty		
45 Occ gyp @ ~45', dry, dusty	///// c.	
50		
55 53'-58' Green claystone, sli damp-dry	///// CL	
56'-86' Red claystone, dry, dusty		
	///// cr	
65=		
86'-87.5' Green claystone 70= 87.5'-78.5' Red claystone	///// ¹¹	
Thin gyp zone 8 73	///// c.	
75=		
78.5'-80' Green claystone, w/approx .5' red claystone mixed/ interbedded @ approx. 77.5-78.5'	//// cr	
Total Depth 80 Ft	ļ	
Rods dry when pulled from hole		
90=		
NUMBER: 96328-30		

				·									
		LONE MOUNTA		·		JOB NO.: 96		2					
		Stress Test,		,		Waynoka, Oklai							
		BY: A.W. Pool	, 	DRILLER: W.	T	METHOD: A							
STAR	T DA	TE: 6/3/96	COMP. D	ATE: 6/3/96	SURF. EL.: 143								
LOGGE	ED B	Y: D. Dowers	ME	AS. PT. EL.: 14.	37.22 FT.	D. T. WATER	14.5 F	T. BGS					
DIAGRA	DIAGRAM DESCRIPTION USCS CODE												
	0	=		FE									
	10	4'-10.5' Red cli	4'-10.5' Red claystone, trace gyp through in thin lenses										
	15	10.5'-13.5' Gree		sli damp			CL						
	:	Becoming da	•	5-23.5*			CL						
	25			<u> </u>			CL						
	35 35		systone, dry-	·sli damp			CL						
	45	·					CL						
	50=					V/////	GYP CL						
	55	49.5'-53.5' Gree			/								
	=					V/////	CL						
	60=					//////	占占						
	55	58.5'-82.5' Red		usty			CT						
	65=	82.5'-85' Green 85'-73.5' Red cl	, ' 	 	/	1/////							
	70=	no -rao Red Cl					CL						
	75=	73.5'-78' Green	clay w/appro	ox I' red clay zone 9	~75'		CL						
	80 85 85 90	Well completion Hale size: 12 Screen: Sch	et when pullir that water c n data: 2°; Casing: Sc nedule 40 PVI	oming to hale is on Si hedule 40 PVC, 0–14 C, 14–74', .010" slot, I	' & 74-79', 8" ID								
A NUMBER	: 9832	Bentonite si	18/30 sand, eal @ 10-12'; (Cement 8 surface-10	•								

CLIENT	Γ: <i>L</i>	ONE MOUNTA	IN	<u> — — — . — . </u>				JOB NO	.: <i>98</i>	328-30	
PROJEC	CT:	Stress Test/	Dewa	tering		LOCATION	1: W	aynoka,	Oklah	oma	
DRILLE	DB	Y: A.W. Pool	,	DRIL	ER: W. (Caldwell		METHO): <i>Alf</i>	Rotar	у
START	DAT	E: 6/3/96	СОМЕ	P. DATE: 6	3/3/98	SURF. EL.:	1433	3.7 FT.	TD: 7	77 FT.	BGS
LOGGE	DBY	: D. Dowers		MEAS. PT	. EL.: 143	34.89 FT.		D. T. WA	TER:	Dry F	T. BGS
WELL DIAGRAM	DPT			DESCRIP	TION				PHIC LOD		ANALYSIS
	0=	0-4° Fill, red ¢l	ay, dang	o, plastic	-			XXXX		FN	
	5=	4'-5' Red clays	tone, w	occ gyp and	mixed green	ciaystone		$\sim\sim$	$\overset{\sim}{\sim}$	CL	
		5'-8' Red clays					/_		44	CL	
	10=	8'-II' Green cla	ystane,	damp	,		1111	\mathcal{A}	CL		
	15=	11'-23' Red clay	stone, d	amp-dry							
	i ≓						:			CL	
	20=										
	25=	23'-27.5' Green	ciay, m	dist. gyp @ ba	se <i>2</i> "	····				CL	
	30=	27.5'-49.5' Red	claysto	ne, dry				1111	///		
	П										
	35∃										
	40=									Cr	
	#"]										
	45 ∃	Gyp – thin za	nes <.5	₽ ~45'							
	៸ֻ∄	Gyp ₽ ~47.5°									
	50 <u>=</u>	48.5'-52.5' Gree	n clays	one, dry						CL	
	55=	52.5'-62' Red cl	aystone	, dry							
	=									CL	
	60 <u>∃</u>	/				·					
	65=	82'-83.5' Green					_/		///	Cr	
	E	63.5'-73' Red Cl	aystone	. common whit	e gyp trags	8 ~85 -70'	- 1			<u>.</u>	
	70=							////		CL	
1.	75 	73'-73.5' Thin gr	een cla	y, dry				<i>[[]</i>	44	CL	
	<u>'</u>	73.5'-74.5' Red					-//			CL	
Įε	30∃	74.5'-77' Green	claysto	ne			-/		,		
	<u> </u>	Total Depth 7					_				
ĮE	35=	Minar wet spot									
g	100	Note: 6" PVC for use in			ds to 2' BGS						
DB NUMBER: 9	9633 <u>0</u> -	-30									
-J HOMBEN. 8		•									

LOG

BORING NO. ST-5

Page 1 of 1

CLIENT: LONE MOUNTAIN JOB NO.: 96328-30 LOCATION: Waynoka, Oklahoma PROJECT: Stress Test/Dewatering DRILLER: W. Caldwell DRILLED BY: A.W. Pool METHOD: Air Rotary (5") SURF. EL.: 1433.5 FT. COMP. DATE: 6/4/96 TD: 75 FT. BGS START DATE: 6/4/96 MEAS. PT. EL.: 1434.48 FT. D. T. WATER: Dry FT. BGS LOGGED BY: D. Dowers GRAPHIC LOG WELL DIAGRAM DPT DESCRIPTION USCS CODE ANALYSIS 0-4' Fill, mixed red clay and gyp gravel, damp, plastic, occ moist 4'-8' Red claystone CL CL 6'-6.5' Green claystone, damp-dry CL CL 8.5'-8' Red claystone, dry 8'-II' Green claystone, damp CL II'-22' Red claystone, dry 18'-20' Common white gyp GYP CL 22'-23' Green clay, damp, soft CL 23'-25' Red claystone, dry-sli damp CL 25'-28' Green claystone, damp, soft **30**-CL 26'-34' Red claystone, dry, acc white gyp trags 35_ CL 34'-35.5' Green-gray claystone, dry 35.5'~48' Red claystone, dry 40- CL GYP 47'-47.5' Gyp zone 50-CL CL 48'-51.5' Green claystone 55-51.5'-81' Red claystone, dry, dusty CL 60-Bi'-83' Green claystone, dry-sil damp CL 65= 83'-72.5' Red claystone CL 70-GYP 89'-88.5' Gyp zone CL CL 72.5'-73' Green claystone, sli damp 75-CL 73'-74' Red claystone CL 74'-75' Green claystone 80= Total Depth 75 Ft Note: 6" PVC surface casing extends to 2" BGS for use in stress test. 90-IOB NUMBER: 98328-30

Page 1 of f

CLIENT:	ONE MOUNTA	767				Т	JOB NO	. 98	328-30	7
	ONE MOUNTA				L OCA TION					
	Stress Test/	uewat	T	1.1	LOCATION					·
 	Y: A.W. Pool	<u> </u>	DRILLER:		,		METHO	Τ		
	TE: 6/4/96	<u> </u>	DATE: 6/4/9		SURF. EL.:			·		
LOGGED BY	f: D. Dowers		MEAS. PT. EL.	: 143	34.21 FT.		D. T. W.			T. BGS
WELL DPT			DESCRIPTION					CS COD	ı	ANALYSIS
	0-4' Fill, red cli	ay, damp,	plastic			3		****	FW	
5=	4'-8' Red clays	tane, dry	-sli damp						CL	
10=	8'-10' Green cla	ystone, d	amp	\ <u>+</u>	///	44	Cr			
=	10'-20' Red clay	stone								
15=	<u> </u>								CL	
20=	20 - 24 Green C	laystone	, damp-moist						CL	
25=		ystane, d	lry						CL	
30=						F				
35=	33'-35' Green c	laystone,	damp-dry						CL	
40=		laystone,	dry, acc gyp frag	3		_				
45									Cr	
		<u> </u>					44			
50=							///		CL	
55=		rstone, ar	y, occ gyp frags							
! ∃						t			CL	:
60=	80'-82.5' Green	clayston	e, damp				////		CT	
65	82.5'-72' Red cl	aystone,	dry						-	
70	70' Thin gyp zar	ne				}			CL	
75	72'-73' Green c	aystone,	si damp				777		Cr	
75 <u>-</u> 80 <u>-</u>	73'-74' Red cla					_/[CL	
80	74'-75' Green c		dry			_				
	Total Depth 7	5 Ft								
85			asing extends to 2	. BGS						
90=	far use in	stre35 (23 (
108 NUMBER: 98328	3-30									

	<u>-</u>	0.15.1401.017.4	74/			_		Т	JOB NO	. 98	328-30	2
		ONE MOUNTA	-				T					<u></u>
PROJECT		Stress Test/	Dewat	erir			LOCATION:	_				
DRILLED			r		DRILLER: M			_	METHO			
START [DAT	E: 6/4/98	<u> </u>		TE: 8/4/98		SURF. EL.: 143	Ţ	·	1,	4 FT.	
LOGGED	BY:	D. Dowers		MEA	S. PT. EL.:	43	33.84 FT.	4	D. T. W.	ATER:	Dry F	T. BGS
WELL DIAGRAM	DPT		·	DE	ESCRIPTION					CS COD		ANALYSIS
	9	0-4'8" Fill, red of fill, cased		t, pla	stic, water coming	g In	0 base				FW	
	E	4'8"-7' Red cla	ystone,	damp				4	<i>///</i>	\mathcal{H}_{A}	CL	1
	10=	7'-8.5' Green c					4	///		CL		
	15	9.5'-20' Red cli	aystane,	dry.	gyp trags commo	19-20*				CL		
1	20=	20'-24' Green (claystone	e, dar	ap						CL CL	·
	²⁵ =	24'-33.5' Red o	laystone	dry	, dusty			T	////		GYP	
	30=	25'-25.5' Gyp									CL	
	35∄	33.5'-34.5' Gre	en clays	tone,	damp			/	1111			
	40 10 11	34.5'-44' Red (cia ystone	e, dry	, common gyp 0	37'					CL	
4	45 ∃	44'-44.5' Thin	green di	Bysto	ine, dry				////		Cr Cr	
	\mathbb{E}_{α}	44.5'-47' Red (claystone	e, dry	<u>'</u>			$/\! brack$			ដ	
	50]	47'-50' Green (· · · · · · · · · · · · · · · · · · ·			Л			6	
	<u></u> 55∃	50'-58' Red cla	ystone,	dry							CL	
<u> </u>	ΞΪ	58'-58.5' Thin (reen cla	ysta	ne, dry			/			- Cr	
6	30 <u>₹</u>	58.5'-58.5' Red						Д	////	///	CL	
	55∃	58.5'-82' Green			amp			/				
	70=	82'-71' Red cla 87' Gyp trags c		ary							CL	
'	#	71'-72' Green c	laystone.	, dam	D			_			CL	,
7	75]	72'-73' Red cla						F	777		Cr	Â
	₹	73'-74' Green s			· · · · · · · · · · · · · · · · · · ·			1				
8	Eog	Total Depth	74 Ft					•				
8	35=		surface in stress		ing extends to 5.	5' 8	GS					
9	Eog											
108 NUMBER: 9	98328	-30										

CLIENT: LONE		7.0.			<u> </u>	JOB NO.: 98	328-30	2
PROJECT: Str			ing	LOCATION	 .w	eynoka, Oklat		
	A.W. Pool		DRILLER: W.			METHOD: All		
		COMB D	ATE: 6/4/96	SURF. EL.: 14	7 3 3		73 FT.	
START DATE:					, <u>, , , , , , , , , , , , , , , , , , </u>			
LOGGED BY: D.	Dowers	ME	AS. PT. EL.: 14.	34.13 F 1.		D. T. WATER:		
DIAGRAM DPT			DESCRIPTION			GRAPHIC L USCS COI		ANALYSIS
	-4'8" Fill, red		maist, plastic, probab sg.	le water producer,			FШ	
	'8"-5.5' Green	claystone,	-	7		CL.		
10=\5	.5'-8' Red clay	stone, damp					Cr Cr	
	'-8' Green cla	ystone, dam]			
	'-20' Red clay	stone, damp	, tr gyp trags				Cr	
	Water on drill	pipe noted	8 17" when pulling rad	s after compl. hole				
20 2	0'-22.5' Green	claystone,	damp				CL	
25 2	2.5'-32' Red c	laystone, sc	at gyp frags 8 ~25',	dry				
"					ļ		Cr	
30∃					ł			
3	2'-33' Green c	laystone, di	у		\overline{A}		CL.	
35 3	3'-47.5' Red c	laystone, oc	c gyp trags, dry		_			
40=					1		CL	
	1.5' Scat greer	n clay trags						
45= 4	5 Scat gyp fr	8gs @ 45° &	47*					
50	7.5'-50' Green	claystone,	dry				CL	
	0'-58.5' Red c	laystone, dr	у					
55 5	5° Scat whi gy	8 55					CL	
60 55	8.5'-80' Green	claystone.	damp-moist		$\overline{}$		CL	
	0'-70' Red cla	ystane, dry	-		_		CL	
65 B	3'-84' Common	white gyp	rags	· · · · · ·			1	1
70=					_		CL	
)'-71' Green cl	aystone, dr			<i>_</i>		Cr	
75 71 72 80	'-72' Red clay	stone, dry			$\int \!\! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! $		CL	1
	?'-73' Green c	laystone, dr	у					
E ⁰⁸	Total Depth 7	'3 Ft						
85=		surface ca In stress tes	sing extends to 5.5° E t	IGS				
90=								
1 1								
OB NUMBER: 98328-30		 						

CLIENT	r· /	ONE MOUNTA	IN			,		JOB NO).: 98.	328-30	2
		Stress Test/		ering		LOCATION	v: W	L			
		: A.W. Pool			B: <i>W</i> .	Caldwell		METHO			V.
		E: 6/4/96	СОМР			SURF. EL.:	1432	L,	,		
<u> </u>		D. Dowers		MEAS. PT. E				D. T. W			
WELL	T		<u>.</u>					_ ·	APHIC LO		
DIAGRAM	DPT			DESCRIPTIO	DN.				cs cod		ANALYSIS
	0 🗷	A 51 511 4 -1						 	XXXX		
	[shallow H ₂ O k			Surface	casing to prevent	•	XXXX	XXX	FU	
	2	5'-7' Red clays	tone, dan	IP .	·		_			CL	
	103	7'-8' Green cla				 				CL	
	۱,,∃	9'-i9.5' Red cla	ystone, t	r scattered gyp	frags					CL	1
	15=										
	20=	19.5'-23' Green	clayston	e. damp–sli mois	t	·		///	/// /	<u> </u>	
	ا ا	23'-28' Red cla						////		Cr	
	25=	25 20 Ned Gid			· · · · · · · · ·					- CL	
	30=										
	,;=	√ 32'-33' Green o	aystone					777		CL	
	35	33'-47' Red cla	ystane, c	lry	·						
	40						:			CT	
	45=										
	50=	50' Green c						44	///	CL	
	=	50'-58' Red cla	ystone, d	ry, dusty							
;	55=					•	i			CL	
!	60	√ 58'-80' Green c	taystone	, damp						CL	
		80'-70' Red cla				- · · · · · · · · · · · · · · · · · · ·				ÇL	
	65=	·	<u></u>			·					
	70	67'-88' Common	ДУР	· · · · · · · · · · · · · · · · · · ·	<u>.</u>	·				GYP CL	1
		70'-72' Green c		<u> </u>				////		CL	1
	75=	Total Depth 7	2 Ft								
	80		surface n stress	casing extends test	to 6' BG	S					
	85=										
	=										
	90=										
 :B NUMBER	98328-	-30				•					

LOG

BORING NO. ST-10

			-		-			
CLIENT:	LONE MOUNTA	IN			JOB NO).: <i>98</i>	328-30)
PROJECT:	Stress Test/	'Dewat e ring	7	LOCATION: N	aynoka,	Oklar	oma	
DRILLED E	3Y: A.W. Pool		DRILLER: W. C	aldwell	METHO	D: <i>All</i>	Rotar	У
START DA	TE: 6/ 4/96	COMP. DA	TE: 8/4/98	SURF. EL.: 1431	.9 FT.	:םד	72 FT. E	BGS
LOGGED B	Y: D. Dowers	MEA	S. PT. EL.: 143	2.98 FT.	D. T. W.	ATER:	Dry F	r. BGS
WELL DP	т	DES	SCRIPTION			CS COD		ANALYSIS
	₽ 0-4.5°	ay, soft, plastic	, damp-moist, set so	urtace casing		***	Fill	
5	4'-5.5' Red cla	ystone, damp-n	noist				Cr	1
10	5.5'-7' Green c	laystone, damp						
i	- 18. Hed clay:	stone					CL	
15	3						-	
20	18'-22.5' Green	nimusiana dam				44		
]	·	p-mast			44	CL	
25	22.5'-32' Red c	aystane, ary					Cr	
30	30'-30.5' Comm	On gyp				///	GYP	
35	1 2012		sli damp			77	<u> </u>	
33_	34'-47' Red cla	ystone						
40							CL	
45	44'-45' Occ gy	p frags						
50	47'-48' Green o	laystone, dry				7 /2	CL	
50=	49'-58' Red cla	ystone, dry						
55				·			Cr	
	58'-60' Green c	lavstone damo		 			CL	
60=	80'-89' Red cla				1///		CL	
65				7	7777	*/*/	GYP	
	87'-88' Scat. gy	/P				//	GYP	
70	88'-70' Green c		·v			33	CL CL	
75	70'-71' Red clay		<u>*</u>	/I		1	Cr	
=	71'-72' Green cla		,					
80=	Total Depth 7	2 Ft						
85		ary súrtace ca ged and aband						
[,,]	nam hañ	See and angul	an de A					
90=								
i i 8 NUMBER: 96321	 8-30							
	· · · · · · · · · · · · · · · · · · ·				——			

CLIENT:	LONE MOUNTA	IN		· · · · ·	JOB N	0.: <i>96328</i> -	-30
PROJECT:	Stress Test/	'Dewaterin	<u> </u>	LOCATION:	Waynoka	, Oklahoma	
DRILLED B	Y: A.W. Pool	. [1	DRILLER: W. (Caldwell	METHO	DD: Air Rot	ary
START DA	TE: 6/4/96	COMP. DA	TE: <i>6/4/96</i>	SURF. EL.: 14.	32.7 FT.	TD: 72 F	T. BGS
LOGGED B	Y: D. Dowers	MEA	S. PT. EL.: 143	33.70 FT.	D. T. W	NATER: Dry	FT. BGS
WELL DIAGRAM DPT		DE	SCRIPTION	· · · · · · · · · · · · · · · · · · ·	l l	APHIC LOG SCS CODE	ANALYSIS
0-	0-1' Fill, red cla	uy damo	 			yyyy Fiii	
5	1'-7' Red clayst	 		CL CL			
	7'-9' Green cla	vetano sli dami	`			-	
10	8'-19' Red clay:			· · · · · · · · · · · · · · · · · · ·			7
15						Cr	
20	Tr scat gyp (///	
	90 51 301 0 4 0					CL	
25	22.5'-32' Red c		•		17//	GYP	ゴ
30						CL	
35	32'-33' Green c	laystone, dry-	sli damp		1777	CL	\exists
	33'-45' Red cla	ystone, dry, du	sty			/// a	
40	40'-40.5' Comm	on gyp, dusty			17//	GYF CL	 1
45	45'-48' Green c	laystone, dry			\	///	
50			dusty		<i>\///</i>	CL	
=		• •	•			/// a	
55=			·				
60 <u>=</u>	57.5'-80' Green				\///	CL	
65	60'-70' Red cla	ystone, ary, au	sty				
						/// cr	
70=	70'-71' Green cli	aystone, dry				CL CL	
75=	71'-71.5' Red cla	ystane, dry				Cr	∄
	71.5'-72' Green (claystone, dry	*	· .	/		
80	Total Depth 7	2 Ft					
85	Plugged and a	bandoned					
90=							
NUMBER: 96321	3-30						

CLIENT: LONE MOUNTAIN JOB NO.: 96328-30 PROJECT: Stress Test/Dewatering LOCATION: Waynoka, Oklahoma DRILLER: W. Caldwell METHOD: Air Rotary DRILLED BY: A.W. Pool SURF. EL.: 1434 FT. COMP. DATE: 8/4/98 TD: 75 FT. BGS START DATE: 6/4/98 LOGGED BY: D. Dowers MEAS. PT. EL.: 1435.04 FT. D. T. WATER: Dry FT. BGS WELL GRAPHIC LOG DPT DESCRIPTION ANALYSIS DIAGRAM USCS CODE 0-4.5' Fill, wet, installed 5' surface casing FM CL 4.5'-6.5' Green claystone, damp 8.5'-21' Red claystone, dry CL CL 21'-23' Green claystone, damp 23'-48' Red claystone, dry, dusty CL 30<u>=</u> CL 32'-33' Thin green claystone CL 48'-50' Green claystone, dry CL 50'-59.5' Red claystone, dry, dusty CL 55-GYP 58'-58' White gyp 60= CL 59.5'-81' Green claystone, dry 65-81'-71' Red claystone, dry CL 70= 71'-72' Green claystone, dry CL CL 72'-73' Red claystone, dry 73'-75' Green claystone, dry 80 Total Depth 75 Ft Plugged and abandoned 85 90 IOB NUMBER: 98328-30

CLIENT	CLIENT: LONE MOUNTAIN JOB NO.: 98328-30									
PROJEC		Stress Test/		etering	······································	LOCATION	: W	aynoka, Okla		
DRILLE	D BY	r: A.W. Pool	•	ם ו	RILLER: W.	<u> </u>		METHOD: A		'y
START	DAT	E: 6/5/96	СОМ	P. DATI	E: <i>6/5/96</i>	SURF. EL.:	1434	L		
LOGGED	BY	: D. Dowers	i .	1	. PT. EL.: 14	35.51 FT.		D. T. WATER	: Dry F	T. BGS
WELL	DPT			DESI	CRIPTION			GRAPHIC	LOG	<u> </u>
DIAGRAM	Ur 1			023				USCS CO	DE 	ANALYSIS
		0-7' Red clays	000 50	at white	OVD demo-dry		/////			
		U-1 REU CIOYS	ione, sc	or white.	Aib' comb at i			CL		
	5				.	_		1		
		7'-10' Green cla	·			· · · · · · · · · · · · · · · · · · ·			Cr	
		10'-2f Red clay Scat gyp fra		-	y					
	15=	Jeat 870 Ha	A3 E 19						CL	
	20									
	=	21'-24.5' Green	claysto	ne, damp					CL	
i i	25]	24.5'-34' Red c	layston	e						
	30∃	Common white	gyp tr	ags & 27°	,		-		CL	
ĺ	E								1	
	35#	∑34'-35' Green o	layston	e, dry	*		7			
	40]	35'-44' Red cla	ystone.	dry, dust	ty					
ľ	E								CL	
4	45🛨	\ 44'-44.5' Green	clayst	one, dry			/	//////	CL	
	╌╪	44.5'-48' Red c					$^{\prime}$	//////	CL	
	50=	48'-51' Green ci	ayston	e, dry	-		_/		CL	
	55=	51'-80.5' Red cli	ystone	e, dry, dus	sty		_			;
	∃								CL	
6	重	\ 80'-80.5' Commo	n gyp 1	frags					GYP	
ļ,	35 <u>+</u>	80.5'-82' Green					- /]		CL CL	
T I		82'-71' Red clay	stone, c	dry, dusty	/		-//1	//////	GYP	
7		85'-85.5' Commo	n white	gyp frag)\$				CL	
,		Common white	gyp fra	igs 8 88'						
·	5	71'-72' Green cla	ystane	, dry					CL	
8		72'-73' Red clay	stone.	dry]			
1		73'-74' Green cl		e, dry]			
8	5	Total Depth 7	4 Ft							
9	o 	Plugged and a	nobned	ed						
)	A344									
OB NUMBER: 9	0328-	9U								

CLIENT: LONE MOUNTAIN JOB NO.: 98328-30											
PROJECT: Stress Test/		LOCATION: W	aynoka, Oklah	oma							
DRILLED BY: A.W. Pool	DRILLER: W. C	aldwell	METHOD: All	Rotar	у						
START DATE: 6/5/98	COMP. DATE: 8/5/98	SURF. EL.: 1434	.8 FT. TD: 7	75 FT. I	BGS						
LOGGED BY: D. Dowers	MEAS. PT. EL.: 143	5.58 FT.	D. T. WATER:	13 FT.	BGS						
WELL DPT	DESCRIPTION		GRAPHIC LO	1							
DIA GRAM S' '			USCS COD	-	ANALYSIS						
0-7.5' Red clay	ystone, damp-dry		//////								
5=				Cr							
Can white gy	/p @ 8'			CL							
10 7.5'-8.5' Green	 	/ _{[-}		CI							
# \	laystone, dry-damp										
	ystone, becomes damp-sli moist & 13			CL							
20 *Made water	after making connection 20' -										
dried up dur	zone @ 13-23' - ing deeper drilling	/-		Cr							
25 23'-28' Green (claystone, damp-moist		777777	GYP							
30 25'-28' Cam gy	p trags										
26'-36' Red cla	systone, sii damp-dry			CL.							
35=	-green claystone, dry			CL							
40= 38.5'-48' Red (
				CL							
45=											
48'-50' Green	Claystone			CL							
50'-80' Red cla	systone, dry										
55⊒				CT							
60=	<u> </u>										
80'-82.5' Green	n claystone			Cr							
65 B2.5'-72' Red c											
Cammon gyp	₽ 85' £ 88'			CL							
70=		u n .									
75 72'-73' Green o	- • 	F	11111	PP							
				Cr							
74'-75' Green o											
₆ =											
Plugged and t	apandoned										
90=											
8 NUMBER: 96328-30			<u> </u>		1						

LOG

BORING NO. ST-15

CLIENT: LONE MOUNTAIN JOB NO.: 98328-30										
		 			LOCATION				,	
PROJEC		Stress Test/	/ Dewateri	T	LOCATION:					
		: A.W. Pool	T00115 5	DRILLER: W.	_	METHO				
		E: 6/5/96	 	ATE: 6/5/98	SURF. EL.: 143	D. T. W	1	18 ET		
-	BY	. D. Dowers	ME	AS. PT. EL.: 14	35.U2 F 1.	+		ī	865	
WELL DIAGRAM	DPT			ESCRIPTION	·		CS COD		ANALYSIS	
	0		ay, wet, soft, 20 infiltration	plastic, cased off t	o 6'			F#		
	5	5'-8.5' Red cla	-			V ///		CL		
	10=	8.5'-11.5' Green	claystone, d	anp	1///		CL			
	11111	11.5'-18' Red cla	systone, dry,	dusty				CL		
	20	18'-20' Red cla	ystone, maist			1///		CL		
		20'-24' Green	claystone, da	mp				CL	Ì	
	25=	24'-34' Red cla	aystone, sii di	amp-dry	<u> </u>					
	30							CL		
	35=	34'-35' Green (cleystone, dr	· · · · · · · · · · · · · · · · · · ·						
	40=	35'-50' Red cla	ystone, dry							
	∃							CL.		
j l	45	·								
	50=	50'-55' Green c	claystone, dry	,				Cr		
	⁵⁵	55'-80' Red cla	ystone, dry			V///				
,	60 <u>‡</u>			· · · · · · · · · · · · · · · · · · ·		<u> </u>		Cr		
	7	80'-82' Green o		<u> </u>		<i>\///</i>		CL		
	65=	62'-71' Red day	jatulie, dry					CL		
<u> </u>	⁷⁰ ∄	\ 71'-72' Green ci	laystano #=					CL		
].	75=	72'-73' Red cla	<u> </u>	.	/	H + + + + + + + + + + + + + + + + + + +		CL		
	\exists	73'-74' Green o				'		لـــــــــــــــــــــــــــــــــــــ		
8		Total Depth 7	74 Ft							
8	95=	Note: Surface plugged	e casing temp and abandom							
Ś	30=									
08 NUMBER: :	98328-	-30								

A EAIDEAN COMPANY		
CLIENT: LONE MOUNTAIN	JOB NO.: 98328-30	
PROJECT: Stress Test/Dewatering LOCATION: Wa	aynoka, Oklahoma	
DRILLED BY: A.W. Pool DRILLER: W. Caldwell	METHOD: Air Rotary	
START DATE: 6/5/96 COMP. DATE: 6/5/96 SURF. EL.: 1434	FT. TD: 74 FT. BG	s
LOGGED BY: D. Dowers MEAS. PT. EL.: 1435.01 FT.	D. T. WATER: Dry FT. E	3GS
DIAGRAM DPT DESCRIPTION	GRAPHIC LOG USCS CODE A	NALYSIS
DIAGRAM O -B.5' Fili, red clay, gyp gravel, damp-sli moist (no need for surface casing) 8.5'-8' Red claystone, damp B'-10.5' Green claystone, sli damp 8 10.5-15', dry below 15' 20-20.5'-24' Green claystone, sli damp-dry 25-24'-30' Red claystone, dry 30-33' Green claystone, dry 33'-50' Red claystone, dry 40-45-50-80' Red claystone, dry 80'-82' Green claystone, w/thin gyp layer on top 80'-82' Green claystone, w/thin gyp layer on top 82'-71' Red claystone, dry Thin gyp zone 8 85' 70-71'-72' Green claystone, dry 75-74' Green claystone, dry 75-74' Green claystone, dry Total Depth 74 Ft		NALYSIS
Plugged and abandoned		
OB NUMBER: 98328-30		

CLIENT: LONE MOUNTAIN JOB NO.: 96328-30										
PROJEC	Т;	Stress Test/	'Dewate	ring	LOCATIO	ON: Way	rnoka, O	klahom	a	
DRILLE	DBY	: A.W. Pool		DRILLER:	W. Caldwell	М	ETHOD:	AIr Ro	otary	,
START	DAT	E: 6/5/ 96	COMP.	DATE: 6/5/96	SURF. EL	.: 1434.2	9 FT. T	D: 74 I	FT. E	igs
LOGGED	BY:	D. Dowers	ME	AS. PT. EL.:	FT.	D	. T. WAT	ER: <i>Dr</i>	y FT	. BGS
WELL DIAGRAM	DPT			DESCRIPTION				CODE		ANALYSIS
	5	0-8' Fill, clay, o	lamp		 :	***		₩ F	en l	
	10	8'-10' Green cla	ıy, damp, pi	astic			7			
	15	10'-20' Red cla	ystone, dry							
	20=)–23', green clays	tone @ 23-24°				i.	
	25 30 30	24'-32' Red cla	ystane, dry						ı.	
	,≠	32'-35' Green c	laystone, si	i damp			////			
İ	35 40=	35'-48' Red cla	ystone, sii (ian p						
4	45							ø '	iL .	
5	50=	48'-51' Green cl	aystone, si	damp			////			
	55=	51'-80' Red clay	stone, dry,	dusty					1	
6										
		80'-82' Green c				_7	////			
ļ	35 10 10	82'-71' Red clay	stone, dry,	dusty					ı.	
	土	71'-72' Green cla	ystone	- <u> </u>			444			
7	' 5∰	72'-73' Red clay					1111		i l	
	<u>,</u> ‡	73'-74' Green cl	aystone							
ام		Total Depth 7	4 Ft	.						
8	5=	Plugged and a	bandoned							
9	0=									
NUMBER: 9	8328-	30								

CLIENT: LONE MOUNTAIN JOB NO .: 98328-30 LOCATION: Waynoka, Oklahoma PROJECT: Stress Test/Dewaterina DRILLED BY: A.W. Pool DRILLER: W. Caldwell METHOD: Air Rotary START DATE: 6/5/96 COMP. DATE: 6/5/96 SURF. EL.: 1444.55 FT. TD: 88 FT. BGS MEAS. PT. EL.: --- FT. LOGGED BY: D. Dowers D. T. WATER: Dry FT. BGS WELL GRAPHIC LOG DPT DESCRIPTION DIAGRAM USCS CODE ANALYSIS 0-5' Red claystone, damp CL ÇL 5'-5.5' Green claystone, damp 5.5'-13' Red claystone, sil damp CL CL 13'-14' Green claystone, sli damp 14'-20' Red claystone, sli damp CL CL 20'-22' Green claystone, damp 22'-35' Red claystone, dry CL 30 35'-40' Green claystone, sli damp-dry CL 40-40'-50' Red claystone, dry, dusty 45-CL 50-50'-82' Red claystone, dry, dusty, acc white gyp frags 55-CL 60-82'-85' Green claystone, dry CL 85'-75' Red claystone, dry 70- CL CL 75'-76' Green claystone, dry 76'-85' Red claystone, dry 80= CL 85-85'-88' Green claystone 86'-87' Occ. red claystone mixed in green claystone 90-87'-88' Green claystone, dry IOB NUMBER: 96328-30 Total Depth 88 Ft Plugged and abandoned

ON TENTA A CASE MOUNTAIN	JOB NO.: 98328-30	
CLIENT: LONE MOUNTAIN	Waynoka, Oklahoma	
PROJECT. Stress restrictions	METHOD: Air Rotary	
DIVIDED DIVIDE DIVIDED DIVIDED DIVIDED DIVIDED DIVIDED DIVIDED DIVIDED DIVIDE DIVIDED DIVIDED DIVIDED DIVIDED DIVIDED DIVIDE DIVIDED DIVIDE DIVIDI DIN	:45.00 FT. TD: 88 FT. BGS	
START DATE. 070700 Detail Date	D. T. WATER: Dry FT. BG	
LOGGED BY: D. Dowers MEAS. PT. EL.: F1.	GRAPHIC LOG	
DESCRIPTION DESCRIPTION		YSIS
0		
○ O-5' Red claystone, damp	CL	
5'-8' Green claystone, damp		
10 B'-13' Red claystone, sli damp	cr	
15 - 13'-14.5' Green claystone, dry	CL	
15 13'-14.5' Green claystone, dry 14.5'-23' Red claystone, com gyp frags @ 18-18', dry		
20=	(//// cr	
25 23'-25' Green claystone, dry	CL CL	
25'-37' Red claystone, dry		
30=	(//// cL	
35 =		
37'-42' Green claystone damo		
40=	CL	
42'-48' Red claystone, dry	///// cL	
48'-50' Green claystone, dry		
50 -82.5' Red claystone, dry		
55=	///// cr	
2890, Common GAb	CL GYP	
65 82.5'-88' Green claystone, dry	//// ct	
88'-70' Red claystone, dry, dusty	///// ct	
70'-70.5' Green claystone, dry		
75 70.5'-77' Red claystone, dry, dusty	Cr Cr	
77'-78' Mixed green clay, red clay & gyp	CI	
78'-85' Red claystone, dry, dusty		
85 Com gyp @ 83'	CL CL	
85'-88' Green claystone, dry	CL CL	
90 Nixed red/green claystone 87'-88' Green claystone	-/	
DB NUMBER: 98328-30 Total Depth 88 Ft Plugged and abandoned	-	

CLIENT: LONE MOUNTAIN JOB NO.: 98328-30										
	CETENT. PONE MONTAIN									
PROJECT:		· · · · · · · · · · · · · · · · · · ·		METHOD:						
DRILLED 8		DRILLER: W.		<u> </u>						
		COMP. DATE: 6/5/98	SURF. EL.: 1432	1 -	: 72 FT.					
LOGGED B	BY: D. Dowers	MEAS. PT. EL.: 14	33.59 FT.	D. T. WATER: Dry FT. BGS						
WELL DIAGRAM DP	PT	DESCRIPTION		GRAPHIC USCS C		ANALYSIS				
0 5 10 15 20	0-5' Fill, soft retained for 15 min to consequired 5'-7' Green clay 7'-18.5' Red clay 23'-30' Red clay 24'-24.5' Gyp. d 30'-33' Green clay 30'-48' Red clay 40'-40.5' Gyp frag 46'-48' Gyp frag 46'-48' Green clay 58'-80' Green clay 80'-85' Red clay 80'-85' Com gyp 68'-70' Green clay 80'-85' Com gyp	d clay, damp—sli moist, stopped heck for water infiltration, no si stone, damp ystone, dry claystone, dry claystone, dry, dusty laystone, dry ystone rags common claystone, dry ystone, dry ystone, dry, dusty laystone, dry ystone, dry, dusty laystone, dry ystone o frags, dry, v dusty laystone, dry stone, dry stone, dry stone, dry	drilling 8 5' art casing		CL CL CL CL GYP CL CL X A CL CL X A CL CL CL CL X A CL CL CL CL CL CL CL CL CL CL CL CL CL	ANALYSIS				
80	Total Depth 7									
80 85		rary surtace casing BGS								
90	3	•								
108 NUMBER: 983	328-30									

JOB NO.: 98328-30 CLIENT: LONE MOUNTAIN LOCATION: Waynoka, Oklahoma PROJECT: Stress Test/Dewatering DRILLER: W. Caldwell METHOD: Air Rotary DRILLED BY: A.W. Pool SURF. EL.: 1432.9 FT. TD: 74 FT. BGS COMP. DATE: 6/5/98 START DATE: 6/5/96 MEAS. PT. EL.: 1433.88 FT. D. T. WATER: Dry FT. BGS LOGGED BY: D. Dowers GRAPHIC LOG WELL DPT DESCRIPTION USCS CODE ANALYSIS DIAGRAM 0: 0-4' Fill, damp, red clay, no surface casing required CĽ 4'-5' Green claystone, damp 5'-7' Red claystone, damp CL 7'-10' Green claystone, damp 10'-20' Red claystone, dry, dusty CL 20-20'-23' Green claystone, damp CL 23'-31' Red claystone, dry, dusty CL 30⁻ 31'-34.5' Green claystone, dry CL 34.5'-44' Red claystone, dry CL 40= 40'-44' Gyp trags common 6YP 44'-46' Green claystone, dry CL 46'-60' Red claystone, dry, dusty, occ thin gyp zones 50-CL 60= CL 80'-82' Green claystone, dry 82'-71' Red claystone, dry, dusty 65-CL GYP 71'-72' Green claystone, dry CL 72'-73' Red claystone, dry 73'-74' Green claystone, dry Total Depth 74 Ft 8" PVC temporary surface casing extends to 2' BGS 90-10B NUMBER: 98328-30

CLIENT	. ,	ONE MOUNTA	ŤΝ					JOB NO.:	08328-3	0
-		Stress Test/		terin		LOCATIO	N: W	aynoka, Ok		
		': A.W. Pool			DRILLER: W		-	METHOD:		·v
		E: 6/5/96	СОМЕ		TE: 6/5/98		1432): 75 FT.	
LOGGED	BY	: D. Dowers	<u> </u>		S. PT. EL.: 1			D. T. WATE		· ·
WELL	DPT				SCRIPTION			GRAPHI		
DIAGRAM	5, ,							uscs o	ODE	ANALYSIS
	٥٦	0-4' Fill, red cl	av. dami	D	-			 	×	
	5	4'-7.5' Red clay			rani ava	·			FW	
	7			_				CL		
	10=	7.5'-10' Green o			· · ·				CL	
	15=	,		,						
	15								Cr Cr	
	20\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	21'-24' Green ci	avet one						4	
	25=	24'-32' Red cla	-		-maist		_		CL	
	₹	Gyp € 25'	,						CL	
1	30 <u>=</u>	<u> </u>			 					
	35∄	32'-34' Green c			dou one this our		_/	/////	CL	
	<u>,</u> =	Ja -ar neg ca	ystone,	dusty,	dry, acc thin gyp	zones				1
4									CL	
4	15=									
5		47'-50' Green c	laystone	6					CL	
		50'-80' Red clay	ystone,	dry, du	sty					
5	55 ∃									
6							ł			
	*	80'-82' Green ci							CL	
6	5 = 1	82'-72' Red clay 82'-85' Com gyp		dry, du	sty					
7		bz-bs com gyp							CL	
- 1		72'-73' Green cl		dry			_	/////	CL	i
7	5到	73'-74' Red clay	-					11111		
R	,∄ ′	74'-75' Green cl					-//			
0		Total Depth 75	Ft				_			
8	5=	8" PVC tempor	ary surf	lace ca	ising		-			
ar		extends to 2' E	3GS				1			•
NUMBER: 96	3328-3	30								

Page 1011									
CLIENT: LONE MOUNTAIN	JOB NO.: 96328-3	0							
PROJECT: Stress Test/Dewatering LOCATION: W	laynoka, Oklahoma								
DRILLED BY: A.W. Pool DRILLER: W. Caldwell	METHOD: Air Rotal	У							
START DATE: 6/5/98 COMP. DATE: 8/5/98 SURF. EL.: 1434	4.24 FT. TD: 75 FT.	BGS							
LOGGED BY: D. Dowers MEAS. PT. EL.: 1437.18 FT.	D. T. WATER: 15 FT.	BGS							
DIAGRAM DPT DESCRIPTION	GRAPHIC LOG USCS CODE	ANALYSIS							
	USCS CODE Fill CL	ANALYSIS							
Bentonite seal @ 10-13'; Cement @ surface-10'	•								
B NUMBER: 98328-30									

JOB NO.: 98328-30 CLIENT: LONE MOUNTAIN LOCATION: Waynoka, Oklahoma PROJECT: Stress Test/Dewatering DRILLER: W. Caldwell METHOD: Air Rotary DRILLED BY: A.W. Pool SURF. EL.: 1437.34 FT. TD: 77 FT. BGS START DATE: 5/7/98 COMP. DATE: 5/7/96 MEAS. PT. EL .: --- FT. D. T. WATER: Dry FT. BGS LOGGED BY: D. Dowers GRAPHIC LOG WELL DPT DESCRIPTION ANALYSIS DIAGRAM USCS CODE 0-4.5' Fill, red clay, soft, damp EM 4.5'-14' Red claystone, damp-dry CL GYP 8'-10' Gyp CL 14'-15.5' Green claystone, damp-dry 15.5'-27.5' Red claystone, dry 20-CL 27.5'-32' Green claystone, damp-dry 30-CL 32'-50' Red claystone, dry 40 CL Com gyp € 47' 50 50'-52' Green claystone, dry CL CL 52'-53' Red claystone, dry 55-CL 53'-58' Green claystone, dry 58'-85.8' Red claystone, dry 60-CL CL 85.8'-88' Green claystone CL TD @ 86' w/5" hole, ream to 8" for isolation casing 70-Set to 66' in hydrated bentonite CL 86'-87.5' Green claystone, dry 87.5'-78.5' Red claystone, dry CL Gyp € 73° 80-78.5'-77' Green claystone, dry Total Depth 77 Ft Note: Drilled with water during ream from 40-86' due to moisture in hole causing poor return w/air. 90-Set temporary 6" PVC isolation casing @ 0-86", plugged and abandoned IOB NUMBER: 98328-30

A ENIDERN COM	- Alti			
CLIENT: LONE	MOUNTAIN	JOB	NO.: 98328-30	2
PROJECT: Stre	ess Tes:/Dewatering	LOCATION: Wayno	ka, Oklahoma	
DRILLED BY: A			HOD: Air Rotar	
START DATE: 6		SURF. EL.: 1437.4 F1	T. TD: 88 FT.	BGS
LOGGED BY: D. L	Dowers MEAS. PT. EL.:	<i>FT</i> . D. T.	WATER: Dry F	T. BGS
WELL DIAGRAM DPT	DESCRIPTION		GRAPHIC LOG USCS CODE	ANALYSIS
0=	4.5' Fill, red clay, damp	***	×××××	
=	Tal, red cay, datap		FRI FRI	
5 4.5	'-14' Red claystone, damp			
10 <u>=</u> e	Gyp @ 8.		CL	
15			CL CL	
\	-15' Green claystone, dry -27' Red claystone		7///	
20= 15'-	2. Ned Caystone		//// a.	
25=				
=	-32.5° Green claystone			
130→	ixed red/green claystone & 29-30"		CL	
1,,=				•
"== "	amman gyp 8 35'			
40 39.5	"-40" Green claystone	/	CL	
45 00	cc gyp @ 45'			
= 1	20 8)h e 40			
50 48.5	5'-50' Green claystone	1777		
55 St	tapped 8 50', reamed 5" hale to 8"		CT	
⊒\ se	Of bentonite peliets, hydrated 8 bottom of hale it isolation casing 0 to 50"			
100-1	55' Green claystone 85.5' Red claystone		/// cL	1
65	one red column	///		
85.5	-86' Green claystone		CL	,
"=	otal Depth 88 Ft			
75 No	ote: Temporary 6" ID PVC isolation casing set & ugged and abandoned	0-50',		
80=				
85				
Į϶϶				
90=				
ALIMPED: CORRES				
NUMBER: 98328-30				

		ONE MOUNTA					<u> </u>		JOB NO.: 98		2
PROJECT		Stress Test/	Dewa				 		ynoka. Oklat		
 		: A.W. Pool			RILLER:		 		METHOD: All		
START	START DATE: 6/7/96 COMP. DATE: 6/7/98 SURF. EL.: 1434.33 FT. TD: 50 FT. BGS										
LOGGED	LOGGED BY: D. Dowers MEAS. PT. EL.: 1437.22 FT. D. T. WATER: 15 FT. BGS										
WELL DIAGRAM	DPT	· · · · · · · · · · · · · · · · · · ·		DES		GRAPHIC L USCS COD		ANALYSIS			
	°\dagger	0-4' Fill, red cl	ay, soft	. damp				3		FIII .	
	5	4'-10.5' Red cla	ystone							CL	
	10]	10.5'-13' Green		ne			 -	-{		CL	
	15	13'-23' Red clay			damp @ ~15*			1			
		Wet cuttings	rom cor	nection	8 50'					CL	
	25卦	23'-23.8' Green	claysto	me				£			
	= 1	Stopped to se			<u> </u>			1/			
1 = 1 3	Eod	23.8'-25' Green			tinued)	·					
	55	25'-~48.5' Red	CIAYSTO	ne							
	\exists	Gray-brownis	n green	claystor	ne e 37-38'			Ł		Cr	
<u> </u>	o 🗐										
 	5 = 5									ĺ	
	*	- Gyp 8 47° & 4	8'								
10-10 50	雪	48.5'-50' Green	claysto	ou6				7	(,/,/,/,/,/,	CL	
5	5=	Total Depth 5	0 Ft	-							
1	=	Well completion	data:				•				
60	0∃	Hole size: 8 Blank casing		PVC B A	-30'						
64		Screen: 2"]	D PVC (30-50	010" slots						
0.5		Filter pack: Bentonite si			9 -5 0°						
70	E	Cement: 0-2	86								
	\exists									i	
66 70 75	H										
RO	且										
	_					•					
85	ヨ									,	
90	Ë,										
lao	7										
 OB NUMBER: 96	 328-3	10									
		·- · · · · · · · · · · · · · · · · · ·									L

LOG

BORING NO. ST-27

CLIENT: LONE MOUNTAIN JOB NO.: 98328-30										2
PROJECT: Stress Test/Dewatering LOCATION: Waynoka, Oklahoma										
DRILLED BY: A.W. Pool DRILLER: W. Caldwell METHOD: Air Rotary										
START DATE: 6/7/96 COMP. DATE: 6/7/96 SURF. EL.: 1434.31 FT. TD: 75 FT. BGS										
LOGGED BY: D. Dowers MEAS. PT. EL.: 1437.07 FT.							D. T. WATER: FT. BGS			
WELL DIAGRAM	DPT	DESCRIPTION					APHIC L	ANALYSIS		
	0.2	0-5' Fill, red clay, soft, damp							FIII	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1							CL	
	10=	10'-12' Green claystone, damp							CL	
	15								CL	
020	25	21.5'-27' Green claystone							CL	<u>.</u> .
<u> </u>	30	27'-35' Red claystone, dry							CL	
<u> </u>	35=	35'-37' Scattered green claystone mixed w/red claystone							CL	
	40	37'-48' Red claystone, dry							CL	
V 4N.	50=	48'-48.8' Green claystone, dry					1///		Cr Cr	
	55=	Drill pipe wet when pulling drill string 48.6'-53' Green claystone					V///	///		
	60	53'-82.5' Red claystone, dry Thin green claystone @ 58-58.2'							CT	
	65	82.5'-83' Green claystone							CL	
	70	83'-72' Red claystone, dry								
	→	72'-75' Green claystone, dry					1			
البيت	75=	Total Depth 75 Ft					7			
	80	Hale size: 8.5"								
	85 90	Blank casing: 2" ID PVC & 0-55" Screen: 2" ID PVC & 55-75" Filter pack: 18/30 sand & 53-75" Bentonite seat: 52-53' Cement: 0-52'								
DB NUMBER: 98328-30										
								_		

Page 1 of 2

CLIENT: A	LONE MOUNTA	IN			JOB NO	.: 983	328-30)			
PROJECT:	Stress Test/	Dewat e ri	ng	LOCATION: W	aynoka,	Oklan	oma				
DRILLED BY: A.W. Pool DRILLER: METHOD: Air Rotary											
START DATE: 6/11/96 COMP. DATE: 6/11/96 SURF. EL.: FT. TD: 78.5 FT. BGS											
LOGGED BY: G. Walker MEAS. PT. EL.: 1437.58 FT. D. T. WATER: FT. BGS											
WELL DIAGRAM DPT			ESCRIPTION			PHIC LO		ANALYSIS			
- - - 0.4	0-4'8" Fill, red Set 8" casing		the surface	·			FW				
5-	Insitu red cla	ystane					CL				
10-					X X X X X X X X X	x x x x	GYP				
-	II' Green claysto					44	CI				
	12'8" Green clay						CL				
15-	15' Red clayston				1111	1//	Cr				
20-	18'8" Gypsum – ; Red claystons Hed claystons	e, drier but s	till has some moisture				CL				
	25°8" Green clay	stone				// /	Cr				
-	26' Brown to gra	<u> </u>				//	Cr				
30-	28' Green clayst						Cr				
	30' Red claystor	ne, dry			X	X X X X X	GYP				
	32' Gypsum - 2"	thick			1111	77	CL				
35—	32°6" Red clayst	one, dry					Cr				
	37' Green clayst	one, moist					CL				
40-	39'8" Red clayst	one, slightly	moist				CL				
	41' Green claysto	one, moist				X X	CL				
45-	41'2" Red claysto	one, dry			* * * * * * * * * * * *	X X X X	GYP CL	·			
OB NUMBER: 98328	-30										

LOG

BORING NO. ST-28

Page 2 of 2

JOB NO .: 98328-30 CLIENT: LONE MOUNTAIN PROJECT: Stress Test/Dewatering LOCATION: Waynoka, Oklahoma DRILLED BY: A.W. Pool DRILLER: METHOD: Air Rotary SURF. EL.: --- FT. TD: 78.5 FT. BGS COMP. DATE: 8/11/98 START DATE: 6/11/96 D. T. WATER: FT. BGS LOGGED BY: G. Walker MEAS. PT. EL .: 1437.58 FT. GRAPHIC LOG WELL DPT DESCRIPTION USCS CODE ANALYSIS DIAGRAM 45' Gypsum - 2" thick CL GYP 48' Green claystone, moist, soft 50-CL 50' Gypsum, red claystone 51'8" Green claystone, moist CL 55. 56' Red claystone, dry **GYP** 60 83' Gypsum - 2" thick CL 65-84°8" Green claystone, some moisture CL 87' Red claystone, dry BYP 88' Gypsum - 2" thick CL 70-70' Red claystone, dry **GYP** 72' Gypsum, dry CL Red, dusty, dry 75'8" Green claystone CL 77' Red claystone CL 78' Green claystone 80-Total Depth 78.5 Ft Temporary 8" ID PVC surface casing set 8 0-2" 10B NUMBER: 98328-30

W.S.P.C.I. BORING LOS

BORING N	NT:3187108	S NTRACT	OR/LE	PAGE 1 F. II TARTE 5/14/87 TARE ENTE: 5/ L
DRILLING INITIAL WATER LE SURFACE WEATHER	##_: #1_EV. :1606.9'gg	CORE STATIC W LEVEL: 165 PRING SIZE	ATER 0.0' 8/ :4" E	LOGGER: T.R. OTHER 13/87 LEVELS: PRING DEPTH:3313'CASING ELEV.: N/A MOSTLY CLEAR
REMARKS:	OBSERVATION WE	LL TO BE (ONSTR	UCTED.
CASIN	е ОЕРТН	USC/USGS SYMBOL SAMPLE NO.	COLOR	DESCRIPTION
	5 - 6.5- 7.8- 9.6- 9.9- 104- 135- 144- 15- 15- 197- 20 - 23- 21- 21- 21- 21- 21- 21- 21- 21- 21- 21	100% 100%	Lt. Gy Lt. Gy Med Gy Gy/R-B R-B R/B	0.0-6.5 Surface Caming (not logged) 6.5 Gypsum: Layered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.10.5-12.0, 13.0-13.5; gypsum nodules 9.12.5-12.9, 12.9; open fractures 13.5 Claystone: Gray and reddish brown 14.0 Gypsum: Layered 14.4 Claystone: Reddish brown 9.14.8-15.4; gypsum grains 15.5 Claystone: Reddish brown with gypsum nodules 18.5 Claystone: Reddish brown with gypsum nodules 18.5 Claystone: Reddish brown with some gray mottle 9.19.0-19.1; gypsum veinlets 19.3 Claystone: Reddish brown 19.7 Claystone: Reddish brown 19.7 Claystone: Reddish brown 9.20.1, 21.3, 21.8; gypsum weinlets 9.20.5, 20.7; gypsum nodules 22.7 Claystone: Gray with red mottle 23.9 Gypsum: Vein 24.0 Claystone: Reddish brown with gypsum weinlets

PROJECT NO. 3187108		B-I CONT		PAGE 2 OF II
CASING	DEPTH USC/USGS SYMBOL	SAMPLE NO % OF REC.		DESCRIPTION
	254	R-B	25.4	Claystone: Reddish brown with gypsus veinlets and gypsus nodules
	26.9 27.4	Gy Gy	26. 9	Lost Core
	283	100% B	27.4	Claystone: Gray with gypsum veinlets and gypsum nodules
	– 30 – ————————————————————————————————————		28.3	Claystone: Gray • 28.6-29.0: gypsum veinlets
			29.0	Claystone: Brown # 29.5, 33.3-33.5: gypsum
	33.5 - 70.55.2 34.5 - 70.55.2	6 Gy/R-B 92 % R-B		nodules • 30.4: gypsum veinlet
	35.7 35.7 36.0	R-B R-B	33.5	Claystone: Gray and reddish brown # 33.8, 33.9, 34.1, 34.3, 34.4, 34.5: gypsum veinlets
	38.1	53%	34.5	Claystone: Silty; reddish brown @ 34.8, 34.9-35.0, 35.2: gypsum veinlets
	41.3	Gy	35.7	Claystone: Reddish brown with gypsus nodules
	420 445 - 2000	R-B	36.0	Claystone: Reddish brown 0 36.0-36.2, 36.8-37.3: gypsus grains 0 37.6-38.1: gypsus veinlets
	445— <i>- 3000-</i> — 45 —	100%	38. 1	Lost Core
	47.0 47.3 48.2	B Gy	41.3	Claystone: Gray with reddish brown mottle and gypsus veinlets
	484 2222 493 495	Med.Gy Gy Gy/R-B	42.0	Claystone: Brown with gray mottle and gypsum veinlets
	- 50	J. J. J. J. J. J. J. J. J. J. J. J. J. J	44.5	Claystone: Reddish brown 6 44.9: gypsum nodules 6 45.1-45.4, 46.1-47.0: gypsum veinlets
			47.0	Claystone: Silty; brown with gypsus nodules
	_		47.3	Claystone: Gray # 47.7, 48.1: layered gypsus grains
	- 1 1		48.2	Gypsum: Layered grains
	ן נ		48.4	Claystone: Hedium gray
	_		49.3	Claystone: Silty; gray
	-		49.5	Claystone: Gray and reddish brown with gypsus veinlets

DPO 15CT NO 318710		TB-I CON	NTINUED BASE 7 OF H	
PROJECT NO. 318710			PAGE 3 OF II	
CASING	5	SAMPLE NO. % OF REC.	DESCRIPTION	
	50.4 50.4 50.7	9 R-B 75% Gy	50.4 Claystone: Reddish brown	
1 111	52.5	월	50.7 Claystone: Gray	
	53.5	10 R-B	52.5 Lost Core	
	54.2= - 55		53.5 Claystone: Reddish brown	
			54.2 Claystone: Reddish brown with gray	
	56.3	S S	ecttle # 54.9: gypsum veinlet	
	57.6	R-B R-B	● 55.3: gypsus nodule	
	593	100% R-B	56.3 Claystone: Silty; gray with red mottle, gypsum nodules, and	
		7.0 0.0	gypsum veinlets 57.6 Claystone: Reddish brown	
	61.3	R-B	# 58.0-58.1: gypsum veinlet	٠
	632 =		58.2 Cleystone: Reddish brown	
		12 22 100%	0 59.2: gypsum veinlet	
	- 65	720	59.3 Claystone: Reddish brown @ 59.5, 59.7, 59.8, 60.1,	
			60.7, 61.1, 61.3: gypsum ' veinlets	
"	680	B/R-B		
	686 200	13 B/R-B 2 100% R-B	0 61.5-61.9, 62.1 (3 mm);	
	- 70	94	gypsum veinlets • 62.6: gypsum nodules	
	70.6	R-B	63.2 Claystone: Brown with gypsum nodules # 64.4-65.3, 67.0, 67.2-67.4,	
	73.0	6	67.6: gypsum veinlets	
	7.700	14	68.0 Claystone: Brown and reddish brown # 68.1-68.2 (3 mm), 68.6:	
	75		gypsum veinlets	
	 		68.6 Claystone: Reddish brown with green mottle	
	+ 1		0 68.6-69.2: gypsum nodules 0 69.7, 70.2, 70.4: gypsum	
	† †		veinlets	
			70.6 Claystone: Reddish brown 9 72.4, 72.7-72.8: gypsum	
			nodules 9 72.7-72.8: gypsum veinlet	
	+ 4 1			
	+		73.0 Claystons: Silty; green 0 73.1, 73.6 (6 mm), 73.9:	
	† †		gypeum veinlets	
	<u> </u>			

		<u> </u>			211110	
PROJECT_NO_318710	8	T	B-I	CONT	INUED	PAGE 4 OF 11
CASING	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	75 - 75.5- 75.9- 769- 770		,	Med.Gy R-B Gy R-B	75.5	Claystone: Hedium gray 0 73.5-75.6, 75.8 (6 mm): gypsum veinlete
	78.4 -		15 100%	Gy/R	75. 9	Claystone: Reddish brown with gypsum veinlets
	− 80°−	- 4600			76. 9	Claystone: Gray
		משושל			77.0	Claystone: Reddish brown with gypsum grains
	83.1- 83.5		16 100%	R-B R-B	78.4	Claystone: Silty; gray and red with gypsum veinlets
	- 85 - 865-	TUTED TUTED TUTED			79.5	Claystone: Reddish brown with gray mottle 0 79.6, 81.9, 82.2: gypsum weinlets
	87.1 <u>=</u> 87.4 = 88.0 =		84%	Gy Med.Gy	83. 1	Claystone: Reddish brown with gypsus veinlets
	895 897 90 = 902			G/R-B R-B	83.5	Claystone: Reddish brown • 84.2, 85.4, 85.8, 86.2: gypsum veinlets • 84.8, 86.4: gypsum nodules
	921 9236 938 938 948 948	727554	100%		86. 5	Claystone: Reddish brown with green sottle # 86.6, '86.8: gypsum modules
	948 - - 95 - -			G R-B R-B R-B	87.1	Claystone: Gray with reddish brown mottle # 87.2: gypsum nodule
	- 4	1 1			87.4	Last Care
					88.0	Claystone: Silty; medium gray with gypsum grains # 88.3: gypsum veinlet
					89.7	Claystone: Silty; green and reddish
					90.2	Claystone: Silty; reddish brown with green acttle
					92. 1	Claystone: Silty; green with reddish brown mottle
					92.3	Claystone: Silty; reddish brown
					93.4	Claystone: Green # 93.4-93.5: gypsus nodules # 93.4-93.5: gypsus veinlets
					93.6	Claystone: Green and reddish brown with gypsum grains
	. 4				93.8	Claystone: Reddish brown
					94.2	Claystone: Reddish brown with gypsum grains
				<u> </u>	94.8	Claystone: Silty; reddish brown

CASING THE STORM AND AND AND AND AND AND AND AND AND AND	OF II
96.2 Claystone: Reddish brown 19 98.1 Claystone: Reddish brown with nodules 98.1 Claystone: Green with gypsum reddish brown 98.2 Green with gypsum reddish brown 100 Claystone: Silty: reddish brown 100.0 Claystone: Silty: reddish brown 101.6 Claystone: Silty: reddish brown 106.0 Claystone: Red and green 106.0 Claystone: Reddish brown with gypsum grains 106.2 Claystone: Reddish brown with gypsum grains 106.2 Claystone: Reddish brown 106.4 Claystone: Reddish brown	
98.1 Claystone: Reddish brown with nodules 98.3 GRB 98.3 Claystone: Green with gypsum a green and reddish brown with nodules 98.1 Claystone: Green with gypsum a green and reddish brown with nodules 98.2 Claystone: Green with gypsum and reddish brown with nodules 98.3 Claystone: Green with gypsum and reddish brown gypsum nodules, gypsum nodules, gypsum nodules, and gypsum greins 106.2 Claystone: Reddish brown with nodules	
98.3 Claystone: Green with gypsum regions of the state of	gypsum
Ol.6- Ol	odules
Ol.6—100% 101.6 Claystone: Silty; reddish brown gypsus nodules, gypsus veinlets, and gypsus greinsts, and gypsus greinsts. 106.0 Claystone: Reddish brown with gypsus grains 106.2 Claystone: Reddish brown with gypsus grains 109.4 Claystone: Reddish brown	LOAN
100% 101.6 Cleystone: Silty; reddish brown gypsus nodules, gypsus veinlets, and gypsus grains 106.0 Claystone: Red and green 106.2 Claystone: Redddish brown with gypsus grains 109.4 Claystone: Reddish brown	'n I
- 105 - R/G R/G R/G R/G R/G R/G R/G R/G R/G R/G	
060 R/G R/G State of Reddish brown with gypsum grains 109.4 Claystone: Reddish brown	1
95% 109.4 Claystone: Reddish brown	. [
110.6 Claustone, General and amount	
094 R/B and gypsus veinlets	odules
110 - 110.9 Gypsum: Vein	
G/R 111.0 Claystone: Green and red	
11.7 22 22 22 23 25 100% R/G 112.2 Lost Core 115.5 115	ı
22 22 111.7 Gypsus: Vein network; clayey 130 139 12.2 Lost Core	
115 - 115 Claystone: Red with gypsum gra	ins
165 R-B 113.0 Claystone: Silty; red and gree	n.
16.5 RB 113.0 Claystone: Silty; red and gree RB/G 113.9 Claystone: Silty; redddish brown with RB 116.5 Claystone: Reddish brown with	rn l
178 100% R-B 186 24 R-B 186 72 % R-B 116.5 Claystone: Reddish brown with souther, gypsus veinlets, and gypsus vein	
21.2 R-8 116.9 Clayetone: Red with gypsum gra: 6 117.3-117.5 (vertical gypsum veinlet	ine
235 R-B 117.5 Claystone: Reddish brown and grant grains	·een
117.8 Claystone: Reddish brown	1
118.6 Claystone: Reddish brown with a veinlets)ypaus
119.7 Claystone: Reddish brown and gr	.eeu
119.9 Claystone: Reddish brown with a veinlets and gypsus grain	1
121.2 Claystone: Reddish brown	ypeun .ne.
122.1 Lost Core	ypeun .ne
123.5 Claystone: Reddish brown with gypsum grains	Jypaun .ne

PROJECT NO. 3187108		B-1		INUED	PAGE 6 OF II	
CASING	GEPTH USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
	26.5		R-B	126.5	Claystons: Reddish brown with gypsus veinlets	
	273	1		127.3	Lost Core	
	285 287 295 - <i>Journal</i> - 130	26%	R-B G	128.5	Claystone: Reddish brown # 128.6: gypsum veinlet	
	- 130 -		R-B	128.7	Claystons: Green # 129.3, 129.4: gypsus veinlets	
	325	1	R-B	129.5	Claystone: Reddish brown	
	- 33.9 34.8		R∕G G	132.5	Claystone: Reddish brown with gypsum veinlets and gypsum grains.	
	33.9 34.8 - 135 - 35.3 35.6 35.8		G R	133.9	Claystone: Red and green with gypsus weinlets and gypsus grains	
				134.8	Claystone: Green with gypsum	
	385	28 100%	R	135.3	Claystone: Green with gypsum grains	
	- 140-			135.6	Claystone: Red with gypsum grains	
1				135.8	Last Care	
	425 - <i>Janger</i>	29 100%	R	138.5	Claystone: Red with gypsum grains	
	- 145 	100%		142.5	Claystone: Red @ 142.5-142.7, 146.2: gypsum	
		30 100%		147.4	Veinlets Claystone: Red	
	474	3 1	R	148.8	Claystone: Red and green	
				150. 1	Claystone: Red	
	48.8	1 1	R/G	152.0	Claystone: Red and green with gypsum	
	- 150 - 50.1	i I	R	152.5	grains ·	
	520-	31 86%	R/G R	152.5	Claystone: Red	
	535			154.0	Claystone: Red with green mattle	
	520- 525- 5350- 545- 549- 155- 155- 552	32 100%		154.5	Claystone: Red	
-	55.2	10076	R	154.9	Claystone: Red with gypsum veinlets	
	577		ا ۽	155. 2	Claystone: Red	
	57.7 =		G R	157.7	Claystons: Green	
	- 160		i	157.9	Claystone: Red	
					·	

PROJECT_NO3187108		TB-I CONT	INUED PAGE 7 OF II
CASING	DEPTH USC/USGS SYMBOL	SAMPLE NO. % OF REC.	DESCRIPTION
	61.85 61.95 62.8 63.4 63.4 67.9 67.9 70.5 72.0 73.5 74.0 74.9 17.5 77.6 77.6 79.5 180 80.2	33% GG R RG R 34% ROO% ROO% ROO R R GR RAG	161.8 Claystone: Green with gypsum grains 161.9 Claystone: Green 162.4 Claystone: Red 162.8 Claystone: Green with gypsum nodules 163.4 Claystone: Red
	- 185	38 R R R R R R R R R R R R R R R R R R R	186.5 Claystone: Red and green 188.0 Claystone: Red end green 188.0 Claystone: Red end green 189.1: layered gypsum grains 189.4 Claystone: Red and green 189.7 Claystone: Red 189.9 Claystone: Red with gypsum grains and gypsum veinlets 192.1 Claystone: Red end green 197.5 Claystone: Red and green 198.0 Claystone: Red 198.5 Claystone: Red with gypsum nodules 199.0 Claystone: Red and green

PRO.I	ECT_NO3187108	TD L C	BORING LOG
	CASING	DEPTH USC/USGS SYMBOL SAMPLE NO. % OF REC.	PAGE 8 OF 11 DESCRIPTION
		200 00.5 01.5 01.5 01.5 01.5 01.5 01.5 01.5 01.5 01.0 00.5 0	200.5 Claystone: Silty; brown 201.5 Claystone: Red with gypsus grains 207.0 Claystone: Red
		39.1	239.1 Lost Care

PROJECT NO. 3187108		S. P. C. TB-1		ORING NTINUED	LOG PAGE 9 OF 11	
CASING	DEPTH	SYMBOL SAMPLE NO.	COLOR		DESCRIPTION	
	240 405 245 245 250 250 544 255 255	50 100°9	R Yo R/G	247.0 C	laystone: Red @ 242.0, 242.1, 242.2, 242.3: gypsum grains @ 244.3, 244.5: gypsum veinlets laystone: Red and green	
	565 567 582 -260 -615 -637 -77 643 -265	53 100°/ 100°/ 100°/	R	256.5 C 256.7 C 258.2 C 261.5 C	# 256.5: gypsum nodule laystone: Red with gypsum grains laystone: Red laystone: Red with gypsum nodule laystone: Red # 262.8: gypsum fragments ypsum: Broken layers: clayey laystone: Red	
	665 685 270 707 715	55% 100%	G R	264. 3 C. 266. 5 C. 268. 5 C. 270. 7 C.	ypsum: Broken layers laystone: Red	
	78.8 79.0	1057%	GR	278.8 CJ	e 271.6, 271.7, 271.8, 271.9: gypsum veinlets e 273.8: gypsum nodule Laystone: Green with gypsum nodules Laystone: Red with green mottle e 280.3, 282.2: gypsum veinlets	

DD0 IECT NO 7187104	_	0. 3. r	B- I		NTINUE	<u>n</u>
PROJECT_NO. 3187108	រ 1	1	T .	<u> </u>	T	PAGE IO OF II
CASING	080 0EPTH	USC/U SYMB	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	835-	Tibbri Tradi		R-B	283. 5 285. 0	Claystone: Reddish brown 6 284.0, 284.1, 284.3, 284.4, 285.0: gypsum veinlets Lost Core
	- -285 -	77.71	58 60%		287.0	Cleystone: Reddish brown 6 288.1: gypsum veinlet
	- 87.0-			R-B	288. 5	Claystone: Reddish brown 6 289.2: gypsum veinlet
	885 895- 290-	- 151.05 - 151.051	59 100%	R-B R-B	289.5	Claystone: Reddish brown with green wottle
	290 -				296.0	Claystone: Reddish brown and green 6 295.8: gypsum nodule Claystone: Red
					296.2	Lost Care
	945 - - 295 -		60 53%	R-B	296.5	Claystone: Red 8 296.7, 296.8, 296.9, 297.5: gypsum veinlets
	960= 962- 965 -	22002 2002 2002		R R	297. 9	Claystone: Reddish brown
	- 97.9 98.0			₽₿	298. 0 300. 5	Lost Core Claystone: Reddish brown with gypsus
	-300 - - 005 - - 008 -	75500	61 82%	R-B	300. a	veinlets Claystone: Green
	00.5	DOSES EUSIND			300.9	Claystone: Reddish brown e 301.1, 301.2, 301.3, 301.9, 302.6, 302.7, 304.1: gypsus veinlets
	-305 -			:	305.0	Lost Core
	- 060 - 068 - 076		100%	R R-B R-B	306.0	Claystone: Red with green mottle @ 306.7: gypsum veinlet
	08.1 =			₹B	306.8	Claystone: Reddish brown with gypsus fragments
	-310 - -	510,500 01:50:			307.6	Claystone: Reddish brown with green mottle 0 308.1: gypsum weinlet
	12.8 - 13.5 -	noni	63 38 %	6	308.1	Claystone: Reddish brown and green 6 309.1, 309.3, 309.4, 309.5, 309.8, 310.1, 310.8, 311.2, 311.5, 311.8, 312.8: gypsus veinlets
					312.8	Claystone: Green
	. 1					

	_		B- I		VTINUED	
PROJECT NO. 3187108		•	· · · · ·		-	PAGE II OF II
CASING	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	315 - 15.6 - 16.9 - 17.3 - 18.0 - 22.0 - 23.	- tataway 77.244	64 80%	R-B GB R-B	328. 5 328. 7 329. 5	Claystone: Reddish brown

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EGRING STATE STATE NC CORE NATION WATER OTHER WATER STATE STATE STATE OTHER WATER STATE S
DRIFTING STEE NC CORE ENTITY: 165.0 8/13/87 LEVELS: SUBFACE STEEL: 165.0 8/13/87 LEVELS: SUBFACE STEEL: 165.0 8/13/87 LEVELS: SUBFACE STEEL: 160.0 8/13/87 LEVELS: SUBFACE STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: WEATHER STEEL: 160.0 8/13/87 LEVELS: ON ON ON ON ON ON ON ON ON ON ON ON ON O
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CASING THE DOT ON WE SERVICE CASING (Not logged) O.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Hedium gray e 11.9-12.0, 13.0-13.5; gypsum nodules e 12.5-12.9, 12.9; open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Gray and reddish brown e 14.8-15.4; gypsum nodu 14.4 Claystone: Reddish brown e 14.8-15.4; gypsum nodu
CASING THE ADDRESS OF THE CASING CASING (not logged) OUNTY ON WAY & Company: Layered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayer; light gray 9.9 Claystone: Hedium gray 10.4 Claystone: Hedium gray 10.4 Claystone: Hedium gray 10.4 Claystone: Hedium gray 10.5 12.5 12.9; 12.9; open 11.6 Gy 10.7 Tractures 14.0 Gypsun: Layered 14.4 Claystone: Reddish brown 14.6 15.4; gypsus nodus 14.4 Claystone: Reddish brown 14.6 15.4; gypsus nodus
0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.6 11.9-12.0, 13.0-13.5: gypsum nodules 9.9 12.5-12.9, 12.9: open fractures 11.9 12.5-12.9, 12.9: open fractures 14.4 Claystone: Reddish brown 9.4.8-15.4: gypsum nodu
0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.6 11.9-12.0, 13.0-13.5: gypsum nodules 9.9 12.5-12.9, 12.9: open fractures 11.9 12.5-12.9, 12.9: open fractures 14.4 Claystone: Reddish brown 9.4.8-15.4: gypsum nodu
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0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.6 11.9-12.0, 13.0-13.5: gypsum nodules 9.9 12.5-12.9, 12.9: open fractures 11.9 12.5-12.9, 12.9: open fractures 14.4 Claystone: Reddish brown 9.4.8-15.4: gypsum nodu
0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.6 11.9-12.0, 13.0-13.5: gypsum modules 9.9 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 9.5 14.6 Gypsum: Layered 14.4 Claystone: Reddish brown 9.14.8-15.41 gypsum modules
0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.6 11.9-12.0, 13.0-13.5: gypsum nodules 9.9 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 9.9 14.8-15.4: gypsum nodu
0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Leyered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 9.6 11.9-12.0, 13.0-13.5: gypsum nodules 9.9 12.5-12.9, 12.9: open fractures 11.9 12.5-12.9, 12.9: open fractures 14.4 Claystone: Reddish brown 9.4.8-15.4: gypsum nodu
0.0-6.5 Surface Casing (not logged) 6.5 Gypsum: Layered grains; silty 7.8 Lost Core 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 9.9 Claystone: Hedium gray 9.10.4 Claystone: Hedium gray 9.10.5-12.9, 13.0-13.5: gypsum nodules 9.12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 9.9 14.8-15.4: gypsum nodu
7.8 Lost Core 9.6 Siltstane: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 10.4 Claystone: Hedium gray 10.5 12.9, 13.0-13.5: gypsum nodules 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 14.4 Claystone: Reddish brown 14.8-15.41 gypsum nodules
7.8 Lost Core 9.6 Siltstane: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 11.9-12.0, 13.0-13.5: gypsum nodules 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 14.4 Claystone: Reddish brown 14.8-15.41 gypsum nodu
9.6 Siltstone: Clayey; light gray 9.9 Claystone: Light gray 10.4 Claystone: Medium gray 9.6 11.9-12.0, 13.0-13.5: gypsum modules 9.9 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 9.6 Siltstone: Clayey; light gray 9.9 Claystone: Medium gray 9.9 Claystone: Medium gray 9.9 11.9-12.0, 13.0-13.5: Gypsum nodules 9.9 12.5-12.9, 12.9: open fractures 14.4 Claystone: Reddish brown 9 14.8-15.41 gypsum nodules
9.9 Claystone: Light gray 10.4 Claystone: Hedium gray 10.4 Claystone: Hedium gray 10.9 11.9-12.0, 13.0-13.5: gypsum nodules 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown 14.4 Claystone: Reddish brown 14.8-15.4: gypsum nodu
10.4 Claystone: Hedium gray • 11.9-12.0, 13.0-13.5: gypsum nodules • 12.5-12.9, 12.9: open fractures 10.4 Claystone: Gray and reddish brown 10.4 Claystone: Reddish brown • 14.8-15.4: gypsum nodu
10.4 Claystone: Hedium gray e 11.9-12.0, 13.0-13.5: gypsum nodules e 12.5-12.9, 12.9: open fractures 10.4 Claystone: Hedium gray e 11.9-12.0, 13.0-13.5: gypsum nodules fractures 12.5-12.9, 12.9: open fractures 14.0 Gypsum: Layered 14.4 Claystone: Reddish brown e 14.8-15.4: gypsum nodu
7.8 9.6 9.6 9.9 U. Gy Li Gy Li Gy Med Gy 14.0 Gypsun: Layered 14.4 Claystone: Reddish brown 14.8-15.41 gypsus nodu
7.8 gypsum nodules 9.12.5-12.9, 12.9: open fractures 104 104 104 105 11.5 Claystone: Gray and reddish brown 104 14.4 Claystone: Reddish brown 14.4 Claystone: Reddish brown 14.8-15.41 gypsum nodu
9.6 9.9 10.4 10.4 10.4 10.4 10.5 10.5 10.5 10.6 10.6 10.6 10.6 10.6 10.6 10.6 10.6
9.9 Li Gy Li Gy Med Gy 10.4 10.4 14.0 Gypsum: Layered 14.4 Claystone: Reddish brown e 14.8-15.41 gypsum nodu
104 13.5 Claystone: Gray and reddish brown 14.4 Claystone: Reddish brown 14.8-15.47 gypsus nodu
14.0 Gypsum: Layered 14.4 Claystone: Reddish brown # 14.8-15.41 gypsum nodu
● 14.8-15.41 gypsus nodu
● 14.8-15.41 gypsus nodu
15.5 Cleystone: Reddish brown with g
18.5 Claystone: Reddish brown with a
gray mottle
● 19.0-19.1: gypmum vein
R-B 19.3 Claystone: Reddish brown R-B 19.7 Claystone: Silty; gray with gyp
2073 100% G 3.3 Claystans: Readtan aroun
grains
20.0 Claystone: Reddish brown
Gy • 20.1, 21.3, 21.8; gyp
23.9 4 90% R-B • 20.5, 20.7; gypsus nod
1
22.7 Claystone: Grey with red mottle
23.9 Gypsum: Vein
24.0 Claystone: Reddish brown with g
veinleta

CASING TB-I CONTINUED PAGE 2 OF II CASING CASING TB-I CONTINUED PAGE 2 OF II DESCRIPTION PAGE 2 OF II PAGE 2 OF III	
25m 1 25m 25.4 Claystone: Reddish brown with gypsus	
veinlets and gypsum nodules	
283 - Gv	
290- 290- B 27.4 Claystone: Gray with gypsus veinlets and gypsus nodules	
28.3 Claystone: Gray e 28.6-29.0: gypsum veinlets	
29.0 Claystone: Brown 6 29.5, 33.3-33.5: gypsus nodules 9 30.4: gypsus veinlet	
33.5 R-B 33.5 Cleystone: Gray and reddish brown 6 35.7 R-B 35.7 R-B 34.3, 34.4, 34.5; gypsus veinlet	
34.5 Claystone: Silty: reddish brown 0 34.8, 34.9-35.0, 35.2: gypsus veinlets	
40 - 40 - 41.3 - Gy Gy B Gy B B Gy B	
36.0 Claystone: Reddish brown 9 36.0-36.2, 36.8-37.3: gypsus grains 4.65 - 36.1 - 36.0 - 36.0 - 36.1 - 36.0	
45 100% 38.1 Lost Core	
47.0 47.0 B	
484	
44.5 Claystone: Reddish brown e 44.9: gypsum nodulem e 45.1-45.4, 46.1-47.0: gypsum veinlets	
47.0 Claystone: Silty; brown with gypsus nodules	
47.3 Claystone: Gray e 47.7, 48.1: layered gypsum grains	
48.2 Gypsum: Layered grains	
48.4 Claystone: Hedium gray	
49.3 Claystone: Silty; gray	
49.5 Claystone: Gray and reddish brown with gypsus veinlets	

TB-I CONTINUED PAGE 3 OF II PROJECT NO. 3187108 USC/USGS SYMBOL DEPTH SAMPLE % OF RE COLOR DESCRIPTION CASING 50 **-**504: 50.7 ٥ 75% Gy R-B 50.4 Claystone: Reddish brown 50.7 Claystone: Gray 52.5 52.5 Lost Core 53.5 R-B 10 54.2 ir-B 53.5 Claystone: Reddish brown 55 -54.2 Claystone: Reddish brown with gray Gy 56.3 mottle # 54.9: gypsum veinlet 57.5 R-8 # 55.3: gypeum module 100% R-B 582 -**56.** 3 Claystone: Silty; gray with red mottle, gypsum nodules, and gypsum veinlets 593 57.6 Claystone: Reddish brown 613 R-B ₱ 58.0-58.1: gypsus veinlet Claystone: Reddish brown 58. 2 632 В 0 59.2: gypsum veinlet 12 100% א 100% 65 59.3 Claystone: Reddish brown 7000 6 59.5, 59.7, 59.8, 60.1, 60.7, 61.1, 61.3: gypsus veinlets - 427,74 -7000 680 B/R-B 61.3 Claystone: Reddish brown 13 R-B # 61.5-61.9, 62.1 (3 mm): 686 gypsum veinlets 6 62.6: gypeum nodules 70 **-**RB Claystone: Brown with gypsus nodules @ 64.4-65.3, 67.0, 67.2-67.4, 63.2 67.6: gypsum veinlets 73.0 14 Claystone: Brown and reddish brown # 68.1-68.2 (3 mm), 68.6: 68.0 gypsum veinlets 75 68.6 Claystone: Reddish brown with green mottle 6 68.6-69.2: gypsum nodules 6 69.7, 70.2, 70.4: gypsum veinlets 70.6 Claystone: Reddish brown ● 72.4, 72.7-72.8: gypsus nodules @ 72.7-72.8: gypsus veinlet Claystone: Silty; green 0 73.1, 73.6 (6 mm), 73.9: 73.0 gypsum veinlets

	ECT NO 318710	_			CONT		PAGE 4 OF II
PROOF	CASING	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
		75 - 75.5 - 75.9 - 76.9 - 770			Med.Gy R-B Gy R-B	75.5	Claystons: Hedium gray 0 75.5-75.6, 75.8 (6 mm): gypsum veinlets
		78.4 - 79.5 - - 80 -	aan.	15 100%	Gy/R R-B	75. 9 76. 9	Claystone: Reddish brown with gypsum veinlets
		- 80 -	คาวเคมี			77.0	Claystone: Gray Claystone: Reddish brown with gypsum grains
		83.1= 83.5	אמנטני. מימטור	16	R-B R-B	78. 4	Claystone: Silty; gray and red with gypsum veinlets
		- 85 - 865-	70,612.00 70,612.00 70,612.36			79.5	Claystone: Reddish brown with gray mottle 0 79.6, 81.9, 82.2: gypsum weinlets
		87.1 = 87.4 = 88.0 = 89.5 =		84%	Gy Med Gy	83.1	Claystone: Reddish brown with gypsus veinlets
		89.7 - 90 - 90.2			G/R-B R-B	63.5	Claystone: Reddish brown # 84.2, 85.4, 85.8, 86.2: gypsum veinlets # 84.8, 86.4: gypsum nodules
		923682 923682 9348 945 95		18 100%		86.5	Claystone: Reddish brown with green mottle # 86.6, 86.8: gypsum nodules
		- 9423 - 95 -			G R-B R-B R-B	871	Claystone: Gray with reddish brown mottle @ 87.2: gypsum nodule
						87.4 68.0	Lost Core Claystone: Silty; medium gray with
						89.5	gypsum grains • 88.3: gypsum veinlet Lost Core
		- 				89.7	Claystone: Silty; green and reddish brown
						90.2	Claystone: Silty; reddish brown with green mottle
		 · -	\			92. 1 92. 3	Claystone: Silty; green with reddish brown mottle
		·				93.4	Claystone: Silty; reddish brown Claystone: Green 0 93.4-93.5: gypsum nodules
						93. 6	6 93.4-93.5: gypsum veinlets Claystone: Green and reddish brown with gypsum grains
						93. A	Claystone: Reddish brown
						94.2	Claystone: Reddish brown with gypsum grains
						94.8	Claystone: Silty; reddish brown

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PROJECT NO. 318710	8	I	8+1	CONT	NUED	PAGE 5 OF II	
CASING	1 66 DEPTH 1	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
			1	R-B	96.2	Claystone: Reddish brown	
	96.2-		19		98.1	Claystone: Reddish brown with gypsus	
	98.1 =		19 100%	₽Đ	98.3	nodules Claystone: Green with gypsum nodules	
	983 994 - - 100 -			G G∕ R-B	99.4	Claystone: Green and reddish brown	
	– 100 –			R-B	100.0	Claystone: Silty; reddish brown	
	01.6		20 100%	R-B	101.6	Claystone: Silty; reddish brown with	
			100%	•		gypsum nodules, gypsum veinlets, and gypsum grains	
			İ	İ	106.0	Claystone: Red and green	
	- 105 - - 060 <u>-</u> 06.2			R/G R-B	106.2	Claystone: Redddish brown with gypsum grains	
	_		21 95%	—	109.4	Claystons: Reddish brown	
	094			R/B	110.6	Cleystone: Green with gypsum nodules and gypsum veinlets	
	- 110 -			6	110.9	Gypsum: Vein	
	- 10.9 -			G/R	111.0	Claystone: Green and red	
	• 11.7 =	****			111.7	Gypsum: Vein network; clayey	
	13.0		22 100%	R R/G	112.2	Lost Core	
	- 11 5	霊站		R-B	112.5	Claystone: Red with gypsum grains	
1 1111 +	_			مه	113.0	Claystone: Silty; red and green	
	16.5 - 16.9 - 17.5 - 17.8 -			R-R/G	113.9	Claystone: Silty; redddish brown	
	17.8 = 18.6 -		1003%	8-8 R-8	116.5	Claystone: Reddish brown with green	
	186- 199 <u>-</u> 120-		72 %	# \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		mottle, gypsum nodules, gypsum veinlets, and gypsum	
	21.2-			R-B	116.9	grains Claystone: Red with gypsum grains	
	22.i-					0 117.3-117.5 (vertical): gypsum veinlet	
	23.5		25 76%	R-B	117.5	Claystone: Reddish brown and green with gypsus grains	
	- 125				117.8	Claystone: Reddish brown	
					118.6	Claystone: Reddish brown with gypsum	
					119.7	Claystone: Reddish brown and green	
		1			119.9	Claystone: Reddish brown with gypsum veinlets and gypsum grains	
	1				121.2	Claystone: Reddish brown	
[]				122.1	Lost Core	
	}				123.5	Claystone: Reddish brown with some	
	╸╶╾		I				

PROJECT NO.		S. P. C. I.	BORING INTINUED	LOG PAGE 6 OF II
CASING	DEPTH USC/USGS	SAMPLE NO. % OF REC.	COLOR	DESCRIPTION
	125 - 26.5 - 273	RH8	126.5	Claystone: Reddish brown with gypsus veinlets;
	285 295 295 - 130	75 74 26 R-B	128.5	Claystone: Reddish brown • 128.6: gypsum veinlet Claystone: Green • 129.3, 129.4: gypsum
	325	R-B 27 46% G	1 *****	Claystone: Reddish brown Claystone: Reddish brown with gypsum
	33.9 34.8 	46 % G	133.9	veinlets and gypsum grains Claystone: Red and green with gypsum veinlets and gypsum grains
	38.5	28 100%	134.8	Claystone: Green with gypsum veinlets Claystone: Green with gypsum grains
	- 140-		135. 6 135. 8	Claystone: Red with gypsum grains Lost Core
	425	29 R 100%	138.5 142.5	Claystone: Red with gypsum grains Claystone: Red 0 142.5-142.7, 146.2: gypsum veinlets
		30 67-100% R	147. 4 148. 8	Claystone: Red Claystone: Red and green
	48.8 - 150 50.1	R∕G R	150.1	Claystone: Red Claystone: Red and green with gypeum grains
	r	86% R/G		Claystone: Red Claystone: Red with green mottle
	520 525 535 545 549 155- 552	32 R R 100% R	154.5	Lost Core Claystone: Red
	57.7 = 57.9 =	G R	155. 2	Claystone: Red with gypsum veinlets Claystone: Red Claystone: Green
	160			Claystone: Red
	<u> </u>			

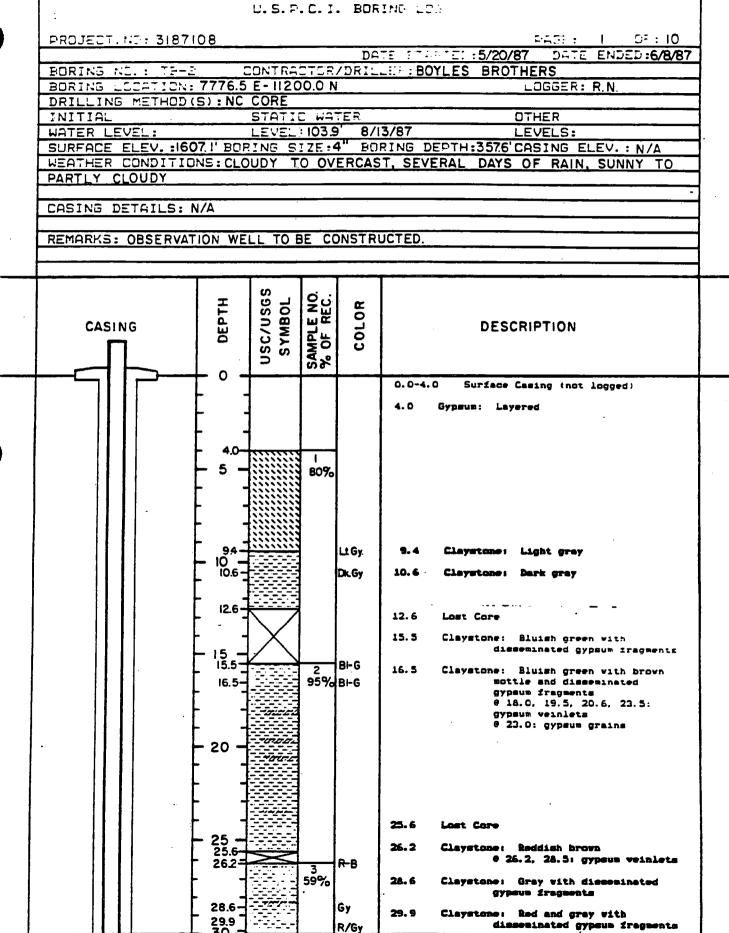
CASING H O O O O O O O O O O O O	PROJECT_NO3187108		TB-I CONTINUED PAGE 7 OF II	
161.8 Claystone: Green with gypsus grains 161.9 Claystone: Green 161.9 Claystone: Red 62.4 Claystone: Red 62.8 Claystone: Green with gypsus nodules 163.4 Claystone: Red 9 166.8-167.3: gypsus weinlet 167.9 Claystone: Red and green		DEPTH USC/USGS SYMBOL		
172.0 gypsus nodule 172.0 claystone: Red with gypsus grains 172.0 claystone: Red with gypsus grains 172.5 claystone: Red with gypsus veinlet 174.1 claystone: Red with gypsus veinlet 174.2 claystone: Red and green 174.2 claystone: Red and green 175.5 claystone: Silty; red 180.2 last Core 179.5 claystone: Silty; red 180.2 last Core 185.1 gypsus nodule 185.1 claystone: Red 185.1 gypsus grains 185.2 last core 185.4 gypsus grains 185.5 last core 185.4 gypsus grains 185.5 last core 185.4 gypsus grains 185.5 last core 186.5 claystone: Red 186.5 claystone: Red 186.5 claystone: Red 186.5 gypsus veinlet 186.5 gypsus veinlet 186.5 gypsus veinlet 186.6 gypsus veinlet 186.7 claystone: Red and green 186.7 claystone: Red and gypsus veinlet 186.7 claystone: Red with gypsus grains 189.9 claystone: Red with gypsus grains 189.1 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus veinlet 197.5 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red and green 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gypsus nodules 198.0 claystone: Red with gyp		61.8 61.9 61.9 62.4 62.8 63.4 62.8 63.4 62.8 63.4 62.8 63.4 62.8 63.4 63.4 63.5 64.5 64.5 64.5 64.5 64.5 64.5 64.5 64	161.8 Claystone: Green with gypsus grains 161.9 Claystone: Green 162.4 Claystone: Red 162.8 Claystone: Green with gypsus nodules 162.8 Claystone: Red 163.4 Claystone: Red 164.8-167.3: gypsus veinlet 167.9 Claystone: Red and green 170.5 Claystone: Red with gypsus grains 172.0 Claystone: Red with gypsus grains 172.0 Claystone: Red with gypsus grains 173.5 Claystone: Red with gypsus grains 174.0 Claystone: Red with green sottle 174.2-174.9 (vertical): gypsus veinlet 174.9 Claystone: Red and green 177.6 Lost Core 179.5 Claystone: Red and green 180.2 Lost Core 180.2 Lost Core 180.2 Lost Core 180.4 Claystone: Red 185.4: gypsus nodule 185.1 Claystone: Red 185.4: gypsus grains 186.7 Claystone: Red 186.3: gypsus veinlet 189.1: layered gypsus grains 189.1 Claystone: Red 189.1: layered gypsus grains 189.7 Claystone: Red 189.1: layered gypsus grains 189.7 Claystone: Red 189.1: layered gypsus grains 189.7 Claystone: Red 180.4 Claystone: Red 189.7 Claystone: Red 189	

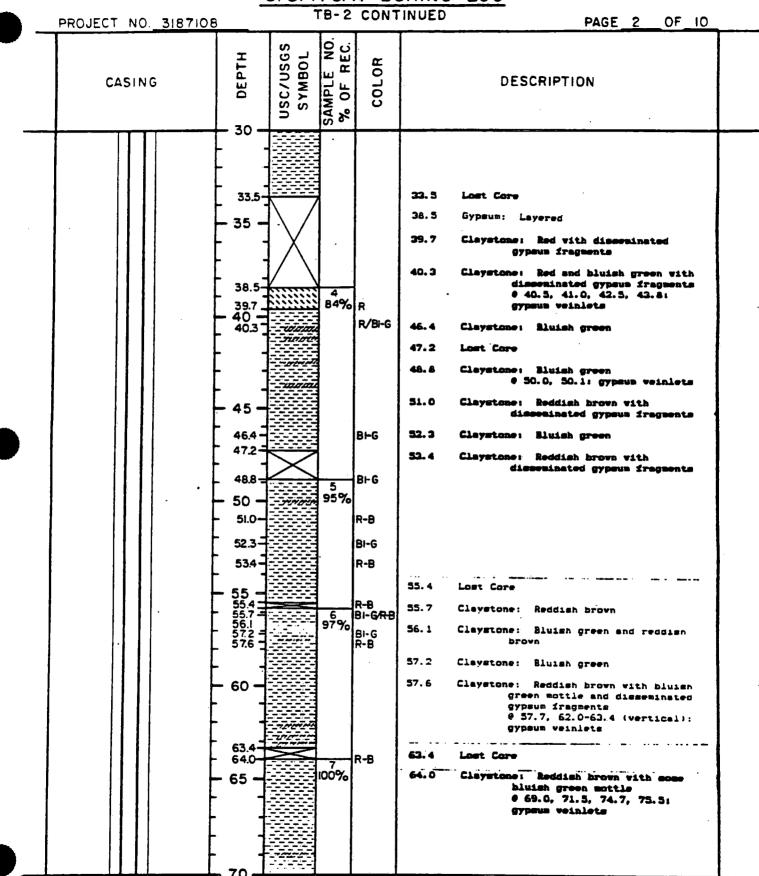
	_!	<u>U. S. P</u>	. C.	<u>I. B</u>	ORING	S LOG
PROJECT NO. 3187108	3	T	B-I	CONT	INUED	PAGE 8 OF 11
CASING	200- 0EPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
1 ·	00.5	5	\$	В	200.5	Claystone: Silty; brown
	01.5		\$ 42 100%	R	201.5	Claystone: Red with gypsum grains
	- 07.0-		43 67%	R	207.0	Claystone: Red # 208.1-208.2: gypsum modules
	092-				209.2	Lost Core
	- 210 - 10.5 - 11.0 -	\times	44	R-B	210.5	Claystone: Reddish brown with gypsum grains
	- 215 -		44,00%	R-B	211.0	Claystone: Reddish brown e 217.0, 218.4, 219.3: gypsum nodules e 219.3: gypsum grains e 220.1, 220.4: gypsum veinlets
	- - - - 205 -		45 00%	R	•	
			46 00%	`	220.5	Claystone: Red with gypsum grains
]		-		224.0	Claystone: Red and green
	- 24.0 - - 225 -	4	47	R∕G	224.0	Claystone: Red and green
	276		ŀ		227.6	Lost Care
	·	$\times 1$			230.5	Claystone: Green
	-230- 305- -	- 10	48 00%	5		0 233.7, 233.9: gypsum veinlets
	235-	7	49 2%	i/R	235.5	Claystone: Green and red
	39.1				239. 1	Lost Care

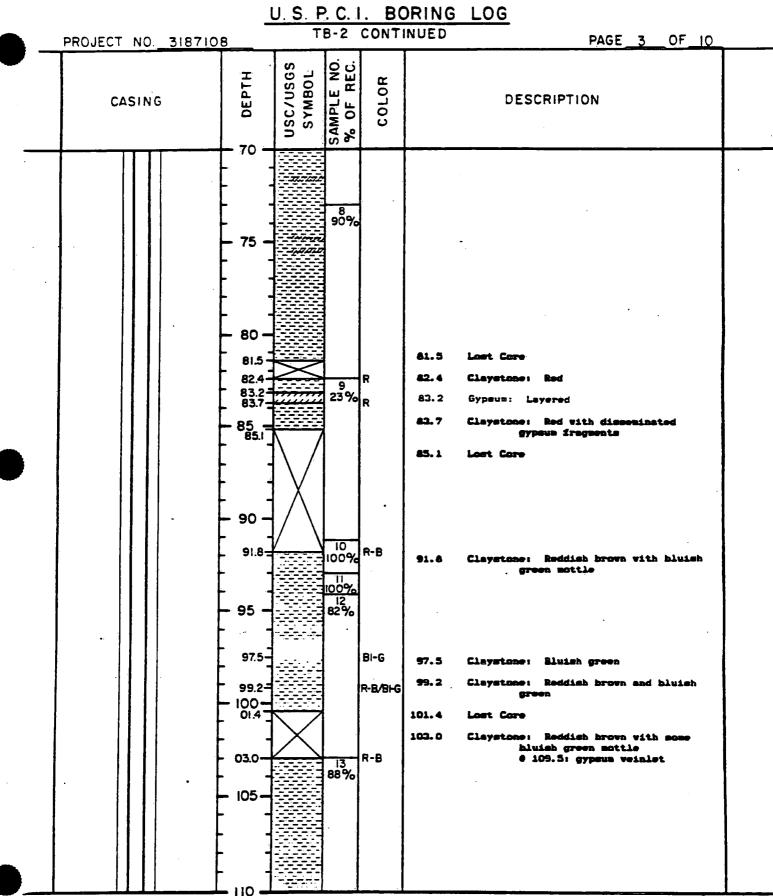
	PROJECT NO. 3187108	_		<u>. C. 1</u> 3-1		TINUED	
	CASING	7 0 0 0 0 0 0 0	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
		405		50 100%	R	240.5	Claystone: Red e 242.0, 242.1, 242.2, 242.3: gypsum grains e 244.3, 244.5: gypsum veinlets
		- 245 - - 245 - - 470 -	-90-7	51 100%	R/G	247.0	Claystone: Red and green
		-250 <i>-</i>		52 100%			
		544 548 - 255 =	,,,,,,,		R R	254. 4 254. 8 255. 2	Claystone: Red with gypsum nodule Gypsum: Broken layers Claystone: Red
)		56.5 - 56.7 - 58.2 - - 260 -		53 100%	R	256. 5 256. 7	# 256.5: gypsum nodule Claystone: Red with gypsum grains Claystone: Red
		61.5	mini	54 100%	R R	258. 2 261. 5 263. 4	Claystone: Red with gypsum nodule Claystone: Red © 262.8: gypsum fragments Gypsum: Broken layers; clayey
		- 265 - 665		55 100%		263. 7 264. 0 264. 3	Claystone: Red Gypsum: Broken layers Claystone: Red 6 264.6: gypsum fragments 6 264.8: gypsum nodule
		- 270 - - 70.7 - 71.5 -	- proto	56	G R R	266.5 268.5	@ 265.2, 266.4: gypsum veinlets Claystone: Red with green mottle Claystone: Green
		275		56 100%		270.7 271.5	Claystone: Red with green mottle Claystone: Red
		78.8 - 79.0 - 280 -		57 100%	GR	278.8 279.0	Claystone: Green with gypsum modules Claystone: Red with green mottle # 280.3, 282.2: gypsum veinlets

PROJECT NO. 3187108	U. S. P. TB-	C. I. BO	TINUED	PAGE 10 OF 11
CASING		SAMPLE NO. % OF REC.		DESCRIPTION .
	835 243 6 285 243 6 87.0 88.5 243 7 6 88.5 243 7 7 6 89.5 243 7 7 6 290 5 243 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0100 B B B B B B B B B B B B B B B B B B	285.0 3 287.0 6 288.5 6 289.5 6 294.5 6 2 296.2 296.5 6 2 296.5 6 297.9 6 298.0 300.5 6 300.8 6 300.9 6 306.0 6 306.8 6 306.8	Claystone: Reddish brown e 284.0, 284.1, 284.3, 284.4, 285.0: gypsus veinlets Lost Core Claystone: Reddish brown e 285.1: gypsus veinlet Claystone: Reddish brown with green sottle Claystone: Reddish brown and green e 295.8: gypsus nodule Claystone: Red Lost Core Claystone: Red e 296.7, 296.8, 296.9, 297.5: gypsus veinlets Claystone: Reddish brown Lost Core Claystone: Reddish brown Lost Core Claystone: Reddish brown Lost Core Claystone: Reddish brown e 301.1, 301.2, 301.3, 301.9, 302.6, 302.7, 304.1: gypsus veinlets Lost Core Claystone: Red with green mottle e 306.7: gypsus veinlet Claystone: Reddish brown with gypsus fragments Claystone: Reddish brown with gypsus fragments
	- 30ki - 3	63 88 % G		Claystone: Reddish brown and green e 309.1, 309.3, 309.4, 309.5, 309.8, 310.1, 310.8, 311.2, 311.5, 311.8, 312.8: gypsus veinlets Claystone: Green e 312.9, 313.2, 313.5, 313.7, 313.8, 314.1, 314.6, 314.7, 315.2, 315.3, 315.5-315.6: gypsus fragments

CASING Casing Ca		PROJECT NO. 3187108	_		3- 1	CON	TINUE	PAGE II OF II
15.6	,	CASING		USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
			15.6 - 16.9 - 17.3 - 18.0 - 22.0 - 23.0 - 23.0 - 28.5 - 28.5 - 28.5 - 29	WADAR WALL	64 80% 65 100%	68 B B B B B B B B B B B B B B B B B B B	316. 4 316. 9 317. 3 318. 0 322. 0 323. 0 328. 5 328. 7 329. 5	Claystone: Green Claystone: Brown Lost Core Claystone: Reddish brown with gypsum veinlets Lost Core Claystone: Reddish brown with gypsum veinlets Claystone: Reddish brown e 328.6: gypsum veinlet Claystone: Green with gypsum veinlets Claystone: Green with gypsum veinlets Claystone: Green e 329.7, 329.8: gypsum nodules e 329.7, 329.8: gypsum veinlets Claystone: Reddish brown with green nodules e 330.5, 330.9, 331.1, 331.3: gypsum veinlets







PROJECT NO. 3187108	0.5.		CONT		PAGE 4 OF IO
CASING	DEPTH USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	110 114 13.0 13.5 17.5 19.0 19.0 120 120 25.6 25.6	14 100%		111.4 113.0 113.5 115.5 117.5 119.0	Lost Core Claystone: Reddish brown with bluish green sottle Claystone: Reddish brown Claystone: Reddish brown with some file. 2: gypsus weinlet Claystone: Reddish brown with some bluish green sottle e 125. 3: gypsus weinlet Claystone: Red with disseminated gypsus fragments e 135.0: gypsus weinlet Lost Core
	43.4 43.4 - 145 - 48.0 48.3	100%	R	141.0 141.8 143.4 148.0 148.3	Claystone: Silty; red Claystone: Bluish green Claystone: Red

PROJECT NO. 3187108				NTINUED	PAGE 5 OF 10
CASING	ОЕРТН	USC/USGS SYMBOL SAMPLE NO.	% OF REC.		DESCRIPTION
	- 150- - 155- - 155- - 160- - 165- - 170- - 702- - 73.2- - 74.8		19 19 10% BI-G R-B	167.5 170.2 173.2 174.8	Claystone: Bluish green Claystone: Red with disseminated gypeum fragments e 158.0-162.2 (vertical, dendritio), 163.5: gypeum veinlets e 163.0, 167.0: gypeum grains Lost Core Claystone: Red e 171.2, 172.0-174.0 (vertical): gypeum veinlets Claystone: Bluish green Claystone: Reddish brown with some bluish green mottle and some gypeum veinlets
	185 - 85.2 86.7	7	BI- R-E		Claystone: Bluish green with gypsus veinlets Claystone: Reddish brown with gypsus
	- 89.0-			189.0	Veinlete Last Care

	PROJECT NO. 3187108	_	J. S. P. C TB-2	CONTIN		PAGE 6 OF 10
•	CASING	— 6 DEPTH —	USC/USGS SYMBOL SAMPLE NO.	% OF REC.		DESCRIPTION
-		90.7-	2: 	R-B	190.7	Claystone: Reddish brown
		986- 996-	2/04	BI-G	198.6	Claystone: Eluish green with some red mottle Lost Core
		- 205 - - 09.2= - 210 - - 215 -	300 900 900 900 900 900 900 900 900 900	R-B 48 %	209. 2	Claystone: Reddish brown with some hiuseh green mottle and disseminated gypeum fragments # 210.0-210.5, 212.5, 215.6: gypsum weinlets
		18.8			218.8	Lost Core
		220- 20.6- 22.4-	2 82	R-B 8+6	220.6	Claystone: Reddish brown with some bluish green mottle 0 221.3, 222.0: gypsum weinlets
		-			222.4	Claystone: Bluish green with some red mottle
i		- 225 - 25.4 -		R-B	225.4	Claystone: Reddish brown with some disseminated gypsum fragments
		-			228.3	Last Care
		28.3 29.9 230		R-B	229.9	Claystone: Reddish brown with mose disseminated gypsum fragments
		 230 - -				

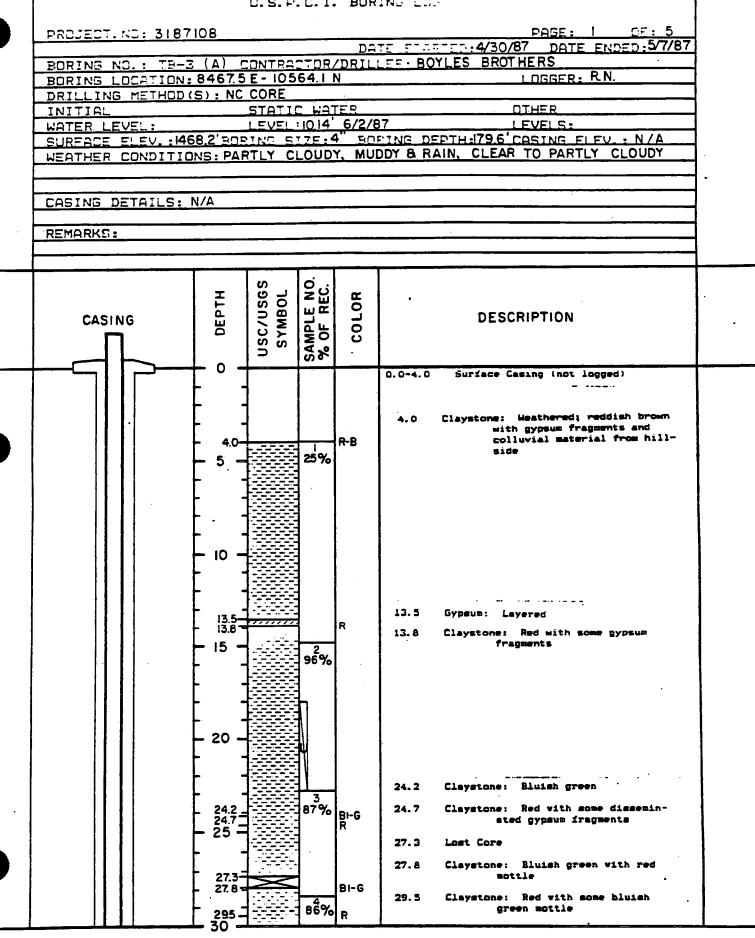
PROJECT NO. 3187108.	U. S. P.	-C.I. BC	NUED	PAGE 7 OF IO
CASING	DEPTH O USC/USGS SYMBOL	SAMPLE NO. % OF REC. COLOR		DESCRIPTION
	33.8	26 39%	233. 8	Last Care
	245	27 100%	240.0	Claystone: Red with some bluish green mottle @ 241.0-241.4, 244.5-245.0: gypsum grains @ 241.6, 244.5, 246.0: gypsum weinlets
	47.5- - 250	28 84% R		Claystone: Sluish green with some red wottle e 250.0, 250.7, 251.5: gypsum veinlets Claystone: Red with some bluish green mottle e 256.0-257.3 (vertical), 257.5, 258.1, 261.5, 262.0, 262.4, 263.0: gypsum veinlets
	-260 -	29 53%	264.0	Lost Core
	68.5	7.30 R (100%		Claystone: Red with some bluich green mottle

PROJECT NO. 3187108		TB-2 (CONTI	NUED	PAGE 8 OF 10	_
CASING	DEPTH USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
	- 275 280 - 80.7 - 285 285 285	31 31 99%		270. 5 271. 0 280. 7 283. 4	Claystone: Sluish green Claystone: Red 9 274.2: gypsus veinlet 9 275.0-275.3: gypsus grains Claystone: Red with some disseminated gypsus fragments Lost Core	
	892 - 290 - 300 - 305 - 310	33 96% 34 30% 35 100%		289.2	Claystone: Reddish brown with some bluish green mottle 9 289.3, 291.0, 291.7, 293.2, 296.0, 297.0, 299.5, 300.0, 300.5, 301.0, 301.6, 303.0, 205.4, 305.8, 206.3, 207.0, 307.5, 310.5, 310.7, 311.0, 311.2, 312.0, 313.0, 313.7, 314.5, 315.0, 315.4: gypsum weinlets	_

_		<u>U. S. F</u>				LOG
PROJECT NO. 318710	8		8-2	CONT	NUED	PAGE 9 OF IO
CASING	OEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	- 315 - 16.3 - 320	Tanan	37	D. B	316.2	Claystone: Reddish brown with some bluish green mottle and some dimensinated gypsum fragments # 316.6, 317.3, 319.5, 320.0, 321.6, 322.1, 322.5, 323.5, 324.4, 324.6, 325.7, 328.5, 329.2, 230.0, 330.7, 331.5: gypsum weinlets
	-325 - - - -330		38 100%			•
	- 38.0 - 38.0 - 34.0 - 40.9		39 84%	R-B	338. 0 338. 3	Gypsum: Layered Claystone: Reddish brown with some hluish green mottle and some dismeminated gypsum fragments
	42.5 - 345- - 350-		40 96%	R-B	240. 9 242. 5	Claystone: Reddish brown with bluish green mottle ### 345.0, 345.5, 346.5: gypsum weinlets

	200 ECT NO 7107100		7. S. F T	B-2	CONT	INUED	PAGE 10 OF	10
	PROJECT NO. 3187108	- 350-	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
		- 355 -		41 56%		357.6	Total Depth	
		TOTAL (JEF I N					
•							•	
		-			'			

U.S.F.C.I. BORING LOS



PROJECT NO. 3187108	U. S. P. C. I. BORI	NG LOG IUED PAGE 2 OF 5
CASING	SAMPLE NO. % OF REC.	DESCRIPTION
	32.6 33.3 35.5 35.5 35.5 35.5 35.5 35.5 35.5 35.5 35.5 36.6 37.6 37.6 38.6 39.6 30.6 31.6 32.6 33.6	Claystone: Reddish brown with bluish green mottle and some disseminated gypsum fragments Claystone: Reddish brown with some disseminated gypsum fragments Lost Core Claystone: Reddish brown with some disseminated gypsum fragmente
	63.3 65.7 65.7 67.3 67.3 67.3 67.3	Claystone: Reddish brown with disseminated gypsum fragments

PR	OJECT NO. 3187108	_	J. S. P. TB			NUED	. PAGE 3 OF 5
	CASING	DEPTH	USC/USGS SYMBOL	% OF REC.	COLOR		DESCRIPTION
		70 75 75 76.5 77.0 80 83.0 85 89.5 90 92.1 95 100 110 110		12 00%	BI-G R-B R	76.5 77.0 83.0 87.8 89.5 92.1	Lost Core Claystone: Bluish green Claystone: Reddish brown Claystone: Red Claystone: Bluish green Claystone: Red Claystone: Red © 108.5-108.8: gypsum gravel

_	PROJECT NO. 3187108	_	J. S. F T	B-3	CONTI	NUED	PAGE 4 OF 5
•	CASING	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
		- 110 - - 110-			BI-G	111.0	Claystone: Bluish green
. •		- 115 - 15.4 -		16 100%	R.	115.4	Claystone: Red @ 117.0, 118.5-119.1: gypsum grains
		- 120- 					
•		- 125 - - 27.9 - - 130 -		17 100%	BI-G	127.9	Claystone: Bluish green
		34.3- - 135 -		18 49%	R	134.3	Claystone: Red with some disseminated gypsum fragments
		38.6- 140-		7		138.6	Lost Core
		- 432 <i>-</i> - 145 <i>-</i>		19 75%	R	143.2	Claystone: Red @ 146.0, 147.5: gypsum fragments
•		49.2 <i>-</i>				149.2	Lost Core

	PROJECT NO. 3187108	_	J. S. F Ti	B-3	CONTI	NUED	PAGE 5 OF 5
	CASING	ОЕРТН	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
		- 150 - 151 - 155 - 160 - 165		20 84%	BI-G	157.1 159.1 160.6	Claystone: Red with bluish green mottle Claystone: Bluish green Lost Core Claystone: Red with bluish green mottle
		- 69.0- - 170 - - 71.2- - 175 - - 75.5 - - 78.0- - TOTAL - 179.6	DEPTH	22,100%	R BI-G	169.0 171.2 175.5 178.0 179.6	Lost Core Claystone: Red with bluish green mottle Claystone: Bluish green Claystone: Red Total Depth
•							

U.S.P.C.I. BORING LO

PRIJECT, NI : 316			-	-	PAGE: 1 6
BORING NE.:	TI-: (B)	NTRA	CTOR/	INILLET : BOYLES BROTHERS
DRILLING METH	<u> 21: 8070.</u> 21: E : N	4 E - 11	<u> 398. 7</u>	<u> </u>	LOGGER : P.B.
INITIAL	<u> </u>		IC W	4 TES	OTHER
WATER I FUEL .			: 70	2 6/	/97
SURFACE ELEV.	:1461.91	EING 9	SIZE	4" <u>°</u>	CRIVE PERTY 1512' CASTNE TITL AND
WEATHER COMMIT	<u> </u>	OUDY,	MUDD	Y 8.	RAIN, CLEAR TO PARTLY CLOUDY
CABING DETAILS	E: N/A				
REMARKS:	 	·			
REMARKS:					
			-1		
		S	<u>.</u>		
	ОЕРТН		EC	R	
CASING	<u>a</u>	SC/USG SYMBOL	LE	COLOR	DESCRIPTION
П	٥	SC	₽ P	00	
	┵。-) > "	SAMPLE NO. % OF REC.		
	T $^{\circ}$ $\overline{}$				0.0-11.5 Surface Casing (not logged)
]			
	L.]			
	L]			
	- 5 -		ĺ		
] .	l l		
]			
	L.				11.5 Claystone: Reddish brown with some green mottle and dissemi-
	<u> </u>]			nated gypsum grains 0 12.0, 13.2-13.3,
	- 10 -]			13.9-14.9: gypsum modules
] •			14.5 Claystone: Reddish brown
{	11.5-		4	R-B	14.7 Claystone: Green
	ļ <u> </u>		100%		0 14.8, 15.0: gypsum nodules
	14.5			R-B	15.2 Claystone: Reddish brown with some
	14.7 =		100%	G	green mottle 0 16.2-16.5 (vertical),
	15.2		100%	R-B	17.0-17.3 (vertical): gypsus veinlets
					18.5 Claystone: Reddish brown with some
					green mottle and some
	18.5		100%	R-B	disseminated gypsum grains
	18.5 19.5 19.8 20		100%	G R-B	19.5 Claystone: Green 0 19.6: gypsum veinlet
	- 1 − 1			_	19.8 Claystone: Reddish brown with some
	21.5		4	R-B	green mottle and some disseminated gypsum grains
	23.0-		100%	R-B	# 20.5: gypsus nodule
	+ 4		5 1		21.5 Claystone: Reddish brown with some
	25 -		100%		green mottle 6 21.6: gypsum nodule
		1 1			# 21.8-22.4 (vertical):
		シ	- 1		gypsum veinlet
1 8 8 1	1 7				23.0 Claystone: Reddish brown
		- 1 L			0 24.0-24.3: network of very

TB-4 CONTINUED PROJECT NO. 3187108 PAGE 2 OF 6 E NO. usc/uses SYMBOL DEPTH OLOR SAMPLE % OF CASING DESCRIPTION 25.5 25.8 26.2 R-B 25.5 Claystone: Reddish brown with some 100% | G-B green mottle 25.8 Claystone: Green 28.0 28.5 29.0 @ 26.0: gypeum graine Claystone: Reddish brown with some 26.2 100% green mottle 30 9 27.1-27.5: gypsum grains 28.0 Claystone: Green 0 28.0: gypsum nodules 26.5 Claystone: Reddish brown with 33.5 R-B , , , , occasional disseminated gypsum grains 35 R-B 0 28.7-28.9 (vertical): 100% gypsum veinlet 36.5 R-B 10 40% Claystone: Reddish brown with some 29.0 37.0 G green mottle and occasional disseminated gypsum grains 38.5 ₹ 31.1, 32.9, 33.0-33.1 (vertical): gypsum veinlets 40 33.5 Claystone: Reddish brown with some green mottle # 34.2: gypsum nodule # 34.4, 34.6: gypsum 41.5 41.6 IG R-B veinlete Claystone: Reddish brown with some 35.0 green mottle 445 45 R-B 12 100% R-B 36.5 Claystone: Reddish brown 45.7: 13 459 37.0 Claystone: Green 100% e 38.2: gypsum nodule e 38.3: gypsum veinlet 48.5 R-A 14 G-B 38.5 Lost Core 49.5 50 -41.5 Claystone: Green # 41.6: gypeum nodule 41.6 Claystone: Silty; reddish brown with some green mottle and some disseminated gypsum grains 44.5 Claystone: Reddish brown with some green mottle # 45.3-45.4: gypsum veinlet 45.7 Claystone: Silty; reddish brown with some green mottle 45.9 Claystone: Reddish brown with some green mottle 0 46.8, 47.3: gypsum nodules 6 47.2-47.9 (vertical): gypsum veinlet 48.5 Claystone: Reddish brown 49.5 Claystone: Greenish brown

PROJECT NO. 3187108	<u>U. S.</u>			TINUED	G PAGE 3 OF 6	
CASING	DEPTH USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
	- 65 65.2 - 65.5 - 70 -	15 100% F		50.5 Clays 51.2 Lost 53.5 Clays 53.9 Clays 53.9 Clays 57.1 Clays 60.0 Lost 61.5 Clays 62.0 Clays 62.5 Clays 63.5 Clays 63.5 Clays 63.5 Clays 63.5 Clays 71.6 Clays 71.9 Clays	stone: Green	

	<u>_ </u>				RING	LOG
PROJECT NO. 318710	8		TB-4	CONT	INUED	PAGE 4 OF 6
CASING	, оертн	USC/US SYMBC	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	75 75.3 - 75.8	TOO W	21 100%		75.0 75.3 75.8	Claystone: Greenish brown Claystone: Green Claystone: Reddish brown 8 75.9-76.0, 76.1-76.2: gypsum veinlets
	80 -	naan	23 25%	R-B	80.0	Claystone: Reddish brown with some green mottle 8 81.0: gypsum veinlet
	- 83.1- - 83.8- - 84.0 - 85 -	\ /		R-B R-B	83.1	Claystone: Reddish brown with green mottle
	- 65			;	83. 8 84. 0	Claystone: Reddish brown Lost Core
	90 -	\bigwedge			91.5	Claystone: Reddish brown with some green mottle @ 96.3-96.4, 97.5-97.9 (vertical): gypsum veinlet @ 96.3-96.6: gypsum nodule
	91.5		24 100%	R-B	98. 9 99. 5	Claystone: Brown with green mottle Claystone: Green with brown mottle @ 99.5-100.1: disseminated gypsum grains
	- 95 -		25 100%	·	100.1	Claystone: Reddish brown with some green mottle Claystone: Green with some
	- - 98.9~		26 93%	B	101.1	disseminated gypsus grains Claystone: Green with brown mottle
	99.5- 100 00.1 00.8-			B G K G G G	101.2	Claystone: Green with some disseminated gypsus grains Lost Core
	- 01.2 - 026 - 030			6	103. D	Claystone: Green Claystone: Reddish brown with some
	04.7 - 105 -	យលាច សម្លាស់ សមាធាន		R-B		green mottle 6 104.7 (3 mm), 105.0-105.1, 105.7, 105.8: gypsum veinlets
	08.5		28 17%		108.5	Claystone: Reddish brown with some green mottle e 113.7-113.8, 114.0-114.2,
	- 110 -	X				115.8, 116.8, 117.8: gypsum nodules 0 113.5, 114.4 (vertical), 115.0-115.2 (vertical), 115.4, 115.5, 115.7, 116.3,
	13.5	/	29 86%	R-B		116.6, 116.8, 116.9, 117.2: gypsum veinlets

PROJECT NO. 318710	_	J. S. P. (TB	-4 CON	TINUED	PAGE 5 OF 6	
CASING	DEPTH	USC/USGS SYMBOL SAMPLE NO.	% OF REC.		DESCRIPTION	
	115 — 18.8 — 19.5 — 120 — 22.2 — 125 — 27.6 — 130 — 33.9 — 135 — 35.7 — 39.5 — 35.7 — 39.5 — 43.5 —	######################################	G G G R-B GR-B GR-B GR-B GR-B GR-B GR-B	118.8 119.5 120.5 122.2 127.6 133.9 135.5 135.7 139.6 140.5	Claystone: Green Lost Core Claystone: Reddish brown with some green mottle 6 123.3, 127.4: gypsum modules e 123.9-124.0, 124.0, 124.4, 124.5, 124.7-124.8, 124.9, 125.5, 126.1, 126.4-126.6, 127.1, 127.4-127.5 (30 mm), 127.6: gypsum weinlets Claystone: Reddish brown with some green mottle and some disseminated gypsum grains e 128.4-128.6, 129.4, 129.9: gypsum andules e 131.0-131.1, 131.6, 131.65, 132.0-132.1, 132.0-132.3, 132.4 (6 mm), 132.5: 132.6, 129.7, 133.0 (8 mm), 133.5: gypsum weinlets Lost Core Claystone: Green Claystone: Reddish brown with some green mottle e 135.6-135.9, 136.1-136.3, 136.3-136.3, 136.3-136.5: disseminated gypsum grains e 136.0-136.5: disseminated gypsum weinlets Lost Core Claystone: Reddish brown with some green mottle e 139.6: gypsum veinlet Claystone: Reddish brown with some green mottle and some disseminated gypsum grains e 140.1, 140.4: gypsum weinlet Claystone: Reddish brown with some green mottle and some disseminated gypsum grains e 141.5-141.6 (8-10 mm), 143.1-143.3 (vertical), 144.3: gypsum veinlets Claystone: Reddish brown Claystone: Reddish brown Claystone: Reddish brown with some green mottle e 143.5-143.8 (vertical), 144.3: gypsum veinlets	

PROJECT NO. 3187108	_		B-4		TINUED	·
CASING		USC/USGS	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
		mauro Tamor Goano Mauro Mauro Taristi Tanor		න න ම සි සි	147.5 148.2 149.3 149.5 150.0	Claystone: Green e 147.6-147.8 (network), 148.1: gypsum veinlets e 148.1: layered gypsum grains Claystone: Reddish brown e 148.3-148.4, 148.8, 148.9, 149.0-149.6: gypsum veinlets Claystone: Green Claystone: Reddish brown Claystone: Greenish brown e 130.7: gypsum nodule Total Depth

		!	u. <i>e</i> . p. c.	.I. BO	RENE LIE
	PROJECT. NO: 3187	108			PAGE: 1 IF: 9
)	PRESECT. AC: 3167	106			ATI ITANTEI:5/8/87
	BORING NO.: TE	- = (C)	CCNT:	RACTOR	BOYLES BROTHERS
	BORING LOCATION DRILLING METHOD	: (9 (5. B	<u>E-12323</u> CORE	. / N	
	INITIAL		STATIC V		OTHER
	WATER LEVEL: SURFACE ELEV.: 14		LEVEL:16		/13/87 LEVELE: DRING DERTH: 170.0 CARING ELEV.: N/A
	WEATHER COMMITTE				
	CASING DETAILS:	N/A		. ,	
-	REMARKE: ABANDON	IED, NOT	USED F	OR A W	ELL.
		_	S O		ŀ
.•		рертн	USC/USGS SYMBOL SAMPLE NO.	OF REC	
	CASING	E	2 8 3	2 2	DESCRIPTION
			SY	2	
		$+ \circ +$		-	0.0-6.0 Surface Caming (not logged)
		t j	ŀ		6.0 Claystone: Sandy (fine-grained);
٠		[]		-	reddish brown
		+ 4		- 1	6.4 Claystone: Reddish brown with some green mottle
		5 -			7.4 Lost Core
		6.0	70	R-B R-B	8.0 Claystone: Reddish brown with some gypsum modules
		8.0	38 ²	R-B R-B	8.2 Claystone: Reddish brown
		827 867 1093	38	R-B R-B R-B R-B R-B	8.4 Claystone: Silty; reddish brown
	•			K-B	8.6 Claystone: Reddish brown
		}	XI		9.3 Claystone: Reddish brown with some green mottle and gypsum
		13.5	68	_	nodules 10.1 Lost Core
		14.7		% В	13.5 Claystone: Green with reddish brown
		├		i i	mottle
•		}			14.7 Claystone: Brown with green mottle
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U.S. P. C. I. BORING LOG TB-5 CONTINUED PROJECT NO. 3187108 PAGE 2 OF 9 SAMPLE NO. % OF REC. USC/USGS DEPTH SYMBOL COLOR DESCRIPTION CASING 15.6: 15.7 G R-B Claystone: Green 15.6 16.9 15.7 Claystone: Reddish brown with some green mottle and disseminated gypsum grains 18.5 19.6 19.6 4 21% R-B R-B 10000 16.9 Lost Core 20.6 20.6 Claystone: Reddish brown with green 18.5 mottle and gypsum nodules 19.1 Claystone: Reddish brown with some green mottle 0 19.3, 19.4: gypsum veinlets # 19.1: disseminated gypsum 25 fragments 0 19.6: gypsum nodules Casystone: Silty; reddish brown 19.6 with green mottle and some gypsum modules 28.5 R-B 100% 29.3 R-B 20.6 Lost Core 30 -משמת 30.5 3 1.2 -R-B R-B 28.5 Claystone: Silty; reddish brown with green mottle 31.9-32.5-R-B 29.3 Claystone: Reddish brown 6 0% 30.5 Claystone: Reddish brown with gypsum grains # 30.5: gypsum veinlet 35 31.2 Claystone: Reddish brown with green mottle and gypsum grains 31.9 Claystone: Reddish brown with some green mottle and some gypsum G 39.0 nodules 66% 40 -32. 5 Lost Core 41.7 39.0 Claystone: Green 422 424 427 41.7 Claystone: Silty; reddish brown with green mottle 4.5 42.2 Claystone: Reddish brown with green mottle 42.4 Claystone: Reddish brown 42.7 Claystone: Reddish brown with green mottle and gypsum nodules 44.2 Claystone: Silty; reddish brown 44.4 Claystone: Reddish brown with green mottle and gypsum grains

		<u>U. S. F</u>			TINUED	LOG
PROJECT NO	1	USC/USGS SYMBOL	N	COLOR		PAGE 3 OF 9 DESCRIPTION
CASIN	44. 4.5 ab. ab. ab. ab. ab. ab. ab. ab. ab. ab.	5 5.4 5.6 5.6 5.6 5.7 5.7 5.6 5.7 5.6 5.7 5.6 5.7 5.6 5.7 5.6 5.7 5.6 5.7 5.6 5.7 5.6 5.	SAMPLE SAMPLE SAMPLE SAMPLE %	G FR FR FR FR FR FR FR FR FR FR FR FR FR	49.0 51.2 54.6 55.7 58.2 58.3 59.3 60.0 60.3 60.6 60.9 61.3 62.1 63.3	Claystone: Silty: green with reddish brown mottle, gypsum nodules, and disseminated gypsum fragments Lost Core Claystone: Green Claystone: Reddish brown with green mottle Claystone: Reddish brown with green green mottle, gypsum grains, and gypsum nodules Claystone: Reddish brown with green mottle Claystone: Reddish brown with gypsum nodules Claystone: Silty; reddish brown with green mottle e 38.4-58.6 (vertical): gypsum vein Claystone: Silty; reddish brown with green mottle and gypsum nodules Claystone: Reddish brown with green mottle Claystone: Green Claystone: Green Claystone: Green with brown mottle Claystone: Silty; reddish brown with green mottle e 63.4-63.6 (vertical): gypsum veinlet Claystone: Silty; reddish brown with green mottle Claystone: Silty; reddish brown mottle Claystone: Silty; reddish brown mottle Claystone: Green with brown mottle Claystone: Green with brown mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle
	<u> </u>				69.3	mottle and gypsum nodules Claystone: Silty; reddish brown with green mottle

PROJECT NO. 31	187108	<u></u>				INUED	PAGE 4 OF 9	
CASING		S DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
CASING		TLA 30 70.1.37 73.37 74.47 75.7 75.7 75.7 75.7 75.7 75.7 75	USC/USG SYMBOL	13 81% 14 100%	क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क्षेत्र के क	70.1 70.8 71.3 71.6 73.3 73.9 74.1 74.4 75.7 76.3 77.0 79.0 79.4 81.4 82.5 82.6 84.1	Claystone: Silty; reddish brown with gypsum nodules Claystone: Silty; reddish brown with green mottle and gypsum nodules Lost Core Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle and gypsum grains Claystone: Silty; reddish brown with green mottle and gypsum with green mottle and gypsum weinlets Claystone: Reddish brown with green mottle gypsum weinlets Claystone: Reddish brown with green mottle gypsum weinlets, and gypsum grains Lost Core Claystone: Reddish brown with some green mottle and gypsum nodules 6 78.2, 78.3, 78.7-78.9 (vertical): gypsum veinlets 6 79.0: gypsum nodules Claystone: Silty; reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle	
						84.5	Claystone: Reddish brown 8 85.2-85.3: gypsum grains	

PROJECT NO. 3187108	_				INUED	PAGE 5 OF 9	
CASING	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
	85.6-1 85.6-3 87.5-1 86.3 87.75-1 88.4 90.32 90.4 99.22 99.25 99.25 97.5 97.5 97.5 97.5		16 100%	BR BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	85.6 86.3 87.3 87.7 88.1 88.4 89.3 90.2 90.4	Claystone: Brown with green mottle, gypsum nodules, and gypsum grains Claystone: Reddish brown with green mottle and gypsum grains Claystone: Green with reddish brown mottle, gypsum nodules, and gypsum grains Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Claystone: Green with brown mottle Claystone: Green with brown with green mottle Claystone: Silty; reddish brown with green mottle Claystone: Reddish brown with green mottle, gypsum nodules, and gypsum grains Claystone: Green with gypsum nodules, and gypsum grains Claystone: Green with gypsum nodules Claystone: Silty; reddish brown with green mottle @ 90.5-90.7, 90.9-91.1: gypsum weinlets @ 91.7-91.8: gypsum nodules Claystone: Silty; reddish brown with green mottle Claystone: Reddish brown with green mottle @ 92.8, 94.4-94.8, 97.2-97.5: gypsum weinlets @ 96.5 (1-2 mm), 93.7: gypsum weinlets @ 96.5 (1-2 mm), 93.7: gypsum weinlets @ 97.5 (3-4 mm), 93.8, 98.9, 99.1, 99.1-99.4 (wertical), 99.4, 99.6 (2-4 mm), 101.0: gypsum weinlets @ 98.3, 100.4-101.1: gypsum nodules @ 101.3-102.5: gypsum grains	

<u> </u>	PROJECT NO. 318710					TINUED	LOG PAGE 6 OF 9	
	CASING	3 рертн	SYMBC SYMBC	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
		02.5 03.9 04.1 05.2 06.7 06.7 08.5 08.5 09.3 11.3	CO DO	19 76%	R-B R-B R-B G R-B	103.9 104.1 105.2 105.9 106.7 108.0 108.3 108.5	Claystone: Silty; reddish brown with green mottle @ 102.7 (2-3 mm), 102.6-103.1 (vertical), 103.6, 103.7: gypsum veinlets Claystone: Reddish brown with green mottle @ 105.1-105.2 (3-4 mm): gypsum veinlet Claystone: Green with hrown mottle and gypsum grains Claystone: Silty; reddish brown with green mottle @ 105.4-106.0: gypsum grains @ 106.1-106.6 (3-4 mm): gypsum veinlet Lost Core Claystone: Reddish brown Claystone: Reddish brown with green mottle Claystone: Reddish brown Claystone: Reddish brown with green mottle Claystone: Reddish brown vith green mottle and gypsum grains @ 108.7-108.9: gypsum veinlets Claystone: Green with reddish brown mottle and gypsum nodules @ 110.0-110.1 (3-4 mm): gypsum veinlet Claystone: Silty; reddish brown with green mottle and gypsum grains Claystone: Silty; green with brown mottle and gypsum grains Claystone: Reddish brown with green mottle and gypsum grains Claystone: Reddish brown with green mottle @ 113.5, 114.1, 114.4-114.6 (1-2 mm), 115.0, 115.1: gypsum veinlets	

		I. BORING	LOG
PROJECT NO. 318710	8 TB-5	CONTINUED	PAGE 7 OF 9
CASING	USC/USGS SYMBOL SAMPLE NO.	1 5 1	DESCRIPTION
	115	R-B 115.4 R-B 117.3 118.0 GR-B 122.7 123.0 R-B 123.2 R-B 123.4	Claystone: Reddish brown with green mottle and gypsum grains Lost Core Claystone: Silty; reddish brown with green mottle
		131.9 133.0 133.1	Claystone: Silty; reddish brown with green mottle e 128.1-128.4 (1-2 mm), 128.4, 128.5, 128.8, 129.5, 120.0, 130.5, 131.4: gypsum veinlets Lost Core Claystone: Reddish brown with green mottle and gypsum grains Claystone: Silty; reddish brown with green mottle e 133.1-133.3 (2-3 mm), 133.5, 134.7: gypsum veinlets Claystone: Reddish brown with green mottle e 135.0 (4-5 mm), 135.4- 135.7 (4-5 mm), 136.3, 136.5: gypsum veinlets

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TB-5 CONTINUED **PROJECT NO. 3187108** OF 9 PAGE B E NO. USC/USGS SYMBOL DEPTH COLOF CASING SAMPLE % OF DESCRIPTION 135 - MARIO 136.8 Lost Core 4000 36.8 Claystone: Silty; reddish brown 138.0 38.0 38.2 with green mottle 38.4 39.5 39.8 2.000 26 70.000 66% 138.2 Claystone: Reddish brown with green mottle amas a 140 G R-B ZHZHA 404 TOURT. 138.4 Claystone: Silty; reddish brown ~###### with green mottle 41.8 42.3 G 139.5 Claystone: Reddish brown with gypsum nodules 44.5 44.6 145-27 74% 139.8 Claystone: Green with brown R-B mottle and gypsum nodules R-B 46.14 -24554 140.4 Claystone: Silty; reddish brown with green mottle and gypsus nodules 48.6 G 49.7 141.8 Claystone: Green with brown mottle 0 138.1, 139.0, 139.8 150 (5-6 mm), 140.4 (2 mm), 141.0 (3-4 mm), 141.8 (1-2 mm): gypsum veinlets 142.3 Lost Core Claystone: Silty; green with brown 144.5 mottle 144.6 Claystone: Silty; reddish brown with green mottle and gypsus nodules Claystone: Silty; reddish brown 146.1 with green mottle @ 146.2 (5-6 mm), 146.4-146.5: gypsum veinlets 148.6 Claystone: Green with brown mottle and gypsum nodules 0 149.2-149.3: gypsum veinlets 149.7 Lost Core

CASING Total Depth Colored Co	PROJECT NO. 3187108	-				INUED	PAGE 9 OF 9	
150 28 151.5 152.1 1		DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOŘ		DESCRIPTION	
		51.5 53.5 155 160 165.5 66.0 170 AL	TOTAL DEPTH	28 100% 29 73%	R-B GR-B	153.1 153.5 158.5 163.6 165.5 166.0	Claystone: Green with brown mottle and gypsum nodules Claystone: Reddish brown with green mottle e 153.5, 153.7, 154.3, 155.2, 155.4, 155.6, 155.7, 155.8, 156.1: gypsum nodules e 155.2 (1-2 mm), 156.1- 156.2, 156.3, 156.5, 156.6: gypsum weinlets Claystone: Silty; reddish brown with green mottle e 159.0 (3-4 mm), 160.4 (5-6 mm), 161.6 (3-4 mm) e 159.4, 159.8, 159.9, 160.2, 160.3, 160.8: gypsum nodules Lost Core Claystone: Silty; reddish brown with green mottle Claystone: Silty; reddish brown with green mottle Claystone: Silty; reddish brown with green mottle e 167.4, 168.5, 168.6, 169.1, 169.4: gypsum weinlets e 167.8, 168.0, 170.0: gypsum grains	

	u. s. ;	.C.I. BOI	RINI
PROJECT, NO: 3187	108		PAGE: 1 OF: 6
DODING NO TO	5 (0)	N.C.	TE STANTE -4/27/87 DATE ENDED -5/1/87
BORING NO. : 18	7828 3 F - 1	ACTUR/DRI 2575 5 N	LLES : BOYLES BROTHERS
DRILLING METHOD		2010.0 N	LOGGER: P.B.
INITIAL	STATI	C WATER	OTHER
WATER LEVEL:	LEVEL	: 7.55 8/13	B/87 LEVELS: PRING DEPTH: 130.0 CASING ELEV.: N/A
WEATHER CONDITI	ONS: CLEAR TO	PARTLY (CLOUDY
CASING DETAILS:	N / A		
CALLAL DI FAILS.			
REMARKS:			
	<u> </u>		
	1 E S J C	SAMPLE NO. % OF REC. COLOR	
CASING	DEPTH USC/USGS	PLE NO	DESCRIPTION
		AP O	DESCRIPTION
		% SA	
— <u>(</u>	+ • +		0.0-11.5 Surface Casing (not logged)
	\[1		
	[]		11.5 Claystone: Reddish brown with
]	some grown mottle and gypsus
	5		nodules
	L 1		12.5 Lost Core
	4 4	ļ	13.0 Claystone: Reddish brown with
	 		0 13.2-13.3: gypsus nodules 0 13.3-13-6 (vertical), 14.0-
	+ $+$		14.2 (vertical), 13.2-14.5
	H 10 -1		(vertical), 13.3-14.6 (vertical): gypsum veinlets
	11.5	R-B	• 13.6: some disseminated gypsum grains
	125	86%	15.0 Lost Core .
	i3.0	R-B	15.3 Claystone: Reddish brown with
		1	disseminated gypsus grains
	153	60% R-B	e 15.7-15.9: gypsum veinlets
	1 100 7	60% G R-B	16.0 Claystone: Green
	16.1	R-B	16.1. Claystons: Reddish brown with
	184	80% R-B	come green mottle 0 16.4-16.7: disseminated
	18.7	R-B	gypsun grains
			16.8 Lost Core
	1] [17.5 Claystone: Reddish brown with some
	1 1 1		Green mottle
	F 1 1 1		€ 17.7-18.0, 18.1 (2-3 mm): gypsum veinlets
	トコット		18.4 Claystons: Green with disseminated
	L 1 1		gypsus grains
	+ 4 1		18.6 Claystone: Reddish brown with green mottle and gypsum modules
· 4 1			
	}		18.7 Claystone: Reddish brown

PROJECT NO. 318710	TB-6	CONTINU	
CASING	DEPTH USC/USGS SYMBOL SAMPLE NO.	COLOR	DESCRIPTION
	20 20.3 20.5 20.5 20.5 20.5 20.5 20.5 20.5 20.5	G-B 21.1 22.0 25.0 25.2 25.2 25.2 25.2 25.2 25.2	green mottle e 38.7-8, 40.4-40.8 (vertical), 41.4-41.7: gypsum veinlets e 38.3-38.5, 38.5-38.6, 39.0: gypsum modules Lost Core Claystone: Reddish brown with some green mottle Claystone: Greenish brown Claystone: Green Claystone: Reddish brown with green mottle Claystone: Reddish brown with green mottle Lost Core Lost Core

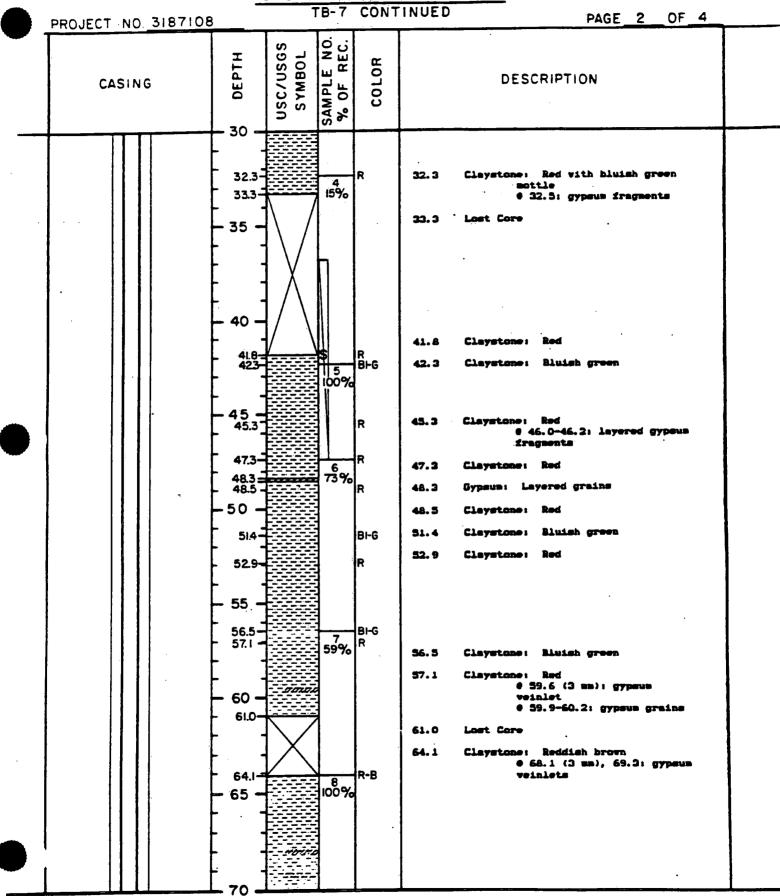
_	PROJECT NO. 3187108	_	J. S. P. (TB-		ORING LOG NTINUED PAGE 3 O	F 6
	CASING	 G ОЕРТН 	USC/USGS SYMBOL SAMPIF NO	% OF REC.	DESCRIPTION	
		590 596 60 65.2 698 70.1 72.5 75		100% G REGREB 11% R-B	59.0 Claystone: Green with disseminate gypsus grains 59.6 Claystone: Reddish brown with some green mottle 8 59.9-60.0 (1-4 mm), 60.6 60.8-61.8, 62.3, 62.9-63.63.3; gypsus veinlets 8 61.3; gypsus nodule 8 59.6-59.9, 62.6-63.0; gypsus grains 63.2 Claystone: Green 8 67.8-68.1 (vertical): gypsus weinlets 8 67.8 gypsus nodule 68.6 Claystone: Reddish brown 8 68.7-69.2; gypsus weinlets 69.1 Claystone: Reddish brown with some green mottle 8 69.9, 70.0 (1-4 mm): gyp weinlets 70.0 Claystone: Reddish brown with some green mottle 8 71.2-71.6 (vertical), 71 71.8: gypsus weinlets 9 71.6, 72.1 (30 mm): gypsus weinlets 72.5 Lost Core 80.0 Claystone: Reddish brown with some green mottle 80.0 Claystone: Reddish brown with some green mottle 80.1 (32.8, 63.2, 83.6 (3-4 mm), 83.9; gypsus weinlets 82.1, 82.8, 83.2, 83.6 (3-4 mm), 83.9; gypsus weinlets 83.5 Claystone: Reddish brown 83.6: gypsus module 87.3 Claystone: Reddish brown 83.6: gypsus weinlet 86.6: Glaystone: Reddish brown 86.6: Glaystone: Reddish brown 87.9 Claystone: Reddish brown 88.6-88.6: gypsus weinlet 88.6 Claystone: Reddish brown 88.6-88.6: gypsus veinlet 89.0 Lost Core 89.5 Claystone: Reddish brown 89.0 Lost Core	to to to to to to to to to to

_			U. S. P. C.			
•	PROJECT NO. 3187108	3	TB- 6	CO	NTINUE	PAGE 4 OF 6
	CASING	ОЕРТН	USC/USGS SYMBOL SAMPLE NO	COLOR		DESCRIPTION
		90 = 901 902	14 55%	R-B R-B	90.1	Claystone: Reddish brown with some
		91.3 92.0		R-B	90.2	Claystone: Reddish brown 8 90.7: gypsum module
-		94.0 - 94.2 - 94.7 - 9 5		R-B	91.3	Claystone: Reddish brown with some green mottle @ 91.7-92.0: gypsum nodules
			- ann an	R-B	92.0	Lost Core
			- 20200 - 20202 - 20202 16	4	94.0	Claystone: Green
					94.2	Claystone: Reddish brown
			TOPIO	1	94.7	Claystone: Green # 94.8: gypsus nodule
		01.5	7 - 11111111 80%	R-B	95.0	Claystone: Reddish brown with some green mottle 0 95.9, 96.5, 96.8 (4 mm),
		03.5 - 04.0 - 105 -	118 - 2000 - 56 %	R-B		96.8-97.1, 96.9, 96.9-97.1, 97.2 (8 mm), 97.7, 98.3, 99.0, 99.3, 99.6 (4 mm), 99.8, 100.0: gypsum veinlets 0 93.5: gypsum grains
		07.1 07.4 08.2		G-B	100.5	# 100.0: gypsum nodule Lost Core
		08.2	\$		101.5	Cleystone: Reddish brown
		. 4			103, 5	Lost Care
					104.0	Claystone: Reddish brown with some green mottle and some disseminated gypsum grains 6 104.1, 104.3, 105.5, 105.8, 106.9 (8 mm): gypsum weinlets 6 104.1, 105.6: gypsum nodules
		- d			107.1	Claystone: Greenish brown with discominated gypsum grains 0 107.1, 107.3, 107.4 (10 mm): gypsum weinlets
					107.4	Claystone: Green with disseminated gypsus grains 0 107.9-108.3, 108.2 (10 mm): gypsus veinlets
		• =			108.2	Last Care
]				
		4				
		. 1				

● PRO	JECT NO. 318	_	TB-	6 COI	NTINUE	D	
	CASING	ОЕРТН	USC/USGS SYMBOL	% OF REC.		PAGE 5 OF 6 DESCRIPTION	
			-ininini Siring Siring Siring Siring Siring	19 % R B B B B B B B B B B B B B B B B B B	111.5 111.8 112.5 114.8 115.0 115.5 119.5 121.5	Claystone: Reddish brown with some disseminated gypsum grains Claystone: Greenish brown with some disseminated gypsum grains e 111.9 (10 mm): gypsum weinlet Claystone: Silty; reddish brown with some green mottle e 112.6 (20 mm), 112.3, 113.5-113.6, 113.8, 114.2 (10 mm), 114.8 (8 mm): gypsum veinlets Lost Core Claystone: Green Claystone: Green Claystone: Reddish brown with some disseminated gypsum grains e 116.5 (10 mm), 119.3: gypsum veinlets Claystone: Reddish brown with some disseminated gypsum grains e 117.2: gypsum veinlets Claystone: Reddish brown with some green mottle e 121.5: gypsum veinlets Claystone: Reddish brown with some green mottle e 121.9-122.0, 122.2, 122.3 (10 mm), 122.5, 122.7, 122.2-123.3: gypsum veinlets Claystone: Green e 122.4-123.5, 123.6; 123.9: gypsum nodules Claystone: Green e 124.1: gypsum veinlet Claystone: Reddish brown e 124.1: gypsum veinlet Claystone: Reddish brown e 124.1: gypsum veinlet Claystone: Green with some disseminated gypsum grains e 125.3: disseminated gypsum grains e 125.3: disseminated gypsum grains e 125.3: disseminated gypsum grains	

PROJECT NO. 3187108		TB	-6	CON	TINUE	D PAGE 6 OF 6
 CASING	ОЕРТН	USC/USGS SYMBOL	% OF REC.	COLOR		DESCRIPTION
	- 3% 丁	- 30.00 10 10 10 10 10 10 10 10 10 10 10 10 1			125. 5 127. 0 127. 3 127. 5 127. 8 128. 2 128. 5 129. 3	Claystone: Reddish brown Claystone: Reddish brown e 127.6, 127.8: gypsus veinlets Claystone: Green with some disseminated gypsus grains Claystone: Reddish brown e 128.5 (8 mm), 128.9: gypsus veinlets Claystone: Green e 129.3, 129.4, 129.5: gypsus veinlets Claystone: Reddish brown Total Depth

U.S.F.C.I. BORING LOG PROJECT. NO: 3187108 PAGE: 1 OF: 4 DATE STARTED: 6/11/87 DATE ENDED:6/16/87 BORING NO. : TB-7 (E) CONTRACTOR/DRILLER: BOYLES BROTHERS BORING LOCATION: 9429.2 E - 10753.9 N LOGSER: R.N DRILLING METHOD(S): NC CORE INITIAL OTHER WATER LEVEL: LEYELS: 16.04 8/17/87 SURFACE ELEV. : 1413.9' BOFING SIZE:4" BORING DEPTH: 1485' CASING ELEV. : N/A WEATHER CONDITIONS: DRIZZLE RAIN TO PARTLY CLOUDY TO CLEAR CASING DETAILS: N/A REMARKS: DRUM PIT SAMPLE NO. % OF REC. USC/USGS DEPTH SYMBOL COLOR CASING DESCRIPTION 0.0-4.0 Surface Casing (not logged) Claystone: 25% Claystone: Red Lost Core 6.9 56% 19.4 223 Claystone: Red with some bluish 300% 25 26.5 BHG # 26.8: gypeum veinlet @ 27.0: gypeum fragments



PROJECT NO3187108	-			TINUED	LOG PAGE 3 OF 4	
 CASING	S DEPTH USC/USGS	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
	72.0 73.0 74.1 75 - 26.00 76.3 76.3 80 - 85 - 85 - 89.7 90 - 90 -	3	R B+G R	73.0 74.1 76.3 81.2	Claystone: Red Claystone: Red 9 74.5, 74.7: gypsus veinists Lost Core Claystone: Red with some bluish green sottle and some disseminated gypsus fragments 9 83.3-83.8, 84.3, 85.2, 85.2-86.5 (vertical), 87.0- 88.9 (vertical), 89.6-89.7: gypsus veinlets	-
	91.3	11 31%	R∕B⊢G	91.3	Claystone: Red and bluish green vith disseminated gypsus fragments	
	95 -	12 85%	R	96.0	Claystone: Red with some disseminated gypsum fragments	
	96.8 97.8 - 100		R-B/B+G	97.8 (Claystone: Reddish brown and bluish green with some disseminated gypsum fragments 9 98.2, 99.8, 100.8, 101.7, 102.4, 103.2 (25 cm), 104.5, 105.9: gypsum veinlets	
	- 105	.00 20	R-B		Claystone: Reddish brown 0 107.5, 108.5 (5-6 mm); gypsum veinlets Lost Core	
	110			4-4-1		·

PROJECT NO	. 3187108					INUED	PAGE 4 OF 4
CASIN	l G	I ⊖ ОЕРТН 1	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
		115 17.6 18.9 120.5 125 28.9 130 140 145 140 145	Tanana, Tanana	15 100% 17 95%	R-B BIGAR-B R-B	117.6 118.9 120.5 124.5 128.7 128.9	Claystone: Reddish brown e 118.4-118.9 (25 cm): gypsun veinlet Claystone: Eluish green and reddish brown e 119.1 (25 cm), 120.0- 120.5 (network): gypsus veinlets Claystone: Reddish brown e 120.5-121.2 (5-6 cm), 122.3-124.4 (network): gypsus veinlets Claystone: Reddish brown with some disseminated gypsus frequents e 127.5 (20 cm): gypsus veinlet Lost Core Claystone: Reddish brown with bluish green mottle e 129.3-129.4, 120.9-131.0, 132.0-132.1, 138.6-138.8: gypsus veinlets Claystone: Reddish brown with gypsus veinlets

	PROJECT. NC: 3187	801					PAGE: OF: 3_
	JORING NC.: TE-8	(F)	201	= a			RTED:7/13/87 DATE ENDED:7/15/87
	BORING LOCATION:				<u> </u>	DRILLE	LOGGER: P.B.
	DRILLING METHOD	5):NC (CORE				
	INITIAL		ETATI Even	WA'	ER		OTHER 1. EVEL 5: 23.6' 8/17/87
	WATER LEVEL:	3' 808 T		775.4	4" PC	PTVG D	EPTH:98.1' CASING ELEV.: N/A
	WEATHER CONDITION	S: CLEA	R TO	PAR	TLY C	LOUDY	
	CASING LETAILS: N	Ι/Δ					
	REMARKS: CELL 5						
		T	S	Τ.	1		
			36.5 2L	SAMPLE NO. % OF REC.	<u>~</u>		
	CASING	ОЕРТН	, US	m #	OLOR	1	DESCRIPTION
	П		SYMBOL SYMBOL	1 년 P		1	
		1 1	S	SAN			
		├ º 		 		0.0-13	3.0 Surface Casing (not logged)
ļ		1			Ì]	
		- 1			l	13.0	Claystone: Reddish brown with some
				İ	[green mottle @ 13.5-14.2 (vertical): thin
		1				_	gypsum veinlets
		- 5 -		l		Į	@ 15.0: gypsum nodule
		- 1		Į		16.3	Claystone: Green
- 1		7		İ		17.2	Claystone: Silty; green
		7				17.4	Claystone: Reddish brown
		- 10 -				17.7	Claystone: Silty; reddish brown with some green mottle
		- 1		ļ		19.9	Claystone: Reddish brown with some
		- 1				i	green mottle 0 20.9 (4 mm): gypsum veinlet
		- 130	3	100%	R-B		0 20.0-20.1: gypsum nodule 0 21.3-21.4: gypsum grains
- {		- 15 -{-		.00 /6		22.0	Claystone: Silty; reddish brown with
							some green mottle @ 22.0-22.1, 23.2-23.6 (vert-
		16.3			G		ical), 24.4-24.6: gypsum
		172 = 174 174 177			G R-B R-B		veinlet 0 24.2-24.3, 24.9-25.0:
						1	layered gypsum nodules
		- 20 -	-outob	100%	R-B	25. 7	Claystone: Green
	[] []			, 1		26.3	Claystone: Silty; green
		22.0	*	100%	R-8	26.7	Claystone: Reddish brown with some green mottle
		- 25 -	אממוער	4 64%		27.2	Claystone: Green
		25.7			G	28.6	Claystone: Reddish brown with some
		263 26.7 27.2 -			G R-B G		green mottle 6 28.7-28.9, 29.2-29.4 (vert-
		27.2			G		ical): gypsum veinlets @ 29.0-29.1: gypsum grains
		28.6	3	1	R-B	29.7	Lost Core
		29.7	:3				

_			I. BORING	LOG	
	PROJECT NO. 3187108	TB-8	CONTINUED	PAGE 2 OF 3	
	CASING	DEPTH USC/USGS SYMBOL SAMPLE NO. % OF REC.	COLOR	DESCRIPTION	
		32.8 100% 32.8 100% 35 100mm 65% 41.0 77 42.1 100mm 79% 43.4 100mm 48% 46.7 47.3 100mm 48% 50 50.8 100mm 48% 50.8 100mm 48% 50.8 100mm 48% 50.8 100mm 48% 50.8 100mm 48% 50.8 100mm 48% 50.8 100mm 48% 100mm 48%	R-B 40.0 41.0 R-B 42.1 R-B 45.3 G 46.7 47.3 R-B 48.8 50.8 R-B	Claystone: Brown and green 4 46.8-46.9: gypsum grains Claystone: Green 4 47.5, 48.5-48.8 (vertical): gypsum veinlets Lost Core Claystone: Silty; reddish hrown with trace of green mottle 5 51.1-51.6 (vertical), 51.5, 52.2 (4 mm), 53.0-53.4, 53.4, 54.7: gypsum veinlets 5 51.6-51.8: gypsum nodules: 5 53.0, 54.8-35.0, 35.4: gypsum grains Lost Core Claystone: Silty; reddish hrown with some green mottle 6 60.7-62.5 (vertical), 60.8, 60.9, 61.3, 61.4, 61.8 (4 mm), 61.4-61.8 (anastamosing), 51.9-62.0, 62.4, 63.0, 63.7: gypsum veinlets 6 60.8: slight vertical displacement (.05 feet) Claystone: Brown and green	
			64.9	6 64.4: gypsum veinlets Claystone: Silty; reddish brown with some green mottle 6 65.9-66.7 (8 mm): gypsum veinlet 6 65.3-66.1, 67.3-67.6, 67.8, 68.7-68.9: gypsum grains	······································

PROJECT. NO. 3187108		J. S. P. TE		ONTINU	
CASING	оертн 1	USC/USGS SYMBOL SAMPLE NO	% OF REC.	COLOR	DESCRIPTION
	70 - 70.9 - 73.1 - 75 - 76.8 - 775 - 79.5 -	TATIONA 10 TATION	R G B GRGR	76. 76. 77. 78. 79. 79. 81.	9 Claystone: Reddish brown e 71.0-71.1, 71.4-71.5, 72.5- 72.6: gypsum veinlets e 72.7, 72.9: gypsum grains 1 Claystone: Reddish brown with some green mottle e 74.2, 74.5-74.5 (vertical), 74.7, 75.3, 75.6 (8 mm): gypsum veinlets e 73.3, 73.7-73.8, 74.2-74.3: gypsum grains 1 Claystone: Green e 76.1-76.5: gypsum grains 2 Claystone: Brown with green mottle 3 Claystone: Green e 77.5 (8 mm): gypsum veinlet 4 Claystone: Reddish brown e 78.5: gypsum veinlet 5 Claystone: Reddish brown 6 78.5: gypsum veinlet 6 Claystone: Reddish brown 7 Claystone: Reddish brown 8 Claystone: Reddish brown 8 Claystone: Reddish brown 9 Claystone: Reddish brown 9 Claystone: Reddish brown 9 Claystone: Reddish brown with some green mottle e 82.0, 82.9, 83.0, 83.4-83.7 (vertical), 83.0-89.1 (6 mm), 89.1 (8 mm): gypsum veinlets e 87.7, 87.9, 90.4-90.6: gypsum grains e 89.9: sailty Claystone: Silty; reddish brown with some green mottle e 91.1 (10 mm), 91.3-91.4, 91.5, 91.7 (10 mm), 91.3-91.4, 91.5, 91.7 (10 mm), 91.3-91.4, 91.5, 91.7 (10 mm), 91.3-91.4 Claystone: Reddish brown e 94.4: gypsum veinlets Claystone: Reddish brown e 94.6-94.9, 94.9: gypsum veinlets Claystone: Reddish brown e 95.3 (8 mm), 96.9, 96.9- 97.0 (10 mm), 97.1, 97.5, 97.6, 97.7, 97.8, 98.0-98.1: gypsum veinlets

	. E.F.C.I. E	SORINGE
PROJECT, NG: 3187		FACE: 1 LF: 4
BORING NO.: TE- BORING LOCATION DRILLING METHOS	: 9417 E - 11773 N	CILLES BOYLES BROTHERS LOGGER: P.B.
INITIAL WATER LEVEL:	STATIC WATER LEVEL 93.8' FIRING SIZE:4"	OTHER LEVELS: 14.84' 8/17/87 ETRING TEFTH: 98.9' CASING ELEV.: N/A
CASING DETAILS: PEMARMS: CELL 6	N/A	
CASING	O DEPTH USC/USGS SYMBOL SAMPLE NO. % OF REC.	DESCRIPTION
	8.5 10 15.1 15.8 16.0 16.9 17.4 18.3 20% 24.9 25 26.6 24.9 25 26.6 24.9 25 26.6 26.6 28.9 29.0 30 G/B 95% G	8.5 Lost Core 15.1 Claystone: Reddish brown with some green mottle 15.6 Claystone: Green 16.0 Claystone: Green 16.9 Claystone: Green 17.4 Claystone: Silty: reddish brown 18.3 Claystone: Silty: reddish brown with some green mottle e 19.9-20.0, 20.9-21.0 (vertical), 19.4-19.6, 19.8: gypsum veinlets e 19.7-19.8, 20.2, 20.3, 24.2: gypsum nodules 24.9 Claystone: Green 26.6 Claystone: Green sottle 28.9 Claystone: Green and brown 29.0 Claystone: Green and brown

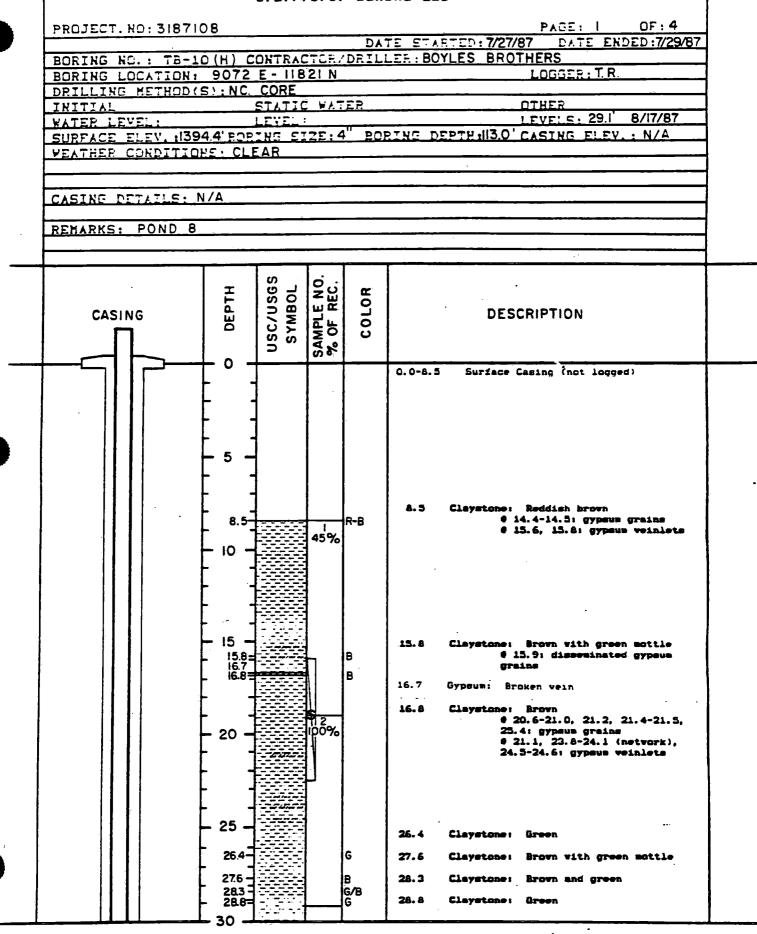
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				<u>′. U. I</u> 3- 9		TINUED	
PROJECT NO	3187108						PAGE 2 OF 4
CASIN	16	ы О DEPTH I	TOBWAS S9SN/2SN	SAMPLE NO. % OF REC.	COLOR	•	DESCRIPTION
		308-	arwoll mann		R-B	30.8	Claystone: Silty; reddish brown with some green mottle e 32.7-32.8, 33.9, 34.0, 34.1, 34.3, 34.4: gypsus veinlets e 34.3: gypsus nodules
		- 34.7 - 35 -	- France		R-B	34, 7	Lost Core
		- 40 - - 41.7-	windin ningi inang nang nang	4 84%		35.0	Claystone: Silty; reddish brown with some green mottle e 36.6, 39.5-39.6, 40.0-40.1 (5 mm), 40.4 (10 mm), 40.6- 40.7, 41.4-41.5, 41.6: gypsum veinlets e 35.3-35.4 (25 mm), 36.3, 39.8, 40.1-40.4, 41.5: gypsum nodules e 40.0-40.3 (vertical): thin open fracture
		- 43.0-		5	R-B	41.7	Lost Care
		443- - 45 - 454- 462-	s gran a d	89%	R-B B B/G G	43.0	Claystone: Silty; reddish brown @ 43.0-43.2, 43.3, 43.5: gypsum veinlets @ 43.6: gypsum grains
		46.7			G R-B	44.3	Claystone: Reddish brown with some green mottle @ 44.3-44.6: gypsum grains @ 45.3: gypsum nodule
-		- 50 - -		\$		45.4	Claystone: Silty; brown with green mottle
		- 51.9		I	1	46.2	Claystone: Brown and green
	ŀ	- 530-		6	R-B	46.7	Claystone: Silty; green
		- 55 -	301000 301000 301000	100 76		49.0	Claystone: Silty; reddish brown with some green mottle # 50.0, 50.1-50.2 (25 mm), 50.3 (25 mm), 51.2 (25 mm), 51.3 (25 mm), 51.7: gypsum modules
						51.9	# 50.6: layered gypsum grains
		- 60 -					
		- 65 -	PHOSE TOUS TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUSE TOUS TOUS TOUS TOUS TOUS TOUS TOUS TOUS	7 77%		53.0	Claystone: Silty; reddish brown with some green mottle e 53.7-53.9: gypsum vein e 55.1-55.2, 55.5-55.6, 56.7 (5 mm), 62.3, 62.3-62.4, 62.6, 62.6-63.0, 62.9-63.0, 63.2, 63.2-63.8, 64.2, 64.3- 64.5, 65.2, 65.5: gypsum veinlets e 54.8, 56.4, 64.7, 65.0- 65.2, 66.4, 69.5: gypsum grains e 63.0-63.5: disseminated gypsum grains
		70	\searrow			68. 2	Lost Core
 		_ / \					

PROJECT NO. 3187108	TP- 0		NTINUED PAGE 3 OF 4
 CASING	USC/USGS SYMBOL SAMPLE NO.		DESCRIPTION
	71.0 9 89 97 72.8 200 700 74.7 200 700 75.2 75.4 76.3 76.8 77.1 76.3 76.8 76.3 80.3 81.0 99 % 88.8 200 700 700 700 700 700 700 700 700 700	中 中 中央の市の市 中 中 中 中 中 中 中 中 中 中 中 中 中 中 中 中 中 中	71.0 Claystone: Reddish brown with some green mottle 72.8 Claystone: Silty: reddish brown with green mottle 8 73.1-73.2, 73.4-73.8, 73.6, 73.8, 74.7-74.8 (8 mm): grains 74.7 Claystone: Green with some gypsum grains 75.2 Claystone: Green with brown mottle 75.4 Claystone: Silty: reddish brown 75.9 Claystone: Silty: reddish brown 76.8 Claystone: Silty: reddish brown 76.8 Claystone: Silty: reddish brown 76.8 Claystone: Silty: reddish brown 77.1 Claystone: Silty: reddish brown 77.2 Claystone: Silty: reddish brown 8 77.6-77.8 (instwork): gypsum weinlets 77.8 Claystone: Reddish brown 8 78.7 (10 mm): gypsum weinlets 79.3 Lost Core 80.3 Claystone: Silty: reddish brown 8 80.3-80.5 (vertical), 80.6-80.7 (6 mm): gypsum veinlets 81.0 Lost Core 82.0 Claystone: Reddish brown 83.1.0 Lost Core 84.0 Claystone: Reddish brown 85.2-99.3, 89.6, 89.8, 90.4 (4 mm), 90.6, 91.2-91.3, 91.51 (gypsum veinlets 88.4 (4 mm), 90.6, 91.2-91.3, 91.51 (gypsum veinlets 88.5 (91.0: gypsum nodule 88.5-69.5, 91.0: gypsum grains

PROJECT	NO. 3187108	_		B- 9		TINUE	
	SING	ОЕРТН	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR	·	DESCRIPTION
		90 - 91.5 - 933 - 95 -	Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan Tannan		G R-B	93.3	Claystone: Green
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U.S.P.C.I. BORING LOS

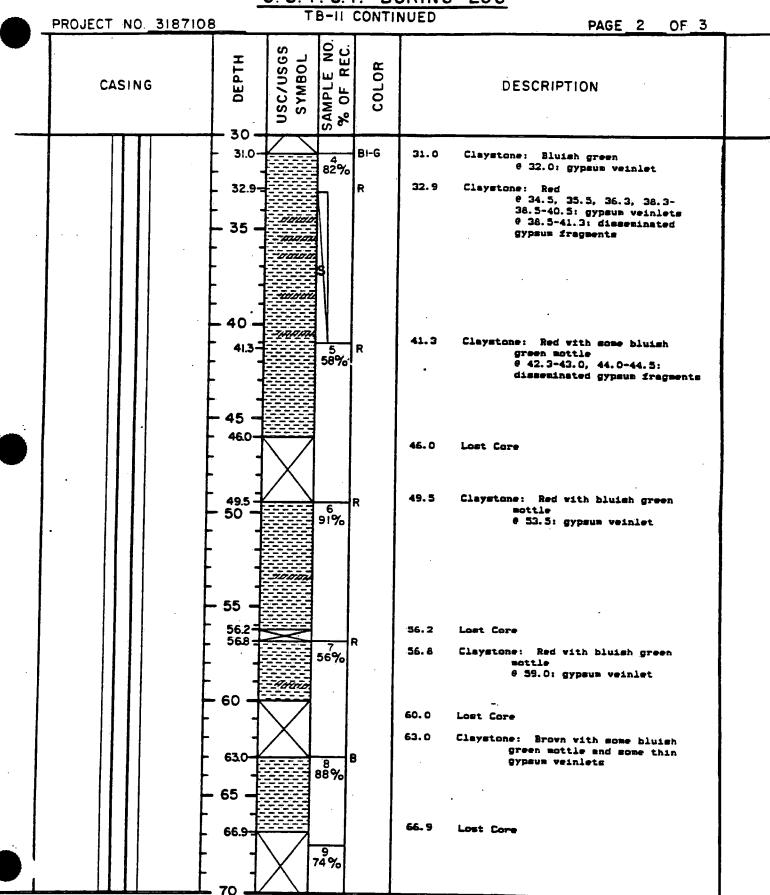


PROJECT NO. 3187108	TB-10 COI	NTINUED PAGE 2 OF 4
CASING	USC/USGS SYMBOL SAMPLE NO. % OF REC.	DESCRIPTION
	30.7 30% B -30.7 30.7 Claystone: Brown # 31.1-31.4, 36.0, 36.6: gypsus vainlets # 32.2-32.3; 34.5, 34.9, 39.2: gypsus nodules # 38.5-40.6: disseminated gypsus grains 40.6 Lost Core 44.7 Claystone: Brown # 46.0 (10 mm), 48.2: gypsus vainlets 48.7 Claystone: Brown with green mottle 50.3 Claystone: Brown with green mottle 50.4-51.0 (vertical): gypsus vainlet 51.0 Claystone: Brown with green mottle # 52.7, 54.5, 54.7, 35.6, # 36.0 (15 mm): gypsus vainlets # 36.1: disseminated gypsus grains 57.2 Lost Core 39.0 Claystone: Brown	
	65	## 59.6, 60.5 (10 mm), 60.8, 61.1, 61.9, 64.2, 63.7 (10 mm): gypsum veinlets ## 60.4-61.0: gypsum grains 66.5 Lost Core 67.0 Claystone: Brown ## 67.6-68.0 (network), 68.8: gypsum veinlets ## 71.0: gypsum fragments

PROJECT NO. 3187108	_		- C. I		TINUE	
CASING	OEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	71.3		! :	₽	71.3	Claystone: Silty; brown with green sottle
	} •	\ /			71.9	Lost Core
	75 -				78.4	Claystone: Green 0 78.8, 79.0, 79.2: gypsum veinlets
	78.4	- 300 500 - 300 700 - 300 700	10 0%	G	79. 5	Claystone: Brown with green mottle @ 81.2, 81.6, 81.8, 82.3, 82.5 (5 mm), 82.6 (5 mm), 83.0 (15 mm), 84.2 (15 mm): gyngum veinlets
	795 - - 80 -		33.70	В	84.3	Lost Core
		7,000,00 ,000,00 7,000,00			88.4	Claystons: Brown 6 88.6 (3 mm): gypsum veinlet
	-	שמשמע			88. 9	Gypsum: Vein
	843 = 85 =		<u></u>		89.0	Claystone: Brown
			N		89. 1	Gypsum: Layered
▼	884 889 890 -		 		89.3	Claystone: Brown
	89.1 - 89.3 - 89.6		\$12 100%	ക്കുദ	49. 6	Claystone: Green e 90.7-90.8, 90.8-90.9: gypsum veinlets
	- 90 - - 909 - 91.6 -	-027.01 -010.01 -010.01	V	B G	90.9	Claystone: Brown # 91.4-91.5 (10 mm): gypsum veinlet
	923	- TAUTA - SUNATA - TUNKAN	45%	В	91.6	Claystons: Green with thin gypsum veinlets
	95 95.3				92.3	Claystone: Brown # 92.5 (10 mm), 92.9 (10 mm), 93.3 (5 mm), 93.7 (10 mm), 93.9 (5 mm), 94.0 (5 mm), 95.3 (10 mm): gypsum veinlets
	├ -				9 5. 3	Lost Care
	99.1	TODE	14 45%	B ∕G G	99.1	Claystone: Brown and green # 99.7 (10 mm), 100.1, 100.2, 100.4-100.5, 100.5-100.6, 101.0, 101.2, 101.5-101.6, 101.7: gypsum veinlets # 100.0: gypsum nodule
	03.6				101.9	Claystone: Green with gypsum weinlets
	-105 - -				103.6	Lost Core
	-0.00		62%	B/G	109.0	Claystone: Brown and green # 111.0-111.5: disseminated gypsum grains

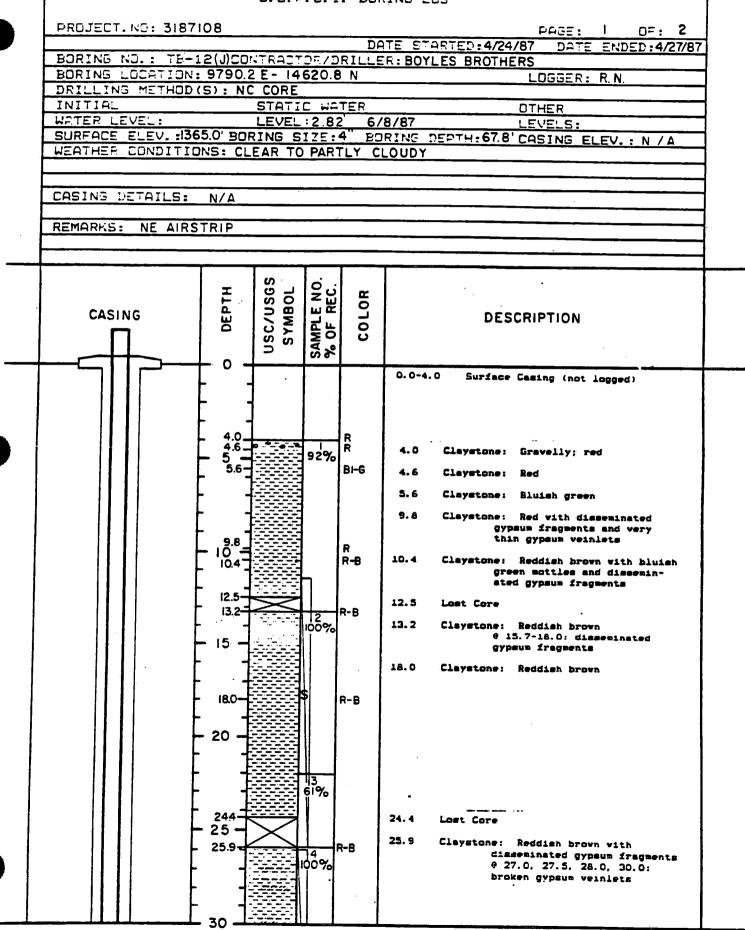
	PROJECT NO. 3187108	 •	TE	<u>3-10</u>	CON	TINUE	D	PAGE 4	OF 4	
	CASING	ОЕРТН	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIP	· · · · · · · · · · · · · · · · · · ·		
- ` -		110	\times			111.5	Lost Core Total Depth			
		TOTAL 113.0	DEPTH							3
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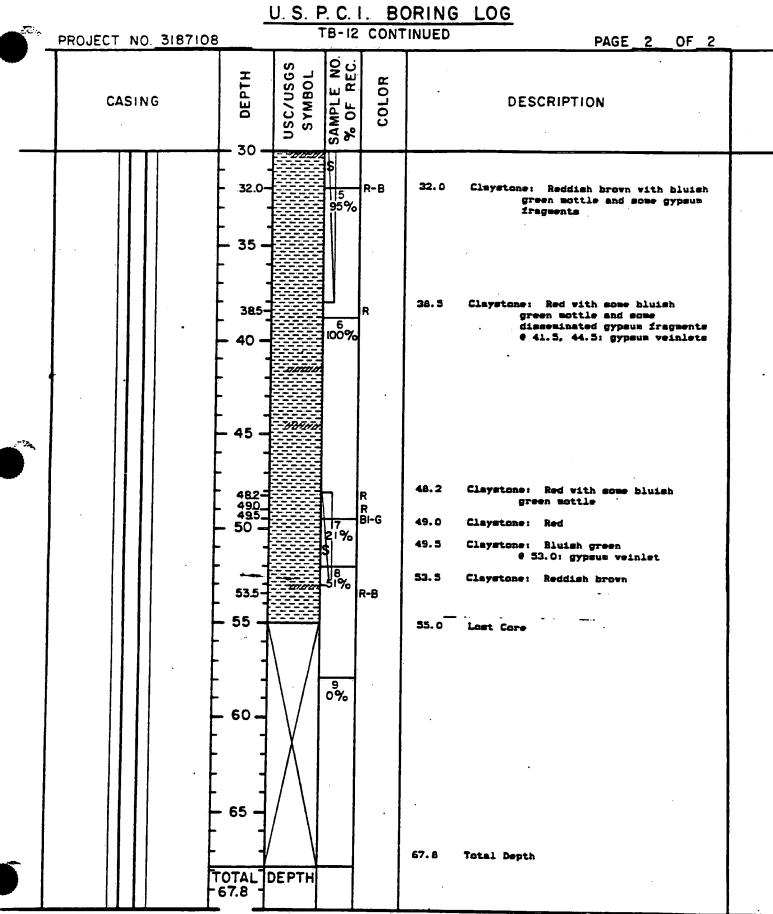
	U. S. F	P.C. I. BO	RING LOG
PROJECT.NO: 3	87108		PAGE: DF: 3
	07300	Di	THE STARTED: 4/21/87 DATE ENDED: 4/23/8
BORING NO. : TE	-11(I) CONTRE	CTOR/DELL	LER: BOYLES BROTHERS
BORING LOCATIO	:: 9617.4 E-	12600.0 N	LOGGER: R.N.
DRILLING METHO			
INITIAL		C WATER	OTHER
WATER LEVEL:	LEVEL	6.53 8/20	D/87 LEVELS:
WEATHER CONDIT	3788 BORING S	IZE:4 PC	RING DEPTH:84.5 CASING ELEV.: N/A
WEHIRER LONDIN	IUNE: CLEAR		
CASING DETAILS:	N/A		
REMARKS: CELL I		·	
			
, , , , , , , , , , , , , , , , , , , 			
	_ s	انان	ľ
	DEPTH USC/USG SYMBOL	APLE NO OF REC	1 .
CASING	F S B		DESCRIPTION
	SC		
	1 1 -	SAMPLE NO. % OF REC.	,
	 	 	0.0-3.8 Surface Caming (not logged)
	† †	ŀ]-
	-]	3.8 Claystone: Red with gray mottle and some disseminated gypsum
	}	1 1	fragments
	3.8	R	4.4 Claystone: Red
}	544	77% R	♥ 5.3: gypsum veinlet
	54-2000	R	5.4 Claystone: Red with gypsum fragments
	6.3	R	9 6.3: gypsum veinlet
		1 1	6.3 Claystone: Red with some vertical
	8.3	Gy	and horizontal gypeum
	9.7	R	
	10.8	1	8.3 Claystone: Gray with disseminated gypsum fragments and some
	1 ""	1 1	horizontal and vertical
	1 1	l [gypsum veinlets
	12.8	91% BI-G	9.7 Claystone: Red with gray mottle,
	144	1 1	disseminated gypsum fragments, and vertical gypsum veinlets
	- 15	R.	10.8 Lost Core
			12.8 Claystone: Bluish green
	ביב סונער.		14.4 Clayetone: Red
			# 17.5: gypsum veinlet # 18.0-19.0: disseminated
			gypsum fragments
	- 20 -	1	•
	21.9	[21.9 Lost Core
	22.8	3 54%	
	├ -{####	54%	
	25 -		22.8 Claystone: Red with some bluish
1 1 1	26.0-	B⊢G	green mottle
		15-6	26.0 Claystone: Bluish green
	273	[]	27.3 Lost Core
	273		27.3 Lost Core



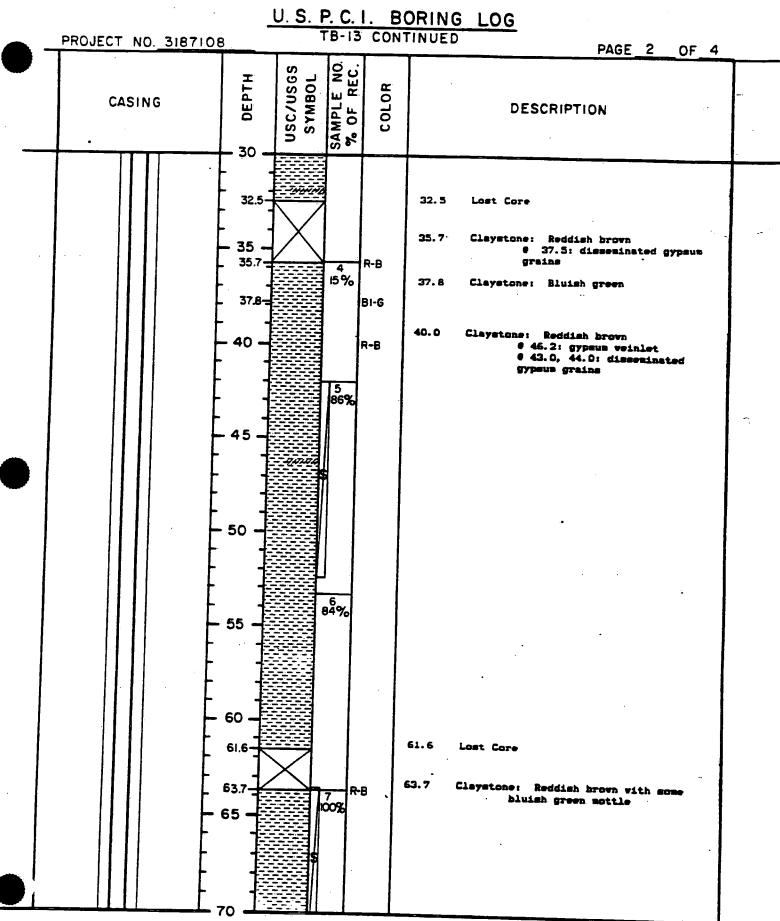
_				<u>J. S. F</u> T	7. U. I	CONTI	NUFD	
	PROJECT NO.	3187108					T	PAGE 3 OF 3
	CASIN	l G	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.			DESCRIPTION
		- - - - -	70.5 70.5 76.7 80 84.5	TOTAL TRANSPORT	[©] 85%	R-B	76.7	Claystons: Soldish brown with some humb green nottle and some disseventated gypsus fragments @ 79.2, 80.3, 81.5, 82.5; gypsus weinlets Total Depth

U.S.F.C.I. BORING LOS





BORING LOCATIO	TB-13 CONTRACT DN: 9448.6 E- 1204	OR/DRIL	PAGE: 1 OF #4 TE STARTED: 4/28/87 DATE ENDED: 4/30 LER: BOYLES BROTHERS LOGGER: R.N
INITIAL WATER LEVEL: EURTACE ELEV.:	DD(S): NC CORES STATIC LEVEL: 3 1384.0 BORING SIZ TOKS: CLEAR TO PA	8' 6/8/ C:4" PO	RING DEPTERMINE CASING ELEV. : N/A
CASING LETAILS REMARKS: SURFI	: N/A CIAL GEOPHYSICS (CORRELA	TION
CASING	USC/USGS SYMBOL SAMPLE NO.	COLOR	DESCRIPTION
			0.0-4.0 Surface Casing (not logged)
	5 - 6.0 81%	BI-G R	4.0 Claystone: Bluish green 6.0 Claystone: Red with some bluish green mottle 0 9.5: gypsum veinlet 0 12.5: gypsum nodule
	12.5	R	12.5 Claystone: Red with disseminated gypsum grains 14.3 Lost Core
	15 16.0	B+G	16.0 Claystone: Bluish green
	20 -	R	20.0 Cleystone: Red @ 24.2, 28.5, 32.0: gypsum weinlets @ 24.0, 27.0: disseminated gypsum grains
	- 25 - 3 88%		

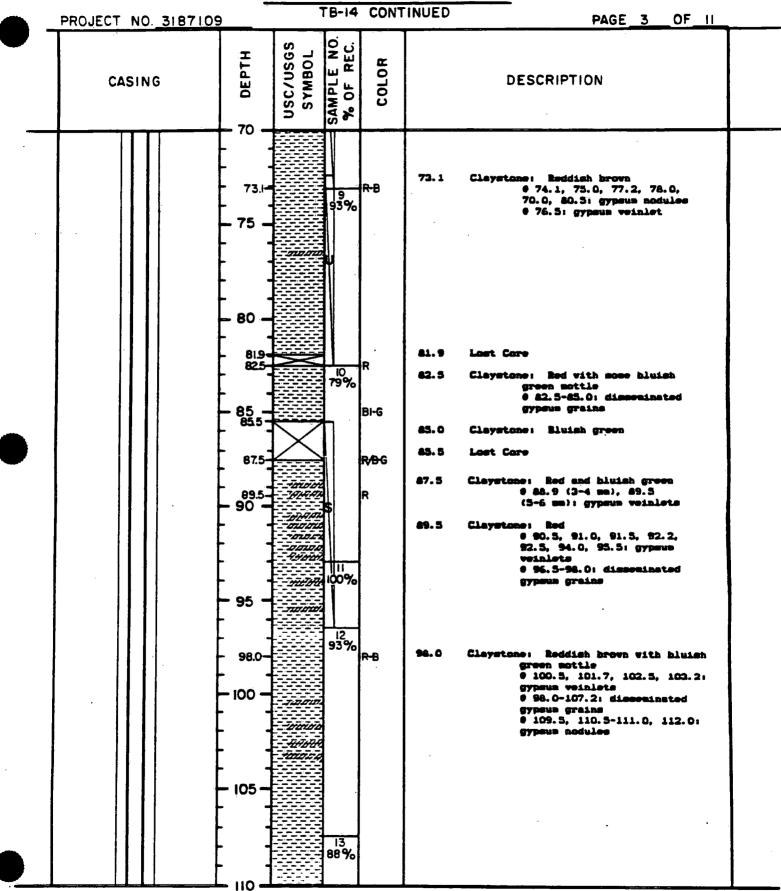


PROJECT NO. 3187108	<u>-</u>	7	B-13	CONT	INUED	PAGE 3 OF 4
 CASING	- О 0ЕРТН 1	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	73.4 - 75 -		63%		73.4	Claystone: Reddish brown
	78.5 80				76. 5	Lost Core
	83.6 - 85 -		58%	R-B	83.6	Claystone: Reddish brown
	87.5 - - 90 -		100% 100%	R-B	87.5	Claystone: Reddish brown with some bluish green mottle and some disseminated gypsum grains
	95 -			·		
	100		12 91%			
	105				<u> </u>	

-	PROJECT	NO. 3187108	_	TE	B-13	CONT	INUED	<u></u>		PAGE 4	OF_4	
		SING	ОЕРТН	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DES	CRIPTIO			
			110 -	DEPTH		Ü	111.5	Total Depth				
			. 1									

PROJECT. NO: 3187108 PAGE: 1 DATE STARTED: 5/8/87 DATE ENDED:5/18/87 BORING NO.: TB-14 (K) CONTRACTOR/DRILLER: BOYLES BROTHERS BORING LOCATION: 7345.8 E-13922.4 N LOGGER: R.N. DRILLING METHOD(S): NC CORE STATIC WATER INITIAL OTHER LEVEL: 4.9 8/29/87 WATER LEVEL: LEVELS: SURFACE ELEV. :1393.8' BORING SIZE: 4" BORING DEPTH:418.1' CASING ELEV. : WEATHER CONDITIONS: CLEAR TO PARTLY CLOUDY CASING DETAILS: 2" PVC FROM SURFACE TO PVC SCREEN, SET AT 365'-375 REMARKS: CEDAR HILLS TEST. OW-7 INSTALLED NEARBY. SAMPLE NO. % OF REC. USC/USGS DEPTH SYMBOL COLOR CASING DESCRIPTION 0.0-4.0 Surface Casing (not logged) Claystone: Red R 0 5.8 (3 mm): gypsum veimlet 74% # 7.0: gypsum grains 10.5 Claystone: Bluish green 10 10.5 BI-G 11.0 Cleystone: 11.7 Lost Core 14.4 Claystone: Red • 15.0, 18.2, 19.0: gypsus 14.4 grains 91% 20.0 Lost Core 81**%** B⊦G 20.5 Claystone: Red 22.I· 21.0 Claystone: Bluish green BI-G 227 22.1 Claystone: Red 22.7 Claystone: Bluish green 25 27.0 Claystone: Red 27.5: gypsum grains28.0-29.1: disseminated 27.0 R gypsum graine 29. 1 Lost Core

PROJECT_NO3187108		1. S. P	B- 14	. BC	TINUED	LOG PAGE 2 OF II
CASING	G DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	31.0		80%	R	31.0	Claystone: Red with some bluigh green mottle 0 31.0-39.0: disseminated gypsum grains 0 31.5, 32.5, 34.5, 35.3: gypsum grains
	39.0 - 40 - 41.0 -	X	5 83%	B⊦G	29. 0	Lost Core Claystone: Eluish green with red mottle 0 46.0, 47.0: gypsum grains
	45				42.9	Last Care
	- 48.9 - 50 - 505	X	90%	R	30.3	Claystone: Red with some bluigh green mottle and dismonin- ated gypsum grains 0 53.0: gypsum grains
	55.5 55.5 56.0 - 60		7 63%	R	55. 5 56. 0	Lost Core Claystone: Red with some disseminated gypsum grains
	63.2		8 98%	3	63.2 64.6	Lost Core Claystone: Red # 68.5: gypsum nodules
	70					



	PROJEÇT NO. 3187108		P. C. I FB- 14	CONT	INUED	PAGE 4 OF 11	
	CASING .	DEPTH USC/USGS	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
		- 115 - 15.9 - 120 - zanan	14 100%	R B	115.9 117.8	Lost Core Claystone: Reddish brown with some hluish green mottle @ 118.5, 119.9, 121.5: gypsum veinlets	
•		- 125 - 26.0 - 27.2 - 20.0000 - 130 - 20.0000	15 100%	R-B		Lost Core Claystone: Reddish brown with discominated gypsum grains 0 128.8, 132.3, 133.2: gypsum voimlets	
		37.5- 140 -	16 53%	Dk B	137.5	Claystone: Dark brown with some bluish green mottle and disseminated gypsum grains	
•		145 45.6	17 75%	R-B		Claystone: Reddish brown with disseminated gypsum grains e 146.2, 146.9, 147.7, 148.3, 148.6, 151.0, 151.8, 153.8, 154.7: gypsum weinlets	

PROJECT NO. 3187108	U. S. P. C. I. BC	DRING LOG NUED PAGE 5 OF 11
CASING	USC/USGS SYMBOL SAMPLE NO. % OF REC.	DESCRIPTION
	54.9	157.9 Claystone: Reddish brown with disseminated gypsus grains 0 158.1, 158.5, 159.0, 160.5, 161.5, 162.5: gypsus weinlets 0 162.0-163.0: this sandstone and siltstone stringers 163.0 Siltstone with sandstone (very fine grained); red with some bluish green mottle 167.3 Lost Core
	73.5 74.4 175 75.6 	174.4 Claystone: Red and gray mottled with disseminated gypsus grains # 174.8: gypsus veinlet 175.6 Claystone: Reddish brown with disseminated gypsus grains # 177.2, 177.5, 177.8, 178.7: gypsus veinlets
		185.1 Claystone: Red # 185.7, 186.2, 186.6, 187.1, 191.1, 191.7: gypsum veinlets # 190.0-190.2: gypsum grains

	PROJECT NO. 3187108					INUED	PAGE 6 OF II
—	CASING	-06F 0EPTH	USC/USGS SYMBOL	SAMPLE NO % OF REC.	COLOR		DESCRIPTION
		92.6 	auron auron auron auron	22 37%	R	192. 6 195. 0	Claystone: Red with bluish green mottle and disseminated gypsus grains 0 195.4, 195.7, 196.3: gypsus veinlets
		99.3	X	23 96%	R-B	196.6 199.3	Last Care Claystane: Reddish brown with gypsus
		- 200 - - - 205	sioaro Vivini Vivini Urbili Vivini Vanno	96%	I R 8	200.0	grains Claystone: Reddish brown with some hluish green mottle and some disseminated gypsum grains 0 201.5, 202.3, 203.3,204.0, 205.5, 206.0: gypsum weinlets
		07.6 07.9 - 210 -	พากส สุดสุด เกลเกล	24 86%	В	207.6 207.9	Lost Core Claystone: Brown e 208.5, 209.0, 210.6, 214.0: gypsus veinlets
		- 215 16.1- 174- - 220-	onoono onoono onoono Motora manna	25 65%	В	216. 1 217. 4	Lost Core Claystone: Brown with some disseminated gypsus grains e 218.3, 219.5, 220.5, 221.4: gypsus veinlets
		- 225 25.7				225.7	Lost Care

PROJECT NO. 3187108	<u>U. S. F</u>		CONTI		PAGE 7 OF II
CASING	DEPTH USC/USGS	SAMPLE NO. % OF REC.	1 ~		DESCRIPTION
-	235	26 95%	8	230.0	Claystone: Brown with some bluigh green mottle 0 233.0, 225.5: gypsum weinlets 0 238.0: disseminated gypsum graine
	240	27 64%	В	239. 5 240. 0	Lost Core Claystone: Brown with some disseminated gypsus grains 6 240.7: gypsus veinlet
	47.2			247.2	Lost Care
	250 - 51.2	28 78%	R B	251.2	Claystone: Reddish brown with some bluish green mottle 6 255.5: gypsum veinlet and gypsum grains
	260- 60.8-	29	В	260. 8	Claystone: Brown with some bluish green mottle and dissemin- ated gypsum graine
		29 50%		264.3	Lost Core
	64.3	7		267.8	Sandstone: Frishle; very fine- grained; brown
				268.5	Sendstone: Frishle; reddish brown with sixed fragments of very fine-grained sandstone
	67.8 68.5 69.0	30 20%	B R-B R-B	269.0	Claystone: Sendy; reddish brown with some disseminated gypsus grains

PROJECT NO. 3187108		-14 CONT	PAGE B OF II
	USC/USGS SYMBOL	SAMPLE NO. % OF REC. COLOR	DESCRIPTION
-21 -21 -21 -21 -21 -21 -21 -31	75 - 78.7 79.7 79.7 79.7 85 - 87.3 90 - 91.4 91.9 92.7 92.7 95 - 92.7	24MRS 24MRS 252 252 252 252 252 252 252 252 252 25	278.7 Sandstone: Very fine-grained; frishle; brown with hrown sandstone fragments 279.0 Sandstone: Very fine-grained; brown 279.4 Claystone: Reddish brown with some bluish green mottle and some disseminated gypsus grains 287.3 Lost Core 291.4 Claystone: Reddish brown 291.9 Claystone: Sandy; reddish hrown with gypsus gravel 292.0 Sandstone: Clayer and silty: fragmented; red 292.7 Lost Core 300.4 Gypsus with red sandstone grains 200.7 Claystone: Red with disseminated gypsus and sandstone fragments e 202.5: gypsus grains 305.6 Lost Core

U. S. P. C. I. BORING LOG PAGE 9 OF II PROJECT NO. 3187108 NO. USC/USGS SYMBOL DEPTH COLOR ü DESCRIPTION SAMPLE % OF CASING 310 Sandstone: Friable with silt and 310.4 34 104 clay; red with some gypsus 54% grains and sandstone ireguents 130 313.0 Lost Core Sandstone: Friable; with milt and 315.2 clay; reddish brown R-B 35 33% 15.8 315. 8 Lost Core Claystone: Reddish brown with bluish 318.5 green mottle and disseminated R-B gypsus grains 18.5 36 100% Claystone: Red with gypsum fragments 321.0 320 221.9 Claystone: Bluish green with gypsus 21.0-37 56% B⊦G iregnents 21.9 225 Lost Core 322.5 38 15% 325 - 25.5 Claystone: Reddish brown with bluish 325.5 R-B 39 100% green mottle and dissimenated gypeum iragments • 328.5, 329.0: gypeum graine • 326.5, 330.0, 331.8, 332.5, 333.6: gypsum voimlets 40 330 -334.0 Claystone: Bluish green 41 Claystone: Reddish brown with 334.2 disseminated gypsum fragments 0 334.6, 335.1, 325.5: gypaum grains 37.7 337.7 Last Care 340 Claystone: Reddish brown with R-B 42.1-342. 1 discominated gypsum fragments # 342.1-342.4 gypsum grains 42 14% 43.7 343.7 Lost Core 345-

	PROJECT NO. 318710	TE	C. 1.	. BORING	G LOG PAGE_IO_OF_II_	
•	CASING	DEPTH OSC/USGS SYMBOL	SAMPLE NO.	COLOR	DESCRIPTION	
		7 1/ \		353.0	Gypsum: Layered	-
		53.0	43 30%	353.3	Sendstone: Very fine-grained; friable; clayey; reddish brown with some gypsum fragments	
-		3557		354.7	Lost Core	
		59.0 -360 - s	44 0%	359.0	Sandstone: Very fine-grained; silty; some disseminated gypsum fragments # 361.0: gypsum veinlet	
•		- 365 - s	R	368. 4 2-B 369. 3	Lost Core Sendstone: Very fine-grained; come	
		- 370 - "	45 00%	· -	small scale cross bedding; reddish brown with some gypsum fragments	
		791 79.5	──R	4	Claystone: Reddish brown	
		- 385 - 385	46	379.5	Sandstone and claystone: Red with some gypsum and some halite Grystals	
		390		387.7	Lost Care	

 PROJECT	NO	3187108			TB-14		KING	PAGE II OF II
CA	SIN	G	DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COL		DESCRIPTION
			94.7 - 395 - - 400 - - 405 -		45 100% 49 100%	R-B	390. 0 391. 1 394. 7 401. 3	Sandstone and claystone: Red with hluish green mottle, some gypsum and some halite crystals Claystone: Reddish brown with few hlue green mottles 0 392.8-393.4 (vertical): open fracture Claystone: Sandy; silty; reddish brown with some gypsum fragments Lost Core Claystone: Sandy; silty; reddish brown with blue mottles 0 403.6-403.4: vertical fracture 0 411.7, 418.0: leyered gypsum grains
			-410 -	DEPTH	51 300%		418.1	Total Depth

	-	S. P.	C. I.	BOR:	NS LOS
PROJECT. NO.: 3187	7108				
	100			בֿבּת	E STARTED: 5/13 DATE DO D : 5/21
BORING NO.: TE-15	0007	כדבאה	R/DR	ILLER	: BOYLES BROTHERS
DORING LODGIES.	9314.21	E- 140	20.5	N	LOGGER: P.B.
DRILLING METHOD(
INITIAL		STATIC			OTHER
WATER LEVEL		EVEL:	3.22	6/2/8	LEVELS: 5 @ 14 Hrs.
SURFACE ELEV.:137	<u> 1.8' BORI</u>	NG SI	ZE: 4	BOF	ING DEPTH:1750'CASING ELEV.: N/A
WEATHER CONDITIO	KE: CLEA	AR TO	PART	LY CL	Yauc
202711 2555	. / 4		-		
CABING DETAILS: N	1/A.				·
REMARKS: TRACER S	STUDY	-	,	_	
RACER S	31001				
· · · · · · · · · · · · · · · · · · ·					
	T		Γ.		
	 	GS L	SAMPLE NO. % OF REC.	~	
	DEPTH	USC/USGS SYMBOL		OLOR	
CASING		₹ ₹	12.	ן ב	DESCRIPTION
П	-	SY SY	20	ပ	
		>	28		•
	╆╺╅				0.0-11.5 Surface Casing (not logged)
	1		İ		••
	†				
11 11	+ -				
	+ -				
1111	- 5 -			•	•
1111	L]				
111					·
					11.5 Claystone: Silty; reddish brown with
	Γ 7				some green mottle
	Γ _ 1			:	<pre># 11.5: gypsum nodule (40 mm diameter)</pre>
	$\vdash \circ \dashv$				@ 12.2-12.4: gypsum nodule
f1 1 1	┝╶┈┋┪				in green mottle 0 12.4: gypsum veinlet
	├ ""-		94%	R-B	
	├ - ₹		3 T 70		
	14.1-			G/B	15.0 Claystone: Green
	- 15		h l	G	17.4 Claystone: Reddish brown with some
			\	J	green mottle
	Γ 1		7		6 18.3: gypsum veinlet (4 mm)
	17.4		7	R-B	18.5 Claystone: Green with disseminated
	18.5		1	6	gypsum grains and small gypsum nodules
	F 19.0 →		1	R-B	0 18.6-19.0 (vertical): gypsum
	205		100%	K-8	Veinlet
	├		100%		19.0 Lost Core
	<u></u> }∃				19.5 Claystone: Redainh brown
	L]:	מממתה	100%		<pre>19.2, 20.1, 20.2, 20.0- 20.3 (vertical), 22.0-22.5,</pre>
	Γ 1	<i>مجريديد</i>	10070		23.5-23.6, 25.0, 27.0, 27.8-
	├				27.9, 28.8, 29.0, 29.8, 30.0,
	- 25 -		100%		30.2, 31.8, 32.0-32.5 network of vertical and
	<u> </u>		.~~%		horizontal veinlets): gypsum
	l 1:				veinlets 6 27.3: layered gypsum
			}	1	. grains
					grains 6 29.7-30.3: disseminated Gypsus grains

	•	_				INUED		
-	PROJECT NO. 3187108	3	·	<u> </u>			PAGE 2 OF 7	
	CASING	у рертн	USC/USGS SYMBOL	SAMPLE'NO. % OF REC.	COLOR		DESCRIPTION	·
		32.5	11/13/20 11/14/16/6 11/14/16/6 11/16/16/6	100%	R-B	32.5	Claystone: Reddish brown with some green mottle and some disseminated gypsum grains 6 32.55, 33.4, 33.6-33.7, 34.6, 35.3: gypsum veinlets	
		- •	-2000			35.6	Claystone: Reddish brown	
		35.6 35.6 35.8	TOTALE.		R-B G	35. 8	Claystone: Green with brown mottle 8 36.2: gypsum veinlet	
		36.3	awaa	83%	R-B	36. 3	Claystone: Reddish brown e 36.5-35.6, 36.7-37.1, 37.3: gypsum veinlets	
		- 39.0- 39.5-	- Jaidan	2 B 100%	R-B	39.0	Lost Core	
		405	BHH		R-B	39.5	Claystone: Reddish brown 8 39.7, 39.9-40.0: gypsum veinlets	
		44.0	700,000	4		40.0	Claystone: Brown and green	
		44.0 44.3- 44.9- 45.5- 45.9- 46.1-	e za	9 100%	6	40.5	Claystone: Reddish brown 0 41.3-41.4, 42.3, 42.5: gypsus veinlets 0 40.1-40.6: disseminated gypsum grains	
		46.5 46.8	שממים	4 10	R-B	44.0	Claystone: Green	
		47.8 47.9	- yara	100%	R-B	44.3	Claystone: Reddish brown 8 44.8: gypsum veinlet	
		- 50 -	-			44.9	Claystone: Green 0 45.2: gypsum grains	
		┝ ・	1			45.5	Claystone: Reddish brown	
			1			45.9	Claystone: Green with some disseminated gypsum grains	
		-	-		1	46.1	Claystone: Brown with green mottle	
						46.5	Claystone: Green e 46.5-46.6: disseminated gypsum grains	
		L.				46.8	Claystone: Reddish brown	
		-	1 1			47.8	Claystone: Reddish brown with green mottle	
		- -				47.9	Claystone: Reddish brown e 48.3-48.8: some silt e 47.7, 49.2 (4 mm), 50.3 (10 mm), 50.9: gypsum veinlets	
		F -						
]					
		F	-					

	PROJECT NO	0. 31 87108				CONT	INUED	LOG PAGE 3 OF 7
•	CASII		G DEPTH	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
			53.4 53.5	ANKA ANALA ANAMA TOOTO TANAL	13 100% \$	G R-B R-B	53. 4 53. 5 54. 0 57. 6 57. 9 59. 5 62. 0	Claystone: Green

TB-15 CONTINUED PROJECT NO. 3187108 PAGE OF 7 4 SAMPLE NO % OF REC. SYMBOL DEPTH usc/use COLOR CASING DESCRIPTION 75 70000 75.9-TATATA YARTAN TATATA TATATA 75.0 G R-B Claystone: Reddish brown 75.9 76.4 76.9 77.2 77.3 77.4 77.8 78.0 @ 75.1 (10 mm): gypsum G R-B veinlet @ 75.2: gypsum nodule - 100 mg 100% - 100 mg 100% 75. 9 Claystone: Green e 75.4, 75.5, 75.6, 75.7-75.8, 75.9, 76.0, 76.2, 76.4 (8 mm), 76.4-77.0 (8 mm): gypsum Wang Separa 80 -78.5 79.1 37,000.0 veinlets G R-B 807 <u>ē</u>09 76.4 Claystone: Reddish brown with green 81.3 81.4 84.0 84.2 mottle 17 R-B R-B 76.9 Claystone: Green @ 77.0, 77.1: gypsum veinlets 84.5 84.6 R-B 77.2 Claystone: Reddish brown 77.3 Claystons: Brown and green Claystone: Reddish brown 77.4 • 77.4, 77.5: gypsum veinlets • 77.2, 77.3: gypsum nodules 77.8 Lost Care Claystone: Reddish brown • 78.3, 78.4-78.5: gypsus 78.0 veiniete 78.5 Claystone: Green with some disseminated gypsus grains ₹ 78.9 (10 mm): gypsum veinlet 79.1 Claystone: Reddish brown @ 79.4 (8 mm), 80.0, 80.6 (10 mm): gypsum veinlets 80.7 Claystone: Green 80.9 Claystone: Reddish brown # 81.0, 81.3: gypsum veinlets 81.3 Claystone: Green 81.4 Claystone: Reddish brown @ 82.5: gypsum veimlet • 82.6-82.8: layered gypeum grains 84.0 Claystone: Silty; reddish brown with green mottle 84.2 Claystone: Reddish brown 84.5 Siltstone: Clayey and sandy (very fine-grained); soft; iriable; green 84.6 Claystone: Silty and sandy; reddish PLOAD

	<u>_</u>				DRING	<u>LOG</u>
PROJECT NO. 3187108	3	TE	B - 15 	CONT	TINUED	PAGE_5 OF_7_
CASING	 © ОЕРТН 	SAMBOL SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION
	85.5 85.8 86.0	la aran arana		R-B G R-B	85.5	Claystone: Silty interbeds at irregular intervals; reddish brown with green mottle
	- 88.9-	rundan	5	R-B	85. B	Claystone: Green with brown mottle 8 86.0: gypsum module
	- 90 - 		18 100%		86.0	Claystone: Reddish brown @ 86.3, 86.4, 87.0-87.7, &8.4: gypsum veinlets @ 87.0, 87.2-87.4, 87.7: green interbeds
	93.5- 94.2- - 95	noord gggno anaa		R-B R-B R-B	88.9	Claystone: Reddish brown 6 90.3, 90.8, 91.4, 91.9, 92.4, 93.0 (10 mm): gypsum veinlets 6 90.8, 91.7, 91.9: gypsum
	-	7,0,0,1	100%		·	nodules 9 91.7-91.9: green interbed
	- 100 -	1000000 100000 100000 100000 100000			93.5	Claystone: Silty with trace of very fine-grained sand; reddish brown 0 93.6: gypsum nodule
			20		94.2	Claystone: Reddish brown
	- 110 -	3100000 31000000 310000000 31000000 3100000 3100000 3100000 3100000 3100000	21		95. 0	Claystone: Reddish brown @ 95.8 (20 mm), 96.3, 97.8, 98.0, 98.8, 99.4-99.8, 100.0, 100.1-100.3, 100.3, 103.4, 103.5-104.2 (approx. 20 mm veinlet interbed), 104.5, 105.1, 105.4, 105.8, 106.0, 106.2, 106.4 106.6, 106.7- 106.8, 107.0, 107.1, 107.5, 107.9, 108.0, 108.1, 108.3, 108.5-108.6, 108.8, 108.9, 109.0, 109.1, 109.2, 110.6, 110.7, 110.9 (10 mm), 111.6, 113.2, 113.9, 115.3, 115.8
	- 115 -	1011000 101000 101000 101000 101000	22 79%		·	(10 mm), 115.9, 116.0, 117.0 117.0-117.6, 117.6, 118.5, 118.6, 119.0 (8 mm), 119.3: gypsum veinlets e 101.8-101.9: green interbed
		TOTAL TOTAL TOTAL TOTAL TOTAL			120.0	Lost Care
	- 120-	X			122.0	Cleystone: Reddish brown with some green mottle 0 122.5: gypsum veinlet
	22.0 22.5 -	ras r		R-B R-B	122.5	Claystone: Very sandy (very fine- grained); reddish brown e 122.6, 123.2-123.3 (8-15 mm), 123.5: gypsum veinlets

U. S. P. C. I. BORING LOG PAGE 6 OF 7 PROJECT NO. 3187108 ال <u>۱</u> ان <u>0</u> usc/uses DEPTH SYMBOL S. $\overline{\mathbf{z}}$ ш DESCRIPTION SAMPLE % OF COL CASING 125 R-B G 125.6 Claystone: Reddish brown 126.0 Lost Core 129.0 Claystone: Reddish brown with gypsum nodules 29.0 R-R 24 20% Claystone: Very sandy (very fine-29.6. R-B 129.6 130 grained); reddish brown 130.0 Lost Core Claystone: Very sandy (very fine-134.0 grained); reddish brown with some green mottle R-B 34 D 25 Sandstone: Very fine-grained; 136.5 38% 135 clayey; soft; friable; reddish brown R-B R-B 137.5 Claystone: Reddish brown @ 137.7: layered gypsum 37.8 nadules 137.8 Lost Core 140 Claystone: Reddish brown 144.0 @ 145.1 (10 mm): gypeum veinlet @ 144.4-144.6: layered gypsum nodules 44.0 ⁻ 44.6 ₋ 44.8 ₋ R-B Claystone: Silty; gypsiferous; 144.6 26 50% green G R-B 45 **3** -47.707 Claystone: Reddish brown 144.8 45.5 Ř-B 45.8 Claystone: Sandy (very fine-R-B 145.5 46.1 R-B R-B grained); green 47.5 4 Sandstone: Very fine-grained; R-B 48.1 145.8 clayey; reddish brown 490 150 Claystone: Reddish brown 146.1 e 146.3, 146.8: gypsus veinlets Sandstone: Very fine-grained; 147.0 clayey; reddieh brown - TE R-B 54.0 27 100% 147.5 Claystone: Reddish brown 55 Claystone: Silty and sandy (very 148.1 fine-grained; reddish brown Lost Core 149.0 Claystone: Silty and sandy (very 154.0 fine-grained); reddish brown 8 155.3, 155.8-155.9, 156.1, 157.3-157.4, 158.1 (8-10 mm). 158.3-158.4 (8 mm), 158.6-158.9 (10 mm), 159.7: gypsum veinlets @ 157.9: gypsum nodule

ŧ	PROJECT N	10. <u>3187108</u>				CONT	NUED	PAGÉ 7 OF 7	
	CASI	ING	п ОЕРТН	USC/USGS SYMBOL	SAMPLE NO. % OF REC.	COLOR		DESCRIPTION	
			63.0 66.5 66.5 69.0 69.3 170 71.6 71.6 71.6 71.6 71.7 72.3 73.2	unional canional nominal monito monito control	28 100% 29 100% 30, 44%		160.0 163.0 166.5 169.0 169.3 169.9 170.8 171.6 171.7 172.3 172.5	Claystone: Silty and sandy (very fine-grained); reddish brown with some green mottle e 160.1, 160.3-160.4: gypsum nodules Sandstone: Clayey; reddish brown with some green mottle e 165.6 (8 mm): gypsum weinlet Lost Core Claystone: Some silt and very fine- grained sand; reddish brown Claystone: Silty with some very fine-grained sand; green with some brown mottle Claystone: Some silt and very fine- grained sand; reddish brown e 170.5 (6mm): gypsum veinlet e 170.0: gypsum nodule Lost Core Claystone: Reddish brown Claystone: Some silt and very fine- grained sand; reddish brown e 171.7-171.8 (20 mm): gypsum veinlets Lost Core Claystone: Reddish brown e 172.6, 172.7, 172.8-173.0 (vertical), 172.1: gypsum veinlets Lost Core Total Depth	

USPCI

35-

IOB NUMBER: 98321-09-93

LOG

BORING NO.

WELL NO. 2A REPLACEMENT LAIDLAW ENVIRONMENTAL Page 1 of 1 JOB NO.: 98321-09-93 CLIENT: USPCI LONE MOUNTAIN PROJECT: CELL 5 INTERIM MEASURE LOCATION: WAYNOKA, OKLAHOMA DRILLER: WAYNE CALDWELL METHOD: AIR ROTARY DRILLED BY: A.W. POOL . . START DATE: 3-18-95 COMP. DATE: 3-20-95 SURFACE ELEVATION: FEET TOTAL DEPTH: 32.0 FEET BGS LOGGED BY: SHAWN LEPPERT GRAPHIC LOG GW SAMPLES/ WELL DIAGRAM DPT DESCRIPTION USCS CODE ISOLATED INTERV. 0.0' to 3.0' Red claystone; wet, minor gypsum to 2 CL Damo from 2' to 3" GP Gypsum from 3' to 3.5', dry CL 3.5' to 4.0' CL Red claystone 4.0' to 8.0' Green daystone; dry 6.0' to 20.0' Red claystone; dry, minor green claystone to 8' Damp from 8' to 12' 10-Minor gypsum from 10' to 12' Dry CL 20-20.0' to 21.0' CL Green daystone 21.0' to 32.0' Red claystone; very broken to 27° Large gypsum veins from 23' to 27' CL 30-Green daystone at 32' Total Depth = 32.0 Feet BGS

CONTRACTOR	LING DEV IOD (S	COF COF FEL COF	PME	O (S NT- ONS	DATE PUF	GED Ba	-91 iler	Sur	tinuing) ge/none lligh , fluid level not static (10/30/91); developme	TOTAL DEPTH 56.65	
DEPTH (ft)	SAMPLE TYPE/ RECOVERYX	ANALYTICAL SAMPLE	BLUM COUNTS/6in	PID SAMPLE		DSPACE READING 120 PROFILE 150 PROFILE	LITHOLOGIC COLUMN	V.S.C.S.	DESCRIPTION	TOP OF PROTECTIVE STEEL CASING CONCRETE PAD 3	DEPTH (FEIBLS
8 8 8 8 6 E					1.1			d.	Fir MATERIAL SILTY CLAY, readish brown SYR 4/4, very slightly moist at 38° to 41	GROUT CEMENT	5 10 11 2 3
50	dc 100				1.2		グラスの	88, 88	CLAYEY SILTSTONE, olive gray 5Y 4/2. SILTY CLAYSTONE, reddish brown 2.5YR 4/4, gypsum lenses present from 48.6 to 49 green clay mottled throughout, dry	not 2° ETFE, SUREEN	7
55	dc 100				1.ë			8 BBB	CLAYEY SILTSTONE. olive gray 5Y 4/2, friable. dry EILTY CLAYSTONE. reddish brown 5YR 4/4, dry CLAYEY SILTSTONE. plive gray 5Y 4/2, very slightly moist SILTY CLAYSTONE. reddish brown 5YR 4/4, green clay mottled throughout, dry T.D. =56.65 FEET	55.0 - 56.65	

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		En	OTEV	nae	nta.	Servi	es P	ROJ	ECT NO. 00178 01 GEOLOGIST B. Ne	wlin		WELL NO. 17-4	4
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APPENDIX 3.3

LITHOLOGICAL ANALYSIS





Dear Valued Customer:

Enclosed is a copy of your analytical data report.

National Analytical Laboratories is proud to submit this data to you. Our laboratory conducts testing using state-of-the-art instrumentation with standardized E.P.A. or other recognized methods. The data in the report you are receiving has been validated using a well documented suality assurance program. Each test is conducted under a standardized method format with a set of quality control checks. These checks include a three-point calibration standard using authentic reference materials, a method blank to validate background and a method control spike to validate accuracy. One in ten samples are run in duplicate to validate precision of the method. Detection limits for all methods have been determined statistically and reflect a value at which the method can no longer generate accurate quantifiable data.

If you have any concerns about the date or need help interpreting the report, please call me at (918) 446-1162.

Respectfully submitted for National Analytical Laboratories

Bonnie D. Oglesby Laboratory Manager

BDO/cdr

Enclosure: Report



BUUG KENT

USPCI - CONE MOUNTAIN ROUTE I BOX 100A

Merricks OK 25660

EFURT NUMBER: HOSSOZ4

AMPRE IDENTIFICATION: 2002-01

GOTOMER IDENTIFICATION: TB1 201.5-203.1

TYF SAMPLED:

YER OF DATERIAL: SOIL

DATE RUCEIVED: 8/14/87 GATE COMPLETED: 8/31/87

· 中国全国民政策	REFALCOLEGI	PETLIMIT	PESUL!
FUSTAUM (T)	6010	6 MG/KG	20160 MG/KG
RTINGRY (T)	601 0	6 MG/KG	BOL MEZKO
RSENIC (T)	704 0	2.0 MG/KG	4.9 MG/KG
ARIUM (T)	6010	i MG/KG	130 M6/K6
CRYLLIUM (T)	6010	i MG/KG	BDL MG/KG
GUMIUM (T)	7431	0.5 MG/KG	BOL MGZKG
ALCIUM (T)	301 0	i MSZKO	10200 MOZKG
JROGIOM (T)	<u> 6</u> 010	1 MG/KG	24 H6/K0
BEALT (T)	E010	2 MGZKC	11 MG/KG
	6010	2 MG/KG	17 MG/kG
	6010	2 MGZKG	20800 MS/KO
CAO (T)	74 21	2.0 mG/KG	6.2 867KG
GENESIUM (T)	۵010	i MGZKG	12800 MG/KG
SMORNESE (T)	6010	1 89789	150 MG/KG
ROURY (1)	7074	0.01 MGZKG	0.17 MG/KO
HLYSOENUM (T)	&010 ·	10 MG/KG	BOL MOZKO
(CKEL (T)	6010	2 MG/KG	28 MG/KG
oMilum (Y)	601 0	10 mG/KG	50L MG/KG
MASSIUM (T)	4010	100 MG/KG	9000 MG/KG
ELENIUM (T)	7740	2.0 MG/KG	SOL MOZRO
LVER (T)	3010	2 MG/KG	BDL MG/KG
Bulbe (T)	6010	10 MG/KG	9000 MG/KS
owilium (T)	<u> 6010</u>	10 MGZKG	BOL MOZKO
amadium (T)	8010	1 MG/KG	35 MO/KO
(MS (T)	6010	1 MS/KG	52 MG/KG
.6081 0E	300.0	10 MG/KG	40 MG/KG
HLOREGE.	300.0	10 MG/KG	7700 MG/KG
LORLYE	300.0	100 MG/KG	BOL MOZKO
() () () () () () () () () ()	300.0	10 MS/KG	BOL MG/KG
TERATE	300.0	10 MG/RG	BOL MG/KG
(OSPHATE	300.0	10 MG/KG	BDL MG/KG
JI. FATE	300.0	10 MG/KG	18600 MG/KG



SLOW DETECTION LIMIT



POJES KENT

USPOT - LONE MOUNTAIR

ROUTE 2 BOX 180A

DAYNORA OK 75860

PAGE 2 -

HMPLE IDENTIFICATION: 2052-02

USTOMER IDENTIFICATION: TB: 254.5-256.0 E GATE COMPLETED: S/31/87

ATE SAMPLED:

YPE OF MATERIAL (BOIL

THORT KUMBER: HOSSOZA

SATE RECEIVED: 8/14/8/

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LUMINUK (T)	6010		MOZKU	26200	
PTIMONY (1)	8010		h6/xS		FBZK6
RSENIO (T)	7030		MOZKO		MOZKO
ARIDA (T)	8010		m⊕ZkG		807KG
ERYLLIUM (T)	6010	-0 -1	MOZKG		MOZKO
ADMIUM (T)	7131	0,5	HGZKS		403/865
ALCIUM (T)	601 0	1	MOZKG		MOZKG
MROMIUM (T)	8010	7. -:	M07K9		mBZKG:
UBALT (T)	<u> </u>	,2	MSZKO		MGZKO
(1)	6010	2	MG/KG		MOZKO
KOR (T)	6010	2	MSZKG	37200	M9/K0
CAD (T)	7421	2.0	NGZKO		M6780
MONESIUM (T)	4010	ü	MSZKO	20800	MOZKO
ANGARESE (T)	8010	i	maz K5		MGZKG
ERCURY (7)	7074	0.01	MGZKG	0.13	MG/KG
DLYBOENUM (T)	4010		#1978.9	8 OL	767 KB
ICKEL (T)	6010	2	MGZKO	29	MGZKG
Smith (T)	8010	1.0	HOZKS	80L	MOZKO
onion (/)	2010	100	MOZKO	9900	MGZKG
	• 7740		HEZKO	804	MGZKG
ELENIUM (T) ILVER (T)	6010	2	иоико	BDL	MOZKO
COTUM (T)	6010	10	HGZKO	9700	1467 K G
HALLIUM (T)	3010	iC	MOZKG	BDL	MGZKO
MHAGIUM (T)	8010	i .	MG/KG	28	m67866
inc (1)	8010	*; ak	MG/KG	40	MGZKG
4.000 33.06	300.0		riG/KG		HIGZ KG
HLORIDE	300.0	į i O	MOZKO		MGZKG
ITRIVE	300.0	100	MGZKO		MGZKG
ROMICE	300.0	i ()	MG/KG		MGZKG
HITRATE	300.0	1.0	hGZK6		MGZKG
MOSPHATE	300.0	10	MG/KG	BDL	MGZKG
-ULFATE	300.0	10	ri67KG	18800	MGZKG



ESLOW DETECTION LIMIT



COUG KENT

USPCI - LONE MOUNTAIN

ROUTE 2 BOX 180A

NAYNOKA OK ZS860

TPORT NUMBER: HOSEOZA

FAGE 3 -

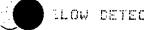
MALE IDENTIFICATION, 2007-02 USTUMER IDENTIFICATION: TEX 315.0-316.5 E DATE COMPLETED: 6/51/6/

GATE RECEIVES: 8/14/87

ATE SAMPLED:

TPE OF HOTERIAL SOIL

ARAGEICR	REFMETHOD	geti.ibi			ULY.
.DAIAUK (T)	6010	á MO	ZKO	24300	NGZKO
TERMONY (T)	6010	ბ რმ	ZK5	354	$P(Q \wedge \mathcal{R}(1))$
REMIC (T)	2030	2.0 NG	7KG	3.4	MOZKG
ARIUM (T)	6010	1 HG	/KG	27	NGZ KG
DRYLLIUM (T)	6010	i MG	ZKG	BD1.	MOZKG
nömile (T)	713J	0.5 MG	7 KG	804.	m0/46
ACTUM (I)	8010	i MO	ZKG	31300	H6/E0
KUMIUM (T)	6010	1 770	7X6		1167 6 15
)BALY (T)	4040	2 83	ZKG	2.0	M6ZK6
(7)	6010	2 MG	7 K G		1467 (3)
(a) (1)	6010	2 MS			MOUNG
(Aŭ (T)	7421	2.0 MG	ZKG		mbz Kiá
ONESIUM (T)	4010	1 MG	Z80		Mts AG
mgarese (T) /	6010	1 86	ZKG		$m57 \times 6$
IRCURY (T)	7074	0.01 MG	ZKG		MOZKO
ALYBOENUM (T)	6010	10 MG.	ZKO		riGzer
CYCL (T)	6010	2 MG.	ZKG	30	MGZKG
Hillm (T)	6010	i 0 - m5.	ZKG		höz Kö
MASSIUM (T)	6010	100 MS.	ZKG		807k5
TENIUM (T)	7740	2.0 HG.	ZKG		(1) (1) (1) (1)
LVSR (T)	6010	2 HS.	ZKG		Herke
FDIUM (T)	6010	10 MG.	ZKG		P 6 / P. 5
(ALLIUM (T)	6040	10 MG.	ZKG		M0/80
NADIUM (T)	6010	i no.	/kō		M5ZkG
MC (T)	6010	i MG.	ZKO		MOZKG
50810E	300.0	10 mg.	ZkG	4 0	ரூந்தல் ந
MORIGE	300.0	10 MG,	ZKG	15000	
TRITE	300.0	100 MG,	/KG		mūzkū
OMICDE	300.0	10 MG/	ZKG		MGZKG
FRATE	300.0	10 MG.			m6/K6
OSPHATE	300.0	10 MG/			MG/K5
LFATE	300.0	10 86		3 9000	



LLOW DETECTION LEMIT

A Division of



DOUG KENT

USPCI - LONE HOUNTAIN ROUTE 2 BOX 180A

WAYNORA OK 738e0

EFORT NUMBER: H035024

FAGE 4

AMPLE IDENTIFICATION: 2082-04

USIOMER IDENTIFICATION: T82 185.6-186.9 E DATE COMPLETED: 8/31/87

ATE SAMPLED:

TPE OF HATERIAL: SUIL

BATE RECEIVED: 8/14/8/

ARAMETER .	AREL ME COUQ	DELLLI	HILL	2 13)	ULT.
LUMINUM (T)	3010		MS/KG		MGZKG
NTIMONY (I)	6010		HGZkG ′		m67.k6
RSENIC (T)	7040		MOZKO	6.9	MGZKG
ARIUM (T)	6010		MGZKG	13	M67.K6
ERYLLIUM (T)	6010		MGZKG		MGZKG
ADMIUM (T)	<i>7</i> 131		HGZKO		ri6/Kö
ALCIUM (T)	6010	ï	MGZKG	5500	MG/KG
HROMIUM (T)	6010	ï	MGZRG	35	r:67KG
05 <u>44</u> T (T)	6010	2	MGZKG	j 4	MGZKG
(T)	5010	2	MGZKG	iO	mG/KG
R_3 (T)	6010	2	MOZKG	38100	MGZKG
SAO (T)	7421	2.0	MGZKG	7.9	M6ZK6
AGNEBIUM (T)	6010	i	MOZKO	24400	MG/KG
ANGANESE (T)	6010	i.	MGZKG	340	FGZKG
ERCURY (T)	7074		MG/kG	0.10	MGZKO
GLY8DENUM (T)	6010	10	MGZKG	SOL	mGZKG
ECKEL (T)	6010	2	MGZKG		MG/KG
SHIUM (T)	6010		MGZKG		MGZKG
OTASSIUM (T)	6010		MGZKG		MGZKG
ELENIUM (T)	7740		MOZEG		ri@/KG
ILVER (T)	6010		MOZKG		MGZKG
DOIUM (T)	6010		MGZKG		MG/KG
HALLIUM (T)	6010		MSZKG		MG/KG
ANADIUM (T)	6010		MG/KG		MGZKO
ING (T)	6010		MGZKG		MG/KG
JUORISE	300.0	10	riG/KG	20	MG/KG
HLORIDE	300.0	10	MOZKG		MGZKG
ITRITE	300.0		MGZKG		MGZKG
KOMIDE	300.0		MGZKG		MG/KG
ITRATE	300.0		MS/K3		MG/KG
IOSPHATE	300.0		MGZKG		MG/KG
J.FATE	300.0		MG/KG		MGZKG



LELOW DETECTION LIMIT



DOUG KENT

USPCI - LONE MOUNTAIN

ROUTE 2 BOX 180A

WAYNOKA OK 73860

EPORT NUMBER: H035024

PAGE 5

AMPLE IDENTIFICATION: 2002-05

USIGMER IDENTIFICATION: TB2 162.5-163.8 SATE COMPLETED: 8/31/87

BATE RECEIVED: 8/14/87

ATE SAMPLED:

YPE OF MATERIAL SOIL

ARAHEIER	REF. DETEND	DENLLIMIT	BIS	WL L
		·		
LUMINUM (T)	6010	6 MG/1	(G 40400	MOZKO
NTIMORY (T)	6010	6 MG/3		mazko
RSENIC (T)	7040	2.0 MG/4		MOZKG
ARIUM (T)	6010	1 MG/1		rii07.Ki5
ERYLLIUM (T)	6010	1 MG/!		MGZKG
ADMIUM (T)	7131	0.5 MG/K	G BOL	MBZKG
ALCIUM (T)	S010	i MG/I	(6 14300	MGZKO
AROMIUM (T)	8010	1 MGZ!	(6 39	H6/K6
08 <u>4L</u> T (T)	6010	2 MG/I	(G 14	MGZKG
\mathbb{C}	6010	2 MG/N	(6 5	MGZKG
Kerr (T)	6010	2 MG/H	6 35100	MGZKG
EAD (T)	7421	2,0 MG/1	(G 7.6	MBZKB
AGNESIUM (T)	6010	1 MG/H	(G 28100	MSZKG
ANGANESE (T)	6010	1 MG/1	6 400	80786
ERCURY (T)	7074	0.01-MG/F	0.13	MG/KG
OLYBGENUM (T)	6010	10 MG/R		MGZKG
ICKEL (T)	6010	2 MG/H	(6 31	MOZKO
antum (T)	6010	10 MG/N	.G 85L	BSZKG
OTASSIUM (Y)	8010	100 MG/F	(G 15800	MG/KG
ELGNIUM (T)	7740	2.0 MG/F		$602 \mathrm{KG}$
ILVES (T)	~~ <u>6</u> 010	2 MG/F		MGZKG
ODIUM (T)	6010	10 MG/)		MGZKG
HALLIUM (T)	<i>60</i> 10	10 M9/N		MGZKG
SMACTUM (T)	6010	1 MG/#		riGZKG
TNO (T)	6010	i MS/A	G 77	MGZKG
LUORIOE	300.0	10 MG/A	G 30	MGZKG
HLORIDE	300.0	10 MG/F		MG/KG
ITRITE	300.0	100 MG/A		riGz KO
ROSIDE	300.0	10 MS/M		NOZKO
ITRATE	300.0	10 MG/k		MG/KG
HOSTMATE	300.0	10 MS/N		MG/KG
JEFATE	300.0	10 MG/k		mozko mozko



ELOW DETECTION LIMIT



DOUG KENT

USFCI - LONE MOUNTAIN

ROUTE 2 BOX 190A

WATNOKA DK 73850

GEECRY NUMBER: HOSSOZA

FAGE 6

MANPLE ICENTIFICATION: 2082-06

JUSTOMER IDENTIFICATION: TB2 271.8-273.2 E DATE COMPLETED: 8/3:/37

DATE RECEIVED: 3/14/87

MATE SAMPLED:

TYPE OF MATERIAL (SOIL

MARAMATER	REF. METHOD	SETALLIGIT	White it
ALUMINUM (T) ENTIMONT (T)	6010 6010	€ MG/KG 6 MG/KG	23000 MOZK a 800 MOZK a
RSENIC (T)	7060	2.0 MG/KG	16.0 NO/KO
:ARIUM (T)	6010	1 265766	8 MGZRG
PERYLLIUM (T)	6010	i MOZKG	BUL MOZKO
ADMIUM (T)	7131	0.5 MG/K O	SOL MOYKS
TALCIUM (T)	6010	1 MO/KO	Sizor Mozko
MROMIUM (T)	6010	i mūzko	22 (90) 3
00417 (1)	6010	2 MG/KG	12 50 KG
(T)	6010	2 M97KG	学 - 程度之代码
K. T.	6010 -	2 MOZKG	BOSCC MORKS
2A0 (Y)	7421	2.0 MG/KG	9.3 <u>80.20</u>
AGNESIUM (T)	4010	i MG/KO	20900 NO 186
ANGAMESE (T)	6010	1 hG/KG	280 000086
ERCURY (T)	7074	0.01 MG/KO	0.14 NG/KS
OLYBOENUM (T)	6010	10 MG/KG	Bibl. miczsie
ICKEL (Y)	6010	2 MGZKG	55 NO. 55
SMIDM (T)	6010	10 MG/kG	គឺម៉ា. កូច ១ភ
OTASSIUM (;)	6010	100 MG/KG	7800 MO. K.
ELENIUM (T)	7740	2.0 MG/KG	801 no ra
ILVER (T)	6010	2 MG/KG	502 80, 8 .
0015H (T)	6910	10 rigzkō	8400 PEZ 1
MALLIUM (T)	6010	10 MG/KO	BDL NG. KG
PRACIUM (T)	6010	1 MGZKG	25 (65/34)
ing (T)	401 0	i MSZKO	Se Mozko
LUGRIGE	300.0	10 MG/KG	40 Mb/kg
MORIDE	300.0	io MGZKG	7800 MG/KG
ITRITE	300.0	100 MGZKG	80L 86786
ROMIDE	300.0	10 MG/KG	BOL MG/KO
TRATE	300.0	io Mezko	BOL MOVED
POSPHATE	300.0	io mozko	BDL MG/KG
SLFATE	300.0	10 HGZKG	18000 HG/KG
		and an order of the control of the c	*0000 100 VO



TLOW DETECTION LIMIT



BOUG KENT

USPCI - LONE HOUNTMIN

ROUTE 2 SCX 180A

WAYNOKA OK 23860

EPORT NUMBER: H035024

PAGE

AMPLE IDENTIFICATION: 2082-07

DATE RECEIVED: 8/14/87

USTOMER IDENTIFICATION: TSS 47.5-49.2

DATE COMPLETED: 8/81/87

ATE SAMPLED:

YPE OF MATERIAL: SOIL

ARAMETER	GEELL METHOD	DETLIMI	. 新語名	ULT.
LUMINUM (T)	6010	6 MO/	TKG 26700	MOZKG
MILHONY (T)	4010 ·	ច់ ជាមិន	KG BDL	₩GZKG
RSENIC (T)	7040	2.0 MG/	ΥKO 45.8	MOZKO
ARIUM (T)	6010	1 MG/	KG 19	MGZKG
ERYLLIUM (T)	6010	i mGz	KG BDL	MGZKG
ADMIUM (T)	7131	0.5 66/	KG 99L	MGZKG
ALCIUM (T)	6010	i M9/	'k0 22300	MG/KO
HROMIUM (T)	6010	i riG/	KG 36	MGZRG
08 <u>41</u> 1 (T)	<u> </u>	2 MO/	KG 17	MGZKG
(T)	4010	2 MG/	KG 40	PGZKG
Range (T)	8010	2 MG/	KG 18000	MOZKG
TAO (Y)	742i	2.0 MG/	KG 58.9	MGZKG
AGNESIUM (T)	6 010	1 MO7	K8 22400	MGZKG
ANGANESE (T)	6010	1 MG/	KG 390	MGZKG
ERCURY (T)	7074	0.01 MOZ		MGZKG
DLY80ENUM (T)	6010	10 HG/		MGZKG
ICKEL (T)	6010	2 MG/		MG/KG
SMIUM (T)	<u> </u>	10 MG/		MGZKG
DIAGSIUM (T)	6010	100 MG/		MGZKG
ELENIUM (T)	7740	2.0 MG/		
ALVER (T)	6010	2 MG/	= :: ::	MG/KG
JOIUM (T)	6010	10 MG/		i96/89
HALLIUM (T)	8010	+ 10 MO/		MG/KG
ANAGIUM (T)	8010	1 MG/		mGZKG
ING (T)	6010	1 MO/		моика
JUORTOE	300.0	10 MG/	KG 30	mg/kg
ALORIOE	300.0	10 MG/	KG 5300	MGZKG
STRITE	300.0	100 MG/	KG SOL	MGZKG
ROMIDE	300.0	10 MG/		MGZKG
TRATE	300.0	10 MG/		MGZKG
HOSPHATE	300.0	10 MG/	·- ·	MG/KG
ILFATE	300. 0	10 MG/		



ELOW DETECTION LIMIT



EGUG KENT

USPCI - LONE MOUNTAIN ROUTE 2 BOX 190A

WAYNOKA OK 75860

SPORT NUMBER: H035024

Fa5E 8

3900 MG/KG

TAMPLE IDENTIFICATION: 2092-08

USTOMER IDENTIFICATION: TB3 72.0-74.0

94TE COMPLETES: 8/31/87

DATE RECEIVED: 9/14/8/

HATE SAMPLED:

YPE OF HATERIAL: SOIL

AFAMEIER	REEL METHOG	OHTA.J.	nIT.	ē, iz	Ы.Х.
LUMINUM (T)	6010	6.	MOZKO	34566	NGZKO
UTIMONY (T)	6010		MOZEG		#67 KG
RUENIC (T)	7040	2.0			mG/KO
ARIUM (T)	6010		MG/KG		MG/KG
ERYLLIUM (T)	6010		MOZKO		HGZKO
ABSTUM (T)	7131	0.5			MG/KG
ALCIUM (T)	6010		MO/KG		MG/KO
AROMIUM (T)	6010		MOZKO		MGZ KG
08 <u>41</u> 1 (T)	6010		MG/KG		NG/KG
C (T)	6010		MG/KG		riG/KG
Rass (T)	. 6010		MOZKO		MOZKG
SAD (T)	7421	2.0			MGZEG
40MESIUM (T)	6010		MOZKO		MGZKO
ANGANESE (T)	6010		HGZKG		MGZKG
SROURY (T)	7074	0.01			MGZKO
OT) MUNSOSYLC	6010		mG/kG		MGZEG
ICKEL (T)	6010		MGZKG		MS/KS
SMINH (T)	6010		MGZKG		MG / KB
DIASSIUM (T)	6010		M9ZK6		MG/KC
ELENIUM (T)	7740		167KG		M27113
ILVER (T)	6010		MGZKG		MOZKO
DOLUM (T)	601.0	10 i	™GZKG	•	Mūzkū
MALLIUM (T)	6010	10 1	40/KG		MOZKO
ANADIUM (T)	6010	1 1	nGZKG		riGz Kiğ
INC (T)	6010	1 1	MSZKG		MG/KO
JUORTOE	300.0	10 1	167KB	30	MGZ KO
HLORIDE	300.0		497KG		MGZKG
ETRITE	300.0	100 /	157KG		M6/K6
ROMICE	300.0		19./KG		MGZKG
TTRATE	300.0		iGZKG		MGZKG
COPHATE	300.0		16/KG		MGZKG
JLFATE	300.0		nG/KG		M6/K6



ELOW DETECTION LIMIT



DOUG KENI

USPCI - LONE MOUNTAIN ROUTE 2 BOX 180A

WANHOKA OK 75860

EFORT NUMBER: H035024

FAGE 9

AMPLE IDENTIFICATION: 2002-09

DATE RECEIVED: 8/14/87

USTOMER TOENTTFICATION: TB4 41.5-43.0 E DATE COMPLETED: 8/31/87

ATE SAMPLED:

THE OF MATERIAL: SOIL

A3A附配 可 取。 。	REFALLMETHOS DETALLIBIT		高龍料砂 点。	
LUMINUM (T)	6010	δ MΘ/KΘ	34600 MG/KG	
RTIHONY (T)	6010	6 MG/KG	SOL HOZKO	
RSENIC (7)	7060	2.0 MOZK6	10.2 MG/KO	
ARIUM (T)	6010	1 mG/KG	3 H0/x0	
ERYLLIUM (T)	6010	i MOZKO	Bbi MGZEG	
AGMIUM (T)	7131	0.5 MG/KG	86L 7652KG	
ALCIUM (T)	3010	i MG/KG	14100 NG/KS	
AROMIUM (T)	6010	i MOZKG	41 862 56	
OPACT (T)	601 0	2 MG/KG	7 MG/KG	
(T)	6010	2 MOZKÔ	8 m3756	
Read (T)	6010	2 MG/KG	33000 NG/KG	
EAD (T)	7421	2.0 MG/KG	10.5 M0/kG	
AGNESIUM (T)	14010	i MSZKO	19800 h G/KG	
ANGANESE (T)	3010	1 <i>H</i> G/kG	260 nG/46	
ERCURY (T)	7074	0.01 MG/KG	0.16 MG/kG	
DLYBDEWUM (T)	6010	10 MG/KG	SOL MOZAL	
TOKEL (T)	6010	2 MGZKG	43 ክፀ/1:6	
SMIUM (T)	6010	10 MG/KG	80L m6/86	
OTASSIUM (T)	6010	100 MG/KG	13500 MG/KG	
ELENIUM (T)	7740	2.0 MG/KG	800 F-67-6	
ILVER (T)	8010	2 MG/KG	BDL MSZKG	
ODIUM (T) MUIGC	6010	10 HG/KG	8300 MB/kb	
HALLIUM (T)	. 6010	10 MG/KG	BDL MG/KG	
ANADIUM (T)	6010	1 m5/KG	30 MOZ NO	
INC (T)	٥٠i٥	i MOZKO	95 MG/KG	
JUORIDE	300.0	10 MG/KG	30 MG/KG	
HLORIDE	300.0	10 MS/KG	5700 MG/KG	
ITRITE	300.0	100 MG/KG	BOL MGZKG	
ROMIDE	300.0	10 MG/KG	BDL MG/KG	
ITRATE	300.0	10 MG/KG	BDL MGZKG	
HOSPHATE	300.0	10 MGZKO	BBL MGZKG	
JLFATE -	300.0	10 MG/KG	20900 MG/KG	



JELOW DETECTION LIMIT



DOUG KENT

USPCI - LONE MOUNTAIN

ROUTE 2 20% 180A

WAYNOKA OK 75860

EFORT NUMBER: H035024

840E

io

AMPLE IDENTIFICATION: 2082-10

USTOMER IDENTIFICATION: TB4 85.3-67.1 E

DATE RECEIVED: 8/14/87 GATE CONTLETES: 8/31/87

ATE SAMPLED:

YEE OF MATERIAL: SOIL

ARABETER	enede: Daqu	QET. LIGIT.	869010
EUMINUM (f)	±010	6 M9/K9	35300 NOVILL
RTIMONY (T)	0010	6 H 6/K8	But, no co
RSENIC (T)	7060	2.0 MG/KG	BDI POSTA
ARIUM (T)	۵010	1 M6/K6	250 867++-
ERYLLIUM (T)	۵010 د د د د د د د د د د د د د د د د د د	i MOZKG	2 45 2
ADMIUM (T)	7131	0.5 MO/KG	ស៊ីស៊ី ខេត្តការ
ALCIUM (T)	6010	1 MS/KG	16300 HS 1
AROMIUM (T)	6010	1 MG/KG	33 F. C.
DBALT (T)	6010	2 MSZKO	34 Mis. 17
(T)	6010	2 MG/KG	A Torres
ASA (T)	60 1 0	2 MOZKG	40100)
HAD (T)	7421	2.0 HG/KG	10.1
49NESIUM (T)	6010	i MSZKG	24200 (1887)
ANGANESE (T)	៩0៎ាល	1 MG/KG	370 10 00
IRCURY (T)	7074	0.01 MS/KG	0.150 700 1
DLY80ENUM (T)	6010	10 MG/KG	B E41. 3
TOKEL (T)	5010	2 MO/KG	30 m
SMIUM (T)	6010	10 MG/KG	Billion of the second
OTASSIUM (T)	601 0	100 MOZKO	3.6500 NO 1
ELENIUM (T)	7740	2.0 HOZKG	Bút. Hi
FLUER (T)	6010	2 MOZKG	BCL I.
DDIUM (T)	4010	10 MG/KG	7900 PH F
(T)	6010	10 MG/KG	DD: no no
RADIUM (T)	6010	1 MG/KG	74 (9)
NC (T)	301 0	i MS/KG	65 million
JORIUE	300.0	10 MG/KG	40 máz kió
ALORIDE	300.0	10 MGZRG	8900 NO KG
TRITE	300.0	100 MS/KS	Bill, mözkö
ROMIDE	300.0	10 MG/KG	BIN. NGZKO
ITRATE	300.0	10 MG/KG	BAL MAZKA
HOSPHATE	300,0	10 MG/KG	BDL MAZKO
JUFATE	300.0	10 MG/kG	36000 MG/kG



ILOW DETECTION LIMIT



DOUG KENT

USPCI - LONE MOUNTAIN

ROUTE 2 BOX 160A

WaYNOKA OK 73880

EPORT NUMBER: HOSSO24

PAGE 11

AMPLE IDENTIFICATION: 2082-11

USTONER TOENTIFICATION: TB5 99.5-101.0 E DATE COMPLETED: 8/31/87

ATE SAMPLED:

. . . .

YFE OF MATERIAL SOIL

DATE RECEIVED: 8/14/87

· · · ·	· ·	•			
ARAMETER	REELLMETHOO	ŞÊT	LMIT.	313	Mas IF
LUMINUM (T)	6010		MGZKG		MOZKO
VIIONY (T)	6010		MGZKG		MOZKO
RSENIC (T)	7060		MG/KG		MOZKO
ARTUM (T)	6010		MGZKŌ		MGZKG
DEYLLIUM (T)	6010		MGZKG		MGZKO
ADMIUM (T)	7131		MOZKG		MGZRB
ALCIUM (T)	۵01 0		MSZKG		MGZKG
ROMIDM (T)	6010		MGZKG	41.	PPS/KB
DBALD (T)	6010		MOZKO	1.1	MGZKO
Marie CTO	6010	2	467KC	10	HGZKG
Was (T)	6010		MGZKO	43700	MGZKG
CAD (T)	7421	$oldsymbol{ar{Z}}$, $oldsymbol{ar{Q}}$	HOZKO	5 D.L.	MGZKG
NONESIUM (T)	60i0	1	MG/KG	26100	MGZKG
∍NGANESE (T)	6010	i.	jaGZKÖ	360	MG2 KG
IRCURY (T)	7074	0.01	MOZKO	0,14	MGZKG
HLYBOENUM (T)	6010	10	HG/KG	801	H6/K6
ICKEL (T)	6010	2	MOZKO	40	MGZKO
HIUM (T)	6010		MGZKO		Mazko
TASSIUM (T)	6010		MSZKO		MBZKG
LENIUM (T)	7740		HGZ KG		mūzķtā
LVER (T)	6010		MGZKG		MGZKG
(T) MUID(6010		MGZR6		MG/KG
MALLIUM (T)	6010		MGZKG		MG/KG
NAOIUM (T)	6010		HOZKO		h67.K6
NG (I)	3010		MSZKO		MGZKG
JUORIBE	300.0	10	MGZKG	30	MGZKG
ILORIDE	300.0		MGZKO		MGZKG
TRITE	300.0		MGZKG		MOZKG
COMIDE	300.0		MGZKG		MGZKG
TRATE	300.0		MG/KG		MOZKO
OSPHATE	300.0		MOZKO		MGZKG
LEATE	300.0		MG/KG		MOZKO
		10	a region a com-	10/00	FRUX NO



ALOW DETECTION LIMIT



DOUG KENT

USPGI - LONE MOUNTAIN

12

ROUTE 2 BOX 180A

WAYNORA OK 73860

EPORT NUMBER: MOSSOR4

PAGE

AMPLE 185911FICATION: 2082-12

USTOMER IDENTIFICATION: TBS 31.5-33 0 E

ATE SAMPLED:

THE OF MATERIAL: SOIL

DAYE	RECENVED:	8/14/87	
DATE	COMPLETED:	8/31/87	
		•	

ARAMEJER	REFL. HETHOD	DETA.IMIT	- 開海	A.J
LUMINUM (T)	6010	6 MS/K0		MG/KG
NTIMONY (T)	5010	6 MG/KS		id@ZKG
RSENIC (T)	7 040	2.0 M3/K6	11.5	MOZKO
HRIUM (T)	6010	1 MG/KG	270	MGZKG
ERYLLIUM (T)	<u> </u>	1 M8/K0	B D L	MGZKG
ADMIUM (T)	7131	0.5 MG/KG	30L	mG∠KG
ALCIUM (T)	2010	1 MG/KG	2190	MGZKG
HROMIUM (T)	6010	1 MGZRO	25	iraāz Kīji
DEAT (I)	6010	2 MGZK0	10	MGZKG
(T)	<u> </u>	2 MG/KG		riiG / kiij
Radio (T)	601 0	2 MG/K9	37200	MGZKG
EAO (Y)	7421	2.0 MG/KG	9.6	MGZKG
NGMESIUM (T)	6010	i Mazko		MOZEO
ANGANESE (T)	8010	1 MG7KG	330	MGZY9
IRCURY (T)	7074	0.01 MG/KG	0.16	MGZKG
DLYBBENUM (T)	3010	10 MG/KG		HOZKO
TOKEL (T)	&010	2 MG/KG	29	MGZKO
SMIUM (T)	<u> </u>	10 MG/KG	abt	HGZK6
DTASSIUM (T)	6010	100 M8ZK8	10300	MGZKG
ELENLOM (T)	7740	2.0 M97K8	ឌី ម៉	667 K6
ALVER (T)	6010	2 NG/KG		SOZKO
DDIUH (T)	<u>6010</u>	10 M6/K6	7060	667K6
HALLIUM (T)	6010	10 MG/KG	800	MGZKG
AMAGIUM (T)	6010	1 MG/KG		HG/RG
INC (T)	6010	1 MO/KO		MGZKG
LUORIDE	300.0	10 MG /RG	20	MGZ KG
MORIDE	300.0	io MGZKG		MG/KG
ETRLTE	300.0	100 MG/KG	5 D L	MG/KG
ROMIDE	300.0	10 MG/KG		MG/KG
TRATE	300.0	10 mG/KG		HG/KG
40SPHATE	300.6	io MG/KO		MGZKG
JLFATE	300.0	10 MG/k6		mG/KG



FLOW DETECTION LIMIT



COUC KENT

USPSI - LONE MOUNTAIN ROUTE 2 BOX 180A

WAYNOKA OK 78860

EFORF MUMBER: MO35024

13 FASE

AMPLE IDENTIFICATION: 2082-13

JSTOMER IJENTIFICATION: 756 40.4-41.5 E DATE COMPLETED: 8/31/87

BATE RECEIVED: 8/14/87

ATE SAMPLED:

THE OF MATERIAL: SOIL

ARABEIGR	PEEL HEIGHOD.	GET. LIMIT	KE Mala i
LUMINUM (T)	6010	6 MOZKO	25300 Marke
affminy (T)	6010	a MGZRG	SQL Barrie
RSENIC (T)	7030	2.0 MG/KG	13.6 mb 15
ARIUM (T)	6010	1 HG/KG	300 65 88
SKYLLIUM (I)	6010	i MGZKG	BBL NOVEM
ADMIUM (T)	7131	0.5 MG/KG	500 150
ALCIUM (T)	6010	1 MG/KQ	5300 no.331
BROMIUM (T)	8010	1 MGZKG	31 2525
BALT (T)	6010	2 MG/KG	
图 (7)	6010	2 MG/KG	20
Same (1)	3010	2 MG/KG	32960 mezite
TAO (7)	7421	2.0 MG/KG	14.3
AGNESIUM (T)	6010	1 MG/KG	19400 115 1
KNGANESE (T)	6010	1 MG/KG	320 (
IRCURY (T)	フロアキ	0,01 MG/KG	0.48 (3.44
OLYBOERUM (T)	১০10	10 MG/KG	និយា 💮
CCKCL (T)	6010	2 MOZKO	32 3
WHIDH (T)	6010	10 MG/KG	30L + 4
JYASSIUM (T)	6010	100 MG/kG	11900 m
ELENTUM (T)	2740	2.0 MG/kG	EM reference
HLVER (T)	6010	2 MG/KG	Edit Att
HOLUM (T)	6010	10 MG/KG	7130 60
MILLIUM (T)	601 0	10 MG/KG	BBL MI ME
MAGIUM (T)	6010	1 MG/KG	20 00 10
MC (1)	6010	1 MG/KG	61 715/16
JUORIOE	300.0	10 MGZKG	40 : 65 // k (-
LORI DE	300.0	10 MG/KG	adoo mazko
TRITE	300.0	100 MG/KG	BÜL Müzzig
CHIPE	300.0	10 MG/KG	BDL HOVKO
TRATE	300.0	10 MG/KG	
OSPHATE	300.0	10 MG/KG	80L M6/86
LFATE	300.0	10 MG/KG	BDL MC/KG
	50010	TO MONKE	4600 m67100



LOW DETECTION LIMIT



BOUG KENT USPCI - LOWE MOUNTAIN ROUTE 2 BOX 180A

1.4

WAYMUKA OK 78860

EFORY NOMBER: HOB5024

FAGE

AMPLE IDENTIFICATION: 2082-14

USTORER IDENTIFICATION: TB6 73.5-74.5 E DATÉ COMPLETED: 8/31/87

BATE RECEIVED: 0/14/87

ATE CAMPLED:

YPE OF MATERIAL: SGIL

AFEKSIER	REF. MEIHQQ	REEL METHOD GET. L		泰匹馬	DRUL!	
LUMINUM (T)	6010	ć	MGZKO	30200	MOZKO	
MITMONT (T)	6010	6	HGZKO		h67k6	
RSENIC (T)	7030	2.0	MOZKO	7.5	MGZKO	
ARIUM (T)	6010	1.	MGZKG	390	MG/KG	
ERYLLIUM (T)	6010	i	MOZKG	BBL	MGZKG	
ADMIUM (T)	7i31	0.5	MOZKO	50L	HOZKO	
ALCIUM (T)	6010	i	MG/KO	22200	MSZKO	
HROMIUM (T)	6010	1	MGZKO	35	#Oz ső	
35 <u>44</u> 7 (↑)	6010	2	MG/KG	12	MOZKO	
TT CTD	6010	2	MGZKG	i 7	MEZRO	
Natur (T)	6010	2	MGZKG	35700	NO7 KI5	
EAD (Y)	7421	2.0	MGZKG	12.i	$in6 \times K6$	
AGNESIUM (T)	6010	i	MGZKG	42200	MOZKG	
RNGARESE (T)	6010	i	MG/KG	590	MBZKO	
ERCURY (T)	7074	0.01	MGZKO	0.15	MG/KO	
BLY60ENUM (T)	6010	10	MGZKG	e a L	MO7KG	
TOKEL (T)	6010.	2	MGZKG	30	MG/KG	
SMIUM (T)	6010	10	MG/KG	80L	rid / Kij	
OTASSIUM (T)	6010	100	MOZKG	8200	MG/KU	
ELENIUM (T)	77.40	2.0	MGZKG	80L	P35/85	
(LVER (T)	6010	2	MGZKG	BDL	MGZKG	
301UM (T)	4 0 10	10	MGZKG	9500	HGZ KG	
HALLIUM (T)	6010		MGZKG	EDL	MGZKG	
AMADIUM (T)	6010		MGZKG	47	MOZKG.	
INC (T)	· 6010	ì	MOZKO	80	MG/KG	
LUORTOE	j 300.0	10	HG/KG	40	MGZKG	
LORIDE	300.0	10	MSZKG	6300	MGZKG	
ITRITE	300.0	100	h6/k6	801	m6ZK6	
ROMIDE	300.0	10	MGZKG		MGZKG	
TRATE	300.0	10	MGZKG	804.	697K 6	
IOSPHATE	300.0	iO	MG/KG		MGZKG	
ALFATE :	300.0	10	MG/KG	22900		



ELOW DETECTION LIMIT





DOUG KENT

USFCI - LONE HOUNTAIN ROUTE 2 BOX 180A

WAYHORA OK 73860

REDRE MUMBER: MOSSUSA

FA6E 15

OMPLE IDENTIFICATION: 2092-15

DATE RECEIVED: 8/14/87

OSTOMER IDENTIFICATION: TEA 96-97.5

DATE COMPLETED: 8/31/87

ATE SAMPLED:

TPE OF MATERIAL: SOIL

ARAMETER	REELL HE (1900	ORTLIHIT	RESMLT
LUMINUM (T)	6010	6 MG∕KG	38400 MB/KG
RTIBONY (T)	6010	6 MG/KG	BUL MOZKO
ROEMIC (T)	7060	2.0 MG/KG	8.9 MG/KG
ARIUM (T)	6010	1	260 MG/KG
TRYLLIUM (T)	6010	1 MOZKG	BDL MG/KG
AGMIUM (T)	7131	0.5 mG/KG	SOL MG/KG
alcium (T)	60i0	1 MG/KG	15200 MG/KG
HROMIUM (T)	601Ü	1 MG/KG	46 h6/K6
SEA (T)	6010	2 MOZKG	13 MG/K3
(T)	5010	.2 MG/KG	10 MG/KG
hear (1)	6010	2 MG/KG	40100 MG/KG
EAD (T)	7421	2.0 MG/KG	10.7 MG/KG
AGMESIUM (T)	6010	1 MGZKG	34200 MG/KG
ANGANESE (T)	6010	1 MG/KG	410 MG/KG
ERCURY (T)	7074	0.01 MG/KG	0.18 MG/KG
DUYSSENUM (T)	6010	10 MG/KG	80L 807KG
ICKEL (T)	6010	2 MG/KG	43 MG/KG
Shium (T)	6010	10 MG/KG	BDL MG/KG
CTADSIUM (T)	6010	100 MG/KG	14600 MG/KG
ELENION (T)	7740	2.0 MG/KG	25L M67K6
ILVER (T)	6010	2 MG/KG	BDL MG/KO
POSUM (T)	6010	10 MG/KG	11100 MG/kG
HALLIUM (T)	6010	10 MG/KG	BUL MG/KG
-NADIUM (T)	6010	1 MG/kG	58 MG/KG
!NC (1)	6010	î MG/KG	97 NG/KG
JUORTOE	300.0	10 MG/KG	90 MG/KG
SLORIBE	300.0	10 MSZKG	11100 MG/KG
STRITE	300.0	100 MG/KG	BOL HG∕KG
ROMIDE	300.0	io MG/KG	BDL MG∕KG
ETRATE	300.0	10 MG/KG	BOL MG/KG
IOSPHATE	300.0	10 MOZKO	BDL MG/KG
ALFATE	300.0	10 MG/KG	29500 MG/KG



ELOW DETECTION LIMIT





DOUG KENT

USPCI - LONE MOUNTAIN

ROUTE 2 SOX 180A

WAYNOKA OK 23860

LAURT NUMBER: H035024

P46E 16

-MARLE ICENTIFICATION: 2092-13

DATE RECEIVED: 8/14/87

JETCHER IDENTIFICATION: T86 108.5-107.7 E DATE COMPLETED: 8/31/87

ATE SAMPLED:

SPE OF MATERIAL: SOIL

ARABETER	REFHEIHQQ	DET. LIMIT	RESULT
JUMINUK (T) HTTHONY (T)	6010 6010	6 MGZKG	25000 MO/KO
RENIC (T)	7030	6 MG/KG 2.0 MG/KG	SOU MGZKG
PRIUM (T)	6010	i MG/KG	6.9 M0/K0
CRYLLJUM (T)	6010	1 MOZKO 1 MOZKO	390 MG/KG BDL MG/KG
ACMEUM (T)	7131	0.5 MG/KG	BOL MOZKO
ALCIUM (T)	6010	1 MO/KG	21300 MG/KG
AROMIUM (T)	6010	1 M6/K6	21500 M6/K6 28 M6/K6
39447 (T)	6010	2 MG/KG	ii MG/KG
(T)	6010	2 MG/KG	70 MG/KG
(1)	6010	2 MG/KG	20700 MG/KG
(A) (T)	7421	2.0 MG/KG	7.7 MG/KG
GNESIUM (T)	6010	1 MOZKG	41300 MG/KG
WOARESE (T)	6010	1 MG/KG	570 MG/KG
IRCURY (T)	7074	0.01 MG/KG	0.82 MG/KG
HLYSSENUM (T)	6010	10 mG/KG	80L MOZKG
CKEL (T)	6010	2 M9/KG	29 MG/KG
Mille (T)	6010	10 MG/KG	BUL MOZKG
MASSIUM (T)	6010	100 MG/KG	6500 MG/KG
THEMSUM (T)	7740	2.0 MG/KG	BOL MOZKO
ILVER (T)	6010	2 MG/KG	BDL MG/KG
:DIUM (T)	6010	10 MG/KG	10700 MG/KG
MALLIUM (T)	6010	io MGZKG	BDL MG/KG
NADIUM (T)	6010	1 MG/KG	34 MG/KG
NC (T)	6010	i MG/KG	73 MG/KO
UGRIDE	300.0	10 MG/KG	40 HG/80
ILORIDE	300.0	10 M9/KG	5200 MG/KG
TRITE	300.0	100 MG/KG	BOL MOZKG
:QMIDE	300.0	10 MG/KG	BD1 MG/KG
TRATE	300.0	10 MG/KG	BBL MG/KG
OSPHATE	300.0	10 MG/KG	BDL MG/KG
LFATE	300.0	10 MG/KG	18400 MG/KG





DOUG KENT

USPCI - LONE MOUNTAIN ROUTE 2 BOX 1804

WAYNOKA OK 73860

GPORT NUMBER: HOSSO24

PAGE 17

AMPLE IDENTIFICATION: 2082-17

USTOMER IGENTIFICATION: T814 71.0-72.2 SATE COMPLETED: 8/31/87

ATE SAMPLED:

THE OF MATERIAL: SOIL

BATE RECEIVED: 8/14/87

AEAMEILE	REHMETHOD	ETUOO QET,.LIMIT		<u>RESULT</u>	
LUMINUM (T)	8010	6	MG/KS	32300	MG/KC
NTIMONY (T)	6010		MGZKG		1967 K 15
RSENIC (T)	7040		MGZKG		MOZKO
ARIUM (T)	<i>6010</i>		MGZKO		MGZkG
ERYLLIUM (T)	6010		MSZKG		MG/KG
ABMIUM (T)	7131		MGZKG		MGZKO
ALCIUM (T)	6010		MOZKG		MG/KG
HROMIUM (T)	6010		MGZKG		MGZKG
DBATT (T)	6010		MGZKG		MOZKA
T (T)	6010		MGZKG		MGZ KG
Reserved (1)	4010	2	MGZKO		MG/KG
EAD (T)	7421	2.0	MGZKS		MOZK6
agnesium (T)	60i0		MOZKO		MOZKO
ANGANESE (T)	6010		H67K6		HGZKG
IRCURY (T)	7074		MGZKG		MGZKG
OLYBOENUM (T)	&010		MGZKG		M6786
TOKEL (T)	6010	2	MOZKO		MGZKG
SMIUM (T)	5010		MOZKO		riūz Kū
JTASSIUM (T)	60 1 0		MGZKG		MGZKG
ELENIUM (T)	7740		HGZ KG		MGZKO
. I., V C. P ₹ 1 2	6010	2	MGZKG		MGZKO
Dium (T)	6010	10	mGZ KG		riū/kū
GLLIUM (T)	6010	10	MGZKG		MG/KG
MADIOM (T)	6010	1	riGZKG		M5/K5
NO (1)	6010	i.	MG/KG		MGZKG
JORTOE	300.0	10	MG/KG	ĠŌ.	MGZKG
FLORT DE	300.0		MG/KG		MG/KG
TRITE	300.0		MGZKG		MGZ KG
:OMITUE	300.0		MG/KG		MGZKG
TRATE	300.0		MG/KG		MGZKG
CSPHATE	300.0		MOZKG		MGZKG
LFATE	300.0		MG/KG		MOZKG MOZKG



LOW DETECTION LIMIT



DOUG KENT

USFCI - LONE HOUNTAIN

ROUTE 2 BOX 180A

WAYNUKA

0K 73860

LEFORT MUHSER: H035024

PAGE 18

IAMPLE IDENTIFICATION: 2082-18

USTOMER IDENTIFICATION: T814 91.5-93.0

DATE RECEIVED: 8/14/97 DATE COMPLETED;

8/31/87

HATE SAMPLED:

YPE OF MATERIAL! SOIL

ARAMEJER	REEBEIHQQ	OET. Lin	JHIT. BEAULT.		
LUMINUM (T)	6010		SZK6		MOZKG
NTIMORY (T)	6010		G/KG		hGZRG
RSENIC (T)	7060	2.0 M			MGZKO
ARIUM (T)	8010		0/KG		MOZKG
ERYLLIUM (T)	6010		GZK6	EDL.	MOZKG
ADMIUM (T)	7131	0.5 M		B-Ji.,	MGZKG
ALCIUM (T)	6010		GZ K19	22100	MGZKO
HROMIUM (T)	6010	1 in	$\mathbb{G} \times \kappa \mathbb{G}$	32	MGZKG
OBA'T (I)	6010		OZKO	i 5	MOZK6
(T)	6010	2 ri:	0/KG	1.3	ri@ZKG
R& (T)	8010		G/KG	31100	MGZKO
EAD (T)	7421	2.0 m	GZKG	ម.ប	MOZRO
ACMESIUM (T)	6010	i M	9/K 0	41600	MGZKG
ANGANESE (T)	6010	1 (4)	9/KG		rii 9 Z K G
ERCURY (1)	デ ジラ4	0.01 M	GZKG -		MGZKG
OLYBOENUM (T)	6010	10 Hi	∃ZK G		MGZKO
ICKEL (T)	6010	2 M(3/KB		MG/KG
SMIUM (T)	6010	10 m			riG/KG
OTASSIUM (T)	6010	100 M			MGZKG
ELENIUM (T)	7740	2.0 M			MG/RG
ILVER (T)	6010	2 MS			MGZKG
(T) MU100	خ010 ف	10 M		12100	
HALLIUM (T)	6010	10 M			MG/KG
ANAOIUM (T)	6010	1 MG			MG/KG
ING (T)	60i0	i MC			MOZKO
LUORIGE	300.0	10 mi	5/K G	80	MOZKG
HLORIDE	300.0	10 MG			MG/KG
ITRITE	300.0	100 MG			MG/KG
ROMIDE	300.0	10 MG			MG/KG
ITRATE	300.0	10 MG			riGZ KG
HOSPHATE	300.0	10 MG			MGZKG
ULFATE	300.0	10 MG		17800	
		TA LIC	7 KU	1/0/0	rioz Ku



ELOW DETECTION LIMIT



DOUG KENT

JSPCI - LONE MOUNTAIN

ROUTE 2 BOX 180A

WAYNOKA OK 23860

EFORT NUMBER: H035024

PAGE

i 9

AMPLE IDENTIFICATION: 2082-19

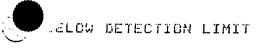
USTOMER IDENTIFICATION: T814 108.5-110.0 DATE COMPLETED: 8/31/87

ATE SAMPLED:

YPE OF MATERIAL: SOIL

DATE RECEIVED: 8/14/87

AROUET er	REE. HETHOO	REEL METHOD DET. L.		RES	131.J.T.	
CUMINUM (T)	6010	6	MG/KG	19200	MG/KG	
RTIMONY (T)	6 010		MGZKG	BOL	MG/KG	
RSLNIC (T)	7040	2.0	MOZKO	3.8	MG/KG	
ARIUM (T)	6010	1.	MGZKO	130	riGZKG	
ERYLLIUM (T)	6010	1	MSZKG	5DL	MG/KG	
ADMIUM (T)	7131	0.5	MOZKS	BOL	MOZKO	
ALCIUM (T)	8010	1	MOZKG	22900	MGZKG	
HRGHIUM (T)	6010	i	MGZKG	28	MGZRG	
08 <u>4</u> 7 (1)	٥٥١٥ -	2	MG/KG	9	MGZKG	
© (T)	6010	2	MGZKG	66	MGZKG	
Read (T)	6010	2	MSZKG	21700	MGZKG	
EAD (T)	7421	2.0	mĢ∠KG	22.1	MGZKG	
AONESIUM (T)	6010	i	MGZKO	26100	MGZKG	
ANGANESE (T)	6010	1	MGZKG	230	MOZKO	
SROURY (T)	フ≎フ4	0.01	MGZKG	0.20	MGZKG	
DLYBOENUM (T)	6010	1.0	MGZKG	8 01.	MGZKG	
ICKEL (T)	6010	2	MGZKG	17	MSZKG	
SMIUM (T)	6010	1.0	riGZKG	50L	MGZKG	
DTASSIUM (T)	<i>4</i> 010	100	MGZKG	5600	MG/KG	
ELERIUM (T)	7740	2.0	MGZKG		MGZKG	
TLVER (T)	6010		MOZKG		NGZKG	
DDEUM (T)	6010	10	MG/KG	12300		
HALLIUM (T)	6010	10	MOZKG	BDL	MG/KG	
PNADIUM (T)	6010	1	MG/KG	40	MGZKG	
INC (T)	6010	1	MGZKG	59	MGZKG	
LUGRICE	300.0	10	MG/kG	90	MG/KG	
HLORIDE	300.0	10	MGZKG	13400	MOZKG	
ITRITE	300.0	100	MGZKG		MG/KG	
ROMIDE	300.0	iO	MGZKG		MG/KG	
LIRATE	300.0		MGZKG		MG/KG	
HOSPHATE	300.0		MOZKG		MGZ KG	
<u>JEFATE</u>	300.0		MG/KG	18800		





DOUG KENT

USPCI - LONE HOUNTAIN :

ROUTE 2 BOX 180A

-AYNOKA OK 73860

KERORT NUMBER: MOSSO24

PAGE 20

10 MGZKG

2300 MG/KG

JAMPLE IDENTIFICATION: 2082-20

JUSTOMER TOENTIFICATION: TB14 163.0-164.5 DATE COMPLETED: 8/31/87

BATE RECEIVED: 8/14/37

JATE SAMPLED: TYPE OF MATERIAL: SOIL

		,	
TARAMETES	REE. HETHOD	DETAILIBAT	RESULT
WLUMINUM (T)	6010	6 MOZKG	6940 MG/kG
NTIMONY (T)	6010	6 H8/k8	BOL MORNO
RSENIC (T)	7060	2.0 MS/KG	2.0 M07K0
MARIUM (T)	6010	1 7657kG	17 m6/k6
SERYLLIUM (T)	8010	i MS/KG	₽DL MG/KJ
ADMIUM (T)	7131	0.5 HG/kG	88L m0788
TALCIUM (T)	6010	i MOZKO	9550 NG/KO
HROMIUM (T)	<u> </u>	1 MGZKG	34 85.75
10 <u>804</u> T (1)	6010	 2 MGZKG 	9 MO. 1k0
<u>.</u> ΥΥ)	6010	2 mGZKG	11 Re/ 6
Real (T)	6010	2 MG/KG	10200 MG/ku
EAO (T)	742±	2.0 MG/KG	5.2 66
ASNESIUM (T)	3010	1 MG/KG	14000 MG 16
ANGANESE (T)	6010	1 MG/kG	380 mi - 5
ERCURY (T)	7074	0.01 MG/KG	0.17 NO. NO.
ÖLYBÖEMÜM (T)	6010	10 MG/KG	BUL HARRY
TOKEL (T)	8010	2 MOZKG	15 MG/16
SHIUM (T)	6010	10 riG∕KG	BüL no
OTASSIUM (T)	3010	100 MG/KG	2300 MR/4 //
ELENIUM (T)	7740	2.0 MG/KG	50L H0 - 6
ILVER (T)	5010	2 MS/KG	PDL Hb 50
ODIUM (T)	6010	10 MG/KG	22300 HG/ A
HALLIUM (T)	6010	10 MG/KG	BDL NG NA
AMADIUM (T)	6010	1 hGzkG	19 mg///
INC (T)	6010	i MG/KG	24 NG/KG
			2 T 1100 R.O.
LUORIOE	300.0	10 MG/kG	30 m6/kg
HLORICE	300.0	10 M3/KG	19000 MG/KS
ITRITE	300.0	100 MG/KG	BBL MG/kG
ROMIDE	300.0	10 MG/KG	BDL MG/KG
ITRATE	300.0	10 MG/KG	BOL MOZKO
HUSPHATE	300.0	10 MG/KG	BDL MG/KG
ULFATE	300.0	10 MGZKG	2300 MG/KG
i	were W. L. W.	キスケード いいきん おび	2300 MD789



ELOW DETECTION LIMIT



DOUG KENT

USPCI - LONE HOUNTAIN

ROUTE 2 BOX 180A

WAYNOKA OK 73860

:EFORT NUMBER: H035024

PAGE

21

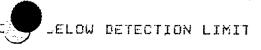
TAMPLE IDENTIFICATION: 2082-21 BATE RECEIVED: 8/14/87

USTOMER TOENTIFICATION: TB14 227.5-229.0 DATE COMPLETED: 8/31/87

ATE SAMPLED:

YFE OF MATERIAL: SOIL

ARAMEIER	REEbETHOO	REFBETHOO DETA.I		提展為)	SULT	
ALUMINUM (T)	6010	6	MG/KG	10900	MG/KG	
NTIMONY (T)	6010		MGZKG	BOL	MGZKG	
RSENIC (T)	7060	2.0	MGZKG	3.7	MGZKG	
ARIUM (T)	6010		MGZKG	30	MGZRG	
ERYLLIUM (T)	6010	ï	MGZKG	BDL	MGZKG	
ADMIUM (T)	7131	0.5	MOZKO	800	MGZKO	
ALCIUM (T)	<u> </u>	i	MOZKG	43300	MOZKO	
HROMIUM (T)	6010	1	MGZKG	2.2	HGZKG	
0847 (7)	60i0	2	MGZKG	4	MOZKG	
O(T)	6010	2	MGZKG	1 i	HGZKO	
Number (T)	6010	.2.	M9∠K6	17900	MGZKG	
EAD (7)	7421	2.0	MGZKG		MGZKG	
AGNESIUM (T)	6010	1	MOZKO	27200		
ANGANESE (T)	6010	i.	riG/RG		MG/KG	
ERCURY (T)	7074	0.01			NGZKG	
OLYSDENUM (T)	6010	10	MGZRO		MG/KG	
ICKEL (T)	6010		MGZKG		MG/KG	
SMIUM (T)	6010		MGZKO		MOZKO	
OTASSIUM (T)	6010		MOZKO		MG/KG	
ALENIOH (T)	7740	•	HG/KG		MG/KG	
ILVER (Y)	6010		MGZKG		MGZKG	
ODJUM (T) MULGO	6010		MGZKG	15700		
HALLIUM (T)	6010		MGZKG		MGZKG	
ANADIUH (T)	6010		MGZKG		MGZKG	
ING (T)	6010		MSZKG		MGZKG	
LUGRICE	300.0	10	mG/KG	30	м6/к6	
HLORISE	300.0	10	MGZKG	22900		
ITRITE	300.0		MGZKG		MG/KG	
ROMIDE	300.0		MGZKG		MGZKG	
ETRATE	300.0		MGZKG		MOZKO	
HOSPHATE	300.0		MGZKG		MGZ KG	
ULFATE	300.0		MG/KG	22900		



A Division of



DOUG KENT

USFCI - LONE MOUNTAIN ROUTE 2 BOX 180A

WAYNOKA OK 73860

EFORT NUMBER: H035024

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DATE RECEIVED: 8/14/87

AMPLE IDENTIFICATION: 2082-22

USTOMER IDENTIFICATION: T814 328.0-329.5 DATE COMPLETED: 8/31/87

ATE SAMPLED:

THE OF MATERIAL: SOIL

ARAMETER	REF. METHOD	DETLin	mLimin Pascur		ui][
LUNINUM (T)	6010	6 Mi	9/KG	14500	MG/KO
HTIMONY (T)	6010	5 M		854	PROMETER
NGENIC (1)	7030	2.0 MC	97KB	8.0	MSZKG
ARIUM (T)	6010	1 M(97KO	120	1915/1815
ERYLLIUM (T)	۵010	i M	DZK6	BDL	MG∠KO
ADMIUM (T)	7131	0.5 MG	97kG	BÖL	rifiz Kö
ALCIUM (T)	60i0	1. M(97 KG	24900	MGZKG
AROMIUM (T)	5010	1 Mc	N/KG		MGZKG
JBAT (Y)	6010	2 M	8ZKÖ		MGZKO
C (T)	60±0	2 m()/KG		50783
Real (T)	601 0	2 MC			MGZKG
FAD (T)	7421	2.0 ME			Filipz K.G
AGNESIUM (T)	6010	i Mõ			MOZKO
ANGANESE (T)	6010	1 140			MGZKG
ERCURY (T)	7074	0.01 Mg			MG/KG
OLYSCENUM (T)	6010	10 Fi6			MG/kG
FOREL (T)	6010	2 MS			MOZKO
BHIUM (T)	6010	10 MG			MGZKG
JIASSIUM (T)	6010	100 MG			MGZKO
ELENEUM (T)	7740	2.0 MG			HG/KG
(LVER (T)	6010	2 MC			MGZKO
ննյան (T)	6010	10 MG		17700	
MALLIUM (T)	6010	10 MG			MG/KG
«NAGIUH (T)	6010	1 76			BOZKO
M3 (T)	6010	1 M3			MG/KG
JUORTOE	300.0	10 HG	ZkG	40	MOZK6
MLORIDE	300.0	10 MG		27900	
TRITE	300.0	100 MG			MG/KG
COMIDS	300.0	10 MG			MGZKG
TRATE	300.0	10 MG			MOZKO
OSPHATE	300.0	10 MG			MGZKG
ILFATE.	300.0	10 MG		16700	





DOUG RENT

USPCI - LONE MOUNTAIN

ROUTE 2 90X 180A

WAYNOKA OK 73800

EPORT NUMBER: P035024

PAGE 23

AMPLE IDENTIFICATION: 2081-23

USTOMER IDENTIFICATION: T514 363.0-364.5 DATE COMPLETED: 8/31/87

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YPE OF MATERIAL: SOLL

BATE RECEIVEB: 8/14/87

ARAMETER .	REFL. METHIO	OET. LI	ri,I.T.	រដូវូនីរុ	
LUNINUM (T)	6010	6	MGZKG	10900	₩GZKS
NTIMONT (I)	6010	6	MGZKG	ä lutu	$47557\mathrm{K}\mathrm{G}$
RSENIC (T)	7060		MSZKG	EDL.	mS/KC
ARIUM (T)	6010	i	MSZKG	23	mūz Kū
ERYLLIUM (T)	4010	ï	MOZKO	BOL.	mG/KO
ADMIUM (T)	7131	0.5	MGZKG	50)	$19.9 \times \mathrm{K}.\mathrm{G}$
ALCIUM (T)	8010	1	MSZKG	30100	MOZKO
AROMIUM (T)	6010	1.	m@/KG	27	h0 > 5
OB <u>AC</u> T (Τ)	6010	er.	MOZKG	ii	MG/466
(T)	6010	2	MGZKG	26	riG7 KU
Reserved to the second	601 0	2	MG/KG	15300	MGZKO
EAD (T)	7421	2.0	MG/KG	15 OL	海拉不成的
ACRESIUM (T)	6010	i	MGZKG	12300	H07165
ANGANESE (T)	8010	1	MGZKG	170	right 6
ERCURY (T)	7074	0.01	MSZKG	0.15	MG/Kt
OLYBORNUM (T)	6010	1.0	HG/KG		PHO ZEO
TOKEL (T)	6010		MSZKG		MG/KJ
SMIUM (T)	6010	10	MGZ KG		おしていり
JTASSIUM (I)	6010		MGZKG		05/45
ELEATUM (T)	7740		MGZKG		$P_{i}^{i}(0,0,2,\cdots)$
ILVER (T)	6010		MOZKO		MOZKO
ODIUM (T)	6010	10	MGZKG		16/80
HALLIUM (T)	6010	10	MGZKG		MGZKO
ARAGIOARA	6010	i	MG/KG		1915 / KI3
ING (I)	6010	1	MGZKG		МОИКО
LUCRICE	300.0	50	MGZ KG	160	HGZRO
HEORIDE	300.0	10	MSZKG	98600	MGZKG
ITRITE	300. 0		MGZKG		1667873
ROMIDE	300.0		MGZKG		MGZRG
ITRATE	300.0		MGZKG		MGZRG
MOSPHATE	300.0		MG/KG		MGZKG
JLFATE	300.0		MG/KG		MG/kG



ELOW DETECTION LIMIT



BOUG KENT

USPCI - LÓME MOUNTAIN

ROUTE 2 BOX 180A

WATHOKA OK 73660

THORY NUMBER: HOSSOZ4

PAGE 24

WHERE IDENTIFICATION: 2082-24

JRTOMES ICENTIFICATION: T014 391.0-372.5

DATE COMPLETED: 8/31/87

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RAKETAR	8年纪。 我国不知识	OETJ.Ibjj.	的 性具有 5
_UNINUM (1)	5010	& M07K0	14200 NG . No
ATTHORY (T)	6010	6 MGZKG	60m M3/70
ROSNIC (T)	7060	2.0 M6/K0	BDL MOST C
WRIUM (T)	8010	1 867k6	110 mb///
DRYELIUM (T)	6010	1 MG/KG	BBI NOVEO
ADMINA (I)	213 1	" 0.5 <i>m</i> G/kG	80L 65 86
WLCIUM (T)	6010	i M9/KG	33100 he he
AROMIUM (T)	6010	1 mG/kG	25 mc +
DB <u>44</u> 7 (7)	6010	2 MS/KG	5t ht. i
(T)	6010	2 ME/KG	45 m
A. (-)	60i0	2 MG/KG	21000 NO :
-69 (f)	7421	2.0 MG/KG	500 B. C. C.
GNESTUM (I)	6010	î MOZKG	22000 8 0 1
MGAMESE (T)	ĕ010	3 inG∠KG	300 i
IROURY (T)	7074	0.01 MG/KG	C. IV ret 199
HYGDENUM (T)	5010	10 MG/kG	600 pm
CKEL (T)	6010	2 MOZKO	26 30 00
Hilod (T)	6010	10 MGZKG	BBL roll
TTASSIUM (T)	6010	100 MG/KG	3700 8
LENIUM (T)	7740	2.0 MG/KG	ម៉ូស៊ី៖ ៣មី ។ ប
LUES (T)	6010	2 MG/KO	Fills The Con-
Olum (T)	6010	10 hG/KG	41700 00
MALLIUM (T)	6010	10 MG/KG	Lillia me i i s
MAGIUM (T)	6010	1 MG/KG	30 600 0
NC (T)	6010	i MS/KO	40 h(c 1%
WORTOE	300.0	50 hG/KG	120 h6/10
6.ORI DE	300.0	10 MG/KG	72500 NG/ NG
TRITE	300.0	500 MG/KG	និង៤ ២ភិកាស
COMIDE	300.0	50 MG/KG	DDL NGZKO
TRATE	300.0	50 MG/KG	BOL MG/KG
IOSPHATE	300.0	50 MO/KO	BDL MG/KG
LFATE	300.0	10 MG/KG	27400 MG/KG

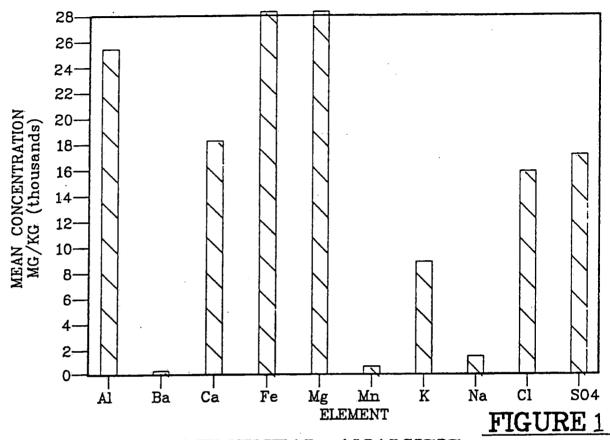


ILOW DETECTION LIMIT

TABLE 3 WHOLE ROCK ELEMENTAL ANALYSIS

ELEMENTS	RANGE OF DETEC	TABL	ES (MG/K	(<u>G)</u>	
Aluminum	6940.0	to	40400.0		
Arsenic	BDL	to	45.3		
Barium	.3	to	510.0		
Beryllium	BDL	to	2.0	(1	Sample)
Calcium	3000.0	to	43300.0		
Chromium	22.0	to	46.0		
Cobalt	4.0	to	20.0		
Copper	5.0	to	70.0		
Iron	3200.0	to	48100.0		
Lead	BDL	to	58.9		
Magnesium	12600.0	to	42200.0		
Manganese	150.0	to	700.0		
Mercury	0.09	to	0.82		
Nickel	11.0	to	46.0		
Potassium	2300.0	to	16000.0		
Sodium	6400.0	to	60700.0		
Vanadium	16.0	to	85.0		
Zinc	24.0	to	112.0		
Fluoride	20.0	to	160.0		
Chloride	3700.0	to !	98600.0		
Sulfate	2300.0	to :	36000.0		

ELEMENTAL ANALYSIS MEAN CONCENTRATIONS OF ELEMENTS



ELEMENTAL ANALYSIS
MEAN CONCENTRATIONS OF ELEMENTS

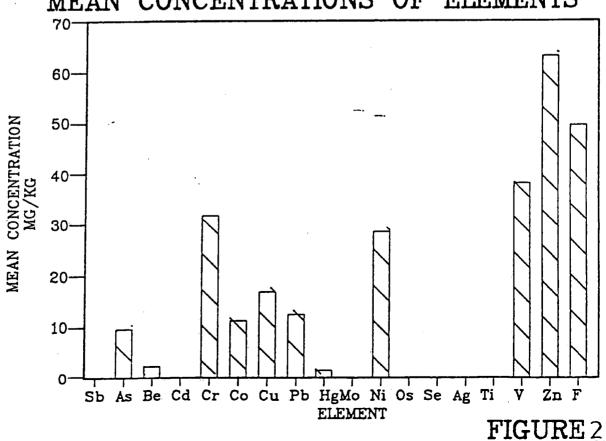


TABLE 7
X-Ray Diffraction
Analysis of Core Samples From L8-3

Sar	nple ID		Clay	y Minerals	· 	Non-Clay Minerals					
No.	Depth	Illite	Mixed-layer Clay (Illite- Smectite and Swelling Clay	Mont- morillonite	<u>Kaol ini te</u>	Quartz	Plagio- clase	K-feldspar	Ferroan Carbonate	Gypsum	Calcite
1	14.0	31	<u>≺</u> 10	0	Tr	31	7	3	15	3	0
2	21.5'	48	<u><</u> 10	0	Tr	31	11	0	0	0	0
3	29.5'	56	<u><</u> 10	0	0	25	4	0	Tr	5	0
4	44.0'	40	<u><</u> 10	, 0	Tr	36	14	0	Tr	0	0
5	76.0'	44	≤ 10	O	Tr	38	-8	Tr	Tr	0	0
6	82.0'	11	≤ 10	0	0	28	7	3	19	. 8	15
7	14-19'	30	≤ 10	0	0	52	5	3	Tr	0	0
8 '	34-38'	25	0	0	0	53	12	ío	Tr	0	0

Western Atlas International

A Litton/Dresser Company

testern Geophysica:

Olfreld Services

Laboratories

LRS

Aero Service

Downhole Seismic Service

J.S. Nolen & Associates

Core Laboratories

הברבועבה מבה ב 1997

September 1, 1987

Dr. Doug Kent
MDK Consultants Inc.
Rt 3, P.O. Box 83
Stillwater, OK 74074

Dear Dr. Kent,

As you requested, here are the visual estimates by thin section of the silt-size particles in the samples (Site Characterization No. 3187108) on which we did X-ray diffraction:

TB - 1 (314.7'): 1% silt

TB - 3 (73.3') : 4% silt

TB - 4 (71.0): 1 - 2% silt

TB - 6 (24.5): 4 - 6% silt.

If you have any questions regarding the thin section data or x-ray data or if you have any problems, please do not hesitate to call.

Sincerely,

Malcolm S. Johes

X-ray Diffraction Specialist

Core Lab

Litton Core Lab

X-RAY DIFFRACTION ANALYSES

FOR

UNITED STATES POLLUTION CONTROL, INC. SITE CHARACTERIZATION NO.: 3187108



Core Lab

August 26, 1987

United States Pollution Control, Inc. 2000 Classen Blvd., Suite 400 South Oklahoma City, OK 73106

Attention: Mr. Roy Murphey

Subject: X-Ray Diffraction Analyses

File: 187131

Site Characterization No.: 3187108

Dear Mr. Murphey:

This report presents the results of X-Ray Diffraction (XRD) analyses performed on four (4) samples. The samples were received by the Reservoir Geology/Petrographic Services Group, Geological Sciences Department, Core Laboratories, Irving, Texas on August 12, 1987.

XRD DATA

The XRD analyses were performed in order to identify and quantify the minerals in the whole-rock and clay fractions. The X-Ray Diffraction data are presented in Table 1. The analytical procedures for these analyses are outlined in Appendix 1.

Our policy is to store the samples received for XRD analyses for six months free of charge. Unless we receive other instructions from you, we will discard these samples in one hundred eighty days. Please advise us if you want the samples returned C.O.D. to you, or we can arrange to store them for a small monthly charge.

It has been a pleasure performing this study for United States Pollution Control, Inc.. Should any questions arise, or if we can be of further assistance, please feel free to contact us.

Sincerely,

CORE LABORATORIES

Malcolm S./Jones XRD Specialist

Dan Powell Supervisor James R. Garrison, Jr., Ph.D. Senior Research Geologist

FILE: 187131

TABLE 1

QUANTITATIVE X-RAY DIFFRACTION ANALYSES

SAMPLE I.D. DEPTH (Feet)	TB-1 314.7	TB-3 73.3	TB-4 71.0	TB-6 24.5						
CALC	ULATED WHO	E-ROCK	COMPOSITIO	МС						
QUARTZ FELDSPAR PLAGIOCLASE ALKALI FELDSPAR DOLOMITE	20.4 5.2 5.2 0.0	7.6	2.7 5.9 1.8 4.1	· _						
SIDERITE BASSANITE CLAY MINERALS	0.0 12.6 61.9	0.0 0.0 65.2 100.0		-						
RELATIVE CLAY ABUNDANCE (Normalized to 100)										
ILLITE CHLORITE CHLORITE/SMECTITE	68.7 9.3 22.0(45)	5.6	90.8 9.3 0.0	94.3 5.7 0.0						
	100.0	100.0	100.0	100.0						

[%] EXPANDABLE INTERLAYERS OF MIXED-LAYER CHLORITE/SMECTITE IN ().

Analytical Procedures

The sample fraction selected for quantitative X-Ray Diffraction (XRD) analysis is first cleaned of hydrocarbon residue, then weighed and disaggregated using standard techniques. The sample is then centrifugally size-fractionated, in water, into a clay-size (less than 4 microns) and a sand/silt-size fraction. The clay-size fraction is then suspended in water and deposited on a porous silver substrate. Each clay-size fraction is analyzed dry (RH=50%) and then after treatment with ethylene glycol. The sand/silt-size fraction is made into a pellet using standard powder techniques.

Quantitative XRD analyses are done utilizing an automated Philips APD 3600/3620 System. The weight percents of the rock-forming minerals (in both size fractions) are determined by an empirical matrix correction procedure with external standard normalization (Jenkins et al., 1979). The detectability limit is 0.1-0.5 weight percent in the fractions analyzed. The relative weight percents of the various clay mineral species are determined according to an empirical peak-area-ratio model (Garrison et al., 1986a) utilizing a Lorentzian profile fitting algorithm (Schreiner and Jenkins, 1983; Garrison et al., 1986b). Compositions and species of the clay minerals are determined according to procedures outlined by Weaver (1956), Jonas and Brown (1959), Srodon (1980), Reynolds (1980), and Srodon (1984). The weight percent of the total clay minerals in the whole-rock sample is estimated by determining and subtracting the total weight percent of rock-forming minerals in the clay-size fraction from the total weight of the clay-size fraction. whole-rock The composition is calculated mathematically combining the XRD data from both size fractions.

References

Mary area and

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