AP - 085

STAGE 1 WORKPLAN

6/06/2008

AP085

Highlander Environmental Corp.

Midland, Texas

Stage 1 Abatement Plan
OXY, USA, Inc.
Hobbs R #10 Abandoned Tank Battery (ATB)
Section 31, T7S, R36E
NMOCD AP085

June 6, 2008

1.0 EXECUTIVE SUMMARY

As part of a due diligence assessment for Pogo Producing Company (Pogo), this site, formerly operated by Latigo Petroleum, Inc., was inspected by Highlander Environmental Corp. of Midland, Texas. Due to visual historic spills, Highlander supervised the installation of auger holes and soil borings at the site. The site location is shown on Figures 1 and 2.

Several impacted areas were investigated around the abandoned tank battery (ATB). One borehole was installed north of the ATB in an area measuring 45' x 60'. Elevated chloride concentrations were found from the surface to a depth of 70 feet below surface. The auger hole and borehole locations are shown on Figure 3. The analytical results are shown in Table 1 and Table 2.

Based on the results, borehole (BH-1) was converted to a temporary 2-inch monitor well. Groundwater was encountered at approximately 72 feet below the top of casing (TOC). On September 6, 2006 and May 15, 2007, Highlander purged and sampled the well per New Mexico Oil Conservation Division (NMOCD) guidelines for analyses of chlorides and BTEX. Chloride concentrations exceed New Mexico Water Quality Control Commission (NMWQCC) standards, while hydrocarbon constituents (BTEX) were detected at levels below the NMWQCC action levels. The analytical results are shown in Table 3.

A total of eight (8) monitor wells have been installed at this facility. The well locations are shown on the attached Figures 4 and 5. The wells have been surveyed, gauged and sampled. The results are summarized in Table 3.

On July 25, 2007, the Director of the (NMOCD), Environmental Bureau was notified in writing of groundwater impact at the above-referenced site in accordance with NM Rule 116. In order to further delineate the site, additional monitor wells were installed. During this time Plains Exploration & Production Company (PXP) purchased Pogo. In March 2008, OXY assumed operating responsibility for this site from PXP.

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2.0 BACKGROUND & PREVIOUS WORK

Highlander Environmental Corp. (Highlander) performed a limited subsurface investigation at the Latigo Todd UT Hobbs R #10 ATB, Section 31, Township 7 South, Range 36 East, Roosevelt County, New Mexico. The site location is shown on Figures 1 and 2.

Several impacted areas were investigated around the ATB. A total of seven auger holes were installed in visually impacted areas on July 20, 2006. TPH concentrations and chloride concentrations were defined in all auger holes with the exception of AH-3 (TPH) and AH-4 (chloride). Two boreholes were installed in the vicinity of AH-3(BH-1) and AH-4 (BH-2). BH-1 exhibited TPH concentrations below the RRAL at 5'-7' below ground surface (bgs). BH-2 was installed north of the ATB in an area measuring 45' x 60'. Elevated chloride concentrations were found from the surface to a depth of 70 feet below surface. In order to further define the lateral extent of impact, an additional nine auger holes were installed and sampled. The auger and borehole locations are shown on Figure 3. The analytical results are shown in Table 1 and Table 2.

Based on the results, borehole (BH-2) was converted to a temporary 2-inch monitor well. Groundwater was encountered at approximately 72 feet below top of casing (TOC). On September 6, 2006 and May 15, 2007, Highlander purged and sampled the well per OCD guidelines for analyses of chlorides and BTEX. Chloride concentrations exceed NMWQCC standards, while hydrocarbon constituents (BTEX) were detected at levels below the NMWQCC action levels. The monitor well was completed as a permanent monitor well. On July 25, 2007, the Director of the (NMOCD), Environmental Bureau was notified in writing of groundwater impact at the above-referenced site in accordance with NM Rule 116. The analytical results are shown in Table 3.

In September 2007, an additional seven (7) monitor wells were installed at this facility. The well locations are shown on the attached Figures 4 and 5. The wells were gauged and sampled on September 21, 2007 and December 7, 2007. The results are summarized in Table 3. Chloride concentrations exceed NMWQCC standards, while hydrocarbon constituents (BTEX) were detected at levels below the NMWQCC action levels.

3.0 GEOLOGY & HYDROGEOLOGY

3.1 Regional and Local Geology

According to the *Geologic Atlas of Texas Brownfield Sheet* (1974), the site is comprised of windblown sand. The sands are dark brown to grayish brown and occur in sheets locally in the form of cover sand, dunes and dune ridges. The sands are derived from lacustrine, fluviatile, and eolian deposits. Dune and dune ridges comprised of light brown to reddish sand overly the windblown sands in the western part of the area. These sands are mostly derived from the Gatuna Formation and average in thickness from 5 to 10 feet.

3.2 Regional and Local Hydrogeology

Groundwater occurs under unconfined conditions in the Ogallala Formation. The Ogallala Formation is regionally known as the High Plains Aquifer. Recharge to the Ogallala Formation occurs through infiltration of rainfall and snowmelt. Discharge occurs principally through pumping from wells.

The regional flow direction for groundwater in the High Plains aquifer is primarily to the south-southeast, however, the localized flow in this area appears to be towards the west-southwest, towards the edge of the Caprock. The depth to water in the monitor wells range from 62' to 82' (TOC).

3.3 Water Well Inventory

Highlander performed an internet search of the New Mexico Office of the State Engineer (OSE) and the United States Geologic Survey (USGS) databases for water wells within a ½ mile radius of the subject site.

No water well records were found in the OSE or USGS databases for the prescribed radius. The closest well reported is in Section 29, T-7-S, R-36-E, with a reported depth to water of 183'. The water well inventory data sheet is included in Appendix A.

4.0 SUBSURFACE SOILS

The soils in the vicinity of this site are typically windblown sands. The sands are dark brown to grayish brown and occur in sheets locally in the form of cover sand, dunes and dune ridges. The sands are derived from lacustrine, fluviatile, and eolian deposits. Dune and dune ridges comprised of light brown to reddish sand overly the windblown sands in the western part of the area. These sands are mostly derived from the Gatuna Formation and average in thickness from 5 to 10 feet. The soil borings at this site indicate sand and sandstone to approximately 60' where sandy clay is encountered.

5.0 GROUNDWATER QUALITY

5.1 Installation of Additional Monitor Wells

One additional monitor well, as required in the April 25, 2008 NMOCD letter, will be installed with the screened interval placed entirely below the water table. If the sampling data indicate the necessity for additional monitor wells, they will be installed accordingly to complete delineation. Copies of the boring and completion logs are included in Appendix B. A water table map was generated for the most recent sampling event and is shown as Figure 4.

5.2 Monitoring Program

The original monitoring well (MW-1) has been sampled four times since September 6, 2006. The most recent sampling was performed on all eight monitor wells on December 7, 2007. Quarterly sampling of all wells will commence in the third quarter of 2008 and continue until further notice.

5.3 Hydrocarbons in Groundwater

Traces of toluene, ethylbenzene and xylene have only been reported in MW-1 and at levels well below the NMWQCC standards.

5.4 Other Constituents of Concern

Chloride concentrations have been defined as shown on the attached Figure 5. Chloride concentrations are highest around MW-1.

6.0 CONCLUSIONS

TPH concentrations were either below the RRAL or limited to the surface 1.0' in 13 of the 16 auger holes. TPH concentrations were defined below the RRAL in the remaining three auger holes (AH-3, AH-4 and AH-5) at a depth of approximately 3.0' bgs. Chloride impact in the soil is limited to the vicinity of BH-2.

The extent of chloride impact in the groundwater has been defined at this site, and no BTEX constituents currently exceed the WQCC standards. There does not appear to be any receptors in the proximity of this site. Quarterly groundwater gauging and sampling will commence in the third quarter of 2008. OXY proposes to continue to monitor all eight wells on a quarterly basis to evaluate plume stability, groundwater parameters and to develop an appropriate groundwater remediation system, if any. If conditions do not improve or if they deteriorate, a workplan for additional investigation will be prepared and submitted to the NMOCD.

7.0 SOIL CORRECTIVE ACTION PLAN (CAP)

The majority of TPH impact is limited to the initial 1.0' of soil. In these areas, the soils will be tilled and treated to promote degradation of TPH concentrations. These soil areas will be periodically monitored until confirmation samples confirm RRALs have been met. The deeper TPH impact at AH-3, AH-4 and AH-5 will be removed and taken to an approved disposal facility. Additionally, the area around AH-4 (BH-2) will be excavated to a depth of 4.0' bgs and a 1.0' thick clay barrier or 40 mil liner will be placed into the excavation. The remainder of the excavation will be backfilled with clean fill material.

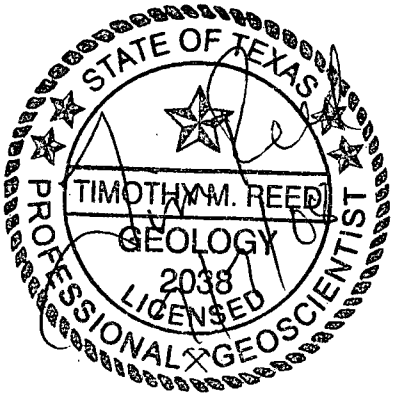
8.0 QUALITY ASSURANCE/ QUALITY CONTROL

All monitor wells were constructed to EPA and industry standards. All downhole equipment (i.e., drill rods, drill bits, etc.) were thoroughly decontaminated between each use with a steam cleaner.

The wells were inspected for the presence of phase-separated hydrocarbons (PSH) and found not to contain any. The wells were properly purged and sampled with clean, dedicated, polyethylene bailers and disposable line. The groundwater samples were submitted to a laboratory for analysis of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B, chloride, sulfate and total dissolved solids.

9.0 PROPOSED SCHEDULE OF ACTIVITIES

Upon approval, quarterly sampling of the eight (8) existing monitor wells will be continued and all results will be submitted in an annual summary report within the first quarter of 2009. Also, upon approval, all soil activities will be commenced and the results reported in the annual summary report.



Respectfully submitted,
Highlander Environmental Corp.

Timothy M. Reed, P.G.
Vice President

cc: Daniel Sanchez-NMOCD
enclosures: figures, water well information, boring and completion logs, tables

FIGURES

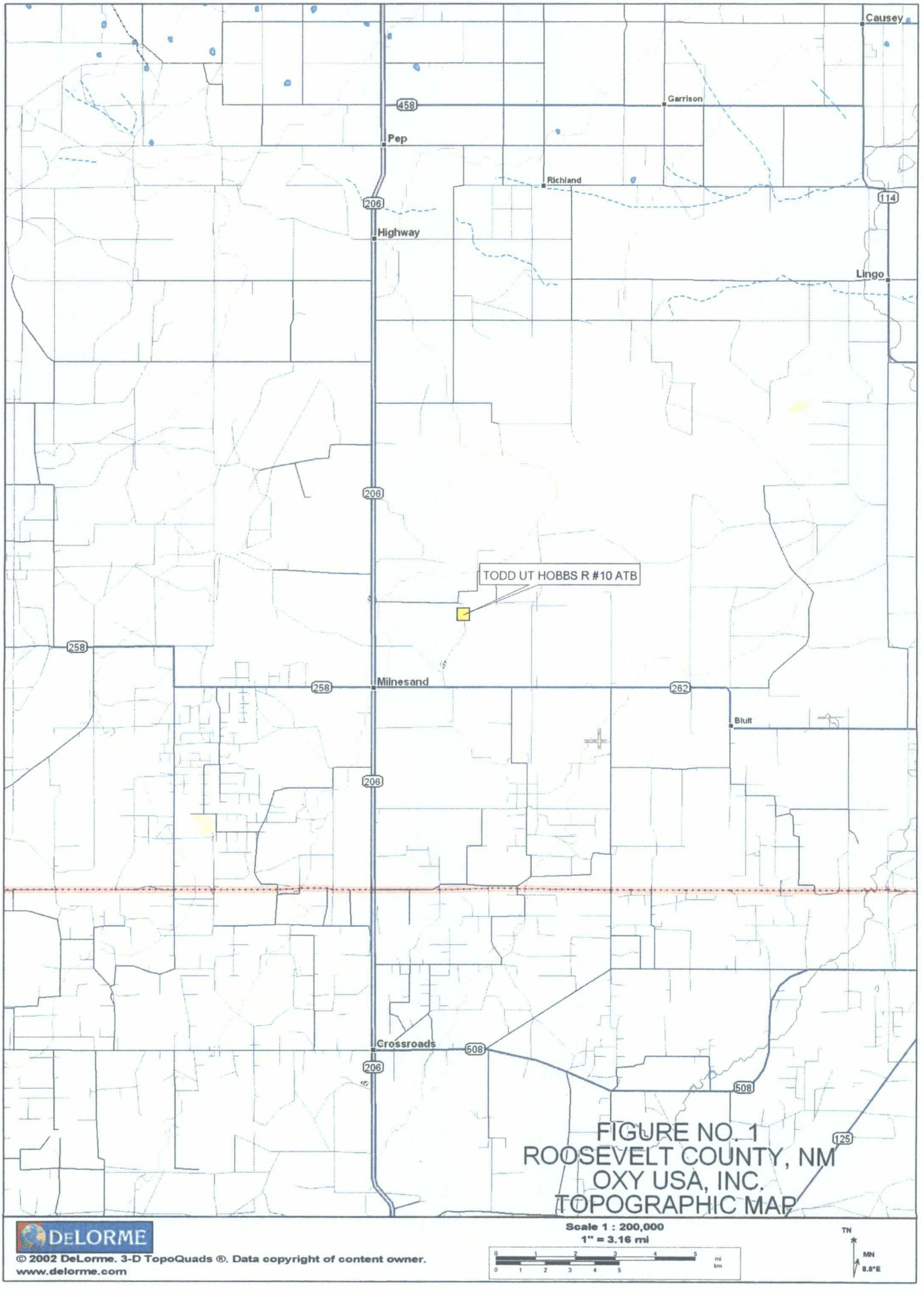


FIGURE NO. 1
ROOSEVELT COUNTY, NM
OXY USA, INC.
TOPOGRAPHIC MAP

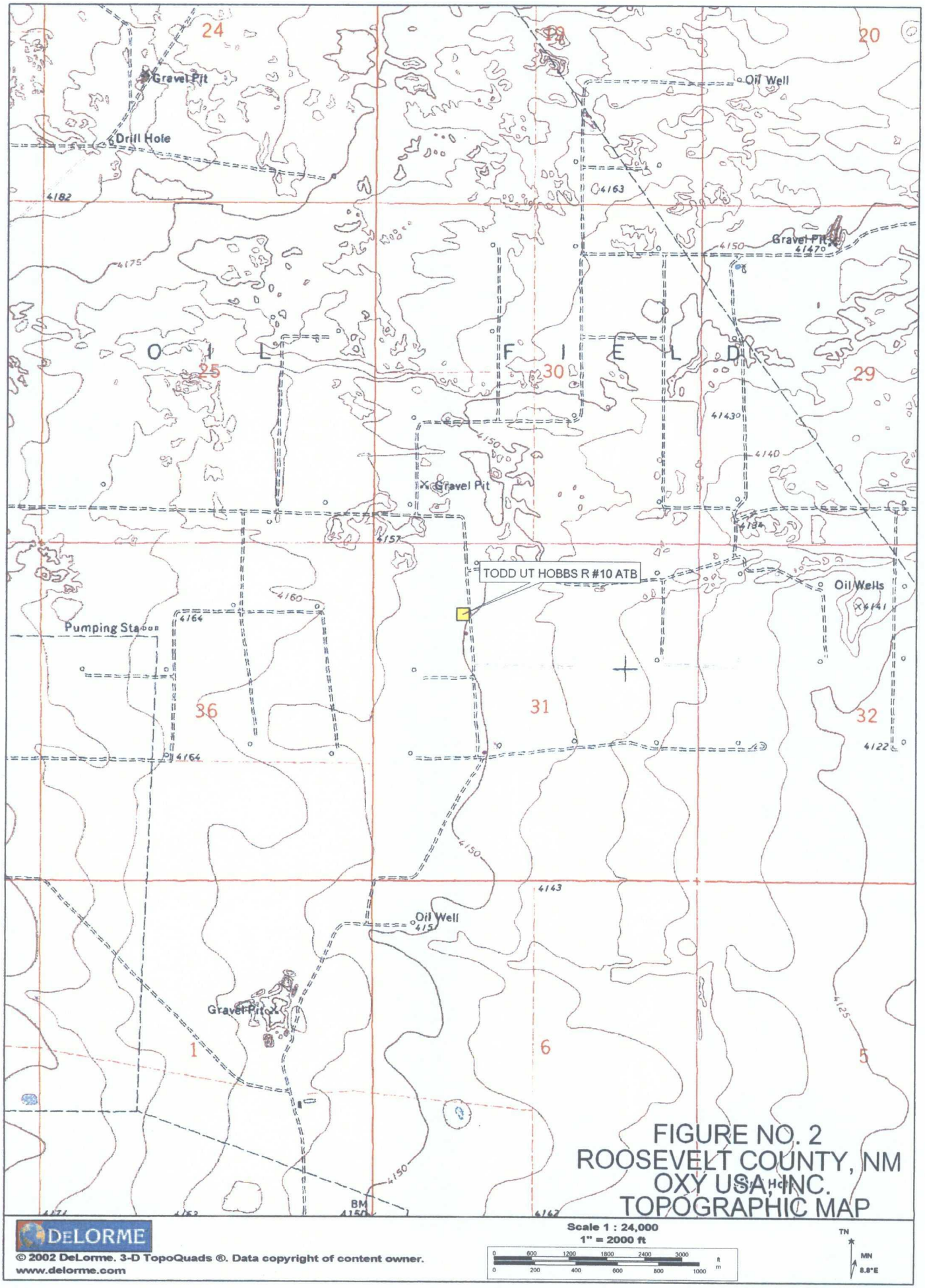


FIGURE NO. 2
ROOSEVELT COUNTY, NM
OXY USA, INC.
TOPOGRAPHIC MAP

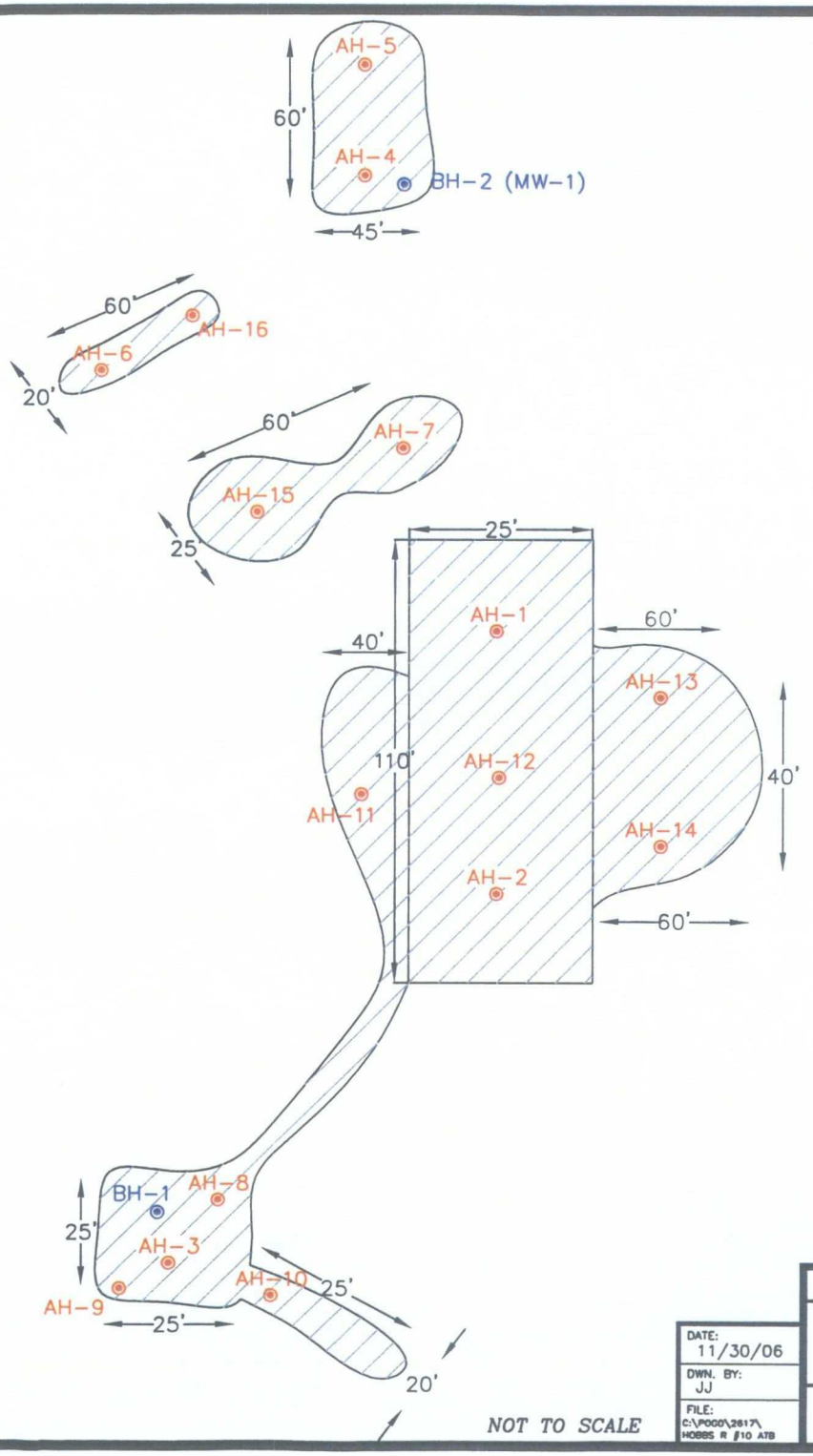


FIGURE NO. 3

ROOSEVELT COUNTY, NEW MEXICO

OXY USA, INC.
TODD UT HOBBS R #10 ATB

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE: 11/30/06
DWN. BY: JJ
FILE: C:\POOO\2617\HOBBS R #10 ATB

FIGURE NO. 4

ROOSEVELT COUNTY, NEW MEXICO

OXY USA, INC.

TODD UT HOBBS R #10 ATB
GROUNDWATER GRADIENT MAP
12/07/07

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE: 10/8/07
DRC. BY: RC
FILE: C:\POOD\2617

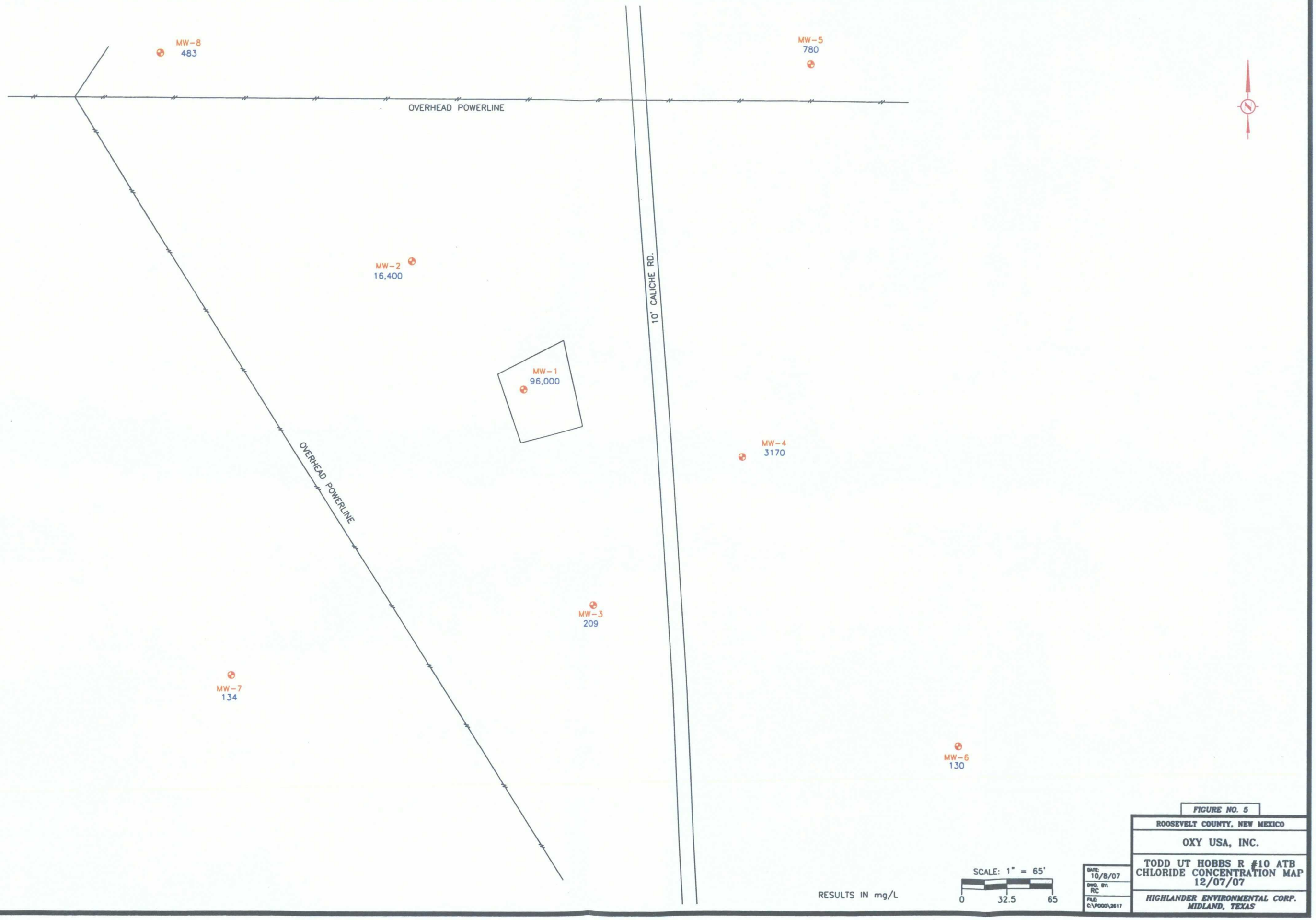


FIGURE NO. 5

ROOSEVELT COUNTY, NEW MEXICO

OXY USA, INC.

TODD UT HOBBS R #10 ATB
CHLORIDE CONCENTRATION MAP
12/07/07

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE: 10/8/07
DRG. BY: RC
FILE: C:\POOO\2617

TABLES

Table 1
Pogo Producing Company
TODD UT HOBBS R #10 ATB
Roosevelt County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
AH-1	7/20/2006	0-1	**20.3**	**304**	**324.3**	<0.0200	<0.0200	<0.0200	<0.0200	**51.8**
	7/20/2006	1-1.5	<1.00	<50.0	<50.0	-	-	-	-	**20.3**
	7/20/2006	2-2.5	<1.00	<50.0	<50.0	-	-	-	-	**39.6**
AH-2	7/20/2006	0-1	**14.6**	**1610**	**1624.6**	<0.0500	<0.0500	<0.0500	<0.0500	**79.5**
	7/20/2006	1-1.5	<1.00	<50.0	<50.0	-	-	-	-	**222**
	7/20/2006	2-2.5	<1.00	<50.0	<50.0	-	-	-	-	**429**
	7/20/2006	3-3.5	<1.00	<50.0	<50.0	-	-	-	-	**316**
AH-3	7/20/2006	0-1	**271**	**2880**	**3151**	<0.100	<0.100	**0.110**	**0.426**	**17.6**
	7/20/2006	1-1.5	**591**	**3490**	**4081**	-	-	-	-	**67.5**
	7/20/2006	2-2.5	**336**	**2230**	**2566**	-	-	-	-	<10.0
AH-4	7/20/2006	1-1.5	**589**	**5340**	**5929**	<0.100	<0.100	**0.501**	**1.32**	
	7/20/2006	2-2.5	**236**	**1200**	**1436**	-	-	-	-	**1820**
	7/20/2006	3-3.5	**589**	**3540**	**4129**	-	-	-	-	**2320**
	7/20/2006	4-4.5	<1.00	**81.40**	**81.40**	-	-	-	-	**5290**
	7/20/2006	5-5.5	<1.00	<50.0	<50.0	-	-	-	-	**4810**
AH-5	7/20/2006	0-1	<1.00	**315**	**315**	-	-	-	-	**26.5**
	7/20/2006	1-1.5	**3.23**	**1180**	**1183.23**	<0.0200	<0.0200	<0.0200	<0.0200	<10.0
	7/20/2006	2-2.5	**43**	**4280**	**4323**	-	-	-	-	**254**
	7/20/2006	3-3.5	<1.00	<50.0	<50.0	-	-	-	-	**187**

Pogo Producing Company
TODD UT HOBBS R #10 ATB
Roosevelt County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
AH-6	7/20/2006	0-1	<2.00	**1050**	**1050**	<0.0200	<0.0200	<0.0200	<0.0200	**110**
	7/20/2006	1-1.5	<1.00	**206**	**206**	-	-	-	-	**48.9**
AH-7	7/20/2006	0-1	<5.00	**1170**	**1170**	<0.0500	<0.0500	<0.0500	<0.0500	<2.00
	7/20/2006	1-1.5	<1.00	**96.0**	**96.0**	-	-	-	-	<2.00
AH-8	9/4/2007	0-1	**1.50**	**1460**	**1462**					
	9/4/2007	1-1.5	**2.20**	<50.0	**2.20**					
AH-9	9/4/2007	0-1	**110**	**14100.0**	**14210.0**					
	9/4/2007	1-1.5	**2.94**	**449.0**	**451.94**					
	9/4/2007	2-2.5	**1.45**	<50.0	**1.45**					
AH-10	9/4/2007	0-1	**1.85**	**1080**	**1081.85**					
	9/4/2007	1-1.5	**2.34**	<50.0	**2.34**					
AH-11	9/4/2007	0-1	**23.7**	**11900**	**11923.7**					
	9/4/2007	1-1.5	**1.25**	**910.0**	**911.25**					
	9/4/2007	2-2.5	**1.72**	**882.0**	**883.72**					
AH-12	9/4/2007	0-1	**2.01**	**768.0**	**770.01**					
	9/4/2007	1-1.5	**1.10**	<50.0	**1.10**					
AH-13	9/4/2007	0-1	<1.00	**545.0**	**545.0**					
		1-1.5	<1.00	<50.0	<50.00					

Pogo Producing Company
TODD UT HOBBS R #10 ATB
Roosevelt County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
AH-14	9/4/2007	0-1	<1.00	**386.0**	**386.0**					
	9/4/2007	1-1.5	**2.04**	<50.0	**2.04**					
AH-15	9/4/2007	0-1	**1.02**	**7410.0**	**7411.02**					
	9/4/2007	1-1.5	<1.00	<50.0	<50.0					
AH-16	9/4/2007	0-1	<1.00	**3070.0**	**3070.0**					
	9/4/2007	1-1.5	<1.00	**99.0**	**99.0**					
Area AH-3	8/25/2006	0-5'	**35.4**	**6870**	**6905.4**	-	-	-	-	-

(-) not analyzed

Table 2
Pogo Producing Company
TODD UT HOBBS R #10 ATB
Roosevelt County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
BH-1	8/31/2006	5-7'	<2.00	<50.0	<50.0	-	-	-	-	-
	8/31/2006	10-12'	<1.00	<50.0	<50.0	-	-	-	-	-
BH-2	8/31/2006	10-12'	-	-	-	-	-	-	-	**6090**
	8/31/2006	15-17'	-	-	-	-	-	-	-	**4580**
	8/31/2006	20-22'	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	**4780**
	8/31/2006	30-32'	-	-	-	-	-	-	-	**1380**
	8/31/2006	40-42'	-	-	-	-	-	-	-	**1120**
	8/31/2006	50-52'	-	-	-	-	-	-	-	**2260**
	8/31/2006	60-62'	-	-	-	-	-	-	-	**4250**
	8/31/2006	70-72'	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	**1120**

(-) not analyzed

Table 3
Pogo Producing Company
TODD UT HOBBS R #10 ATB
Roosevelt County, New Mexico

Sample ID	Date Sampled	Date Gauged	Total Depth (feet)	Top of Casing Elevation (feet)	Measured Groundwater Elevations (feet)	Corrected Groundwater Elevations (feet)	Sample Number	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Xylene (mg/L)	Chloride (mg/L)	TDS (mg/L)
TMW-1 (MW-1)	09/06/06	N.G.	80.50	4,153.39	N.G.	N.G.	102409	<0.00100	**0.00120**	**0.00110**	<0.00100	**40,800**	-
	05/15/07	N.G.		4,153.39	N.G.	N.G.	124622	<0.00100	<0.00100	<0.00100	<0.00100	**120,000**	-
	09/21/07	09/19/07		4,153.39	72.00	4,081.39	137383	<0.00100	<0.00100	<0.00100	**0.28900**	**92,700**	-
	12/07/07	12/04/07		4,153.39	71.67	4,081.72	-	-	-	-	-	**96,000**	**178,700**
MW-2	09/21/07	09/19/07	80.60	4,153.90	63.51	4,090.39	137384	<0.00100	<0.00100	<0.00100	<0.00100	**16,200**	-
	12/07/07	12/04/07		4,153.90	63.62	4,090.28	-	-	-	-	-	**16,400**	**26,400**
MW-3	09/21/07	09/19/07	88.20	4,155.13	78.56	4,076.57	137385	<0.00100	<0.00100	<0.00100	<0.00100	**164**	-
	12/07/07	12/04/07		4,155.13	78.13	4,077.00	-	-	-	-	-	**209**	**806**
MW-4	09/21/07	09/19/07	87.90	4,153.35	68.11	4,085.24	137386	<0.00100	<0.00100	<0.00100	<0.00100	**3,330**	-
	12/07/07	12/04/07		4,153.35	68.12	4,085.23	-	-	-	-	-	**3,170**	**6,400**
MW-5	09/21/07	09/19/07	87.87	4,154.01	62.83	4,091.18	137387	<0.00100	<0.00100	<0.00100	<0.00100	**601**	-
	12/07/07	12/04/07		4,154.01	62.79	4,091.22	-	-	-	-	-	**780**	**2,155**
MW-6	09/21/07	09/19/07	88.80	4,153.54	71.62	4,081.92	137388	<0.00100	<0.00100	<0.00100	<0.00100	**121**	-
	12/07/07	12/04/07		4,153.54	70.95	4,082.59	-	-	-	-	-	**130**	**838**
MW-7	09/21/07	09/19/07	88.00	4,154.97	82.45	4,072.52	137389	<0.00100	<0.00100	<0.00100	<0.00100	**127**	-
	12/07/07	12/04/07		4,154.97	82.26	4,072.71	-	-	-	-	-	**134**	**706**
MW-8	09/21/07	09/19/07	87.93	4,156.28	87.93	4,068.35	137390	<0.00100	<0.00100	<0.00100	<0.00100	**365**	-
	12/07/07	12/04/07		4,156.28	65.30	4,090.98	-	-	-	-	-	**483**	**1,586**

(-) not analyzed N.G. - Not gauged TMW-1 converted to MW-1 on September 17, 2007

APPENDIX A

Water Well Data
Average Depth to Groundwater (ft)
Hobb R #10 ATB, Roosevelt County, New Mexico

6 South 35 East

6	5	4	3	2	1
7	8	9	10	11	12 **75** **90**
18	17	16	15	14	13 **55**
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

6 South 36 East

6 **70**	5 **85**	4 **90**	3	2	1
7	8	9	10	11	12 **100**
18	17	16	15	14 **90**	13 **94**
19 **63**	20	21	22 **100**	23	24 **90**
30	29	28 **142**	27	26	25
31	32	33	34	35	36

6 South 37 East

6	5	4	3	2 **90**	1
7 **82**	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **80**	22 **98**	23 **90**	24
30	29	28	27	26	25
31	32	33	34	35	36

7 South 35 East

6	5	4	3	2 **211**	1
7 **190**	8	9	10 **188**	11 **197**	12
18	17 **191**	16	15	14	13
19 **181**	20	21	22	23 **198**	24
30	29 **158**	28	27	26 **50**	25
31 **53**	32	33	34 **116**	35	36

7 South 36 East

6 **194**	5 **149**	4	3	2	1
7	8	9	10	11 **185**	12
18	17	16	15	14	13
19	20	21	22	23 **185**	24 **180**
30	29 **183**	28 **183**	27 **187**	26	25
31	32	33	34	35	36 **155**

7 South 37 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 **172**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

8 South 35 East

6	5	4	3	2	1
7	8	9	10 **80**	11 **70**	12
18	17 **60**	16	15	14 **78**	13
19	20	21	22	23	24
30	29 **120**	28	27	26	25
31	32	33	34	35	36

8 South 36 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17 **184**	16	15 **85**	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

8 South 37 East

6	5	4	3 **177**	2	1
7 **87**	8	9	10 **112**	11	12
18 **90**	17	16 **97**	15	14	13
19 **92**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports
105 USGS Well Reports
90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

APPENDIX B

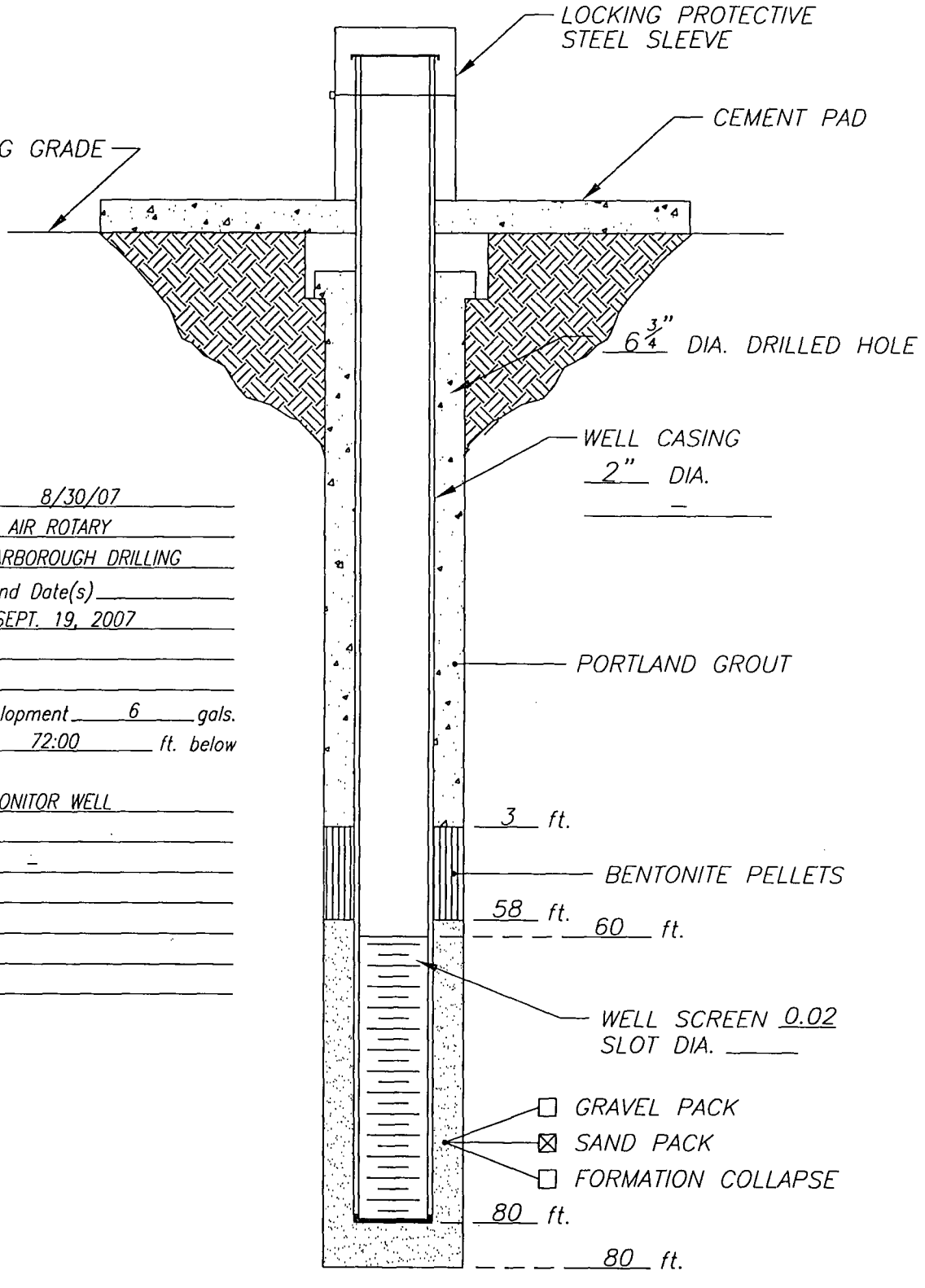
SAMPLE LOG

Boring/Well: MW-1
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 80
Date Installed: 08/30/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown medium grain sand
5-10	--	Buff sandy limestone
10-15	--	Hard tan/yellow sandy limestone
15-20	--	Hard tan/yellow sandy limestone
30-35	--	Tan calcareous sand
40-45	--	Tan calcareous sand
50-55	--	Tan/buff sandy limestone
60-65	--	Pea gravel and large sand with hydrocarbon odor (moist)
70-75	--	Tan/yellow clay with slight moisture
75-80	--	Tan/yellow clay with slight moisture

Total Depth is 80 feet Groundwater encountered at 69 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 8/30/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING - SEPT. 19, 2007

Water Removed During Development 6 gals.
Static Depth to Water 72:00 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks -

DATE: OCT 3, 2007	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-1
	LOCATION: ROOSEVELT CO, NM	

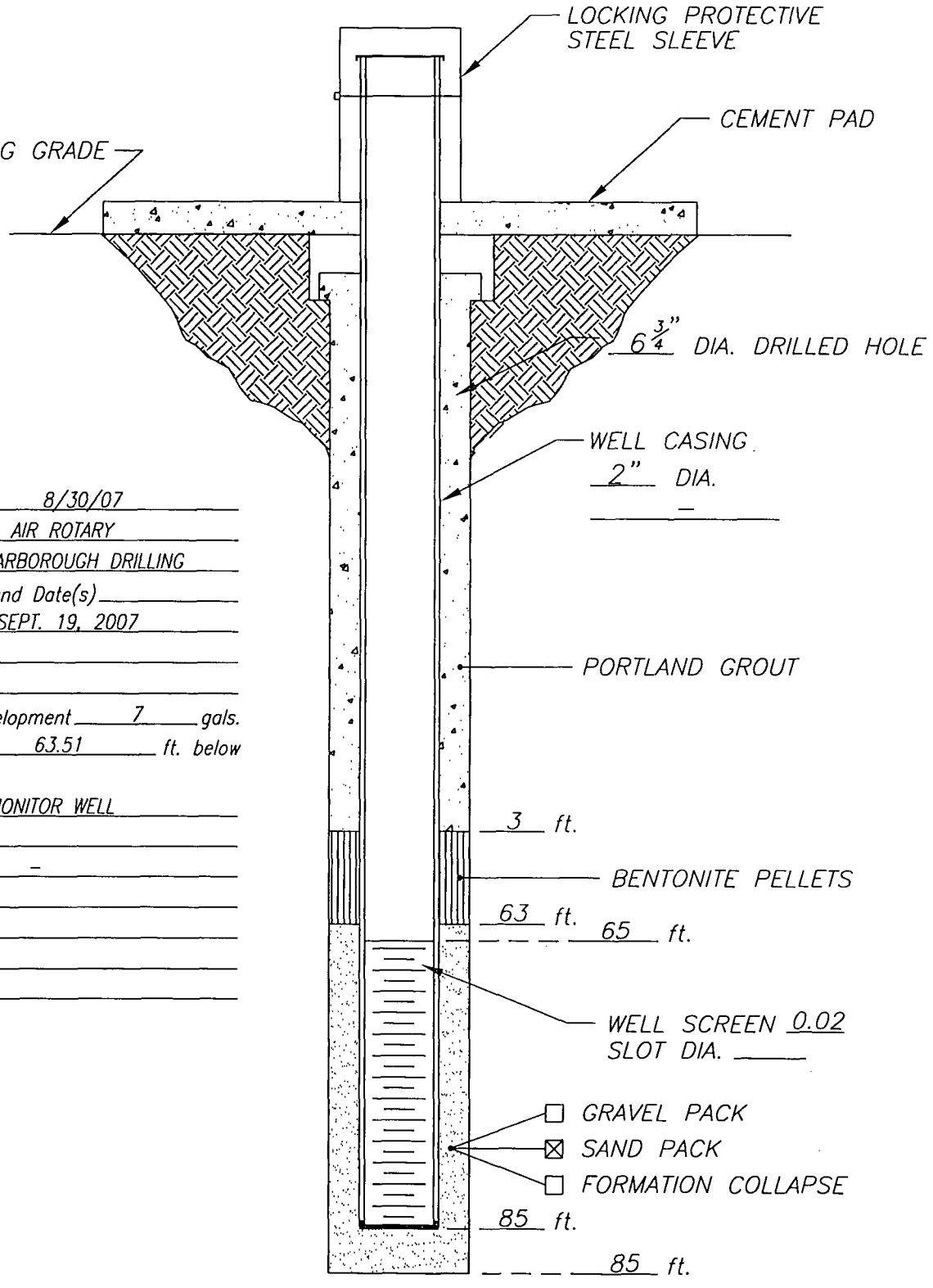
SAMPLE LOG

Boring/Well: MW-2
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 08/30/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Gray/red fine grain well sorted sand
5-10	--	Tan/buff calcareous sand
10-15	--	Buff sandy limestone (hard)
15-20	--	Tan/buff calcareous sand
20-25	--	Tan/buff calcareous sand
25-30	--	Tan well sorted fine grain sand
30-35	--	Buff sandy limestone
35-40	--	Tan calcareous sand
40-45	--	Tan fine grain blow sand
45-50	--	Tan fine grain blow sand with sandstone
50-55	--	Tan fine grain blow sand with gravel intermixed
55-60	--	Tan/red sandy clay
60-65	--	Tan clay of high plasticity
65-70	--	Tan clay of high plasticity
70-75	--	Tan clay of high plasticity
75-80	--	Tan clay of high plasticity
80-85	--	Tan/yellow clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 69 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 8/30/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING - SEPT. 19, 2007

Water Removed During Development 7 gals.
Static Depth to Water 63.51 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks -

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-2
	LOCATION: ROOSEVELT CO, NM	

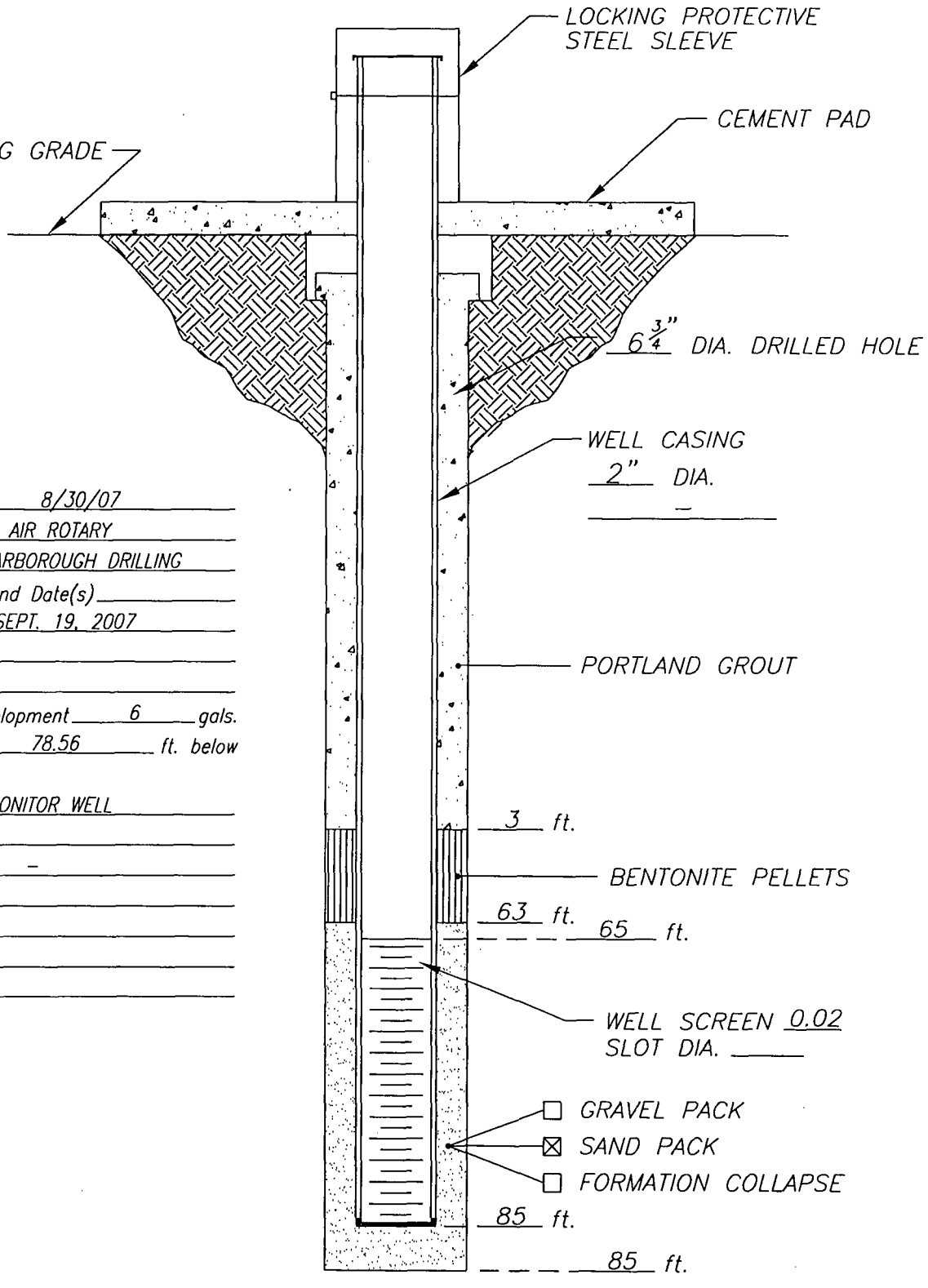
SAMPLE LOG

Boring/Well: MW-3
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 08/30/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Gray/red fine to medium grain sand
5-10	--	Tan calcareous sand
10-15	--	Buff slightly sandy limestone with chert
15-20	--	Buff slightly sandy limestone
20-25	--	Tan/buff calcareous fine grain sand
25-30	--	Tan/buff calcareous fine grain sand
30-35	--	Tan calcareous well sorted fine grain sand
35-40	--	Tan well sorted fine grain sand (blow sand)
40-45	--	Tan well sorted fine grain sand (blow sand)
45-50	--	Tan well sorted fine grain sand (blow sand) with sandstone intermixed
50-55	--	Tan poorly sorted fine to medium grain sand with pebbles
55-60	--	Tan poorly sorted fine to medium grain sand with pebbles
60-65	--	Tan sandy clay of high plasticity
65-70	--	Dark tan slightly sandy clay of high plasticity
70-75	--	Dark tan slightly sandy clay of high plasticity
75-80	--	Dark tan slightly sandy clay of high plasticity
80-85	--	Dark tan slightly sandy clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 78 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 8/30/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING - SEPT. 19, 2007

Water Removed During Development 6 gals.
Static Depth to Water 78.56 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks -

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-3
	LOCATION: ROOSEVELT CO, NM	

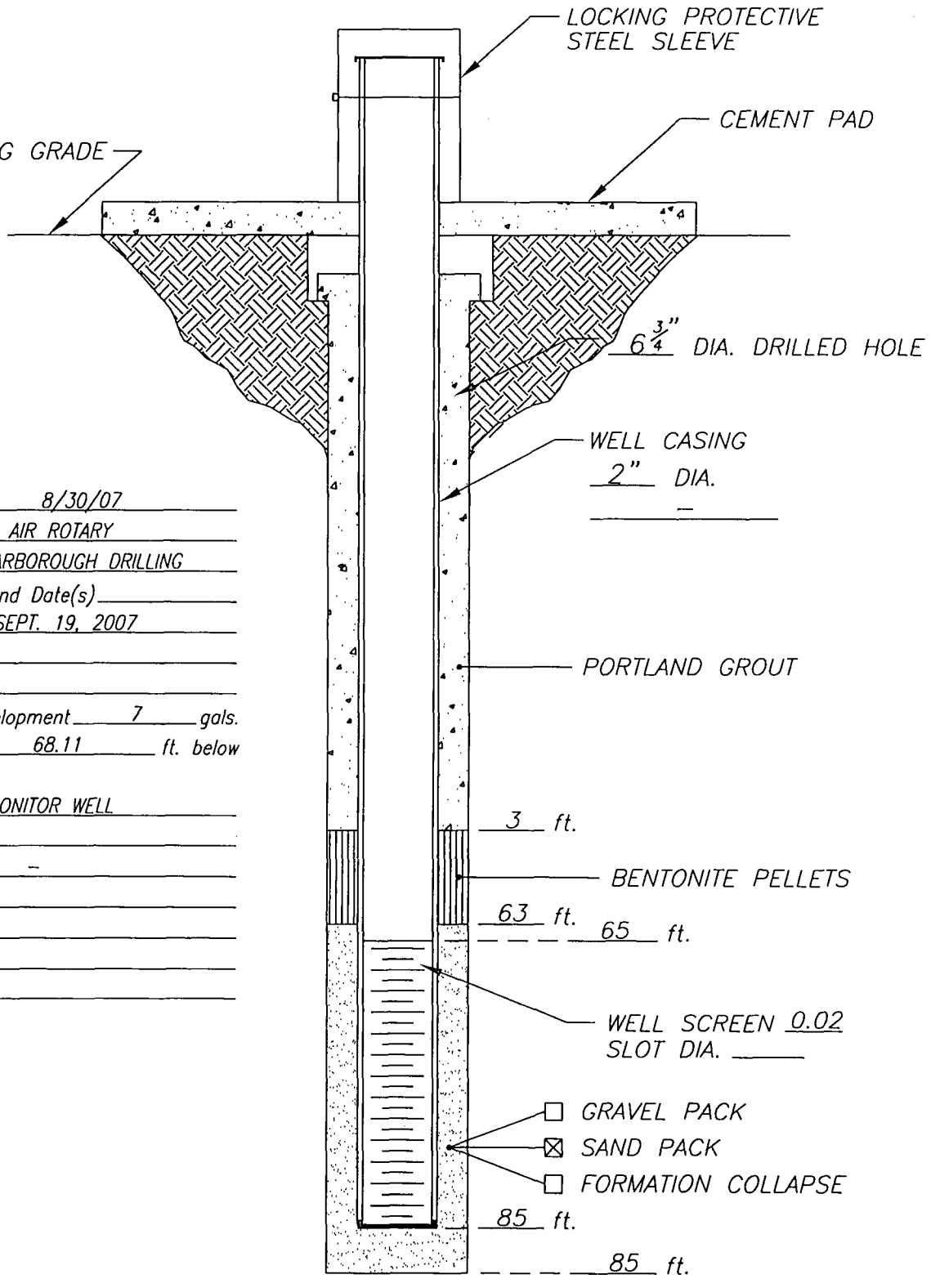
SAMPLE LOG

Boring/Well: MW-4
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 08/30/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Grayish/red sand
5-10	--	Buff/tan fine grain sandy limestone
10-15	--	Buff (slightly sandy) limestone
15-20	--	Buff (slightly sandy) limestone
20-25	--	Tan/buff calcareous sand
25-30	--	Buff/tan sandy limestone
30-35	--	Buff/tan sandy limestone
35-40	--	Tan/buff calcareous sand
40-45	--	Tan fine grain sand
45-50	--	Tan fine grain sand
50-55	--	Tan fine to medium grain sand with pebbles intermixed
55-60	--	Dark tan fine to medium grain sand with pebbles
60-65	--	Dark tan/brown clay of high plasticity
65-70	--	Tan clay of high plasticity with some sand intermixed
70-75	--	Tan/yellow clay of high plasticity
75-80	--	Tan/yellow clay of high plasticity
80-85	--	Tan/yellow clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 68 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 8/30/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING – SEPT. 19, 2007

Water Removed During Development 7 gals.
Static Depth to Water 68.11 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW–4
	LOCATION: ROOSEVELT CO, NM	

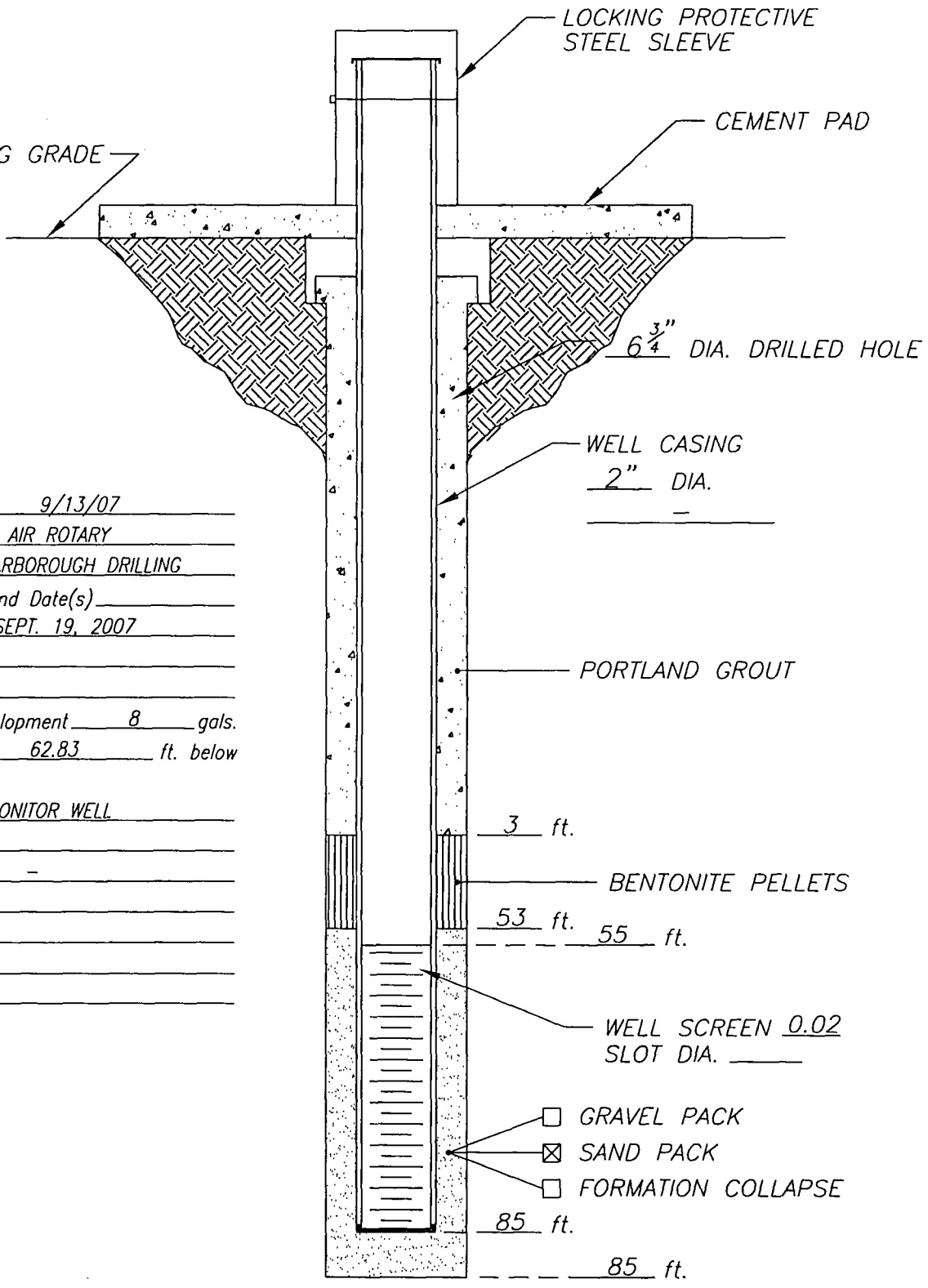
SAMPLE LOG

Boring/Well: MW-5
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 09/13/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Gray/brown medium grain sand
5-10	--	Tan medium grain calcareous sand
10-15	--	Buff fine grain sandy limestone
15-20	--	Buff fine grain sandy limestone
20-25	--	Tan fine grain calcareous sand
25-30	--	Tan fine grain calcareous sand
30-35	--	Tan fine grain calcareous sand
35-40	--	Tan fine grain calcareous sand
40-45	--	Tan fine grain sand
45-50	--	Tan fine grain sand
50-55	--	Tan medium grain sand with sandstone intermixed
55-60	--	Tan medium grain sand with sandstone intermixed
60-65	--	Brown medium to coarse grain sand with pebbles and sandstone intermixed
65-70	--	Tan/brown sandy clay (moist)
70-75	--	Tan/brown sandy clay (moist)
75-80	--	Tan clay of high plasticity
80-85	--	Tan clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 68 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 9/13/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING - SEPT. 19, 2007

Water Removed During Development 8 gals.
Static Depth to Water 62.83 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks -

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-5
	LOCATION: ROOSEVELT CO, NM	

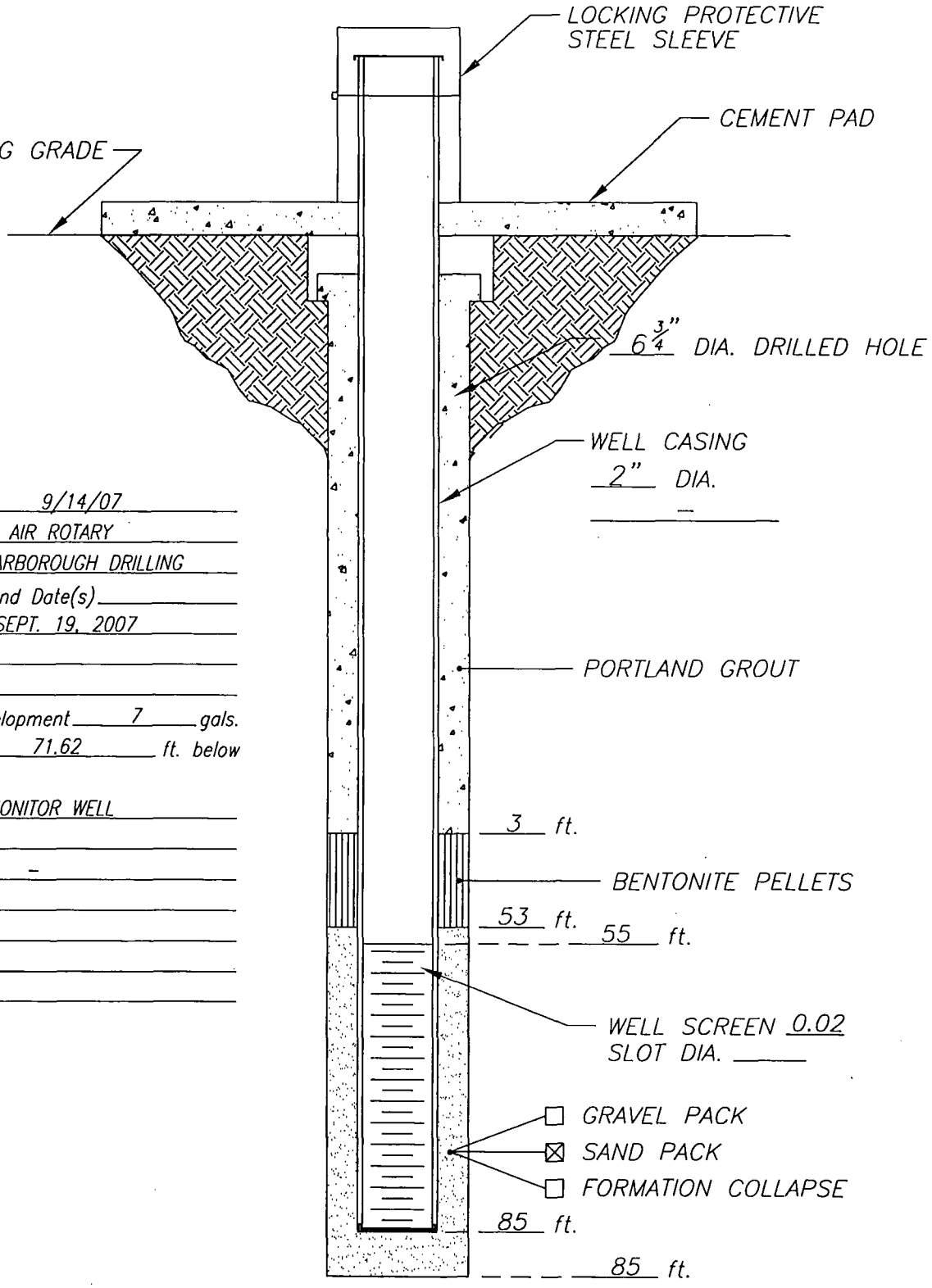
SAMPLE LOG

Boring/Well: MW-6
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 09/14/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown fine to medium grain sand
5-10	--	Buff/tan sandy limestone
10-15	--	Buff/tan sandy limestone
15-20	--	Tan fine grain calcareous sand
20-25	--	Tan fine grain calcareous sand
25-30	--	Tan/buff fine grain sand (blow sand)
30-35	--	Tan/buff fine grain calcareous sand
35-40	--	Tan/buff fine grain calcareous sand
40-45	--	Tan fine grain calcareous sand with limestone intermixed
45-50	--	Tan fine grain calcareous sand
50-55	--	Tan fine grain sand with some sandstone intermixed
55-60	--	Tan/brown medium grain sand with gravel intermixed
60-65	--	Tan/brown sandy clay of high plasticity
65-70	--	Tan/brown sandy clay of high plasticity
70-75	--	Yellow/brown clay of high plasticity
75-80	--	Yellow/brown clay of high plasticity
80-85	--	Yellow/brown clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 70 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 9/14/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING - SEPT. 19, 2007

Water Removed During Development 7 gals.
Static Depth to Water 71.62 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks -

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-6
	LOCATION: ROOSEVELT CO, NM	

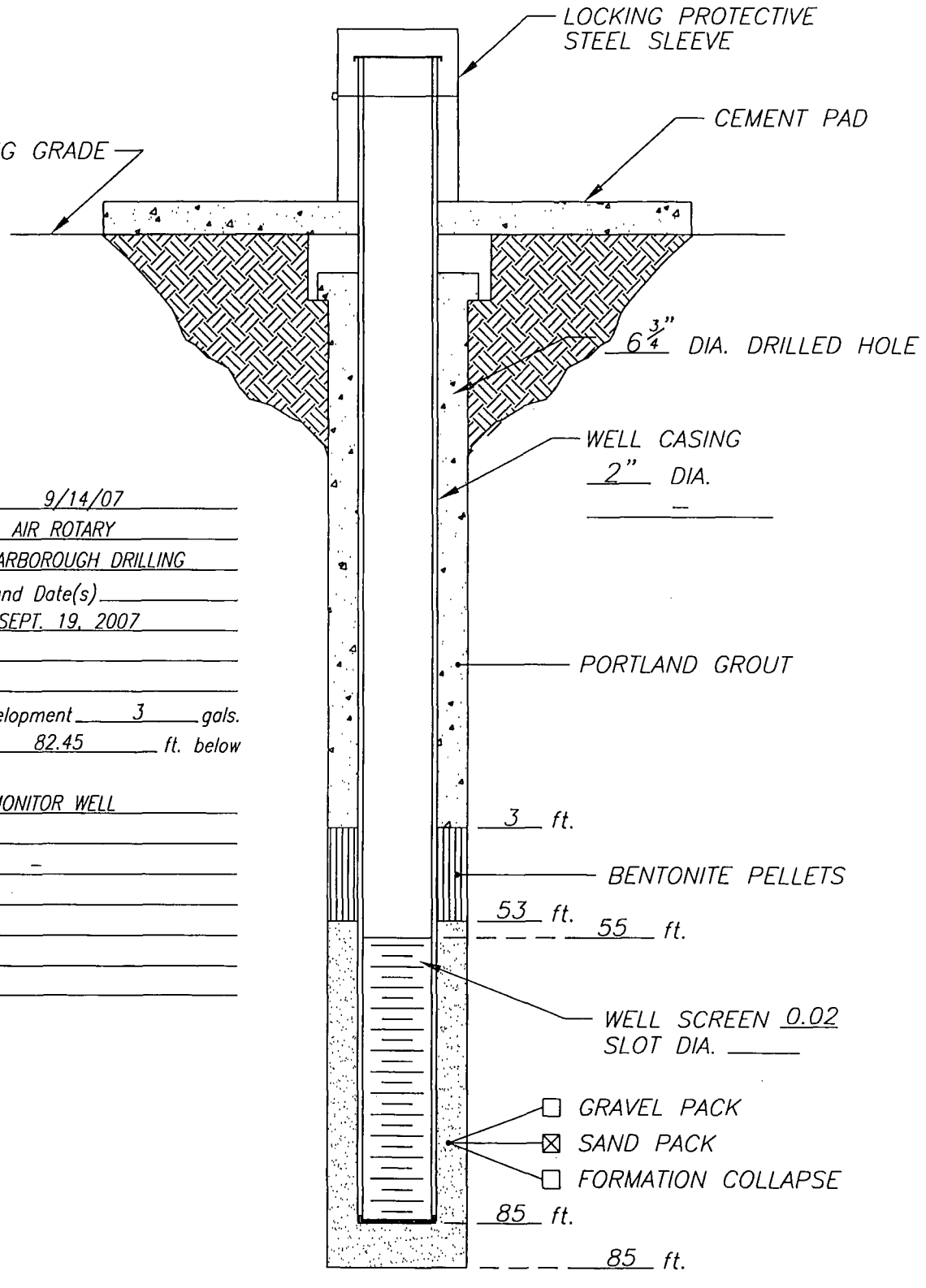
SAMPLE LOG

Boring/Well: MW-7
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 09/14/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown medium grain sand
5-10	--	Tan/buff calcareous fine grain sand
10-15	--	Tan/buff calcareous fine grain sand
15-20	--	Buff fine grain sandy limestone
20-25	--	Buff fine grain sandy limestone
25-30	--	Tan/buff fine grain calcareous sand
30-35	--	Tan/buff fine grain calcareous sand
35-40	--	Tan fine grain sand
40-45	--	Tan fine grain sand (blow sand)
45-50	--	Tan fine grain sand (blow sand)
50-55	--	Tan fine grain sand with sandstone intermixed
55-60	--	Tan fine grain sand
60-65	--	Tan/brown sandy clay of high plasticity
65-70	--	Tan/brown clay of high plasticity
70-75	--	Tan/brown clay of high plasticity
75-80	--	Tan/brown clay of high plasticity
80-85	--	Tan/brown clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 80 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 9/14/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING - SEPT. 19, 2007

Water Removed During Development 3 gals.
Static Depth to Water 82.45 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks -

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-7
	LOCATION: ROOSEVELT CO, NM	

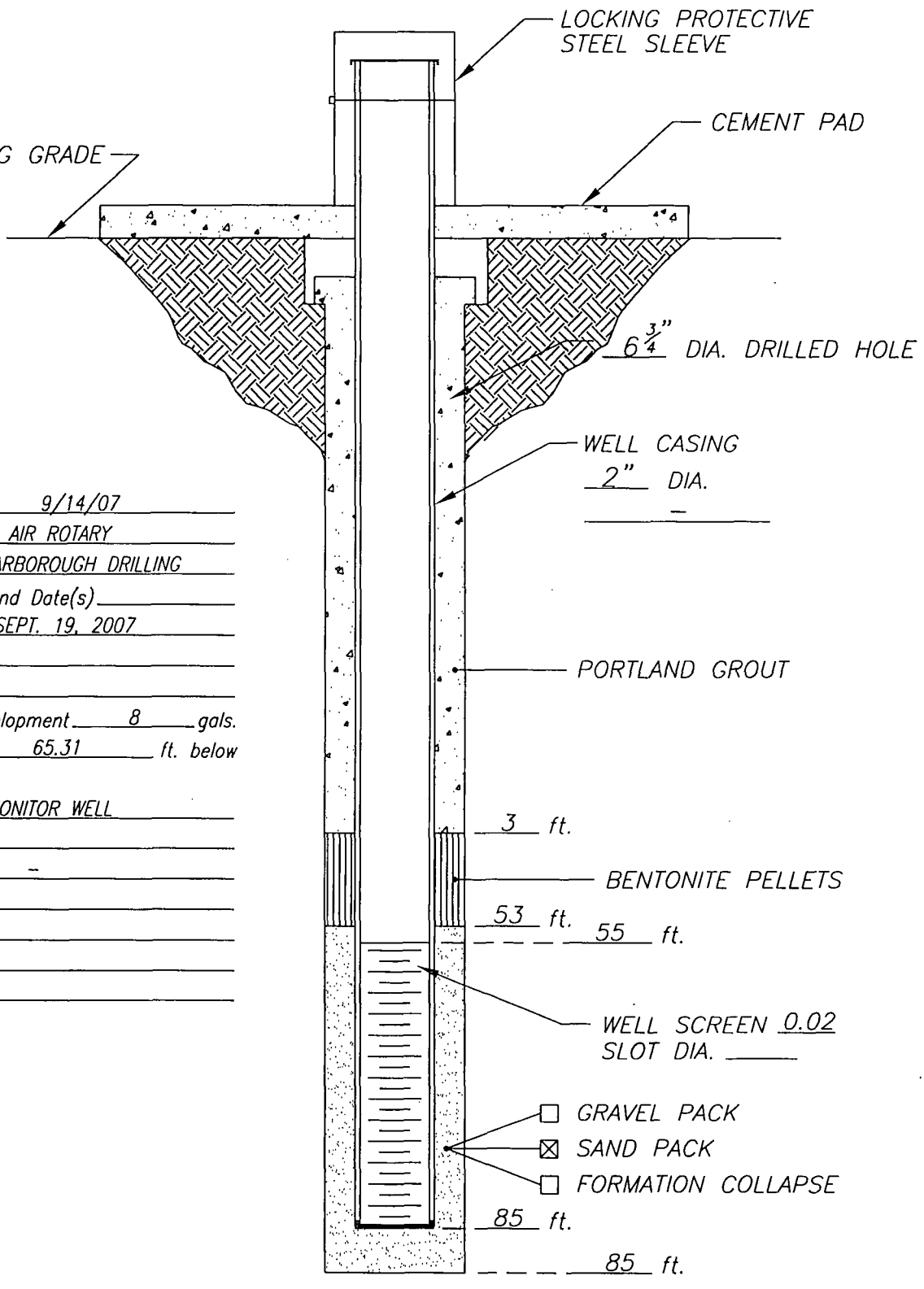
SAMPLE LOG

Boring/Well: MW-8
Project Number: 2617
Client: Pogo Production Inc.
Site Location: Todd UT Hobbs R # 10 ATB
Location: Roosevelt County, New Mexico
Total Depth 85
Date Installed: 09/14/07

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
0-5	--	Tan/brown medium grain sand
5-10	--	Brown/tan fine to medium grain sand
10-15	--	Tan/buff calcareous sand with chert and limestone intermixed
15-20	--	Tan/buff calcareous sand with limestone intermixed
20-25	--	Tan/buff calcareous sand with limestone intermixed
25-30	--	Tan fine grain calcareous sand
30-35	--	Tan fine grain calcareous sand
35-40	--	Tan fine grain calcareous sand
40-45	--	Tan fine grain sand (blow sand)
45-50	--	Tan fine grain sand with sandstone intermixed
50-55	--	Tan fine grain sand with gravel intermixed
55-60	--	Tan/brown medium grain sand with some gravel
60-65	--	Tan/brown medium grain sand with sandstone intermixed
65-70	--	Tan/brown clay of high plasticity
70-75	--	Tan/brown clay of high plasticity
75-80	--	Tan/brown clay of high plasticity
80-85	--	Tan/brown clay of high plasticity

Total Depth is 85 feet Groundwater encountered at 65 feet below ground surface.

WELL CONSTRUCTION LOG



Installation Date(s) 9/14/07
Drilling Method AIR ROTARY
Drilling Contractor SCARBOROUGH DRILLING
Development Technique(s) and Date(s)
HANDBAILING – SEPT. 19, 2007

Water Removed During Development 8 gals.
Static Depth to Water 65.31 ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: 10/3/07	CLIENT: POGO PRODUCING INC	WELL NO.
Highlander Environmental	PROJECT: TODD UT HOBBS R # 10 ATB	MW-8
	LOCATION: ROOSEVELT CO, NM	