SUMMARY REPORT SITE INVESTIGATION

Summary Report
Site Investigation
Baker Oil Tools Facility
2800 W. Marland
Hobbs, New Mexico
June, 1992

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SUMMARY REPORT
BAKER OIL TOOLS
2800 W. MARLAND
HOBBS, NEW MEXICO

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SCOPE OF WORK

The December 19-20, 1991, and the February 24-28, 1992, field investigations conducted by Simon Hydro-Search, Inc. (Simon) at the referenced facility included the following:

(1) Visual inspection and integrity test of interior sump;

(2) Collection of liquid and solid phase samples of interior sump contents;

(3) Removal of tubing string and downhole pump from water well;

(4) Collection of groundwater samples from water well;

(5) Completion of 12 soil borings and collection of soil samples;

(6) Collection of background soil samples;

(7) Installation, development, and sampling of three monitor wells;

(8) Submittal of collected samples for laboratory analysis;

(9) Preparation of this investigation report.

BACKGROUND AND PRELIMINARY WORK

Baker Oil Tools (Baker) currently operates an oilfield service tool rental facility at 2800 W. Marland in Hobbs, New Mexico. The site occupies approximately 1.01 acres. Topography at the site is relatively flat. During the operation of the business, tools from the oilfield are brought to the facility, cleaned, and refurbished for reuse. Wastewater generated from this washing operation contains heavy crude distillates, leaded grease sediments, and crude oil (5%) in an aqueous suspension (95%). Historically, the wastewater flowed initially to an interior sump (approximately 100 gallon capacity) and finally to the wastewater disposal pit (pit) described later.

Since the latter part of 1991, the wastewater disposal pit no longer receives discharges from the interior sump. Instead, these discharges from the interior sump flow through an exterior, three-chambered oil/water separator (approximately 150 gallon capacity) and then into the municipal sewer system.

The facility is located in a business/residential area and is bounded to the north by undeveloped land, to the east by a private residence and motel, to the south by U.S. Highway 62-180, and to the west by a truck stop/convenience store. The truck stop and convenience store is adjoined to the north by a wholesale fuel supply facility. This facility, which is owned by Keeling Petroleum, includes several aboveground and underground storage tanks.

The relative location of the site is shown in Figure 1 (Appendix A). Figure 2 is a site map with significant site features indicated (Appendix A).

The approximate pit dimensions were 25 feet long, 16 feet wide, and 6 feet deep. A review of available historical aerial photographs of the site indicates that the pit remained this approximate size since it was installed. From discussions with Baker personnel, historical wastewater flow into the pit varied from 0 to 100 gallons per day.

The object of this investigation is to assess the extent of pollutant contamination associated with the operation of the aforementioned wastewater disposal pit.

SITE INVESTIGATION

Interior Sump

Prior to the inspection of the interior sump, Baker personnel transferred the liquid and solid contents of the sump into a clean, sealable, 55-gallon drum during the week of December 16, 1991. The drum and its contents were stored on-site pending laboratory analysis.

During the visual inspection of the interior sump on December 19, 1991, a seam located approximately 3 inches below the shop floor was found that extended around the perimeter of the sump. Along the east wall of the sump, an upper seam was not structurally sound. The seams along the other three sump walls as well as the remainder of the sump appeared to be structurally sound.

Water was placed in the sump at a measured level slightly below the seam and monitored for approximately 24 hours. At the conclusion of the 24-hour test period, the water level in the interior sump remained at the initial level. Thus, the portion of the sump below the seam in the concrete is structurally sound. The approximate location of the sump is shown in Figure 2 (Appendix A).

Separate samples of both the liquid and solid phases of the drummed interior sump contents were collected for laboratory analysis for benzene, toluene, ethylbenzene, and xylenes (BTEX), Total Petroleum Hydrocarbons (TPH), pH, and RCRA metals. The samples were placed into clean, laboratory-supplied containers, sealed, labeled, placed in an ice-filled cooler, and delivered via Federal Express to Southern Petroleum Laboratories (SPL) in Houston, Texas. Simon personnel initiated Chain of Custody documentation of the submitted samples.

Water Well

On December 19, 1991, the tubing string and downhole pump were removed from the on-site water well (WW-1) to allow for the collection of groundwater samples from the well. After the removal of the tubing string and downhole pump, the bottom of the downhole pump was measured to have been set approximately 60 feet below grade. Several hours after the removal of the tubing and pump, the static water level in the well was measured at approximately 31 feet below the top of the 6.75-inch well casing. The depth of the well was measured to be approximately 93 feet. The location of WW-1 is shown in Figure 2 (Appendix A).

Groundwater samples were collected with a clean bailer for analysis for BTEX, TPH, pH, and RCRA metals. The samples were placed in laboratory-supplied containers, sealed, labeled, placed in an ice-filled cooler, and delivered via Federal Express to SPL in Houston, Texas. No visual or olfactory evidence of hydrocarbons was detected in the collected groundwater samples nor on the pump itself. Simon personnel initiated Chain of Custody documentation of the submitted samples.

For safety, a steel plate and 4-inch nipple assembly were welded to the top of the water well casing. A removable polyvinyl chloride (PVC) cap was placed on top of the nipple to permit future groundwater sampling. After the well location was determined, the well was covered with dirt to prevent vandalism.

Wastewater Disposal Pit

During the week of December 16, 1991, the former wastewater disposal pit at the facility was lined with plastic sheeting and backfilled with clean imported sand. The sand was compacted in lifts and brought to surface grade. The purpose of this work was

two-fold. First, the pit was backfilled to permit the collection of soil samples from below the pit. Soil samples were collected with a truck-mounted drilling rig. The condition of the pit before backfilling would have made rig access difficult. In addition, the plastic liner provides an identifiable boundary between the existing pit material and backfilled sand.

Background Soil Samples

Background soil samples BG1 through BG4 were collected at four on-site locations well away from the pit boundary. Each of them was collected with a hand shovel from a depth of 0-1 foot below grade. The shovel was decontaminated before the collection of each sample to prevent possible cross-contamination. Each sampling location was backfilled with the remaining excavated soil. No visual or olfactory evidence of hydrocarbons was observed in any of the background soil samples. The approximate location of each sampling location is shown in Figure 2 (Appendix A).

Each sample was placed in a clean, laboratory-supplied glass container, sealed, labeled, placed in an ice-filled cooler, and delivered via Federal Express to SPL in Houston, Texas. Simon personnel initiated Chain of Custody documentation of the submitted samples. Each sample was analyzed for BTEX, TPH, pH, and TCLP metals.

Soil Boring/Monitor Well Installation

Simon contracted with Professional Service Industries, Inc. (PSI) to drill, sample, and plug the soil borings and to install the monitor wells. Each borehole was drilled and sampled with a truck-mounted drilling rig equipped with hollow stem augers. Due to the difficulty in drilling through the hard native caliche to install

the monitor wells, Simon contracted Larry's Drilling and Pump Co. (Larry's Drilling), a local water well drilling contractor, to drill approximately the initial 28 feet of each monitor well borehole using a truck-mounted air rotary drilling rig. At this approximate depth, loose sands were encountered. PSI then deepened each monitor well borehole to its terminal depth, collected soil samples, and installed each well using their hollow stem auger drilling rig. The location of each soil boring and monitor well is shown in Figure 2 (Appendix A).

Soil Sampling

A total of 12 boreholes were installed. Nine of the boreholes (borings B1 - B9) were used to collect samples and three of the boreholes were used to collect samples and to install three monitor wells (MW1 - MW3). Borings B1 - B6 were installed during the December 19-20, 1991, investigation. Borings B7 - B9 and monitor wells MW1 - MW3 were installed during the February 24-28, 1992, investigation.

All soil samples were collected from each borehole through the use of either the split spoon or Shelby tube sampling method. Upon removal from a given borehole, each sample was immediately divided into representative halves. One half of the sample was prepared, placed in a clean, laboratory-supplied glass container, sealed, labeled, and placed in an ice-filled cooler. The remainder of the sample was placed in a clean plastic bag, labeled, and sealed. Each plastic bag of soil was left at ambient temperature for later screening with a photoionization detector (HNU meter) calibrated to an isobutylene standard.

The collected samples were visually described regarding their lithology, color, moisture content, etc. Based upon field screening results, soil samples were selected for laboratory

analysis. A stratigraphic log of each monitor well borehole is included in Appendix B.

Throughout the investigation, downhole drilling and sampling equipment was decontaminated between sampling depths and drilling locations to prevent possible cross-contamination. Between uses, the split spoon and Shelby tube sampling devices were first scrubbed with a non-phosphate detergent, followed by scrubbing and rinsing with methanol. Between drilling locations, the drilling augers were steam cleaned.

Within the pit, various types of debris and soil were encountered; both visual and olfactory evidence of hydrocarbon-impacted soil was found in borings B5, B6, and B8 which are located within the pit. While scattered pieces of wire were seen in boring B1 (2.5-3 feet) which is located outside of the pit, it appears that the perimeter borings (B1-B4) are located beyond the limits of the former pit.

Borings B1-B6 were backfilled to the ground surface with a cement/bentonite mixture. Soil cuttings from borings B1-B4 were placed in a single, sealable 55-gallon drum, labeled, and stored on-site. The soil cuttings from borings B5 and B6 were each placed in a separate, sealable 55-gallon drum, labeled, and stored on-site pending analytical results.

Since no visual, olfactory, or HNU evidence of hydrocarbon-impacted soil was encountered in boring B7, this borehole was backfilled to the ground surface with the generated soil cuttings. The soil cuttings from MW1-MW3 were placed in clean, sealable, 55-gallon drums, labeled, and stored on-site pending analytical results.

A bentonite seal was placed in boreholes B8 and B9 from their terminal depths to approximately 20 feet below grade, well above the top of the encountered saturated sand interval. A cement/bentonite grout mixture was used to fill the remainder of

each borehole to the ground surface. The purpose of this seal is to lessen the possibility of contaminants migrating vertically along the boreholes and into the shallow groundwater. The soil cuttings from B8 and B9 were placed in clean, sealable, 55-gallon drums, labeled, and stored on-site pending analytical results.

Monitor Well Installation

Three monitor wells, MW1, MW2, and MW3 were installed during the week of February 24, 1992. Each monitor well borehole was drilled to and terminated at the following depths: MW1 to 48 feet; MW2 to 48 feet; and MW3 to 44 feet. At these respective depths, a hard sandstone layer was reached that prevented the advance of the hollow stem drilling augers. Above this sandstone layer, several feet of water-saturated sand had been encountered. A representative of Larry's Drilling indicated that this sandstone layer exists at this approximate depth throughout the Hobbs, New Mexico area and typically is several feet thick.

Regionally, saturated sand is present below the hard sandstone layer to an approximate depth of 200 feet below grade. Since this sandstone layer provides a relatively low-permeability seal between the two saturated sand layers, none of the boreholes were allowed to penetrate it and enter the deeper saturated sand interval. This will prevent the monitor wells from serving as a migration pathway for possible cross-contamination between the water-bearing intervals.

Each monitor well was constructed of new, 4-inch, PVC casing and screen and equipped with a locking cap. A well construction diagram of each installed monitor well is included in Appendix C.

After installation, each well was initially developed with a surge block and then with a submersible pump. Approximately 70 gallons

(i.e. at least three casing volumes) of groundwater were recovered from each monitor well. At the conclusion of well development, the produced water was clear in color and free of visible suspended solids. The produced water was collected in clean, sealable, 55-gallon drums, labeled, and stored on-site pending analytical results.

John W. West Engineering Company, a local licensed surveyor, was contracted to survey the relative elevation of the water well and the newly-installed monitor wells and the location of all wells relative to significant site features. The location of each of these wells is shown in Figure 2 (Appendix A).

Groundwater Sampling

On December 19, 1991, the static water level in WW-1 was measured and recorded after the tubing string and downhole pump were removed. Groundwater samples were collected from the top of the water column in the water well using a clean bailer. Each sample was properly prepared, placed in laboratory-supplied containers, sealed, labeled, packed in an ice-filled cooler, and delivered via Federal Express to SPL in Houston, Texas. The samples were submitted for analysis of TPH, BTEX, pH, and RCRA metals. Simon personnel initiated Chain of Custody documentation of the groundwater samples. No visual or olfactory evidence of hydrocarbon-impacted water was observed in the collected samples.

During the week of February 24, 1992, groundwater samples were collected from each newly-installed monitor well. After each monitor well sufficiently recovered from the development process, the static water level in each well was measured and recorded. The static water levels were again measured on March 2, 1992, for verification.

Also, during the week of February 24, 1992, a second groundwater sample was collected from WW-1. To obtain a representative sample of the groundwater moving through WW-1, approximately 330 gallons (i.e. three casing volumes) of groundwater were purged from it using a submersible pump prior to sample collection. The purged water was collected in clean, sealable, 55-gallon drums, labeled, and left on-site pending analytical results. Prior to purging the water well, the static water level was measured and recorded. The static water level was again measured on March 2, 1992, for verification.

Groundwater samples were collected from each of the three monitor wells and from WW-1 with clean "Teflon" bailers for analysis of TPH, pH, Volatile Organic Compounds (Volatiles), Total Dissolved Solids (TDS), and TCLP metals. The samples were properly prepared, placed in laboratory-supplied containers, sealed, labeled, packed in ice-filled coolers, and delivered via Federal Express to SPL in Houston, Texas. Simon personnel initiated Chain of Custody documentation of the samples.

FINDINGS

Analytical Results-Interior Sump

Table 1 in Appendix D is a summary of the reported benzene, BTEX, TPH, and detectable metal concentrations of the samples collected on December 19, 1991, from the drummed contents of the interior sump. A certified copy of the analytical results of interior sump samples as well as Chain of Custody documentation are included in Appendix G (under separate cover).

Area Stratigraphy

A generalized stratigraphic section of the material encountered at the site beyond the pit boundary is:

Depth (feet below grade)	Description
0-3	Brown surface sand and silty clay; slightly moist.
3-25	White, hard caliche; dry.
25-28	White, hard caliche with brown sand (sand content increasing with depth); dry to slightly moist.
28-47	Brown sand; moist to saturated at 34 feet.
47-?	Light brown sandstone; dry.

A generalized stratigraphic section of the material encountered within the pit boundary is:

Depth (feet below grade)	Description
0-6	Backfill sand; dry.
6-16.5	Interbedded black/grey silty clay, caliche, debris, and sand; visible staining and hydrocarbon odor; moist to dry.
16.5-22.5	Stained caliche (grey and black); hydrocarbon odor; dry.
22.5-25	White, hard caliche; hydrocarbon odor; dry.
25-28	White, hard caliche with brown sand (sand content increasing with depth); hydrocarbon odor; dry to slightly moist.
28-33.5	Light and dark brown sand (possibly stained); hydrocarbon odor; slightly moist to saturated at 33 feet (dark black staining at saturation level).

Field Screening-Soil

Soil samples from borings B1-B9 and monitor wells MW1, MW2, and MW3 were screened for organic vapors with an HNU meter. Within the pit, the majority of the HNU soil readings were above 40 parts per million (ppm) with a maximum HNU reading of 180 ppm detected in B8 (31.5-33.5 feet). Of the six locations outside of the pit boundary screened with the HNU meter, only one of them (B9) had detectable HNU readings. In boring B9, the HNU readings ranged from non-detectable to 200 ppm (34.5-36 feet). Table 1 in Appendix E summarizes the HNU readings of the screened soil samples.

Visual and olfactory evidence of hydrocarbon-impacted soil was observed in the soil samples collected within the pit in borings

B5, B6, and B8. Outside the pit in boring B9, olfactory evidence of hydrocarbon-impacted soil was apparent in the samples from a depth of 33-36 feet. No visual or olfactory evidence of hydrocarbon-impacted soil was observed in the remaining soil borings or monitor well boreholes.

Analytical Results-Soil

No soil samples from boring B7 were submitted for laboratory analysis since none of the field screening methods indicated the presence of hydrocarbons in them. At least one soil sample from the remaining borings and monitor well boreholes was submitted for laboratory analysis. The selection of these samples was based upon HNU screening results and observations. In general, the soil sample with the highest HNU reading from each location was submitted. Where no detectable HNU readings were recorded, as in the MW-1, MW-2, and MW-3 boreholes, the soil sample immediately above the level of water saturation was submitted. Tables 2-4 in Appendix D summarize the reported BTEX, TPH, Volatiles, and TCLP metals concentrations of the submitted soil samples. The results of the four background soil samples BG1-BG4 are also included. Certified copies of the analytical results and Chain of Custody documentation are included in Appendix G (under separate cover).

Field Screening - Groundwater

No olfactory or visual evidence of hydrocarbons was observed in the groundwater samples collected from water well WW-1 during either investigation. During the February 24-28, 1992, investigation, no olfactory or visual evidence of hydrocarbons was observed in the groundwater samples collected from monitor wells MW1 - MW3.

Analytical Results - Groundwater

Tables 5-7 in Appendix D are summaries of the Volatiles, TPH, pH, TDS, and TCLP metals concentrations from the site monitor wells and from WW-1. Certified copies of the analytical results and Chain of Custody documentation are included in Appendix G (under separate cover).

DISCUSSION

Groundwater Gradient

The groundwater flow direction at the site was determined from depth-to-groundwater data collected on March 2, 1992. The general flow direction of the shallow groundwater at the site is toward the southeast. A groundwater gradient map utilizing the March 2, 1992, data is presented as Figure 3 in Appendix A.

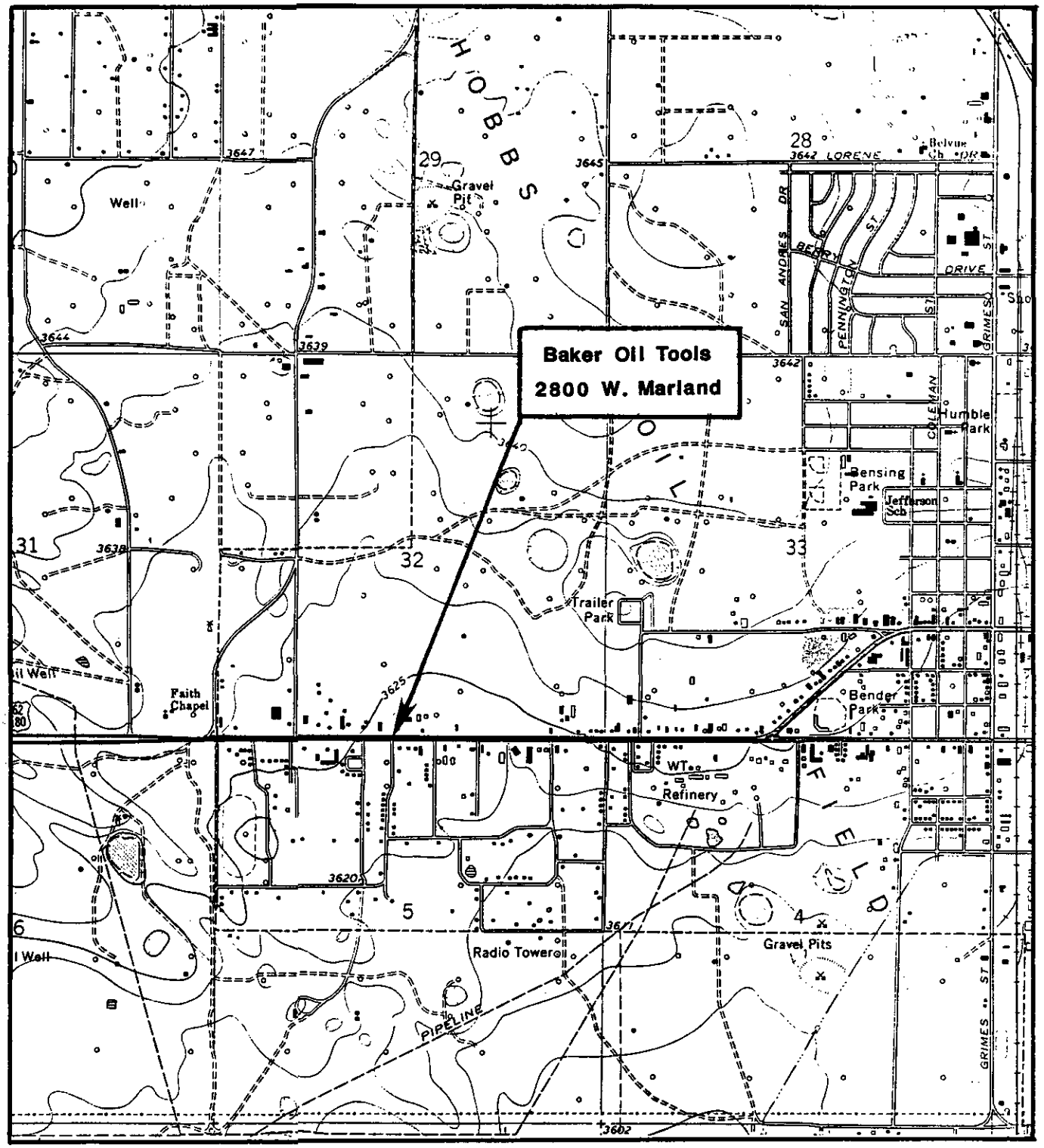
Differentiation of Aquifers

Based upon the stratigraphic section encountered in monitor wells MW1-MW3 and area water well logs, it appears that at least two shallow aquifers exist at the site. Relative to the aquifer characteristics themselves, the sandstone layer encountered in MW1-MW3 at an approximate depth of 47 feet below grade provides a low-permeability boundary between the two aquifers. All three of the installed monitor wells were terminated upon reaching the top of the low-permeability sandstone layer. Therefore, none of the monitor wells are screened in saturated sands located below the sandstone layer (see Appendix C for well construction diagrams).

Review of the well log of the on-site water well indicates that this well penetrates the hard sandstone layer and was drilled to a depth of 100 feet. Furthermore, the screened interval of the water well is from 70-100 feet below grade. Well records of the on-site water well are included in Appendix F.

The monitor wells and WW-1 are not screened in the same sand interval. Based upon available data and treating the hard sandstone as a confining layer, the groundwater samples from the monitor wells and from WW-1 may not be representative of water from the same saturated interval.

APPENDIX A
Figures



0 2000

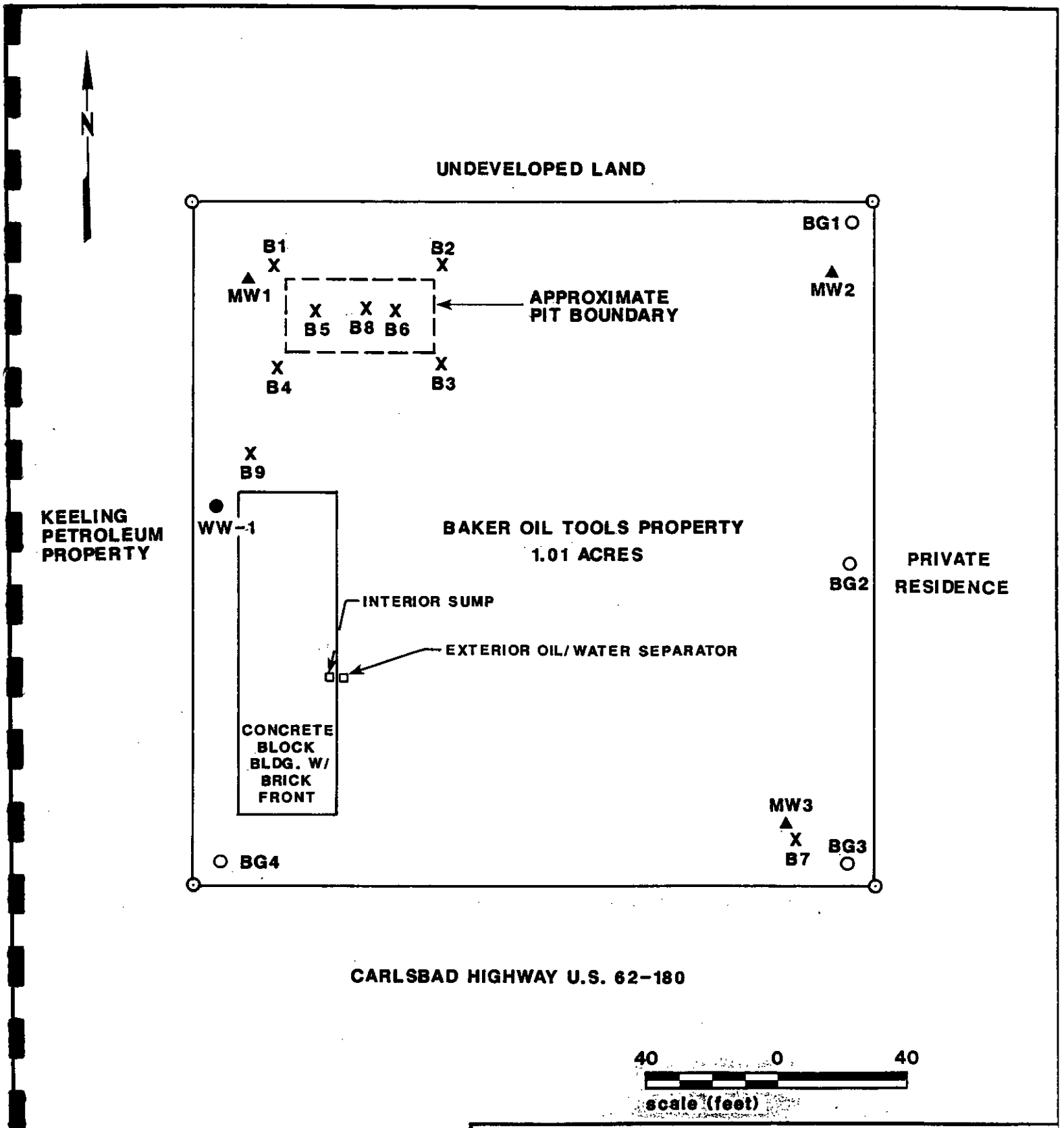
Scale Feet

Reference:
Hobbs West Quadrangle
7.5 Min. Series

SIMON HYDRO-SEARCH
HOUSTON, TEXAS

BAKER OIL TOOLS **HOBBS, NEW MEXICO**

SCALE AS SHOWN	CHECKED BY	DRAWN BY RAM
DATE 5/20/92		
SIZE	SITE LOCATION MAP	DRAWING NO. FIGURE 1



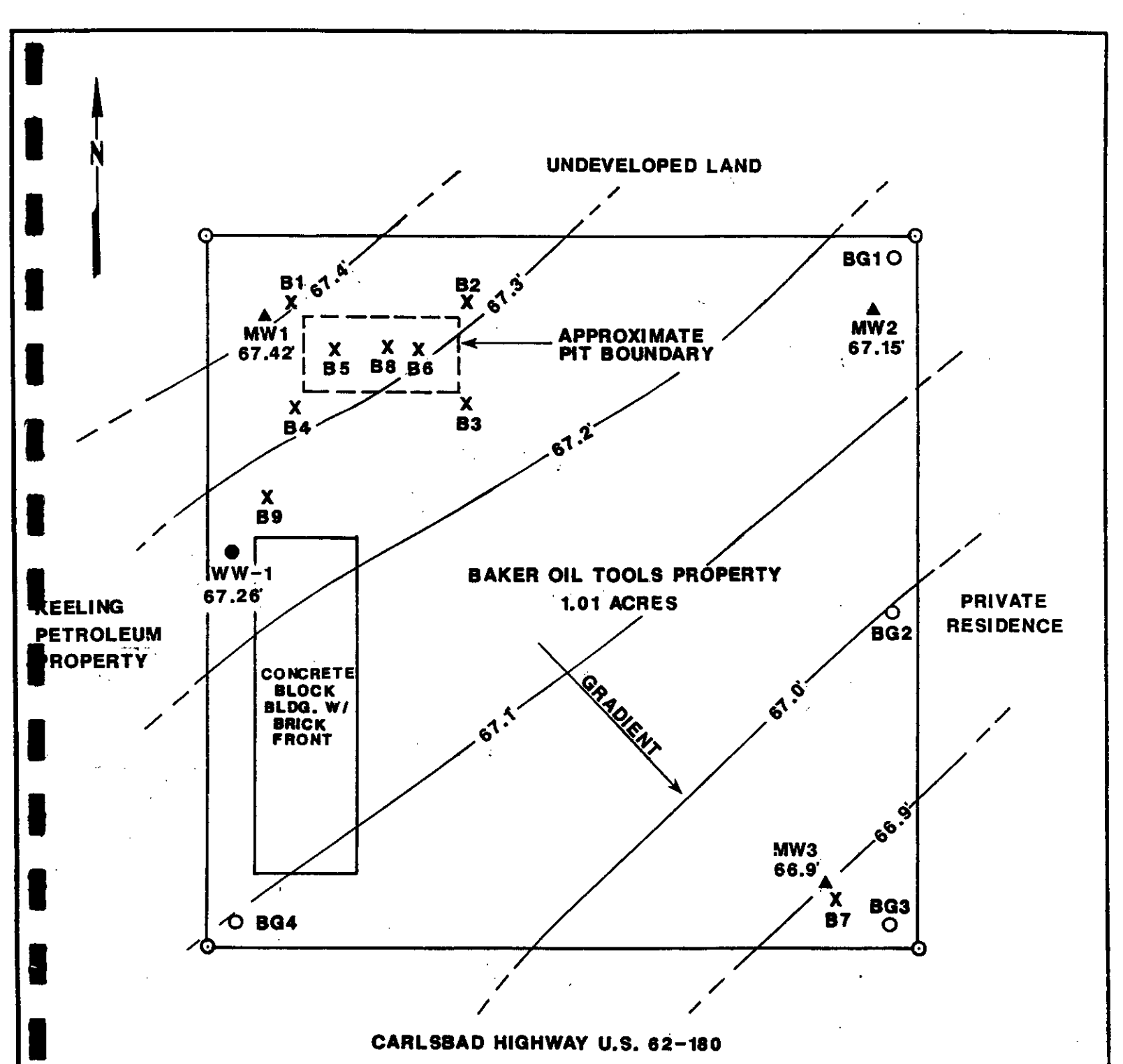
LEGEND:

X B1	BORING
○ BG1	BACKGROUND SAMPLE
▲ MW1	MONITOR WELL
● WW-1	WATER WELL

SIMON HYDRO-SEARCH HOUSTON, TEXAS

BAKER OIL TOOLS 2800 W. MARLAND HOBBS, N.M.

SCALE 1"=40'	CHECKED BY	DRAWN BY GAR	
DATE 4/22/92			
SIZE	SITE MAP	DRAWING NO. FIGURE 2	



CI: 0.1'

40 0 40

scale (feet)

LEGEND:

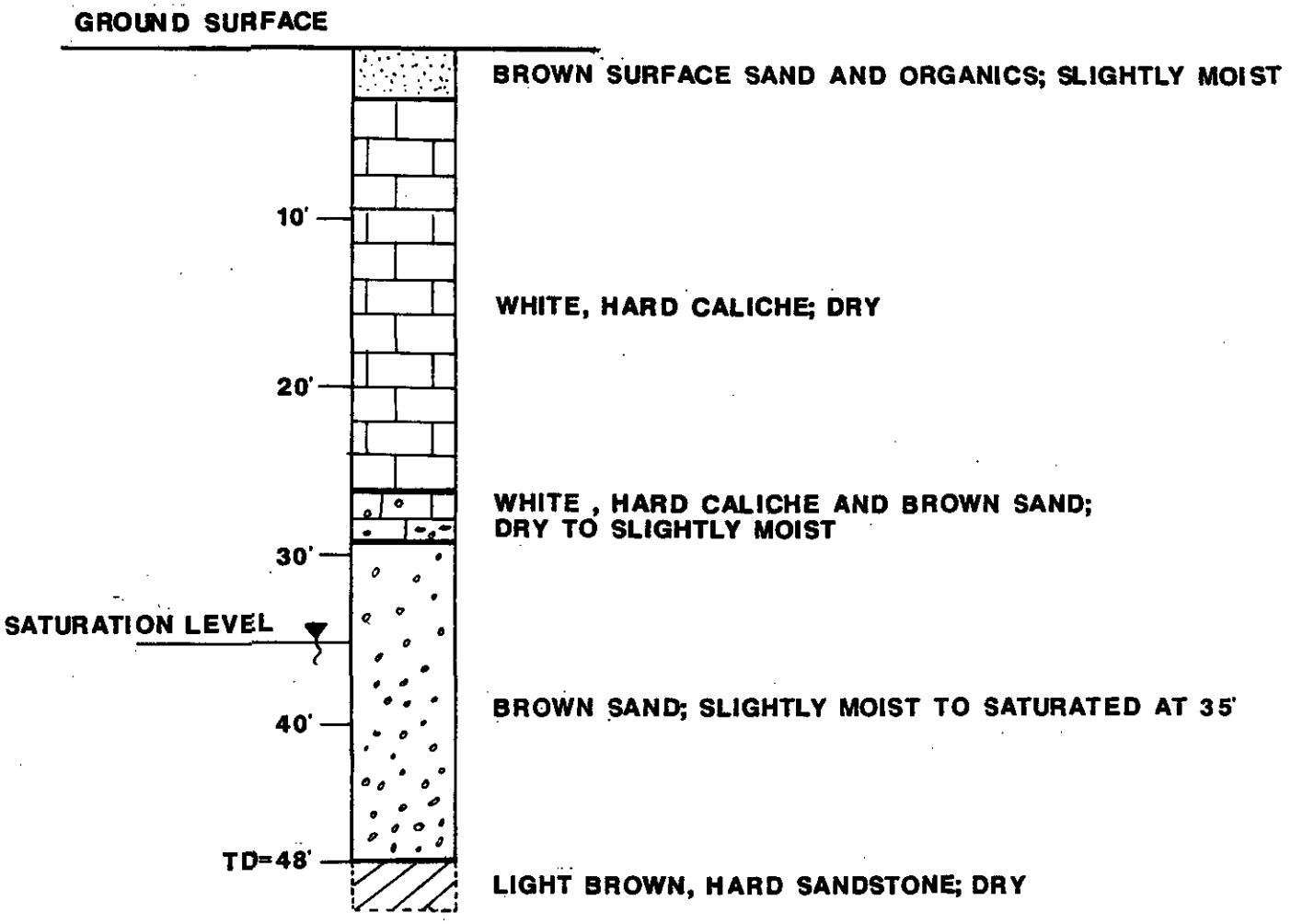
X B1	BORING
O BG1	BACKGROUND SAMPLE
▲ MW1	MONITOR WELL
● WW-1	WATER WELL

SIMON HYDRO-SEARCH
HOUSTON, TEXAS

BAKER OIL TOOLS 2800 W. MARLAND HOBBS, N.M.

SCALE	1"=40'	CHECKED BY	DRAWN BY GAR
DATE	4/22/92		
SIZE	GROUNDWATER GRADIENT MAP: 3/2/92	DRAWING NO.	FIGURE 3

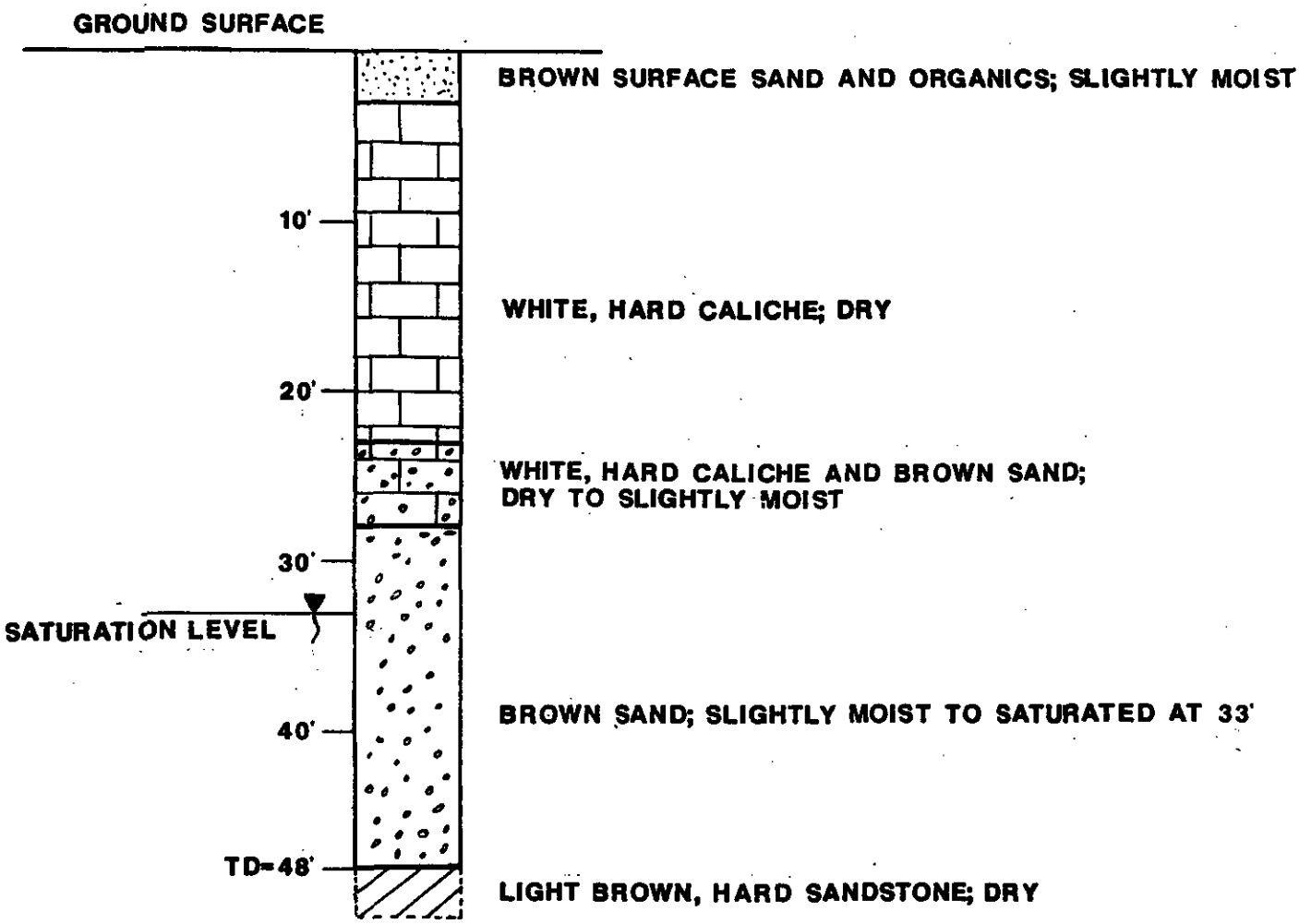
APPENDIX B
Stratigraphic Logs



SIMON HYDRO-SEARCH
HOUSTON, TEXAS

BAKER OIL TOOLS 2800 W. MARLAND HOBBS, N.M.

SCALE AS SHOWN	CHECKED BY	DRAWN BY GAR
DATE 4/24/92		
SIZE	STRATIGRAPHIC LOG: MW1	DRAWING NO.



SIMON HYDRO-SEARCH
HOUSTON, TEXAS

BAKER OIL TOOLS 2800 W. MARLAND HOBBS, N.M.

SCALE AS SHOWN	CHECKED BY	DRAWN BY GAR
DATE 4/24/92		
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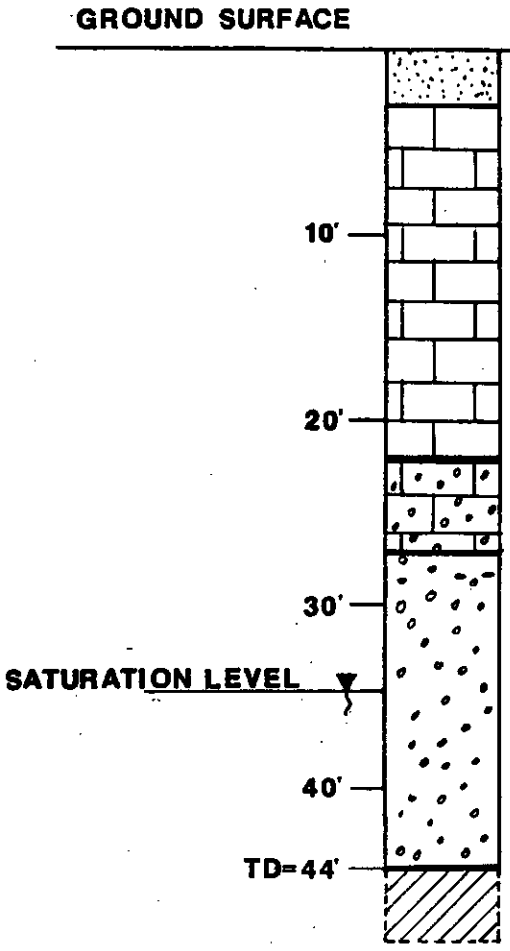


BROWN SURFACE SAND AND ORGANICS; SLIGHTLY MOIST

WHITE, HARD CALICHE; DRY

WHITE, HARD CALICHE AND BROWN SAND;
DRY TO SLIGHTLY MOIST

BROWN SAND; SLIGHTLY MOIST TO SATURATED AT 34.5'

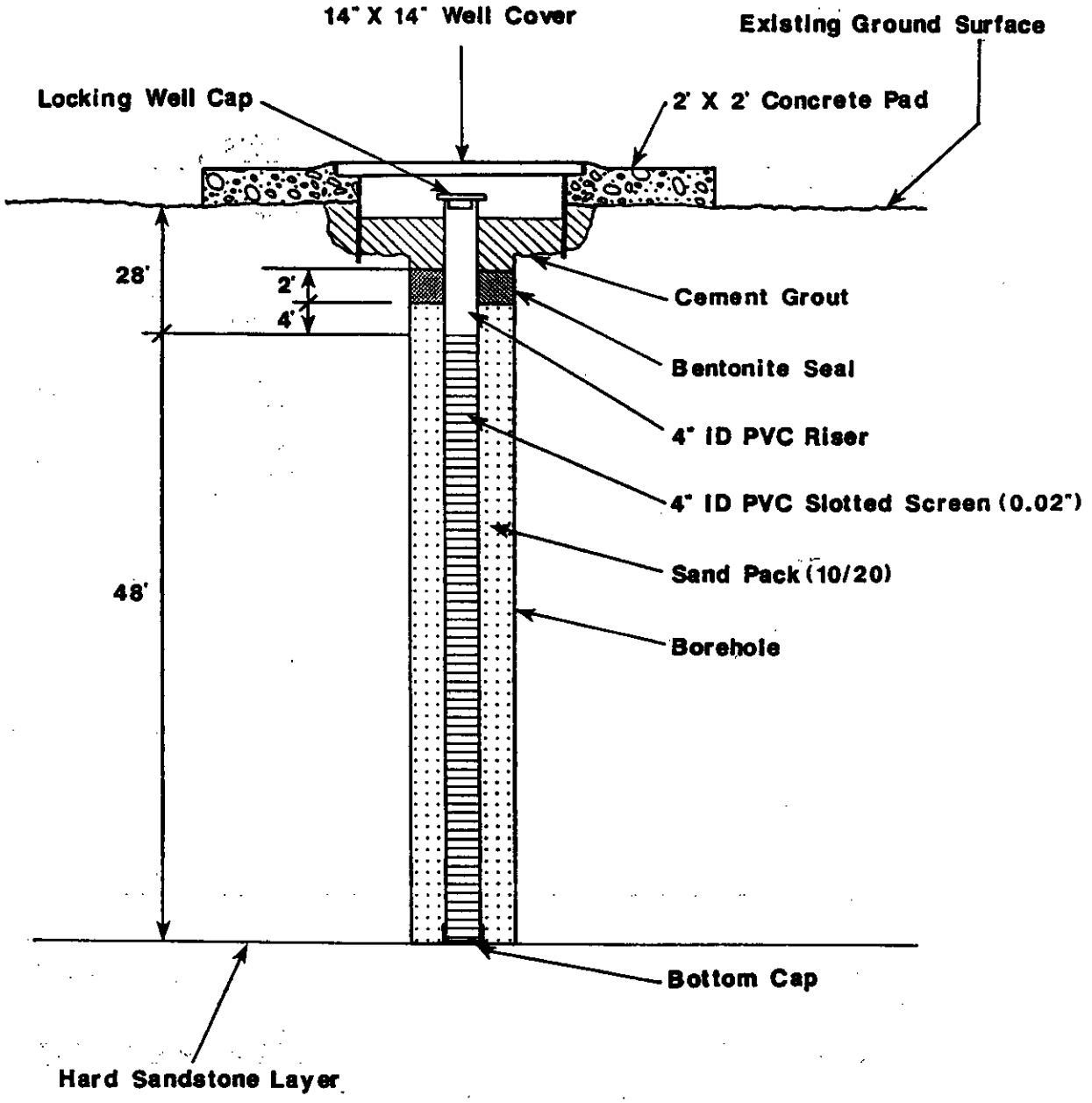
LIGHT BROWN, HARD SANDSTONE; DRY

SIMON HYDRO-SEARCH
HOUSTON, TEXAS

BAKER OIL TOOLS 2800 W. MARLAND HOBBS, N.M.

SCALE AS SHOWN	CHECKED BY	DRAWN BY GAR	
DATE 4/24/92			
SIZE	STRATIGRAPHIC LOG: MW 3	DRAWING NO.	

APPENDIX C
Well Construction Diagrams



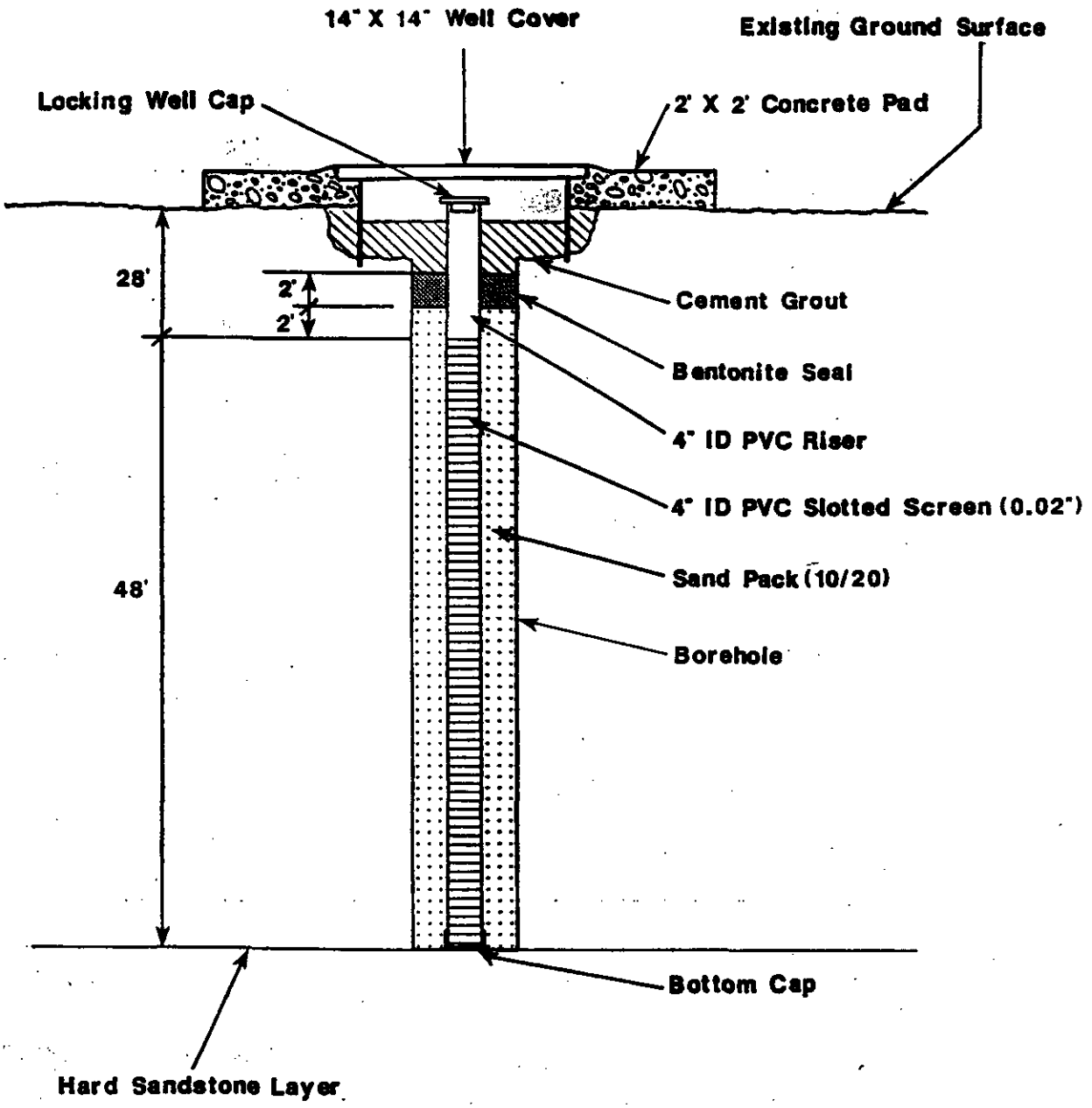
SIMON HYDRO - SEARCH
HOUSTON, TEXAS

SCALE: N T S	APPROVED BY:	DRAWN BY RAM
DATE:		REVISED

Baker Oil Tools
2800 W. Marland
Hobbs, N.M.

WELL CONSTRUCTION DIAGRAM: MW1

DRAWING NUMBER



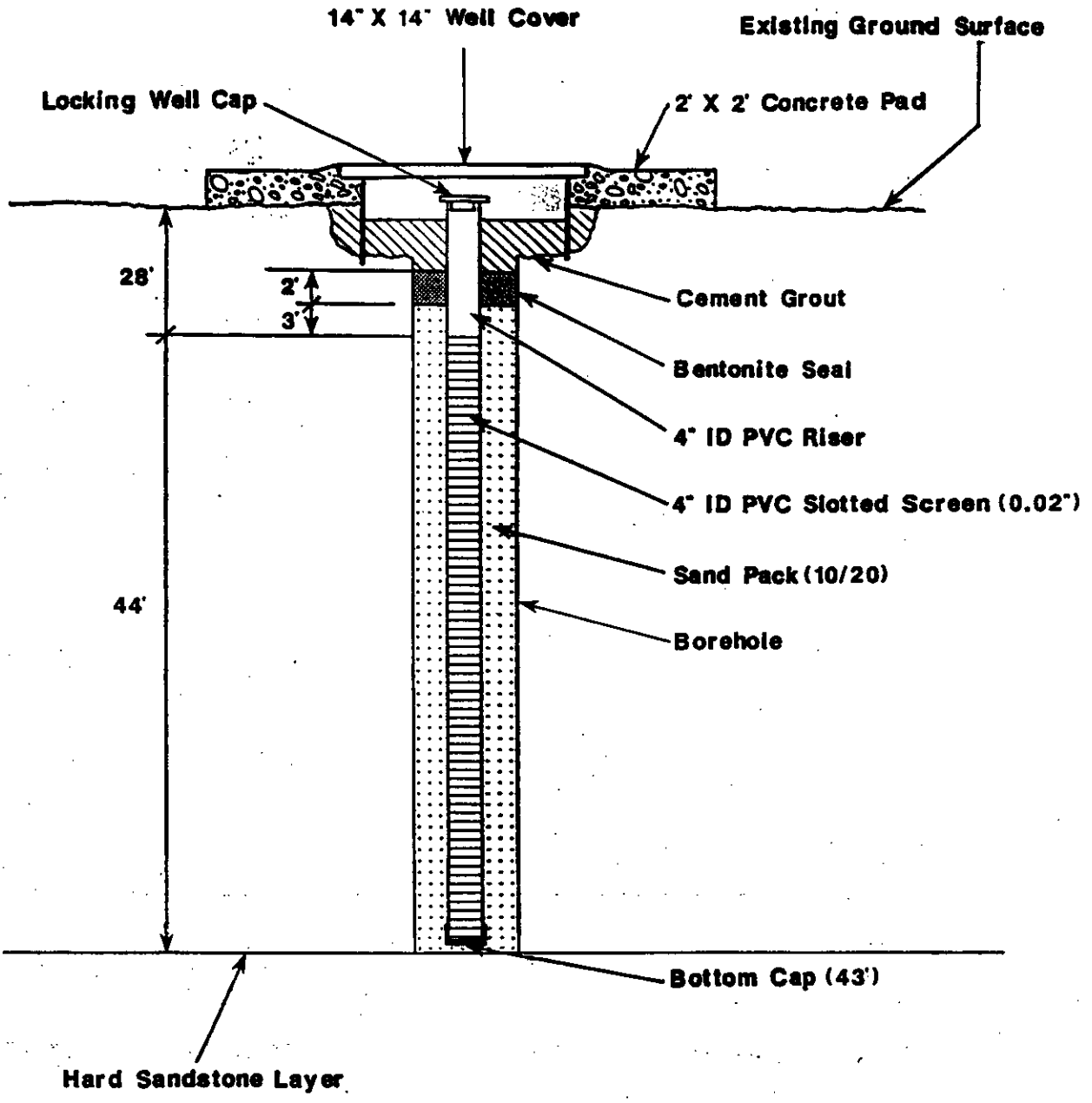
SIMON HYDRO - SEARCH
HOUSTON, TEXAS

SCALE: N T S	APPROVED BY:	DRAWN BY RAM
DATE:		REVISED

Baker Oil Tools
2800 W. Marland
Hobbs, N.M.

WELL CONSTRUCTION DIAGRAM: MW2

DRAWING NUMBER



SIMON HYDRO - SEARCH
HOUSTON, TEXAS

SCALE: N T S	APPROVED BY:	DRAWN BY RAM
DATE:		REVISED

Baker Oil Tools
2800 W. Marland
Hobbs, N.M.

WELL CONSTRUCTION DIAGRAM: MW3

DRAWING NUMBER

APPENDIX D
Summary Tables of Analytical Results

Table 1
Interior Sump Analytical Results: Benzene, BTEX, TPH, and Detectable RCRA Metals
Baker Oil Tools
2800 W. Marland
Hobbs, New Mexico

Sample Phase	Benzene ([1])	BTEX ([1])	TPH ([1])	Barium (mg/l)	Chromium (mg/l)	Lead (mg/l)
Liquid	0.022	0.32	900	1.48	0.04	1.6
Solid	1.7	140.2	220,000	2.08	ND(0.02)	ND(0.3)

Notes: [1] Concentrations for the liquid phase are in milligrams per liter (mg/l) and in milligrams per kilogram (mg/kg) for the solid phase.
ND - Not detected, detection limit in parentheses.
The liquid-phase sample was analyzed for Total RCRA metals and the solid-phase sample was analyzed for TCLP RCRA metals.

Sample Numbe	BTEX (mg/kg)	TPH (mg/kg)
BG1:0/1	0.004	ND(10)
BG2:0/1	0.001	ND(10)
BG3:0/1	0.006	12
BG4:0/1	0.016	34
B1:5/6	0.084	42
B1:9/10	0.04	18
B2:5/6	0.007	310
B2:10/11	0.008	25
B3:5/6	0.005	74
B3:10/11	0.048	58
B4:5/6	0.061	220
B4:10/11	0.006	97
B5:11/12	1.768	2,100
B5:15/16.5	4.761	3,800
B6:9.5/10.5	0.376	2,800
B6:14.5/15.	0.294	5,200
B8:26-27.5	0.361	1,800
B8:31.5-33.	2.66	6,600
B9:34.5-36	0.107	61
MW1:33.5-35	0.0	ND(10)
MW2:31.5-33	0.0	11
MW3:31-33	0.0	ND(10)

Notes: mg/kg
ND =
BTEX [illegible] xylenes; undetected

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Sample Number	Sampl Depth (feet	Styrene (mg/kg)	4-Methyl-2-Pentanone (mg/kg)
B5:11/12	11-12	ND(0.03)	ND(0.06)
B5:15/16.5	15-16	0.063	ND(0.011)
B6:9.5/10.5	9.5-10	ND(0.006)	ND(0.011)
B6:14.5/15.5	14.5-15	ND(0.006)	ND(0.011)
B8:26-27.5	26-27	ND(0.026)	ND(0.053)
B8:31.5-33.5	31.5-33	ND(0.028)	ND(0.057)
B9:34.5-36	34.5-36	ND(0.006)	0.026
MW1:33.5-35	33.5-35	ND(0.006)	ND(0.012)
MW2:31.5-33	31.5-33	ND(0.006)	ND(0.012)
MW3:31-33	31-33	ND(0.006)	ND(0.012)

Notes: mg/kg = millig
ND = Not detec
Only those vol. No other sample
locations w

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Table 4
Soil Analytical Results: Detectable TCLP Metals
Baker Oil Tools
2800 W. Marland
Hobbs, New Mexico

Sample Number	Sample Depth (feet)	Sample Date	Arsenic (mg/l)	Barium (mg/l)
BG1:0/1	0-1	12/20/91	0.009	1.63
BG2:0/1	0-1	12/20/91	ND(0.007)	0.91
BG3:0/1	0-1	12/20/91	ND(0.007)	1.08
BG4:0/1	0-1	12/20/91	0.013	0.68
B1:5/6	5-6	12/20/91	0.028	1.08
B1:9/10	9-10	12/20/91	0.035	0.86
B2:5/6	5-6	12/20/91	0.04	0.68
B2:10/11	10-11	12/20/91	0.03	0.56
B3:5/6	5-6	12/20/91	0.042	0.76
B3:10/11	10-11	12/20/91	0.017	0.68
B4:5/6	5-6	12/20/91	0.039	0.67
B4:10/11	10-11	12/20/91	0.032	0.69
B5:11/12	11-12	12/20/91	ND(0.007)	1.64
B5:15/16.5	15-16.5	12/20/91	ND(0.007)	2.11
B6:9.5/10.5	9.5-10.5	12/20/91	0.012	1.61
B6:14.5/15.5	14.5-15.5	12/20/91	ND(0.007)	2.73
B8:26-27.5	26-27.5	2/25/92	ND(0.007)	2.17
B8:31.5-33.5	31.5-33.5	2/25/92	ND(0.007)	2.28
B9:34.5-36	34.5-36	2/26/92	ND(0.007)	0.51
MW1:33.5-35	33.5-35	2/27/92	ND(0.007)	0.829
MW2:31.5-33	31.5-33	2/27/92	ND(0.007)	0.938
MW3:31-33	31-33	2/28/92	ND(0.007)	1.46

Notes: mg/l = milligrams per liter.
ND = Not detected, detection limit in parentheses.

Table 5
Groundwater Analytical Results: Detectable Volatile Organic Compounds[1]
Baker Oil Tools
2800 W. Marland
Hobbs, New Mexico

Sample Number	Location	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Xylenes (mg/l)	BTEX (mg/l)
WW121991	Water Well	12/19/91	0.006	0.002	0.001	0.004	0.013
WW22492	Water Well	2/24/92	0.82	0.3	0.2	0.3	1.62
MW1:022792	MW1	2/27/92	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.0
MW2:022892	MW2	2/28/92	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.0
MW3:022892	MW3	2/28/92	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.0

Notes: [1] Only those volatile organic compounds detected in at least one sample are presented.
mg/l = milligrams per liter.
BTEX is the summation of individual concentrations of benzene, toluene, ethylbenzene, and xylenes; undetected concentrations are treated as zero.
Sample WW121991 was analyzed only for BTEX constituents.
Methylene Chloride was detected in samples MW1:022792, MW2:022892, and MW3:022892 but also in the laboratory blank sample.

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Table 6
Groundwater Analytical Results: TPH, pH, and TDS
Baker Oil Tools
2800 W. Marland
Hobbs, New Mexico

Sample Number	Location	Sample Date	TPH (mg/l)	pH (pH units)	TDS (mg/l)
WW121991	Water Well	12/19/91	ND(1)	7.74	NA
WW22492	Water Well	2/24/92	ND(1)	7.35	1,140
MW1:022792	MW1	2/27/92	ND(1)	7.52	801
MW2:022892	MW2	2/28/92	ND(1)	7.21	1,680
MW3:022892	MW3	2/28/92	ND(1)	7.13	1,140

Notes: mg/l = milligrams per liter.
ND = Not detected, detection limit in parentheses.
NA = Not analyzed

Table 7
Groundwater Analytical Results: Detectable TCLP Metals
Baker Oil Tools
2800 W. Marland
Hobbs, New Mexico

Sample Number	Location	Sample Date	Barium (mg/l)
WW121991	Water Well	12/19/91	1.4
WW22492	Water Well	2/24/92	0.696
MW1:022792	MW1	2/27/92	0.404
MW2:022892	MW2	2/28/92	0.587
MW3:022892	MW3	2/28/92	0.544

Notes: mg/l = milligrams per liter.
Sample WW121991 was analyzed for RCRA metals (Total).

APPENDIX E
HNU Readings: Soil

Table 1
HNU Readings: Soil
Baker Oil Tools
2800 W. Marland
Hobbs, New Mexico

Location	Depth (feet)	HNU Reading (ppm)
B1	0-2	ND
	2-3	ND
	3-3.5	ND
	3.5-4	ND
	5-5.7	ND
MW2	30-31	ND
	31.5-33	ND
	33-35	ND
MW3	31-33	ND
	33-34.5	ND
	34.5-36.5	ND

Notes: ND = Not Detected.
* = Sample of cuttings collected at ground surface.

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APPENDIX F
Water Well Records

TD-14a

STATE OF NEW MEXICO
STATE ENGINEER

WELL SCHEDULE

Date 8/12 19 57 Record by R. L. BORTON

Source of data Bill Scott and field obs.

1. Location: County Lea Map 108. 4. 1
   ___ ¼ ___ ¼ ___ ¼ sec. ___ T. ___ R. ___
2. Owner Baker Tool Co.
3. Driller Musselwhite
4. Topography Hobbs Mesa Elev. 3625
5. Type drilled 19 55 Use D & C
6. Log on file : filed
7. Depth: Rept 100: ft. Meas. ___
8. Casing 6 5/8" OD/ 99' ?
9. Equipment: Pump, type turbine (sub) make Reda
   ser. no./model ___ size of dischg. ___ in
   Power, kind ___ make ___ H.P. ___
10. Distribution System pressure tank
11. Water Level: ---- ft. rept / meas ___ 19 ___ above / below ___
    ___ which is ___ ft. above / below ___
12. Discharge Measurement ___
    ___ G. P. M. ___ Temp. ___ °
13. Remarks Sl. gas cut? Took sample from tap. Well gravel-packed.

Well # 5 Logged 1-3-58

~~AQUIFER(S):~~

Well No. ___ on Photograph DPH 25-

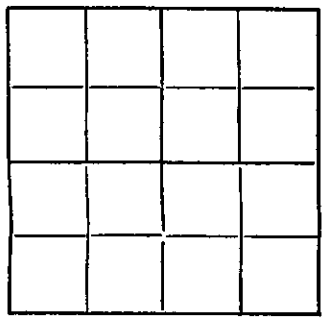
File No. ___ *Location No.* 18.38.32.344

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Baker Oil Tools, Inc.
Street and Number Box 1295
City Hobbs, State New Mexico
Well was drilled under Permit No. L-2964 and is located in the NE¼ SW¼ SW¼ of Section 32 Twp. 18S Rge. 38E
(B) Drilling Contractor O.R. Musselwhite License No. WD 99
Street and Number Box 56
City Hobbs, N State New Mexico
Drilling was commenced Sept. 10 19 55
Drilling was completed Sept. 11 19 55

Elevation at top of casing in feet above sea level ..... Total depth of well 100
State whether well is shallow or artesian shallow Depth to water upon completion 30

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	40	80	40	Sand & sand rock
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
6 5/8	18	8	0	100	100	Collar	70	100

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor ..... License No. .....
Street and Number ..... City ..... State .....
Tons of Clay used ..... Tons of Roughage used ..... Type of roughage .....
Plugging method used ..... Date Plugged ..... 19 .....
Plugging approved by:

..... Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received [illegible]

File No. L-2964 Use Dom Location No. 18.38.32.334

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	1	1	Brown	Soil
1	28	27	White	Caleghie & rock
28	35	7	Grey	Sandy shale
35	40	5	Brown	Quartrite
40	80	40	Red	Sand & sand rock
80	100	20	Red	Sand, fine

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

O. R. Musselwhite
Well Driller