GW - 072

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GW-072
(Formerly-1

Brown AND Caldwell

January 26, 2011

Mr. Glen Von Gonten
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street, State Land Office Building
Santa Fe, New Mexico 87505

Subject: BJ Services Facility
2708 West County Road
Hobbs, New Mexico

¢20, 18S, 38E

References: (a) *March 2005 Groundwater Sampling Report, Hobbs, New Mexico Facility, BJ Services Company, U.S.A.*, dated February 2, 2006
(b) *December 2003 Groundwater Sampling Report, Hobbs, New Mexico Facility, BJ Services Company, U.S.A.*, dated July 16, 2004
(c) *March 2004 Groundwater Sampling Report, Hobbs, New Mexico Facility, BJ Services Company, U.S.A.*, dated July 16, 2004

Dear Mr. Von Gonten:

On February 6, 2006, Brown and Caldwell, on behalf of BJ Services Company, U.S.A. (BJ Services), submitted the Reference (a) report pertaining to chloride-impacted groundwater in the area of the subject facility (Site). The attached Table 1 presents cumulative groundwater chloride data from monitor wells located at or in the vicinity of the Site. Based on information presented in the Reference (a) report, and supported by information presented in the Reference (b) and Reference (c) reports, the following conclusions pertaining to chloride-impacted groundwater in the area of the Site are evident:

1. BJ Services removed three field waste tanks, formerly located in the north central portion of the Site, and associated impacted soil on March 6-7, 1997;
2. The former field waste tanks apparently served as a source of chloride impact to groundwater at the Site;
3. Groundwater flow in the area of the Site is generally to the east-northeast, as indicated in the attached Figure 1 (taken from the Reference (a) report);
4. The vertical and lateral extent of chloride impact to groundwater at the Site at concentrations exceeding the New Mexico Water Quality Control Criteria (NMWQCC) standard of 250 milligrams per liter is defined within the boundaries of the Site, as indicated in the attached Figure 2 (taken from the Reference (a) report);
5. Chloride-impacted groundwater is also present at off-site locations to the east of the Site;

6. Based on a review of New Mexico Oil Conservation Division (NMOCD) files, as documented in the Reference (b) report, numerous potential historic sources of chloride impact to groundwater existed to the east of and surrounding the Site; and
7. Chloride-impacted groundwater would not be present to the east of the Site if not for the presence of an off-site chloride source.

Brown and Caldwell, on behalf of BJ Services and Baker Hughes Incorporated (Baker Hughes, the current owner of the Site), requests that NMOCD grant site closure status related to the occurrence of chloride in groundwater issue at the Site. For your convenience, copies of the Reference (a), (b) and (c) reports are attached.

If you have any questions pertaining to the information presented herein, please contact Ms. Myna Letlow of Baker Hughes at 713.439.8139 or the undersigned at 713-646-1129.

Sincerely,

BROWN AND CALDWELL

Richard Rexroad

Richard Rexroad
Project Manager

cc: Myna Letlow (Baker Hughes)

Attachments:

Figure 1: Groundwater Elevation Map, March 8-11, 2005

Figure 2: Chloride Distribution in Groundwater, March 2005

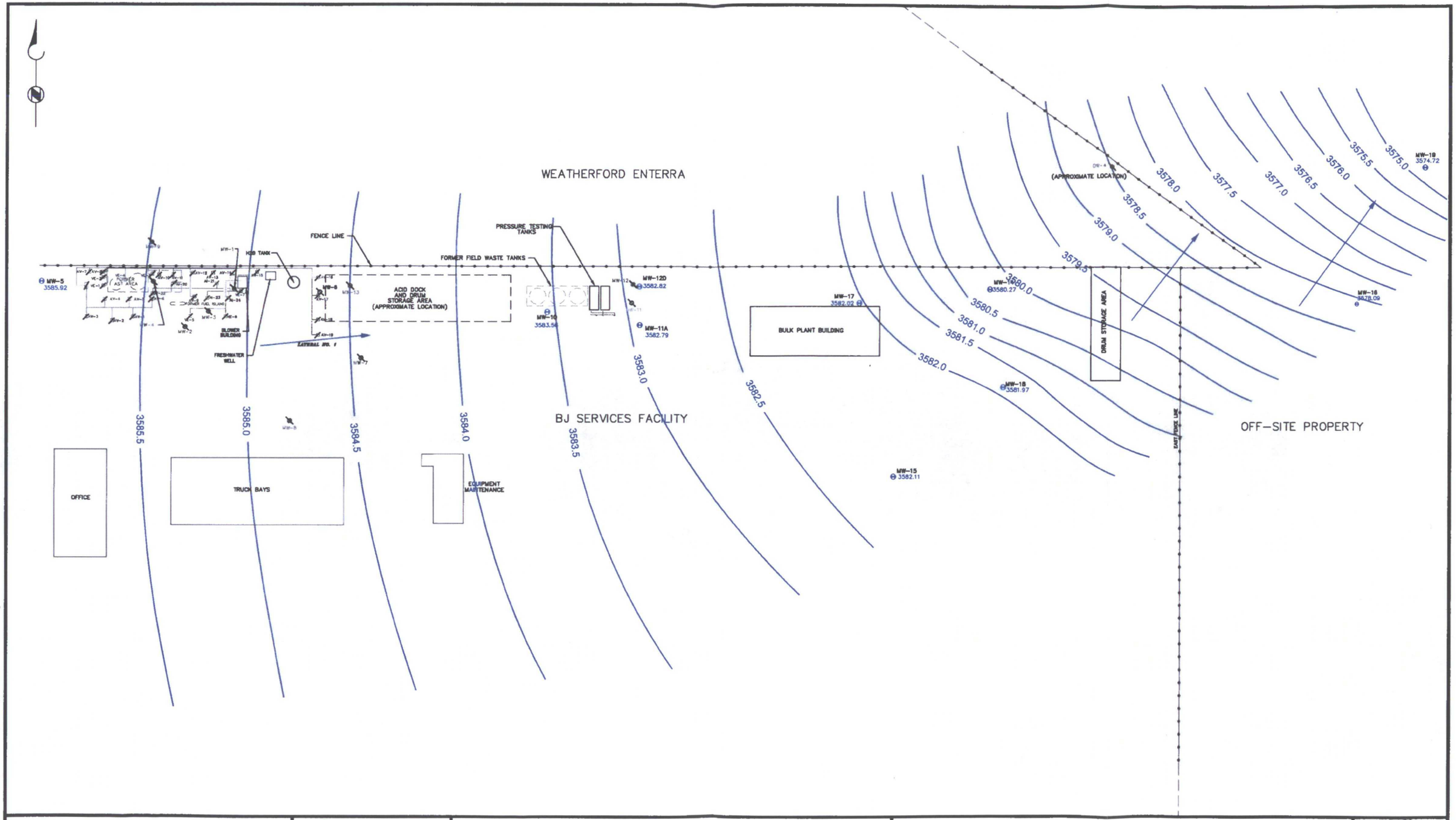
Table 1: Cumulative Results for Chloride Analyses

March 2005 Groundwater Sampling Report, Hobbs, New Mexico Facility, BJ Services Company, U.S.A., dated February 2, 2006

December 2003 Groundwater Sampling Report, Hobbs, New Mexico Facility, BJ Services Company, U.S.A., dated July 16, 2004

March 2004 Groundwater Sampling Report, Hobbs, New Mexico Facility, BJ Services Company, U.S.A., dated July 16, 2004

FIGURES



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

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SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-10 — EXISTING MONITOR WELL LOCATION WITH GROUNWATER ELEVATION (ft AMSL)
MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)
FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)
3584.0 — GROUNDWATER ELEVATION CONTOUR LINE
GROUNDWATER FLOW DIRECTION

TITLE: GROUNDWATER ELEVATION MAP – MARCH 8–11, 2005	DATE: 5/12/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1

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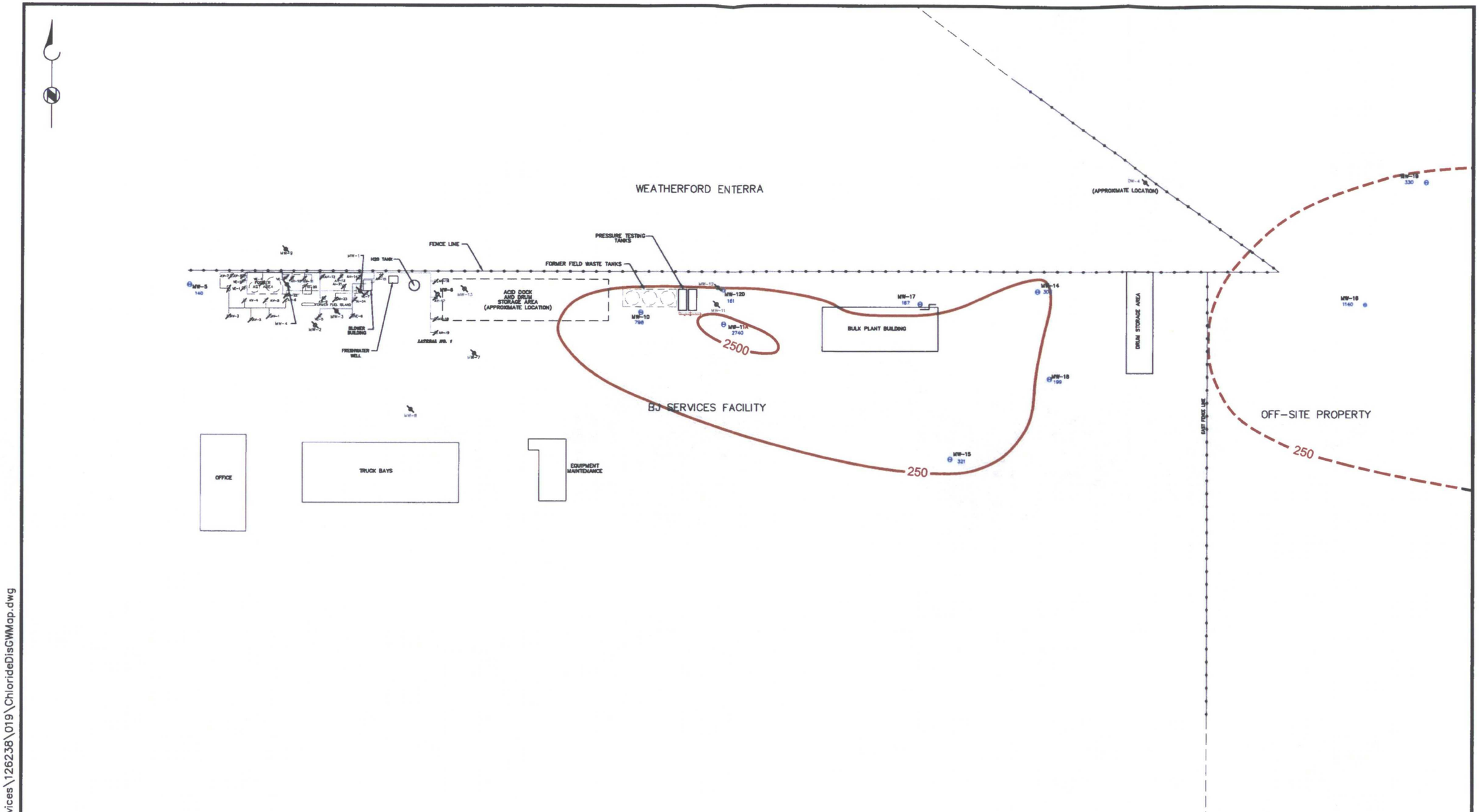

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 45 90
SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-10 / 798 — MONITOR WELL LOCATION, WITH MOST RECENT CHLORIDE CONCENTRATION (mg/L)

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

250 — CHLORIDE ISOCONCENTRATION LINE (CONTOUR INTERVAL = LOGARITHMIC)

FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)

TITLE: CHLORIDE DISTRIBUTION IN GROUNDWATER – MARCH 2005	DATE: 6/2/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 2

Jan 26, 2011 – 9:24am anarvaez
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TABLES

Table 1
Cumulative Results[1] for Chloride[2] Analyses
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Sample Date	Monitor Wells[3]																				
	MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
8/1/1995	160	150	310	130	380	310	350	110	2,200	3,400	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
8/23/1996	130	140	100	99	210	250	360	140	2,000	2,900	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
3/23-24/1998	212	206	126	151	183	223	364	164	2,390	NS	940	1,200	NP	NP	NP	NP	NP	NP	NP	NP	NS
3/9-10/1999	163	156	142	155	411	238	274	123	1,160	NS	834	314	NP	NP	NP	NP	NP	NP	NP	NP	NS
6/10-7/2/1999	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	195	496	NP	NP	NP	NP	NP	NP	266
3/9-10/2000	258	196	196	196	NP	224	241	131	474	NP	1,290	327	117	276	NP	NP	NP	NP	NP	NP	258
1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	368	219	NP	NP	NP	NP	NS
3/8-9/2001	NA	165	172	152	NP	224	250	127	879	NP	1,720	585	NS	276	327	NA	NP	NP	NP	NP	NS-D
6/21/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NS	NA	222	222	NP	NP	NP	NP	NS-D
9/10/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	245	228	NP	NP	NP	NP	NS-D
9/18/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	79	NA	NA	NA	NP	NP	NP	NP	NS-D
12/6/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	276	215	NP	NP	NP	NP	NS-D
3/11-12/2002	177	172	183	127	NP	188	241	110	861	NP	1,230	NS-D	76	207	284	224	NP	NP	NP	NP	NS-D
6/18/2002	NS	NA	NA	NA	NP	NA	NS	NS	NA	NP	NA	NS-D	NA	145	258	233	NP	NP	NP	NP	NS-D
9/16/2002	NS	NS	NS	121	NP	NS	NS	NS	1,030	NP	1,550	NS-D	86	NS	293	246	NP	NP	NP	NP	NS-D
1/9/2003	NS	NS	NS	123	NP	NS	NS	NS	525	NP	3,150	NS-D	95	NS	179	228	NP	NP	NP	NP	NS-D
3/6/2003	NS	NS	NS	116	NP	NS	NS	NS	363	NP	2,900	NS-D	102	NS	163	272	NP	NP	NP	NP	NS-D
6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	89.3	NS	NS	NS	983	NP	NP	NP	NS-D
8/22/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NS	NS	182	280	841	NP	NP	NP	NS-D
10/2/2003	NS	NS	NS	194	NP	NS	NS	NS	420	NP	3,240	NS-D	99.8	NS	175	298	963	NP	NP	NP	NS-D
12/18/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	123	263	823	NP	NP	NP	NS-D
3/30/2004	NS	NS	NS	70	NP	NS	NS	NS	928	NP	2,980	NS-D	116	NS	119	245	753	NP	NP	NP	NS-D
3/24/2005	NP	NP	NP	140	NP	NP	NP	NP	798	NP	2,740	NP	161	NP	303	321	1,140	167	199	330	NP

[1] - in mg/L.
[2] - NMWQCC standard for chloride is 250 mg/L.
[3] - MW-2 not operative after May 3, 1995; P&A'd 7/1/99.
MW-6 P&A'd 7/1/99.
MW-11 P&A'd 7/1/99.
MW-11A installed February 1998.
MW-12 installed February 1998 (screened at the top of the saturated zone).
MW-12D installed June 1999, adjacent to MW-12 (screened in a lower portion of the uppermost saturated zone).
MW-13 installed June 1999.
MW-14 and MW-15 installed January 2001.
MW-16 installed May 2003.
MW-17, MW-18, and MW-19 installed March 2005.
MW-1, MW-3, MW-4, MW-7, MW-8, MW-9, MW-12, MW-13, and OW-4 P&A'd March 2005.

NP = not present at time of sampling event.
NS = not sampled during applicable sampling event.
NA = not analyzed for chloride during applicable sampling event.
NS-D = not sampled because well was dry during applicable sampling event.

MARCH 2005 GROUNDWATER SAMPLING REPORT,
HOBBS, NEW MEXICO FACILITY, BJ SERVICES COMPANY, U.S.A.,
DATED FEBRUARY 2, 2006

MARCH 2005 GROUNDWATER SAMPLING REPORT HOBBS, NEW MEXICO FACILITY

BJ SERVICES COMPANY, U.S.A.

February 2, 2006

MARCH 2005 GROUNDWATER SAMPLING REPORT
HOBBS, NEW MEXICO FACILITY
BJ SERVICES COMPANY, U.S.A.

Prepared for

BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

BC Project Number: 126238.020

Ben Camacho
Scientist

Richard L. Rexroad, P.G.
Project Manager

February 2, 2006

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Houston, Texas 77002 - (713) 759-0999

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CONTENTS

1.0 INTRODUCTION

Brown and Caldwell conducted a monitor well installation and soil and groundwater sampling event at the BJ Services Company, U.S.A. (BJ Services) facility located at 2708 West County Road in Hobbs, New Mexico on March 8-11, 2005. This report presents a description of the field activities and a summary and evaluation of the analytical results. A groundwater potentiometric surface map and a chloride distribution map are included.

A layout of the facility is shown in Figure 1. The former fuel island area biosparging system was decommissioned in March 2005, as described in the Final Closure Report, GW-072 that was submitted to the New Mexico Oil Conservation Division (NMOCD) on April 13, 2005. NMOCD approved the GW-072 Final Closure Report on June 15, 2005.

BJ Services removed three field waste tanks from the facility on March 6-7, 1997. An ongoing groundwater monitoring program was expanded to address the former field waste tanks area of the facility, as directed by NMOCD in correspondence dated January 21, 1999. Table 1 presents a site chronology detailing the history of investigations into impacts to soil and groundwater in the area of the former field waste tanks at the BJ Services Hobbs, New Mexico facility, along with the history of investigations and remediation conducted by BJ Services pertaining to hydrocarbon impacts associated with the former fuel island area of the facility, for which regulatory closure has been granted.

2.0 FIELD ACTIVITIES

Brown and Caldwell purged and sampled ten monitor wells at or in the vicinity of the facility on March 8-11, 2005 to determine the concentrations of chloride in groundwater and to evaluate general groundwater quality in the area of the facility. The sampling event included three new monitor wells (MW-17, MW-18, and MW-19) that were installed and sampled for the first time in March 2005. The locations of current and former monitor wells in the area of the facility are shown in Figure 1. Soil samples were collected from the borings associated with the new monitor wells and from a soil boring completed adjacent to existing monitor well MW-16. The following subsections describe the field activities conducted by Brown and Caldwell during the current groundwater sampling and soil sampling event. Section 3.0 presents an evaluation of these data.

2.1 Soil Sampling Activities

Soil samples were collected from the monitor wells MW-17, MW-18, and MW-19 borings and from soil boring SB-16 (located adjacent to existing monitor well MW-16) to evaluate the vertical distribution of chloride impact to soil at these locations. These soil borings were installed using air rotary drilling techniques.

Soil samples were collected from non-indurated vadose zone materials at approximate 10-foot centers from the MW-17, MW-18, and MW-19 soil borings and at approximate 5-foot centers from soil boring SB-16. The associated boring logs are provided in Appendix A. The soil samples were analyzed for chloride by Method 325.2 to determine the vertical distribution of chloride in vadose zone soils at these locations. The laboratory analytical reports and chain-of-custody documentation for the soil samples are provided in Appendix B.

Soil boring SB-16 was backfilled with cement-bentonite grout upon completion of sampling activities. The soil borings for monitor wells MW-17, MW-18, and MW-19 were advanced into the saturated zone for subsequent installation of the monitor wells, as described in Section 2.2.

Decontamination procedures associated with installation of soil borings and monitor wells consisted of washing drilling equipment with distilled water and a non-phosphate detergent. Decontamination water was discharged to an on-site water reclamation system at the BJ Services facility. Soil cuttings were placed in labeled 55-gallon drums and stored onsite pending analytical results.

2.2 Monitor Well Installation and Development Activities

Monitor wells MW-17, MW-18, and MW-19 were installed and sampled at the request of the New Mexico Oil Conservation Division (NMOCD) to assess and delineate the extent of chloride impact to the subsurface at and in the vicinity of the facility. Monitor well MW-17 was installed near the north fence line of the facility to verify that chloride-impacted groundwater has not migrated northward from the facility. Monitor well MW-18 was installed in the eastern portion of the facility to investigate the potential for chloride impact to groundwater at that location. Monitor well MW-19 was installed approximately 250 feet northeast of existing off-site monitor well MW-16 to define the downgradient extent of chloride impact to groundwater detected at the monitor well MW-16 location.

The monitor well soil borings were advanced to an approximate depth of 78 feet below the observed top of the uppermost saturated zone. The monitor wells were constructed using 15 feet of 2-inch diameter 0.01-inch machine slotted PVC screen and sufficient 2-inch diameter PVC riser pipe to extend the well to the ground surface. The well screens were placed to capture the saturated zone such that approximately 1.5 feet of screen is situated above the apparent top of the saturated zone and approximately 13.5 feet of screen is situated below the apparent top of the saturated zone. The wells were equipped with a 6-inch PVC bottom cap, and a sealing top cap. The annular area of each well was backfilled with 20/40-grade filter sand installed from the total depth of the well to approximately 2 feet above the top of the screen. The remaining annular area was backfilled with a hydrated bentonite seal. For monitor wells MW-17 and MW-18, the uppermost portion of the PVC riser pipe was encased within a flush-mounted approximate 8-inch diameter vault and set within a 3-foot by 3-foot by 4-inch thick concrete surface pad that slopes away from the well. For monitor well MW-19, the above-grade portion of the riser pipe was

encased in a locking above-grade protective steel casing and set within a 3-foot by 3-foot by 4-inch thick concrete pad that slopes away from the well. Four bollards were set in concrete surrounding MW-19's well pad. Construction diagrams for monitor wells MW-17, MW-18, and MW-19 are presented in Appendix A.

The newly installed monitor wells were developed with previously unused disposable bailers and monitored with a turbidity meter until produced groundwater was clear and reasonably free of suspended sediment. The development methods of the new wells were monitored by Brown and Caldwell in order to acknowledge that the wells were free of suspended sediment.

The top-of-casing (TOC) elevations of monitor wells MW-17, MW-18, and MW-19 were surveyed relative to the TOC elevation of existing monitor well MW-16 using field surveying techniques. The horizontal locations of the wells were measured relative to existing features at the facility.

2.3 Groundwater Sampling Activities

Groundwater samples were collected from monitor wells MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, MW-16, MW-17, MW-18, and MW-19. Groundwater level measurements to the nearest 0.01 foot were obtained from all monitor wells at the facility using a decontaminated electronic water-level indicator prior to purging and sampling. Current and historical groundwater elevation data for each well are presented in Table 2. A groundwater elevation map for March 8-11, 2005 is presented in Figure 2. The groundwater elevation data indicate that the groundwater flow direction is to the east/northeast.

Monitor wells MW-12D, MW-16, MW-17, MW-18, and MW-19 were purged with a submersible pump and previously unused down-hole tubing until groundwater stabilization occurred. Low flow/low stress purging was performed to maintain the water level at or near the static water level. The remaining wells were purged with previously unused disposable bailers and clean, previously unused polyethylene rope. Three well volumes were purged from monitor well MW-15. Monitor wells MW-5, MW-10, MW-11A, and MW-14 were purged dry.

Field parameter measurements for pH, specific conductivity, oxidation-reduction potential, dissolved oxygen, and temperature were collected during purging of these wells. Field parameter readings were recorded on the groundwater sampling forms included in Appendix C and summarized in Table 3.

Groundwater samples were obtained directly from the discharge line of the submersible pump (monitor wells MW-12D, MW-16, MW-17, MW-18, and MW-19) or by pouring recovered water from a bailer. The groundwater samples were placed in laboratory-prepared, clean glass or plastic containers, sealed with Teflon®-lined lids, labeled, and placed on ice in an insulated cooler for delivery to Southern Petroleum Laboratory in Houston, Texas for analysis using standard chain-of-custody procedures. The laboratory analytical reports and chain-of-custody documentation for groundwater samples collected during the current sampling event are provided in Appendix B.

Field measurement equipment was decontaminated prior to and following each use. Decontamination procedures consisted of washing with distilled water and a non-phosphate detergent, then rinsing with distilled water. Purge and decontamination waters were discharged to an on-site water reclamation system at the BJ Services facility.

3.0 ANALYTICAL RESULTS

The following subsections present the analytical results for soil and groundwater samples collected during the March 2005 sampling event.

3.1 Soil Samples

Table 4 summarizes the results for chloride analysis of soil samples from the MW-17, MW-18, MW-19, and SB-16 soil borings. Chloride concentrations in vadose zone soil at these locations are relatively elevated (i.e., exceeding 100 milligrams per kilogram (mg/kg)) in the uppermost 20 feet to 25 feet below grade, and decrease below this interval throughout the remaining portion of the vadose zone.

3.2 Groundwater Samples

Groundwater samples from monitor wells MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, MW-16, MW-17, MW-18, and MW-19 were analyzed for the following parameters using the indicated analytical methodologies:

- Chloride (Method 325.3);
- Nitrate, Sulfate, Fluoride (Method E300);
- Bicarbonate and Carbonate Alkalinity (Method 2320B);
- Hardness (Method E130.2); and
- Calcium, magnesium, potassium and sodium (Method 6010B).

Table 5 presents current and cumulative results for chloride analyses of groundwater samples collected at the facility. Current chloride concentrations in monitor wells MW-5, MW-12D, MW-17, and MW-18 are less than the New Mexico Water Quality Control Commission (NMWQCC) chloride standard of 250 milligrams per liter (mg/L), but chloride concentrations in monitor wells

MW-10, MW-11A, MW-14, MW-15, MW-16, and MW-19 exceed the NMWQCC chloride standard.

Table 6 presents the cumulative analytical results for annual sampling and analysis for NMWQCC constituents. The 2005 analytical results for geochemical parameters (i.e., carbonate, bicarbonate, hardness, fluoride, nitrate, sulfate, and cations) are generally comparable to historic data for these parameters on a well-by-well basis.

3.3 Data Evaluation

Figure 3 depicts the distribution of chloride in groundwater in the area of the facility and indicates the presence of two chloride sources in the area of the facility:

1. Former field waste tanks at the BJ Services facility; and
2. A separate source in the vicinity of monitor well MW-16.

The occurrence of chloride in association with each of these source areas is discussed below.

Former Field Waste Tanks Source Area

Groundwater chloride impact associated with the former field waste tanks source area is present at the monitor well MW-10 and MW-11A locations and is defined downgradient at the monitor well MW-18 location in the eastern portion of the BJ Services facility. The northern extent of this chloride plume is defined within the boundaries of the BJ Services facility at the monitor well MW-17 location. Previous groundwater sampling conducted by BJ Services at the on-site nested monitor well MW-12/MW-12D location indicated that the degree of chloride impact to groundwater decreased with depth within the uppermost aquifer at the BJ Services facility (see Table 5). The current chloride concentration in monitor well MW-12D is less than the NMWQCC chloride standard of 250 mg/L and is an order of magnitude less than in nearby monitor well MW-11A, which is screened in the upper portion of the uppermost aquifer. Chloride concentrations in this area of impact decrease in an eastward (downgradient) from 2,740 mg/L in monitor well MW-11A

to 321 mg/L and 303 mg/L at monitor wells MW-15 and MW-14, respectively, to 199 mg/L in monitor well MW-18.

Monitor Well MW-16 Source Area

The previously indicated separate chloride source area in the vicinity monitor well MW-16 relative to the former field waste tanks source area is confirmed by groundwater data from the March 2005 sampling event. From the former field waste tanks source area, chloride concentrations decrease in an eastward (downgradient) from 2,740 mg/L in monitor well MW-11A to 321 mg/L and 303 mg/L at monitor wells MW-15 and MW-14, respectively, to 199 mg/L in monitor well MW-18 (i.e., less than the NMWQCC chloride standard of 250 mg/L). Moving further eastward, the chloride concentration in monitor well MW-16 increases by an order of magnitude to 1,140 mg/L, then once again decreases in a northeastward (generally downgradient) direction to 330 mg/L at the MW-19 location. This generalized pattern of decreasing chloride concentrations moving eastward from monitor well MW-11A to the monitor wells MW-14 and MW-15 locations, following by an elevated chloride concentration in monitor well MW-16 has also been documented on the basis of chloride concentration data from March 2004, October 2003, and March/June 2003, as indicated in Table 5. The temporal consistency of this pattern of chloride concentrations indicates that the elevated chloride concentrations being detected at the monitor well MW-16 location are not the result of a sporadic passage of chloride-impacted groundwater from the former field waste tanks area, but instead indicates that a separate chloride source area, from which chloride is continuously leaching to groundwater, is present in the vicinity of monitor well MW-16. Although current data from monitor wells MW-16 and MW-19 indicate that chloride concentrations associated with the monitor well MW-16 source area decrease in a downgradient direction, the downgradient extent of chloride impact to groundwater associated with the monitor well MW-16 source area is not presently defined.

Groundwater modeling conducted by Brown and Caldwell prior to installation of monitor well MW-16 in May 2003 indicated an anticipated chloride concentration of less than 250 mg/L at the proposed downgradient monitor well MW-16 location east of the BJ Services facility, based on historic data that had also defined an eastward decrease in chloride concentrations within the BJ

Services facility. Specifically, historic chloride concentrations in former field waste tanks area monitor wells MW-11 and MW-11A had ranged from 834 mg/L to 3,400 mg/L, whereas chloride concentrations in the area of monitor wells MW-14 and MW-15, which are located further east within the BJ Services facility, had ranged from 163 mg/L to 368 mg/L.

Off-site monitor well MW-16 has been sampled six times since its installation in May 2003, with chloride concentrations in the well ranging from 753 mg/L to 1,140 mg/L. During the post-May 2003 time period, chloride concentrations in individual wells at the BJ Services facility have remained generally consistent with previous chloride data from those wells. The data presented in Figure 3 demonstrate that chloride impact associated with the former field waste tanks is limited to within the boundaries of the BJ Services facility and that the concentration of chloride in off-site monitor well MW-16 would not exceed 250 mg/L if there was no off-site source of chloride impact.

Brown and Caldwell provided further evidence of this off-site source of chloride impact to groundwater in the report for the December 2003 groundwater sampling event, based on a search of NMOCD files relating to permitted oil & gas exploration and production activities in the area, and supplemented by historical aerial photographs depicting industrial development in the vicinity. Brown and Caldwell also presented the results of a water well search that indicated no current groundwater usage within 1 mile downgradient of the facility.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on information obtained during the March 2005 and previous groundwater sampling events at the BJ Services Hobbs, New Mexico facility.

4.1 Conclusions

- The distribution of chloride concentrations within groundwater in the area of the BJ Services Hobbs, New Mexico facility indicates the presence of two separate source areas: the MW-16 area and the former field waste tanks area. Elevated chloride concentrations in groundwater east of the BJ Services facility are apparently attributable to one or more off-site sources. In the absence of these apparent sources, chloride impact attributable to the onsite source would be less than the NMWQCC standard of 250 mg/L in the area to the east of the BJ Services facility.
- Chloride concentrations measured in on-site downgradient monitor wells MW-17 and MW-18 during the current groundwater sampling event are less than the NMWQCC standard of 250 mg/L.
- Elevated chloride concentrations in soil were observed within the uppermost 25 feet below the ground surface at each of the March 2005 boring locations. Chloride concentrations then decreased with depth throughout the vadose zone at each location.

4.2 Recommendations

- Given that (1) chloride impact to groundwater attributable to the BJ Services facility at concentrations exceeding the NMWQCC standard of 250 mg/L is limited to the BJ Services facility, and (2) there is no current downgradient usage of groundwater within 1 mile of the facility, BJ Services should discontinue sampling and analysis pertaining to chloride impact to groundwater within the uppermost aquifer at and in the vicinity of its Hobbs, New Mexico facility.

DISTRIBUTION

March 2005 Groundwater Sampling Report
BJ Services Company, U.S.A.
Hobbs, New Mexico

February 2, 2006

Final Distribution as follows:

1 copy to: State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Wayne Price

1 copy to: State of New Mexico
Oil Conservation Division, Hobbs District Office
1625 N. French Dr.
Post Office Box 1980
Hobbs, New Mexico 88240

Attention: Mr. Chris Williams

1 copy to: BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240

Attention: Mr. John Adcock

1 copy to: BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

Attention: Ms. Jo Ann Cobb

1 copy to: Brown and Caldwell Project File

QUALITY CONTROL REVIEWER

L M Wright

Lynn M. Wright, P.G.
Supervising Geologist

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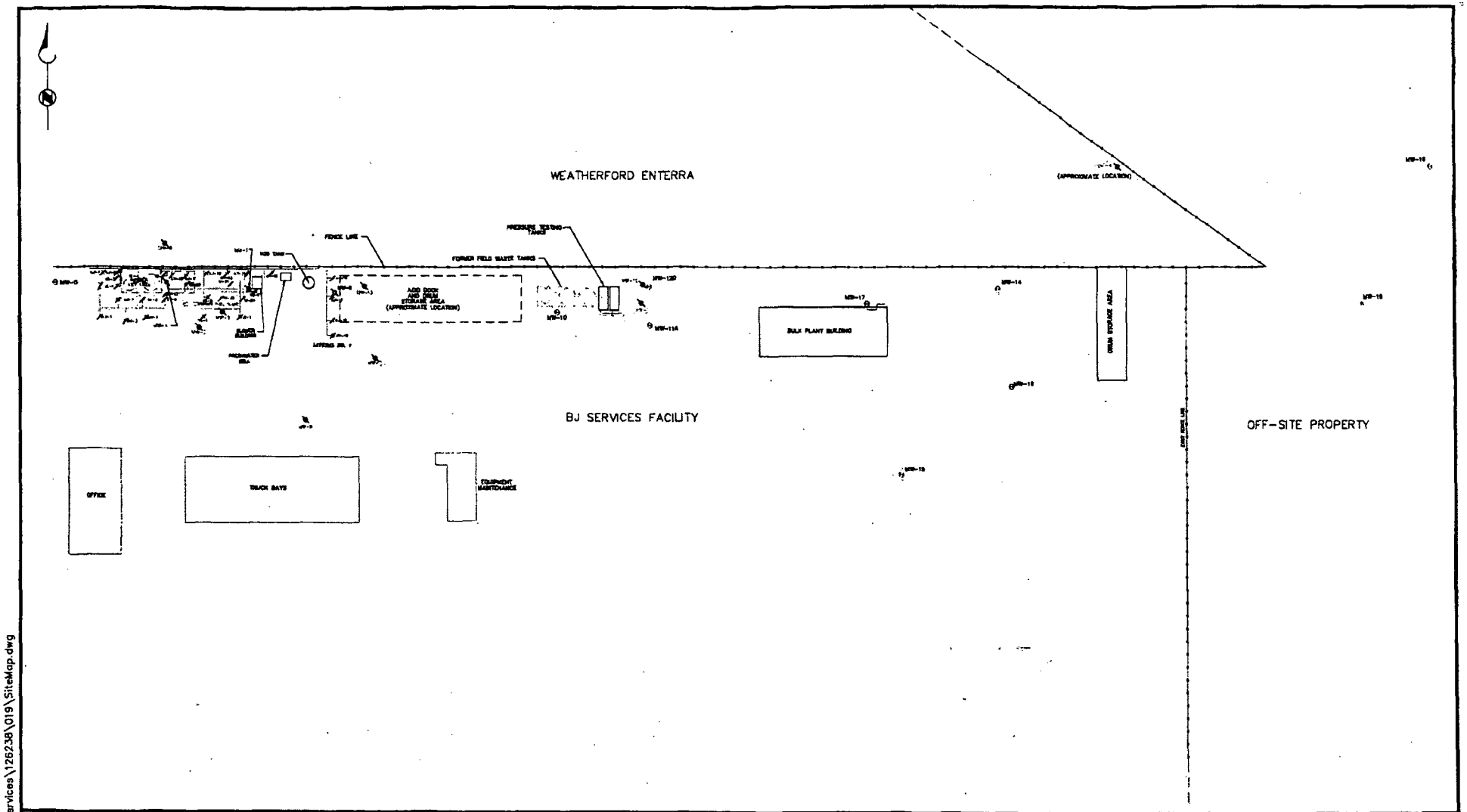
FIGURES



BROWN AND CALDWELL HOUSTON, TEXAS SUBMITTED: _____ DATE: _____ PROJECT MANAGER APPROVED: _____ DATE: _____ BROWN AND CALDWELL	0 45 90 SCALE IN FEET DRAWN BY: ____ DATE ____ CHK'D BY: ____ DATE ____ APPROVED: ____ DATE ____	MW-10 EXISTING MONITOR WELL LOCATION MW-2 MONITOR WELL (PLUGGED AND ABANDONED) FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)	TITLE: SITE MAP CLIENT: BJ SERVICES COMPANY, U.S.A. SITE: HOBBS, NEW MEXICO	DATE: 5/10/05 PROJECT NUMBER: 126238.020 FIGURE NUMBER: 1

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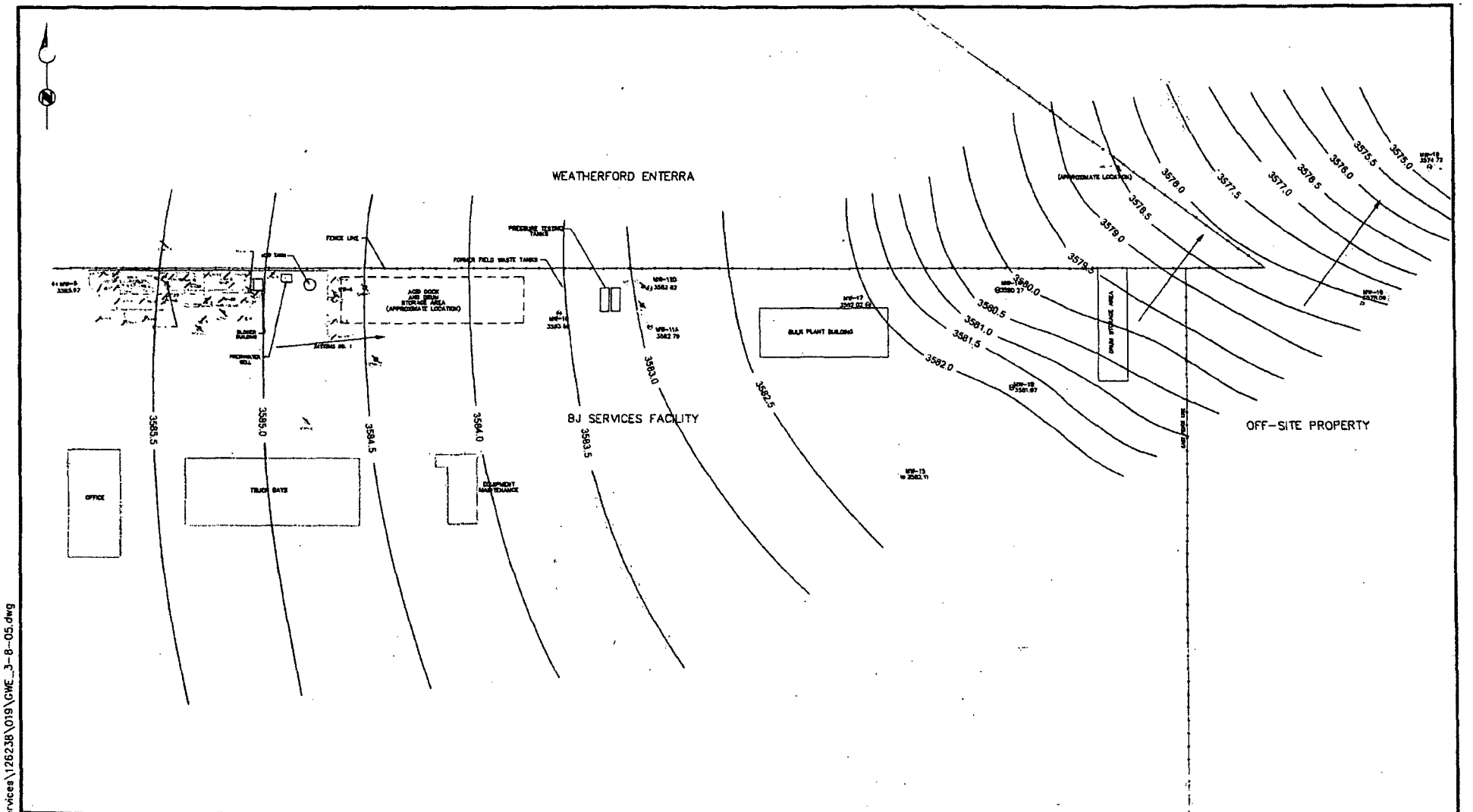

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BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

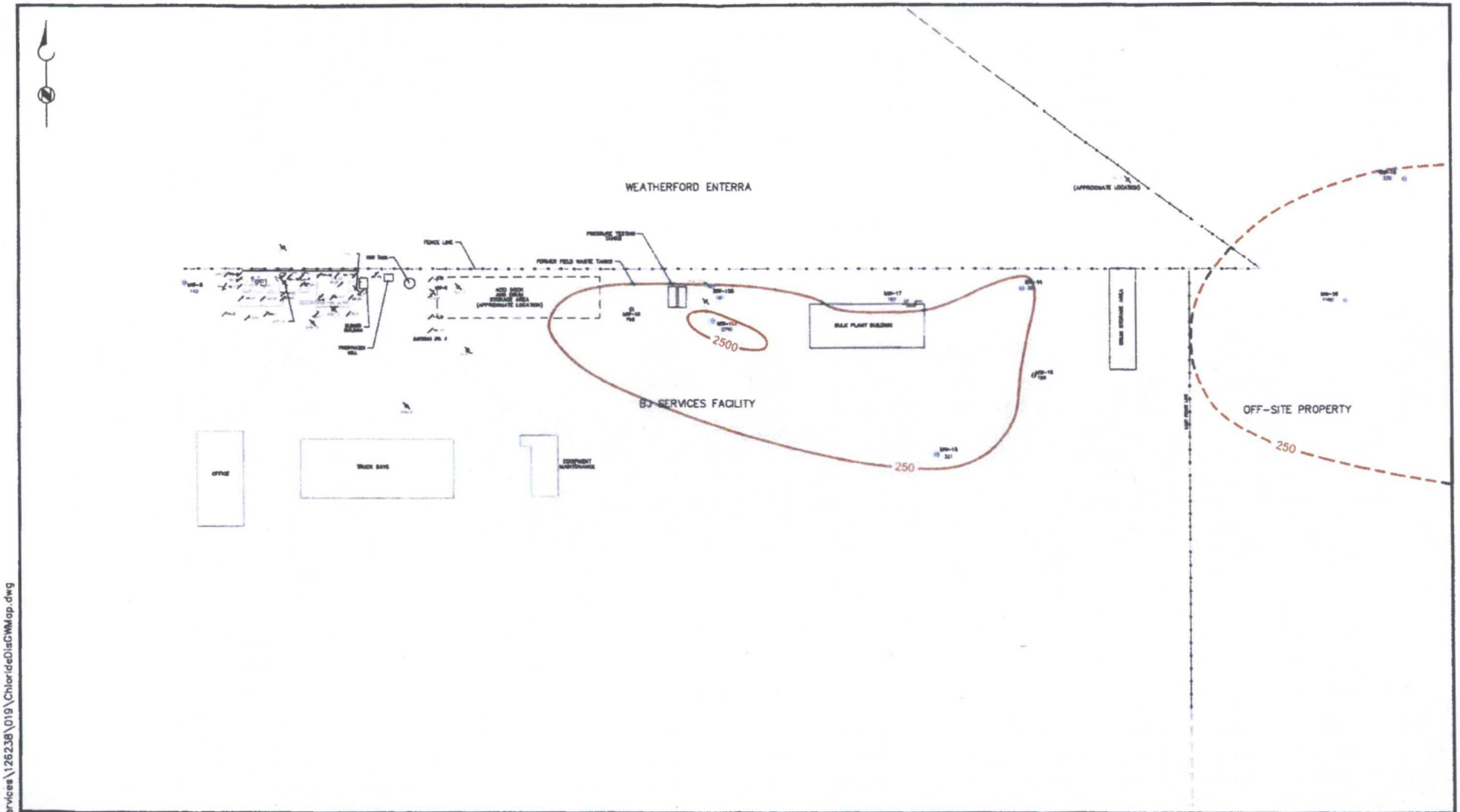
0 45 90
SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-10 EXISTING MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (ft AMSL)
MW-2 MONITOR WELL (PLUGGED AND ABANDONED)
FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)
3584.0 GROUNDWATER ELEVATION CONTOUR LINE
GROUNDWATER FLOW DIRECTION

TITLE: GROUNDWATER ELEVATION MAP – MARCH 8-11, 2005	DATE: 5/12/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 2



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 45 90
SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-10 — MONITOR WELL LOCATION, WITH MOST RECENT CHLORIDE CONCENTRATION (mg/L)

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

CHLORIDE ISOCONCENTRATION LINE (CONTOUR INTERVAL = LOGARITHMIC)

FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)

TITLE: CHLORIDE DISTRIBUTION IN GROUNDWATER – MARCH 2005	DATE: 6/2/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 3

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TABLES

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

Date	Activity
February 7, 1991	The New Mexico Oil Conservation Division (NMOCD) conducted an on-site inspection, including sampling of the on-site fresh water well.
August 6, 1991	The NMOCD requested submittal of an investigation work plan.
September 5, 1991	Roberts/Schornick and Associates, Inc. (RSA) submitted Technical Work Plan for soil and groundwater investigation to the NMOCD.
November 15, 1991	The NMOCD approved the Technical Work Plan submitted by RSA.
December 16, 1991	RSA sampled the fresh water well. The analytical results were submitted to the NMOCD.
February 21, 1992	Western sampled the fresh water well. The analytical results were submitted to the NMOCD.
July 29 - August 10, 1992	Brown and Caldwell conducted a soil and groundwater investigation according to the approved Technical Work Plan. The investigation included drilling and sampling nine soil borings, sampling six hand-augured soil borings, installation and sampling of five monitor wells, and sampling of the fresh water well.
October 12, 1992	Brown and Caldwell submitted a Soil and Groundwater Investigation Report to the NMOCD.
December 2, 1992	The NMOCD requested the installation and sampling of four additional monitor wells, including a monitor well on an adjacent property.
April 13, 1993	Brown and Caldwell conducted a vapor extraction pilot test on the existing monitor wells.
April 15, 1993	Brown and Caldwell installed off-site monitor well MW-9.
April 22, 1993	Brown and Caldwell sampled off-site monitor well MW-9.
May 27, 1993	Brown and Caldwell submitted a letter report documenting the installation and sampling of off-site monitor well MW-9 to the NMOCD.
June 2, 1993	Brown and Caldwell conducted a short-term aquifer test using the fresh water well at the facility.
June 8, 1993	USTank Management, Inc. conducted a non-volumetric tank system tightness test on the diesel and unleaded gasoline aboveground storage tanks at the facility.
June 21, 1993	ENSR Consulting and Engineering (ENSR), the environmental consultant for the adjacent property owner on which off-site well MW-9 is located, submitted a request to sample monitor well MW-9.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

July 15, 1993	ENSR split a groundwater sample collected from monitor well MW-9 with Brown and Caldwell.
July 30, 1993	USTank Management, Inc. submitted a tank tightness test report to Brown and Caldwell. The report indicated that both tanks and their associated piping passed.
August 16-19, 1993	Brown and Caldwell installed two additional downgradient monitor wells. Brown and Caldwell sampled each of the existing and newly installed monitor wells.
January 26, 1994	Brown and Caldwell performed a groundwater monitoring event; the existing monitor wells and the fresh water well were purged and sampled. The groundwater samples were analyzed for BTEX.
May 6, 1994	A Remedial Action Plan (RAP) was submitted to the NMOCD.
August 11, 1994	The RAP was approved by the NMOCD.
May 3, 1995	Brown and Caldwell conducted the May 1995 groundwater sampling event.
July 31, 1995	Brown and Caldwell conducted the July 1995 groundwater sampling event.
August 2-9, 1995	Installation of the biosparging system was initiated. Nineteen combined injection/extraction wells and three vacuum extraction wells were installed.
August 14-26, 1995	Remedial Construction Services, Inc. (RCS) constructed the initial design of the biosparging system.
September 19, 1995	Operation of the extraction portion of the biosparging system commenced.
November 13, 1995	Operation of the injection portion of the biosparging system commenced.
November 14, 1995	Brown and Caldwell conducted the November 1995 groundwater sampling event.
February 23, 1996	Brown and Caldwell conducted the February 1996 groundwater sampling event.
May 31, 1996	Brown and Caldwell conducted the May 1996 groundwater sampling event.
August 23, 1996	Brown and Caldwell conducted the August 1996 groundwater sampling event.
December 2, 1996	Brown and Caldwell conducted the December 1996 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

March 6-7, 1997	BJ Services removed three field waste tanks and associated hydrocarbon-impacted soil.
March 12, 1997	Brown and Caldwell conducted the March 1997 groundwater sampling event.
March 14, 1997	Vapor extraction well VE-4 was installed.
April 1997	Vapor extraction well VE-4 was connected to the vapor extraction system.
June 12, 1997	Brown and Caldwell conducted the June 1997 groundwater sampling event.
September 11-12, 1997	Brown and Caldwell conducted the September 1997 groundwater sampling event.
December 10, 1997	Brown and Caldwell conducted the December 1997 groundwater sampling event.
February 3-14, 1998	Air injection wells AI-20 through AI-24, vapor extraction wells VE-5 through VE-7, and monitor wells MW-11A and MW-12 were installed.
February 19, 1998	Operation of previously existing injection wells was suspended in preparation for start-up of new injection wells AI-20 through AI-24.
March 10, 1998	Operation of new air injection wells AI-20 through AI-24 and new vapor extraction wells VE-5 through VE-7 commenced.
March 23-24, 1998	Brown and Caldwell conducted the March 1998 groundwater sampling event.
March 24, 1998	Operation of previously existing injection wells and vapor extraction wells resumed.
June 23, 1998	Brown and Caldwell conducted the June 1998 groundwater sampling event.
September 30, 1998	Brown and Caldwell conducted the September 1998 groundwater sampling event.
December 9-10, 1998	Brown and Caldwell conducted the December 1998 groundwater sampling event.
January 21, 1999	The NMOCD requested submittal of a work plan by March 22, 1999 to perform additional groundwater delineation in the area of the former field waste tanks and the former AST/MW-6 area.
March 9-10, 1999	Brown and Caldwell conducted the March 1999 groundwater sampling event.
March 19, 1999	Brown and Caldwell submitted the work plan for groundwater delineation activities that was requested by the NMOCD.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

May 19, 1999	The NMOCD approved the groundwater delineation work plan.
June 10, 1999	Brown and Caldwell performed sampling of existing monitor wells for the June /July 1999 groundwater sampling event.
July 2, 1999	Brown and Caldwell completed plugging and abandonment of monitor wells MW-2, MW-6, and MW-11; installed and developed monitor wells MW-12D and MW-13; and sampled monitor wells MW-12D and MW-13 to complete the June/July 1999 groundwater sampling event.
July 14, 1999	Brown and Caldwell redirected air discharge from the shallow injection well injection system to Lateral No. 1 and optimized air flow to injection wells AI-16 and AI-17 to apply increased remedial pressure to the eastern portion of the west plume.
September 13-14, 1999	Brown and Caldwell conducted the September 1999 groundwater sampling event.
December 9, 1999	Brown and Caldwell conducted the December 1999 groundwater sampling event.
March 9-10, 2000	Brown and Caldwell conducted the March 2000 groundwater sampling event and shut off air flow to biosparging system Lateral Nos. 4S, 5S, 6S, and 7S.
June 8, 2000	Brown and Caldwell conducted the June 2000 groundwater sampling event.
September 13, 2000	Brown and Caldwell conducted the September 2000 groundwater sampling event.
November 1, 2000	Brown and Caldwell deactivated the biosparging system.
December 7, 2000	Brown and Caldwell conducted the December 2000 groundwater sampling event.
January 2001	Brown and Caldwell installed and sampled monitor wells MW-14 and MW-15.
March 8-9, 2001	Brown and Caldwell conducted the March 2001 groundwater sampling event.
June 21-22, 2001	Brown and Caldwell conducted the June 2001 groundwater sampling event.
July 23, 2001	Brown and Caldwell collected soil samples from four soil borings installed at the former fueling system area of the facility to confirm the effectiveness of the biosparging system in remediating hydrocarbon impact to soil, as specified in the NMOCD-approved RAP.
September 10, 2001	Brown and Caldwell conducted the September 2001 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

December 6, 2001	Brown and Caldwell conducted the December 2001 groundwater sampling event.
February 26, 2002	Brown and Caldwell repaired the crushed well completion on monitor well MW-10.
February 28, 2002	NMOCD requested an evaluation of chloride content of groundwater at the facility.
March 11-12, 2002	Brown and Caldwell conducted the March 2002 groundwater sampling event. Groundwater samples from all water-producing wells at the facility were analyzed for chloride content.
May 21, 2002	Brown and Caldwell submitted the report for the March 2002 groundwater sampling event, including an evaluation of chloride content of groundwater at the facility and a recommendation for installation of a downgradient off-site well (MW-16) to replace off-site well OW-4, which has gone dry.
June 17-18, 2002	Brown and Caldwell conducted the June 2002 groundwater sampling event.
September 16, 2002	Brown and Caldwell conducted the September 2002 groundwater sampling event.
November 11, 2002	Brown and Caldwell submitted the June 2002 Groundwater Sampling Report and Biosparging System Closure Report.
January 9, 2003	Brown and Caldwell conducted the January 2003 groundwater sampling event.
March 6, 2003	Brown and Caldwell conducted the March 2003 groundwater sampling event.
May 13, 2003	Brown and Caldwell installed monitor well MW-16 at a location to the west of the facility.
June 19, 2003	Brown and Caldwell initiated the June 2003 groundwater sampling event.
August 22, 2003	Brown and Caldwell completed the June 2003 groundwater sampling event.
October 2, 2003	Brown and Caldwell conducted the October 2003 groundwater sampling event.
December 17-18, 2003	Brown and Caldwell conducted the December 2003 groundwater sampling event.
March 29-30, 2004	Brown and Caldwell conducted the March 2004 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

March 8-11, 2005	Brown and Caldwell conducted the March 2005 groundwater sampling event. Brown and Caldwell installed monitor wells MW-17 and MW-18 in the eastern portion of the facility, and monitor well MW-19 at a location to the east of the facility. Soil samples were taken from the MW-17, MW-18, and MW-19 soil borings, as well as from a soil boring identified as SB-16, which was installed at a location adjacent to existing monitor well MW-16. Brown and Caldwell decommissioned the biosparging system at the former fuel island area.
April 13, 2005	The Final Closure Report for the former fuel island area (GW-072) was submitted to NMOCD.
June 15, 2005	NMOCD approved the Final Closure Report for the former fuel island area (GW-072).

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-1	3,647.53	8/10/1992	53.22	0.00	3,594.31	(1)
		2/9/1993	53.03	0.00	3,594.50	
		8/18/1993	53.10	0.00	3,594.43	
		1/26/1994	53.31	0.00	3,594.22	
		5/3/1995	54.64	0.20	3,593.05	(2)
		7/31/1995	54.14	0.00	3,593.39	
		11/14/1995	53.69	0.00	3,593.84	
		2/23/1996	54.32	0.00	3,593.21	
		5/31/1996	54.14	0.00	3,593.39	
		8/23/1996	56.17	0.00	3,591.36	
		12/2/1996	55.27	0.00	3,592.26	
		3/12/1997	55.70	0.27	3,592.05	
		6/12/1997	55.08	0.02	3,592.47	
		9/12/1997	55.64	0.51	3,592.31	
		12/10/1997	55.46	0.00	3,592.07	PSH Sheen
		3/24/1998	55.81	0.00	3,591.72	PSH Sheen
		6/23/1998	56.38	0.06	3,591.20	
		9/30/1998	56.82	0.00	3,590.71	PSH Sheen
		12/9/1998	57.05	0.00	3,590.48	
		3/10/1999	57.45	0.00	3,590.08	
		6/10/1999	58.02	0.00	3,589.51	
		7/2/1999	57.90	0.00	3,589.63	
		9/14/1999	58.14	0.00	3,589.39	
		12/9/1999	-	-	-	(3)
		3/9/2000	58.99	0.00	3,588.54	
		06/00	-	-	-	
		09/00	-	-	-	
		12/7/00	-	-	-	
		3/8/2001	60.35	0.00	3,587.18	
		6/21/01	60.99	0.00	3,586.54	
		9/10/01	61.17	0.00	3,586.36	
		12/6/2001	not measured			
		03/11/02	62.11	0.00	3,585.42	
		6/17/02	62.53	0.00	3,585.00	
		9/16/2002	62.43	0.00	3,585.10	
		1/9/2003	62.61	0.00	3,584.92	
		3/6/2003	62.72	0.00	3,584.81	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	62.97	0.00	3,584.56	
		12/17/2003	63.21	0.00	3,584.32	
		3/29/2004	63.24	0.00	3,584.29	
		3/8/2005	-	-	-	(11)
MW-2	3,644.84	8/10/1992	52.82	0.00	3,592.02	(1)
		2/9/1993	49.60	0.00	3,595.24	
		8/18/1993	49.71	0.00	3,595.13	
		1/26/1994	49.97	0.00	3,594.87	
		5/3/1995	-	-	-	(4),(5)
MW-3	3,645.00	8/10/1992	52.99	0.00	3,592.01	(1)
		2/9/1993	52.72	0.00	3,592.28	
		8/18/1993	52.82	0.00	3,592.18	
		1/26/1994	53.05	0.00	3,591.95	
		5/3/1995	54.31	0.00	3,590.69	
		7/31/1995	51.24	0.00	3,593.76	
		11/14/1995	51.10	0.00	3,593.90	
		2/23/1996	51.68	0.00	3,593.32	
		5/31/1996	51.45	0.00	3,593.55	
		8/23/1996	51.55	0.00	3,593.45	
		12/2/1996	52.23	0.00	3,592.77	
		3/12/1997	52.67	0.00	3,592.33	
		6/12/1997	52.68	0.00	3,592.32	
		9/11/1997	52.71	0.00	3,592.29	
		12/10/1997	52.89	0.00	3,592.11	
		3/23/1998	53.22	0.00	3,591.78	
		6/23/1998	53.66	0.00	3,591.34	
		9/30/1998	54.06	0.00	3,590.94	
		12/9/1998	54.36	0.00	3,590.64	
		3/10/1999	54.72	0.00	3,590.28	
		6/10/1999	55.17	0.00	3,589.83	
		7/2/1999	55.15	0.00	3,589.85	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-3 cont.	3,645.00	9/14/1999	55.42	0.00	3,589.58	
		12/9/1999	55.78	0.00	3,589.22	
		3/9/2000	56.23	0.00	3,588.77	
		6/8/2000	56.66	0.00	3,588.34	
		9/13/2000	56.77	0.00	3,588.23	
		12/7/2000	57.15	0.00	3,587.85	
		3/8/2001	57.69	0.00	3,587.31	
		6/21/01	58.34	0.00	3,586.66	
		9/10/01	58.54	0.00	3,586.46	
		12/6/2001	59.04	0.00	3,585.96	
		3/11/2002	59.50	0.00	3,585.50	
		6/17/02	59.83	0.00	3,585.17	
		9/16/2002	59.80	0.00	3,585.20	
		1/9/2003	60.01	0.00	3,584.99	
		3/6/2003	60.10	0.00	3,584.90	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	60.34	0.00	3,584.66	
		12/17/2003	60.50	0.00	3,584.50	
		3/29/2004	60.55	0.00	3,584.45	
		3/8/2005	-	-	-	(11)
MW-4	3,645.28	8/10/1992	50.55	0.00	3,594.73	(1)
		2/9/1993	50.26	0.00	3,595.02	
		8/18/1993	50.38	0.00	3,594.90	
		1/26/1994	50.90	0.30	3,594.63	
		5/3/1995	51.51	0.45	3,594.14	
		7/31/1995	51.74	0.26	3,593.75	
		11/14/1995	51.03	0.00	3,594.25	
		2/23/1996	51.65	0.01	3,593.64	
		5/31/1996	51.48	0.00	3,593.80	
		8/23/1996	53.49	0.00	3,591.79	
		12/2/1996	52.32	0.00	3,592.96	
		3/12/1997	52.74	0.05	3,592.58	
		6/12/1997	53.08	0.44	3,592.56	
		9/12/1997	52.60	0.15	3,592.80	
		12/10/1997	52.89	0.00	3,592.39	PSH Sheen
		3/24/1998	53.20	0.25	3,592.29	
		6/23/1998	53.82	0.22	3,591.64	
		9/30/1998	53.96	0.00	3,591.32	200 ml PSH
		12/9/1998	54.27	0.00	3,591.01	
		3/10/1999	54.69	0.04	3,590.62	
		6/10/1999	55.07	0.00	3,590.21	
		7/2/1999	55.10	0.00	3,590.18	
		9/14/1999	55.33	0.00	3,589.95	
		12/9/1999	55.79	0.00	3,589.49	
		3/10/2000	56.12	0.00	3,589.16	
		6/8/2000	56.67	0.00	3,588.61	
		9/13/2000	56.65	0.00	3,588.63	
		12/7/2000	57.05	0.00	3,588.23	
		3/8/2001	57.72	0.00	3,587.56	
		6/21/01	58.18	0.00	3,587.10	
		9/10/01	58.54	0.00	3,586.74	
		12/6/2001	58.88	0.00	3,586.40	
		3/11/2002	59.41	0.00	3,585.87	
		6/17/02	59.67	0.00	3,585.61	
		9/16/2002	59.71	0.00	3,585.57	
		1/9/2003	59.91	0.00	3,585.37	
		3/6/2003	60.03	0.00	3,585.25	
		6/19/2003	60.16	0.00	3,585.12	
		10/2/2003	60.30	0.00	3,584.98	
		12/17/2003	60.35	0.00	3,584.93	
		3/29/2004	60.38	0.00	3,584.90	
		3/8/2005	-	-	-	(11)
MW-5	3,647.72	8/10/1992	52.38	0.00	3,595.34	(1)
		2/9/1993	52.06	0.00	3,595.66	
		8/18/1993	52.16	0.00	3,595.56	
		1/26/1994	52.50	0.00	3,595.22	
		5/3/1995	53.57	0.00	3,594.15	
		7/31/1995	53.27	0.00	3,594.45	
		11/14/1995	52.83	0.00	3,594.89	
		2/23/1996	53.57	0.00	3,594.15	
		5/31/1996	53.16	0.00	3,594.56	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-5 cont.	3,647.72	8/23/1996	53.41	0.00	3,594.31	
		12/2/1996	53.98	0.00	3,593.74	
		3/12/1997	54.44	0.00	3,593.28	
		6/12/1997	54.48	0.00	3,593.24	
		9/12/1997	54.29	0.00	3,593.43	
		12/10/1997	54.66	0.00	3,593.06	
		3/23/1998	55.05	0.00	3,592.67	
		6/23/1998	55.44	0.00	3,592.28	
		9/30/1998	55.65	0.00	3,592.07	
		12/9/1998	56.00	0.00	3,591.72	
		3/9/1999	56.45	0.00	3,591.27	
		6/10/1999	56.91	0.00	3,590.81	
		7/2/1999	56.93	0.00	3,590.79	
		9/14/1999	57.12	0.00	3,590.60	
		12/9/1999	57.41	0.00	3,590.31	
		3/9/2000	57.92	0.00	3,589.80	
		6/8/2000	58.32	0.00	3,589.40	
		9/13/2000	58.36	0.00	3,589.36	
		12/7/2000	58.71	0.00	3,589.01	
		3/8/2001	59.36	0.00	3,588.36	
		6/21/01	59.94	0.00	3,587.78	
		9/10/01	59.85	0.00	3,587.87	
		12/6/2001	60.56	0.00	3,587.16	
		3/11/02	61.12	0.00	3,586.60	
		6/17/02	61.43	0.00	3,586.29	
		9/16/2002	61.52	0.00	3,586.20	
		1/9/2003	61.75	0.00	3,585.97	
		3/6/2003	61.90	0.00	3,585.82	
		6/19/2003	62.01	0.00	3,585.71	
		10/2/2003	62.16	0.00	3,585.56	
		12/17/2003	62.35	0.00	3,585.37	
		3/29/2004	62.56	0.00	3,585.16	
		3/8/2005	61.80	0.00	3,585.92	
MW-6	3,644.74	2/9/1993	50.58	0.00	3,594.16	(1)
		8/18/1993	50.78	0.00	3,593.96	
		1/26/1994	51.00	0.00	3,593.74	
		5/3/1995	52.63	0.00	3,592.11	
		7/31/1995	51.90	0.00	3,592.84	
		11/14/1995	51.19	0.00	3,593.55	
		2/23/1996	52.10	0.00	3,592.64	
		5/31/1996	51.76	0.00	3,592.98	
		8/23/1996	51.63	0.00	3,593.11	
		12/2/1996	52.85	0.00	3,591.89	
		3/12/1997	53.55	0.00	3,591.19	
		6/12/1997	52.08	0.00	3,592.66	
		9/11/1997	53.72	0.00	3,591.02	
		12/10/1997	53.27	0.00	3,591.47	
		3/23/1998	53.56	0.00	3,591.18	
		6/23/1998	52.88	0.00	3,591.86	
		9/30/1998	54.89	0.00	3,589.85	
		12/9/1998	54.57	0.00	3,590.17	
		3/10/1999	55.10	0.00	3,589.64	
		7/2/1999	-	-	-	(5),(6)
MW-7	3,644.55	2/9/1993	50.53	0.00	3,594.02	(1)
		8/18/1993	50.74	0.00	3,593.81	
		1/26/1994	51.01	0.00	3,593.54	
		5/3/1995	52.25	0.00	3,592.30	
		7/31/1995	51.92	0.00	3,592.63	
		11/14/1995	51.48	0.00	3,593.07	
		2/23/1996	52.15	0.00	3,592.40	
		5/31/1996	51.78	0.00	3,592.77	
		8/23/1996	52.02	0.00	3,592.53	
		12/2/1996	52.52	0.00	3,592.03	
		3/12/1997	52.99	0.00	3,591.56	
		6/12/1997	53.08	0.00	3,591.47	
		9/11/1997	53.00	0.00	3,591.55	
		12/10/1997	53.28	0.00	3,591.27	
		3/23/1998	53.59	0.00	3,590.96	
		6/23/1998	54.20	0.00	3,590.35	
		9/30/1998	54.54	0.00	3,590.01	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-7 cont.	3,644.55	12/9/1998	54.74	0.00	3,589.81	
		3/9/1999	55.15	0.00	3,589.40	
		6/10/1999	55.66	0.00	3,588.89	
		7/2/1999	55.73	0.00	3,588.82	
		9/13/1999	55.94	0.00	3,588.61	
		12/9/1999	56.38	0.00	3,588.17	
		3/9/2000	56.74	0.00	3,587.81	
		6/8/2000	57.17	0.00	3,587.38	
		9/13/2000	57.40	0.00	3,587.15	
		12/7/2000	57.77	0.00	3,586.78	
		3/8/2001	58.29	0.00	3,586.26	
		6/21/01	58.91	0.00	3,585.64	
		9/10/01	59.25	0.00	3,585.30	
		12/6/2001	59.75	0.00	3,584.80	
		3/11/2002	60.03	0.00	3,584.52	
		6/17/02	60.39	0.00	3,584.16	
		9/16/2002	60.39	0.00	3,584.16	
		1/9/2003	60.53	0.00	3,584.02	
		3/6/2003	60.61	0.00	3,583.94	
		6/19/2003	60.73	0.00	3,583.82	
		10/2/2003	60.84	0.00	3,583.71	
		12/17/2003	60.99	0.00	3,583.56	
		3/29/2004	61.19	0.00	3,583.36	
		3/8/2005	-	-	-	(11)
MW-8	3,644.87	2/9/1993	50.48	0.00	3,594.39	(1)
		8/18/1993	50.67	0.00	3,594.20	
		1/26/1994	50.96	0.00	3,593.91	
		5/3/1995	52.15	0.00	3,592.72	
		7/31/1995	51.77	0.00	3,593.10	
		11/14/1995	51.37	0.00	3,593.50	
		2/23/1996	52.17	0.00	3,592.70	
		5/31/1996	51.55	0.00	3,593.32	
		8/23/1996	51.92	0.00	3,592.95	
		12/2/1996	52.43	0.00	3,592.44	
		3/12/1997	52.93	0.00	3,591.94	
		6/12/1997	53.96	0.00	3,590.91	
		9/11/1997	52.73	0.00	3,592.14	
		12/10/1997	53.15	0.00	3,591.72	
		3/23/1998	53.51	0.00	3,591.36	
		6/23/1998	54.01	0.00	3,590.86	
		9/30/1998	54.35	0.00	3,590.52	
		12/9/1998	54.60	0.00	3,590.27	
		3/9/1999	55.00	0.00	3,589.87	
		6/10/1999	55.56	0.00	3,589.31	
		7/2/1999	55.57	0.00	3,589.30	
		9/13/1999	55.72	0.00	3,589.15	
		12/9/1999	-	-	-	(3)
		3/9/2000	56.52	0.00	3,588.35	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	58.11	0.00	3,586.76	
		6/21/01	58.72	0.00	3,586.15	
		9/10/01	58.94	0.00	3,585.93	
		12/6/2001	not measured			
		3/11/2002	59.94	0.00	3,584.93	
		6/17/02	60.22	0.00	3,584.65	
		9/16/2002	60.24	0.00	3,584.63	
		1/9/2003	60.42	0.00	3,584.45	
		3/6/2003	60.52	0.00	3,584.35	
		6/19/2003	60.63	0.00	3,584.24	
		10/2/2003	60.75	0.00	3,584.12	
		12/17/2003	60.92	0.00	3,583.95	
		3/29/2004	61.11	0.00	3,583.76	
		3/8/2005	-	-	-	(11)
MW-9	3,644.78	4/22/1993	49.73	0.00	3,595.05	(1)
		7/15/1993	49.65	0.00	3,595.13	
		8/18/1993	49.85	0.00	3,594.93	
		1/26/1994	50.02	0.00	3,594.76	
		5/3/1995	51.35	0.00	3,593.43	
		7/31/1995	50.97	0.00	3,593.81	
		11/14/1995	50.43	0.00	3,594.35	
		2/23/1996	51.12	0.00	3,593.66	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-9 cont.	3,644.78	5/31/1996	50.89	0.00	3,593.89	
		8/23/1996	50.98	0.00	3,593.80	
		12/2/1996	51.58	0.00	3,593.20	
		3/12/1997	52.21	0.05	3,592.61	
		6/12/1997	52.10	0.00	3,592.68	PSH Sheen
		9/12/1997	51.95	0.00	3,592.83	PSH Sheen
		12/10/1997	52.37	0.00	3,592.41	PSH Sheen
		3/23/1998	52.68	0.00	3,592.10	PSH Sheen
		6/23/1998	53.08	0.00	3,591.70	PSH Sheen
		9/30/1998	53.39	0.01	3,591.40	PSH Sheen
		12/9/1998	53.68	0.00	3,591.10	
		3/10/1999	54.15	0.00	3,590.63	
		6/10/1999	54.68	0.00	3,590.10	
		7/2/1999	54.71	0.00	3,590.07	
		9/13/1999	54.71	0.00	3,590.07	
		12/9/1999	-	-	-	(3)
		3/9/2000	55.69	0.00	3,589.09	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	57.03	0.00	3,587.75	
		6/21/01	57.91	0.00	3,586.87	
		9/10/01	57.95	0.00	3,586.83	
		12/6/2001	not measured			
		3/11/2002	58.96	0.00	3,585.82	
		6/17/02	59.14	0.00	3,585.64	
		9/16/2002	not measured			
		1/9/2003	59.34	0.00	3,585.44	
		3/6/2003	59.48	0.00	3,585.30	
		6/19/2003	59.64	0.00	3,585.14	
		10/2/2003	59.76	0.00	3,585.02	
		12/17/2003	59.93	0.00	3,584.85	
		3/29/2004	60.13	0.00	3,584.65	
		3/8/2005	-	-	-	(11)
MW-10	3,644.47	8/18/1993	51.54	0.00	3,592.93	(1)
		1/26/1994	51.90	0.00	3,592.57	
		5/3/1995	52.97	0.00	3,591.50	
		7/31/1995	52.87	0.00	3,591.60	
		11/14/1995	52.51	0.00	3,591.96	
		2/23/1996	53.05	0.00	3,591.42	
		5/31/1996	52.79	0.00	3,591.68	
		8/23/1996	53.03	0.00	3,591.44	
		12/2/1996	53.41	0.00	3,591.06	
		3/12/1997	54.21	0.00	3,590.26	
		6/12/1997	53.99	0.00	3,590.48	
		9/12/1997	53.94	0.00	3,590.53	
		12/10/1997	54.12	0.00	3,590.35	
		3/23/1998	54.51	0.00	3,589.96	
		6/23/1998	55.12	0.00	3,589.35	
		9/30/1998	55.61	0.00	3,588.86	
		12/9/1998	55.80	0.00	3,588.67	
		3/9/1999	56.09	0.00	3,588.38	
		6/10/1999	56.60	0.00	3,587.87	
		7/2/1999	56.64	0.00	3,587.83	
		9/14/1999	56.91	0.00	3,587.56	
		12/9/1999	57.37	0.00	3,587.10	
		3/10/2000	57.71	0.00	3,586.76	
		6/8/2000	58.08	0.00	3,586.39	
		9/13/2000	58.44	0.00	3,586.03	
		12/7/2000	58.89	0.00	3,585.58	
		3/9/2001	59.31	0.00	3,585.16	
		6/21/01	59.89	0.00	3,584.58	
		9/10/01	61.34	0.00	3,583.13	
		12/6/2001	60.65	0.00	3,583.82	
		3/11/2002	60.69	0.00	3,583.78	
		6/17/02	60.98	0.00	3,583.49	
		9/16/2002	61.00	0.00	3,583.47	
		1/9/2003	61.07	0.00	3,583.40	
		3/6/2003	61.19	0.00	3,583.28	
		6/19/2003	61.26	0.00	3,583.21	
		10/2/2003	61.38	0.00	3,583.09	
		12/17/2003	61.55	0.00	3,582.92	
		3/29/2004	61.71	0.00	3,582.76	
		3/8/2005	60.91	0.00	3,583.56	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-11	3,643.78	8/18/1993	51.92	0.00	3,591.86	(1)
		1/26/1994	52.32	0.00	3,591.46	
		5/3/1995	53.38	0.00	3,590.40	
		7/31/1995	53.35	0.00	3,590.43	
		11/14/1995	52.96	0.00	3,590.82	
		2/23/1996	53.50	0.00	3,590.28	
		5/31/1996	53.25	0.00	3,590.53	
		8/23/1996	53.49	0.00	3,590.29	
		12/2/1996	53.79	0.00	3,589.99	
		3/12/1997	53.81	0.00	3,589.97	
		6/12/1997	53.96	0.00	3,589.82	
		9/12/1997	52.93	0.00	3,590.85	
		12/10/1997	-	-	-	(5),(6)
MW-11A	3,644.24	3/23/1998	54.79	0.00	3,589.45	(7)
		6/23/1998	55.43	0.00	3,588.81	
		9/30/1998	55.96	0.00	3,588.28	
		12/9/1998	56.13	0.00	3,588.11	
		3/10/1999	56.43	0.00	3,587.81	
		6/10/1999	56.94	0.00	3,587.30	
		7/2/1999	57.01	0.00	3,587.23	
		9/14/1999	57.36	0.00	3,586.88	
		12/9/1999	57.72	0.00	3,586.52	
		3/9/2000	58.01	0.00	3,586.23	
		6/8/2000	58.40	0.00	3,585.84	
		9/13/2000	58.84	0.00	3,585.40	
		12/7/2000	59.29	0.00	3,584.95	
		3/8/2001	59.72	0.00	3,584.52	
		6/21/01	60.28	0.00	3,583.96	
		9/10/01	60.69	0.00	3,583.55	
		12/6/2001	60.88	0.00	3,583.36	
		3/11/2002	61.42	0.00	3,582.82	
		6/17/02	61.55	0.00	3,582.69	
		9/16/2002	61.59	0.00	3,582.65	
		1/9/2003	61.67	0.00	3,582.57	
		3/6/2003	61.70	0.00	3,582.54	
		6/19/2003	61.84	0.00	3,582.40	
		10/2/2003	61.88	0.00	3,582.36	
		12/17/2003	62.05	0.00	3,582.19	
		3/29/2004	62.25	0.00	3,581.99	
		3/8/2005	61.45	0.00	3,582.79	
MW-12	3,644.29	3/23/1998	54.72	0.00	3,589.57	(7)
		6/23/1998	55.48	0.00	3,588.81	
		9/30/1998	56.02	0.00	3,588.27	
		12/9/1998	56.17	0.00	3,588.12	
		3/10/1999	56.45	0.00	3,587.84	
		6/10/1999	56.97	0.00	3,587.32	
		7/2/1999	56.99	0.00	3,587.30	
		9/14/1999	57.41	0.00	3,586.88	
		12/9/1999	57.76	0.00	3,586.53	
		3/10/2000	58.08	0.00	3,586.21	
		6/8/2000	58.42	0.00	3,585.87	
		9/13/2000	58.85	0.00	3,585.44	
		12/7/2000	59.31	0.00	3,584.98	
		3/8/2001	59.76	0.00	3,584.53	
		6/21/01	60.29	0.00	3,584.00	
		9/10/01	60.79	0.00	3,583.50	
		12/6/2001	well dry during this and subsequent monitoring events			
		3/8/2005	-	-	-	(11)
MW-12D	3,644.38	7/2/1999	57.13	0.00	3,587.25	(8)
		9/14/1999	57.74	0.00	3,586.64	
		12/9/1999	57.86	0.00	3,586.52	
		3/9/2000	58.24	0.00	3,586.14	
		6/8/2000	58.56	0.00	3,585.82	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	-	-	-	
		6/21/01	-	-	-	
		9/10/01	-	-	-	
		12/6/2001	61.30	0.00	3,583.08	
		3/11/2002	61.61	0.00	3,582.77	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-12D cont.	3,644.38	6/17/02	61.71	0.00	3,582.67	
		9/16/2002	61.75	0.00	3,582.63	
		1/9/2003	61.86	0.00	3,582.52	
		3/6/2003	61.91	0.00	3,582.47	
		6/19/2003	61.95	0.00	3,582.43	
		10/2/2003	62.05	0.00	3,582.33	
		12/17/2003	62.21	0.00	3,582.17	
		3/29/2004	62.38	0.00	3,582.00	
		3/8/2005	61.56	0.00	3,582.82	
MW-13	3,645.52	7/2/1999	56.60	0.00	3,588.92	(9)
		9/14/1999	56.92	0.00	3,588.60	
		12/9/1999	57.28	0.00	3,588.24	
		3/10/2000	57.68	0.00	3,587.84	
		6/8/2000	58.04	0.00	3,587.48	
		9/13/2000	58.29	0.00	3,587.23	
		12/7/2000	58.68	0.00	3,586.84	
		3/8/2001	59.19	0.00	3,586.33	
		6/21/01	59.80	0.00	3,585.72	
		9/10/01	60.03	0.00	3,585.49	
		12/6/2001	60.59	0.00	3,584.93	
		3/11/2002	60.94	0.00	3,584.58	
		6/17/02	61.28	0.00	3,584.24	
		9/16/2002	61.23	0.00	3,584.29	
		1/9/2003	61.38	0.00	3,584.14	
		3/6/2003	61.45	0.00	3,584.07	
		6/19/2003	61.58	0.00	3,583.94	
		10/2/2003	61.70	0.00	3,583.82	
		12/17/2003	61.93	0.00	3,583.59	
		3/29/2004	62.04	0.00	3,583.48	
		3/8/2005	-	-	-	(11)
MW-14	3,642.45	3/8/2001	61.07	0.00	3,581.38	
		6/21/01	61.71	0.00	3,580.74	
		9/10/01	62.31	0.00	3,580.14	
		12/6/2001	62.80	0.00	3,579.65	
		3/11/2002	62.70	0.00	3,579.75	
		6/17/02	62.65	0.00	3,579.80	
		9/16/2002	62.55	0.00	3,579.90	
		1/9/2003	62.59	0.00	3,579.86	
		3/6/2003	62.64	0.00	3,579.81	
		6/19/2003	62.64	0.00	3,579.81	
		10/2/2003	62.73	0.00	3,579.72	
		12/17/2003	62.93	0.00	3,579.52	
		3/29/2004	63.04	0.00	3,579.41	
		3/8/2005	62.18	0.00	3,580.27	
MW-15	3,643.24	3/8/2001	59.79	0.00	3,583.45	
		6/21/01	60.49	0.00	3,582.75	
		9/10/01	61.02	0.00	3,582.22	
		12/6/2001	61.47	0.00	3,581.77	
		3/11/2002	61.65	0.00	3,581.59	
		6/17/02	61.68	0.00	3,581.56	
		9/16/2002	61.47	0.00	3,581.77	
		1/9/2003	61.59	0.00	3,581.65	
		3/6/2003	61.63	0.00	3,581.61	
		6/19/2003	61.62	0.00	3,581.62	
		10/2/2003	61.70	0.00	3,581.54	
		12/17/2003	61.83	0.00	3,581.41	
		3/29/2004	62.01	0.00	3,581.23	
		3/8/2005	61.13	0.00	3,582.11	
MW-16	3,643.73	6/19/2003	66.50	0.00	3,577.23	
		10/2/2003	66.61	0.00	3,577.12	
		12/17/2003	66.72	0.00	3,577.01	
		3/29/2004	66.86	0.00	3,576.87	
		3/8/2005	65.64	0.00	3,578.09	
MW-17	3642.25	3/11/2005	61.71	0.00	3,582.02	(1)
MW-18	3641.50	3/11/2005	61.76	0.00	3,581.97	(1)
MW-19	3642.25	3/11/2005	69.01	0.00	3,574.72	(1)

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
OW-4	3,644.06	7/2/1999	58.18	0.00	3,585.88	(8)
		9/14/1999	58.63	0.00	3,585.43	
		12/9/1999	58.92	0.00	3,585.14	
		3/9/2000	59.19	0.00	3,584.87	
		6/8/2000	59.56	0.00	3,584.50	
		9/13/2000	60.16	0.00	3,583.90	
		12/7/2000	61.15	0.00	3,582.91	
		3/8/2001	61.43	0.00	3,582.63	(10)
		6/21/01	61.48	0.00	3,582.58	
		9/10/01	61.53	0.00	3,582.53	
		12/6/2001	well dry during this and subsequent monitoring events			

(1) - Top of casing elevations and groundwater elevations of all monitor wells were relative to an arbitrary datum of 100.00 feet prior to March 1997 and have been converted to Mean Sea Level (MSL).

(2) - For wells having measurable thickness of free product, the groundwater elevation was calculated as follows:
Groundwater Elevation = (TOC elevation)-(depth to groundwater)+[(free product thickness)x(SG of free product)]
Note: The specific gravity (SG) of the free product is 0.82.

(3) - Not measured.

(4) - Monitor well MW-2 could not be located after January 1994.

(5) - Well plugged and abandoned July 2, 1999.

(6) - Monitor well MW-11 could not be located after September 12, 1997.

(7) - TOC elevations for MW-11A and MW-12 estimated relative to TOC elevation for MW-10.

(8) - TOC elevations for MW-12D and OW-4 estimated relative to TOC elevation for MW-12.

(9) - TOC elevation for MW-13 estimated relative to TOC elevation for MW-7.

(10) - Well dry (measured depth to water is below base of screen); true groundwater elevation is less than listed groundwater elevation.

Table 3
March 2005 Field Screening Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Cumulative Liters Removed	pH	Temperature (°C)	Conductivity (umhos/cm)	Redox (mV)	Dissolved Oxygen (meter) (mg/L)
MW-5	4.5[1]	7.03	16.33	978	149.0	6.72
MW-10	4.8[1]	6.65	17.07	3,357	-55.8	3.11
MW-11A	6.4[1]	6.30	20.44	8,471	-61.6	3.20
MW-12D	2.4	6.10	20.01	1,050	-64.4	0.52
MW-14	11.4[1]	6.86	18.26	1,486	132.1	7.32
MW-15	10[1]	6.70	18.20	1,473	162.3	5.80
MW-16	3.6	6.67	19.03	3,439	145.1	7.79
MW-17	4.8	7.35	16.60	1,111	103.4	8.54
MW-18	4.2	6.72	19.74	1,393	118.1	8.04
MW-19	4.2	6.60	19.87	1,604	110.5	7.50

Monitor wells MW-10, MW-11A, MW-14, and MW-15 were purged by removing 3 well volumes of groundwater from each well.
[1] - Well was purged dry using bailing techniques.

Table 4
Chloride Analytical Results for Soil Samples
Hobb, New Mexico Facility
BJ Services Company, U.S.A.

Date	Boring	Sample Depth Interval (ft. below grade)	Chloride, Total (325.2)[1]
3/10/2005	MW-17	9-10'	27.3
3/10/2005	MW-17	19-20'	186
3/10/2005	MW-17	29-30'	80.5
3/10/2005	MW-17	39-40'	40.2
3/10/2005	MW-17	49-50'	39.1
3/10/2005	MW-17	59-60'	42.8
3/9/2005	MW-18	9-10'	464
3/9/2005	MW-18	19-20'	363
3/9/2005	MW-18	29-30'	60.1
3/9/2005	MW-18	39-40'	31.4
3/9/2005	MW-18	49-50'	27.1
3/9/2005	MW-18	59-60'	97.9
3/9/2005	MW-19	9-10'	102
3/9/2005	MW-19	19-20'	50.8
3/9/2005	MW-19	29-30'	11.1
3/9/2005	MW-19	39-40'	12.6
3/9/2005	MW-19	49-50'	11
3/9/2005	MW-19	59-60'	13.2
3/9/2005	SB-16	4-5'	31.8
3/9/2005	SB-16	9-10'	39.3
3/9/2005	SB-16	14-15'	105
3/9/2005	SB-16	19-20'	124
3/9/2005	SB-16	24-25'	141
3/9/2005	SB-16	29-30'	93.5
3/9/2005	SB-16	34-35'	45.3
3/9/2005	SB-16	39-40'	70.1
3/9/2005	SB-16	44-45'	31.1
3/9/2005	SB-16	49-50'	32.2
3/9/2005	SB-16	54-55'	29.6
3/9/2005	SB-16	59-60'	26.2

(1) - in mg/kg.

Table 5
Cumulative Results(1) for Chloride(2) Analyses
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Sample Date	Monitor Wells(3)																				
	MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
8/1/1995	160	150	310	130	380	310	350	110	2,200	3,400	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
8/23/1996	130	140	100	99	210	250	360	140	2,000	2,900	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
3/23-24/1998	212	206	126	151	183	223	364	164	2,390	NS	940	1,200	NP	NP	NP	NP	NP	NP	NP	NP	NS
3/9-10/1999	163	156	142	155	411	238	274	123	1,160	NS	834	314	NP	NP	NP	NP	NP	NP	NP	NP	NS
6/10-7/2/1999	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	195	496	NP	NP	NP	NP	NP	NP	266
3/9-10/2000	258	196	196	196	NP	224	241	131	474	NP	1,290	327	117	276	NP	NP	NP	NP	NP	NP	258
1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	368	219	NP	NP	NP	NP	NS
3/8-9/2001	NA	165	172	152	NP	224	250	127	879	NP	1,720	586	NS	276	327	NA	NP	NP	NP	NP	NS-D
6/21/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NS	NA	222	222	NP	NP	NP	NP	NS-D
9/10/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	245	228	NP	NP	NP	NP	NS-D
9/18/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	79	NA	NA	NA	NP	NP	NP	NP	NS-D
12/6/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	276	215	NP	NP	NP	NP	NS-D
3/11-12/2002	177	172	183	127	NP	188	241	110	861	NP	1,230	NS-D	76	207	284	224	NP	NP	NP	NP	NS-D
6/18/2002	NS	NA	NA	NA	NP	NA	NS	NS	NA	NP	NA	NS-D	NA	145	258	233	NP	NP	NP	NP	NS-D
9/16/2002	NS	NS	NS	121	NP	NS	NS	NS	1,030	NP	1,550	NS-D	86	NS	293	246	NP	NP	NP	NP	NS-D
1/9/2003	NS	NS	NS	123	NP	NS	NS	NS	525	NP	3,150	NS-D	95	NS	179	228	NP	NP	NP	NP	NS-D
3/6/2003	NS	NS	NS	116	NP	NS	NS	NS	363	NP	2,900	NS-D	102	NS	163	272	NP	NP	NP	NP	NS-D
6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	89.3	NS	NS	NS	983	NP	NP	NP	NS-D
8/22/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NS	NS	182	280	841	NP	NP	NP	NS-D
10/2/2003	NS	NS	NS	194	NP	NS	NS	NS	420	NP	3,240	NS-D	99.8	NS	175	298	963	NP	NP	NP	NS-D
12/18/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	123	263	823	NP	NP	NP	NS-D
3/30/2004	NS	NS	NS	70	NP	NS	NS	NS	928	NP	2,980	NS-D	116	NS	119	245	753	NP	NP	NP	NS-D
3/24/2005	NP	NP	NP	140	NP	NP	NP	NP	798	NP	2,740	NP	161	NP	303	321	1,140	167	199	330	NP

(1) - in mg/L.
(2) - NMWQCC standard for chloride is 250 mg/L.
(3) - MW-2 not operative after May 3, 1995; P&A'd 7/1/99.
MW-6 P&A'd 7/1/99.
MW-11 P&A'd 7/1/99.
MW-11A installed February 1998.
MW-12 installed February 1998 (screened at the top of the saturated zone).
MW-12D installed June 1999, adjacent to MW-12 (screened in a lower portion of the uppermost saturated zone).
MW-13 installed June 1999.
MW-14 and MW-15 installed January 2001.
MW-16 installed May 2003.
MW-17, MW-18, and MW-19 installed March 2005.
MW-1, MW-3, MW-4, MW-7, MW-8, MW-9, MW-12, MW-13, and OW-4 P&A'd March 2005.

NP = not present at time of sampling event.
NS = not sampled during applicable sampling event.
NA = not analyzed for chloride during applicable sampling event.
NS-D = not sampled because well was dry during applicable sampling event.

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Bicarbonate, as $CaCO_3$ (mg/L)	8/1/1995	380	430	490	290	670	440	360	570	520	560	NP[2]	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS[3]
	8/23/1996	310	310	210	270	120	400	280	390	520	430	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	286	214	175	247	180	309	260	386	557	NS	319	451	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	92	309	186	283	286	358	317	333	278	NS	335	386	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	200	520	NP	NP	NP	NP	NP	NP	316
	3/9-10/2000	89.1	248	160	253	NP	301	362	279	435	NP	703	402	244	240	NP	NP	NP	NP	NP	NP	1020
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	374	250	NP	NP	NP	NP	NS
	3/8-9/2001	90.9	242	232	222	NP	283	252	253	586	NP	646	475	NS	131	NA[4]	NS	NP	NP	NP	NP	NS-D[4]
	3/11-12/2002	230	230	210	260	NP	260	340	260	784	NP	520	NS-D	260	164	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	243	NP	NS	NS	NS	273	NP	401	NS-D	241	NS	373	231	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	232	NS	NA	NA	163	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	214	NP	NS	NS	NS	582	NP	378	NS-D	214	NS	368	209	279	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	225	NP	NP	NP	NP	523	NP	485	NP	224	NP	448	227	352	251	273	207	NP
Carbonate, as $CaCO_3$ (mg/L)	8/1/1995	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	NS	< 1	< 1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	NS	< 1	< 1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<1	<1	NP	NP	NP	NP	NP	NP	<1
	3/9-10/2000	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	NP	NP	NP	NP	NP	<4
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<2	<2	NP	NP	NP	NP	NS
	3/8-9/2001	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	<2	NS	<2	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	NS-D	<2	<2	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<2	NP	NS	NS	NS	<2	NP	<2	NS-D	<2	NS	3.03	<2	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NA	NS-D	<2	NS	NA	NA	< 2	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	234	NP	NS	NS	NS	279	NP	386	NS-D	189	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<2	NP	NS	NS	NS	<2	NP	<2	NS-D	<2	NS	<2	<2	< 2	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	<2	NP	NP	NP	NP	<2	NP	<2	NP	<2	NP	<2	<2	<2	<2	<2	<2	NP
Hardness-Total, as $CaCO_3$ (mg/L)	3/23-24/1998	430	430	275	342	440	670	740	510	1,450	NP	1,000	1,600	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	250	440	310	340	640	780	680	370	720	NS	1,150	460	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/2000	600	450	500	1,200	NP	660	760	430	760	NP	880	700	260	540	NP	NP	NP	NP	NP	NP	3,000
	3/8-9/2001	310	470	610	440	NP	590	590	1,000	1,300	NP	1,900	1,300	NS	670	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	420	420	450	420	NP	ND[5]	ND	ND	1,200	NP	1,400	NS-D	330	750	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	690	NP	NS	NS	NS	NA	NP	1,500	NS-D	360	NS	NA	NA	NP	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	790	NP	NA	NS-D	NA	NS	600	660	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	220	NP	NS	NS	NS	1,300	NP	2,200	NS-D	380	NS	800	760	640	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	270	NP	NP	NP	NP	1300	NP	1300	NP	680	NP	1000	640	620	540	650	620	NP
Hydroxide (mg/L)	8/1/1995	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
Methane (mg/L)	3/23-24/1998	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	0.039	< 0.0012	0.91	NS	0.14	< 0.0012	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	NS	NS	NS	<0.0012	NS	NS	NS	NS	0.035	NS	0.094	< 0.0012	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NA	NA	0.0015	0.0017	NP	NP	NP	NP	NP	NP	< 0.0012
	3/9-10/2000	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	< 0.0012	0.13	< 0.0012	0.0056	NP	0.037	< 0.0012	< 0.0012	< 0.0012	NP	NP	NP	NP	NP	NP	< 0.0012
	3/8-9/2001	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	0.0028	< 0.0012	NS	< 0.0012	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.007	< 0.0012	0.0024	< 0.0012	NP	ND	ND	ND	ND	NP	0.0044	NS-D	< 0.0012	< 0.0012	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	< 0.0012	NP	NS	NS	NS	0.0031	NP	0.0044	NS-D	0.0038	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	< 0.0012	NS	NS	NS	< 0.0012	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	< 0.0012	NS	< 0.0012	< 0.0012	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	<0.0012	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	< 0.0012	NS	< 0.0012	< 0.0012	< 0.0012	NP	NP	NP	NS-D

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Anions (mg/L)																						
Chloride		See Table 5																				
Fluoride	3/23-24/1998	0.9	1.2	1.2	0.6	1.1	0.8	0.9	1.3	6.1	NS	2.9	4.2	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	1.54	1.46	1.5	1.38	1.79	1.56	1.44	1.84	4.93	NS	3.08	3.13	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	1.83	2.22	NP	NP	NP	NP	NP	NP	3.43
	3/9-10/2000	1.7	1.1	1.1	1.1	NP	0.75	0.69	1.5	1	NP	<0.1	1.7	1.3	1.7	NP	NP	NP	NP	NP	NP	3.8
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	3.5	1.2	NP	NP	NP	NP	NS
	3/8-9/2001	1.3	0.77	0.63	0.86	NP	0.69	0.66	0.92	1.2	NP	1.1	1.9	NS	1.6	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	1.2	1.4	1.2	1.4	NP	1.3	1.1	1.5	1.8	NP	2.1	NS-D	1.4	2.3	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	1.1	NP	NS	NS	NS	1.6	NP	4.1	NS-D	1.2	NS	2.3	0.91	NP	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	1.1	NP	NS	NS	NS	2.2	NP	3.5	NS-D	1.1	NS	2.5	1.1	5.3	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	1	NP	NP	NP	NP	<2.5	NP	6.3	NP	1.1	NP	2.4	1.1	8.2	3.7	1.7	1.2	NP
Nitrate (Nitrogen as N)	8/1/1995	4.7	5.6	15	28	1.3	9.2	11	38	< 0.1	5.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	11	7.6	7.6	12	< 0.5	10	8.6	24	< 5	11	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	1.78	3.07	2.39	3.87	0.69	3.92	1.84	4.27	0.07	NS	< 0.05	< 0.05	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.7	2.1	2.6	NA	<0.1	3.3	0.7	3.7	NA	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	2.1	2.4	NP	NP	NP	NP	NP	NP	3.96
	3/9-10/2000	0.33	2.9	3.7	5.3	NP	3.6	0.35	7.2	0.1	NP	0.11	<0.1	0.14	<0.1	NP	NP	NP	NP	NP	NP	3.6
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	4.3	4.88	NP	NP	NP	NP	NS
	3/8-9/2001	4.31	2.56	4.75	3.24	NP	2.82	0.664	7.9	<0.1	NP	<0.1	<0.1	NS	<0.1	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	5.7	3.86	8.55	2.98	NP	3.23	0.607	6.34	<0.1	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	2.75	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	0.705	NS	5.82	3.67	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	<0.1	NS	NS	NS	4.4	NP	NP	NP	NS-D
	8/21/2003	NS	NS	NS	2.4	NP	NS	NS	NS	NA	NP	NA	NS-D	< 0.1	NS	NA	NA	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	2.5	NP	NS	NS	NS	0.28	NP	<0.1	NS-D	< 0.1	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	2.6	NP	NS	NS	NS	0.25	NP	1.9	NS-D	< 0.1	NS	4.9	3	5.8	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	4.2	NP	NP	NP	NP	<0.5	NP	NA	NP	NA	NP	NA	2.9	3.2	3.8	3.4	9.4	NP
Sulfate	8/1/1995	150	150	210	230	6.7	180	160	150	130	230	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	130	150	150	140	85	80	160	180	120	130	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	130	180	160	190	230	310	250	230	320	NS	190	240	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	196	162	178	195	72	246	240	146	223	NP	227	193	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	249	334	NP	NP	NP	NP	NP	NP	192
	3/9-10/2000	530	190	250	260	NP	280	260	170	160	NP	270	210	200	170	NP	NP	NP	NP	NP	NP	200
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	180	130	NP	NP	NP	NP	NS
	3/8-9/2001	210	170	180	180	NP	260	240	150	270	NP	330	300	NS	380	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	190	150	160	120	NP	240	250	130	230	NP	350	NS-D	200	380	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	110	NP	NS	NS	NS	270	NP	290	NS-D	170	NS	130	150	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	160	NS	NS	NS	200	NP	NP	NP	NS-D
	8/21/2003	NS	NS	NS	100	NP	NS	NS	NS	NA	NP	NA	NS-D	160	NS	NA	NA	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	110	NP	NS	NS	NS	350	NP	320	NS-D	160	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	110	NP	NS	NS	NS	350	NP	380	NS-D	160	NS	190	140	180	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	110	NP	NP	NP	NP	360	NP	370	NP	160	NP	130	200	110	150	220	200	NP
Cations (mg/L)																						
Calcium	8/1/1995	120	120	220	160	320	300	300	180	610	490	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	120	130	89	110	62	270	230	190	390	440	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	129	122	79	109	94	208	215	142	417	NS	259	388	NP	NP	NP	NP	NP	NP	NP	NP	NS

Table 6
Summary of Groundwater Quality Parameters and Detected PARs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Calcium (cont.)	3/9-10/1999	80.2	129	90.8	116	141	233	197	122	214	NP	308	148	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	113	389	NP	NP	NP	NP	NP	NP	141
	3/9-10/2000	155	119	147	387	NP	167	215	110	177	NP	229	180	78.1	122	NP	NP	NP	NP	NP	NP	882
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	179	150	NP	NP	NP	NP	NS
	3/8-9/2001	86.8	148	214	157	NP	172	183	381	331	NP	466	338	NS	198	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	112	121	130	143	NP	ND	ND	ND	303	NP	330	NS-D	120	225	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	288	NP	NS	NS	NS	NA	NP	470	NS-D	135	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	219	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	108	NP	NA	NS-D	NA	NS	62.2	107	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	80.1	NP	NS	NS	NS	308	NP	763	NS-D	142	NS	205	255	210	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	84.3	NP	NP	NP	NP	310	NP	394	NP	201	NP	276	218	192	169	207	206	NP
Magnesium	8/1/1995	34	36	58	27	72	42	49	43	130	130	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	120	32	21	18	28	40	48	44	84	120	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	36	30	18	20	42	47	52	36	130	NS	96	108	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	19.7	31.5	20.4	21.6	62.2	54.4	47.7	28.5	43	NP	101	32.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	16.6	83.9	NP	NP	NP	NP	NP	NP	44.3
	3/9-10/2000	41.3	27.5	26.3	29.2	NP	44.3	39.1	26.2	61	NP	47.7	30.6	7.25	38.8	NP	NP	NP	NP	NP	NP	74.5
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	87.5	28.3	NP	NP	NP	NP	NS
	3/8-9/2001	20.7	24.9	25.9	16.6	NP	41.1	37.4	28.2	95.1	NP	93.4	95.3	NS	52.3	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	27.3	20.7	20.7	13	NP	ND	ND	ND	ND	NP	103	NS-D	6.06	44.7	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	19.6	NP	NS	NS	NS	NA	NP	160	NS-D	6.74	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	45.4	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	41.1	NP	NA	NS-D	NA	NS	35.5	17.3	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	12.4	NP	NS	NS	NS	128	NP	134	NS-D	7.63	NS	66.4	31.3	39.2	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	12.9	NP	NP	NP	NP	101	NP	78.7	NP	10.8	NP	78.2	35.8	34.9	41.3	43.7	37.2	NP
Potassium	8/1/1995	2.4	2.6	3.5	4.2	3	3.4	5	4.1	35	46	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	2.4	3	2.2	3.1	2.4	3.7	3.9	2.6	41	53	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	20	NS	30	70	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	3	4	3	4	4	9	4	3	15	NP	21	101	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	66	6	NP	NP	NP	NP	NP	NP	3
	3/9-10/2000	4.01	4.11	3.95	5.61	NP	6.98	4.53	4.08	18.3	NP	18.6	104	70.6	2.84	NP	NP	NP	NP	NP	NP	10.7
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	3.59	4.59	NP	NP	NP	NP	NS
	3/8-9/2001	<2	2.56	2.76	2.25	NP	5.15	2.94	3.84	19.5	NP	33.5	47.2	NS	2.26	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	2.82	4.05	2.79	3.55	NP	ND	ND	ND	ND	NP	41.5	NS-D	72	2.82	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	3.72	NP	NS	NS	NS	NA	NP	39.4	NS-D	55.6	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	4.78	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	4.61	NP	NA	NS-D	NA	NS	< 2	3.98	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	4.15	NP	NS	NS	NS	10.8	NP	28.6	NS-D	50.4	NS	3.07	3.53	4.02	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	2.97	NP	NP	NP	NP	9.68	NP	31.9	NP	42.9	NP	4.36	3.42	4.06	17.8	3.65	5.64	NP
Sodium	8/1/1995	100	93	140	110	130	95	94	98	660	2000	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	100	110	88	120	120	96	100	83	960	2600	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	113	126	109	130	100	92	101	118	1090	NS	312	381	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	126	135	124	155	141	110	115	122	856	NP	225	180	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	121	165	NP	NP	NP	NP	NP	NP	103
	3/9-10/2000	123	112	115	123	NP	95.1	95.4	99.1	181	NP	608	129	103	114	NP	NP	NP	NP	NP	NP	97.3
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	144	108	NP	NP	NP	NP	NS
	3/8-9/2001	141	124	135	147	NP	121	118	119	410	NP	801	185	NS	142	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	147	133	128	145	NP	ND	ND	ND	ND	NP	660	NS-D	79.4	127	NS	NS	NP	NP	NP	NP	NS-D

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Sodium (cont.)	3/6/2003	NS	NS	NS	144	NP	NS	NS	NS	NA	NP	1550	NS-D	68.8	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	436	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	170	NP	NA	NS-D	NA	NS	53.3	63.8	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	115	NP	NS	NS	NS	488	NP	1370	NS-D	54	NS	80.7	88.1	382	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	126	NP	NP	NP	NP	383	NP	1590	NP	56	NP	92.2	105	612	99.2	99.7	158	NP
Metals (mg/L)																						
Arsenic	8/1/1995	0.0076	0.0043	< 0.002	0.0059	0.028	0.0033	0.0034	0.0055	0.015	0.0086	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	0.0078	0.0066	0.0059	0.0067	0.018	0.0036	0.0033	0.0044	0.028	0.011	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	0.007	0.007	0.008	0.007	0.013	< 0.005	< 0.005	0.005	0.035	NS	0.019	0.013	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.013	0.009	0.012	0.005	0.02	0.006	0.005	0.007	0.026	NP	0.036	0.066	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.022	0.008	NP	NP	NP	NP	NP	NP	<0.005
	3/9-10/2000	0.0178	0.00817	0.0178	0.0173	NP	0.00849	0.00953	0.00757	0.0474	NP	0.108	0.0948	0.0143	< 0.005	NP	NP	NP	NP	NP	NP	0.004
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	0.00511	< 0.005	NP	NP	NP	NP	NS
	3/8-9/2001	0.0205	0.0094	0.0386	0.00974	NP	0.00694	NA	0.013	0.133	NP	0.08	0.0445	NS	0.00673	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.00939	0.00889	0.0101	0.0104	NP	ND	ND	ND	0.286	NP	0.086	NS-D	0.0471	0.012	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	0.0125	NP	NS	NS	NS	NA	NP	0.0287	NS-D	0.0491	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	0.00674	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	0.0598	NP	NA	NS-D	NA	NS	< 0.005	< 0.005	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	0.00836	NP	NS	NS	NS	0.032	NP	0.0559	NS-D	0.045	NS	0.00911	0.00841	0.00869	NP	NP	NP	NS-D
Barium	8/1/1995	0.069	0.38	0.34	0.049	1.1	0.069	0.075	0.089	0.37	0.2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	0.064	0.24	0.069	0.038	0.29	0.061	0.066	0.089	0.26	0.2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	0.11	0.182	0.044	0.044	0.208	0.059	0.074	0.066	0.287	NS	0.163	0.157	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.058	0.059	0.045	0.054	0.555	0.076	0.052	0.043	0.17	NP	0.174	0.144	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.155	0.333	NP	NP	NP	NP	NP	NP	0.062
	3/9-10/2000	0.0917	0.108	0.0694	0.184	NP	0.046	0.236	0.0419	0.281	NP	0.872	0.245	0.0962	0.113	NP	NP	NP	NP	NP	NP	1.49
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	0.0833	0.073	NP	NP	NP	NP	NS
	3/8-9/2001	0.044	0.119	0.0978	0.0055	NP	0.043	0.0512	0.111	0.23	NP	0.401	0.603	NS	0.171	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.06	0.0797	0.0805	0.0524	NP	ND	ND	ND	0.294	NP	0.348	NS-D	0.0865	0.109	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	0.15	NP	NS	NS	NS	NA	NP	0.297	NS-D	0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	0.0728	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	0.04	NP	NA	NS-D	NA	NS	0.0262	0.0326	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	0.0464	NP	NS	NS	NS	0.0922	NP	0.221	NS-D	0.104	NS	0.0699	0.0772	0.0596	NP	NP	NP	NS-D
Cadmium	8/1/1995	< 0.001	< 0.001	0.0052	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	NS	< 0.005	< 0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NP	<0.005
	3/9-10/2000	<0.005	< 0.005	0.0178	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	< 0.005	<0.005	<0.005	<0.005	NP	NP	NP	NP	NP	NP	<0.005
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NS
	3/8-9/2001	<0.005	<0.005	0.0121	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NS	<0.005	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<0.005	<0.005	<0.005	<0.005	NP	ND	ND	ND	<0.005	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.005	NP	NA	NS-D	NA	NS	62.2	107	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	<0.005	NP	<0.005	NS-D	<0.005	NS	<0.005	<0.005	<0.005	NP	NP	NP	NS-D
Chromium	8/1/1995	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.01	< 0.01	< 0.01	< 0.01	0.049	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NS	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NS

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Chromium (cont.)	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.02	0.02	NP	NP	NP	NP	NP	NP	< 0.01
	3/9-10/2000	< 0.01	< 0.01	< 0.01	0.0248	NP	< 0.01	< 0.01	< 0.01	0.031	NP	0.0342	0.0124	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	0.105
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	< 0.01	< 0.01	NP	NP	NP	NP	NS
	3/8-9/2001	< 0.01	< 0.01	0.0104	0.0101	NP	< 0.01	< 0.01	0.013	0.0109	NP	0.0392	0.0469	NS	0.0104	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.01	< 0.01	< 0.01	< 0.01	NP	ND	ND	ND	0.0246	NP	0.023	NS-D	< 0.01	0.0114	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	0.0174	NP	NS	NS	NS	NA	NP	0.0168	NS-D	0.01	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 0.01	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	< 0.01	NP	NA	NS-D	NA	NS	< 0.01	< 0.01	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.01	NP	NS	NS	NS	< 0.01	NP	0.0441	NS-D	< 0.01	NS	< 0.01	< 0.01	< 0.01	NP	NP	NP	NS-D
Lead	8/1/1995	< 0.002	< 0.002	0.0044	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0025	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	NS	< 0.005	< 0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.005	<0.005	<0.005	< 0.005	0.013	< 0.005	< 0.005	< 0.005	< 0.005	NP	0.009	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NP	< 0.005
	3/9-10/2000	<0.005	<0.005	<0.005	0.00565	NP	< 0.005	< 0.005	< 0.005	0.00661	NP	0.00595	< 0.005	<0.005	<0.005	NP	NP	NP	NP	NP	NP	0.0355
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NS
	3/8-9/2001	<0.005	<0.005	0.00602	<0.005	NP	<0.005	<0.005	0.00597	0.0222	NP	0.0119	0.00627	NS	<0.005	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<0.005	<0.005	<0.005	<0.005	NP	ND	ND	ND	0.0234	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	< 0.005	NP	NA	NS-D	NA	NS	< 0.005	< 0.005	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	< 0.005	NP	0.00901	NS-D	<0.005	NS	< 0.005	<0.005	<0.005	NP	NP	NP	NS-D
Mercury	8/1/1995	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	NS	< 0.0002	< 0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	<0.0002
	3/9-10/2000	NS	NS	NS	NS	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	<0.0002
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.0002	<0.0002	NP	NP	NP	NP	NS
	3/8-9/2001	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	NS	<0.0002	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<0.0002	<0.0002	<0.0002	0.000243	NP	ND	ND	ND	<0.0002	NP	<0.0002	NS-D	<0.0002	<0.0002	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.0002	NP	NS	NS	NS	NA	NP	<0.0002	NS-D	<0.0002	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.0002	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.0002	NP	NA	NS-D	NA	NS	<0.0002	<0.0002	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.0002	NP	NS	NS	NS	<0.0002	NP	<0.0002	NS-D	<0.0002	NS	<0.0002	<0.0002	<0.0002	NP	NP	NP	NS-D
Selenium	8/1/1995	<0.004	<0.004	<0.004	<0.004	<0.004	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.004	<0.004	<0.004	<0.004	<0.004	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.005	0.006	<0.005	0.006	<0.005	0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/2000	<0.005	<0.005	<0.005	<0.005	NP	0.00926	<0.005	<0.005	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	NP	NP	NP	NP	NP	<0.005
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	0.00523	NP	NP	NP	NP	NS
	3/8-9/2001	<0.005	0.00702	0.00508	0.00587	NP	0.00617	<0.005	0.0054	<0.005	NP	<0.005	<0.005	NS	<0.005	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.00549	0.00625	<0.005	0.00558	NP	ND	ND	ND	<0.005	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NS	NP	NS	NS	NS	< 0.005	NP	NS	NS-D	NA	NS	< 0.005	< 0.005	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	< 0.005	NP	<0.005	NS-D	<0.005	NS	< 0.005	< 0.005	< 0.005	NP	NP	NP	NS-D

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Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																					
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
		PAHs (µg/L)																					
Acenaphthene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	NS	<0.3	<0.3	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	<2.0	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.28	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NP	NS-D
Acenaphthylene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	< 0.1	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.91	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	0.4	NP	<0.1	<0.1	<0.1	1.8	NP	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	0.71	NP	0.35	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	1.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NP	NS-D
Anthracene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	< 0.1	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.12	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	<0.1	NS	NP	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NP	NS-D
Benzo(a)-anthracene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS

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BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Benzo(a)-anthracene (cont)	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.18	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Benzo(k)-fluoranthene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	< 0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Benzo(a)pyrene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	< 0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Fluorene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	NS	<0.3	<0.3	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	<2.0	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	25	< 0.1	0.36	<0.1	NP	<0.1	<0.1	1.5	<0.1	NP	<0.1	<0.1	<0.1	1.6	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Naphthalene	8/1/1995	< 5	210	1700	< 5	470	< 5	< 5	15	92	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	230	110	440	< 5	< 30	< 5	< 5	< 84	< 76	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	130	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	8	NS	0.8	11	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	10	8	170	0.1	160	<0.1	<0.1	<0.1	6	NP	<0.1	19	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.6	34	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	2.4	<0.1	0.44	<0.1	NP	<0.1	<0.1	0.42	1.5	NP	0.12	0.26	<0.1	56	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	0.15	NP	0.21	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	0.14	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	0.14	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Phenanthrene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.65	<0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	0.22	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Pyrene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.4	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	< 2	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	< 0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	< 0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
VOCs (µg/L)																						
Acetone	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<100	<100	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	130	<100	NP	NP	NP	NP	NP	NP	<100
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<100	<100	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 100	NP	NP	NP	NS-D
sec-Butylbenzene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	5	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Isopropylbenzene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	21	NP	NP	NP	NP	NP	NP	< 5

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Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Isopropylbenzene (cont.)	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<3.0	<3.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Naphthalene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	190	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<3.0	<3.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
n-Propylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	68	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<3.0	<3.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
1,2,4-Trimethyl-benzene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<3.0	<3.0	< 5	NP	NP	NP	NS-D
1,3,5-Trimethyl-benzene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<3.0	<3.0	NP	NP	NP	NP	NS-D
MTBE	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 10	25	NP	NP	NP	NP	NP	NP	< 10
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<3.0	<3.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
SVOCs (µg/L)																						
2,4-Dimethyl-phenol	8/1/1995	< 50	97	< 500	< 5	42	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	56	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
2-Methyl-naphthalene	8/1/1995	280	62	1500	< 5	150	< 5	< 5	36	23	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	29	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
2-Methylphenol	8/1/1995	< 50	56	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
4-Methylphenol	8/1/1995	< 80	< 20	< 800	< 8	150	< 8	< 8	< 8	< 8	< 8	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Bis(2-ethylhexyl)-phthalate	8/1/1995	750	< 20	10000	40	< 40	< 7	< 7	< 7	< 7	< 7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Phenol	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	8.2	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<5	6	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D

[1] - MW-2 not operative after May 3, 1995; MW-11 not operative after September 1997; MW-2, MW-6, and MW-11 P&A'd 7/1/99.

[2] - NP = Well not present at time of sampling event.

[3] - NS = Well not sampled.

[4] - NA = Not Analyzed.

[5] - NS-D = Well not sampled (dry well).

[6] - ND = No data - sample aliquot not collected due to insufficient well yield.

APPENDICES

APPENDIX A

Boring Logs and Monitor Well Construction Diagrams: Monitor Wells MW-17, MW-18, MW-19 and Soil Boring SB-16

Monitoring Well: **MW-17**

Project Name: BJ Services Company, USA | Project Number: 126238.020 | Sheet 1 of 3

Project Location: Hobbs, New Mexico		Logged By: B. Camacho	Approved: R. Rexroad
Drilling Contractor: Harrison and Cooper		Date Started: 3/10/05	Date Finished: 3/10/05
Drilling Equipment: Ingersol-Rand TH-60	Driller: Leonard Hennen	Total Boring Depth: (feet) 78.0	Depth to Static Water: (feet)
Drilling Method: Air Rotary	Borehole Diameter: 5 1/8"	TOC Elevation:	Ground Elevation:
Sampling Method: cuttings		Diameter and Type of Well Casing: 2" Schedule 40 PVC	
Comments: Logged by cuttings		Slot Size: 0.01"	Filter Material: 20/40 Silica Sand
		Development Method: 2" PVC Bailer	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
				Concrete Pad					Locking Well Cap (Below Grade Completion)
2				Fill, Sand with gravel					2.0
4		CL		SANDY CLAY (CL), Dark brown sandy clay, slightly moist.					
6, 8, 10				SILTSTONE, Light brown siltstone with caliche, fine grained, moderatley moist.				9-10'	
12, 14, 16, 18		SP		SAND (SP), Whitish, fine grained, contains 1/2 inch rounded siltstone gravel, low moisture content.					Hydrated Bentonite Seal
20, 22, 24, 26				Light pinkish brown caliche cemented with very fine grained sand, slightly moist.				19-20'	
28				SAA, light brown, low moisture content.				29-30'	
30, 32				SAA, light pinkish brown, slightly moist.					

Monitoring Well: **MW-17**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **2** of **3**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
34									Hydrated Bentonite Seal
36		SP		SAND (SP), light brown sand, medium grained, contains 0.5 to 1.0 inch diameter sandstone nodules, slightly moist.					
38								39-40'	
40									
42				SANDSTONE, Medium brown sandstone, >1" diameter nodules of very fine lithified sandstone, slightly moist.					
44									
46									
48									
50								49-50'	
52				SAA, .5" to 1" nodules of rounded sandstone.					
54									
56		SW		SAND (SW), brown sand, Fine to very fine grained, moist.					
58									58.0
60								59-60'	20/40 Silica Sand Filter Pack
62	▼			SAA, wet					
64									0.01-inch slotted well screen
66				SAA, medium to fine grained.					
68									
70				Light pinkish brown fine grained lithified sandstone, dry. (Aquitard)					
72									
74									75.0

Monitoring Well: **MW-17**

Project Name: BJ Services Company, USA Project Number: 126238.020 Sheet 3 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks		
76									75.3		Bottom cap
78				Total Depth = 78 feet					78.0		

Monitoring Well: **MW-18**

Project Name: BJ Services Company, USA | Project Number: 126238.020 | Sheet 1 of 3

Project Location: Hobbs, New Mexico		Logged By: B. Camacho	Approved: R. Rexroad
Drilling Contractor: Harrison and Cooper		Date Started: 3/9/05	Date Finished: 3/9/05
Drilling Equipment: Ingersol-Rand TH-60	Driller: Leonard Hennen	Total Boring Depth: (feet) 78.0	Depth to Static Water: (feet)
Drilling Method: Air Rotary	Borehole Diameter: 5 1/8"	TOC Elevation:	Ground Elevation:
Sampling Method: cuttings		Diameter and Type of Well Casing: 2" Schedule 40 PVC	
Comments: Logged by cuttings		Slot Size: 0.01"	Filter Material: 20/40 Silica Sand
		Development Method: 2" PVC Bailer	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
				FILL, Sand with Gravel.					Locking Well Cap (Below Grade Completion)
2		CL		SANDY CLAY (CL), Grayish to white sandy clay with caliche, slightly moist.					2.0
4									
6				SILTSTONE, Light brown siltstone with caliche, fine to very fine grained, moderatley moist.					
8								9-10'	
10									
12				SANDSTONE, Medium brown sandstone, fine grained, slightly moist.					
14									
16		SP		SAND (SP), Whitish, fine grained, contains 1/2 inch rounded sandstone nodules, low moisture content.					Hydrated Bentonite Seal
18									
20								19-20'	
22				SANDSTONE, Light pinkish brown sandstone with cemented caliche, fine grained, dry.					
24									
26									
28									
30								29-30'	
32									

Monitoring Well: **MW-18**

Project Name: BJ Services Company, USA Project Number: 126238.020 Sheet 2 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
34									
36		SP		SAND (SP), light brown sand, medium to fine grained, contains 0.5 to 1.0 inch diameter sandstone nodules, slightly moist.					Hydrated Bentonite Seal
38									
40								39-40'	
42				SAA, Medium brown.					
44									
46									
48									
50				SAA, < .5" diameter sandstone nodules, moist.				49-50'	
52									
54									
56				SAA, Very fine sand, moist.					
58									58.0
60								59-60'	20/40 Silica Sand Filter Pack
62	▼	SW		SAND (SW), Light brown sand, fine to very fine grained, well sorted, wet.					0.01-inch slotted well screen
64									
66									
68									
70									
72				SANDSTONE, Light brown sandstone, medium to fine grained, wet.					
74									75.0

Monitoring Well: **MW-18**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **3** of **3**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks		
76									75.3		Bottom cap
78				Total Depth = 78 feet					78.0		

Monitoring Well: **MW-19**

Project Name: BJ Services Company, USA | Project Number: 126238.020 | Sheet 1 of 3

Project Location: Hobbs, New Mexico		Logged By: B. Camacho	Approved: R. Rexroad
Drilling Contractor: Harrison and Cooper		Date Started: 3/9/05	Date Finished: 3/9/05
Drilling Equipment: Ingersol-Rand TH-60	Driller: Leonard Hennen	Total Boring Depth: (feet) 78.0	Depth to Static Water: (feet)
Drilling Method: Air Rotary	Borehole Diameter: 5 1/8"	TOC Elevation:	Ground Elevation:
Sampling Method: cuttings		Diameter and Type of Well Casing: 2" Schedule 40 PVC	
Comments: Logged by cuttings		Slot Size: 0.01"	Filter Material: 20/40 Silica Sand
		Development Method: 2" PVC Bailer	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
2		CL ML		Dark brown silty clay with sand and gravel, slightly moist.					2.0 Locking Well Cap (Above Grade Completion)
4, 6				Medium brown fine to very fine sandstone, moderatley moist.					
8, 10, 12, 14				Light pinkish brown caliche, little fine sand, moist.				9-10'	
16				SAA, dry.					Hydrated Bentonite Seal
18, 20				SAA, slightly moist.				19-20'	
22, 24, 26, 28				Light pinkish brown caliche-cemented sandstone, with 0.5" nodules of lithified sandstone, dry					
30, 32		SP		Light brown medium to fine sand, slightly moist.				29-30'	

Monitoring Well: **MW-19**

Project Name: BJ Services Company, USA Project Number: 126238.020 Sheet 2 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
34									
36				Medium brown sandstone, 0.5" to 1.0" nodules of very fine lithified sandstone, slightly moist.					Hydrated Bentonite Seal
38									
40								39-40'	
42									
44									
46									
48				SAA, 0.5" nodules of lithified sandstone, moist.					
50								49-50'	
52		SW		Medium brown medium to fine grained sand, moist.					
54									
56									56.0 20/40 Silica Sand Filter Pack
58									
60	▼			SAA, fine to very fine sand, wet.				59-60'	
62									
64									0.01-inch slotted well screen
66									
68									
70				Dark brown sandstone, medium to fine grained, wet.					
72									
74									73.0 73.3 Bottom cap

Monitoring Well: **MW-19**

Project Name: BJ Services Company, USA Project Number: 126238.020 Sheet 3 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks		
76											
78				Total Depth = 78 feet					78.0		

Soil Boring: **SB-16**

Project Name: BJ Services Company, USA Project Number: 126238.020 Sheet 1 of 2

Project Location: Hobbs, New Mexico		Logged By: B. Camacho	Approved: R. Rexroad
Drilling Contractor: Harrison and Cooper		Date Started: 3/9/05	Date Finished: 3/9/05
Drilling Equipment: Ingersol-Rand TH-60	Driller: Leonard Hennen	Total Boring Depth: (feet) 62.0	Depth to Static Water: (feet)
Drilling Method: Air Rotary	Borehole Diameter: 5 1/8"	TOC Elevation:	Ground Elevation:
Sampling Method: cuttings		Diameter and Type of Well Casing:	
Comments: Logged by cuttings		Slot Size:	Filter Material:
		Development Method:	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Soil Boring Remarks
2		CL ML		Dark brown silty clay with sand and gravel, slightly moist.					SB-16 was plugged with a hydrated bentonite seal
4				Medium brown fine to very fine sandstone, slightly moist.				4-5'	
6									
8								9-10'	
10				Light pinkish brown caliche, little fine sand, slightly moist.					
12									
14				SAA, some fine to very fine sand, moist.				14-15'	
16									
18								19-20'	
20				SAA, slightly moist.					
22									
24								24-25'	
26				Light pinkish brown caliche-cemented sandstone,dry.					
28									
30								29-30'	
32									

Soil Boring: **SB-16**

Project Name: BJ Services Company, USA Project Number: 126238.020 Sheet 2 of 2

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Soil Boring Remarks
		SP		Light brown medium to fine sand, dry.					
34								34-35'	
36									
38									
								39-40'	
40				Medium brown sandstone, 0.5" to 1.0" nodules of very fine lithified sandstone, slightly moist.					
42									
44								44-45'	
46									
				SAA, 0.5" nodules of lithified sandstone.					
48									
								49-50'	
50									
52									
54								54-55'	
		SW		Medium brown medium to fine grained sand, moist					
56									
58				SAA, fine to very fine sand.					
								59-60'	
60	▼								
62				Total Depth = 62 feet					

APPENDIX B

Laboratory Analytical Reports

APPENDIX B

Laboratory Analytical Reports

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To: Brown & Caldwell Rick Rexroad 1415 Louisiana Suite 2500 Houston TX 77002- ph: (713) 759-0999 fax: (713) 308-3886	**Project Name:** BJ Service/126238.020 **Site:** Hobbs, NM **Site Address:** **PO Number:** **State:** New Mexico **State Cert. No.:** **Date Reported:** 3/21/2005

This Report Contains A Total Of 45 Pages

Excluding This Page, Chain Of Custody

And

Attachments

3/21/2005

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	3/21/2005

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

The result for fluoride on your sample "MW-10" was reported as ND (not detected) at a 5-fold dilution due to matrix interference.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Your sample "MW-5" was randomly selected for use in SPL's quality control program for metals by Method 6010B, and the percent recoveries and RPD's for calcium and magnesium could not be reported because the concentrations for these elements in the sample were greater than four times the amount of spike added to the sample.

Any other exceptions associated with this report will be footnoted in the analytical result pages or the quality control summary pages.

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/22/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/21/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-5	05030473-01	Water	3/8/2005 4:45:00 PM	3/11/2005 9:30:00 AM		☐
MW-10	05030473-02	Water	3/8/2005 5:30:00 PM	3/11/2005 9:30:00 AM		☐
MW-18-S-9-10'	05030473-03	Soil	3/9/2005 8:00:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-19-20'	05030473-04	Soil	3/9/2005 8:10:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-29-30'	05030473-05	Soil	3/9/2005 8:15:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-39-40'	05030473-06	Soil	3/9/2005 8:20:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-49-50'	05030473-07	Soil	3/9/2005 8:25:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-59-60'	05030473-08	Soil	3/9/2005 8:40:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-4-5'	05030473-09	Soil	3/9/2005 10:00:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-9-10'	05030473-10	Soil	3/9/2005 10:05:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-14-15'	05030473-11	Soil	3/9/2005 10:10:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-19-20'	05030473-12	Soil	3/9/2005 10:15:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-24-25'	05030473-13	Soil	3/9/2005 10:20:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-29-30'	05030473-14	Soil	3/9/2005 10:25:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-34-35'	05030473-15	Soil	3/9/2005 10:30:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-39-40'	05030473-16	Soil	3/9/2005 10:35:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-44-45'	05030473-17	Soil	3/9/2005 10:40:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-49-50'	05030473-18	Soil	3/9/2005 10:45:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-54-55'	05030473-19	Soil	3/9/2005 10:50:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-59-60'	05030473-20	Soil	3/9/2005 10:55:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-9-10'	05030473-21	Soil	3/9/2005 11:35:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-19-20'	05030473-22	Soil	3/9/2005 11:40:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-29-30'	05030473-23	Soil	3/9/2005 11:45:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-39-40'	05030473-24	Soil	3/9/2005 11:50:00 AM	3/11/2005 9:30:00 AM		☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/21/2005
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/21/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-19-S-49-50'	05030473-25	Soil	3/9/2005 11:55:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-59-60'	05030473-26	Soil	3/9/2005 12:00:00 PM	3/11/2005 9:30:00 AM		☐
MW-5	05030473-27	Water	3/10/2005 7:40:00 AM	3/11/2005 9:30:00 AM		☐
MW-10	05030473-28	Water	3/10/2005 7:55:00 AM	3/11/2005 9:30:00 AM		☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/21/2005
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 03/08/2005 16:45 **SPL Sample ID:** 05030473-01

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	225	2		1		03/16/05 17:00	A_E	2685861
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/16/05 17:00	A_E	2685936
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	140	5		5		03/18/05 13:15	T_H	2688019
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	270	25		5		03/17/05 14:00	CV	2686869
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	1	0.5		1		03/11/05 14:44	CV	2679305
Sulfate	110	5		10		03/14/05 14:24	CV	2685268
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	84.3	0.1		1		03/15/05 11:38	MW	2684043
Magnesium	12.9	0.1		1		03/15/05 11:38	MW	2684043
Potassium	2.97	2		1		03/15/05 11:38	MW	2684043
Sodium	126	0.5		1		03/15/05 11:38	MW	2684043

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/14/2005 15:50	VMD	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-10 **Collected:** 03/08/2005 17:30 **SPL Sample ID:** 05030473-02

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	523	2		1		03/16/05 17:00	A_E	2685865
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/16/05 17:00	A_E	2685937
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	798	10		10		03/18/05 13:15	T_H	2688022
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	1300	250		50		03/17/05 14:00	CV	2686870
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	ND	2.5		5		03/11/05 21:26	CV	2679330
Sulfate	360	25		50		03/14/05 14:38	CV	2685269
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	310	0.1		1		03/15/05 12:02	MW	2684049
Magnesium	101	0.1		1		03/15/05 12:02	MW	2684049
Potassium	9.68	2		1		03/15/05 12:02	MW	2684049
Sodium	383	0.5		1		03/15/05 12:02	MW	2684049

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/14/2005 15:50	VMD	1.00

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-9-10' **Collected:** 03/09/2005 8:00 **SPL Sample ID:** 05030473-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	464	10	1		03/17/05 14:10	T_H	2686782

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-19-20' **Collected:** 03/09/2005 8:10 **SPL Sample ID:** 05030473-04

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	363	10	1		03/17/05 14:10	T_H	2686783

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-29-30' **Collected:** 03/09/2005 8:15 **SPL Sample ID:** 05030473-05

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL		E325.2	Units: mg/kg		
Chloride	60.1	10		1		03/17/05 14:13	T_H	2688784

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-39-40' **Collected:** 03/09/2005 8:20 **SPL Sample ID:** 05030473-06

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	31.4	10	1		03/17/05 14:13	T_H	2686785

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-49-50' **Collected:** 03/09/2005 8:25 **SPL Sample ID:** 05030473-07

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	27.1	10	1		03/17/05 14:13	T_H	2686786

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-59-60' **Collected:** 03/09/2005 8:40 **SPL Sample ID:** 05030473-08

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	97.9	10	1		03/17/05 14:13	T_H	2686787

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-4-5' **Collected:** 03/09/2005 10:00 **SPL Sample ID:** 05030473-09

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	31.8	10	1		03/17/05 14:13	T_H	2686788

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-9-10' **Collected:** 03/09/2005 10:05 **SPL Sample ID:** 05030473-10

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	39.3	10	1		03/18/05 9:24	T_H	2687200

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-14-15' **Collected:** 03/09/2005 10:10 **SPL Sample ID:** 05030473-11

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	105	10		1		03/18/05 9:24	T_H	2687204

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-19-20' **Collected:** 03/09/2005 10:15 **SPL Sample ID:** 05030473-12

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	124	10		1		03/18/05 9:26	T_H	2887205

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-24-25' **Collected:** 03/09/2005 10:20 **SPL Sample ID:** 05030473-13

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	141	10	1		03/18/05 9:26	T_H	2687206

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-29-30' **Collected:** 03/09/2005 10:25 **SPL Sample ID:** 05030473-14

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**		**E325.2**	**Units: mg/kg**		
Chloride	93.5	10		1		03/18/05 9:26	T_H	2687207

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-34-35' **Collected:** 03/09/2005 10:30 **SPL Sample ID:** 05030473-15

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	45.3	10	1		03/18/05 9:26	T_H	2687208

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

3/21/2005 8:25:35 AM

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Client Sample ID: SB-16-39-40' **Collected:** 03/09/2005 10:35 **SPL Sample ID:** 05030473-16

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	70.1	10	1		03/18/05 9:28	T_H	2687209

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-44-45' **Collected:** 03/09/2005 10:40 **SPL Sample ID:** 05030473-17

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	31.1	10		1		03/18/05 10:19	T_H	2687435

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-49-50' **Collected:** 03/09/2005 10:45 **SPL Sample ID:** 05030473-18

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	32.2	10	1		03/18/05 10:19	T_H	2687438

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-54-55' **Collected:** 03/09/2005 10:50 **SPL Sample ID:** 05030473-19

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**		**E325.2**	**Units: mg/kg**	
Chloride	29.6	10	1		03/18/05 10:19	T_H	2687439

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-59-60' **Collected:** 03/09/2005 10:55 **SPL Sample ID:** 05030473-20

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	26.2	10		1		03/18/05 10:21	T_H	2687440

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-9-10' **Collected:** 03/09/2005 11:35 **SPL Sample ID:** 05030473-21

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	102	10	1		03/18/05 10:21	T_H	2687441

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-19-20' **Collected:** 03/09/2005 11:40 **SPL Sample ID:** 05030473-22

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	50.8	10		1		03/18/05 10:21	T_H	2687442

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-29-30' **Collected:** 03/09/2005 11:45 **SPL Sample ID:** 05030473-23

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	11.1	10	1		03/18/05 10:21	T_H	2687443

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-39-40' **Collected:** 03/09/2005 11:50 **SPL Sample ID:** 05030473-24

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	12.6	10		1		03/18/05 10:21	T_H	2687444

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-49-50' **Collected:** 03/09/2005 11:55 **SPL Sample ID:** 05030473-25

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	11	10	1		03/18/05 10:22	T_H	2687447

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-59-60' **Collected:** 03/09/2005 12:00 **SPL Sample ID:** 05030473-26

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	13.2	10		1		03/18/05 10:22	T_H	2687448

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-5 **Collected:** 03/10/2005 7:40 **SPL Sample ID:** 05030473-27

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**		**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	4.2	0.5		1		03/11/05 15:09	CV	2679306

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-10 **Collected:** 03/10/2005 7:55 **SPL Sample ID:** 05030473-28

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**		**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND	0.5		1		03/11/05 15:21	CV	2679307

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis:	Metals by Method 6010B, Total	WorkOrder:	05030473
Method:	SW6010B	Lab Batch ID:	46277

Method Blank

RunID:	TJA_050315A-2684041	Units:	mg/L
Analysis Date:	03/15/2005 11:29	Analyst:	MW
Preparation Date:	03/14/2005 15:50	Prep By:	VMD Method SW3010A

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01A	MW-5
05030473-02A	MW-10

Analyte	Result	Rep Limit
Calcium	ND	0.1
Magnesium	ND	0.1
Potassium	ND	2
Sodium	ND	0.5

Laboratory Control Sample (LCS)

RunID:	TJA_050315A-2684042	Units:	mg/L
Analysis Date:	03/15/2005 11:33	Analyst:	MW
Preparation Date:	03/14/2005 15:50	Prep By:	VMD Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	0.9836	98.36	80	120
Magnesium	1	0.9880	98.80	80	120
Potassium	10	9.216	92.16	80	120
Sodium	1	0.9804	98.04	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:	05030473-01		
RunID:	TJA_050315A-2684044	Units:	mg/L
Analysis Date:	03/15/2005 11:42	Analyst:	MW
Preparation Date:	03/14/2005 15:50	Prep By:	VMD Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	84.33	1	85.44	N/C	1	85.92	N/C	N/C	20	75	125
Magnesium	12.90	1	13.91	N/C	1	13.92	N/C	N/C	20	75	125
Potassium	2.970	10	13.20	102.3	10	12.38	94.06	6.449	20	75	125
Sodium	126.4	1	126.5	N/C	1	125.3	N/C	N/C	20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030473
Lab Batch ID: R135560B

Method Blank

RunID: IC1_050311A-2679297 Units: mg/L
Analysis Date: 03/11/2005 12:38 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_050311A-2679298 Units: mg/L
Analysis Date: 03/11/2005 12:50 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.77	97.7	85	115
Nitrogen,Nitrate (As N)	10	9.83	98.3	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: IC1_050311A-2679328 Units: mg/L
Analysis Date: 03/11/2005 21:01 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.03	10	10.4	93.7	10	10.1	90.6	2.96	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 05030473
Lab Batch ID: R135910

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030472-03
RunID: IC1_050314A-2685263 Units: mg/L
Analysis Date: 03/14/2005 13:21 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	1940	5000	7060	102	5000	6960	100	1.46	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/21/2005 8:25:38 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 05030473
Lab Batch ID: R135936

Method Blank

RunID: WET_050316X-2685847 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_050316X-2685852 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030438-03
RunID: WET_050316X-2685855 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	98.5	99.5	1.02	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Carbonate
Method: M2320 B

WorkOrder: 05030473
Lab Batch ID: R135939

Method Blank

RunID: WET_050316Y-2685926 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_050316Y-2685931 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030438-03
RunID: WET_050316Y-2685933 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R135990

Method Blank

RunID: KONELAB_050317E-26867 Units: mg/kg
Analysis Date: 03/17/2005 14:10 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-03A	MW-18-S-9-10'
05030473-04A	MW-18-S-19-20'
05030473-05A	MW-18-S-29-30'
05030473-06A	MW-18-S-39-40'
05030473-07A	MW-18-S-49-50'
05030473-08A	MW-18-S-59-60'
05030473-09A	SB-16-4-5'

Laboratory Control Sample (LCS)

RunID: KONELAB_050317E-26867 Units: mg/kg
Analysis Date: 03/17/2005 14:10 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	552.6	110.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030437-04
RunID: KONELAB_050317E-26867 Units: mg/kg
Analysis Date: 03/17/2005 14:10 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	ND	500	534.2	105.0	500	537.1	105.6	0.5350	20	78	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Hardness, Total (Titrimetric, EDTA) **WorkOrder:** 05030473
Method: E130.2 **Lab Batch ID:** R135996

Method Blank

RunID: WET_050317G-2686864 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01A	MW-5
05030473-02A	MW-10

Laboratory Control Sample (LCS)

RunID: WET_050317G-2686866 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	330	335	102	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: WET_050317G-2686873 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	675	1250	1950	102	1250	1920	100	1.29	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/21/2005 8:25:38 AM

HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R136012

Method Blank

RunID: KONELAB_050318A-26871 Units: mg/kg
Analysis Date: 03/18/2005 9:24 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-10A	SB-16-9-10'
05030473-11A	SB-16-14-15'
05030473-12A	SB-16-19-20'
05030473-13A	SB-16-24-25'
05030473-14A	SB-16-29-30'
05030473-15A	SB-16-34-35'
05030473-16A	SB-16-39-40'

Laboratory Control Sample (LCS)

RunID: KONELAB_050318A-26871 Units: mg/kg
Analysis Date: 03/18/2005 9:24 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	469.5	93.90	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-10
RunID: KONELAB_050318A-26872 Units: mg/kg
Analysis Date: 03/18/2005 9:24 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	39.28	500	481.4	88.42	500	480.6	88.26	0.1718	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R136027

Method Blank

RunID: KONELAB_050318B-26874 Units: mg/kg
Analysis Date: 03/18/2005 10:19 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-17A	SB-16-44-45'
05030473-18A	SB-16-49-50'
05030473-19A	SB-16-54-55'
05030473-20A	SB-16-59-60'
05030473-21A	MW-19-S-9-10'
05030473-22A	MW-19-S-19-20'
05030473-23A	MW-19-S-29-30'
05030473-24A	MW-19-S-39-40'
05030473-25A	MW-19-S-49-50'
05030473-26A	MW-19-S-59-60'

Laboratory Control Sample (LCS)

RunID: KONELAB_050318B-26874 Units: mg/kg
Analysis Date: 03/18/2005 10:19 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	476.0	95.21	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-17
RunID: KONELAB_050318B-26874 Units: mg/kg
Analysis Date: 03/18/2005 10:19 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	31.14	500	617.4	117.2	500	616.5	117.1	0.1388	20	78	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/21/2005 8:25:39 AM

HOUSTON LABORATORY
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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R136067

Method Blank

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.57	95.14	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	140.4	250	433.5	117.2	250	432.2	116.7	0.3099	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/21/2005 8:25:39 AM

Sample Receipt Checklist
And
Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	05030473	Received By:	NB
Date and Time Received:	3/11/2005 9:30:00 AM	Carrier name:	FedEx
Temperature:	4.0°C	Chilled by:	Water Ice

		Yes	No	Not Present
1.	Shipping container/cooler in good condition?	☑	☐	☐
2.	Custody seals intact on shippping container/cooler?	☑	☐	☐
3.	Custody seals intact on sample bottles?	☐	☐	☑
4.	Chain of custody present?	☑	☐	
5.	Chain of custody signed when relinquished and received?	☑	☐	
6.	Chain of custody agrees with sample labels?	☑	☐	
7.	Samples in proper container/bottle?	☑	☐	
8.	Sample containers intact?	☑	☐	
9.	Sufficient sample volume for indicated test?	☑	☐	
10.	All samples received within holding time?	☑	☐	
11.	Container/Temp Blank temperature in compliance?	☑	☐	
12.	Water - VOA vials have zero headspace?	☐	☐	Not Applicable ☑
13.	Water - pH acceptable upon receipt?	☑	☐	Not Applicable ☐

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

Contact: Kick Kerlond Phone: (713) 758-0999
Address: 1416 Louisiana Fax: (713) 308-3888
Suite 2500
City: Houston State: TX, 770002

Project Name: BJ Service
Project No: 128238.020
Site Address: Hobbs, NM
Sampled By: Ben Camacho

MW-Monitoring Wells SEP [X]
Other (describe below) [ ]
WC-Waste Char. [ ]
Other (describe below) [ ]

QA/QC Level
Std [X] Lvl 3 [ ]
CLP [ ] Other [ ]

SPL Workorder Number: 0503047 3

REQUESTED ANALYSIS

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative ph 3/ice	6010 ph<2	SO4/Cl-300.0/Cl-SE.3	300	Cat/Phosphate/Nitrates 4500-CO2-D/300	CLD-300 325.2			
MW-5	3/8/05	1645		X	X		2	3,3	HNO3	X	X		X				
MW-10	3/8/05	1730		X	X		2	3,3	HNO3	X	X		X				
MW-18-5-9-10'	3/9/05	0800		X		X	1	4oz	—					X			
MW-18-5-19-20'	3/9/05	0810		X		X	1	4oz	—					X			
MW-18-5-29-30'	3/9/05	0815		X		X	1	4oz	—					X			
MW-18-5-39-40'	3/9/05	0820		X		X	1	4oz	—					X			
MW-18-5-49-50'	3/9/05	0825		X		X	1	4oz	—					X			
MW-18-5-59-60'	3/9/05	0840		X		X	1	4oz	—					X			
SB-16-4-5'	3/9/05	1000		X		X	1	4oz	—					X			
SB-16-9-10'	3/9/05	1005		X		X	1	4oz	—					X			
SB-16-14-15'	3/9/05	1010		X		X	1	4oz	—					X			
SB-16-19-20'	3/9/05	1015		X		X	1	4oz	—					X			

TAT
24hr [ ] 72hr [ ]
48hr [ ] 10 day [X]
Other [ ]

Special Detection Limits (Specify)

Special Reporting Requirements: - Soil is method 325.2 Chloride, NO3 Analysis has 48hr Hold time.

Consultant Remarks

Laboratory Remarks (1) RCRA metals not required. RL 3/14/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

Relinquished by Sampler:	date	time	Received by:
Ben Camacho Ben Camacho	3/10/05	1200	
Relinquished by:	date	time	Received by:
Relinquished by:	date	time	Received by SPL, Inc.:
	3/11/05	0930	

RL

Contact: Rick Rerroad	Phone: (713) 759-0999	MW-Monitoring Wells SEP	[X]
Address: 1415 Louisiana	Fax: (713) 308-3888	Other (describe below)	[ ]
Suite 2500		WC-Waste Char.	[ ]
City: Houston	State: TX, 770002	Other (describe below)	[ ]
Project Name: BJ Service		QA/QC Level	
Project No: 126238.028		Std [X] Lvl 3 [ ]	
Site Address: Hobbs, NM		CLP [ ] Other [ ]	
Sampled By: Ben Camacho			

SPL Workorder Number: 050504115

REQUESTED ANALYSIS

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	SW846-8260B/8270C/8082/RCRA 6010 (1)	SW846-FL-SOM01/CLP-SOW3	9253	Cond/Bicarb/Alkalinity 4500-CO2-D/310.1	CLP-SOW3 325.2			
SB-16-24-25'	3/9/05	1020		X		X	1	4oz	—					X			
SB-16-29-30'	3/9/05	1025		X		X	1	4oz	—					X			
SB-16-34-35'	3/9/05	1030		X		X	1	4oz	—					X			
SB-16-39-40'	3/9/05	1035		X		X	1	4oz	—					X			
SB-16-44-45'	3/9/05	1040		X		X	1	4oz	—					X			
SB-16-49-50'	3/9/05	1045		X		X	1	4oz	—					X			
SB-16-54-55'	3/9/05	1050		X		X	1	4oz	—					X			
SB-16-59-60'	3/9/05	1055		X		X	1	4oz	—					X			
MW-19-S-9-10'	3/9/05	1135		X		X	1	4oz	—					X			
MW-19-S-19-20'	3/9/05	1140		X		X	1	4oz	—					X			
MW-19-S-29-30'	3/9/05	1145		X		X	1	4oz	—					X			
MW-19-S-39-40'	3/9/05	1150		X		X	1	4oz	—					X			

TAT
24hr [ ] 72hr [ ]
48hr [ ] 10 day [X]
Other [ ]

Special Detection Limits (Specify) Soil analysis - Chloride 325.2
No3 has 48 hold time

Special Reporting Requirements:

Consultant Remarks

Laboratory Remarks (1) RCRA metals not required. PLL 3/14/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

Relinquished by Sampler:	date	time	Received by:
Ben Camacho Ben Camacho	3/10/05	1200	
Relinquished by:	date	time	Received by:
Relinquished by:	date	time	Received by SPL, Inc.:
	3/11/05	0930	

PLL

Contact: Kirk Kerrod Phone: (713) 759

Address: 1415 Louisiana Fax: (713) 308-3886

Suite 2500

City: Houston State: TX, 770002

Project Name: BJ Service

Project No: 128238.020

Site Address: Hobbs, NM

Sampled By: Ben Camacho

MW-Monitoring Wells SEP [X]

Other (describe below) [ ]

WC-Waste Char. [ ]

Other (describe below) [ ]

QA/QC Level

Std [X] Lvl 3 [ ]

CLP [ ] Other [ ]

SPL Workorder No.: 0503047 S

REQUESTED ANALYSIS

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	8260/Metals/Cr/Mg/Mn/Na 6010	8260FL/TPH/PCB-SW3	pH	Carb/Bicarb/Hydroxide 4500-CO2-D	Cl-325.3 325.2			
MW-19-S-49-50	3/9/05	1155		X		X	1	4oz	—					X			
MW-19-S-59-60	3/9/05	1200		X		X	1	4oz	—					X			
MW-5	3/10/05	0740		X	X		1	2	—			X					
MW-10	3/10/05	0755		X	X		1	2	—			X					

RUSH

TAT

24hr [ ] 72hr [ ]

48hr [ ] 10 day [X]

Other [ ]

Special Detection Limits (Specify)

Special Reporting Requirements:
Soil Analysis - Chloride 325.2
NO3 Analysis has 48 hr hold time

Consultant Remarks

Laboratory Remarks ① RCRA metals not required PL 3/15/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

Relinquished by Sampler:	date	time	Received by:
Ben Camacho Ben Camacho	3/10/05	1200	
Relinquished by:	date	time	Received by:
Relinquished by:	date	time	Received by SPL Inc:
	3/11/05	0930	[signature]

PLL

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:
05030533

MAR 3 0 2005
BROWN AND CALDWELL HOUSTON

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell Rick Rexroad 1415 Louisiana Suite 2500 Houston TX 77002- ph: (713) 759-0999 fax: (713) 308-3886		Site:	Hobbs, NM
		Site Address:	
		PO Number:	
		State:	New Mexico
		State Cert. No.:	
		Date Reported:	3/24/2005

This Report Contains A Total Of 18 Pages

Excluding This Page, Chain Of Custody

And

Attachments

3/24/2005

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030533

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	3/24/2005

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030533

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	3/24/2005

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

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Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030533

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:

PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/24/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-18	05030533-01	Water	3/11/2005 9:45:00 AM	3/12/2005 10:00:00 AM		☐
MW-15	05030533-02	Water	3/11/2005 10:15:00 AM	3/12/2005 10:00:00 AM		☐
MW-16	05030533-03	Water	3/11/2005 10:50:00 AM	3/12/2005 10:00:00 AM		☐
MW-19	05030533-04	Water	3/11/2005 11:45:00 AM	3/12/2005 10:00:00 AM		☐

3/24/2005

Pat Lynch
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-18 | **Collected: 03/11/2005 9:45** | **SPL Sample ID: 05030533-01**

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	273	2		1		03/22/05 19:00	A_E	2693050
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693059
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	199	10		10		03/23/05 10:44	T_H	2692987
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	650	125		25		03/17/05 14:00	CV	2686878
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.7	0.5		1		03/14/05 19:00	CV	2685289
Nitrogen,Nitrate (As N)	3.4	0.5		1		03/12/05 14:07	CV	2681637
Sulfate	220	25		50		03/14/05 16:04	CV	2685276
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	207	0.1		1		03/22/05 12:29	MW	2692404
Magnesium	43.7	0.1		1		03/22/05 12:29	MW	2692404
Potassium	3.65	2		1		03/22/05 12:29	MW	2692404
Sodium	99.7	0.5		1		03/22/05 12:29	MW	2692404

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
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Client Sample ID: MW-15 **Collected:** 03/11/2005 10:15 **SPL Sample ID:** 05030533-02

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	227	2		1		03/22/05 19:00	A_E	2693052
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693061
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	321	10		10		03/23/05 10:45	T_H	2692988
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	640	50		10		03/17/05 14:00	CV	2686881
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	1.1	0.5		1		03/14/05 19:13	CV	2685290
Nitrogen,Nitrate (As N)	2.9	0.5		1		03/12/05 14:19	CV	2681638
Sulfate	200	10		20		03/14/05 16:42	CV	2685279
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	218	0.1		1		03/22/05 12:33	MW	2692405
Magnesium	35.8	0.1		1		03/22/05 12:33	MW	2692405
Potassium	3.42	2		1		03/22/05 12:33	MW	2692405
Sodium	105	0.5		1		03/22/05 12:33	MW	2692405

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

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Client Sample ID: MW-16 **Collected:** 03/11/2005 10:50 **SPL Sample ID:** 05030533-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	352	2		1		03/22/05 19:00	A_E	2693053
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693062
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	1140	20		20		03/23/05 12:16	T_H	2693184
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	620	50		10		03/17/05 14:00	CV	2686882
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	8.2	2.5		5		03/14/05 19:26	CV	2685291
Nitrogen,Nitrate (As N)	3.2	0.5		1		03/12/05 14:32	CV	2681639
Sulfate	110	5		10		03/14/05 16:55	CV	2685280
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	192	0.1		1		03/22/05 12:37	MW	2692406
Magnesium	34.9	0.1		1		03/22/05 12:37	MW	2692406
Potassium	4.06	2		1		03/22/05 12:37	MW	2692406
Sodium	612	2.5		5		03/22/05 12:56	MW	2692410

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
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Client Sample ID: MW-19 **Collected:** 03/11/2005 11:45 **SPL Sample ID:** 05030533-04

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	207	2		1		03/22/05 19:00	A_E	2693054
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693063
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	330	10		10		03/23/05 10:45	T_H	2692989
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	620	50		10		03/17/05 14:00	CV	2686883
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	1.2	0.5		1		03/14/05 19:38	CV	2685292
Nitrogen,Nitrate (As N)	9.4	0.5		1		03/12/05 14:45	CV	2681640
Sulfate	200	10		20		03/14/05 17:07	CV	2685281
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	206	0.1		1		03/22/05 12:41	MW	2692407
Magnesium	37.2	0.1		1		03/22/05 12:41	MW	2692407
Potassium	5.64	2		1		03/22/05 12:41	MW	2692407
Sodium	158	0.5		1		03/22/05 12:41	MW	2692407

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 05030533
Lab Batch ID: 46287

Method Blank

RunID: TJA_050322A-2692390 Units: mg/L
Analysis Date: 03/22/2005 11:27 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Result	Rep Limit
Calcium	ND	0.1
Magnesium	ND	0.1
Potassium	ND	2
Sodium	ND	0.5

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01A	MW-18
05030533-02A	MW-15
05030533-03A	MW-16
05030533-04A	MW-19

Laboratory Control Sample (LCS)

RunID: TJA_050322A-2692391 Units: mg/L
Analysis Date: 03/22/2005 11:35 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	1.094	109.4	80	120
Magnesium	1	1.001	100.1	80	120
Potassium	10	10.23	102.3	80	120
Sodium	1	0.9629	96.29	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030495-24
RunID: TJA_050322A-2692393 Units: mg/L
Analysis Date: 03/22/2005 11:44 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	0.1918	1	1.250	105.8	1	1.267	107.5	1.381	20	75	125
Magnesium	ND	1	0.9846	95.42	1	1.018	98.80	3.374	20	75	125
Potassium	ND	10	9.847	89.98	10	10.44	95.92	5.856	20	75	125
Sodium	ND	1	1.016	90.84	1	1.036	92.86	1.964	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:07 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030533
Lab Batch ID: R135694

Method Blank

RunID: IC1_050312A-2681627 Units: mg/L
Analysis Date: 03/12/2005 12:01 Analyst: CV

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01C	MW-18
05030533-02C	MW-15
05030533-03C	MW-16
05030533-04C	MW-19

Laboratory Control Sample (LCS)

RunID: IC1_050312A-2681628 Units: mg/L
Analysis Date: 03/12/2005 12:14 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10	9.78	97.8	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-11
RunID: IC1_050312A-2681633 Units: mg/L
Analysis Date: 03/12/2005 13:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	9.57	95.7	10	9.39	93.9	1.88	20	80	120

Qualifiers:
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J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:07 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030533
Lab Batch ID: R135910A

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01C	MW-18
05030533-02C	MW-15
05030533-03C	MW-16
05030533-04C	MW-19

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Dunlicate (MSD)

Sample Spiked: 05030533-01
RunID: IC1_050314A-2685277 Units: mg/L
Analysis Date: 03/14/2005 16:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	224	500	741	103	500	729	101	1.66	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:07 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030533
Lab Batch ID: R135910B

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01C	MW-18
05030533-02C	MW-15
05030533-03C	MW-16
05030533-04C	MW-19

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: IC1_050314A-2685285 Units: mg/L
Analysis Date: 03/14/2005 18:10 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.10	10	10.2	91.4	10	10.3	91.9	0.497	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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HOUSTON, TX 77054
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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Hardness, Total (Titrimetric, EDTA)
Method: E130.2
WorkOrder: 05030533
Lab Batch ID: R135996A

Method Blank

RunID: WET_050317G-2686884 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01A	MW-18
05030533-02A	MW-15
05030533-03A	MW-16
05030533-04A	MW-19

Laboratory Control Sample (LCS)

RunID: WET_050317G-2686886 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	330	335	102	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030533-01
RunID: WET_050317G-2686879 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	650	1250	1880	98.0	1250	1880	98.0	0	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:08 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030533
Lab Batch ID: R136348

Method Blank

RunID: KONELAB_050323C-26929 Units: mg/L
Analysis Date: 03/23/2005 10:44 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	1.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01B	MW-18
05030533-02B	MW-15
05030533-04B	MW-19

Laboratory Control Sample (LCS)

RunID: KONELAB_050323C-26929 Units: mg/L
Analysis Date: 03/23/2005 10:44 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.76	95.52	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030622-10
RunID: KONELAB_050323C-26929 Units: mg/L
Analysis Date: 03/23/2005 10:44 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	243.8	250	514.2	108.2	250	513.9	108.0	0.06550	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:08 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 05030533
Lab Batch ID: R136354

Method Blank

RunID: WET_050322T-2693047 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01B	MW-18
05030533-02B	MW-15
05030533-03B	MW-16
05030533-04B	MW-19

Laboratory Control Sample (LCS)

RunID: WET_050322T-2693049 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030533-01
RunID: WET_050322T-2693050 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	273	273.4	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:06 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Carbonate
Method: M2320 B
WorkOrder: 05030533
Lab Batch ID: R136356

Method Blank

RunID: WET_050322U-2693056 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01B	MW-18
05030533-02B	MW-15
05030533-03B	MW-16
05030533-04B	MW-19

Laboratory Control Sample (LCS)

RunID: WET_050322U-2693058 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030533-01
RunID: WET_050322U-2693059 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
MI - Matrix Interference
B - Analyte detected in the associated Method Blank
D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:08 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030533
Lab Batch ID: R136361

Method Blank

RunID: KONELAB_050323E-26931 Units: mg/L
Analysis Date: 03/23/2005 12:16 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-03B	MW-16

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050323E-26931 Units: mg/L
Analysis Date: 03/23/2005 12:16 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.07	94.14	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030610-02
RunID: KONELAB_050323E-26931 Units: mg/L
Analysis Date: 03/23/2005 12:16 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	4460	2500	6662	88.10	2500	6657	87.89	0.08149	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 7:43:08 AM

Sample Receipt Checklist
And
Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	05030533	Received By:	RE
Date and Time Received:	3/12/2005 10:00:00 AM	Carrier name:	Fedex-Priority
Temperature:	3.5°C	Chilled by:	Water Ice

		Yes	No	Not Present
1.	Shipping container/cooler in good condition?	☑	☐	☐
2.	Custody seals intact on shippping container/cooler?	☑	☐	☐
3.	Custody seals intact on sample bottles?	☐	☐	☑
4.	Chain of custody present?	☑	☐	
5.	Chain of custody signed when relinquished and received?	☑	☐	
6.	Chain of custody agrees with sample labels?	☑	☐	
7.	Samples in proper container/bottle?	☑	☐	
8.	Sample containers intact?	☑	☐	
9.	Sufficient sample volume for indicated test?	☑	☐	
10.	All samples received within holding time?	☑	☐	
11.	Container/Temp Blank temperature in compliance?	☑	☐	
12.	Water - VOA vials have zero headspace?	☐	☐	Not Applicable ☑
13.	Water - pH acceptable upon receipt?	☑	☐	Not Applicable ☐

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

Contact: Rick Rexroad	Phone: (713) 759-	MW-Monitoring Wells SEP	[X]
Address: 1415 Louisiana	Fax: (713) 308-3888	Other (describe below)	[ ]
Suite 2500		WC-Waste Char.	[ ]
City: Houston	State: TX, 770002	Other (describe below)	[ ]
Project Name: BJ Service		QA/QC Level	
Project No: 128238.028		Std [X]	Lvl 3 [ ]
Site Address: Hobbs, NM		CLP [ ]	Other [ ]
Sampled By: Ben Camacho			

SPL Workorder Number: 0503 0553

REQUESTED ANALYSIS

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	Nitrate Nitrite,Sulfate,Chloride	Sulfide,Sulfate,Chloride	pH	Carb/Bicarb/Hardness	[redacted]			
MW-18	3/11/05	0945		X	X		3	3,3,2	HNO3	X	X	X	X				
MW-15	3/11/05	1015		X	X		3	3,3,2	HNO3	X	X	X	X				
MW-16	3/11/05	1050		X	X		3	3,3,2	HNO3	X	X	X	X				
MW-19	3/11/05	1145		X	X		3	3,3,2	HNO3	X	X	X	X				

PLEASE

TAT

24hr [ ] 72hr [ ]

48hr [ ] 10 day [X]

Other [ ]

Special Detection Limits (Specify)

Special Reporting Requirements:

Nitrate Analysis has 48hr. Hold time

Consultant Remarks

3.5c

Laboratory Remarks

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

	date	time	
Relinquished by Sampler: Ben Camacho			Received by:
Relinquished by:			Received by:
Relinquished by:	3/12/05	1000	Received by SPL, Inc.:

PLLSK

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030531

Report To: Brown & Caldwell Rick Rexroad 1415 Louisiana Suite 2500 Houston TX 77002- ph: (713) 789-0999 fax: (713) 308-3886	**Project Name:** BJ Service/126238.020 **Site:** Hobbs, NM **Site Address:** **PO Number:** **State:** New Mexico **State Cert. No.:** **Date Reported:** 3/24/2005

This Report Contains A Total Of 28 Pages

Excluding This Page, Chain Of Custody

And

Attachments

3/24/2005

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030531

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-			
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	3/24/2005

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030531

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:

PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/24/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-17-S-9-10'	05030531-01	Soil	3/10/2005 8:30:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-19-20'	05030531-02	Soil	3/10/2005 8:35:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-29-30'	05030531-03	Soil	3/10/2005 8:40:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-39-40'	05030531-04	Soil	3/10/2005 8:45:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-49-50'	05030531-05	Soil	3/10/2005 8:50:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-59-60'	05030531-06	Soil	3/10/2005 8:55:00 AM	3/12/2005 10:00:00 AM		☐
MW-11A	05030531-07	Water	3/10/2005 3:45:00 PM	3/12/2005 10:00:00 AM		☐
MW-12D	05030531-08	Water	3/10/2005 4:30:00 PM	3/12/2005 10:00:00 AM		☐
MW-14	05030531-09	Water	3/10/2005 5:20:00 PM	3/12/2005 10:00:00 AM		☐
MW-17	05030531-10	Water	3/11/2005 8:30:00 AM	3/12/2005 10:00:00 AM		☐
MW-12D	05030531-11	Water	3/11/2005 8:00:00 AM	3/12/2005 10:00:00 AM		☐
MW-11A	05030531-12	Water	3/11/2005 8:10:00 AM	3/12/2005 10:00:00 AM		☐
MW-14	05030531-13	Water	3/11/2005 8:20:00 AM	3/12/2005 10:00:00 AM		☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17-S-9-10' **Collected:** 03/10/2005 8:30 **SPL Sample ID:** 05030531-01

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	27.3	10		1		03/18/05 11:01	T_H	2687609

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17-S-19-20' **Collected:** 03/10/2005 8:35 **SPL Sample ID:** 05030531-02

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	186	10		1		03/18/05 11:01	T_H	2687612

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17-S-29-30' **Collected:** 03/10/2005 8:40 **SPL Sample ID:** 05030531-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL		E325.2	Units: mg/kg		
Chloride	80.5	10		1		03/18/05 11:01	T_H	2687613

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17-S-39-40' **Collected:** 03/10/2005 8:45 **SPL Sample ID:** 05030531-04

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	40.2	10	1		03/18/05 11:02	T_H	2687614

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17-S-49-50' **Collected:** 03/10/2005 8:50 **SPL Sample ID:** 05030531-05

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2	Units: mg/kg		
Chloride	39.1	10	1		03/18/05 11:02	T_H	2687615

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17-S-59-60' **Collected:** 03/10/2005 8:55 **SPL Sample ID:** 05030531-06

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/kg		
Chloride	42.8	10		1		03/18/05 11:02	T_H	2687616

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-11A **Collected:** 03/10/2005 15:45 **SPL Sample ID:** 05030531-07

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	485	2		1		03/21/05 15:30	A_E	2690676
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690687
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	2740	100		100		03/21/05 12:17	T_H	2689669
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	1300	250		50		03/17/05 14:00	CV	2686871
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	6.3	5		10		03/14/05 19:51	CV	2685293
Sulfate	370	50		100		03/14/05 14:49	CV	2685270
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	394	0.1		1		03/22/05 12:04	MW	2692398
Magnesium	78.7	0.1		1		03/22/05 12:04	MW	2692398
Potassium	31.9	2		1		03/22/05 12:04	MW	2692398
Sodium	1590	2.5		5		03/22/05 12:52	MW	2692409

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-12D | **Collected:** 03/10/2005 16:30 | **SPL Sample ID:** 05030531-08

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	224	2		1		03/21/05 15:30	A_E	2690678
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690689
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	161	5		5		03/18/05 13:18	T_H	2688024
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	680	125		25		03/17/05 14:00	CV	2686872
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.1	0.5		1		03/14/05 17:32	CV	2685282
Sulfate	160	10		20		03/14/05 15:02	CV	2685271
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	201	0.1		1		03/22/05 12:08	MW	2692399
Magnesium	10.8	0.1		1		03/22/05 12:08	MW	2692399
Potassium	42.9	2		1		03/22/05 12:08	MW	2692399
Sodium	56	0.5		1		03/22/05 12:08	MW	2692399

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
Mi - Matrix Interference

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Client Sample ID MW-14 **Collected:** 03/10/2005 17:20 **SPL Sample ID:** 05030531-09

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	448	2		1		03/21/05 15:30	A_E	2690679
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690690
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	303	5		5		03/18/05 13:18	T_H	2688025
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	1000	125		25		03/17/05 14:00	CV	2686875
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	2.4	0.5		1		03/14/05 18:35	CV	2685287
Sulfate	130	10		20		03/14/05 15:39	CV	2685274
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	276	0.1		1		03/22/05 12:21	MW	2692402
Magnesium	78.2	0.1		1		03/22/05 12:21	MW	2692402
Potassium	4.36	2		1		03/22/05 12:21	MW	2692402
Sodium	92.2	0.5		1		03/22/05 12:21	MW	2692402

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-17 | **Collected:** 03/11/2005 8:30 | **SPL Sample ID:** 05030531-10

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	251	2		1		03/21/05 15:30	A_E	2690680
ALKALINITY, CARBONATE			MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690691
CHLORIDE, TOTAL			MCL	E325.2		Units: mg/L		
Chloride	167	5		5		03/18/05 13:18	T_H	2688026
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	540	50		10		03/17/05 14:00	CV	2686877
ION CHROMATOGRAPHY			MCL	E300.0		Units: mg/L		
Fluoride	3.7	0.5		1		03/14/05 18:48	CV	2685288
Nitrogen,Nitrate (As N)	3.8	0.5		1		03/12/05 13:54	CV	2681636
Sulfate	150	10		20		03/14/05 15:52	CV	2685275
METALS BY METHOD 6010B, TOTAL			MCL	SW6010B		Units: mg/L		
Calcium	169	0.1		1		03/22/05 12:25	MW	2692403
Magnesium	41.3	0.1		1		03/22/05 12:25	MW	2692403
Potassium	17.8	2		1		03/22/05 12:25	MW	2692403
Sodium	99.2	0.5		1		03/22/05 12:25	MW	2692403

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-12D | **Collected:** 03/11/2005 8:00 | **SPL Sample ID:** 05030531-11

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND	0.5	1		03/12/05 13:04	CV	2681632

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-11A | **Collected:** 03/11/2005 8:10 | **SPL Sample ID:** 05030531-12

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND	0.5	1		03/12/05 12:51	CV	2681631

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-14 **Collected:** 03/11/2005 8:20 **SPL Sample ID:** 05030531-13

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	5	0.5	1		03/12/05 13:42	CV	2881635

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 05030531
Lab Batch ID: 48287

Method Blank

RunID: TJA_050322A-2692390 Units: mg/L
Analysis Date: 03/22/2005 11:27 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Result	Rep Limit
Calcium	ND	0.1
Magnesium	ND	0.1
Potassium	ND	2
Sodium	ND	0.5

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07A	MW-11A
05030531-08A	MW-12D
05030531-09A	MW-14
05030531-10A	MW-17

Laboratory Control Sample (LCS)

RunID: TJA_050322A-2692391 Units: mg/L
Analysis Date: 03/22/2005 11:35 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	1.094	109.4	80	120
Magnesium	1	1.001	100.1	80	120
Potassium	10	10.23	102.3	80	120
Sodium	1	0.9629	96.29	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030495-24
RunID: TJA_050322A-2692393 Units: mg/L
Analysis Date: 03/22/2005 11:44 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	0.1918	1	1.250	105.8	1	1.267	107.5	1.381	20	75	125
Magnesium	ND	1	0.9848	95.42	1	1.018	98.80	3.374	20	75	125
Potassium	ND	10	9.847	89.98	10	10.44	95.92	5.856	20	75	125
Sodium	ND	1	1.018	90.84	1	1.036	92.86	1.964	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030531
Lab Batch ID: R135694

Method Blank

RunID: IC1_050312A-2681627 Units: mg/L
Analysis Date: 03/12/2005 12:01 Analyst: CV

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-10C	MW-17
05030531-11A	MW-12D
05030531-12A	MW-11A
05030531-13A	MW-14

Laboratory Control Sample (LCS)

RunID: IC1_050312A-2681628 Units: mg/L
Analysis Date: 03/12/2005 12:14 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10	9.78	97.8	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-11
RunID: IC1_050312A-2681633 Units: mg/L
Analysis Date: 03/12/2005 13:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	9.57	95.7	10	9.39	93.9	1.88	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030531
Lab Batch ID: R135910A

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07C	MW-11A
05030531-08C	MW-12D
05030531-09C	MW-14
05030531-10C	MW-17

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030533-01
RunID: IC1_050314A-2685277 Units: mg/L
Analysis Date: 03/14/2005 16:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	224	500	741	103	500	729	101	1.66	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:36:47 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030531
Lab Batch ID: R135910B

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07C	MW-11A
05030531-08C	MW-12D
05030531-09C	MW-14
05030531-10C	MW-17

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: IC1_050314A-2685285 Units: mg/L
Analysis Date: 03/14/2005 18:10 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.10	10	10.2	91.4	10	10.3	91.9	0.497	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:36:47 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Hardness, Total (Titrimetric, EDTA)
Method: E130.2
WorkOrder: 05030531
Lab Batch ID: R135996

Method Blank

RunID: WET_050317G-2686864 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07A	MW-11A
05030531-08A	MW-12D
05030531-09A	MW-14
05030531-10A	MW-17

Laboratory Control Sample (LCS)

RunID: WET_050317G-2686866 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	330	335	102	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: WET_050317G-2686873 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	675	1250	1950	102	1250	1920	100	1.29	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:36:47 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030531
Lab Batch ID: R136042

Method Blank

RunID: KONELAB_050318C-26876 Units: mg/kg
Analysis Date: 03/18/2005 11:01 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-01A	MW-17-S-9-10'
05030531-02A	MW-17-S-19-20'
05030531-03A	MW-17-S-29-30'
05030531-04A	MW-17-S-39-40'
05030531-05A	MW-17-S-49-50'
05030531-06A	MW-17-S-59-60'

Laboratory Control Sample (LCS)

RunID: KONELAB_050318C-26876 Units: mg/kg
Analysis Date: 03/18/2005 11:01 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	479.4	95.89	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-01
RunID: KONELAB_050318C-26876 Units: mg/kg
Analysis Date: 03/18/2005 11:01 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	27.33	500	581.1	110.7	500	582.9	111.1	0.3219	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030831
Lab Batch ID: R136067

Method Blank

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-08B	MW-12D
05030531-09B	MW-14
05030531-10B	MW-17

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.57	95.14	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	140.4	250	433.5	117.2	250	432.2	116.7	0.3099	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:38:48 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030531
Lab Batch ID: R136161

Method Blank

RunID: KONELAB_050321C-26896 Units: mg/L
Analysis Date: 03/21/2005 12:15 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07B	MW-11A

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050321C-26896 Units: mg/L
Analysis Date: 03/21/2005 12:15 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.13	94.25	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030760-01
RunID: KONELAB_050321C-26896 Units: mg/L
Analysis Date: 03/21/2005 12:15 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	15.96	50	73.89	115.9	50	73.79	115.7	0.1350	20	76	131

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:38:48 AM

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Quality Control Report

Brown & Caldwell

BJ Service/128238.020

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 05030531
Lab Batch ID: R136234

Method Blank

RunID: WET_050321K-2690673 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07B	MW-11A
05030531-08B	MW-12D
05030531-09B	MW-14
05030531-10B	MW-17

Laboratory Control Sample (LCS)

RunID: WET_050321K-2690675 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030531-07
RunID: WET_050321K-2690676 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	485	485.4	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Carbonate
Method: M2320 B
WorkOrder: 05030531
Lab Batch ID: R136236

Method Blank

RunID: WET_050321L-2690684 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07B	MW-11A
05030531-08B	MW-12D
05030531-09B	MW-14
05030531-10B	MW-17

Laboratory Control Sample (LCS)

RunID: WET_050321L-2690686 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030531-07
RunID: WET_050321L-2690687 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:38:48 AM

Sample Receipt Checklist
And
Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	05030531	Received By:	RE
Date and Time Received:	3/12/2005 10:00:00 AM	Carrier name:	Fedex-Priority
Temperature:	4.0°C	Chilled by:	Water Ice

1.	Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2.	Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
3.	Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4.	Chain of custody present?	Yes ☑	No ☐	
5.	Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
6.	Chain of custody agrees with sample labels?	Yes ☑	No ☐	
7.	Samples in proper container/bottle?	Yes ☑	No ☐	
8.	Sample containers intact?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test?	Yes ☑	No ☐	
10.	All samples received within holding time?	Yes ☑	No ☐	
11.	Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
12.	Water - VOA vials have zero headspace?	Yes ☐	No ☐	Not Applicable ☑
13.	Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

Contact: Rick Rexford Phone: (713) 308-
Address: 1415 Louisiana Fax: (713) 308-3886
Suite 2500
City: Houston State: TX, 770002

Project Name: BJ Service
Project No: 126238.020
Site Address: Hobbs, NM
Sampled By: Ben Camacho

MW-Monitoring Wells SEP [X]
Other (describe below) [ ]
WC-Waste Char. [ ]
Other (describe below) [ ]

QA/QC Level
Std [X] Lvl 3 [ ]
CLP [ ] Other [ ]

SPL Workorder ID: 05030531

REQUESTED ANALYSIS

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	60/10	300.0	45.00-CO3-D/353.1	325.2
MW-17-S-9-10'	3/10/05	0830		X		X	1	4oz	—				X
MW-17-S-19-20'	3/10/05	0835		X		X	1	4oz	—				X
MW-17-S-29-30'	3/10/05	0840		X		X	1	4oz	—				X
MW-17-S-39-40'	3/10/05	0845		X		X	1	4oz	—				X
MW-17-S-49-50'	3/10/05	0850		X		X	1	4oz	—				X
MW-17-S-59-60'	3/10/05	0855		X		X	1	4oz	—				X
MW-11A	3/10/05	1545		X	X		2	3,3	HNO3	X	X	X	
MW-12D	3/10/05	1630		X	X		2	3,3	HNO3	X	X	X	
MW-14	3/10/05	1720		X	X		2	3,3	HNO3	X	X	X	
MW-12D	3/11/05	0800		X	X		1	2	—			X	
MW-11A	3/11/05	0810		X	X		1	2	—			X	
MW-14	3/11/05	0820		X	X		1	2	—			X	
MW-17	3/11/05	0830		X	X		3	3,2	HNO3	X	X	X	

RUSH

TAT: 24hr [ ] 72hr [ ] 48hr [ ] 10 day [X] Other [ ]

Special Detection Limits (Specify):

Special Reporting Requirements: Soil analyzed for chloride 325.2
Nitrate Analysis has 48 hr. Hold time

Laboratory Remarks: ① RCRA metals not required

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

4.0c
PLL 3/14/05

Relinquished by Sampler:	date	time	Received by:
Ben Camacho, Ben C	3/11/05	1500	
Relinquished by:	date	time	Received by:
Relinquished by:	date	time	Received by SPL, Inc.:
	3/12/05	1000	

PLL

APPENDIX C

Groundwater Sampling Forms

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-5

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/8/05 Time: 1620

Client: US-Services Personnel: B. Camacho

Project Location: Hobbs, NM Weather: 75°F, wind 5 mph East

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.58 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.80 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 2.78 feet	Well Volume: .46 gal Screened Interval (from GS):

x3 = 1.4 gallons Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Disposable bailer
2. YSI-600 XL
3. Hach turb.

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1630		6.84	16.18	0.994	161.2	7.90	13.0		
1640	1.1	7.03	16.33	0.978	149.0	6.72	11.0		

well purged dry at 1.1 gallons removed
waited till recharged to sample.

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☐ No

Sample ID: MW-5 Sample Time: 1645 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses
Ferrous Iron: ___ mg/L
DO: ___ mg/L
Nitrate: ___ mg/L
Sulfate: ___ mg/L
Alkalinity: ___ mg/L

5. COMMENTS

Nitrate Sampled on 3/10/05 @ 0740

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

FORM GW-1 (Rev 6/8/99 - wsh)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-10

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/9/05 Time: 1700

Client: BS-Services Personnel: B. CAMACHO

Project Location: Hobbs, NM Weather: Sunny 75-85°F wind 5 mph

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 63.43 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 60.91 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 2.5 feet Well Volume: .42 gal Screened Interval (from GS):

3 well x = 1.3 gallons Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer: ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing: ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. YSI 600XL
2. Hach turb.
3. Bailer

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1715	—	6.70	16.95	3.298	-41.7	5.07	19.2		- water purged
1720	-	6.66	16.86	3.355	-54.5	3.36	15.7		by filtr. pump 1st.
1725	-	6.65	17.07	3.357	-56.8	3.11	—		- went Dry
									- well went Dry
									after 1.3 gallons
									was bailed

1.3 gal removed

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer: ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope: ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-10 Sample Time: 1730 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: ____ mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

Bailed Nitrate on 3/10/05 @ 0755

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature: [illegible]

FORM GW-1 (Rev 8/8/99 - wsh)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-11A

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/10/05 Time: 1530

Client: BJ-Services Personnel: B. Camacho

Project Location: Hobbs, NM Weather: 75-80°F Smph East, Sunny

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.79 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.45 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 3.34 feet Well Volume: .58 gal Screened Interval (from GS):

3 well x = 1.7

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: ____ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Bailer
2. YSI 600XL
3. Hach Turb meter

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1540	1.6	6.50	20.48	8.492	-63.9	3.94	86.0		well purged
1545	—	6.30	20.44	8.471	-61.6	3.20	76.2		dry after 1.7 g.
									removed.
									-Waiting for rech
									-water recharging
									slowly.

1.7 Gallons removed

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-11A Sample Time: 1545 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: ____ mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

Sampled for Nitrate on 3/11/05 @ 0810

Note: Include comments such as well condition, odor, presence of NAPL or other items not on the field data sheet

Signature

FORM GW-1 (Rev 6/6/99 - wsh)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-12D

1. PROJECT INFORMATION

Project Number: 126[redacted]238 Task Number: 019 Date: 3/10/05 Time: 1555

Client: BJ-Services Personnel: B.CA MACHO

Project Location: Hobbs, NM Weather: 68°F, wind 5mph east

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 87.65 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.56 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

pump intake @ 73.0'

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? 1.8 gal ☐ Yes ☒ No Pumping Rate: 2 L/min

Equipment Model(s)
1. YSI 600 XL
2. HACH turbidity
3. fulflo pump

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other: ft	Comments
1610	—	6.23	19.86	1.073	9.3	2.00	35.7	61.78	
1614	.6	6.07	19.85	1.039	-54.1	.71	28.0	61.78	
1618	1.2	6.09	19.97	1.047	-62.7	.53	22.0	61.79	
1622	1.8	6.09	20.04	1.048	-63.9	.52	19.7	61.79	
1626	2.4	6.10	20.01	1.050	-64.4	.52	21.5	61.79	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 61.79 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-12D Sample Time: 1630 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

nitrate sampled on 3/11/05 - 0800

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-14

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/10/05 Time: 1655

Client: BJ-Services Personnel: B. CAMACHO

Project Location: Hobbs, NM Weather: 75-80°F wind 5-7mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 69.85 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 62.15 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 7.70 feet	Well Volume: 1.2 gal × 3 = 3.6 Screened Interval (from GS):

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. disposable Bailer
2. YSI-600 XL
3. HACH Turbidity

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1700	3.6	6.86	18.3	1.484	132.9	7.30	325		
1705	—	6.86	18.26	1.486	132.1	7.32	457		

well purged dry after 3.0 gallons removed

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: ___ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-14 Sample Time: 1720 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses
Ferrous Iron: ___ mg/L
DO: ___ mg/L
Nitrate: ___ mg/L
Sulfate: ___ mg/L
Alkalinity: ___ mg/L

5. COMMENTS

Nitrate sampled on 3/11/05 @ 0820

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet

Signature

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-15

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 0955

Client: BJ-Services Personnel: B. Campbell

Project Location: Hobbs, NM Weather: 80°F / 15 mph NE / Sunny

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 66.21 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.13 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 5.08 feet Well Volume: .85 gal Screened Interval (from GS):

Pump Intake depth — (from GS) 3X well = 2.6

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: — gal/min

Equipment Model(s)
1. disposable bailer
2. YSI 600 XL
3. HACH Turb. meter

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1000	2.6	7.01	18.41	1.462	131.5	6.66	41.4		
1010	—	6.81	18.20	1.473	151.9	5.90	—		- turn pump
1015	—	6.70	18.20	1.473	162.3	5.40	37.2		purged 1 gallons
									before water
									was below pump
				2.6 gallons bailed					

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☐ No

Sample ID: MW-15 Sample Time: 1015 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: — mg/L

DO: — mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-16

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 1025

Client: BJ Services Personnel: B. CAMACHO, Yong Ping

Project Location: Hobbs, NM Weather: Sunny, wind 15mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 75.85 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 65.89 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

Pump intake depth 70' (from ~~GS~~) TOC

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: Liters ~~gal~~/min

Equipment Model(s)
1. Hach Turbidity
2. Fulte pump
3. 455-600XL

Time	Cum. ~~Gallons~~ Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
—	Liters	—	°C	mS/cm	mV	mg/L	NTU	ft	
10:30	—	6.94	17.90	3.404	162.8	7.94	247	65.92	
10:34	.6	6.84	18.18	3.443	156.1	7.94	182	65.89	- Turbidity
10:37	1.2	6.74	18.27	3.455	149.7	7.85	155	65.89	very High
10:40	1.8	6.70	18.34	3.455	151.4	7.86	156	65.89	
10:43	2.4	6.67	18.66	3.446	147.8	7.82	160	65.89	
10:46	3.0	6.66	18.77	3.443	146.4	7.82	150	65.89	
10:49	3.6	6.67	19.03	3.439	145.1	7.79	[illegible]	65.89	
10:52	4.2							65.89	Sc

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 65.89 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-16 Sample Time: 10:50 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: ____ mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

Sampled for Anions, cations, CO3, HCO3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-17

1. PROJECT INFORMATION

Project Number: 126234 Task Number: 019 Date: 3/11/05 Time: 0735

Client: AS-Services Personnel: B. Camacho, Yong Ping

Project Location: Hobbs, NM Weather: Sunny, 80°F 15 mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 73.98 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.71 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: ~~NAPL~~ feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

pump intake depth: 67 ft (TOC)

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Equipment Model(s)
1. Hach Turbidity
2. YSI 600XL
3. fultz pump

Was well purged dry? ☐ Yes ☒ No Pumping Rate: .2 gal/min

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other: ft	Comments
—	Liters	—	°C	mS/cm	mV	mg/L	NTU	ft	
0753	—	7.79	16.13	1.180	176.0	8.53	>1000	61.79	
0756	.6	7.65	16.36	1.164	123.6	8.67	>1000	61.78	
0800	1.2	7.51	16.41	1.134	121.9	8.64	>1000	61.78	
0803	1.8	7.46	17.45	1.121	113.2	8.56	>105	61.78	-Turbidity very
0806	2.4	7.44	17.29	1.121	108.7	8.51	577	61.78	High.
0809	3.0	7.41	17.17	1.113	107.6	8.58	537	61.78	
0812	3.6	7.38	16.93	1.108	104.6	8.62	257	61.78	
0815	4.2	7.36	16.45	1.116	105.1	8.58	190	61.78	
0818	4.8	7.35	16.60	1.111	103.4	8.54	136	61.78	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 61.78 Field Filtered? ☐ Yes ☐ No

Sample ID: MW-17 Sample Time: 8:30 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: _____

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for Anions, cations, CO3, HCO3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

FORM GW-1 (Rev 6/8/99 - wsh)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-18

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 0900

Client: BJ-Services Personnel: B. CAMACHO, Young Ping

Project Location: Hobbs, NM Weather: wind 15 mph NE, 80°F sunny

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 73.90 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.76 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

Pump intake depth 67' (from [redacted]) BTOC

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: 0.2 L/min

Equipment Model(s)
1. YSI-600 XL
2. HACH Turbidity
3. Fulflo pump

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
	Liters	–	°C	mS/cm	mV	mg/L	NTU	ft	- Turbidity very
9:10	--	7.15	17.66	1.375	102.3	7.73	684	61.78	High.
9:13	.6	7.03	17.90	1.377	106.1	7.91	460	61.78	
9:16	1.2	6.92	18.52	1.376	100.1	8.11	371	61.78	
9:19	1.8	6.91	19.19	1.382	93.0	8.16	302	61.78	
9:22	2.4	6.84	19.81	1.384	101.8	8.13	201	61.78	
9:25	3.0	6.78	19.99	1.389	108.8	8.11	156	61.78	- water clearing
9:28	3.6	6.70	19.78	1.394	116.1	8.08	118	61.78	up.
9:31	4.2	6.72	19.74	1.393	118.1	8.04	61.9	61.78	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 61.78 Field Filtered? ☐ Yes ☐ No

Sample ID: MW-18 Sample Time: 9:45 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for anions, cations, CO3, HCO3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-19

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 1115

Client: BS-Services Personnel: B. Camacho, Yang Ping

Project Location: Hobbs, NM Weather: 80°F, sunny, wind 15mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 76.15 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 69.01 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

Pump intake depth 72' (from ~~BG~~ TOC *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Equipment Model(s)

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable — 1. YSI-600 XL

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable — 2. Fulte pumps

Was well purged dry? ☐ Yes ☒ No Pumping Rate: .2 L/min — 3. Hach Turb.

Time	Cum. ~~Gallons~~ Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
—	Liters	—	°C	mS/cm	mV	mg/L	NTU	ft	
11:16	—	7.01	19.04	1.611	115.8	7.67	>1000	70.02	
11:19	.6	6.72	19.11	1.592	113.2	7.64	>1000	69.58	
11:22	1.2	6.66	19.89	1.584	95.6	7.39	>1000	69.53	
11:25	1.8	6.66	20.16	1.592	92.5	7.26	681	69.53	
11:28	2.4	6.64	20.25	1.601	95.3	7.17	312	69.53	
11:31	3.0	6.58	19.78	1.598	107.5	7.40	510	69.53	
11:34	3.6	6.58	19.88	1.600	109.0	7.42	325	69.53	
11:37	4.2	6.60	19.81	1.604	110.5	7.50	127	69.53	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 69.53 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-19 Sample Time: 11:45 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for cations, anions, CO_3, HCO_3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

DECEMBER 2003 GROUNDWATER SAMPLING REPORT,
HOBBS, NEW MEXICO FACILITY, BJ SERVICES COMPANY, U.S.A.,
DATED JULY 16, 2004

FILE COPY

DECEMBER 2003 GROUNDWATER SAMPLING REPORT HOBBS, NEW MEXICO FACILITY

BJ SERVICES COMPANY, U.S.A.

JULY 16, 2004

DECEMBER 2003 GROUNDWATER SAMPLING REPORT
HOBBS, NEW MEXICO FACILITY
BJ SERVICES COMPANY, U.S.A.

Prepared for

BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

BC Project Number: 12832.019

Richard L. Rexroad, P.G.
Project Manager

July 16, 2004

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CONTENTS

FIGURES

CONTENTS (continued)

TABLES

APPENDICES

1.0 INTRODUCTION

Brown and Caldwell conducted a quarterly groundwater sampling event at the BJ Services Company, U.S.A. (BJ Services) facility located at 2708 West County Road in Hobbs, New Mexico on December 17-18, 2003. This report presents a description of the groundwater sampling field activities, a summary and evaluation of the analytical results, and an evaluation of remedial technologies applied at the facility. A groundwater potentiometric surface map and a hydrocarbon distribution map are included.

A layout of the facility is shown in Figure 1. The facility formerly operated an on-site fueling system. The New Mexico Oil Conservation Division (NMOCD) detected evidence of subsurface impact near the former diesel fueling system during an on-site inspection on February 7, 1991. The fueling system was taken out of operation in July 1995. The NMOCD has required a quarterly groundwater monitoring program to assess the concentration of hydrocarbon constituents in groundwater as a result of the diesel fuel release.

A biosparging system was activated in November 1995 and expanded in March/April 1997 and February/March 1998 to remediate soil and groundwater at the former fuel island area of the facility. The biosparging system was deactivated on November 1, 2000 after achieving cleanup goals for groundwater. The confirmation soil sampling program specified in the NMOCD-approved Remedial Action Plan (RAP) for the facility was conducted in July 2001. The results of the confirmation soil sampling program were presented to NMOCD in the report for the June 2001 groundwater sampling event. In accordance with the RAP for the facility, four additional groundwater sampling events were conducted following the confirmation soil sampling event. Hydrocarbon concentrations in groundwater samples from applicable monitor wells remained below the target concentrations specified in the RAP during each of these sampling events, so a request to decommission the biosparging system was submitted to NMOCD in the June 2002 Groundwater Sampling and Biosparging System Closure Report for the facility.

BJ Services removed three field waste tanks from the facility on March 6-7, 1997. The ongoing groundwater monitoring program was expanded to address both the former fuel island and the former field waste tanks areas of the facility, as directed by NMOCD in correspondence dated January 21, 1999.

Table 1 presents a site chronology detailing the history of investigations into and the remediation of hydrocarbon impacts to soil and groundwater in the areas of the former fueling system and the former field waste tanks at the facility, along with the history of investigations conducted by BJ Services regarding chloride impact to groundwater at and in the vicinity of its facility in Hobbs, New Mexico.

2.0 FIELD ACTIVITIES AND RESULTS

Brown and Caldwell purged and sampled seven monitor wells (MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, and MW-16) at the facility on December 18, 2003 to evaluate concentrations of dissolved-phase hydrocarbons and chloride in groundwater. The monitor well locations are shown in Figure 1. The following subsections describe the field activities conducted by Brown and Caldwell during the current groundwater sampling event and present the results from the associated groundwater analyses.

2.1 Groundwater Sampling Activities

Groundwater level measurements were obtained from all monitor wells at the facility prior to purging and sampling the wells listed above. Groundwater levels were measured to the nearest 0.01 foot with an electronic water-level indicator. Current and historical groundwater elevation data for each well are presented in Table 2. The groundwater elevation data presented in Table 2 indicate that groundwater levels have continued to decline in monitor wells at the facility since late 1995. A groundwater elevation map for December 17, 2003 is presented in Figure 2. The groundwater elevation data indicate that the groundwater flow direction is to the east/northeast, with hydraulic gradient ranging from 0.006 foot/foot (ft/ft) in the western portion of the facility to 0.010 ft/ft in the eastern portion of the groundwater monitoring area.

Monitor wells MW-12D and MW-16 were purged with a submersible pump and previously unused down-hole tubing. The remaining wells were purged with previously unused disposable bailers and clean, previously unused polyethylene rope. Three well volumes were purged from monitor wells MW-5 and MW-15. Monitor wells MW-10, MW-11A, and MW-14 were purged dry.

Low flow/low stress purging was performed prior to sampling of monitor wells MW-12D and MW-16 to maintain the water level at or near the static water level. Field parameter measurements for pH, specific conductivity, oxidation-reduction potential, dissolved oxygen, and temperature were collected during purging of these wells. Ferrous iron and dissolved oxygen concentrations

were measured in groundwater from monitor wells MW-5, MW-10, MW-11A and MW-12D upon conclusion of purging activities. Field parameter readings were recorded on the groundwater sampling forms included in Appendix A and are summarized in Table 3.

Groundwater samples were obtained directly from the discharge line of the submersible pump or by pouring recovered water from a bailer into laboratory-prepared, clean glass or plastic containers, sealed with Teflon®-lined lids, labeled, and placed on ice in an insulated cooler for delivery to Southern Petroleum Laboratory in Houston, Texas for analysis using standard chain-of-custody procedures.

Field measurement equipment was decontaminated prior to and following each use. Decontamination procedures consisted of washing with distilled water and a non-phosphate detergent, then rinsing with distilled water. Purge and decontamination waters were discharged to an on-site water reclamation system at the BJ Services facility.

2.2 Results of Groundwater Analyses

Groundwater samples from monitor wells MW-14, MW-15, and MW-16 were analyzed for chloride content using Method E325.3. Table 4 presents current and cumulative results for chloride analyses performed on groundwater samples collected at the facility. The current chloride concentration in monitor well MW-14 remains less than the New Mexico Water Quality Control Commission (NMWQCC) chloride standard of 250 milligrams per liter (mg/L). The chloride concentrations in monitor wells MW-15 and MW-16 exceed the NMWQCC chloride standard.

Groundwater samples from monitor wells MW-5, MW-10, MW-11A, and MW-12D were analyzed for diesel- and gasoline-range total petroleum hydrocarbons (TPH-D and TPH-G) using EPA Method SW-8015B and for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method SW-8021B. Current and cumulative analytical results for BTEX constituents, TPH-D, and TPH-G are presented in Table 5. Figure 3 presents a hydrocarbon distribution map for December

18, 2003. All BTEX concentrations measured in groundwater during the current sampling event were less than applicable NMWQCC standards.

Analysis of groundwater from monitor wells MW-5, MW-10, MW-11A, and MW-12D for nitrate and sulfate (Method E300.0), dissolved methane (Method RSK 147), and alkalinity (Method E310.1) was performed to evaluate mechanisms for natural attenuation of hydrocarbons at the facility. Current and historical results for nitrate, sulfate, and dissolved methane analyses performed on groundwater samples from monitor wells MW-5, MW-10, MW-11A, MW-12, and MW-12D are presented in Table 6.

The laboratory analytical reports and chain-of-custody documentation for groundwater samples collected during the current sampling event are provided in Appendix B.

3.0 EVALUATION OF REMEDIAL TECHNOLOGIES

Evaluations of remedial technologies applied at the former fueling system and former field waste tanks areas of the BJ Services facility in Hobbs, New Mexico are presented in Sections 3.1 and 3.2, respectively. Section 3.3 presents an evaluation of chloride impact to groundwater at and in the vicinity of the facility.

3.1 Biosparging System at the Former Fueling System Area

Brown and Caldwell recommended installation of a biosparging system at the former fueling system area of the facility in a Remedial Action Plan (RAP) submitted to the NMOCD in May 1994. The NMOCD approved the RAP on August 11, 1994. The biosparging system was installed in August 1995, with expansions completed in April 1997 and March 1998. Operation of the biosparging system resulted in substantial decreases in hydrocarbon concentrations in former fueling system area monitor wells. In accordance with the RAP, confirmation soil sampling activities were conducted at the former fueling system area in July 2001 to verify the effectiveness of the biosparging system in remediating vadose zone soils. The analytical results for these soil samples, as discussed in the report for the June 2001 groundwater sampling event, indicated that remediation goals for soil in this area had been achieved.

Following the confirmation soil sampling activities, hydrocarbon concentrations in groundwater remained below target cleanup goals for four successive quarters. In accordance with the RAP for the facility, a request to decommission the biosparging system was submitted to the NMOCD in the June 2002 Groundwater Sampling and Biosparging System Closure Report.

3.2 Natural Attenuation at the Former Field Waste Tanks Area

Natural attenuation is the primary remediation mechanism for the dissolved-phase hydrocarbon plume located in the area of the former field waste tanks (see Figure 1).

Plume behavior is the primary evidence of natural attenuation. Secondary evidence of natural attenuation can be obtained by collection and evaluation of data relating to the concentrations of indigenous electron acceptors such as dissolved oxygen, nitrate, sulfate, and carbon dioxide. A plume is shrinking when the rate of hydrocarbon loading from a source area is less than the rate of natural degradation of hydrocarbons. Plume shrinkage in the absence of aggressive remediation is indicative of the occurrence of natural attenuation processes. Conversely, a plume is expanding if the rate of hydrocarbon loading from a source area is greater than the rate of natural degradation of hydrocarbons through natural attenuation processes.

The former field waste tanks in the eastern portion of the facility were removed in March 1997. Concentrations of total BTEX in monitor wells in this area have been generally stable or declining subsequent to removal of these tanks. Sporadic increases in total BTEX concentrations between quarterly sampling events have been observed in monitor wells in this area since March 1997, however. These increases may be attributed to sporadic loading rates from the vadose zone in excess of the rate of natural attenuation in the area. The following subsections present primary and secondary evidence of natural attenuation of hydrocarbons in groundwater at the former field waste tanks area of the facility.

3.2.1 Primary Evidence

The benzene concentration in monitor well MW-10 has decreased from a maximum of 1.3 mg/L in August 1995 (prior to removal of the field waste tanks) to less than the NMWQCC standard of 0.01 mg/L for benzene in the 12 applicable groundwater sampling events from December 2000 to December 2003. Benzene has not been detected in monitor well MW-10 since September 2001, a span of eight consecutive quarterly groundwater sampling events. Concentrations of toluene, ethylbenzene, and xylenes in monitor well MW-10 were non-detect during the current sampling event and have generally been non-detect since December 2000. Detectable concentrations of TPH-D in monitor well MW-10 have ranged from 0.3 mg/L to 3.4 mg/L. TPH-D concentrations in monitor well MW-10 have been less than 1 mg/L during the four most recent quarterly groundwater

sampling events. TPH-G has not been detected in monitor well MW-10 during the last 10 quarterly groundwater sampling events.

Benzene concentrations at the monitor well MW-11/11A location have generally decreased from a maximum of 0.970 mg/L in December 1996 (prior to removal of the field waste tanks). The current benzene concentration of 0.0034 mg/L in monitor well MW-11A is less than the NMWQCC standard for benzene. Benzene concentrations in MW-11A have been less than the NMWQCC standard for benzene during 10 of the 11 groundwater sampling events conducted from June 2001 through December 2003, including the last four consecutive quarterly groundwater sampling events. Concentrations of toluene, ethylbenzene, and xylenes in monitor well MW-11A have been at low to typically non-detectable concentrations since March 1998. Detectable concentrations of TPH-D in monitor well MW-11A have ranged from 0.28 mg/L to 2.2 mg/L. TPH-G concentrations in monitor well MW-11A have been less than 1 mg/L in each of the last seven quarterly groundwater sampling events. TPH-G concentrations have been less than 1 mg/L throughout the monitoring history of well MW-11A.

Concentrations of each BTEX constituent at the monitor well MW-12/12D location have been below analytical detection limits for the past 11 sampling events. TPH-D has not been detected at this location since September 2002, and TPH-G has not been detected since June 2001.

3.2.2 Secondary Evidence

The following lines of geochemical evidence can also be used to suggest that intrinsic bioremediation (an important natural attenuation mechanism) of dissolved-phase hydrocarbons is occurring in the area of the former field waste tanks.

1. Dissolved oxygen may be utilized as an electron acceptor during intrinsic bioremediation. Dissolved oxygen concentrations should therefore be depressed in areas where intrinsic bioremediation is occurring.

   Groundwater samples from monitor wells MW-5, MW-10 and MW-11A were collected using bailers during the current sampling event. The use of bailers may cause

groundwater samples to become oxygenated, thus precluding a meaningful comparison of dissolved oxygen data.

Historic evidence submitted to the NMOCD in previous quarterly groundwater monitoring reports for the facility when down-hole pumps were utilized has indicated that dissolved oxygen concentrations were typically depressed in hydrocarbon-impacted monitor wells relative to non-impacted wells at the facility (see the June 2001 Groundwater Sampling Report for BJ Services Hobbs, New Mexico Facility, for example).

2. Nitrate may be utilized as an electron acceptor during intrinsic bioremediation after dissolved oxygen is depleted. Therefore, nitrate concentrations may be depressed in areas where intrinsic bioremediation is occurring.

   Nitrate was detected at a concentration of 2.5 mg/L in background monitor well MW-5 during the current sampling event. Although minimal to no hydrocarbon impact was detected at former field waste tanks area wells MW-10, MW-11A, and MW-12D during the current sampling event (see Table 5), nitrate was detected in monitor well MW-10 at a concentration of 0.28 mg/L; nitrate was not detected in monitor wells MW-11A or MW-12D. The depressed to non-detectable nitrate concentrations observed during the current sampling event at former field waste tanks area wells MW-10, MW-11A, and MW-12D relative to the background nitrate concentration at the facility are likely due to residual effects of hydrocarbons in these areas.

3. When dissolved oxygen and nitrate are depleted, anaerobic microbes that utilize other electron acceptors may become active. Ferrous iron is the reduction product of ferric iron, a common electron acceptor. Therefore, ferrous iron concentrations should increase in areas where intrinsic bioremediation is occurring.

   The elevated ferrous iron concentrations in monitor wells MW-10, MW-11A and MW-12D relative to background well MW-5 suggest that ferric iron has been used as an electron acceptor during natural attenuation of hydrocarbons at the former field waste tanks area of the facility.

4. Microbes that utilize sulfate may become active when dissolved oxygen, nitrate, and ferric iron are depleted. Sulfate concentrations should therefore decrease in areas where intrinsic bioremediation is occurring through the use of sulfate as an electron acceptor.

   During the current sampling event, sulfate concentrations in the former field waste tanks area monitor wells MW-10, MW-11A, and MW-12D ranged from 160 mg/L to 350 mg/L, whereas the sulfate concentration in background monitor well MW-5 was measured at 110 mg/L. The fact that sulfate concentrations in the former source area monitor wells are greater than the sulfate concentration in the background monitor well suggests that sulfate is not being utilized as an electron acceptor in the former field waste tanks area.

5. Methane is a reaction product generated during utilization of carbon dioxide as an electron acceptor, so its concentration may increase in areas where concentrations of electron acceptors such as dissolved oxygen, nitrate, and ferric iron have diminished.

Dissolved methane was not detected in background monitor well MW-5 or in former field waste tanks area monitor wells MW-10, MW-11A, and MW-12D during the current groundwater sampling event. These data indicate that carbon dioxide is not presently being utilized as an electron acceptor at the former field waste tanks area of the facility.

6. Microbes produce fatty acids as a byproduct during degradation of hydrocarbons. These fatty acids react with carbonate mineral substrates to release carbonate into solution, causing alkalinity of groundwater to increase. Elevated alkalinity therefore suggests that natural attenuation of hydrocarbons is occurring.

   Background monitor well MW-5 displayed an alkalinity of 234 mg/L during the current sampling event. Alkalinity was measured at respective concentrations of 279 mg/L and 386 mg/L in former field waste tanks area monitor wells MW-10 and MW-11A in December 2003. The elevated alkalinity values in monitor wells MW-10 and MW-11A may be a result of intrinsic bioremediation of residual hydrocarbons in these areas.

In conclusion, current nitrate and historic dissolved oxygen data suggest that these electron acceptors have been utilized during intrinsic bioremediation processes in the vicinity of the former field waste tanks area of the facility. Data for ferrous iron also indicates utilization of ferric iron as an electron acceptor in this area of the facility. Alkalinity data provide further evidence of natural attenuation of hydrocarbons at the former field waste tanks area.

It is recommended that monitoring for natural attenuation evaluation parameters continue during future sampling events of former field waste tank area monitor wells MW-10, MW-11A, and MW-12D and the background well, MW-5. Redox potential, dissolved oxygen content, ferrous iron content, and alkalinity serve as good indicators of the occurrence of intrinsic bioremediation of hydrocarbons, so testing for these parameters in all wells to be sampled during future groundwater monitoring events is recommended.

3.3 Chloride Evaluation

Based on NMOCD concerns regarding potential chloride impact to downgradient water wells, BJ Services investigated chloride impact to groundwater at and in the vicinity of its Hobbs, New Mexico facility. Figure 4 presents a map of chloride distribution in groundwater, based on the most recent chloride concentration datum available for each well (see Table 4). The data presented in Figure 4 suggest that the former field wastes tanks at the BJ Services facility may have served as a

source of chloride impact to groundwater within the facility, based on exceedances of the NMWQCC chloride standard of 250 mg/L in this area. Previous groundwater sampling conducted by BJ Services at the on-site nested monitor well MW-12/MW-12D location indicated that the degree of chloride impact to groundwater decreased with depth within the uppermost aquifer at the facility (see Table 4).

Groundwater modeling conducted by Brown and Caldwell prior to installation of off-site monitor well MW-16 indicated an anticipated chloride concentration of less than 250 mg/L at the proposed downgradient monitor well MW-16 location east of the BJ Services facility, based on historic data that defined an eastward decrease in chloride concentrations within the BJ Services facility. Specifically, historic chloride concentrations in the area of monitor wells MW-11 and MW-11A, which are located in proximity to BJ Services' former field waste tanks, ranged from 834 mg/L to 3,400 mg/L whereas chloride concentrations in the area of monitor wells MW-14 and MW-15, which are located further east within the BJ Services facility, ranged from 123 mg/L to 368 mg/L.

Off-site monitor well MW-16 has been sampled four times since its installation in May 2003, with chloride concentrations in the well ranging from 823 mg/L to 983 mg/L. During the post-May 2003 time period, chloride concentrations in wells at the BJ Services facility have remained consistent with previous chloride data. Chloride concentrations in monitor wells MW-14 and MW-15, which are located in the eastern portion of the BJ Services facility, have ranged from 123 mg/L to 298 mg/L since May 2003, and chloride was detected at a concentration of 3,240 mg/L in monitor well MW-11A in October 2003. The elevated chloride concentrations detected in monitor well MW-16 suggest the presence of a separate, off-site source of chloride impact to groundwater east of the BJ Services facility. The previously documented eastward decrease in chloride concentrations within the BJ Services facility indicates that groundwater chloride concentrations would likely be at or below 250 mg/L at the eastern boundary of the BJ Services facility if there was no off-site source of chloride impact, as indicated in Figure 4.

To confirm the suspected off-site source of chloride impact, Brown and Caldwell conducted a search of NMOCD files relating to permitted oil & gas exploration and production activities in the

area (see Section 3.3.1). In addition, Brown and Caldwell obtained several historical aerial photographs depicting industrial development in the vicinity (see Section 3.3.2). Section 3.3.3 presents the results of a current water well search conducted by Brown and Caldwell to determine whether water wells are present downgradient of the BJ Services facility. Section 3.3.4 summarizes chloride impact to groundwater at and in the vicinity of the BJ Services Hobbs, New Mexico facility.

3.3.1 Oil & Gas Well Search

Brown and Caldwell performed a search of NMOCD files to determine whether permitted drilling activities have been conducted to the east of the BJ Services facility. This search, which is fully documented in Appendix C, indicates the presence of an active injection well located approximately 1/8-mile east/northeast of the northeast corner of the BJ Services facility (i.e., Well No. 4, as identified in Appendix C). Injection wells are used for disposal of oil-field wastes, including saltwater produced from subsurface formations. Waste fluids are typically delivered to an injection well site by truck or surface piping, and are usually stored in tanks, where separation of solids and oil from saltwater occurs. Waste materials are then injected under pressure into suitable geologic formations in the deep subsurface. The reported total depth of the active injection well located east/northeast of the BJ Services facility is 4,441 feet. Under this general operational scenario, mechanisms by which chloride impact to shallow groundwater can occur include one or more of the following:

- Spillage from trucks delivering oil-field wastes, including saltwater, to the injection well site;
- Leakage of oil-field wastes, including saltwater, from surface piping used for conveyance of wastes to the injection well site;
- Leakage of oil-field wastes, including saltwater, from storage/separation tanks at the injection well site; and
- Leakage of wastes from the injection well into the shallow subsurface during high-pressure injection activities.

The oil & gas well search presented in Appendix C also located 14 oil wells within an approximate ½-mile radius north, east, and south of the BJ Services facility. The oil & gas well search was not extended to the west of the BJ Services facility.

The high degree of oil & gas exploration and production activity in the area of the BJ Services facility and, in particular, the saltwater injection well located east of the facility suggest that off-site sources of chloride impact to groundwater are likely.

3.3.2 Historical Aerial Photographs

Appendix D contains a series of aerial photographs that show the BJ Services facility and its surroundings at the following times:

- 1997;
- 1986;
- 1977;
- 1966; and
- 1949.

The 1997 aerial photograph (Figure D-1) shows the rectangular BJ Services facility and the pie-shaped Weatherford Enterra facility located to its north. These facilities are located east and southeast of West County Road, which runs northward, then northeastward, through the area. The 1997 aerial photograph also shows an apparently non-vegetated area east of the BJ Services facility, near the monitor well MW-16 location (see also Figure 1). Field observations in October 2003 confirmed an area of stressed vegetation at this location. This area of stressed vegetation may be associated with operation of the nearby active injection well discussed in Section 3.3.1.

The 1986 aerial photograph is presented as Figure D-2. The BJ Services facility and the Weatherford Enterra facility are visible in Figure D-2. The 1986 aerial photograph shows the same non-vegetated area east of the BJ Services facility, near the monitor well MW-16 location, as was shown in the 1997 aerial photograph. The presence of numerous other non-vegetated areas,

especially to the south and southeast of the BJ Services facility, suggests an increased level of oil & gas exploration and production activities in the area in 1986 relative to 1997. A surface impoundment or similar structure appeared to be present on property to the west of the BJ Services facility in 1986.

Figure D-3 is a 1977 aerial photograph of the area. The BJ Services facility is visible in Figure D-3, but the Weatherford Enterra facility had not been developed in 1977. The 1977 aerial photograph shows the same non-vegetated area east of the BJ Services facility, near the monitor well MW-16 location, as was shown in the 1997 and 1986 aerial photographs. The level of oil & gas exploration and production activities in the area in 1977 appears to be comparable to that suggested in the 1986 aerial photograph. Three to four settling basins or similar structures were present on the property to the west of the BJ Services facility in 1977.

The 1966 aerial photograph is presented as Figure D-4. The BJ Services facility had not been developed in 1966. The 1966 aerial photograph shows the same non-vegetated area east of the BJ Services facility, near the monitor well MW-16 location, as was shown in the 1997, 1986, and 1977 aerial photographs. The same settling basins or similar structures that were shown on the property to the west of the BJ Services facility in the 1977 aerial photograph are also visible in the 1966 aerial photograph.

The 1949 aerial photograph, which is presented as Figure D-5, shows the presence of settling basins or similar structures on the property immediately south or southeast of the eastern portion of the present-day BJ Services facility.

Thus, the historic aerial photographs presented in Appendix D document oil & gas-related exploration and production activities that have been conducted in the vicinity of the BJ Services facility over the past 55 years. At least three possible off-site sources of chloride impact to groundwater are indicated in these photographs. These possible off-site sources are as follows:

- The non-vegetated area east of the BJ Services facility, near the monitor well MW-16 location, as indicated in the 1997, 1986, and 1977 aerial photographs, may have been the location of an oil well and associated brine pits, and may be or have been associated with operation of the nearby active injection well;
- The surface impoundment and/or settling basins on the property located immediately west of the BJ Services facility, as indicated in the 1986, 1977, and 1966 aerial photographs, which may have been used for management of saltwater produced from local oil wells; and
- The settling basins or similar structures on the property immediately south or southeast of the eastern portion of the BJ Services facility, as indicated in the 1949 aerial photograph, which may also have may have been used for management of saltwater produced from local oil wells.

3.3.3 Water Well Search

Brown and Caldwell obtained a current water well search within a 1-mile radius of the BJ Services facility to determine whether downgradient water wells are present east of the facility. This water well search, which is fully documented in Appendix E, indicates the presence of one generally downgradient water well. This well, which is identified as Well No. 4 in Appendix E, is owned by the City of Eunice and is located approximately ½ mile east/southeast of the BJ Services facility. This well is not currently used.

3.3.4 Summary

The historic and current eastward decreases in chloride concentrations within the BJ Services facility, as described herein, indicate that chloride concentrations in groundwater to the east of the BJ Services facility would likely be at or below 250 mg/L if an apparent off-site source of chloride impact was not present. The elevated chloride concentrations detected in off-site monitor well MW-16 are apparently attributable to one or more off-site sources. Potential sources of chloride impact east of the BJ Services facility include an active injection well and historic oil & gas exploration and production activities conducted in this area, as documented in NMOCD files and historic aerial photographs. There are no currently active water wells within a 1-mile radius downgradient of the BJ Services facility that are affected by this chloride impact. Based on these

findings, further investigation by BJ Services into the occurrence of chloride at and in the vicinity of its Hobbs, New Mexico facility is unwarranted.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on information obtained during the December 2003 and previous groundwater sampling events at the BJ Services Hobbs, New Mexico facility.

4.1 Conclusions

- Operation of the biospraging system installed in the area of the former fuel island at the facility has successfully remediated soil and groundwater impacts to meet performance requirements specified in the RAP for this portion of the facility.
- The substantial reduction in hydrocarbon concentrations in the vicinity of the former field waste tanks is attributable to natural attenuation of hydrocarbons, based on generally decreasing hydrocarbon concentrations in applicable monitor wells over time and as substantiated by geochemical data. Current benzene concentrations in all former field waste tanks area monitor wells are less than the NMWQCC standard of 0.01 mg/L for benzene. Benzene concentrations in all former field waste tanks area monitor wells have been less than the NMWQCC benzene standard of 0.01 mg/L during each of the last four quarterly groundwater sampling events.
- The chloride concentration measured in downgradient monitor well MW-14 during the current 2003 groundwater sampling event remains less than the NMWQCC standard of 250 mg/L. The chloride concentrations in monitor wells MW-15 and MW-16 exceed the NMWQCC chloride standard, however. Elevated chloride concentrations in groundwater east of the BJ Services facility are apparently attributable to one or more off-site sources. In the absence of these apparent sources, chloride impact attributable to the onsite source would likely be at or below the NMWQCC standard of 250 mg/L at the eastern boundary of the BJ Services facility.

4.2 Recommendations

- Upon approval from the NMOCD, decommission the biosparging system at the former fuel island area.
- Given that the removal of the former field waste tanks and associated impacted soil in March 1997 constituted effective source removal and that constituent concentrations in all applicable wells have been less than applicable NMWQCC standards for four consecutive quarterly groundwater sampling events, closure for the former field waste tanks area is recommended.

- Given that chloride impact to groundwater attributable to the BJ Services facility at concentrations exceeding the NMWQCC standard of 250 mg/L appears to be limited to the BJ Services facility and there is no current downgradient usage of groundwater within 1 mile of the facility, BJ Services should discontinue sampling and analysis pertaining to chloride impact to groundwater within the uppermost aquifer at and in the vicinity of its Hobbs, New Mexico facility.
- Given that BJ Services has demonstrated compliance with regard to hydrocarbon impacts at the former fuel island and former field waste tanks source area and with regard to chloride issues, granting of overall site closure by NMOCD, with no additional groundwater monitoring activities, is recommended.

DISTRIBUTION

December 2003 Groundwater Sampling Report
BJ Services Company, U.S.A.
Hobbs, New Mexico

July 16, 2004

Final Distribution as follows:

1 copy to: State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Wayne Price

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Oil Conservation Division, Hobbs District Office
1625 N. French Dr.
Post Office Box 1980
Hobbs, New Mexico 88240

Attention: Mr. Chris Williams

1 copy to: BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240

Attention: John Adcock

1 copy to: BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

Attention: Ms. Jo Ann Cobb

1 copy to: Brown and Caldwell Project File

QUALITY CONTROL REVIEWER

Lynn M. Wright, P.G.
Supervising Geologist

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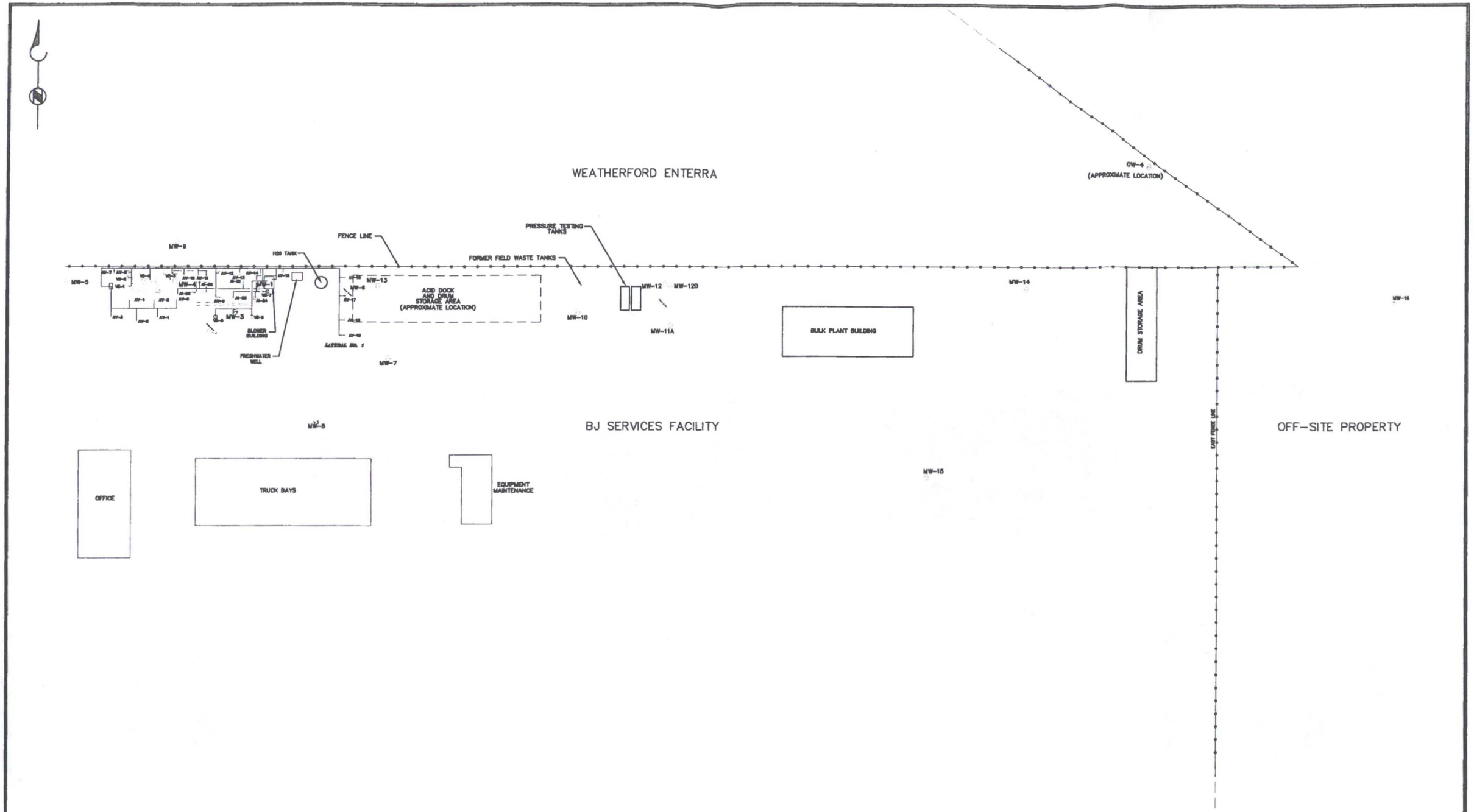
FIGURES



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BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

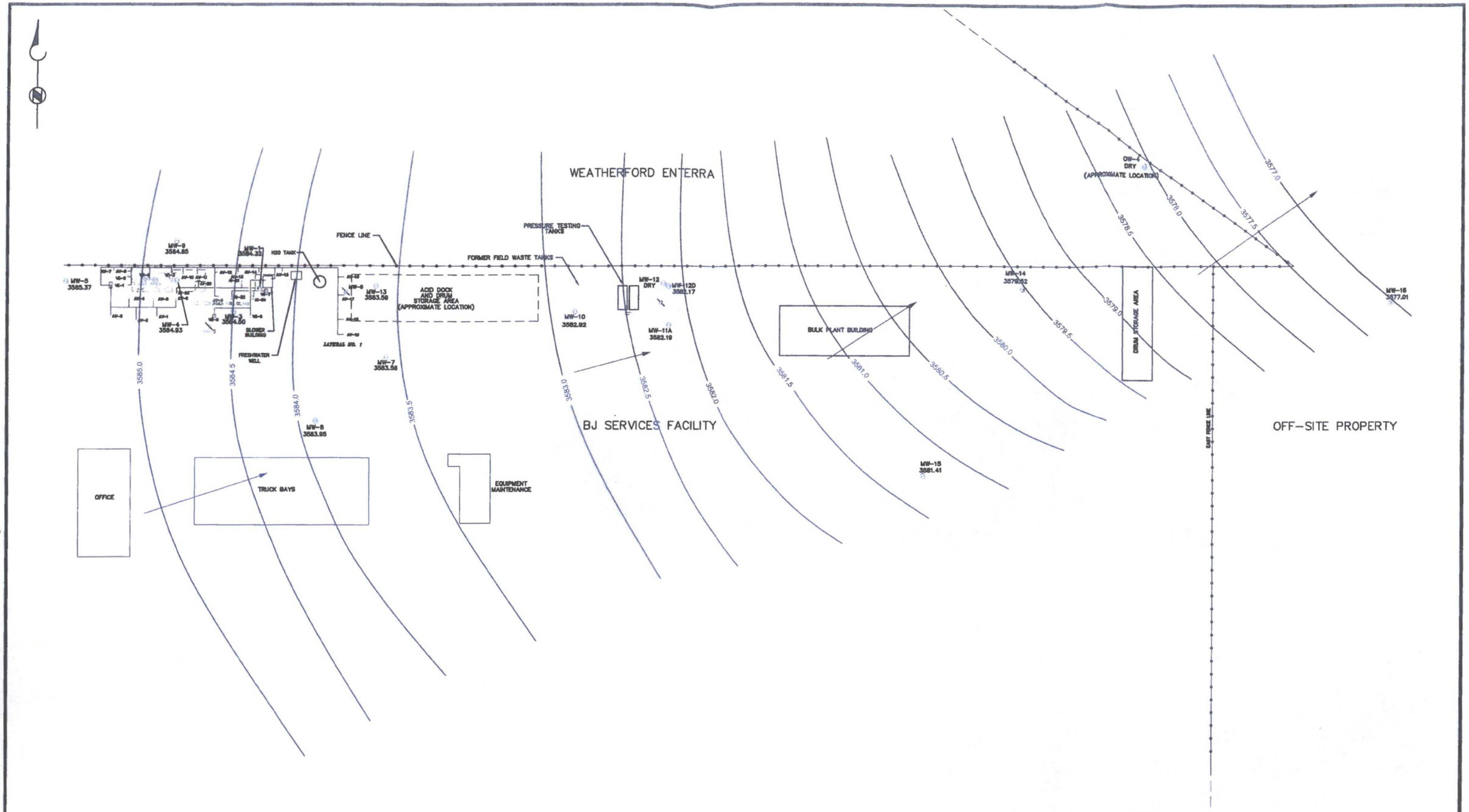
0 60 90
SCALE: 1" = 90'

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-3	EXISTING MONITOR WELL LOCATION
	BIOSPARGING SYSTEM
MW-2	MONITOR WELL (PLUGGED AND ABANDONED)

TITLE: SITE MAP	DATE: 9/11/00
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.018
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 60 90
SCALE: 1" = 90'

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

3584.93 MW-4 — EXISTING MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (FEET AMSL)

BIOSPARGING SYSTEM

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

GROUNDWATER FLOW DIRECTION

NM = NOT MEASURED

TITLE: GROUNDWATER ELEVATION MAP FOR DECEMBER 17, 2003	DATE: 10/15/03
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.018
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 2

Dec 30, 2003 - 10:36am ckelly
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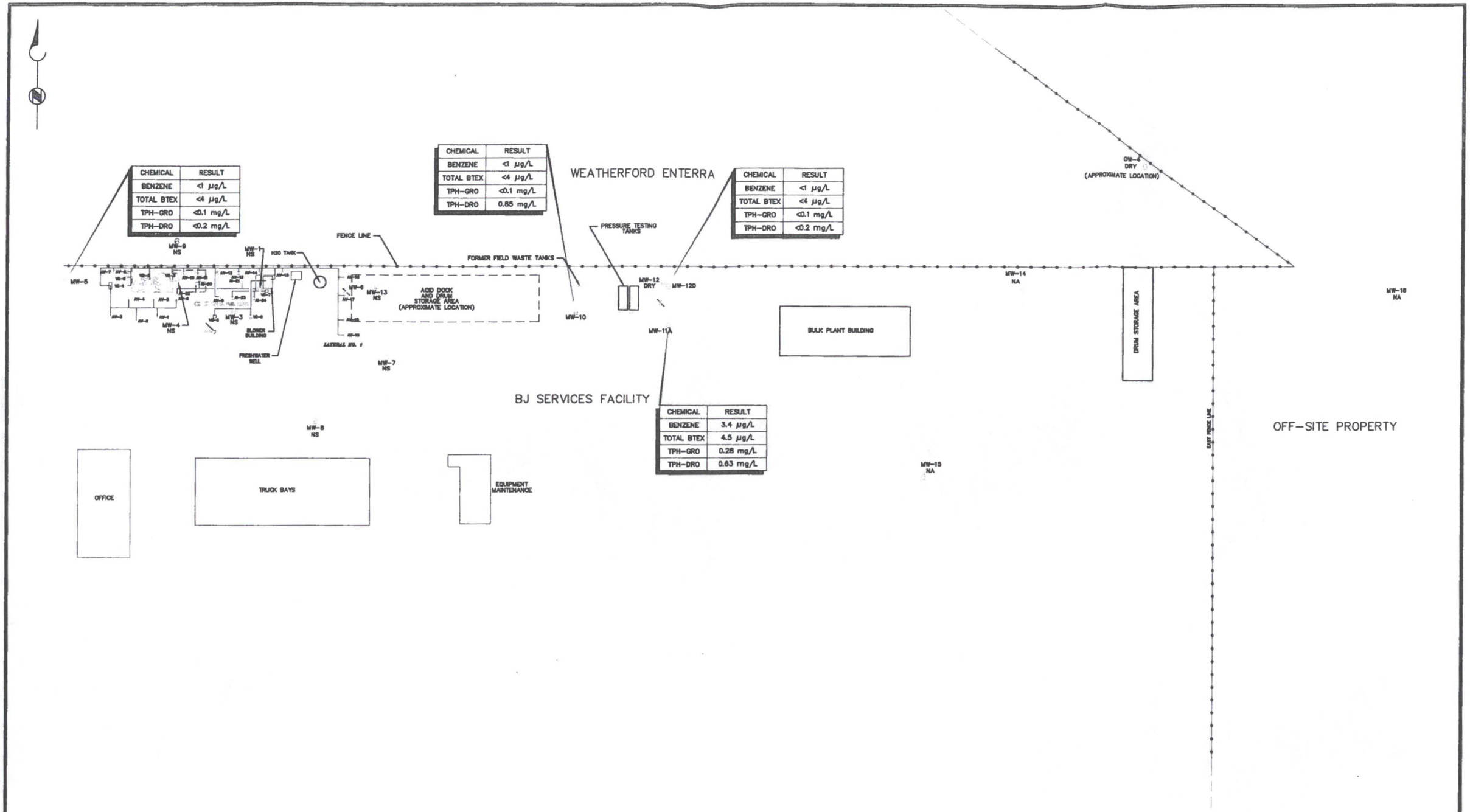

CHEMICAL	RESULT
BENZENE	<1 µg/L
TOTAL BTEX	<4 µg/L
TPH-GRO	<0.1 mg/L
TPH-DRO	<0.2 mg/L

CHEMICAL	RESULT
BENZENE	<1 µg/L
TOTAL BTEX	<4 µg/L
TPH-GRO	<0.1 mg/L
TPH-DRO	0.85 mg/L

CHEMICAL	RESULT
BENZENE	<1 µg/L
TOTAL BTEX	<4 µg/L
TPH-GRO	<0.1 mg/L
TPH-DRO	<0.2 mg/L

CHEMICAL	RESULT
BENZENE	3.4 µg/L
TOTAL BTEX	4.5 µg/L
TPH-GRO	0.28 mg/L
TPH-DRO	0.63 mg/L

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BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

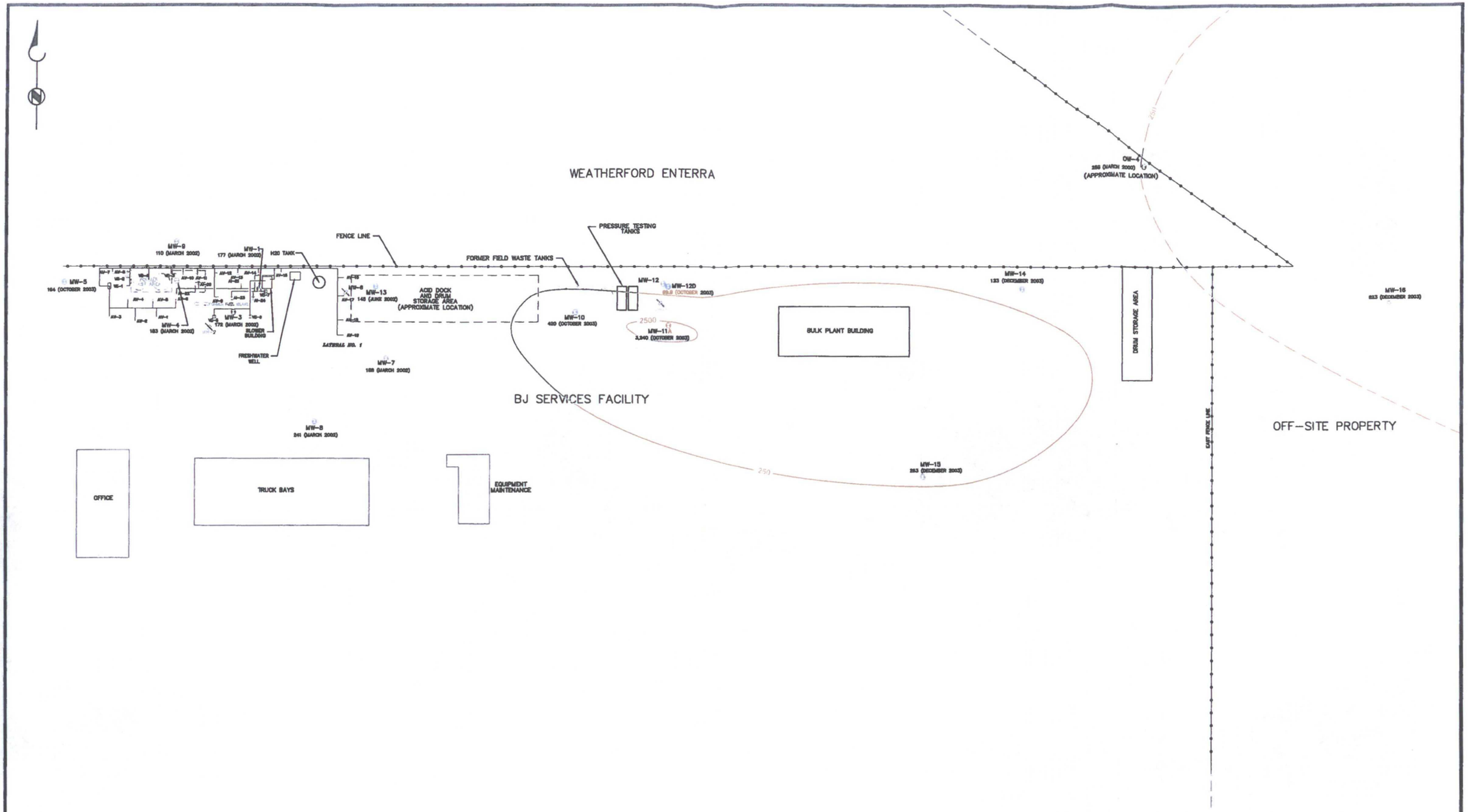
0 60 90
SCALE: 1" = 90'
DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-3 EXISTING MONITOR WELL LOCATION
BIOSPARGING SYSTEM
MW-2 MONITOR WELL (PLUGGED AND ABANDONED)
GROUNDWATER FLOW DIRECTION

NS = NOT SAMPLED
NA = NOT ANALYZED

TITLE: HYDROCARBON DISTRIBUTION MAP FOR DECEMBER 18, 2003
DATE: 9/11/00
CLIENT: BJ SERVICES COMPANY, U.S.A.
PROJECT NUMBER: 12832.018
SITE: HOBBS, NEW MEXICO
FIGURE NUMBER: 3



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 60 90
SCALE: 1" = 90'

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-3 / 183 (MARCH 2002)	MONITOR WELL LOCATION, WITH MOST RECENT CHLORIDE CONCENTRATION (mg/L) AND DATE
	BIOSPARGING SYSTEM
MW-2	MONITOR WELL (PLUGGED AND ABANDONED)
	CHLORIDE ISOCONCENTRATION LINE (CONTOUR INTERVAL = LOGARITHMIC)

TITLE: CHLORIDE DISTRIBUTION IN GROUNDWATER	DATE: 9/11/00
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.018
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 4

Jan 27, 2004 - 11:15am ckelly
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TABLES

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

Date	Activity
February 7, 1991	The New Mexico Oil Conservation Division (NMOCD) conducted an on-site inspection, including sampling of the on-site fresh water well.
August 6, 1991	The NMOCD requested submittal of an investigation work plan.
September 5, 1991	Roberts/Schornick and Associates, Inc. (RSA) submitted Technical Work Plan for soil and groundwater investigation to the NMOCD.
November 15, 1991	The NMOCD approved the Technical Work Plan submitted by RSA.
December 16, 1991	RSA sampled the fresh water well. The analytical results were submitted to the NMOCD.
February 21, 1992	Western sampled the fresh water well. The analytical results were submitted to the NMOCD.
July 29 - August 10, 1992	Brown and Caldwell conducted a soil and groundwater investigation according to the approved Technical Work Plan. The investigation included drilling and sampling nine soil borings, sampling six hand-augured soil borings, installation and sampling of five monitor wells, and sampling of the fresh water well.
October 12, 1992	Brown and Caldwell submitted a Soil and Groundwater Investigation Report to the NMOCD.
December 2, 1992	The NMOCD requested the installation and sampling of four additional monitor wells, including a monitor well on an adjacent property.
April 13, 1993	Brown and Caldwell conducted a vapor extraction pilot test on the existing monitor wells.
April 15, 1993	Brown and Caldwell installed off-site monitor well MW-9.
April 22, 1993	Brown and Caldwell sampled off-site monitor well MW-9.
May 27, 1993	Brown and Caldwell submitted a letter report documenting the installation and sampling of off-site monitor well MW-9 to the NMOCD.
June 2, 1993	Brown and Caldwell conducted a short-term aquifer test using the fresh water well at the facility.
June 8, 1993	USTank Management, Inc. conducted a non-volumetric tank system tightness test on the diesel and unleaded gasoline aboveground storage tanks at the facility.
June 21, 1993	ENSR Consulting and Engineering (ENSR), the environmental consultant for the adjacent property owner on which off-site well MW-9 is located, submitted a request to sample monitor well MW-9.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

July 15, 1993	ENSR split a groundwater sample collected from monitor well MW-9 with Brown and Caldwell.
July 30, 1993	USTank Management, Inc. submitted a tank tightness test report to Brown and Caldwell. The report indicated that both tanks and their associated piping passed.
August 16-19, 1993	Brown and Caldwell installed two additional downgradient monitor wells. Brown and Caldwell sampled each of the existing and newly installed monitor wells.
January 26, 1994	Brown and Caldwell performed a groundwater monitoring event; the existing monitor wells and the fresh water well were purged and sampled. The groundwater samples were analyzed for BTEX.
May 6, 1994	A Remedial Action Plan (RAP) was submitted to the NMOCD.
August 11, 1994	The RAP was approved by the NMOCD.
May 3, 1995	Brown and Caldwell conducted the May 1995 groundwater sampling event.
July 31, 1995	Brown and Caldwell conducted the July 1995 groundwater sampling event.
August 2-9, 1995	Installation of the biosparging system was initiated. Nineteen combined injection/extraction wells and three vacuum extraction wells were installed.
August 14-26, 1995	Remedial Construction Services, Inc. (RCS) constructed the initial design of the biosparging system.
September 19, 1995	Operation of the extraction portion of the biosparging system commenced.
November 13, 1995	Operation of the injection portion of the biosparging system commenced.
November 14, 1995	Brown and Caldwell conducted the November 1995 groundwater sampling event.
February 23, 1996	Brown and Caldwell conducted the February 1996 groundwater sampling event.
May 31, 1996	Brown and Caldwell conducted the May 1996 groundwater sampling event.
August 23, 1996	Brown and Caldwell conducted the August 1996 groundwater sampling event.
December 2, 1996	Brown and Caldwell conducted the December 1996 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

March 6-7, 1997	BJ Services removed three field waste tanks and associated hydrocarbon-impacted soil.
March 12, 1997	Brown and Caldwell conducted the March 1997 groundwater sampling event.
March 14, 1997	Vapor extraction well VE-4 was installed.
April 1997	Vapor extraction well VE-4 was connected to the vapor extraction system.
June 12, 1997	Brown and Caldwell conducted the June 1997 groundwater sampling event.
September 11-12, 1997	Brown and Caldwell conducted the September 1997 groundwater sampling event.
December 10, 1997	Brown and Caldwell conducted the December 1997 groundwater sampling event.
February 3-14, 1998	Air injection wells AI-20 through AI-24, vapor extraction wells VE-5 through VE-7, and monitor wells MW-11A and MW-12 were installed.
February 19, 1998	Operation of previously existing injection wells was suspended in preparation for start-up of new injection wells AI-20 through AI-24.
March 10, 1998	Operation of new air injection wells AI-20 through AI-24 and new vapor extraction wells VE-5 through VE-7 commenced.
March 23-24, 1998	Brown and Caldwell conducted the March 1998 groundwater sampling event.
March 24, 1998	Operation of previously existing injection wells and vapor extraction wells resumed.
June 23, 1998	Brown and Caldwell conducted the June 1998 groundwater sampling event.
September 30, 1998	Brown and Caldwell conducted the September 1998 groundwater sampling event.
December 9-10, 1998	Brown and Caldwell conducted the December 1998 groundwater sampling event.
January 21, 1999	The NMOCD requested submittal of a work plan by March 22, 1999 to perform additional groundwater delineation in the area of the former field waste tanks and the former AST/MW-6 area.
March 9-10, 1999	Brown and Caldwell conducted the March 1999 groundwater sampling event.
March 19, 1999	Brown and Caldwell submitted the work plan for groundwater delineation activities that was requested by the NMOCD.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

May 19, 1999	The NMOCD approved the groundwater delineation work plan.
June 10, 1999	Brown and Caldwell performed sampling of existing monitor wells for the June /July 1999 groundwater sampling event.
July 2, 1999	Brown and Caldwell completed plugging and abandonment of monitor wells MW-2, MW-6, and MW-11; installed and developed monitor wells MW-12D and MW-13; and sampled monitor wells MW-12D and MW-13 to complete the June/July 1999 groundwater sampling event.
July 14, 1999	Brown and Caldwell redirected air discharge from the shallow injection well injection system to Lateral No. 1 and optimized air flow to injection wells AI-16 and AI-17 to apply increased remedial pressure to the eastern portion of the west plume.
September 13-14, 1999	Brown and Caldwell conducted the September 1999 groundwater sampling event.
December 9, 1999	Brown and Caldwell conducted the December 1999 groundwater sampling event.
March 9-10, 2000	Brown and Caldwell conducted the March 2000 groundwater sampling event and shut off air flow to biosparging system Lateral Nos. 4S, 5S, 6S, and 7S.
June 8, 2000	Brown and Caldwell conducted the June 2000 groundwater sampling event.
September 13, 2000	Brown and Caldwell conducted the September 2000 groundwater sampling event.
November 1, 2000	Brown and Caldwell deactivated the biosparging system.
December 7, 2000	Brown and Caldwell conducted the December 2000 groundwater sampling event.
January 2001	Brown and Caldwell installed and sampled monitor wells MW-14 and MW-15.
March 8-9, 2001	Brown and Caldwell conducted the March 2001 groundwater sampling event.
June 21-22, 2001	Brown and Caldwell conducted the June 2001 groundwater sampling event.
July 23, 2001	Brown and Caldwell collected soil samples from four soil borings installed at the former fueling system area of the facility to confirm the effectiveness of the biosparging system in remediating hydrocarbon impact to soil, as specified in the NMOCD-approved RAP.
September 10, 2001	Brown and Caldwell conducted the September 2001 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

December 6, 2001	Brown and Caldwell conducted the December 2001 groundwater sampling event.
February 26, 2002	Brown and Caldwell repaired the crushed well completion on monitor well MW-10.
February 28, 2002	NMOCD requested an evaluation of chloride content of groundwater at the facility.
March 11-12, 2002	Brown and Caldwell conducted the March 2002 groundwater sampling event. Groundwater samples from all water-producing wells at the facility were analyzed for chloride content.
May 21, 2002	Brown and Caldwell submitted the report for the March 2002 groundwater sampling event, including an evaluation of chloride content of groundwater at the facility and a recommendation for installation of a downgradient off-site well (MW-16) to replace off-site well OW-4, which has gone dry.
June 17-18, 2002	Brown and Caldwell conducted the June 2002 groundwater sampling event.
September 16, 2002	Brown and Caldwell conducted the September 2002 groundwater sampling event.
November 11, 2002	Brown and Caldwell submitted the June 2002 Groundwater Sampling Report and Biosparging System Closure Report.
January 9, 2003	Brown and Caldwell conducted the January 2003 groundwater sampling event.
March 6, 2003	Brown and Caldwell conducted the March 2003 groundwater sampling event.
May 13, 2003	Brown and Caldwell installed monitor well MW-16 at a location to the west of the facility.
June 19, 2003	Brown and Caldwell initiated the June 2003 groundwater sampling event.
August 22, 2003	Brown and Caldwell completed the June 2003 groundwater sampling event.
October 2, 2003	Brown and Caldwell conducted the October 2003 groundwater sampling event.
December 17-18, 2003	Brown and Caldwell conducted the December 2003 groundwater sampling event.

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-1	3,647.53	8/10/1992	53.22	0.00	3,594.31	(1)
		2/9/1993	53.03	0.00	3,594.50	
		8/18/1993	53.10	0.00	3,594.43	
		1/26/1994	53.31	0.00	3,594.22	
		5/3/1995	54.64	0.20	3,593.05	(2)
		7/31/1995	54.14	0.00	3,593.39	
		11/14/1995	53.69	0.00	3,593.84	
		2/23/1996	54.32	0.00	3,593.21	
		5/31/1996	54.14	0.00	3,593.39	
		8/23/1996	56.17	0.00	3,591.36	
		12/2/1996	55.27	0.00	3,592.26	
		3/12/1997	55.70	0.27	3,592.05	
		6/12/1997	55.08	0.02	3,592.47	
		9/12/1997	55.64	0.51	3,592.31	
		12/10/1997	55.46	0.00	3,592.07	PSH Sheen
		3/24/1998	55.81	0.00	3,591.72	PSH Sheen
		6/23/1998	56.38	0.06	3,591.20	
		9/30/1998	56.82	0.00	3,590.71	PSH Sheen
		12/9/1998	57.05	0.00	3,590.48	
		3/10/1999	57.45	0.00	3,590.08	
		6/10/1999	58.02	0.00	3,589.51	
		7/2/1999	57.90	0.00	3,589.63	
		9/14/1999	58.14	0.00	3,589.39	
		12/9/1999	-	-	-	(3)
		3/9/2000	58.99	0.00	3,588.54	
		06/00	-	-	-	
		09/00	-	-	-	
		12/7/00	-	-	-	
		3/8/2001	60.35	0.00	3,587.18	
		6/21/01	60.99	0.00	3,586.54	
		9/10/01	61.17	0.00	3,586.36	
		12/6/2001	not measured			
		03/11/02	62.11	0.00	3,585.42	
		6/17/02	62.53	0.00	3,585.00	
		9/16/2002	62.43	0.00	3,585.10	
		1/9/2003	62.61	0.00	3,584.92	
		3/6/2003	62.72	0.00	3,584.81	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	62.97	0.00	3,584.56	
		12/17/2003	63.21	0.00	3,584.32	
MW-2	3,644.84	8/10/1992	52.82	0.00	3,592.02	(1)
		2/9/1993	49.60	0.00	3,595.24	
		8/18/1993	49.71	0.00	3,595.13	
		1/26/1994	49.97	0.00	3,594.87	
		5/3/1995	-	-	-	(4),(5)
MW-3	3,645.00	8/10/1992	52.99	0.00	3,592.01	(1)
		2/9/1993	52.72	0.00	3,592.28	
		8/18/1993	52.82	0.00	3,592.18	
		1/26/1994	53.05	0.00	3,591.95	
		5/3/1995	54.31	0.00	3,590.69	
		7/31/1995	51.24	0.00	3,593.76	
		11/14/1995	51.10	0.00	3,593.90	
		2/23/1996	51.68	0.00	3,593.32	
		5/31/1996	51.45	0.00	3,593.55	
		8/23/1996	51.55	0.00	3,593.45	
		12/2/1996	52.23	0.00	3,592.77	
		3/12/1997	52.67	0.00	3,592.33	
		6/12/1997	52.68	0.00	3,592.32	
		9/11/1997	52.71	0.00	3,592.29	
		12/10/1997	52.89	0.00	3,592.11	
		3/23/1998	53.22	0.00	3,591.78	
		6/23/1998	53.66	0.00	3,591.34	
		9/30/1998	54.06	0.00	3,590.94	
		12/9/1998	54.36	0.00	3,590.64	
		3/10/1999	54.72	0.00	3,590.28	
		6/10/1999	55.17	0.00	3,589.83	
		7/2/1999	55.15	0.00	3,589.85	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-3 cont.	3,645.00	9/14/1999	55.42	0.00	3,589.58	
		12/9/1999	55.78	0.00	3,589.22	
		3/9/2000	56.23	0.00	3,588.77	
		6/8/2000	56.66	0.00	3,588.34	
		9/13/2000	56.77	0.00	3,588.23	
		12/7/2000	57.15	0.00	3,587.85	
		3/8/2001	57.69	0.00	3,587.31	
		6/21/01	58.34	0.00	3,586.66	
		9/10/01	58.54	0.00	3,586.46	
		12/6/2001	59.04	0.00	3,585.96	
		3/11/2002	59.50	0.00	3,585.50	
		6/17/02	59.83	0.00	3,585.17	
		9/16/2002	59.80	0.00	3,585.20	
		1/9/2003	60.01	0.00	3,584.99	
		3/6/2003	60.10	0.00	3,584.90	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	60.34	0.00	3,584.66	
		12/17/2003	60.50	0.00	3,584.50	
MW-4	3,645.28	8/10/1992	50.55	0.00	3,594.73	(1)
		2/9/1993	50.26	0.00	3,595.02	
		8/18/1993	50.38	0.00	3,594.90	
		1/26/1994	50.90	0.30	3,594.63	
		5/3/1995	51.51	0.45	3,594.14	
		7/31/1995	51.74	0.26	3,593.75	
		11/14/1995	51.03	0.00	3,594.25	
		2/23/1996	51.65	0.01	3,593.64	
		5/31/1996	51.48	0.00	3,593.80	
		8/23/1996	53.49	0.00	3,591.79	
		12/2/1996	52.32	0.00	3,592.96	
		3/12/1997	52.74	0.05	3,592.58	
		6/12/1997	53.08	0.44	3,592.56	
		9/12/1997	52.60	0.15	3,592.80	
		12/10/1997	52.89	0.00	3,592.39	PSH Sheen
		3/24/1998	53.20	0.25	3,592.29	
		6/23/1998	53.82	0.22	3,591.64	
		9/30/1998	53.96	0.00	3,591.32	200 ml PSH
		12/9/1998	54.27	0.00	3,591.01	
		3/10/1999	54.69	0.04	3,590.62	
		6/10/1999	55.07	0.00	3,590.21	
		7/2/1999	55.10	0.00	3,590.18	
		9/14/1999	55.33	0.00	3,589.95	
		12/9/1999	55.79	0.00	3,589.49	
		3/10/2000	56.12	0.00	3,589.16	
		6/8/2000	56.67	0.00	3,588.61	
		9/13/2000	56.65	0.00	3,588.63	
		12/7/2000	57.05	0.00	3,588.23	
		3/8/2001	57.72	0.00	3,587.56	
		6/21/01	58.18	0.00	3,587.10	
		9/10/01	58.54	0.00	3,586.74	
		12/6/2001	58.88	0.00	3,586.40	
		3/11/2002	59.41	0.00	3,585.87	
		6/17/02	59.67	0.00	3,585.61	
		9/16/2002	59.71	0.00	3,585.57	
		1/9/2003	59.91	0.00	3,585.37	
		3/6/2003	60.03	0.00	3,585.25	
		6/19/2003	60.16	0.00	3,585.12	
		10/2/2003	60.30	0.00	3,584.98	
		12/17/2003	60.35	0.00	3,584.93	
MW-5	3,647.72	8/10/1992	52.38	0.00	3,595.34	(1)
		2/9/1993	52.06	0.00	3,595.66	
		8/18/1993	52.16	0.00	3,595.56	
		1/26/1994	52.50	0.00	3,595.22	
		5/3/1995	53.57	0.00	3,594.15	
		7/31/1995	53.27	0.00	3,594.45	
		11/14/1995	52.83	0.00	3,594.89	
		2/23/1996	53.57	0.00	3,594.15	
		5/31/1996	53.16	0.00	3,594.56	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-5 cont.	3,647.72	8/23/1996	53.41	0.00	3,594.31	
		12/2/1996	53.98	0.00	3,593.74	
		3/12/1997	54.44	0.00	3,593.28	
		6/12/1997	54.48	0.00	3,593.24	
		9/12/1997	54.29	0.00	3,593.43	
		12/10/1997	54.66	0.00	3,593.06	
		3/23/1998	55.05	0.00	3,592.67	
		6/23/1998	55.44	0.00	3,592.28	
		9/30/1998	55.65	0.00	3,592.07	
		12/9/1998	56.00	0.00	3,591.72	
		3/9/1999	56.45	0.00	3,591.27	
		6/10/1999	56.91	0.00	3,590.81	
		7/2/1999	56.93	0.00	3,590.79	
		9/14/1999	57.12	0.00	3,590.60	
		12/9/1999	57.41	0.00	3,590.31	
		3/9/2000	57.92	0.00	3,589.80	
		6/8/2000	58.32	0.00	3,589.40	
		9/13/2000	58.36	0.00	3,589.36	
		12/7/2000	58.71	0.00	3,589.01	
		3/8/2001	59.36	0.00	3,588.36	
		6/21/01	59.94	0.00	3,587.78	
		9/10/01	59.85	0.00	3,587.87	
		12/6/2001	60.56	0.00	3,587.16	
		3/11/02	61.12	0.00	3,586.60	
		6/17/02	61.43	0.00	3,586.29	
		9/16/2002	61.52	0.00	3,586.20	
		1/9/2003	61.75	0.00	3,585.97	
		3/6/2003	61.90	0.00	3,585.82	
		6/19/2003	62.01	0.00	3,585.71	
		10/2/2003	62.16	0.00	3,585.56	
		12/17/2003	62.35	0.00	3,585.37	
MW-6	3,644.74	2/9/1993	50.58	0.00	3,594.16	(1)
		8/18/1993	50.78	0.00	3,593.96	
		1/26/1994	51.00	0.00	3,593.74	
		5/3/1995	52.63	0.00	3,592.11	
		7/31/1995	51.90	0.00	3,592.84	
		11/14/1995	51.19	0.00	3,593.55	
		2/23/1996	52.10	0.00	3,592.64	
		5/31/1996	51.76	0.00	3,592.98	
		8/23/1996	51.63	0.00	3,593.11	
		12/2/1996	52.85	0.00	3,591.89	
		3/12/1997	53.55	0.00	3,591.19	
		6/12/1997	52.08	0.00	3,592.66	
		9/11/1997	53.72	0.00	3,591.02	
		12/10/1997	53.27	0.00	3,591.47	
		3/23/1998	53.56	0.00	3,591.18	
		6/23/1998	52.88	0.00	3,591.86	
		9/30/1998	54.89	0.00	3,589.85	
		12/9/1998	54.57	0.00	3,590.17	
		3/10/1999	55.10	0.00	3,589.64	
		7/2/1999	-	-	-	(5),(6)
MW-7	3,644.55	2/9/1993	50.53	0.00	3,594.02	(1)
		8/18/1993	50.74	0.00	3,593.81	
		1/26/1994	51.01	0.00	3,593.54	
		5/3/1995	52.25	0.00	3,592.30	
		7/31/1995	51.92	0.00	3,592.63	
		11/14/1995	51.48	0.00	3,593.07	
		2/23/1996	52.15	0.00	3,592.40	
		5/31/1996	51.78	0.00	3,592.77	
		8/23/1996	52.02	0.00	3,592.53	
		12/2/1996	52.52	0.00	3,592.03	
		3/12/1997	52.99	0.00	3,591.56	
		6/12/1997	53.08	0.00	3,591.47	
		9/11/1997	53.00	0.00	3,591.55	
		12/10/1997	53.28	0.00	3,591.27	
		3/23/1998	53.59	0.00	3,590.96	
		6/23/1998	54.20	0.00	3,590.35	
		9/30/1998	54.54	0.00	3,590.01	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-7 cont.	3,644.55	12/9/1998	54.74	0.00	3,589.81	
		3/9/1999	55.15	0.00	3,589.40	
		6/10/1999	55.66	0.00	3,588.89	
		7/2/1999	55.73	0.00	3,588.82	
		9/13/1999	55.94	0.00	3,588.61	
		12/9/1999	56.38	0.00	3,588.17	
		3/9/2000	56.74	0.00	3,587.81	
		6/8/2000	57.17	0.00	3,587.38	
		9/13/2000	57.40	0.00	3,587.15	
		12/7/2000	57.77	0.00	3,586.78	
		3/8/2001	58.29	0.00	3,586.26	
		6/21/01	58.91	0.00	3,585.64	
		9/10/01	59.25	0.00	3,585.30	
		12/6/2001	59.75	0.00	3,584.80	
		3/11/2002	60.03	0.00	3,584.52	
		6/17/02	60.39	0.00	3,584.16	
		9/16/2002	60.39	0.00	3,584.16	
		1/9/2003	60.53	0.00	3,584.02	
		3/6/2003	60.61	0.00	3,583.94	
		6/19/2003	60.73	0.00	3,583.82	
		10/2/2003	60.84	0.00	3,583.71	
		12/17/2003	60.99	0.00	3,583.56	
MW-8	3,644.87	2/9/1993	50.48	0.00	3,594.39	(1)
		8/18/1993	50.67	0.00	3,594.20	
		1/26/1994	50.96	0.00	3,593.91	
		5/3/1995	52.15	0.00	3,592.72	
		7/31/1995	51.77	0.00	3,593.10	
		11/14/1995	51.37	0.00	3,593.50	
		2/23/1996	52.17	0.00	3,592.70	
		5/31/1996	51.55	0.00	3,593.32	
		8/23/1996	51.92	0.00	3,592.95	
		12/2/1996	52.43	0.00	3,592.44	
		3/12/1997	52.93	0.00	3,591.94	
		6/12/1997	53.96	0.00	3,590.91	
		9/11/1997	52.73	0.00	3,592.14	
		12/10/1997	53.15	0.00	3,591.72	
		3/23/1998	53.51	0.00	3,591.36	
		6/23/1998	54.01	0.00	3,590.86	
		9/30/1998	54.35	0.00	3,590.52	
		12/9/1998	54.60	0.00	3,590.27	
		3/9/1999	55.00	0.00	3,589.87	
		6/10/1999	55.56	0.00	3,589.31	
		7/2/1999	55.57	0.00	3,589.30	
		9/13/1999	55.72	0.00	3,589.15	
		12/9/1999	-	-	-	(3)
		3/9/2000	56.52	0.00	3,588.35	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	58.11	0.00	3,586.76	
		6/21/01	58.72	0.00	3,586.15	
		9/10/01	58.94	0.00	3,585.93	
		12/6/2001	not measured			
		3/11/2002	59.94	0.00	3,584.93	
		6/17/02	60.22	0.00	3,584.65	
		9/16/2002	60.24	0.00	3,584.63	
		1/9/2003	60.42	0.00	3,584.45	
		3/6/2003	60.52	0.00	3,584.35	
		6/19/2003	60.63	0.00	3,584.24	
		10/2/2003	60.75	0.00	3,584.12	
		12/17/2003	60.92	0.00	3,583.95	
MW-9	3,644.78	4/22/1993	49.73	0.00	3,595.05	(1)
		7/15/1993	49.65	0.00	3,595.13	
		8/18/1993	49.85	0.00	3,594.93	
		1/26/1994	50.02	0.00	3,594.76	
		5/3/1995	51.35	0.00	3,593.43	
		7/31/1995	50.97	0.00	3,593.81	
		11/14/1995	50.43	0.00	3,594.35	
		2/23/1996	51.12	0.00	3,593.66	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-9 cont.	3,644.78	5/31/1996	50.89	0.00	3,593.89	
		8/23/1996	50.98	0.00	3,593.80	
		12/2/1996	51.58	0.00	3,593.20	
		3/12/1997	52.21	0.05	3,592.61	
		6/12/1997	52.10	0.00	3,592.68	PSH Sheen
		9/12/1997	51.95	0.00	3,592.83	PSH Sheen
		12/10/1997	52.37	0.00	3,592.41	PSH Sheen
		3/23/1998	52.68	0.00	3,592.10	PSH Sheen
		6/23/1998	53.08	0.00	3,591.70	PSH Sheen
		9/30/1998	53.39	0.01	3,591.40	PSH Sheen
		12/9/1998	53.68	0.00	3,591.10	
		3/10/1999	54.15	0.00	3,590.63	
		6/10/1999	54.68	0.00	3,590.10	
		7/2/1999	54.71	0.00	3,590.07	
		9/13/1999	54.71	0.00	3,590.07	
		12/9/1999	-	-	-	(3)
		3/9/2000	55.69	0.00	3,589.09	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	57.03	0.00	3,587.75	
		6/21/01	57.91	0.00	3,586.87	
		9/10/01	57.95	0.00	3,586.83	
		12/6/2001	not measured			
		3/11/2002	58.96	0.00	3,585.82	
		6/17/02	59.14	0.00	3,585.64	
		9/16/2002	not measured			
		1/9/2003	59.34	0.00	3,585.44	
		3/6/2003	59.48	0.00	3,585.30	
		6/19/2003	59.64	0.00	3,585.14	
		10/2/2003	59.76	0.00	3,585.02	
		12/17/2003	59.93	0.00	3,584.85	
MW-10	3,644.47	8/18/1993	51.54	0.00	3,592.93	(1)
		1/26/1994	51.90	0.00	3,592.57	
		5/3/1995	52.97	0.00	3,591.50	
		7/31/1995	52.87	0.00	3,591.60	
		11/14/1995	52.51	0.00	3,591.96	
		2/23/1996	53.05	0.00	3,591.42	
		5/31/1996	52.79	0.00	3,591.68	
		8/23/1996	53.03	0.00	3,591.44	
		12/2/1996	53.41	0.00	3,591.06	
		3/12/1997	54.21	0.00	3,590.26	
		6/12/1997	53.99	0.00	3,590.48	
		9/12/1997	53.94	0.00	3,590.53	
		12/10/1997	54.12	0.00	3,590.35	
		3/23/1998	54.51	0.00	3,589.96	
		6/23/1998	55.12	0.00	3,589.35	
		9/30/1998	55.61	0.00	3,588.86	
		12/9/1998	55.80	0.00	3,588.67	
		3/9/1999	56.09	0.00	3,588.38	
		6/10/1999	56.60	0.00	3,587.87	
		7/2/1999	56.64	0.00	3,587.83	
		9/14/1999	56.91	0.00	3,587.56	
		12/9/1999	57.37	0.00	3,587.10	
		3/10/2000	57.71	0.00	3,586.76	
		6/8/2000	58.08	0.00	3,586.39	
		9/13/2000	58.44	0.00	3,586.03	
		12/7/2000	58.89	0.00	3,585.58	
		3/9/2001	59.31	0.00	3,585.16	
		6/21/01	59.89	0.00	3,584.58	
		9/10/01	61.34	0.00	3,583.13	
		12/6/2001	60.65	0.00	3,583.82	
		3/11/2002	60.69	0.00	3,583.78	
		6/17/02	60.98	0.00	3,583.49	
		9/16/2002	61.00	0.00	3,583.47	
		1/9/2003	61.07	0.00	3,583.40	
		3/6/2003	61.19	0.00	3,583.28	
		6/19/2003	61.26	0.00	3,583.21	
		10/2/2003	61.38	0.00	3,583.09	
		12/17/2003	61.55	0.00	3,582.92	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-11	3,643.78	8/18/1993	51.92	0.00	3,591.86	(1)
		1/26/1994	52.32	0.00	3,591.46	
		5/3/1995	53.38	0.00	3,590.40	
		7/31/1995	53.35	0.00	3,590.43	
		11/14/1995	52.96	0.00	3,590.82	
		2/23/1996	53.50	0.00	3,590.28	
		5/31/1996	53.25	0.00	3,590.53	
		8/23/1996	53.49	0.00	3,590.29	
		12/2/1996	53.79	0.00	3,589.99	
		3/12/1997	53.81	0.00	3,589.97	
		6/12/1997	53.96	0.00	3,589.82	
		9/12/1997	52.93	0.00	3,590.85	
		12/10/1997	-	-	-	(5),(6)
MW-11A	3,644.24	3/23/1998	54.79	0.00	3,589.45	(7)
		6/23/1998	55.43	0.00	3,588.81	
		9/30/1998	55.96	0.00	3,588.28	
		12/9/1998	56.13	0.00	3,588.11	
		3/10/1999	56.43	0.00	3,587.81	
		6/10/1999	56.94	0.00	3,587.30	
		7/2/1999	57.01	0.00	3,587.23	
		9/14/1999	57.36	0.00	3,586.88	
		12/9/1999	57.72	0.00	3,586.52	
		3/9/2000	58.01	0.00	3,586.23	
		6/8/2000	58.40	0.00	3,585.84	
		9/13/2000	58.84	0.00	3,585.40	
		12/7/2000	59.29	0.00	3,584.95	
		3/8/2001	59.72	0.00	3,584.52	
		6/21/01	60.28	0.00	3,583.96	
		9/10/01	60.69	0.00	3,583.55	
		12/6/2001	60.88	0.00	3,583.36	
		3/11/2002	61.42	0.00	3,582.82	
		6/17/02	61.55	0.00	3,582.69	
		9/16/2002	61.59	0.00	3,582.65	
		1/9/2003	61.67	0.00	3,582.57	
		3/6/2003	61.70	0.00	3,582.54	
		6/19/2003	61.84	0.00	3,582.40	
		10/2/2003	61.88	0.00	3,582.36	
		12/17/2003	62.05	0.00	3,582.19	
MW-12	3,644.29	3/23/1998	54.72	0.00	3,589.57	(7)
		6/23/1998	55.48	0.00	3,588.81	
		9/30/1998	56.02	0.00	3,588.27	
		12/9/1998	56.17	0.00	3,588.12	
		3/10/1999	56.45	0.00	3,587.84	
		6/10/1999	56.97	0.00	3,587.32	
		7/2/1999	56.99	0.00	3,587.30	
		9/14/1999	57.41	0.00	3,586.88	
		12/9/1999	57.76	0.00	3,586.53	
		3/10/2000	58.08	0.00	3,586.21	
		6/8/2000	58.42	0.00	3,585.87	
		9/13/2000	58.85	0.00	3,585.44	
		12/7/2000	59.31	0.00	3,584.98	
		3/8/2001	59.76	0.00	3,584.53	
		6/21/01	60.29	0.00	3,584.00	
		9/10/01	60.79	0.00	3,583.50	
		12/6/2001	well dry during this and subsequent monitoring events			
MW-12D	3,644.38	7/2/1999	57.13	0.00	3,587.25	(8)
		9/14/1999	57.74	0.00	3,586.64	
		12/9/1999	57.86	0.00	3,586.52	
		3/9/2000	58.24	0.00	3,586.14	
		6/8/2000	58.56	0.00	3,585.82	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	-	-	-	
		6/21/01	-	-	-	
		9/10/01	-	-	-	
		12/6/2001	61.30	0.00	3,583.08	
		3/11/2002	61.61	0.00	3,582.77	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-12D cont.	3,644.38	6/17/02	61.71	0.00	3,582.67	
		9/16/2002	61.75	0.00	3,582.63	
		1/9/2003	61.86	0.00	3,582.52	
		3/6/2003	61.91	0.00	3,582.47	
		6/19/2003	61.95	0.00	3,582.43	
		10/2/2003	62.05	0.00	3,582.33	
		12/17/2003	62.21	0.00	3,582.17	
MW-13	3,645.52	7/2/1999	56.60	0.00	3,588.92	(9)
		9/14/1999	56.92	0.00	3,588.60	
		12/9/1999	57.28	0.00	3,588.24	
		3/10/2000	57.68	0.00	3,587.84	
		6/8/2000	58.04	0.00	3,587.48	
		9/13/2000	58.29	0.00	3,587.23	
		12/7/2000	58.68	0.00	3,586.84	
		3/8/2001	59.19	0.00	3,586.33	
		6/21/01	59.80	0.00	3,585.72	
		9/10/01	60.03	0.00	3,585.49	
		12/6/2001	60.59	0.00	3,584.93	
		3/11/2002	60.94	0.00	3,584.58	
		6/17/02	61.28	0.00	3,584.24	
		9/16/2002	61.23	0.00	3,584.29	
		1/9/2003	61.38	0.00	3,584.14	
		3/6/2003	61.45	0.00	3,584.07	
		6/19/2003	61.58	0.00	3,583.94	
		10/2/2003	61.70	0.00	3,583.82	
		12/17/2003	61.93	0.00	3,583.59	
MW-14	3,642.45	3/8/2001	61.07	0.00	3,581.38	
		6/21/01	61.71	0.00	3,580.74	
		9/10/01	62.31	0.00	3,580.14	
		12/6/2001	62.80	0.00	3,579.65	
		3/11/2002	62.70	0.00	3,579.75	
		6/17/02	62.65	0.00	3,579.80	
		9/16/2002	62.55	0.00	3,579.90	
		1/9/2003	62.59	0.00	3,579.86	
		3/6/2003	62.64	0.00	3,579.81	
		6/19/2003	62.64	0.00	3,579.81	
		10/2/2003	62.73	0.00	3,579.72	
		12/17/2003	62.93	0.00	3,579.52	
MW-15	3,643.24	3/8/2001	59.79	0.00	3,583.45	
		6/21/01	60.49	0.00	3,582.75	
		9/10/01	61.02	0.00	3,582.22	
		12/6/2001	61.47	0.00	3,581.77	
		3/11/2002	61.65	0.00	3,581.59	
		6/17/02	61.68	0.00	3,581.56	
		9/16/2002	61.47	0.00	3,581.77	
		1/9/2003	61.59	0.00	3,581.65	
		3/6/2003	61.63	0.00	3,581.61	
		6/19/2003	61.62	0.00	3,581.62	
		10/2/2003	61.70	0.00	3,581.54	
		12/17/2003	61.83	0.00	3,581.41	
MW-16	3,643.73	6/19/2003	66.50	0.00	3,577.23	
		10/2/2003	66.61	0.00	3,577.12	
		12/17/2003	66.72	0.00	3,577.01	
OW-4	3,644.06	7/2/1999	58.18	0.00	3,585.88	(8)
		9/14/1999	58.63	0.00	3,585.43	
		12/9/1999	58.92	0.00	3,585.14	
		3/9/2000	59.19	0.00	3,584.87	
		6/8/2000	59.56	0.00	3,584.50	
		9/13/2000	60.16	0.00	3,583.90	
		12/7/2000	61.15	0.00	3,582.91	
		3/8/2001	61.43	0.00	3,582.63	(10)
		6/21/01	61.48	0.00	3,582.58	
		9/10/01	61.53	0.00	3,582.53	
		12/6/2001	well dry during this and subsequent monitoring events			

(1) - Top of casing elevations and groundwater elevations of all monitor wells were relative to an arbitrary datum of 100.00 feet prior to March 1997 and have been converted to Mean Sea Level (MSL).

(2) - For wells having measurable thickness of free product, the groundwater elevation was calculated as follows:
Groundwater Elevation = (TOC elevation)-(depth to groundwater)+[(free product thickness)x(SG of free product)]
Note: The specific gravity (SG) of the free product is 0.82.

(3) - Not measured.

(4) - Monitor well MW-2 could not be located after January 1994.

(5) - Well plugged and abandoned July 2, 1999.

(6) - Monitor well MW-11 could not be located after September 12, 1997.

(7) - TOC elevations for MW-11A and MW-12 estimated relative to TOC elevation for MW-10.

(8) - TOC elevations for MW-12D and OW-4 estimated relative to TOC elevation for MW-12.

(9) - TOC elevation for MW-13 estimated relative to TOC elevation for MW-7.

(10) -Well dry (measured depth to water is below base of screen); true groundwater elevation is less than listed groundwater elevation.

Table 3
December 18, 2003 Field Screening Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Cumulative Liters Removed	pH	Temperature (°C)	Conductivity (umhos/cm)	Redox (mV)	Dissolved Oxygen (meter) (mg/L)	Dissolved Oxygen (Hach kit) (mg/L)	Ferrous Iron (mg/L)
MW-5	4.6	NM(2)	NM	NM	NM	NM	3.6	1.00
MW-10	NM(1)	NM	NM	NM	NM	NM	2.0	6.8
MW-11A	NM	NM	NM	NM	NM	NM	1.5	7.8
MW-12D	2.0	6.80	16.58	1,124	-108	0.63	1.2	2.2
MW-14	3.7(1)	NM	NM	NM	NM	NM	NM	NM
MW-15	9.2(1)	NM	NM	NM	NM	NM	NM	NM
MW-16	3.0	6.77	17.31	3,478	58.9	6.79	NM	NM

Monitor wells MW-1, MW-3, MW-4, MW-7, MW-8, MW-9, and MW-13 not sampled.

Monitor well MW-2 not operative after January 1994; P&A'd 7/1/99.

Monitor well MW-6 P&A'd 7/1/99.

Monitor well MW-11 not operative after September 1997; P&A'd 7/1/99.

Monitor wells MW-12 and OW-4 were dry.

Monitor wells MW-5 and MW-15 were purged by removing 3 well volumes of groundwater from each well

(1) - Well was purged dry using bailing techniques.

(2) - NM = Not measured

Table 4
Cumulative Results[1] for Chloride[2] Analyses
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Sample Date	Monitor Wells[3]																	
	MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
8/1/95	160	150	310	130	380	310	350	110	2,200	3,400	NP	NP	NP	NP	NP	NP		NS
8/23/96	130	140	100	99	210	250	360	140	2,000	2,900	NP	NP	NP	NP	NP	NP	NP	NS
3/23-24/98	212	206	126	151	183	223	364	164	2,390	NS	940	1,200	NP	NP	NP	NP	NP	NS
3/9-10/99	163	156	142	155	411	238	274	123	1,160	NS	834	314	NP	NP	NP	NP	NP	NS
6/10-7/2/99	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	195	496	NP	NP	NP	266
3/9-10/00	258	196	196	196	NP	224	241	131	474	NP	1,290	327	117	276	NP	NP	NP	258
1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	368	219	NP	NS
3/8-9/01	NA	165	172	152	NP	224	250	127	879	NP	1,720	586	NS	276	327	NA	NP	NS-D
6/21/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NS	NA	222	222	NP	NS-D
9/10/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	245	228	NP	NS-D
9/18/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	79	NA	NA	NA	NP	NS-D
12/6/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	276	215	NP	NS-D
3/11-12/02	177	172	183	127	NP	188	241	110	861	NP	1,230	NS-D	76	207	284	224	NP	NS-D
6/18/2002	NS	NA	NA	NA	NP	NA	NS	NS	NA	NP	NA	NS-D	NA	145	258	233	NP	NS-D
9/16/2002	NS	NS	NS	121	NP	NS	NS	NS	1,030	NP	1,550	NS-D	86	NS	293	246	NP	NS-D
1/9/2003	NS	NS	NS	123	NP	NS	NS	NS	525	NP	3,150	NS-D	95	NS	179	228	NP	NS-D
3/6/2003	NS	NS	NS	116	NP	NS	NS	NS	363	NP	2,900	NS-D	102	NS	163	272	NP	NS-D
6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	89.3	NS	NS	NS	983	NS-D
8/22/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NS	NS	182	280	841	NS-D
10/2/2003	NS	NS	NS	194	NP	NS	NS	NS	420	NP	3,240	NS-D	99.8	NS	175	298	963	NS-D
12/18/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	123	263	823	NS-D

(1) - in mg/L.

(2) - NMWQCC standard for chloride is 250 mg/L.

(3) - MW-2 not operative after May 3, 1995; P&A'd 7/1/99.

MW-6 P&A'd 7/1/99.

MW-11 P&A'd 7/1/99.

MW-11A installed February 1998.

MW-12 installed February 1998 (screened at the top of the saturated zone).

MW-12D installed June 1999, adjacent to MW-12 (screened in a lower portion of the uppermost saturated zone).

MW-13 installed June 1999.

MW-14 installed January 2001.

MW-15 installed January 2001.

MW-16 installed May 2003.

NP = not present at time of sampling event.

NS = not sampled during applicable sampling event.

NA = not analyzed for chloride during applicable sampling event.

NS-D = not sampled because well was dry during applicable sampling event.

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Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-1	8/10/92	Regular	5550.0	12090.0	2160.0	7370.0	NA	NA
	2/9/93	Regular	2100.0	6500.0	1300.0	7400.0	NA	NA
	8/19/93	Regular	3200.0	7300.0	1200.0	3700.0	NA	NA
	1/27/94	Regular	1930.0	4580.0	672.0	2390.0	NA	NA
	5/3/95	Regular	NSP	NSP	NSP	NSP	NA	NSP
	8/1/95	Regular	390.0	1300.0	230.0	800.0	NA	5.7
	11/15/95	Regular	880.0	1800.0	300.0	970.0	NA	6.8
	2/23/96	Regular	1500.0	3700.0	620.0	2200.0	NA	21
	5/31/96	Regular	1100.0	1700.0	380.0	990.0	NA	7.5
	8/23/96	Regular	1800.0	3300.0	570.0	2100.0	NA	17
	12/2/96	Regular	5600.0	9600.0	2100.0	9600.0	100	64
	3/12/97	Regular	5500.0	9700.0	2600.0	8200.0	22	62
	6/12/97	Regular	5300.0	34000.0	7500.0	27000.0	180	160
	9/12/97	Regular	1800.0	4400.0	1000.0	3000.0	23	21
	12/10/97	Regular	7600.0	12000.0	2800.0	8200.0	11	71
	3/24/98	Regular	4800.0	7200.0	1200.0	2400.0	4.2	38
	6/23/98	Regular	53.0	680.0	580.0	1400.0	1.4	9.2
	9/30/1998	Regular	3.2	90.0	280.0	970.0	2.5	3.6
	12/10/1998	Regular	< 1.0	1.5	17.0	110.0	1.4	0.31
	3/10/1999	Regular	< 1.0	< 1.0	8.2	110.0	0.62	0.85
	3/10/1999	Duplicate	< 1.0	< 1.0	7.9	110.0	0.66	0.84
	6/10/1999	Regular	< 1.0	1.1	< 1.0	28.0	0.53	0.55
	6/10/1999	Duplicate	< 1.0	1.8	< 1.0	41.0	0.69	0.76
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	-	NS	NS	NS	NS	NS	NS
	3/9/2000	Regular	< 1	< 1	< 1	9.1	14	1.3
	6/8/2000	-	NS	NS	NS	NS	NS	NS
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	Regular	2.0	< 1	< 1	< 1	0.49	0.58
	6/21/2001	-	NS	NS	NS	NS	NS	NS
	9/10/2001	-	NS	NS	NS	NS	NS	NS
	12/6/2001	-	NS	NS	NS	NS	NS	NS
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/18/2002 through December 2003	- - -	NS	NS	NS	NS	NS	NS
MW-2[1]	8/10/92	Regular	14.9	< 4	< 4	< 4	NA	NA
	2/9/93	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/93	Regular	100.0	12.0	3.0	13.0	NA	NA
	1/27/94	Regular	< 1	1.2	2.0	2.5	NA	NA
MW-3	8/10/92	Regular	304.9	2099.0	6760.0	1586.0	NA	NA
	2/9/93	Regular	130.0	< 10	< 10	190.0	NA	NA
	8/19/93	Regular	560.0	3100.0	630.0	1900.0	NA	NA
	1/27/94	Regular	1070.0	5380.0	510.0	3120.0	NA	NA
	5/4/95	Regular	770.0	3300.0	470.0	1800.0	NA	NA
	8/1/95	Regular	490.0	2900.0	890.0	1600.0	NA	14
	11/15/95	Regular	250.0	1000.0	180.0	440.0	NA	2.9
	2/23/96	Regular	120.0	810.0	170.0	560.0	NA	4
	5/31/96	Regular	670.0	3900.0	1200.0	2300.0	NA	15
	8/23/96	Regular	330.0	2200.0	590.0	1500.0	NA	12

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-3 (cont.)	12/2/96	Regular	220.0	1800.0	670.0	1000.0	0.89	7.4
	3/12/97	Regular	370.0	2000.0	960.0	1400.0	1.8	11
	6/12/97	Regular	860.0	4800.0	1700.0	2600.0	1.9	20
	9/11/97	Regular	770.0	3000.0	1600.0	1900.0	1.6	16
	12/10/97	Regular	240.0	740.0	500.0	450.0	0.59	5.3
	3/24/98	Regular	140.0	630.0	360.0	310.0	0.56	3.9
	6/23/98	Regular	100.0	720.0	350.0	490.0	0.40	4.9
	9/30/1998	Regular	42.0	470.0	450.0	530.0	1.0	3.8
	12/10/1998	Regular	13.0	220.0	160.0	290.0	1.3	0.43
	3/10/1999	Regular	3.2	7.4	42.0	32.0	0.2	0.44
	6/10/1999	Regular	1.7	3.1	<1.0	36.0	< 0.20	0.18
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.32	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.22	< 0.1
	9/13/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/7/2000	Regular	< 1	< 1	< 1	< 1	< 0.25	< 0.1
	3/8/2001	Regular	< 1	< 1	< 1	< 1	0.42	< 0.1
	6/21/2001	Regular	< 1	< 1	< 1	< 1	< 0.22	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/18/2002	Regular	<1	<1	<1	<1	<0.2	<0.1
	9/16/2002 through December 2003	- - -	NS	NS	NS	NS	NS	NS
MW-4	8/10/92	Regular	2594.0	10360.0	2160.0	6740.0	NA	NA
	2/9/93	Regular	5200.0	15000.0	2200.0	10000.0	NA	NA
	8/19/93	Regular	3000.0	12000.0	< 2000	7000.0	NA	NA
	1/27/94	Regular	NSP	NSP	NSP	NSP	NA	NSP
	5/3/95	Regular	NSP	NSP	NSP	NSP	NA	NSP
	8/1/95	Regular	5700.0	17000.0	3500.0	13000.0	NA	120
	11/15/95	Regular	490.0	1600.0	310.0	1100.0	NA	5.2
	2/23/96	Regular	360.0	2800.0	560.0	2500.0	NA	18
	5/31/96	Regular	84.0	830.0	280.0	1100.0	NA	6.2
	8/23/96	Regular	110.0	1400.0	430.0	1800.0	NA	9.8
	12/2/96	Regular	190.0	2000.0	1800.0	7200.0	56	43
	3/12/97	Regular	220.0	1500.0	1500.0	4400.0	27	27
	6/12/97	Regular	47.0	270.0	360.0	950.0	2.5	6.2
	9/12/97	Regular	92.0	840.0	670.0	2100.0	15	7.6
	12/10/97	Regular	230.0	750.0	970.0	2300.0	3.7	16
	3/24/98	Regular	150.0	510.0	270.0	620.0	1.2	5.6
	6/23/98	Regular	160.0	890.0	590.0	1600.0	0.69	10
	9/30/1998	Regular	80.0	180.0	370.0	840.0	2.0	3.9
	12/10/1998	Regular	28.0	70.0	210.0	960.0	9.3	4.3
	12/10/1998	Duplicate	26.0	62.0	180.0	830.0	3.9	4.3
	3/10/1999	Regular	8.0	20.0	250.0	1400.0	13.0	13
	6/10/1999	Regular	<1.0	<1.0	12.0	12.0	0.44	0.63
	9/14/1999	Regular	< 1.0	< 1.0	3.3	13.1	0.35	0.17
	12/9/1999	Regular	< 1	2.5	2.3	20.1	2	0.53
	3/10/2000	Regular	< 1	< 1	< 1	3.6	2.6	0.15

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-4 (cont.)	6/8/2000	Regular	< 1	< 1	< 1	< 1	0.44	0.23
	9/13/2000	Regular	< 1	< 1	< 1	< 1	0.61	< 0.1
	12/7/2000	Regular	< 1	< 1	1.3	< 1	0.53	0.16
	3/8/2001	Regular	< 1	< 1	< 1	< 1	0.43	0.16
	6/21/2001	Regular	< 1	< 1	< 1	< 1	< 0.25	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	0.6	< 1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/18/2002	Regular	<1	<1	<1	<1	<0.2	<0.1
	9/16/2002 through December 2003	-	NS	NS	NS	NS	NS	NS
MW-5	8/10/92	Regular	< 4	< 4	< 4	< 4	NA	NA
	2/9/93	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/10/93	Regular	< 2	< 2	< 2	< 6	NA	NA
	1/27/94	Regular	8.7	29.9	4.0	11.3	NA	NA
	5/3/95	Regular	3.7	5.3	0.9	4.6	NA	NA
	8/1/95	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	NA
	11/15/95	Regular	< 0.3	1.2	< 0.3	1.5	NA	NA
	2/23/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	NA
	5/31/96	Regular	31.0	86.0	10.0	20.0	NA	NA
	8/23/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	12/2/96	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	3/12/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	6/12/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	9/12/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	12/10/97	Regular	< 5	< 5	< 5	< 5	< 0.2	< 0.1
	3/23/98	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/23/98	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/30/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	12/10/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	3/9/1999	Regular	<1.0	<1.0	<1.0	<1.0	< 0.20	< 0.1
	6/10/1999	Regular	<1.0	<1.0	<1.0	<1.0	< 0.20	< 0.1
	9/14/1999	Regular	<1.0	<1.0	<1.0	<2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.55	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/13/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/7/2000	Regular	< 1	< 1	< 1	< 1	< 0.25	< 0.1
	3/8/2001	Regular	< 1	< 1	< 1	< 1	0.56	< 0.1
	6/21/2001	Regular	< 1	< 1	< 1	< 1	0.26	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	0.49	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.24	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	< 0.074	< 0.11	< 0.068	< 0.082	0.3 J	< 0.05
	1/9/2003	Regular	< 1	< 1	< 1	< 1	< 1.0	< 0.1
	3/6/2003	Regular	< 1	< 1	< 1	< 1	NA	< 0.1
	8/21/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	< 1	< 1	< 1	< 1	< 1.1	< 0.1
	12/18/2003	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-6[1]	8/10/92	Regular	NS	NS	NS	NS	NA	NS
	2/9/93	Regular	7000.0	19000.0	3100.0	7200.0	NA	NA
	8/19/93	Regular	8100.0	19000.0	3500.0	6400.0	NA	NA
	1/27/94	Regular	7960.0	20200.0	3830.0	6150.0	NA	NA
	5/4/95	Regular	11000.0	17000.0	2900.0	6000.0	NA	NA
	8/1/95	Regular	8300.0	12000.0	2500.0	5100.0	NA	60
	11/15/95	Regular	8900.0	17000.0	2900.0	5500.0	NA	57
	2/23/96	Regular	8100.0	10000.0	2300.0	4000.0	NA	58
	5/31/96	Regular	83.0	150.0	15.0	51.0	NA	0.57
	5/31/96	Duplicate	87.0	160.0	13.0	47.0	NA	0.52
	8/23/96	Regular	31.0	28.0	9.4	7.9	NA	0.46
	12/2/96	Regular	< 1	< 1	< 1	1.7	5.6	< 0.1
	3/12/97	Regular	12.0	< 5	6.8	18.0	12	< 0.5
	6/12/97	Regular	1900.0	1400.0	410.0	310.0	7.8	7.4
	9/11/97	Regular	11.0	1.3	3.4	< 1	1	< 0.1
	12/10/97	Regular	3.0	4.2	1.2	3.9	1.7	0.14
	3/23/98	Regular	3.6	< 1	4.0	< 1	< 0.2	< 0.1
	6/23/98	Regular	170.0	4.1	15.0	7.2	1.2	0.51
	9/30/1998	Regular	1000.0	420.0	140.0	270.0	4.0	3.3
	12/10/1998	Regular	7.6	6.6	1.7	5.8	2.0	< 0.1
	3/10/1999	Regular	2500.0	930.0	590.0	1400.0	11.0	13
MW-7	8/10/92	Regular	NS	NS	NS	NS	NA	NS
	2/9/93	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/93	Regular	< 2	3.0	< 2	< 2	NA	NA
	1/27/94	Regular	1.1	< 1	< 1	< 1	NA	NA
	5/3/95	Regular	52.0	3.4	0.7	2.8	NA	NA
	8/1/95	Regular	22.0	2.2	0.9	2.8	NA	< 0.1
	11/15/95	Regular	8.4	0.8	< 0.3	0.9	NA	< 0.1
	2/23/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	2/23/96	Duplicate	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	5/31/96	Regular	29.0	83.0	10.0	21.0	NA	0.25
	8/23/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	12/2/96	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	3/12/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	6/12/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	9/11/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	12/10/97	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/23/98	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/23/98	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/30/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	12/10/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	3/9/1999	Regular	<1.0	<1.0	<1.0	<1.0	4.7	< 0.1
	6/10/1999	Regular	<1.0	<1.0	<1.0	<1.0	< 0.20	< 0.1
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 5	< 5	< 5	< 5	1.8	< 0.5
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.66	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.21	< 0.1
	9/13/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/7/2000	Regular	< 1	< 1	< 1	< 1	< 0.29	< 0.1
	3/8/2001	Regular	< 1	< 1	< 1	< 1	1.2	< 0.1

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-7 (cont.)	6/21/2001	Regular	3.1	< 1	< 1	< 1	< 0.22	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.33	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	1.3	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	NA	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002 through December 2003	-	NS	NS	NS	NS	NS	NS
MW-8	8/10/92	Regular	NS	NS	NS	NS	NA	NS
	2/9/93	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/93	Regular	< 2	< 2	< 2	< 2	NA	NA
	1/27/94	Regular	< 1	< 1	< 1	< 1	NA	NA
	5/3/95	Regular	3.0	4.9	0.8	3.7	NA	NA
	8/1/95	Regular	3.1	1.2	0.5	1.6	NA	< 0.001
	8/1/95	Duplicate	3.6	1.5	0.5	1.5	NA	< 0.1
	11/15/95	Regular	< 0.3	0.5	< 0.3	< 0.6	NA	< 0.1
	2/23/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	5/31/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	8/23/96	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	12/2/96	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	3/12/97	Regular	< 1	< 1	< 1	1.8	< 0.1	< 0.1
	6/12/97	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	9/11/97	Regular	< 1	< 1	< 1	< 1	0.1	< 0.1
	12/10/97	Regular	< 1	< 1	< 1	< 1	0.3	< 0.1
	3/23/98	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/23/98	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/30/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	12/10/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	3/9/1999	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	6/10/1999	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	-	NS	NS	NS	NS	NS	NS
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.55	< 0.1
	6/8/2000	-	NS	NS	NS	NS	NS	NS
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	Regular	< 1	< 1	< 1	< 1	1.6	< 0.1
	6/21/2001	-	NS	NS	NS	NS	NS	NS
	9/10/2001	-	NS	NS	NS	NS	NS	NS
	12/6/2001	-	NS	NS	NS	NS	NS	NS
	3/12/2002	Regular	< 1	< 1	< 1	< 1	0.38	< 0.1
	6/18/2002	-	NS	NS	NS	NS	NS	NS
	9/16/2002 through December 2003	-	NS	NS	NS	NS	NS	NS
MW-9	4/22/93	Regular	570.0	380.0	< 50	870.0	NA	NA
	7/15/93	Regular	121.0	7.3	3.0	458.0	NA	NA
	8/19/93	Regular	390.0	290.0	40.0	250.0	NA	NA
	1/27/94	Regular	327.0	357.0	51.1	293.0	NA	NA
	5/3/95	Regular	380.0	110.0	19.0	120.0	NA	NA
	8/1/95	Regular	660.0	410.0	91.0	310.0	NA	6.2

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-9 (cont.)	11/15/95	Regular	240.0	24.0	11.0	140.0	NA	1.5
	11/15/95	Duplicate	170.0	18.0	10.0	120.0	NA	1.9
	2/23/96	Regular	170.0	18.0	2.3	160.0	NA	4.3
	5/31/96	Regular	120.0	16.0	3.0	200.0	NA	NA
	8/23/96	Regular	82.0	13.0	6.0	270.0	NA	4
	8/23/96	Duplicate	76.0	14.0	4.8	250.0	NA	4.4
	12/2/96	Regular	61.0	< 25	< 25	210.0	2.6	2.8
	12/2/96	Duplicate	86.0	13.0	2.4	270.0	3.7	2.9
	3/12/97	Regular	30.0	48.0	420.0	880.0	8.2	19
	6/12/97	Regular	4.7	2.1	11.0	97.0	2.6	2.2
	6/12/97	Duplicate	< 5	< 5	6.6	69.0	5.2	1.9
	9/12/97	Regular	2.1	2.3	2.1	120.0	1.2	1.9
	12/10/97	Regular	4.9	9.0	6.8	62.0	0.86	0.92
	3/24/98	Regular	< 1	< 1	< 1	26.0	0.9	1
	6/23/98	Regular	2.4	22.0	10.0	36.0	< 0.2	0.25
	9/30/1998	Regular	1.1	5.5	21.0	59.0	0.27	0.27
	12/10/1998	Regular	< 1.0	1.9	17.0	79.0	5.1	0.25
	3/10/1999	Regular	< 1.0	< 1.0	5.7	68.0	< 0.2	0.22
	6/10/1999	Regular	< 1.0	1.8	1.8	71.0	< 0.20	0.43
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	<0.10
	12/9/1999	-	NS	NS	NS	NS	NS	NS
	3/9/2000	Regular	< 1	< 1	< 1	64.0	0.66	1.3
	6/8/2000	-	NS	NS	NS	NS	NS	NS
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	Regular	< 1	< 1	< 1	< 1	1.4	< 0.1
	6/21/2001	-	NS	NS	NS	NS	NS	NS
	9/10/2001	-	NS	NS	NS	NS	NS	NS
	12/6/2001	-	NS	NS	NS	NS	NS	NS
	3/12/2002	Regular	1	< 1	< 1	< 1	0.37	< 0.1
	6/18/2002	-	NS	NS	NS	NS	NS	NS
	9/16/2002 through December 2003	-	NS	NS	NS	NS	NS	NS
MW-10	8/19/93	Regular	190.0	460.0	< 200	240.0	NA	NA
	1/27/94	Regular	13.4	4.0	5.5	33.6	NA	NA
	5/4/95	Regular	980.0	15.0	11.0	84.0	NA	NA
	8/1/95	Regular	1300.0	32.0	32.0	100.0	NA	3.6
	11/15/95	Regular	1000.0	24.0	15.0	36.0	NA	1.7
	2/23/96	Regular	810.0	23.0	27.0	44.0	NA	2.4
	5/31/96	Regular	700.0	24.0	34.0	28.0	NA	2
	8/23/96	Regular	290.0	3.4	6.4	13.0	NA	1.4
	12/2/96	Regular	280.0	1.3	17.0	8.0	0.94	0.97
	3/12/97	Regular	110.0	< 5	17.0	< 5	0.61	0.57
	6/12/97	Regular	150.0	12.0	30.0	< 5	0.68	< 0.5
	9/12/97	Regular	87.0	2.3	26.0	2.7	0.76	0.33
	9/12/97	Duplicate	87.0	2.4	26.0	2.8	0.79	0.33
	12/10/97	Regular	41.0	9.8	12.0	7.7	1.1	0.28
	12/10/97	Duplicate	36.0	8.5	10.0	6.7	1.2	0.24
	3/23/98	Regular	36.0	< 5	5.9	< 5	1.6	< 0.5

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-10 (cont.)	3/23/98	Duplicate	36.0	< 1	5.3	1.3	1.7	0.18
	6/23/98	Regular	37.0	< 5	< 5	< 5	2.1	< 0.5
	9/30/1998	Regular	84.0	3.2	30.0	2.2	1.4	0.36
	12/10/1998	Regular	29.0	1.0	7.0	1.0	0.86	0.18
	3/9/1999	Regular	28.0	<5.0	5.8	<5.0	0.92	<0.5
	6/10/1999	Regular	17.0	<1.0	<1.0	<1.0	0.30	0.16
	9/14/1999	Regular	10.0	< 1.0	< 1.0	< 2.0	<0.20	<0.10
	12/9/1999	Regular	23.0	< 1	< 1	1.2	0.44	0.16
	3/10/2000	Regular	300.0	4.3	6.6	43.2	1.2	0.85
	6/8/2000	Regular	78.0	1.7	7.2	9.0	0.67	0.74
	9/13/2000	Regular	23.0	1.5	1.1	2.9	1.6	0.41
	12/7/2000	Regular	7.2	< 1	< 1	< 1	1.5	0.15
	3/8/2001	Regular	3.4	1.1	< 1	< 1	3.4	0.2
	6/22/2001	Regular	< 1	< 1	< 1	< 1	1.2	<0.1
	9/10/01 and 9/18/01	Regular	2	< 1	< 1	< 1	2.3	<0.1
	12/6/2001	Regular	No Valid Data					
	3/12/2002	Regular	< 1	< 1	< 1	< 1	3.2	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	1.2	< 0.1
	9/16/2002	Regular	< 0.074	< 0.11	0.1	<0.082	3 J	< 0.05
	1/9/2003	Regular	< 1	< 1	< 1	< 1	< 1.0	< 0.1
	3/6/2003	Regular	< 1	< 1	18	< 1	NA	< 0.1
	8/21/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	< 1	< 1	< 1	< 1	< 1.2	< 0.1
	12/18/2003	Regular	< 1	< 1	< 1	< 1	0.9	< 0.1
MW-11[1]	8/19/93	Regular	< 2	< 2	< 2	< 2	NA	NA
	1/27/94	Regular	< 1	< 1	< 1	< 1	NA	NA
	5/4/95	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	NA
	8/1/95	Regular	44.0	29.0	5.5	13.0	NA	0.2
	11/15/95	Regular	190.0	2.8	6.2	11.0	NA	0.4
	2/23/96	Regular	49.0	1.2	0.5	4.0	NA	0.25
	5/31/96	Regular	300.0	83.0	12.0	28.0	NA	0.8
	8/23/96	Regular	100.0	1.2	0.3	4.7	NA	0.26
	12/2/96	Regular	970.0	< 5	6.0	8.1	2	1.3
	3/12/97	Regular	130.0	< 5	13.0	5.8	0.42	< 0.5
	3/12/97	Duplicate	100.0	< 5	10.0	5.1	0.43	< 0.5
	6/12/97	Regular	150.0	23.0	19.0	< 5	1.1	0.55
	9/12/97	Regular	220.0	15.0	27.0	13.0	1	0.46
MW-11A	3/24/98	Regular	24.0	5.0	< 5	< 5	0.28	0.14
	6/23/98	Regular	9.9	< 5	< 5	< 5	< 0.2	< 0.5
	9/30/1998	Regular	9.3	3.7	2.2	7.0	<0.20	0.1
	12/10/1998	Regular	1.7	<1.0	<1.0	<1.0	<0.20	<0.1
	3/10/1999	Regular	<5	< 5	< 5	< 5	0.3	<0.5
	6/10/1999	Regular	<1.0	< 1.0	< 1.0	< 1.0	<0.20	<0.10
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	<0.20	<0.10
	12/9/1999	Regular	< 5	< 5	< 5	< 5	< 0.2	< 0.1
	3/9/2000	Regular	1.2	< 1	< 1	< 1	0.43	< 0.1
	6/8/2000	Regular	3.6	< 1	< 1	< 1	0.37	< 0.1
	9/13/2000	Regular	1.4	< 1	< 1	< 1	0.36	< 0.1
	12/7/00	Regular	26	< 1	< 1	3.3	0.3	0.12
	3/8/01	Regular	12	< 5	< 5	< 5	2.2	< 0.5

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-11A (cont.)	6/22/2001	Regular	1.5	< 1	< 1	< 1	1	< 0.1
	9/10/2001	Regular	7.9	< 1	< 1	< 1	1.1	< 0.1
	12/6/2001	Regular	<1	< 1	< 1	< 1	1	< 0.1
	3/12/2002	Regular	1.8	< 1	< 1	1	1.6	< 0.1
	6/18/2002	Regular	2.9	< 0.1	1.3	< 1	0.91	<0.1
	9/16/2002	Regular	9	< 0.11	41	< 0.082	1 J	0.2
	1/9/2003	Regular	12	< 1	< 1	1.2	< 1.0	0.4
	3/6/2003	Regular	3.2	< 1	< 1	1.2	< 1	0.13
	8/21/2003	Regular	3.7	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	3.7	< 1	< 1	< 1	< 1.2	< 0.1
	12/18/2003	Regular	3.4	< 1	1.1	< 1	0.63	0.28
MW-12	3/24/98	Regular	100.0	11.0	6.0	8.0	0.29	0.41
	6/23/98	Regular	88.0	< 5	< 5	< 5	< 0.2	< 0.5
	6/23/98	Duplicate	89.0	< 5	< 5	< 5	0.31	< 0.5
	9/30/1998	Regular	260.0	3.0	1.2	7.9	<0.20	0.62
	12/10/1998	Regular	160.0	< 1.0	< 1.0	1.2	0.21	0.36
	3/10/1999	Regular	160.0	1.1	< 1.0	2.9	0.38	0.45
	6/10/1999	Regular	49.0	1.4	< 1.0	< 1.0	0.22	0.13
	9/14/1999	Regular	75.0	< 1.0	< 1.0	< 2.0	<0.20	0.23
	12/9/1999	Regular	64.0	< 1	< 1	< 1	< 0.2	0.21
	3/10/2000	Regular	93.0	< 1	< 1	< 1	< 0.2	0.21
	3/10/2000	Duplicate	99.0	< 1	< 1	< 1	0.22	0.22
	6/8/2000	Regular	62.0	< 1	< 1	< 1	< 0.2	< 0.1
	9/13/2000	Regular	34.0	< 1	< 1	< 1	0.23	< 0.1
	12/7/2000	Regular	27	< 1	2.9	1.9	<0.25	< 0.1
	3/8/2001	Regular	14	< 1	< 1	< 1	2.1	0.1
	6/22/2001	Regular	12	< 1	< 1	< 1	0.51	0.11
	9/10/2001	Well Dry (Not Sampled) During This and Subsequent Monitoring Events						
MW-12D	7/2/1999	Regular	< 5	< 5	< 5	< 5	<0.20	<0.10
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	<0.10
	12/9/1999	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.24	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	-	NS	NS	NS	NS	NS	NS
	6/22/2001	-	NS	NS	NS	NS	NS	NS
	9/18/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	0.44	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	< 0.074	< 0.11	< 0.068	< 0.082	0.2 J	< 0.05
	1/9/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	3/6/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	6/20/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	8/21/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	< 1	< 1	< 1	< 1	< 1.2	< 0.1
	12/18/2003	Regular	< 1	< 1	< 1	< 1	<0.2	< 0.1
MW-13	7/2/1999	Regular	1500.0	23.0	750.0	58.0	2.2	5.1
	9/14/1999	Regular	860.0	16.0	450.0	34.4	2.1	3.1
	12/9/1999	Regular	430.0	16.0	410.0	40.9	0.46	3.2

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
	3/10/2000	Regular	88.0	2.8	200.0	1.3	1.9	0.99
MW-13	6/8/2000	Regular	6.0	< 1	63.0	3.3	1.1	0.91
(cont.)	9/13/2000	Regular	<1.0	<1.0	3.4	<1.0	0.44	0.12
	12/7/2000	Regular	<1	<1	<1	<1	0.43	< 0.1
	3/8/2001	Regular	<1	<1	1.2	<1	2	< 0.1
	6/22/2001	Regular	< 1	< 1	< 1	< 1	0.31	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	0.3	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	0.84	< 0.1
	6/18/2002	Regular	<1	<1	<1	<1	0.3	<0.1
	9/16/2002 through December 2003	-	NS	NS	NS	NS	NS	NS
MW-14	1/14/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	NA	NA	NA	NA	NA	NA
	1/9/2003	Regular	NA	NA	NA	NA	NA	NA
	March 2003	Regular	NA	NA	NA	NA	NA	NA
	June 2003	Regular	NA	NA	NA	NA	NA	NA
	October 2003	Regular	NA	NA	NA	NA	NA	NA
	12/18/03	Regular	NA	NA	NA	NA	NA	NA
MW-15	1/14/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	NA	NA	NA	NA	NA	NA
	1/9/2003	Regular	NA	NA	NA	NA	NA	NA
	March 2003	Regular	NA	NA	NA	NA	NA	NA
	June 2003	Regular	NA	NA	NA	NA	NA	NA
	October 2003	Regular	NA	NA	NA	NA	NA	NA
	12/18/03	Regular	NA	NA	NA	NA	NA	NA
MW-16	6/20/2003	Regular	< 5	< 5	< 5	< 5	NA	NA
	October 2003	Regular	NA	NA	NA	NA	NA	NA
	12/18/03	Regular	NA	NA	NA	NA	NA	NA
OW-4	6/10/1999	Regular	<1.0	<1.0	<1.0	4.4	< 0.2	< 0.10
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.2	< 0.1
	3/9/2000	Regular	< 1.0	< 1.0	< 1.0	< 1.0	0.25	< 0.1
	6/8/2000	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.21	< 0.1
	9/13/2000	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.2	< 0.1
	12/7/2000	Well Dry (Not Sampled) During This and Subsequent Monitoring Events						

[1] Well plugged and abandoned 7/1/99
NA = Not Analyzed
NS = Not Sampled
NS-D = Not Sampled because well was dry
NSP = Not Sampled due to Phase-Separated Hydrocarbons

Table 6
Current and Historical Nitrate, Sulfate, and Dissolved Methane Data for Monitor Wells MW-5, MW-10, MW-11A, MW-12, and MW-12D
Hobbs, New Mexico
BJ Services Company, U.S.A.

Well	Date	Nitrate[1] (mg/L)	Sulfate[1] (mg/L)	Dissolved Methane (mg/L)
MW-5	3/23/1998	3.87	190	< 0.0012
	3/9/1999	< 0.1	195	< 0.0012
	6/10/1999	4.73	209	< 0.0012
	9/14/1999	4.3	210	< 0.0012
	12/9/1999	4.2	210	< 0.0012
	3/9/2000	5.3	260	< 0.0012
	6/8/2000	4.7	240	< 0.0012
	9/13/2000	3.93	200	< 0.0012
	12/7/2000	3.27	160	< 0.0012
	3/8/2001	3.24	180	< 0.0012
	6/21/2001	2.74	150	0.0017
	9/10/2001	NA[2]	130	< 0.0012
	12/6/2001	2.38	120	< 0.0012
	3/12/2002	2.98	120	< 0.0012
	6/18/2002	2.56	110	0.002
	9/16/2002	2.4	105	0.002
	1/9/2003	2.1	97	0.004
	3/6/2003	2.75	110	< 0.0012
	8/21/2003	2.4	100	< 0.0012
	10/2/2003	2.5	100	<0.0012
	12/18/2003	2.5	110	<0.0012
MW-10	3/23/1998	0.07	320	0.91
	6/23/1998	< 0.1	325	0.55
	9/30/1998	< 0.1	204	0.81
	12/10/1998	< 0.1	180	0.091
	3/9/1999	< 0.1	142	0.035
			223[3]	
	9/14/1999	< 0.10	160	0.0049
	12/9/1999	0.49	170	0.0039
	3/10/2000	0.1	160	0.0056
	6/8/2000	< 0.1	150	0.031
	9/13/2000	< 0.1	160	0.031
	12/7/2000	< 0.1	190	0.17
	3/8/2001	< 0.1	270	< 0.0012
	6/22/2001	< 0.1	270	0.044
	9/10/2001	NA	NA	NA
	3/12/2002	< 0.1	230	NA
	6/18/2002	< 0.1	240	0.007

Table 6
Current and Historical Nitrate, Sulfate, and Dissolved Methane Data for Monitor Wells MW-5, MW-10, MW-11A, MW-12, and MW-12D
Hobbs, New Mexico
BJ Services Company, U.S.A.

Well	Date	Nitrate[1] (mg/L)	Sulfate[1] (mg/L)	Dissolved Methane (mg/L)
MW-10 (cont.)	9/16/2002	< 0.03	318	0.006
	1/9/2003	< 0.1	280	0.0024
	3/6/2003	< 0.1	270	0.0031
	8/21/2003	0.21	350	< 0.0012
	10/2/2003	0.11	360	<0.0012
	12/18/2003	0.28	350	<0.0012
MW-11A	3/23/1998	< 0.05	190	0.14
	6/23/1998	< 0.1	225	0.11
	9/30/1998	0.4	196	0.043
	12/10/1998	0.7	188	0.033
	3/10/1999	< 0.1	164	0.094
		< 0.1[4]	227[3]	
	6/10/1999	< 0.1	181	0.0036
	9/13/1999	0.22	250	< 0.0012
	12/9/1999	< 0.1	290	0.0079
	3/9/2000	0.11	270	0.037
	6/8/2000	< 0.1	240	0.0069
	9/13/2000	< 0.1	320	< 0.0012
	12/7/2000	< 0.1	260	0.0096
	3/8/2001	< 0.1	330	0.0028
	6/22/2001	< 0.1	180	0.0074
	9/10/2001	NA	280	< 0.0012
	12/6/2001	< 0.1	240	0.0041
	3/12/2002	< 0.1	350	0.0044
	6/18/2002	< 0.1	560	0.0028
	9/16/2002	0.3	383	< 0.0012
	1/9/2003	< 0.5	290	0.0063
	3/6/2003	< 0.1	290	0.0044
	8/21/2003	0.68	340	< 0.0012
	10/2/2003	1.4	350	< 0.0012
	12/18/2003	<0.1	320	<0.0012
MW-12	3/23/1998	< 0.05	240	< 0.0012
	6/23/1998	< 0.1	240	< 0.0012
	9/30/1998	< 0.1	168	< 0.0012
	12/10/1998	< 0.1	202	< 0.0012
	3/10/1999	< 0.1	137	< 0.0012
		< 0.1[4]	193[3]	
	6/10/1999	< 0.1	217	< 0.0012
	9/14/1999	< 0.10	230	< 0.0012
	12/9/1999	< 0.1	180	< 0.0012
	3/10/2000	< 0.1	210	< 0.0012

Table 6
Current and Historical Nitrate, Sulfate, and Dissolved Methane Data for Monitor Wells MW-5, MW-10, MW-11A, MW-12, and MW-12D
Hobbs, New Mexico
BJ Services Company, U.S.A.

Well	Date	Nitrate[1] (mg/L)	Sulfate[1] (mg/L)	Dissolved Methane (mg/L)
MW-12 (cont.)	6/8/2000	< 0.1	220	< 0.0012
	9/13/2000	< 0.1	240	< 0.0012
	12/7/2000	< 0.1	260	< 0.0012
	3/8/2001	< 0.1	300	< 0.0012
	6/22/2001	< 0.1	360	0.0021
	9/10/2001	Well Dry (Not Sampled) During This and Subsequent Monitoring Events		
MW-12D	9/18/2001	NA	190	< 0.0012
	12/6/2001	< 0.1	200	< 0.0012
	3/12/2002	< 0.1	200	< 0.0012
	6/18/2002	< 0.1	180	0.0012
	9/16/2002	0.06	172	< 0.0012
	1/9/2003	< 0.1	150	0.005
	3/6/2003	0.705	170	0.0038
	6/20/2003	< 0.1	160	< 0.0012
	8/22/2003	< 0.1	160	< 0.0012
	10/2/2003	< 0.1	140	< 0.0012
	12/18/2003	<0.1	160	<0.0012

(1) - By EPA Method 300, except as noted
(2) - NA indicates not analyzed
(3) - By EPA Method 375.4
(4) - By EPA Method 353.3
(5) - NS-D indicates not sampled (well dry)
mg/L = milligrams per liter

APPENDICES

APPENDIX A

Groundwater Sampling Forms

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-5

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 12-18-03 Time: 0830

Client: BJ Personnel: JE/RB

Project Location: HOBBS, NM Weather: Cold/+34°F/Windy

2. WELL DATA

Casing Diameter: 2 inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.50 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☒ Other: Historical
Depth to Static Water: 62.35 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 2.15 feet Well Volume: 0.344 gal Screened Interval (from GS): 45-60'

Pump Intake depth 63.5 (from GS) 3 WV = 1.032

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☒ No Pumping Rate: — gal/min

Equipment Model(s)
1. Bailer
2. Water probe
3. Hach Kit

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
	Bailed	1.25	gal	(3	well	volumes)			

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☐ No

Sample ID: MW-5 Sample Time: 0950 # of Containers: 8

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: 1.0 mg/L

DO: 3.6 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Sample for BTEX, TPH-D, TPH-G, NO_3, SO_4, Alkalinity, and Dissolved Methane

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature: [signature]

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-10

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 12-18-03 Time: 0930

Client: BJ Services Personnel: JE/RB

Project Location: Hobbs, NM Weather: Cold (+32°F) windy

2. WELL DATA

Casing Diameter: 2" inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 63.51 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.55 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 1.96 feet Well Volume: 0.31 gal Screened Interval (from GS): —

Pump Intake depth — (from GS) 3WV = 0.94 gal

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Bailer
2. Water probe
3. Hach kit

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
									Bailed out dry - 1/2 gal

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-10 Sample Time: 0930 # of Containers: 8

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: 6.8 mg/L

DO: 2.0 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Sampled for BTEX, TPH-GRO, Nitrate, sulfate, Alkalinity, Dissolved methane

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg) BTEX,

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-11A

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 12-18-03 Time: 0805

Client: BJ Personnel: JE/RB

Project Location: HOBBS, NM Weather: Cold 1 ± 55°F / Windy

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 63.82 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 62.05 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other: 50-65

Length of Water Column: 1.77 feet Well Volume: 0.283 gal Screened Interval (from GS): 50-65'

Pump Intake depth _____ (from GS) 3WV = 0.849 gal

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Bailer
2. Water Probe
3.

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
									Bailed out dry - 1 gal

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-11A Sample Time: 0930 # of Containers: 8

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: 7.8 mg/L

DO: 1.5 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

BTEX, TPH-D, TPH-G, NO_3, SO_4, Alkalinity & Dissolved Methane

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/28/02 - dg)

Signature: JE

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-12D

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 12-18-03 Time: 1030

Client: BJ Services Personnel: JE/RB

Project Location: HOBBS Weather: Cold/windy

2. WELL DATA

Casing Diameter: 2 inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 87.58 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☑ Other: Historical
Depth to Static Water: 62.21 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 25.37 feet Well Volume: 4.24 gal Screened Interval (from GS): 77½ - 87½'

Pump Intake depth 67 (from GS) 3 WV = 12.18

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☑ No Pumping Rate: — gal/min

Equipment Model(s)
1. Peristaltic Pump
2. Water Mole/Hach
3. YSI 600 XLS

Time	Cum. ~~Gallons~~ Liters Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
early purge 1124	L	—	°C	µS/cm	ORP	mg/L	—	ft	
1129	0.5	6.57	16.44	1120	-81	1.44	—	62.36	
1132	1.0	6.70	15.87	1124	-93	0.87	—	62.32	
1135	1.5	6.76	16.18	1121	-103	0.68	—	62.32	
1138	2.0	6.80	16.58	1124	-108	0.63	—	62.32	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 62.32 Field Filtered? ☐ Yes ☑ No

Sample ID: MW-12D Sample Time: 1140 # of Containers: 8

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 2.2 mg/L

DO: 1.2 ~~2.0~~ DE mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Sampled for BTEX, TPH-G, TPH-D, NO_3, SO_4, Alkalinity, and Dissolved Methane.

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-14

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 12-18-03 Time: 1245

Client: BJ Personnel: JE/RB

Project Location: Hobbs Weather: Cold / 35°F / cloudy

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 69.37 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☒ Other: Historical Records
Depth to Static Water: 62.55 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 6.82 feet	Well Volume: ~~3.27~~ 1.09 gal Screened Interval (from GS): 54.95 69.5
Pump Intake depth: — (from GS)	1.09 gal X 3 5 = 3 well volume = (3.27 gal) Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☐ Polyethylene ☒ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Bailer
2. W-probe
3.

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
	Bailed Dry at 1 gallon								clear

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: — ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☒ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-14 Sample Time: 1335 # of Containers: 1

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: — mg/L

DO: — mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Bailed dry at 1 gallon

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature: RB

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-15

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 12-18-03 Time: 1250

Client: BJ Personnel: JG/RB

Project Location: HOBBS, NM Weather: cold, cloudy ~35°F

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: ~ inches	Type: ☐ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 67.01 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☒ Other: Historical log
Depth to Static Water: 61.83 feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: – feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 5.18 feet Well Volume: 0.829 gal Screened Interval (from GS): 52' → 67.0'

Pump Intake depth: ____ (from GS) 0.829 gal x 3 = 2.49 gal = 3 well volumes

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☐ Polyethylene ☒ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: ____ gal/min

Equipment Model(s)
1. Bailer
2. W-probe
3.

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
							1.5 gal		
					DRY @				
					and bailed				Clear
	Bailed								
				2.49 gal		total			

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: ____ Field Filtered? ☐ Yes ☒ No

Sample ID: MW-15 Sample Time: 1330 # of Containers: 1

Duplicate Sample Collected? ☐ Yes ☒ No ID: ____

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: ____ mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

CHLORIDE

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/28/02 - dg)

Signature: JE

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-16

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 04 Date: 12-18-03 Time: 1545

Client: BJ Services Personnel: JE/RB

Project Location: HOBBS Weather: Cold/±60°F/windy

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:	
Screen Diameter: ~ inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:	
Total Depth of Well: 77.0 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:	
Depth to Static Water: 66.72 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:	
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:	

Length of Water Column: 10.28 feet Well Volume: 1.644 gal Screened Interval (from GS): _____

Pump intake depth 69' (from GS) 3 well volume: 1.644 x 3 = 4.9 gallons

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Was well purged dry? ☐ Yes ☑ No Pumping Rate: 0.176 gal/min

Equipment Model(s)
1. Fultz Pump
2. Water Probe
3. YSI

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1555	0		0C	µS/cm	ORP	mg/L	—	66.78	
1558	0.5	6.86	15.90	3444	58.4	4.58	—	66.89	SL cloudy
1600	1.0	6.83	15.99	3485	58.3	5.81	—	66.88	
1603	1.5	6.82	16.31	3475	58.7	6.48	—	66.90	
1606	2.0	6.78	17.08	3478	58.9	6.62	—	66.91	
1609	2.5	6.77	17.26	3477	58.8	6.74	—	66.93	
1612	3.0	6.77	17.31	3478	58.9	6.79	—	66.95	
	3.5								

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: 66.95 Field Filtered? ☐ Yes ☑ No

Sample ID: MW-16 Sample Time: 1615 # of Containers: 1

Duplicate Sample Collected? ☐ Yes ☑ No ID: _____

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

CHLORIDES

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature: JE

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

03120780

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2509
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ-Hobbs #12832
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-5	03120780-01	Water	12/18/03 9:50:00 AM	12/19/03 9:30:00 AM	188096	☐
MW-11A	03120780-02	Water	12/18/03 9:30:00 AM	12/19/03 9:30:00 AM	188096	☐
MW-10	03120780-03	Water	12/18/03 9:40:00 AM	12/19/03 9:30:00 AM	188096	☐
MW-12D	03120780-04	Water	12/18/03 11:40:00 AM	12/19/03 9:30:00 AM	188096	☐
Trip Blank	03120780-05	Water	12/18/03	12/19/03 9:30:00 AM	188096	☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

1/5/04
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

03120780

Report To:		Project Name:	BJ-Hobbs #12832
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2509		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	
ph: (713) 759-0999	fax: (713) 308-3886		

The data in this report applies to the analysis of four water samples for the BJ Services site in Hobbs, New Mexico. These samples were received on December 19, 2003, assigned to SPL Certificate of Analysis No. 03120780, and analyzed for the parameters as noted on Chain-of-Custody No.188096 .

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result pages or the quality control summary pages.

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L Lynch

Pat Lynch
Senior Project Manager

1/7/2004
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-5 **Collected:** 12/18/2003 9:50 **SPL Sample ID:** 03120780-01

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	234		2	1		12/30/03 12:00	J_C	2023664
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	ND		0.2	1		01/02/04 3:10	AM	2024953
Surr: n-Pentacosane	78.2	%	39-142	1		01/02/04 3:10	AM	2024953

Prep Method	Prep Date	Prep Initials
SW3510C	12/20/2003 7:56	K_L

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1	1		12/27/03 0:34	AE	2019751
Surr: 1,4-Difluorobenzene	106	%	74-121	1		12/27/03 0:34	AE	2019751
Surr: 4-Bromofluorobenzene	102	%	55-150	1		12/27/03 0:34	AE	2019751
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	ND		0.0012	1		12/22/03 20:58	J_F	2011153
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	2.5		0.1	1		12/19/03 17:37	CV	2006831
Sulfate	110		4	20		12/30/03 19:22	CV	2025263
PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: ug/L**		
Benzene	ND		1	1		12/27/03 0:34	AE	2019849
Ethylbenzene	ND		1	1		12/27/03 0:34	AE	2019849
Toluene	ND		1	1		12/27/03 0:34	AE	2019849
Xylenes,Total	ND		1	1		12/27/03 0:34	AE	2019849
Surr: 4-Bromofluorobenzene	106	%	57-157	1		12/27/03 0:34	AE	2019849
Surr: 1,4-Difluorobenzene	103	%	39-163	1		12/27/03 0:34	AE	2019849

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-11A **Collected:** 12/18/2003 9:30 **SPL Sample ID:** 03120780-02

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	386		2	1		12/30/03 12:00	J_C	2023665
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	0.63		0.2	1		01/02/04 3:48	AM	2024955
Surr: n-Pentacosane	68.0	%	39-142	1		01/02/04 3:48	AM	2024955

Prep Method	Prep Date	Prep Initials
SW3510C	12/20/2003 7:56	K_L

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	0.28		0.1	1		12/27/03 0:59	AE	2019752
Surr: 1,4-Difluorobenzene	127 MI	%	74-121	1	*	12/27/03 0:59	AE	2019752
Surr: 4-Bromofluorobenzene	105	%	55-150	1		12/27/03 0:59	AE	2019752
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	ND		0.0012	1		12/22/03 21:07	J_F	2011154
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND		0.1	1		12/19/03 18:15	CV	2006834
Sulfate	320		10	50		12/30/03 19:35	CV	2025265
PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: ug/L**		
Benzene	3.4		1	1		12/27/03 0:59	AE	2019850
Ethylbenzene	1.1		1	1		12/27/03 0:59	AE	2019850
Toluene	ND		1	1		12/27/03 0:59	AE	2019850
Xylenes,Total	ND		1	1		12/27/03 0:59	AE	2019850
Surr: 4-Bromofluorobenzene	103	%	57-157	1		12/27/03 0:59	AE	2019850
Surr: 1,4-Difluorobenzene	91.8	%	39-163	1		12/27/03 0:59	AE	2019850

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-10 **Collected:** 12/18/2003 9:40 **SPL Sample ID:** 03120780-03

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	279		2	1		12/30/03 12:00	J_C	2023666
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	0.85		0.25	1		01/02/04 4:26	AM	2024956
Surr: n-Pentacosane	67.8	%	39-142	1		01/02/04 4:26	AM	2024956

Prep Method	Prep Date	Prep Initials
SW3510C	12/20/2003 7:56	K_L

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1	1		12/27/03 1:26	AE	2019753
Surr: 1,4-Difluorobenzene	107	%	74-121	1		12/27/03 1:26	AE	2019753
Surr: 4-Bromofluorobenzene	119	%	55-150	1		12/27/03 1:26	AE	2019753
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	ND		0.0012	1		12/22/03 21:27	J_F	2011158
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	0.28		0.1	1		12/19/03 18:27	CV	2006835
Sulfate	350		20	100		12/30/03 19:48	CV	2025266
PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: ug/L**		
Benzene	ND		1	1		12/27/03 1:26	AE	2019852
Ethylbenzene	ND		1	1		12/27/03 1:26	AE	2019852
Toluene	ND		1	1		12/27/03 1:26	AE	2019852
Xylenes,Total	ND		1	1		12/27/03 1:26	AE	2019852
Surr: 4-Bromofluorobenzene	105	%	57-157	1		12/27/03 1:26	AE	2019852
Surr: 1,4-Difluorobenzene	98.6	%	39-163	1		12/27/03 1:26	AE	2019852

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-12D **Collected:** 12/18/2003 11:40 **SPL Sample ID:** 03120780-04

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY (AS CACO3), TOTAL				**MCL**	**E310.1**	**Units: mg/L**		
Alkalinity, Total (As CaCO3)	189		2	1		12/30/03 12:00	J_C	2023667
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Diesel Range Organics	ND		0.2	1		01/02/04 5:05	AM	2024957
Surr: n-Pentacosane	77.2	%	39-142	1		01/02/04 5:05	AM	2024957

Prep Method	Prep Date	Prep Initials
SW3510C	12/20/2003 7:56	K_L

GASOLINE RANGE ORGANICS				**MCL**	**SW8015B**	**Units: mg/L**		
Gasoline Range Organics	ND		0.1	1		12/27/03 1:51	AE	2019754
Surr: 1,4-Difluorobenzene	105	%	74-121	1		12/27/03 1:51	AE	2019754
Surr: 4-Bromofluorobenzene	105	%	55-150	1		12/27/03 1:51	AE	2019754
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**		
Methane	ND		0.0012	1		12/22/03 21:36	J_F	2011157
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND		0.1	1		12/19/03 18:40	CV	2006836
Sulfate	160		4	20		12/30/03 20:26	CV	2025270
PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: ug/L**		
Benzene	ND		1	1		12/27/03 1:51	AE	2019853
Ethylbenzene	ND		1	1		12/27/03 1:51	AE	2019853
Toluene	ND		1	1		12/27/03 1:51	AE	2019853
Xylenes,Total	ND		1	1		12/27/03 1:51	AE	2019853
Surr: 4-Bromofluorobenzene	99.3	%	57-157	1		12/27/03 1:51	AE	2019853
Surr: 1,4-Difluorobenzene	98.7	%	39-163	1		12/27/03 1:51	AE	2019853

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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Client Sample ID Trip Blank | **Collected:** 12/18/2003 0:00 | **SPL Sample ID:** 03120780-05

Site: **Hobbs, NM**

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: ug/L**		
Benzene	ND		1	1		12/27/03 2:17	AE	2019855
Ethylbenzene	ND		1	1		12/27/03 2:17	AE	2019855
Toluene	ND		1	1		12/27/03 2:17	AE	2019855
Xylenes,Total	ND		1	1		12/27/03 2:17	AE	2019855
Surr: 4-Bromofluorobenzene	98.4	%	57-157	1		12/27/03 2:17	AE	2019855
Surr: 1,4-Difluorobenzene	94.7	%	39-163	1		12/27/03 2:17	AE	2019855

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Diesel Range Organics
Method: SW8015B
WorkOrder: 03120780
Lab Batch ID: 34298

Method Blank

RunID: HP_V_031231E-2024944 Units: mg/L
Analysis Date: 12/31/2003 19:32 Analyst: AM
Preparation Date: 12/20/2003 7:56 Prep By: K_L Method SW3510C

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.20
Surr: n-Pentacosane	94.8	18-120

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01B	MW-5
03120780-02B	MW-11A
03120780-03B	MW-10
03120780-04B	MW-12D

Laboratory Control Sample (LCS)

RunID: HP_V_031231E-2024946 Units: mg/L
Analysis Date: 12/31/2003 20:10 Analyst: AM
Preparation Date: 12/20/2003 7:56 Prep By: K_L Method SW3510C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics	2.5	2.13	85	21	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03120820-01
RunID: HP_V_031231E-2024949 Units: mg/L
Analysis Date: 12/31/2003 21:26 Analyst: AM
Preparation Date: 12/20/2003 7:56 Prep By: K_L Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics	0.666	5	2.43	35.2	5	2.55	37.7	5.04	39	13	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Headspace Gas Analysis
Method: RSK147
WorkOrder: 03120780
Lab Batch ID: R100842

Method Blank

RunID: VARC_031222C-2011143 Units: mg/L
Analysis Date: 12/22/2003 18:30 Analyst: J_F

Analyte	Result	Rep Limit
Methane	ND	0.0012

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01D	MW-5
03120780-02D	MW-11A
03120780-03D	MW-10
03120780-04D	MW-12D

Laboratory Control Sample (LCS)

RunID: VARC_031222C-2011144 Units: mg/L
Analysis Date: 12/22/2003 18:40 Analyst: J_F

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Methane	1000	823	82	70	130

Sample Duplicate

Original Sample: 03120666-01
RunID: VARC_031222C-2011145 Units: mg/L
Analysis Date: 12/22/2003 18:51 Analyst: J_F

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Butane	ND	ND	0	50
Ethane	ND	ND	0	50
Ethylene	ND	ND	0	50
Isobutane	ND	ND	0	50
Methane	ND	ND	0	50
Propane	ND	ND	0	50
Propylene	ND	ND	0	50

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Gasoline Range Organics
Method: SW8015B

WorkOrder: 03120780
Lab Batch ID: R101220

Method Blank

RunID: HP_S_031226B-2019738 Units: mg/L
Analysis Date: 12/26/2003 18:05 Analyst: AE

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	98.3	74-121
Surr: 4-Bromofluorobenzene	100.0	55-150

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01A	MW-5
03120780-02A	MW-11A
03120780-03A	MW-10
03120780-04A	MW-12D

Laboratory Control Sample (LCS)

RunID: HP_S_031226B-2019735 Units: mg/L
Analysis Date: 12/26/2003 13:25 Analyst: AE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	1	100	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03120727-04
RunID: HP_S_031226B-2019736 Units: mg/L
Analysis Date: 12/26/2003 17:13 Analyst: AE

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	0.541	0.9	1.71	130	0.9	1.53	110	10.9	36	36	160

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Purgeable Aromatics
Method: SW8021B
WorkOrder: 03120780
Lab Batch ID: R101225

Method Blank

RunID: HP_S_031226A-2019827 Units: ug/L
Analysis Date: 12/26/2003 18:05 Analyst: AE

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	97.6	39-163
Surr: 4-Bromofluorobenzene	108.6	57-157

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01A	MW-5
03120780-02A	MW-11A
03120780-03A	MW-10
03120780-04A	MW-12D
03120780-05A	Trip Blank

Laboratory Control Sample (LCS)

RunID: HP_S_031226A-2019817 Units: ug/L
Analysis Date: 12/26/2003 12:59 Analyst: AE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	48.9	98	81	125
Ethylbenzene	50	48.4	97	85	119
Toluene	50	49.1	98	87	120
Xylenes,Total	150	145.3	97	83	122

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03120727-01
RunID: HP_S_031226A-2019820 Units: ug/L
Analysis Date: 12/26/2003 16:21 Analyst: AE

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	20.5	98.6	20	20.2	97.0	1.56	26	43	155
Ethylbenzene	ND	20	20.1	101	20	19.4	97.1	3.64	34	51	142
Toluene	ND	20	19.6	97.9	20	18.6	92.9	5.21	25	57	142
Xylenes,Total	ND	60	60.7	101	60	58.2	97.0	4.21	27	47	154

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 03120780
Lab Batch ID: R100656

Method Blank

RunID: IC1_031219A-2006827 Units: mg/L
Analysis Date: 12/19/2003 16:46 Analyst: CV

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01C	MW-5
03120780-02C	MW-11A
03120780-03C	MW-10
03120780-04C	MW-12D

Laboratory Control Sample (LCS)

RunID: IC1_031219A-2006828 Units: mg/L
Analysis Date: 12/19/2003 16:59 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10	10.5	105	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03120780-01
RunID: IC1_031219A-2006832 Units: mg/L
Analysis Date: 12/19/2003 17:49 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	2.46	10	13.3	109	10	13.3	109	0.00150	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Alkalinity (as CaCO3), Total
Method: E310.1
WorkOrder: 03120780
Lab Batch ID: R101404

Method Blank

RunID: WET_031230S-2023656 Units: mg/L
Analysis Date: 12/30/2003 12:00 Analyst: J_C

Analyte	Result	Rep Limit
Alkalinity, Total (As CaCO3)	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01C	MW-5
03120780-02C	MW-11A
03120780-03C	MW-10
03120780-04C	MW-12D

Laboratory Control Sample (LCS)

RunID: WET_031230S-2023658 Units: mg/L
Analysis Date: 12/30/2003 12:00 Analyst: J_C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Total (As CaCO3)	101	98.5	98	90	110

Sample Duplicate

Original Sample: 03120713-01
RunID: WET_031230S-2023659 Units: mg/L
Analysis Date: 12/30/2003 12:00 Analyst: J_C

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Total (As CaCO3)	408	407.9	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs #12832

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 03120780
Lab Batch ID: R101495

Method Blank

RunID: IC1_031230A-2025235 Units: mg/L
Analysis Date: 12/30/2003 13:09 Analyst: CV

Analyte	Result	Rep Limit
Sulfate	ND	0.20

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120780-01C	MW-5
03120780-02C	MW-11A
03120780-03C	MW-10
03120780-04C	MW-12D

Laboratory Control Sample (LCS)

RunID: IC1_031230A-2025236 Units: mg/L
Analysis Date: 12/30/2003 13:21 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10	10.4	104	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03120713-03
RunID: IC1_031230A-2025243 Units: mg/L
Analysis Date: 12/30/2003 16:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	0.838	10	12.1	112	10	11.9	111	1.27	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

Sample Receipt Checklist
And
Chain of Custody

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No: 03120780

188096

page 1 of 1

Client Name: Brown and Caldwell

Address/Phone: 1415 Louisiana Suite 2500 713-759-0999

Client Contact: Rick Rexroad

Project Name: BJ - Hobbs

Project Number: 12832

Project Location: Hobbs, New Mexico

Invoice To: Rick Rexroad

matrix: W=water S=soil SL=sludge O=other:

bottle: P=plastic A=amber glass G=glass V=vial

size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz

pres.: 1=HCl 2=HNO3 3=H2SO4 O=other:

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX	TPH-G	TPH-D	NO3	SO4	Alkalinity	Dissolved Methane		
MW-5	12-18-03	0950		✓	W	A,P,V	1,40	1	8	✓	✓	✓	✓	✓	✓	✓		
MW-11A	12-18-03	0930		✓	W	A,P,V	1,40	1	8	✓	✓	✓	✓	✓	✓	✓		
MW-10	12-18-03	0940		✓	W	A,P,V	1,40	1	8	✓	✓	✓	✓	✓	✓	✓		
MW-12D	12-18-03	1140		✓	W	A,P,V	1,40	1	8	✓	✓	✓	✓	✓	✓	✓		
Trip Blank	—	—			W	V	40	1	2	✓				~~✓~~				

RUSH

Client/Consultant Remarks: ~~Do not sample Trip Blank~~ PB BTEX only, for Trip Blank.

Laboratory remarks:

Intact? ☐ Y ☐ N

Temp: 3.8°C

Requested TAT

24hr ☐ 72hr ☐

48hr ☐ Standard ☑

Other ☐ _____

Special Reporting Requirements: Fax Results ☐ Raw Data ☐ Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial): JT 12/21/03

1. Relinquished by Sampler:	date	time	2. Received by:
Ricardo Banda	12-18-03	1500	
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date	time	6. Received by Laboratory:
	12/19/03	0930	

☑ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459-Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

CS 8423 7688 7778 SD 3011 L

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	03120780	Received By:	RE
Date and Time Received:	12/19/03 9:30:00 AM	Carrier name:	Fedex-Standard Overnight
Temperature:	3.8°C	Chilled by:	Water Ice

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	Not Applicable ☐
13.	**Water - pH acceptable upon receipt?**	Yes ☑	No ☐	Not Applicable ☐

SPL Representative:
Contact Date & Time:
Client Name Contacted:

Non Conformance Issues:

Client Instructions:

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

03120777

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2509
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ-Hobbs/12832
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-14	03120777-01	Water	12/18/03	12/19/03 9:30:00 AM	188100	☐
MW-15	03120777-02	Water	12/18/03	12/19/03 9:30:00 AM	188100	☐
MW-16	03120777-03	Water	12/18/03	12/19/03 9:30:00 AM	188100	☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

1/5/04
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

03120777

Report To:		Project Name:	BJ-Hobbs/12832
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2509		PO Number:	
Houston			
TX		State:	New Mexico
77002-		State Cert. No.:	
ph: (713) 759-0999	fax: (713) 308-3886	Date Reported:	

The data in this report applies to the analysis of three water samples for the BJ Services site in Hobbs, New Mexico. These samples were received on December 19, 2003, assigned to SPL Certificate of Analysis No. 03120777, and analyzed for the parameters as noted on Chain-of-Custody No.188100 .

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result pages or the quality control summary pages.

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

1/7/2004
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-14 **Collected:** 12/18/2003 0:00 **SPL Sample ID:** 03120777-01

Site: **Hobbs, NM**

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.3**	**Units: mg/L**		
Chloride	123	2	2		12/30/03 18:00	RA	2025391

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-15 **Collected:** 12/18/2003 0:00 **SPL Sample ID:** 03120777-02

Site: **Hobbs, NM**

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.3**	**Units: mg/L**		
Chloride	263	5	5		12/30/03 18:00	RA	2025394

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-16 **Collected:** 12/18/2003 0:00 **SPL Sample ID:** 03120777-03

Site: **Hobbs, NM**

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.3**	**Units: mg/L**		
Chloride	823	10	10		12/30/03 18:00	RA	2025395

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

BJ-Hobbs/12832

Analysis: Chloride, Total
Method: E325.3
WorkOrder: 03120777
Lab Batch ID: R101502

Method Blank

RunID: WET_031230X-2025387 Units: mg/L
Analysis Date: 12/30/2003 18:00 Analyst: RA

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03120777-01A	MW-14
03120777-02A	MW-15
03120777-03A	MW-16

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: WET_031230X-2025389 Units: mg/L
Analysis Date: 12/30/2003 18:00 Analyst: RA

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	78	77.05	99	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03120777-01
RunID: WET_031230X-2025392 Units: mg/L
Analysis Date: 12/30/2003 18:00 Analyst: RA

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	122.6	100	220.7	98.07	100	220.7	98.07	0	20	85	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

1/5/04 8:54:59 AM

Sample Receipt Checklist
And
Chain of Custody

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No: 0312 0777

188100

page 1 of 1

Client Name: Brown and Caldwell

Address/Phone: 1415 Louisiana, Suite 2500 713-759-0999

Client Contact: Rick Rexroad

Project Name: BJ - Hobbs

Project Number: 12832

Project Location: Hobbs, NM

Invoice To: Rick Rexroad

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil SL=sludge O=other:)	bottle (P=plastic A=amber glass G=glass V=vial)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz)	pres. (1=HCl 2=HNO3 3=H2SO4 O=other:)	Number of Containers	Chloride
MW-14	12-18-03			✓	W	P	1	None	1	✓
MW-15	12-18-03			✓	W	P	1	None	1	✓
MW-16	12-18-03			✓	W	P	1	None	1	✓

Client/Consultant Remarks: Do not analyze triplank in this cooler.

Laboratory remarks:

Intact? ☐ Y ☐ N

Temp: 4.2°C

Requested TAT

24hr ☐ 72hr ☐

48hr ☐ Standard ☑

Other ☐ _____

Special Reporting Requirements: Fax Results ☐ Raw Data ☐ Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial): JL 12/22/03

1. Relinquished by Sampler: Ricardo Banda RBB	date 12-18-03	time 1600	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 12/19/03	time 9:30	6. Received by Laboratory:

☑ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459-Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

8423 7488 7951 50 30 lbs CS

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	03120777	Received By:	R_R
Date and Time Received:	12/19/03 9:30:00 AM	Carrier name:	FedEx
Temperature:	4.2°C	Chilled by:	Water Ice

		Yes	No	Not Present
1.	Shipping container/cooler in good condition?	☑	☐	☐
2.	Custody seals intact on shippping container/cooler?	☐	☐	☑
3.	Custody seals intact on sample bottles?	☐	☐	☑
4.	Chain of custody present?	☑	☐	
5.	Chain of custody signed when relinquished and received?	☑	☐	
6.	Chain of custody agrees with sample labels?	☑	☐	
7.	Samples in proper container/bottle?	☑	☐	
8.	Sample containers intact?	☑	☐	
9.	Sufficient sample volume for indicated test?	☑	☐	
10.	All samples received within holding time?	☑	☐	
11.	Container/Temp Blank temperature in compliance?	☑	☐	
12.	Water - VOA vials have zero headspace?	☐	☐	Not Applicable ☑
13.	Water - pH acceptable upon receipt?	☐	☐	Not Applicable ☑

SPL Representative:
Contact Date & Time:
Client Name Contacted:

Non Conformance Issues:

Client Instructions:

APPENDIX C

Oil & Gas Well Search

Banks Information Solutions, Inc.

Oil & Gas Well Search

December 18, 2003

CLIENT

Brown & Caldwell
Attention: Rick Rexroad
1415 Louisiana Street, #250
Houston, Texas 77002
Phone: 713-759-0999
Fax: 713-308-3886

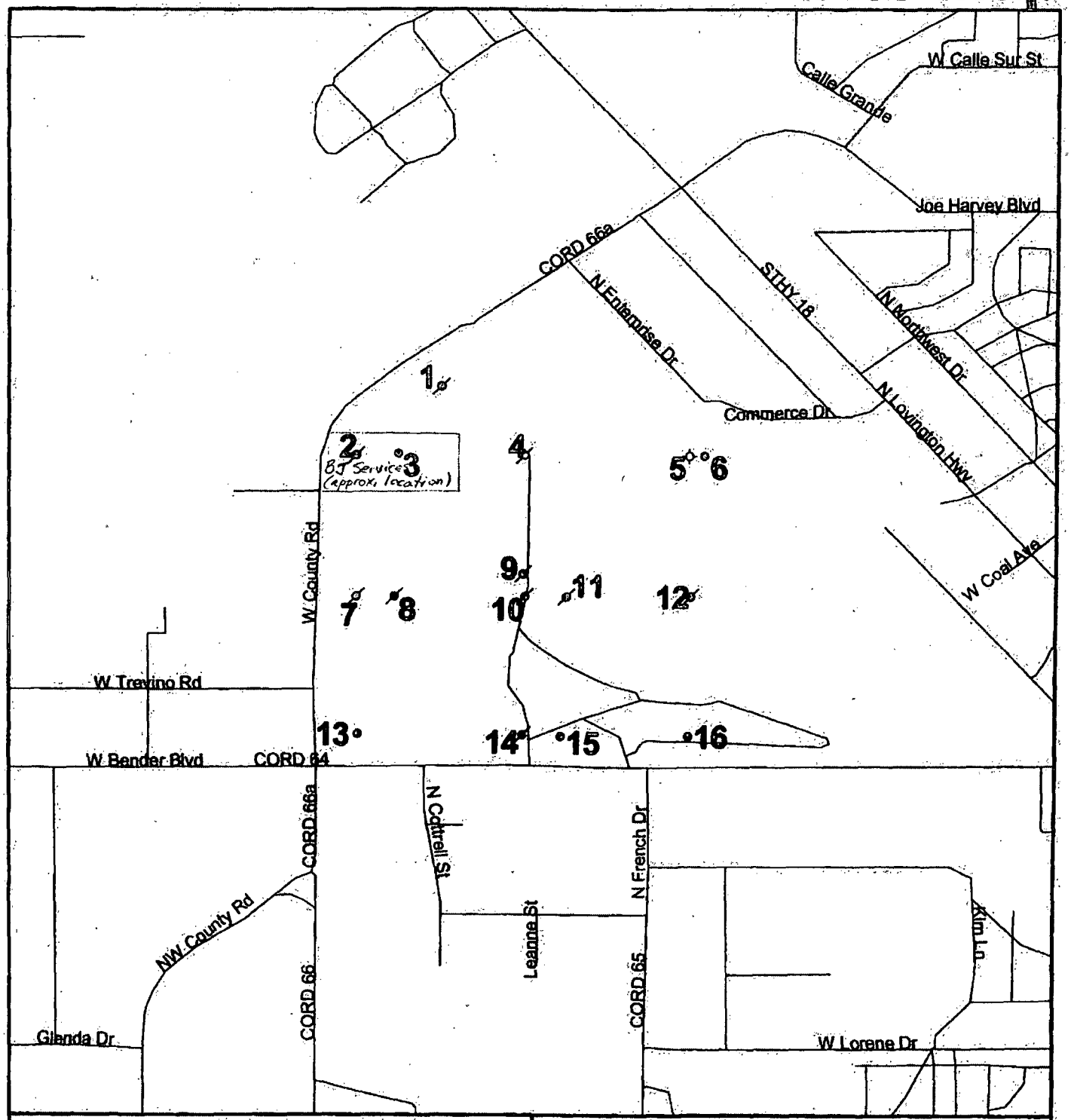
SITE

BJ Services
Hobbs, New Mexico
Lea County

Banks Information Solutions, Inc. P.O. Box 12851, Capitol Station Austin, Texas 78711
1701 Nueces Austin, Texas 78701 512-478-0059 FAX 512-478-1433
E-Mail banks @ banksinfo.com www.banksinfo.com

Banks
Information
Solutions, Inc.

Site Map



BJ Services Facility
Hobbs, New Mexico
Lea County

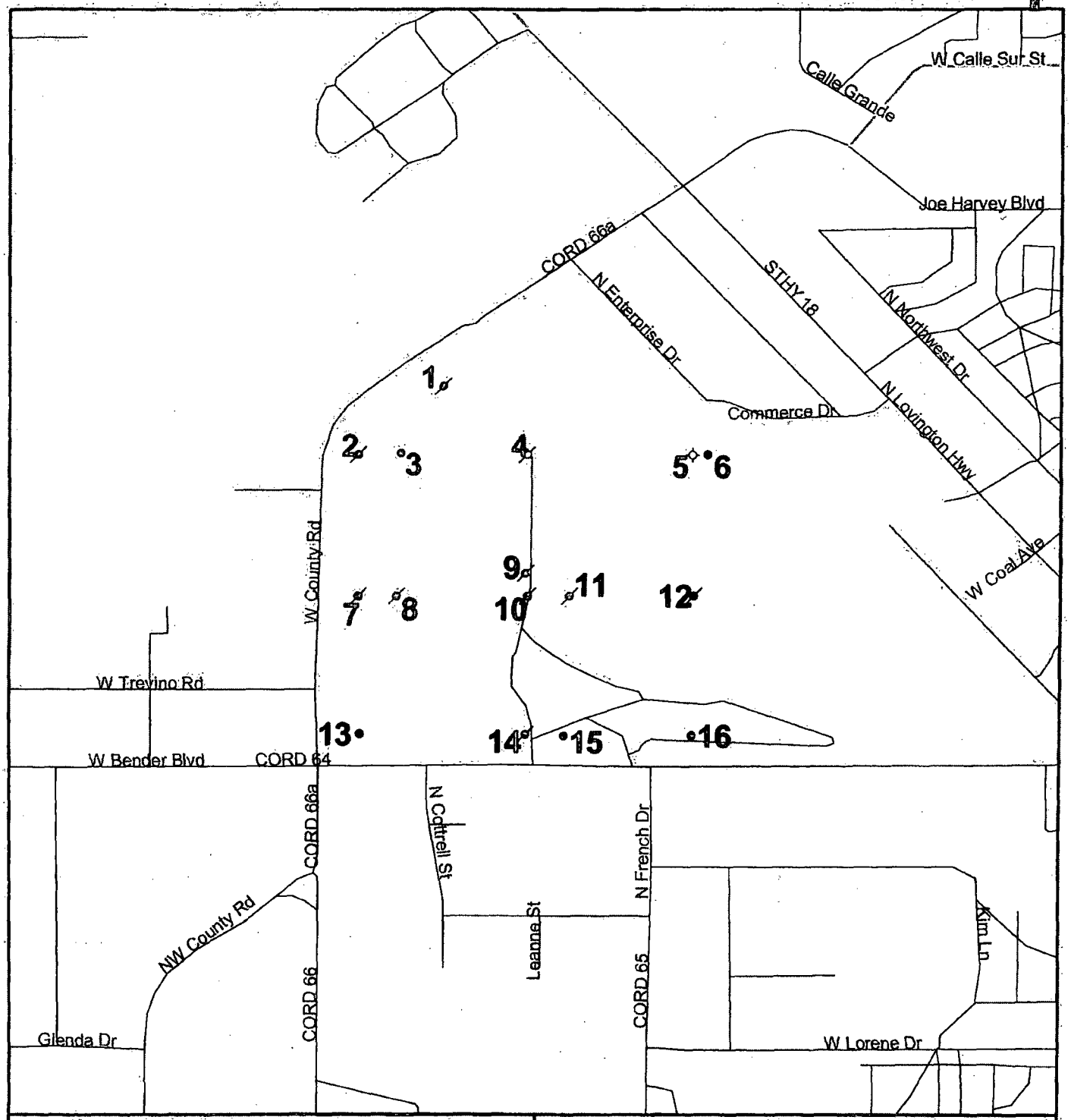
0 0.5 Miles

Local road
Water body
Park
State
Highway
Primary road
Secondary road

N

Banks
Information
Solutions, Inc.

Site Map



BJ Services Facility
Hobbs, New Mexico
Lea County

0 0.5 Miles

Local road
Water body
Park
State
Highway
Primary road
Secondary road

N

Oil & Gas Well Search

Subject Property: BJ Services
Hobbs, New Mexico
Lea County

Wells were searched within eastern half of section 20.

REPORT SUMMARY	
WELL TYPE	**NUMBER IDENTIFIED**
Oil Wells	**5**
Gas Wells	**0**
Other Types of Wells*	**11**
TOTAL NUMBER OF WELLS FOUND	**16**
*May include dry holes, abandoned locations, disposal, injection, domestic or water supply wells.	

SOURCES AND LIMITATIONS

Banks Information Solutions, Inc. has performed a thorough and diligent search of all wells recorded with the Louisiana Department of Natural Resources (LDNR). All information was obtained from the LDNR. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the well locations and well data could possibly be traced to the appropriate regulatory authority. Therefore, Banks cannot guarantee the accuracy of the data or well location(s) of those maps and records maintained by the Louisiana Department of Natural Resources.

MAP ID #	OPERATOR	LEASE	WELL #	DRILLED DATE	Plug Date	Depth	TYPE / STATUS	API #	COMMENTS
1	Moran Oil Prod. & Drlg.	SM-20	1	3/24/62	Unknown	6175'	Oil	30-025-07374	Plugged and Abandoned
2	Sun Oil Company	McKinley B	1	1/28/47	Unknown	8010'	Oil	30-025-07380	Plugged and Abandoned
3	Morris R. Antwell	McKinley B	1-A	3/20/52	N/A	4270'	Oil	30-025-07379	Active
4	Shell Oil Co.	North Hobbs (GBSA) Unit Sec. 20	Wi-421	2/24/82	N/A	4414'	Injection	30-025-07388	Active
5	Morris R. Antwell	Morris	1	11/3/52	Unknown	4294'	Dry	30-025-07389	Plugged and Abandoned
6	Robinson Oil Co.	Morris #002	2	5/29/82	N/A	4230'	Oil	30-025-27777	Active
7	Humble Oil & Refg Co.	BA Bowers B	2	12/24/32	Unknown	4247'	Oil	30-025-07372	Assumed Plugged and Abandoned
8	Shell Western E & P Inc.	North Hobbs G/SA UT. Sec 20 #331	2-AO	3/17/54	Unknown	4202'	Oil	30-025-07381	Assumed Plugged and Abandoned
9	Occidental Permian Ltd.	North Hobbs G/SA UT. #432	3	1/23/54	Unknown	4210'	Oil	30-025-07387	Assumed Plugged and Abandoned
10	Sweet C H Oil Co.	Brown Grimes	1	11/27/34	Unknown	4244	Oil	30-025-07376	Assumed Plugged and Abandoned
11	Occidental Permian Ltd.	North Hobbs G/SA UT. #432	1-AO	5/25/52	Unknown	4253'	Oil	30-025-07386	Assumed Plugged and Abandoned
12	Occidental Permian Ltd.	North Hobbs G/SA Unit #131	131	7/2/83	Unknown	4235'	Oil	30-025-07393	Assumed Plugged and Abanonded
13	Occidental Permian Ltd.	North Hobbs G/SA Unit #341	1	10/5/69	N/A	4242'	Oil	30-025-07371	Active
14	Humble Oil & Refg Co.	Bowers B	3	1/31/33	Unknown	4225'	Oil	30-025-07373	Assumed Plugged and Abandoned
15	Sweet C H Oil Co.	Bowers-Federal	3	3/1/54	Unknown	4230'	Oil	30-025-07385	Assumed Plugged and Abandoned
16	Occidental Permian Ltd.	North Hobbs G/SA Unit #141	1	1/15/35	N/A	4219'	Oil	30-025-07390	Active

APPENDIX D

Historic Aerial Photographs

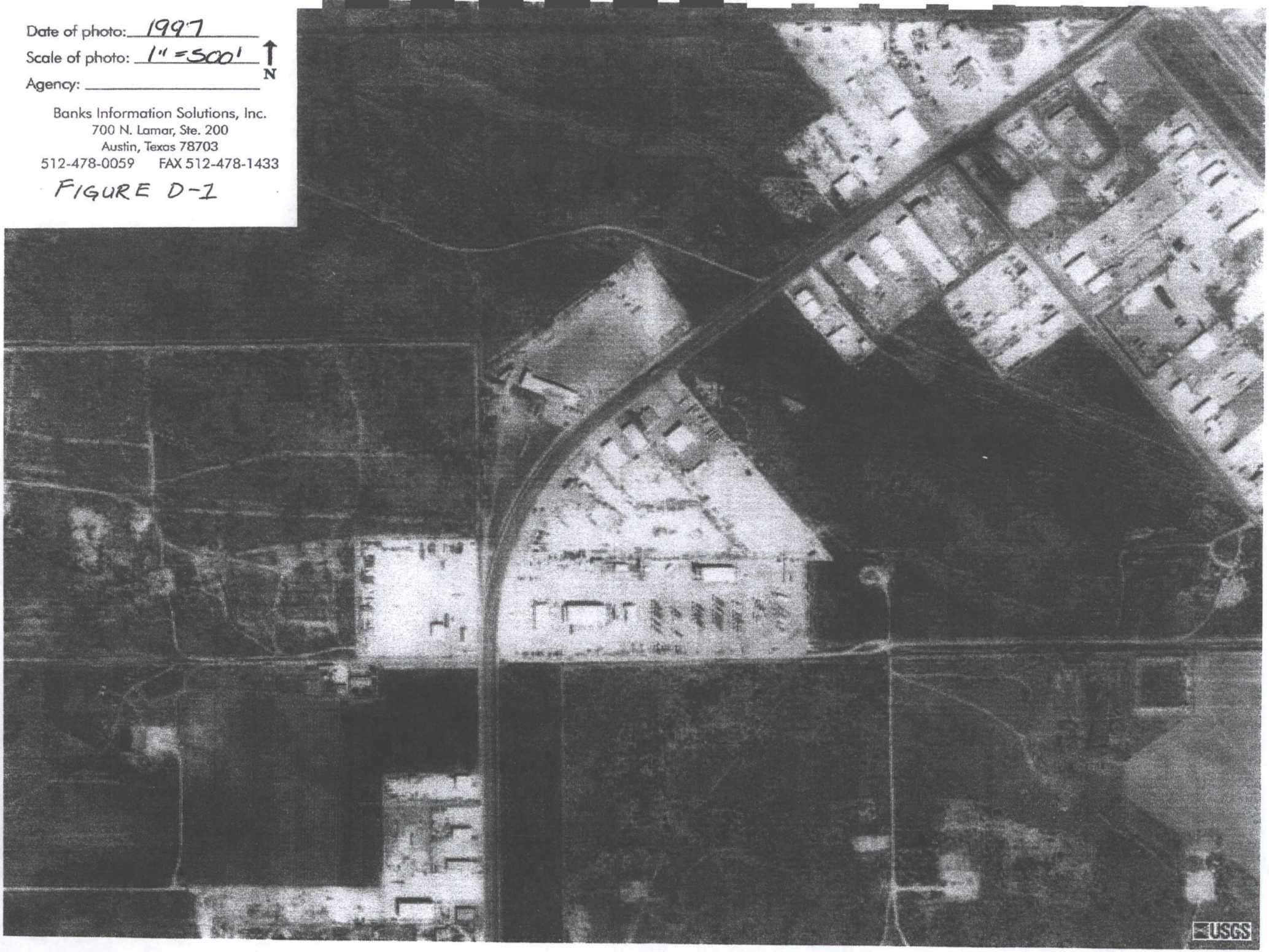
Date of photo: 1997

Scale of photo: 1" = 500'

Agency:

Banks Information Solutions, Inc.
700 N. Lamar, Ste. 200
Austin, Texas 78703
512-478-0059 FAX 512-478-1433

FIGURE D-1



Date of photo: 1980

Scale of photo: 1" = 500'

Agency: _____

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Austin, Texas 78703
512-478-0059 FAX 512-478-1433

FIGURE D-2

Date of photo: 1977

Scale of photo: 1" = 500'

Agency: _____

N

Banks Information Solutions, Inc.
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Austin, Texas 78703
512-478-0059 FAX 512-478-1433

FIGURE D-3

Date of photo: 1966

Scale of photo: 1" = 500'

N

Agency:

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700 N. Lamar, Ste. 200
Austin, Texas 78703
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FIGURE D-4

Date of photo: 1949

Scale of photo: 1" = 500'

Agency: _____

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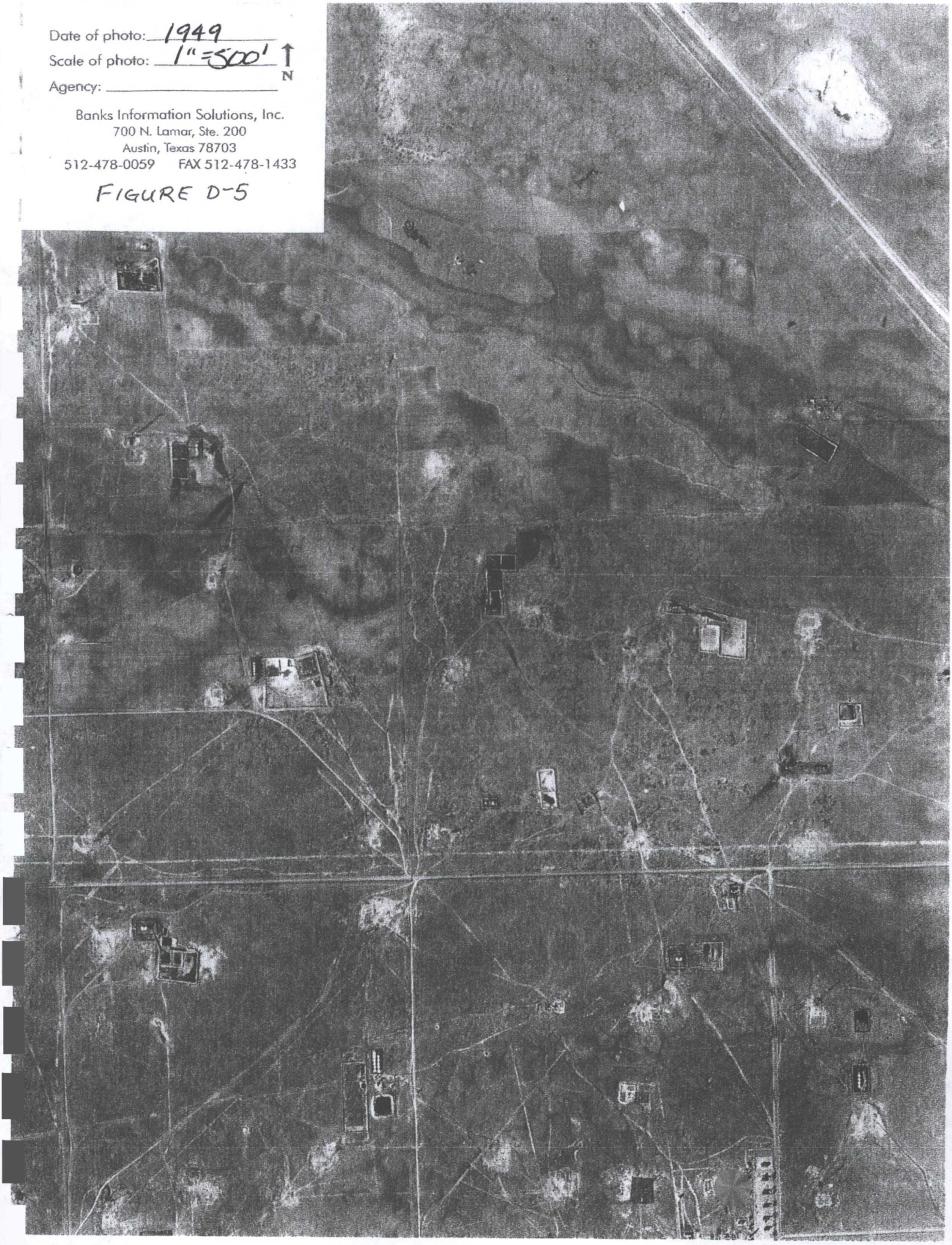
FIGURE D-5



APPENDIX E

Current Water Well Search

Banks Information Solutions, Inc.

Water Well Report™

December 8, 2003

CLIENT

Brown & Caldwell, Inc.
1415 Louisiana Street, #2500
Houston, TX 77002

SITE

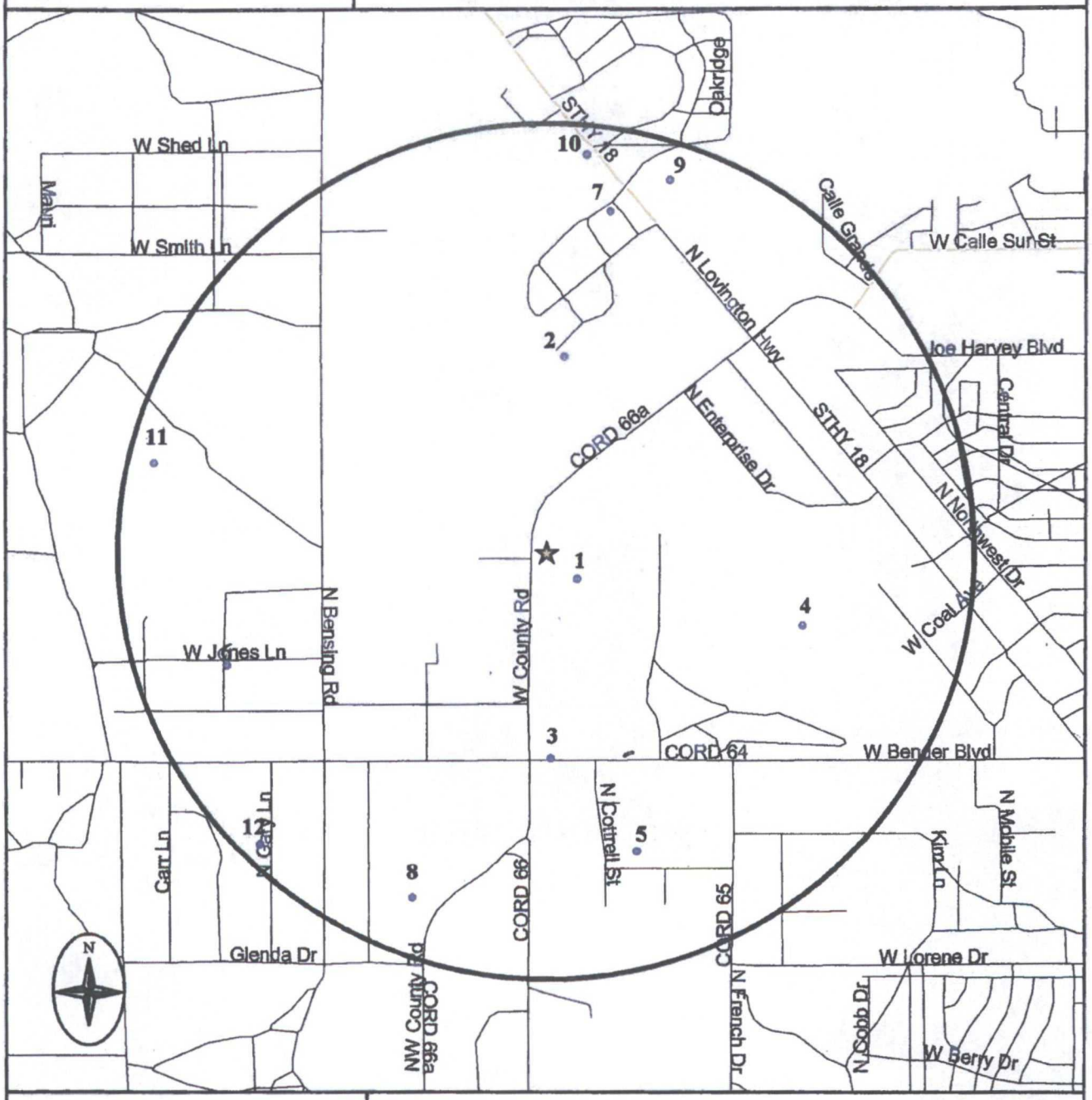
BJ Services Facility
Hobbs, New Mexico
Lea County
120803-038

P.O. Box 12851, Capitol Station, Austin, TX 78711
700 N. Lamar, Suite 200 Austin, TX 78703
512.478.0059 FAX 512.478.1433 e-mail banks@banksinfo.com

Banks Information Solutions, Inc.

Water Well Report™

Map of Wells within One and One-Quarter Miles



Subject Site
Ground Water Wells (Cluster)
Ground Water Well
Airport
Hospital
Highway
Primary road
Secondary and connecting road
Local road
Access road
Water body
Park
State

0 0.5 1 Miles

Banks Information Solutions, Inc.
P.O. Box 12851, Capitol Station Austin, Texas 78711
700 N. Lamar, Suite 200 Austin, Texas 78703
512-478-0059 FAX 512-478-1433 E Mail: BANKS@BANKSINFO.COM

December 8, 2003

Banks Information Solutions, Inc.

Water Well Report™

DETAILS

		MAP ID
State ID	324356103100701	1
Banks ID	3502501465	
Owner Of Well	CITY OF EUNICE	
Type Of Well	Irrigation	
Depth Drilled	N/A '	
Completion Date	N/A	
Longitude	-103.168611111	
Lattitude	32.73222222222	

		MAP ID
State ID	L 04320	2
Banks ID	3502503683	
Owner Of Well	INC. DONNELLY DRILLING CO.	
Type Of Well	Industrial	
Depth Drilled	112 '	
Completion Date	11/10/1959	
Longitude	-103.169161	
Lattitude	32.740158	

		MAP ID
State ID	324333103101101	3
Banks ID	3502501442	
Owner Of Well	NOLEN, KEN, AND NOLEN CONSTRUCTIO	
Type Of Well	Domestic	
Depth Drilled	102 '	
Completion Date	4/26/1993	
Longitude	-103.169722222	
Lattitude	32.72583333333	

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Banks Information Solutions, Inc.

Water Well Report™

DETAILS

		MAP ID
State ID	324350103093301	4
Banks ID	3502501458	
Owner Of Well	CITY OF EUNICE	
Type Of Well	Unused	
Depth Drilled	130 '	
Completion Date	N/A	
Longitude	-103.159166667	
Latitude	32.73055555556	

		MAP ID
State ID	324321103095801	5
Banks ID	3502501426	
Owner Of Well	N/A	
Type Of Well	Unused	
Depth Drilled	N/A '	
Completion Date	N/A	
Lon itude	-103.166111111	
Latitude	32.7225	

		MAP ID
State ID	324345103110001	6
Banks ID	3502501455	
Owner Of Well	JONES, CHARLES B.	
Type Of Well	Irrigation	
Depth Drilled	N/A '	
Completion Date	N/A	
Longitude	-103.183333333	
Latitude	32.72916666667	

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700 N. Lamar, Suite 200 Austin, TX 78703
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Banks Information Solutions, Inc.

Water Well Report™

DETAILS

State ID	324443103100201	MAP ID 7
Banks ID	3502501501	
Owner Of Well	STATE OF NEW MEXICO	
Type Of Well	Domestic	
Depth Drilled	100 '	
Completion Date	N/A	
Longitude	-103.167222222	
Latitude	32.74527777778	

State ID	324315103103201	MAP ID 8
Banks ID	3502501416	
Owner Of Well	RYLANT, W.L.	
Type Of Well	Domestic	
Depth Drilled	N/A '	
Completion Date	N/A	
Longitude	-103.175555556	
Latitude	32.72083333333	

State ID	324447103095301	MAP ID 9
Banks ID	3502501506	
Owner Of Well	STATE OF NEW MEXICO	
Type Of Well	Recreation	
Depth Drilled	120 '	
Completion Date	N/A	
Longitude	-103.164722222	
Latitude	32.74638888889	

P.O. Box 12851, Capitol Station, Austin, TX 78711
700 N. Lamar, Suite 200 Austin, TX 78703
512.478.0059 FAX 512.478.1433 e-mail banks@banksinfo.com

Banks Information Solutions, Inc.

Water Well Report™

DETAILS

State ID	L 04686	MAP ID 10
Banks ID	3502503685	
Owner Of Well	CACTUS DRILLING COMPANY	
Type Of Well	Industrial	
Depth Drilled	125 '	
Completion Date	8/3/1961	
Longitude	-103.168212	
Latitude	32.74728	

State ID	324411103111101	MAP ID 11
Banks ID	3502501477	
Owner Of Well	HUSTON, H.G.	
Type Of Well	Stock	
Depth Drilled	N/A '	
Completion Date	N/A	
Longitude	-103.186388889	
Latitude	32.73638888889	

State ID	324322103105501	MAP ID 12
Banks ID	3502501430	
Owner Of Well	N/A	
Type Of Well	N/A	
Depth Drilled	70 '	
Completion Date	N/A	
Longitude	-103.181944444	
Latitude	32.72277777778	

P.O. Box 12851, Capitol Station, Austin, TX 78711
700 N. Lamar, Suite 200 Austin, TX 78703
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Water Well Report™ Research Mapping Protocol

Banks Information Solutions, Inc. Water Well Report™ is prepared from existing state water well databases and/or additional file data/records research conducted at the State Engineers Office located in Santa Fe, New Mexico. In New Mexico, water wells are located within a grid system using section, township, and range. The locations of these wells on the enclosed map were plotted using a GIS program, ArcView 3.2, with the aid of the section, township, and range of the wells provided by the drillers logs.

Banks Information Solutions, Inc. has performed a thorough and diligent search of all groundwater well information provided and recorded with the New Mexico State Engineers Office. All mapped locations are based on information obtained from the NMSEO. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the records and mapped well locations could possibly be traced to the appropriate regulatory authority or the actual driller. It may be possible that some water well schedules and logs have never been submitted to the regulatory authority by the water driller and, thus, may explain the possible unaccountability of privately drilled wells. It is uncertain if the above listing provides 100% of the existing wells within the area of review. Therefore, Banks Information Solutions, Inc. cannot fully guarantee the accuracy of the data or well location(s) of those maps and records maintained by the New Mexico State Engineer regulatory authorities.

MARCH 2004 GROUNDWATER SAMPLING REPORT,
HOBBS, NEW MEXICO FACILITY, BJ SERVICES COMPANY, U.S.A.,
DATED JULY 16, 2004

MARCH 2004 GROUNDWATER SAMPLING REPORT HOBBS, NEW MEXICO FACILITY

BJ SERVICES COMPANY, U.S.A.

JULY 16, 2004

MARCH 2004 GROUNDWATER SAMPLING REPORT
HOBBS, NEW MEXICO FACILITY
BJ SERVICES COMPANY, U.S.A.

Prepared for

BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

BC Project Number: 12832.019

Richard L. Rexroad, P.G.
Project Manager

July 16, 2004

Brown and Caldwell
1415 Louisiana, Suite 2500
Houston, Texas 77002 - (713) 759-0999

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CONTENTS

1.0 INTRODUCTION

Brown and Caldwell conducted a quarterly groundwater sampling event at the BJ Services Company, U.S.A. (BJ Services) facility located at 2708 West County Road in Hobbs, New Mexico on March 29-30, 2004. This report presents a description of the groundwater sampling field activities, a summary and evaluation of the analytical results, and an evaluation of remedial technologies applied at the facility. A groundwater potentiometric surface map and a hydrocarbon distribution map are included.

A layout of the facility is shown in Figure 1. The facility formerly operated an on-site fueling system. The New Mexico Oil Conservation Division (NMOCD) detected evidence of subsurface impact near the former diesel fueling system during an on-site inspection on February 7, 1991. The fueling system was taken out of operation in July 1995. The NMOCD has required a quarterly groundwater monitoring program to assess the concentration of hydrocarbon constituents in groundwater as a result of the diesel fuel release.

A biosparging system was activated in November 1995 and expanded in March/April 1997 and February/March 1998 to remediate soil and groundwater at the former fuel island area of the facility. The biosparging system was deactivated on November 1, 2000 after achieving cleanup goals for groundwater. The confirmation soil sampling program specified in the NMOCD-approved Remedial Action Plan (RAP) for the facility was conducted in July 2001. The results of the confirmation soil sampling program were presented to NMOCD in the report for the June 2001 groundwater sampling event. In accordance with the RAP for the facility, four additional groundwater sampling events were conducted following the confirmation soil sampling event. Hydrocarbon concentrations in groundwater samples from applicable monitor wells remained below the target concentrations specified in the RAP during each of these sampling events, so a request to decommission the biosparging system was submitted to NMOCD in the June 2002 Groundwater Sampling and Biosparging System Closure Report for the facility.

BJ Services removed three field waste tanks from the facility on March 6-7, 1997. The ongoing groundwater monitoring program was expanded to address both the former fuel island and the former field waste tanks areas of the facility, as directed by NMOCD in correspondence dated January 21, 1999.

Table 1 presents a site chronology detailing the history of investigations into and the remediation of hydrocarbon impacts to soil and groundwater in the areas of the former fueling system and the former field waste tanks at the facility, along with the history of investigations conducted by BJ Services regarding chloride impact to groundwater at and in the vicinity of its facility in Hobbs, New Mexico.

2.0 FIELD ACTIVITIES AND RESULTS

Brown and Caldwell purged and sampled seven monitor wells (MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, and MW-16) at the facility on March 30, 2004 to evaluate concentrations of dissolved-phase hydrocarbons and NMQCC constituents in groundwater. The monitor well locations are shown in Figure 1. The following subsections describe the field activities conducted by Brown and Caldwell during the current groundwater sampling event and present the results from the associated groundwater analyses.

2.1 Groundwater Sampling Activities

Groundwater level measurements were obtained from all monitor wells at the facility prior to purging and sampling the wells listed above. Groundwater levels were measured to the nearest 0.01 foot with an electronic water-level indicator. Current and historical groundwater elevation data for each well are presented in Table 2. The groundwater elevation data presented in Table 2 indicate that groundwater levels have continued to decline in monitor wells at the facility since late 1995. A groundwater elevation map for March 29, 2004 is presented in Figure 2. The groundwater elevation data indicate that the groundwater flow direction is to the east/northeast, with hydraulic gradient ranging from 0.005 foot/foot (ft/ft) in the western portion of the facility to 0.009 ft/ft in the eastern portion of the groundwater monitoring area.

Monitor wells MW-5, MW-12D, and MW-16 were purged with a submersible pump and previously unused down-hole tubing until groundwater stabilization occurred. The remaining wells were purged with previously unused disposable bailers and clean, previously unused polyethylene rope. Three well volumes were purged from monitor well MW-15. Monitor wells MW-10, MW-11A, and MW-14 were purged dry.

Low flow/low stress purging was performed prior to sampling of monitor wells MW-5, MW-12D and MW-16 to maintain the water level at or near the static water level. Field parameter measurements for pH, specific conductivity, oxidation-reduction potential, dissolved oxygen, and

temperature were collected during purging of these wells. Ferrous iron and dissolved oxygen concentrations were measured in groundwater from all monitor wells upon conclusion of purging activities. Field parameter readings were recorded on the groundwater sampling forms included in Appendix A and are summarized in Table 3.

Groundwater samples were obtained directly from the discharge line of the submersible pump or by pouring recovered water from a bailer into laboratory-prepared, clean glass or plastic containers, sealed with Teflon®-lined lids, labeled, and placed on ice in an insulated cooler for delivery to Southern Petroleum Laboratory in Houston, Texas for analysis using standard chain-of-custody procedures.

Field measurement equipment was decontaminated prior to and following each use. Decontamination procedures consisted of washing with distilled water and a non-phosphate detergent, then rinsing with distilled water. Purge and decontamination waters were discharged to an on-site water reclamation system at the BJ Services facility.

2.2 Results of Groundwater Analyses

Groundwater samples from monitor wells MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, and MW-16 were analyzed for the following parameters using the indicated analytical methodologies:

- Chloride (Method 325.3);
- BTEX (Method 8021B);
- TPH-D (Method 8015B);
- Nitrate, Sulfate, Fluoride (Method E300);
- Bicarbonate and Carbonate Alkalinity (Method 2320B);
- Hardness (Method E130.2);
- Methane (Method RSK 147);
- Polynuclear Aromatic Hydrocarbons (Method 8310); and

- RCRA metals, calcium, magnesium, potassium and sodium (Method 6010B)/7470A.

TPH-G was not analyzed this quarter due to an insufficient supply of sample containers. Current and cumulative analytical results for BTEX constituents and TPH-D are presented in Table 5. Figure 3 presents a hydrocarbon distribution map for March 30, 2004. All BTEX concentrations measured in groundwater during the current sampling event are less than applicable NMWQCC standards.

Nitrate, sulfate, dissolved methane, and alkalinity data were used to evaluate mechanisms for natural attenuation of hydrocarbons at the facility. Current and historical results for nitrate, sulfate, and dissolved methane analyses performed on groundwater samples from monitor wells MW-5, MW-10, MW-11A, MW-12, and MW-12D are presented in Table 6.

The laboratory analytical reports and chain-of-custody documentation for groundwater samples collected during the current sampling event are provided in Appendix B.

3.0 EVALUATION OF REMEDIAL TECHNOLOGIES

Evaluations of remedial technologies applied at the former fueling system and former field waste tanks areas of the BJ Services facility in Hobbs, New Mexico are presented in Sections 3.1 and 3.2, respectively. Section 3.3 presents an evaluation of chloride impact to groundwater at and in the vicinity of the facility.

3.1 Biosparging System at the Former Fueling System Area

Brown and Caldwell recommended installation of a biosparging system at the former fueling system area of the facility in a Remedial Action Plan (RAP) submitted to the NMOCD in May 1994. The NMOCD approved the RAP on August 11, 1994. The biosparging system was installed in August 1995, with expansions completed in April 1997 and March 1998. Operation of the biosparging system resulted in substantial decreases in hydrocarbon concentrations in former fueling system area monitor wells. In accordance with the RAP, confirmation soil sampling activities were conducted at the former fueling system area in July 2001 to verify the effectiveness of the biosparging system in remediating vadose zone soils. The analytical results for these soil samples, as discussed in the report for the June 2001 groundwater sampling event, indicated that remediation goals for soil in this area had been achieved.

Following the confirmation soil sampling activities, hydrocarbon concentrations in groundwater remained below target cleanup goals for four successive quarters. In accordance with the RAP for the facility, a request to decommission the biosparging system was submitted to the NMOCD in the June 2002 Groundwater Sampling and Biosparging System Closure Report.

3.2 Natural Attenuation at the Former Field Waste Tanks Area

Natural attenuation is the primary remediation mechanism for the dissolved-phase hydrocarbon plume located in the area of the former field waste tanks (see Figure 1).

Plume behavior is the primary evidence of natural attenuation. Secondary evidence of natural attenuation can be obtained by collection and evaluation of data relating to the concentrations of indigenous electron acceptors such as dissolved oxygen, nitrate, sulfate, and carbon dioxide. A plume is shrinking when the rate of hydrocarbon loading from a source area is less than the rate of natural degradation of hydrocarbons. Plume shrinkage in the absence of aggressive remediation is indicative of the occurrence of natural attenuation processes. Conversely, a plume is expanding if the rate of hydrocarbon loading from a source area is greater than the rate of natural degradation of hydrocarbons through natural attenuation processes.

The former field waste tanks in the eastern portion of the facility were removed in March 1997. Concentrations of total BTEX in monitor wells in this area have been generally stable or declining subsequent to removal of these tanks. Sporadic increases in total BTEX concentrations between quarterly sampling events have been observed in monitor wells in this area since March 1997, however. These increases may be attributed to sporadic loading rates from the vadose zone in excess of the rate of natural attenuation in the area. The following subsections present primary and secondary evidence of natural attenuation of hydrocarbons in groundwater at the former field waste tanks area of the facility.

3.2.1 Primary Evidence

The benzene concentration in monitor well MW-10 has decreased from a maximum of 1.3 mg/L in August 1995 (prior to removal of the field waste tanks) to less than the NMWQCC standard of 0.01 mg/L for benzene in the 13 applicable groundwater sampling events from December 2000 to March 2004. Benzene has not been detected in monitor well MW-10 since September 2001, a span of nine consecutive quarterly groundwater sampling events. Concentrations of toluene, ethylbenzene, and xylenes in monitor well MW-10 were non-detect during the current sampling event and have generally been non-detect since December 2000. Detectable concentrations of TPH-D in monitor well MW-10 have ranged from 0.3 mg/L to 3.4 mg/L. TPH-D concentrations in monitor well MW-10 have been less than 1.2 mg/L during the five most recent quarterly groundwater sampling events. TPH-G has not been detected in monitor well MW-10 since March 2001.

Benzene concentrations at the monitor well MW-11/11A location have generally decreased from a maximum of 0.970 mg/L in December 1996 (prior to removal of the field waste tanks). There was no detectible concentration of benzene in monitor well MW-11A during the current sampling event. Benzene concentrations in MW-11A have been less than the NMWQCC standard for benzene during 11 of the 12 groundwater sampling events conducted from June 2001 through March 2004, including the last five consecutive quarterly groundwater sampling events. Concentrations of toluene, ethylbenzene, and xylenes in monitor well MW-11A have been at low to typically non-detectable concentrations since March 1998. Detectable concentrations of TPH-D in monitor well MW-11A have ranged from 0.28 mg/L to 2.2 mg/L. TPH-G concentrations have been less than 1 mg/L throughout the monitoring history of well MW-11A.

Concentrations of each BTEX constituent at the monitor well MW-12/12D location have been below analytical detection limits for the past 12 sampling events. TPH-D has not been detected at this location since September 2002, and TPH-G has not been detected since June 2001.

3.2.2 Secondary Evidence

The following lines of geochemical evidence can also be used to suggest that intrinsic bioremediation (an important natural attenuation mechanism) of dissolved-phase hydrocarbons is occurring in the area of the former field waste tanks.

1. Dissolved oxygen may be utilized as an electron acceptor during intrinsic bioremediation. Dissolved oxygen concentrations should therefore be depressed in areas where intrinsic bioremediation is occurring.

   Groundwater samples from monitor wells MW-10, MW-11A, MW-14 and MW-15 were collected using bailers during the current sampling event. The use of bailers may cause groundwater samples to become oxygenated, thus precluding a meaningful comparison of dissolved oxygen data.

   Historic evidence submitted to the NMOCD in previous quarterly groundwater monitoring reports for the facility when down-hole pumps were utilized has indicated that dissolved oxygen concentrations were typically depressed in hydrocarbon-impacted

monitor wells relative to non-impacted wells at the facility (see the June 2001 Groundwater Sampling Report for BJ Services Hobbs, New Mexico Facility, for example).

2. Nitrate may be utilized as an electron acceptor during intrinsic bioremediation after dissolved oxygen is depleted. Therefore, nitrate concentrations may be depressed in areas where intrinsic bioremediation is occurring.

   Nitrate was detected at a concentration of 2.6 mg/L in background monitor well MW-5 during the current sampling event. Although minimal to no hydrocarbon impact was detected at former field waste tanks area wells MW-10, MW-11A, and MW-12D during the current sampling event (see Table 5), nitrate was detected in monitor well MW-10 and MW-11A at respective concentrations of 0.25 mg/L and 1.9 mg/L; nitrate was not detected in monitor well MW-12D. The depressed to non-detectable nitrate concentrations observed during the current sampling event at former field waste tanks area wells MW-10, MW-11A, and MW-12D relative to the background nitrate concentration at the facility are likely due to residual effects of hydrocarbons in these areas.

3. When dissolved oxygen and nitrate are depleted, anaerobic microbes that utilize other electron acceptors may become active. Ferrous iron is the reduction product of ferric iron, a common electron acceptor. Therefore, ferrous iron concentrations should increase in areas where intrinsic bioremediation is occurring.

   Ferrous iron concentrations in former field waste tanks area monitor wells MW-10, MW-11A, and MW-12D ranged from 1.0 mg/L to 10 mg/L, whereas ferrous iron was not detected in background monitor well MW-5. The elevated ferrous iron concentrations in monitor wells MW-10, MW-11A and MW-12D relative to background well MW-5 suggest that ferric iron has been used as an electron acceptor during natural attenuation of hydrocarbons at the former field waste tanks area of the facility.

4. Microbes that utilize sulfate may become active when dissolved oxygen, nitrate, and ferric iron are depleted. Sulfate concentrations should therefore decrease in areas where intrinsic bioremediation is occurring through the use of sulfate as an electron acceptor.

   During the current sampling event, sulfate concentrations in the former field waste tanks area monitor wells MW-10, MW-11A, and MW-12D ranged from 160 mg/L to 380 mg/L, whereas the sulfate concentration in background monitor well MW-5 was measured at 110 mg/L. The fact that sulfate concentrations in the former source area monitor wells are greater than the sulfate concentration in the background monitor well suggests that sulfate is not being utilized as an electron acceptor in the former field waste tanks area.

5. Methane is a reaction product generated during utilization of carbon dioxide as an electron acceptor, so its concentration may increase in areas where concentrations of electron acceptors such as dissolved oxygen, nitrate, and ferric iron have diminished.

   Dissolved methane was not detected in background monitor well MW-5 or in former field waste tanks area monitor wells MW-10, MW-11A, and MW-12D during the current groundwater sampling event. These data indicate that carbon dioxide is not presently being utilized as an electron acceptor at the former field waste tanks area of the facility.

6. Microbes produce fatty acids as a byproduct during degradation of hydrocarbons. These fatty acids react with carbonate mineral substrates to release carbonate into solution, causing alkalinity of groundwater to increase. Elevated alkalinity therefore suggests that natural attenuation of hydrocarbons is occurring.

   Background monitor well MW-5 displayed an alkalinity of 214 mg/L during the current sampling event. Alkalinity was measured at respective concentrations of 582 mg/L and 378 mg/L in former field waste tanks area monitor wells MW-10 and MW-11A in March 2004. The elevated alkalinity values in monitor wells MW-10 and MW-11A may be a result of intrinsic bioremediation of residual hydrocarbons in these areas.

In conclusion, current nitrate and historic dissolved oxygen data suggest that these electron acceptors have been utilized during intrinsic bioremediation processes in the vicinity of the former field waste tanks area of the facility. Data for ferrous iron also indicates utilization of ferric iron as an electron acceptor in this area of the facility. Alkalinity data provide further evidence of natural attenuation of hydrocarbons at the former field waste tanks area.

3.3 Chloride Evaluation

Figure 4 presents a map of chloride distribution in groundwater for March 30, 2004 (see Table 4). The data presented in Figure 4 suggests that the former field wastes tanks at the BJ Services facility may have served as a source of chloride impact to groundwater within the facility, based on exceedances of the NMWQCC chloride standard of 250 mg/L in this area. Previous groundwater sampling conducted by BJ Services at the on-site nested monitor well MW-12/MW-12D location indicated that the degree of chloride impact to groundwater decreased with depth within the uppermost aquifer at the facility (see Table 4).

Groundwater modeling conducted by Brown and Caldwell prior to installation of off-site monitor well MW-16 indicated an anticipated chloride concentration of less than 250 mg/L at the proposed downgradient monitor well MW-16 location east of the BJ Services facility, based on historic data that defined an eastward decrease in chloride concentrations within the BJ Services facility. Specifically, historic chloride concentrations in the area of monitor wells MW-11 and MW-11A, which are located in proximity to BJ Services' former field waste tanks, ranged from 834 mg/L to

3,400 mg/L whereas chloride concentrations in the area of monitor wells MW-14 and MW-15, which are located further east within the BJ Services facility, ranged from 119 mg/L to 368 mg/L.

Off-site monitor well MW-16 has been sampled five times since its installation in May 2003, with chloride concentrations in the well ranging from 753 mg/L to 983 mg/L. During the post-May 2003 time period, chloride concentrations in wells at the BJ Services facility have remained generally consistent with previous chloride data. The elevated chloride concentrations detected in monitor well MW-16 suggest the presence of a separate, off-site source of chloride impact to groundwater east of the BJ Services facility. The data presented in Figure 4 demonstrate that chloride impact associated with the former field waste tanks is limited to within the boundaries of the BJ Services facility and that the concentration of chloride in off-site monitor well MW-16 would not exceed 250 mg/L if there was no off-site source of chloride impact.

Brown and Caldwell provided further evidence of this off-site source of chloride impact to groundwater in the report for the December 2003 groundwater sampling event, based on a search of NMOCD files relating to permitted oil & gas exploration and production activities in the area, and supplemented by historical aerial photographs depicting industrial development in the vicinity. Brown and Caldwell also presented the results of a water well search that indicated no current groundwater usage within 1 mile downgradient of the facility.

Based on these findings and as confirmed on the basis of chloride data from the current groundwater sampling event, further investigation by BJ Services into the occurrence of chloride at and in the vicinity of its Hobbs, New Mexico facility is unwarranted.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on information obtained during the March 2004 and previous groundwater sampling events at the BJ Services Hobbs, New Mexico facility.

4.1 Conclusions

- Operation of the biospraging system installed in the area of the former fuel island at the facility has successfully remediated soil and groundwater impacts to meet performance requirements specified in the RAP for this portion of the facility.
- The substantial reduction in hydrocarbon concentrations in the vicinity of the former field waste tanks is attributable to natural attenuation of hydrocarbons, based on generally decreasing hydrocarbon concentrations in applicable monitor wells over time and as substantiated by geochemical data. Current benzene concentrations in all former field waste tanks area monitor wells have remained less than the NMWQCC standard of 0.01 mg/L for benzene. Benzene concentrations in all former field waste tanks area monitor wells have been less than the NMWQCC benzene standard of 0.01 mg/L during each of the last five quarterly groundwater sampling events.
- The chloride concentrations measured in on-site downgradient monitor wells MW-14 and MW-15 during the current groundwater sampling event are less than the NMWQCC standard of 250 mg/L. The chloride concentration in monitor well MW-16 exceeds the NMWQCC chloride standard, however. Elevated chloride concentrations in groundwater east of the BJ Services facility are apparently attributable to one or more off-site sources. In the absence of these apparent sources, chloride impact attributable to the onsite source would be less than the NMWQCC standard of 250 mg/L in the area to the east of the BJ Services facility.

4.2 Recommendations

- Upon approval from the NMOCD, decommission the biosparging system at the former fuel island area.
- Given that the removal of the former field waste tanks and associated impacted soil in March 1997 constituted effective source removal and that constituent concentrations in all applicable wells have been less than applicable NMWQCC standards for five consecutive quarterly groundwater sampling events, closure for the former field waste tanks area is recommended.

- Given that chloride impact to groundwater attributable to the BJ Services facility at concentrations exceeding the NMWQCC standard of 250 mg/L is limited to the BJ Services facility and there is no current downgradient usage of groundwater within 1 mile of the facility, BJ Services should discontinue sampling and analysis pertaining to chloride impact to groundwater within the uppermost aquifer at and in the vicinity of its Hobbs, New Mexico facility.
- Given that BJ Services has demonstrated compliance with regard to hydrocarbon impacts at the former fuel island and former field waste tanks source area and with regard to chloride issues, granting of overall site closure by NMOCD, with no additional groundwater monitoring activities, is recommended.
- No additional groundwater monitoring activities should be performed while NMOCD evaluates the current and previously submitted closure requests.

DISTRIBUTION

March 2004 Groundwater Sampling Report
BJ Services Company, U.S.A.
Hobbs, New Mexico

July 16, 2004

Final Distribution as follows:

1 copy to: State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Wayne Price

1 copy to: State of New Mexico
Oil Conservation Division, Hobbs District Office
1625 N. French Dr.
Post Office Box 1980
Hobbs, New Mexico 88240

Attention: Mr. Chris Williams

1 copy to: BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240

Attention: Mr. John Adcock

1 copy to: BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

Attention: Ms. Jo Ann Cobb

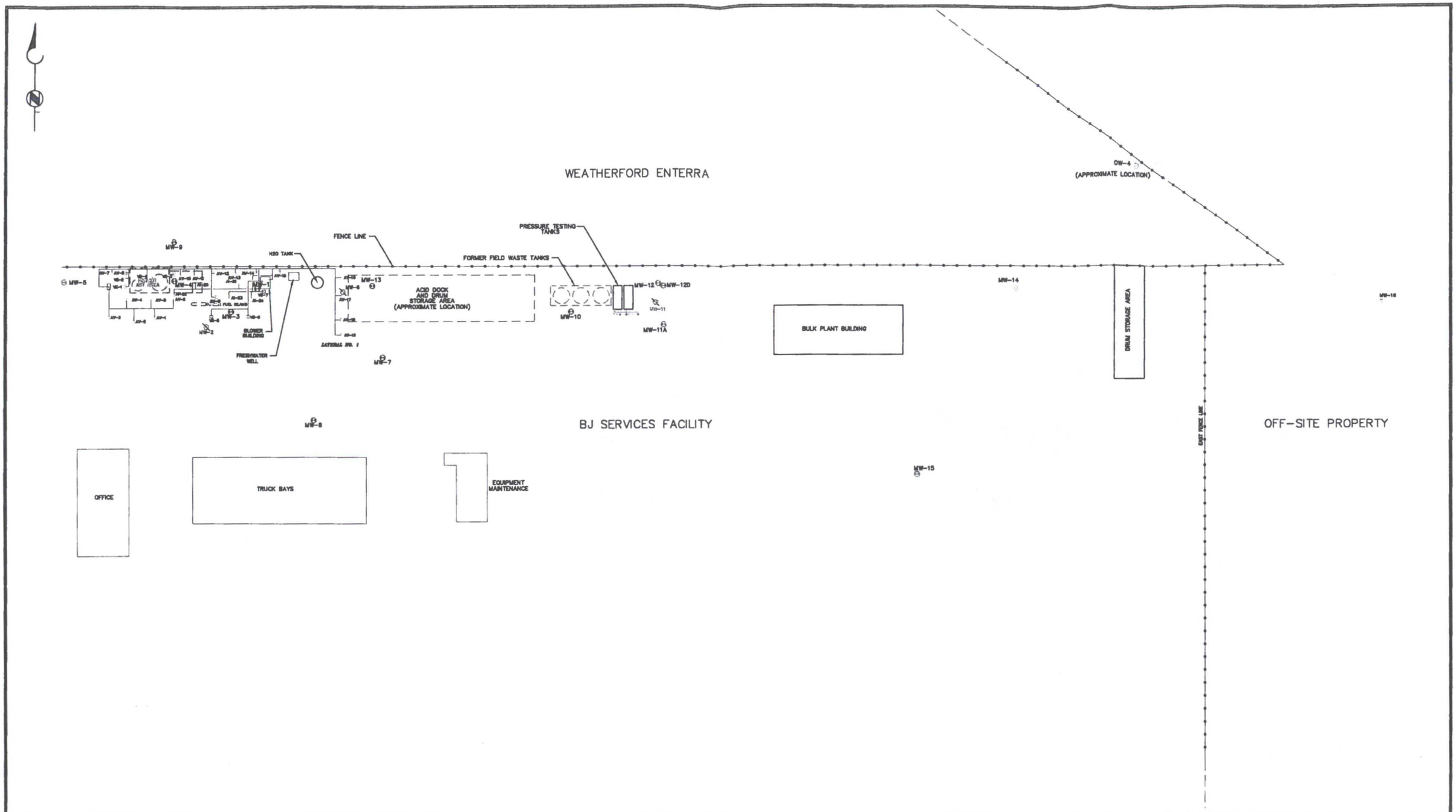
1 copy to: Brown and Caldwell Project File

QUALITY CONTROL REVIEWER

Thomas R Marvin for

Lynn M. Wright, P.G.
Supervising Geologist

FIGURES



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 60 90
SCALE: 1" = 90'

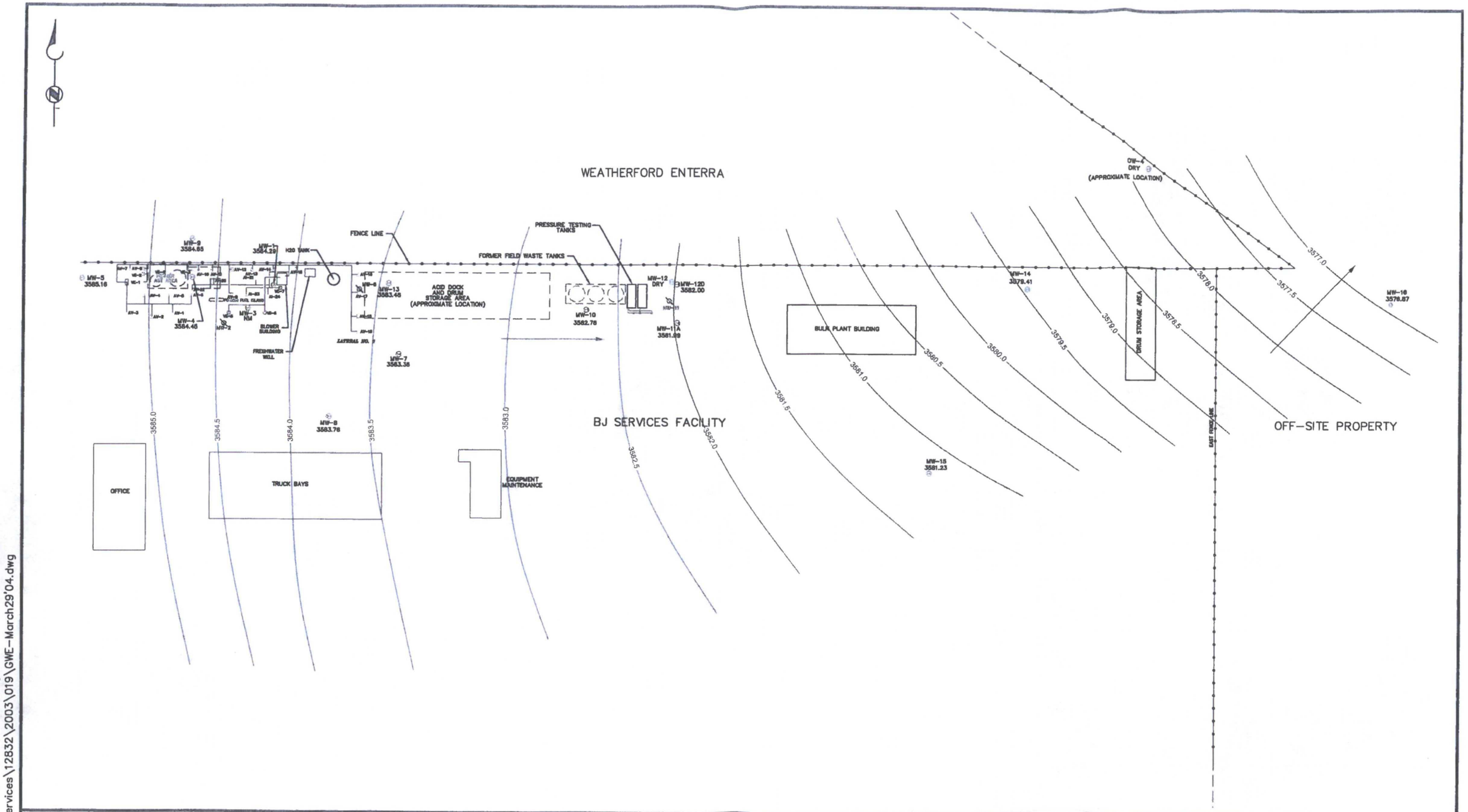
DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-3	EXISTING MONITOR WELL LOCATION
	BIOSPARGING SYSTEM
MW-2	MONITOR WELL (PLUGGED AND ABANDONED)

TITLE: SITE MAP	DATE: 5/13/04
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.019
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1

P:\Cad\JOBS\BJServices\12832\2003\019\SiteMap.dwg



May 14, 2004 - 8:51am ckenny
P:\Cad\JOBS\BJServices\12832\2003\019\GWE-March29'04.dwg

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 60 90
SCALE: 1" = 90'

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

3585.12 / MW-4 — EXISTING MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (FEET AMSL)

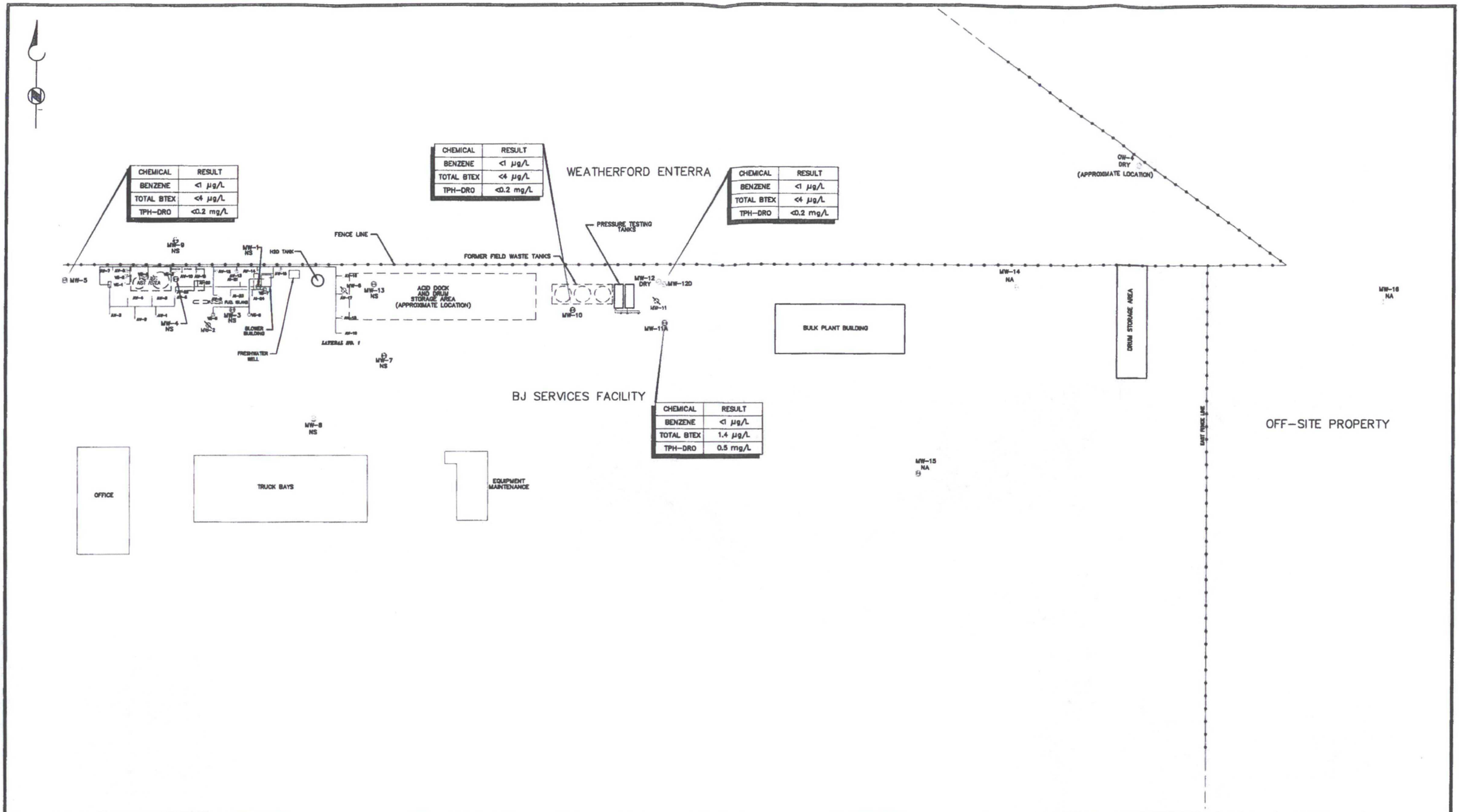
BIOSPARGING SYSTEM

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

GROUNDWATER FLOW DIRECTION

NM = NOT MEASURED

TITLE: GROUNDWATER ELEVATION MAP FOR MARCH 29, 2004	DATE: 5/13/04
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.019
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 2



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 60 90
SCALE: 1" = 90'
DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

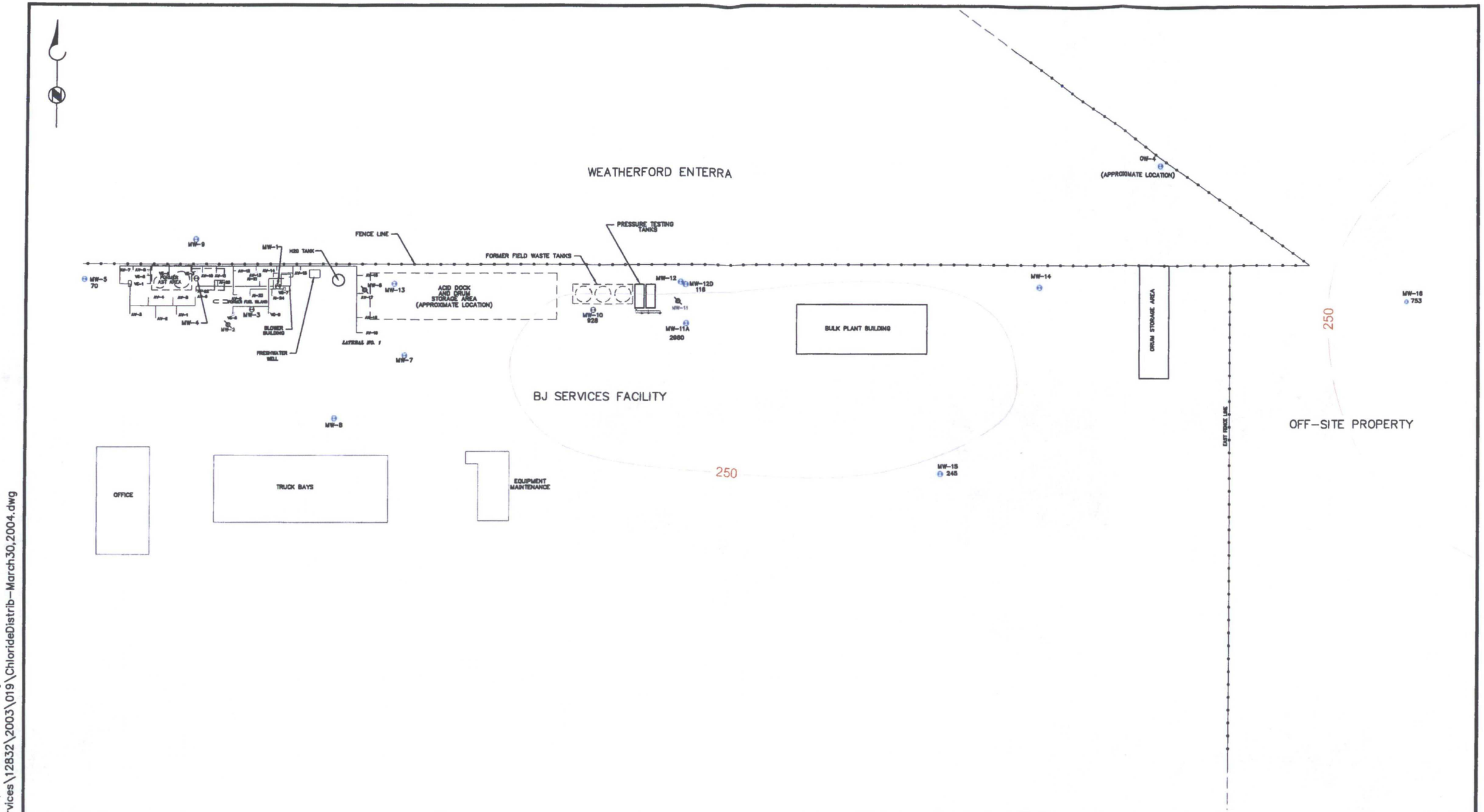
LEGEND

MW-3 EXISTING MONITOR WELL LOCATION
BIOSPARGING SYSTEM
MW-2 MONITOR WELL (PLUGGED AND ABANDONED)

NS = NOT SAMPLED
NA = NOT ANALYZED

TITLE: HYDROCARBON DISTRIBUTION MAP FOR MARCH 30, 2004	DATE: 9/11/00
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.019
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 3

P:\Cad\JOBS\BJServices\12832\2003\019\BenisoHydroMap-March 30,2004.dwg



Jul 16, 2004 - 2:09pm ckelly
P:\Cad\JOBS\BJServices\12832\2003\019\ChlorideDistrib-March30,2004.dwg

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 60 90
SCALE: 1" = 90'

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-3
183 (MARCH 2002) MONITOR WELL LOCATION, WITH MOST RECENT CHLORIDE CONCENTRATION (mg/L) AND DATE

BIOSPARGING SYSTEM

MW-2 MONITOR WELL (PLUGGED AND ABANDONED)

CHLORIDE ISOCONCENTRATION LINE

TITLE: CHLORIDE DISTRIBUTION MAP FOR MARCH 30, 2004	DATE: 5/13/04
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.019
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 4

TABLES

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

Date	Activity
February 7, 1991	The New Mexico Oil Conservation Division (NMOCD) conducted an on-site inspection, including sampling of the on-site fresh water well.
August 6, 1991	The NMOCD requested submittal of an investigation work plan.
September 5, 1991	Roberts/Schornick and Associates, Inc. (RSA) submitted Technical Work Plan for soil and groundwater investigation to the NMOCD.
November 15, 1991	The NMOCD approved the Technical Work Plan submitted by RSA.
December 16, 1991	RSA sampled the fresh water well. The analytical results were submitted to the NMOCD.
February 21, 1992	Western sampled the fresh water well. The analytical results were submitted to the NMOCD.
July 29 - August 10, 1992	Brown and Caldwell conducted a soil and groundwater investigation according to the approved Technical Work Plan. The investigation included drilling and sampling nine soil borings, sampling six hand-augured soil borings, installation and sampling of five monitor wells, and sampling of the fresh water well.
October 12, 1992	Brown and Caldwell submitted a Soil and Groundwater Investigation Report to the NMOCD.
December 2, 1992	The NMOCD requested the installation and sampling of four additional monitor wells, including a monitor well on an adjacent property.
April 13, 1993	Brown and Caldwell conducted a vapor extraction pilot test on the existing monitor wells.
April 15, 1993	Brown and Caldwell installed off-site monitor well MW-9.
April 22, 1993	Brown and Caldwell sampled off-site monitor well MW-9.
May 27, 1993	Brown and Caldwell submitted a letter report documenting the installation and sampling of off-site monitor well MW-9 to the NMOCD.
June 2, 1993	Brown and Caldwell conducted a short-term aquifer test using the fresh water well at the facility.
June 8, 1993	USTank Management, Inc. conducted a non-volumetric tank system tightness test on the diesel and unleaded gasoline aboveground storage tanks at the facility.
June 21, 1993	ENSR Consulting and Engineering (ENSR), the environmental consultant for the adjacent property owner on which off-site well MW-9 is located, submitted a request to sample monitor well MW-9.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

July 15, 1993	ENSR split a groundwater sample collected from monitor well MW-9 with Brown and Caldwell.
July 30, 1993	USTank Management, Inc. submitted a tank tightness test report to Brown and Caldwell. The report indicated that both tanks and their associated piping passed.
August 16-19, 1993	Brown and Caldwell installed two additional downgradient monitor wells. Brown and Caldwell sampled each of the existing and newly installed monitor wells.
January 26, 1994	Brown and Caldwell performed a groundwater monitoring event; the existing monitor wells and the fresh water well were purged and sampled. The groundwater samples were analyzed for BTEX.
May 6, 1994	A Remedial Action Plan (RAP) was submitted to the NMOCD.
August 11, 1994	The RAP was approved by the NMOCD.
May 3, 1995	Brown and Caldwell conducted the May 1995 groundwater sampling event.
July 31, 1995	Brown and Caldwell conducted the July 1995 groundwater sampling event.
August 2-9, 1995	Installation of the biosparging system was initiated. Nineteen combined injection/extraction wells and three vacuum extraction wells were installed.
August 14-26, 1995	Remedial Construction Services, Inc. (RCS) constructed the initial design of the biosparging system.
September 19, 1995	Operation of the extraction portion of the biosparging system commenced.
November 13, 1995	Operation of the injection portion of the biosparging system commenced.
November 14, 1995	Brown and Caldwell conducted the November 1995 groundwater sampling event.
February 23, 1996	Brown and Caldwell conducted the February 1996 groundwater sampling event.
May 31, 1996	Brown and Caldwell conducted the May 1996 groundwater sampling event.
August 23, 1996	Brown and Caldwell conducted the August 1996 groundwater sampling event.
December 2, 1996	Brown and Caldwell conducted the December 1996 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

March 6-7, 1997	BJ Services removed three field waste tanks and associated hydrocarbon-impacted soil.
March 12, 1997	Brown and Caldwell conducted the March 1997 groundwater sampling event.
March 14, 1997	Vapor extraction well VE-4 was installed.
April 1997	Vapor extraction well VE-4 was connected to the vapor extraction system.
June 12, 1997	Brown and Caldwell conducted the June 1997 groundwater sampling event.
September 11-12, 1997	Brown and Caldwell conducted the September 1997 groundwater sampling event.
December 10, 1997	Brown and Caldwell conducted the December 1997 groundwater sampling event.
February 3-14, 1998	Air injection wells AI-20 through AI-24, vapor extraction wells VE-5 through VE-7, and monitor wells MW-11A and MW-12 were installed.
February 19, 1998	Operation of previously existing injection wells was suspended in preparation for start-up of new injection wells AI-20 through AI-24.
March 10, 1998	Operation of new air injection wells AI-20 through AI-24 and new vapor extraction wells VE-5 through VE-7 commenced.
March 23-24, 1998	Brown and Caldwell conducted the March 1998 groundwater sampling event.
March 24, 1998	Operation of previously existing injection wells and vapor extraction wells resumed.
June 23, 1998	Brown and Caldwell conducted the June 1998 groundwater sampling event.
September 30, 1998	Brown and Caldwell conducted the September 1998 groundwater sampling event.
December 9-10, 1998	Brown and Caldwell conducted the December 1998 groundwater sampling event.
January 21, 1999	The NMOCD requested submittal of a work plan by March 22, 1999 to perform additional groundwater delineation in the area of the former field waste tanks and the former AST/MW-6 area.
March 9-10, 1999	Brown and Caldwell conducted the March 1999 groundwater sampling event.
March 19, 1999	Brown and Caldwell submitted the work plan for groundwater delineation activities that was requested by the NMOCD.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

May 19, 1999	The NMOCD approved the groundwater delineation work plan.
June 10, 1999	Brown and Caldwell performed sampling of existing monitor wells for the June /July 1999 groundwater sampling event.
July 2, 1999	Brown and Caldwell completed plugging and abandonment of monitor wells MW-2, MW-6, and MW-11; installed and developed monitor wells MW-12D and MW-13; and sampled monitor wells MW-12D and MW-13 to complete the June/July 1999 groundwater sampling event.
July 14, 1999	Brown and Caldwell redirected air discharge from the shallow injection well injection system to Lateral No. 1 and optimized air flow to injection wells AI-16 and AI-17 to apply increased remedial pressure to the eastern portion of the west plume.
September 13-14, 1999	Brown and Caldwell conducted the September 1999 groundwater sampling event.
December 9, 1999	Brown and Caldwell conducted the December 1999 groundwater sampling event.
March 9-10, 2000	Brown and Caldwell conducted the March 2000 groundwater sampling event and shut off air flow to biosparging system Lateral Nos. 4S, 5S, 6S, and 7S.
June 8, 2000	Brown and Caldwell conducted the June 2000 groundwater sampling event.
September 13, 2000	Brown and Caldwell conducted the September 2000 groundwater sampling event.
November 1, 2000	Brown and Caldwell deactivated the biosparging system.
December 7, 2000	Brown and Caldwell conducted the December 2000 groundwater sampling event.
January 2001	Brown and Caldwell installed and sampled monitor wells MW-14 and MW-15.
March 8-9, 2001	Brown and Caldwell conducted the March 2001 groundwater sampling event.
June 21-22, 2001	Brown and Caldwell conducted the June 2001 groundwater sampling event.
July 23, 2001	Brown and Caldwell collected soil samples from four soil borings installed at the former fueling system area of the facility to confirm the effectiveness of the biosparging system in remediating hydrocarbon impact to soil, as specified in the NMOCD-approved RAP.
September 10, 2001	Brown and Caldwell conducted the September 2001 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

December 6, 2001	Brown and Caldwell conducted the December 2001 groundwater sampling event.
February 26, 2002	Brown and Caldwell repaired the crushed well completion on monitor well MW-10.
February 28, 2002	NMOCD requested an evaluation of chloride content of groundwater at the facility.
March 11-12, 2002	Brown and Caldwell conducted the March 2002 groundwater sampling event. Groundwater samples from all water-producing wells at the facility were analyzed for chloride content.
May 21, 2002	Brown and Caldwell submitted the report for the March 2002 groundwater sampling event, including an evaluation of chloride content of groundwater at the facility and a recommendation for installation of a downgradient off-site well (MW-16) to replace off-site well OW-4, which has gone dry.
June 17-18, 2002	Brown and Caldwell conducted the June 2002 groundwater sampling event.
September 16, 2002	Brown and Caldwell conducted the September 2002 groundwater sampling event.
November 11, 2002	Brown and Caldwell submitted the June 2002 Groundwater Sampling Report and Biosparging System Closure Report.
January 9, 2003	Brown and Caldwell conducted the January 2003 groundwater sampling event.
March 6, 2003	Brown and Caldwell conducted the March 2003 groundwater sampling event.
May 13, 2003	Brown and Caldwell installed monitor well MW-16 at a location to the west of the facility.
June 19, 2003	Brown and Caldwell initiated the June 2003 groundwater sampling event.
August 22, 2003	Brown and Caldwell completed the June 2003 groundwater sampling event.
October 2, 2003	Brown and Caldwell conducted the October 2003 groundwater sampling event.
December 17-18, 2003	Brown and Caldwell conducted the December 2003 groundwater sampling event.
March 29-30, 2004	Brown and Caldwell conducted the March 2004 groundwater sampling event.

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-1	3,647.53	8/10/1992	53.22	0.00	3,594.31	(1)
		2/9/1993	53.03	0.00	3,594.50	
		8/18/1993	53.10	0.00	3,594.43	
		1/26/1994	53.31	0.00	3,594.22	
		5/3/1995	54.64	0.20	3,593.05	(2)
		7/31/1995	54.14	0.00	3,593.39	
		11/14/1995	53.69	0.00	3,593.84	
		2/23/1996	54.32	0.00	3,593.21	
		5/31/1996	54.14	0.00	3,593.39	
		8/23/1996	56.17	0.00	3,591.36	
		12/2/1996	55.27	0.00	3,592.26	
		3/12/1997	55.70	0.27	3,592.05	
		6/12/1997	55.08	0.02	3,592.47	
		9/12/1997	55.64	0.51	3,592.31	
		12/10/1997	55.46	0.00	3,592.07	PSH Sheen
		3/24/1998	55.81	0.00	3,591.72	PSH Sheen
		6/23/1998	56.38	0.06	3,591.20	
		9/30/1998	56.82	0.00	3,590.71	PSH Sheen
		12/9/1998	57.05	0.00	3,590.48	
		3/10/1999	57.45	0.00	3,590.08	
		6/10/1999	58.02	0.00	3,589.51	
		7/2/1999	57.90	0.00	3,589.63	
		9/14/1999	58.14	0.00	3,589.39	
		12/9/1999	-	-	-	(3)
		3/9/2000	58.99	0.00	3,588.54	
		06/00	-	-	-	
		09/00	-	-	-	
		12/7/00	-	-	-	
		3/8/2001	60.35	0.00	3,587.18	
		6/21/01	60.99	0.00	3,586.54	
		9/10/01	61.17	0.00	3,586.36	
		12/6/2001	not measured			
		03/11/02	62.11	0.00	3,585.42	
		6/17/02	62.53	0.00	3,585.00	
		9/16/2002	62.43	0.00	3,585.10	
		1/9/2003	62.61	0.00	3,584.92	
		3/6/2003	62.72	0.00	3,584.81	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	62.97	0.00	3,584.56	
		12/17/2003	63.21	0.00	3,584.32	
		3/29/2004	63.24	0.00	3,584.29	
MW-2	3,644.84	8/10/1992	52.82	0.00	3,592.02	(1)
		2/9/1993	49.60	0.00	3,595.24	
		8/18/1993	49.71	0.00	3,595.13	
		1/26/1994	49.97	0.00	3,594.87	
		5/3/1995	-	-	-	(4),(5)
MW-3	3,645.00	8/10/1992	52.99	0.00	3,592.01	(1)
		2/9/1993	52.72	0.00	3,592.28	
		8/18/1993	52.82	0.00	3,592.18	
		1/26/1994	53.05	0.00	3,591.95	
		5/3/1995	54.31	0.00	3,590.69	
		7/31/1995	51.24	0.00	3,593.76	
		11/14/1995	51.10	0.00	3,593.90	
		2/23/1996	51.68	0.00	3,593.32	
		5/31/1996	51.45	0.00	3,593.55	
		8/23/1996	51.55	0.00	3,593.45	
		12/2/1996	52.23	0.00	3,592.77	
		3/12/1997	52.67	0.00	3,592.33	
		6/12/1997	52.68	0.00	3,592.32	
		9/11/1997	52.71	0.00	3,592.29	
		12/10/1997	52.89	0.00	3,592.11	
		3/23/1998	53.22	0.00	3,591.78	
		6/23/1998	53.66	0.00	3,591.34	
		9/30/1998	54.06	0.00	3,590.94	
		12/9/1998	54.36	0.00	3,590.64	
		3/10/1999	54.72	0.00	3,590.28	
		6/10/1999	55.17	0.00	3,589.83	
		7/2/1999	55.15	0.00	3,589.85	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-3 cont.	3,645.00	9/14/1999	55.42	0.00	3,589.58	
		12/9/1999	55.78	0.00	3,589.22	
		3/9/2000	56.23	0.00	3,588.77	
		6/8/2000	56.66	0.00	3,588.34	
		9/13/2000	56.77	0.00	3,588.23	
		12/7/2000	57.15	0.00	3,587.85	
		3/8/2001	57.69	0.00	3,587.31	
		6/21/01	58.34	0.00	3,586.66	
		9/10/01	58.54	0.00	3,586.46	
		12/6/2001	59.04	0.00	3,585.96	
		3/11/2002	59.50	0.00	3,585.50	
		6/17/02	59.83	0.00	3,585.17	
		9/16/2002	59.80	0.00	3,585.20	
		1/9/2003	60.01	0.00	3,584.99	
		3/6/2003	60.10	0.00	3,584.90	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	60.34	0.00	3,584.66	
		12/17/2003	60.50	0.00	3,584.50	
		3/29/2004	60.55	0.00	3,584.45	
MW-4	3,645.28	8/10/1992	50.55	0.00	3,594.73	(1)
		2/9/1993	50.26	0.00	3,595.02	
		8/18/1993	50.38	0.00	3,594.90	
		1/26/1994	50.90	0.30	3,594.63	
		5/3/1995	51.51	0.45	3,594.14	
		7/31/1995	51.74	0.26	3,593.75	
		11/14/1995	51.03	0.00	3,594.25	
		2/23/1996	51.65	0.01	3,593.64	
		5/31/1996	51.48	0.00	3,593.80	
		8/23/1996	53.49	0.00	3,591.79	
		12/2/1996	52.32	0.00	3,592.96	
		3/12/1997	52.74	0.05	3,592.58	
		6/12/1997	53.08	0.44	3,592.56	
		9/12/1997	52.60	0.15	3,592.80	
		12/10/1997	52.89	0.00	3,592.39	PSH Sheen
		3/24/1998	53.20	0.25	3,592.29	
		6/23/1998	53.82	0.22	3,591.64	
		9/30/1998	53.96	0.00	3,591.32	200 ml PSH
		12/9/1998	54.27	0.00	3,591.01	
		3/10/1999	54.69	0.04	3,590.62	
		6/10/1999	55.07	0.00	3,590.21	
		7/2/1999	55.10	0.00	3,590.18	
		9/14/1999	55.33	0.00	3,589.95	
		12/9/1999	55.79	0.00	3,589.49	
		3/10/2000	56.12	0.00	3,589.16	
		6/8/2000	56.67	0.00	3,588.61	
		9/13/2000	56.65	0.00	3,588.63	
		12/7/2000	57.05	0.00	3,588.23	
		3/8/2001	57.72	0.00	3,587.56	
		6/21/01	58.18	0.00	3,587.10	
		9/10/01	58.54	0.00	3,586.74	
		12/6/2001	58.88	0.00	3,586.40	
		3/11/2002	59.41	0.00	3,585.87	
		6/17/02	59.67	0.00	3,585.61	
		9/16/2002	59.71	0.00	3,585.57	
		1/9/2003	59.91	0.00	3,585.37	
		3/6/2003	60.03	0.00	3,585.25	
		6/19/2003	60.16	0.00	3,585.12	
		10/2/2003	60.30	0.00	3,584.98	
		12/17/2003	60.35	0.00	3,584.93	
		3/29/2004	60.38	0.00	3,584.90	
MW-5	3,647.72	8/10/1992	52.38	0.00	3,595.34	(1)
		2/9/1993	52.06	0.00	3,595.66	
		8/18/1993	52.16	0.00	3,595.56	
		1/26/1994	52.50	0.00	3,595.22	
		5/3/1995	53.57	0.00	3,594.15	
		7/31/1995	53.27	0.00	3,594.45	
		11/14/1995	52.83	0.00	3,594.89	
		2/23/1996	53.57	0.00	3,594.15	
		5/31/1996	53.16	0.00	3,594.56	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-5 cont.	3,647.72	8/23/1996	53.41	0.00	3,594.31	
		12/2/1996	53.98	0.00	3,593.74	
		3/12/1997	54.44	0.00	3,593.28	
		6/12/1997	54.48	0.00	3,593.24	
		9/12/1997	54.29	0.00	3,593.43	
		12/10/1997	54.66	0.00	3,593.06	
		3/23/1998	55.05	0.00	3,592.67	
		6/23/1998	55.44	0.00	3,592.28	
		9/30/1998	55.65	0.00	3,592.07	
		12/9/1998	56.00	0.00	3,591.72	
		3/9/1999	56.45	0.00	3,591.27	
		6/10/1999	56.91	0.00	3,590.81	
		7/2/1999	56.93	0.00	3,590.79	
		9/14/1999	57.12	0.00	3,590.60	
		12/9/1999	57.41	0.00	3,590.31	
		3/9/2000	57.92	0.00	3,589.80	
		6/8/2000	58.32	0.00	3,589.40	
		9/13/2000	58.36	0.00	3,589.36	
		12/7/2000	58.71	0.00	3,589.01	
		3/8/2001	59.36	0.00	3,588.36	
		6/21/01	59.94	0.00	3,587.78	
		9/10/01	59.85	0.00	3,587.87	
		12/6/2001	60.56	0.00	3,587.16	
		3/11/02	61.12	0.00	3,586.60	
		6/17/02	61.43	0.00	3,586.29	
		9/16/2002	61.52	0.00	3,586.20	
		1/9/2003	61.75	0.00	3,585.97	
		3/6/2003	61.90	0.00	3,585.82	
		6/19/2003	62.01	0.00	3,585.71	
		10/2/2003	62.16	0.00	3,585.56	
		12/17/2003	62.35	0.00	3,585.37	
		3/29/2004	62.56	0.00	3,585.16	
MW-6	3,644.74	2/9/1993	50.58	0.00	3,594.16	(1)
		8/18/1993	50.78	0.00	3,593.96	
		1/26/1994	51.00	0.00	3,593.74	
		5/3/1995	52.63	0.00	3,592.11	
		7/31/1995	51.90	0.00	3,592.84	
		11/14/1995	51.19	0.00	3,593.55	
		2/23/1996	52.10	0.00	3,592.64	
		5/31/1996	51.76	0.00	3,592.98	
		8/23/1996	51.63	0.00	3,593.11	
		12/2/1996	52.85	0.00	3,591.89	
		3/12/1997	53.55	0.00	3,591.19	
		6/12/1997	52.08	0.00	3,592.66	
		9/11/1997	53.72	0.00	3,591.02	
		12/10/1997	53.27	0.00	3,591.47	
		3/23/1998	53.56	0.00	3,591.18	
		6/23/1998	52.88	0.00	3,591.86	
		9/30/1998	54.89	0.00	3,589.85	
		12/9/1998	54.57	0.00	3,590.17	
		3/10/1999	55.10	0.00	3,589.64	
		7/2/1999	-	-	-	(5),(6)
MW-7	3,644.55	2/9/1993	50.53	0.00	3,594.02	(1)
		8/18/1993	50.74	0.00	3,593.81	
		1/26/1994	51.01	0.00	3,593.54	
		5/3/1995	52.25	0.00	3,592.30	
		7/31/1995	51.92	0.00	3,592.63	
		11/14/1995	51.48	0.00	3,593.07	
		2/23/1996	52.15	0.00	3,592.40	
		5/31/1996	51.78	0.00	3,592.77	
		8/23/1996	52.02	0.00	3,592.53	
		12/2/1996	52.52	0.00	3,592.03	
		3/12/1997	52.99	0.00	3,591.56	
		6/12/1997	53.08	0.00	3,591.47	
		9/11/1997	53.00	0.00	3,591.55	
		12/10/1997	53.28	0.00	3,591.27	
		3/23/1998	53.59	0.00	3,590.96	
		6/23/1998	54.20	0.00	3,590.35	
		9/30/1998	54.54	0.00	3,590.01	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-7 cont.	3,644.55	12/9/1998	54.74	0.00	3,589.81	
		3/9/1999	55.15	0.00	3,589.40	
		6/10/1999	55.66	0.00	3,588.89	
		7/2/1999	55.73	0.00	3,588.82	
		9/13/1999	55.94	0.00	3,588.61	
		12/9/1999	56.38	0.00	3,588.17	
		3/9/2000	56.74	0.00	3,587.81	
		6/8/2000	57.17	0.00	3,587.38	
		9/13/2000	57.40	0.00	3,587.15	
		12/7/2000	57.77	0.00	3,586.78	
		3/8/2001	58.29	0.00	3,586.26	
		6/21/01	58.91	0.00	3,585.64	
		9/10/01	59.25	0.00	3,585.30	
		12/6/2001	59.75	0.00	3,584.80	
		3/11/2002	60.03	0.00	3,584.52	
		6/17/02	60.39	0.00	3,584.16	
		9/16/2002	60.39	0.00	3,584.16	
		1/9/2003	60.53	0.00	3,584.02	
		3/6/2003	60.61	0.00	3,583.94	
		6/19/2003	60.73	0.00	3,583.82	
		10/2/2003	60.84	0.00	3,583.71	
		12/17/2003	60.99	0.00	3,583.56	
		3/29/2004	61.19	0.00	3,583.36	
MW-8	3,644.87	2/9/1993	50.48	0.00	3,594.39	(1)
		8/18/1993	50.67	0.00	3,594.20	
		1/26/1994	50.96	0.00	3,593.91	
		5/3/1995	52.15	0.00	3,592.72	
		7/31/1995	51.77	0.00	3,593.10	
		11/14/1995	51.37	0.00	3,593.50	
		2/23/1996	52.17	0.00	3,592.70	
		5/31/1996	51.55	0.00	3,593.32	
		8/23/1996	51.92	0.00	3,592.95	
		12/2/1996	52.43	0.00	3,592.44	
		3/12/1997	52.93	0.00	3,591.94	
		6/12/1997	53.96	0.00	3,590.91	
		9/11/1997	52.73	0.00	3,592.14	
		12/10/1997	53.15	0.00	3,591.72	
		3/23/1998	53.51	0.00	3,591.36	
		6/23/1998	54.01	0.00	3,590.86	
		9/30/1998	54.35	0.00	3,590.52	
		12/9/1998	54.60	0.00	3,590.27	
		3/9/1999	55.00	0.00	3,589.87	
		6/10/1999	55.56	0.00	3,589.31	
		7/2/1999	55.57	0.00	3,589.30	
		9/13/1999	55.72	0.00	3,589.15	
		12/9/1999	-	-	-	(3)
		3/9/2000	56.52	0.00	3,588.35	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	58.11	0.00	3,586.76	
		6/21/01	58.72	0.00	3,586.15	
		9/10/01	58.94	0.00	3,585.93	
		12/6/2001	not measured			
		3/11/2002	59.94	0.00	3,584.93	
		6/17/02	60.22	0.00	3,584.65	
		9/16/2002	60.24	0.00	3,584.63	
		1/9/2003	60.42	0.00	3,584.45	
		3/6/2003	60.52	0.00	3,584.35	
		6/19/2003	60.63	0.00	3,584.24	
		10/2/2003	60.75	0.00	3,584.12	
		12/17/2003	60.92	0.00	3,583.95	
		3/29/2004	61.11	0.00	3,583.76	
MW-9	3,644.78	4/22/1993	49.73	0.00	3,595.05	(1)
		7/15/1993	49.65	0.00	3,595.13	
		8/18/1993	49.85	0.00	3,594.93	
		1/26/1994	50.02	0.00	3,594.76	
		5/3/1995	51.35	0.00	3,593.43	
		7/31/1995	50.97	0.00	3,593.81	
		11/14/1995	50.43	0.00	3,594.35	
		2/23/1996	51.12	0.00	3,593.66	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-9 cont.	3,644.78	5/31/1996	50.89	0.00	3,593.89	
		8/23/1996	50.98	0.00	3,593.80	
		12/2/1996	51.58	0.00	3,593.20	
		3/12/1997	52.21	0.05	3,592.61	
		6/12/1997	52.10	0.00	3,592.68	PSH Sheen
		9/12/1997	51.95	0.00	3,592.83	PSH Sheen
		12/10/1997	52.37	0.00	3,592.41	PSH Sheen
		3/23/1998	52.68	0.00	3,592.10	PSH Sheen
		6/23/1998	53.08	0.00	3,591.70	PSH Sheen
		9/30/1998	53.39	0.01	3,591.40	PSH Sheen
		12/9/1998	53.68	0.00	3,591.10	
		3/10/1999	54.15	0.00	3,590.63	
		6/10/1999	54.68	0.00	3,590.10	
		7/2/1999	54.71	0.00	3,590.07	
		9/13/1999	54.71	0.00	3,590.07	
		12/9/1999	-	-	-	(3)
		3/9/2000	55.69	0.00	3,589.09	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	57.03	0.00	3,587.75	
		6/21/01	57.91	0.00	3,586.87	
		9/10/01	57.95	0.00	3,586.83	
		12/6/2001	not measured			
		3/11/2002	58.96	0.00	3,585.82	
		6/17/02	59.14	0.00	3,585.64	
		9/16/2002	not measured			
		1/9/2003	59.34	0.00	3,585.44	
		3/6/2003	59.48	0.00	3,585.30	
		6/19/2003	59.64	0.00	3,585.14	
		10/2/2003	59.76	0.00	3,585.02	
		12/17/2003	59.93	0.00	3,584.85	
		3/29/2004	60.13	0.00	3,584.65	
MW-10	3,644.47	8/18/1993	51.54	0.00	3,592.93	(1)
		1/26/1994	51.90	0.00	3,592.57	
		5/3/1995	52.97	0.00	3,591.50	
		7/31/1995	52.87	0.00	3,591.60	
		11/14/1995	52.51	0.00	3,591.96	
		2/23/1996	53.05	0.00	3,591.42	
		5/31/1996	52.79	0.00	3,591.68	
		8/23/1996	53.03	0.00	3,591.44	
		12/2/1996	53.41	0.00	3,591.06	
		3/12/1997	54.21	0.00	3,590.26	
		6/12/1997	53.99	0.00	3,590.48	
		9/12/1997	53.94	0.00	3,590.53	
		12/10/1997	54.12	0.00	3,590.35	
		3/23/1998	54.51	0.00	3,589.96	
		6/23/1998	55.12	0.00	3,589.35	
		9/30/1998	55.61	0.00	3,588.86	
		12/9/1998	55.80	0.00	3,588.67	
		3/9/1999	56.09	0.00	3,588.38	
		6/10/1999	56.60	0.00	3,587.87	
		7/2/1999	56.64	0.00	3,587.83	
		9/14/1999	56.91	0.00	3,587.56	
		12/9/1999	57.37	0.00	3,587.10	
		3/10/2000	57.71	0.00	3,586.76	
		6/8/2000	58.08	0.00	3,586.39	
		9/13/2000	58.44	0.00	3,586.03	
		12/7/2000	58.89	0.00	3,585.58	
		3/9/2001	59.31	0.00	3,585.16	
		6/21/01	59.89	0.00	3,584.58	
		9/10/01	61.34	0.00	3,583.13	
		12/6/2001	60.65	0.00	3,583.82	
		3/11/2002	60.69	0.00	3,583.78	
		6/17/02	60.98	0.00	3,583.49	
		9/16/2002	61.00	0.00	3,583.47	
		1/9/2003	61.07	0.00	3,583.40	
		3/6/2003	61.19	0.00	3,583.28	
		6/19/2003	61.26	0.00	3,583.21	
		10/2/2003	61.38	0.00	3,583.09	
		12/17/2003	61.55	0.00	3,582.92	
		3/29/2004	61.71	0.00	3,582.76	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-11	3,643.78	8/18/1993	51.92	0.00	3,591.86	(1)
		1/26/1994	52.32	0.00	3,591.46	
		5/3/1995	53.38	0.00	3,590.40	
		7/31/1995	53.35	0.00	3,590.43	
		11/14/1995	52.96	0.00	3,590.82	
		2/23/1996	53.50	0.00	3,590.28	
		5/31/1996	53.25	0.00	3,590.53	
		8/23/1996	53.49	0.00	3,590.29	
		12/2/1996	53.79	0.00	3,589.99	
		3/12/1997	53.81	0.00	3,589.97	
		6/12/1997	53.96	0.00	3,589.82	
		9/12/1997	52.93	0.00	3,590.85	
		12/10/1997	-	-	-	(5),(6)
MW-11A	3,644.24	3/23/1998	54.79	0.00	3,589.45	(7)
		6/23/1998	55.43	0.00	3,588.81	
		9/30/1998	55.96	0.00	3,588.28	
		12/9/1998	56.13	0.00	3,588.11	
		3/10/1999	56.43	0.00	3,587.81	
		6/10/1999	56.94	0.00	3,587.30	
		7/2/1999	57.01	0.00	3,587.23	
		9/14/1999	57.36	0.00	3,586.88	
		12/9/1999	57.72	0.00	3,586.52	
		3/9/2000	58.01	0.00	3,586.23	
		6/8/2000	58.40	0.00	3,585.84	
		9/13/2000	58.84	0.00	3,585.40	
		12/7/2000	59.29	0.00	3,584.95	
		3/8/2001	59.72	0.00	3,584.52	
		6/21/01	60.28	0.00	3,583.96	
		9/10/01	60.69	0.00	3,583.55	
		12/6/2001	60.88	0.00	3,583.36	
		3/11/2002	61.42	0.00	3,582.82	
		6/17/02	61.55	0.00	3,582.69	
		9/16/2002	61.59	0.00	3,582.65	
		1/9/2003	61.67	0.00	3,582.57	
		3/6/2003	61.70	0.00	3,582.54	
		6/19/2003	61.84	0.00	3,582.40	
		10/2/2003	61.88	0.00	3,582.36	
		12/17/2003	62.05	0.00	3,582.19	
		3/29/2004	62.25	0.00	3,581.99	
MW-12	3,644.29	3/23/1998	54.72	0.00	3,589.57	(7)
		6/23/1998	55.48	0.00	3,588.81	
		9/30/1998	56.02	0.00	3,588.27	
		12/9/1998	56.17	0.00	3,588.12	
		3/10/1999	56.45	0.00	3,587.84	
		6/10/1999	56.97	0.00	3,587.32	
		7/2/1999	56.99	0.00	3,587.30	
		9/14/1999	57.41	0.00	3,586.88	
		12/9/1999	57.76	0.00	3,586.53	
		3/10/2000	58.08	0.00	3,586.21	
		6/8/2000	58.42	0.00	3,585.87	
		9/13/2000	58.85	0.00	3,585.44	
		12/7/2000	59.31	0.00	3,584.98	
		3/8/2001	59.76	0.00	3,584.53	
		6/21/01	60.29	0.00	3,584.00	
		9/10/01	60.79	0.00	3,583.50	
		12/6/2001	well dry during this and subsequent monitoring events			
MW-12D	3,644.38	7/2/1999	57.13	0.00	3,587.25	(8)
		9/14/1999	57.74	0.00	3,586.64	
		12/9/1999	57.86	0.00	3,586.52	
		3/9/2000	58.24	0.00	3,586.14	
		6/8/2000	58.56	0.00	3,585.82	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	-	-	-	
		6/21/01	-	-	-	
		9/10/01	-	-	-	
		12/6/2001	61.30	0.00	3,583.08	
		3/11/2002	61.61	0.00	3,582.77	

Table 2
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Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-12D cont.	3,644.38	6/17/02	61.71	0.00	3,582.67	
		9/16/2002	61.75	0.00	3,582.63	
		1/9/2003	61.86	0.00	3,582.52	
		3/6/2003	61.91	0.00	3,582.47	
		6/19/2003	61.95	0.00	3,582.43	
		10/2/2003	62.05	0.00	3,582.33	
		12/17/2003	62.21	0.00	3,582.17	
		3/29/2004	62.38	0.00	3,582.00	
MW-13	3,645.52	7/2/1999	56.60	0.00	3,588.92	(9)
		9/14/1999	56.92	0.00	3,588.60	
		12/9/1999	57.28	0.00	3,588.24	
		3/10/2000	57.68	0.00	3,587.84	
		6/8/2000	58.04	0.00	3,587.48	
		9/13/2000	58.29	0.00	3,587.23	
		12/7/2000	58.68	0.00	3,586.84	
		3/8/2001	59.19	0.00	3,586.33	
		6/21/01	59.80	0.00	3,585.72	
		9/10/01	60.03	0.00	3,585.49	
		12/6/2001	60.59	0.00	3,584.93	
		3/11/2002	60.94	0.00	3,584.58	
		6/17/02	61.28	0.00	3,584.24	
		9/16/2002	61.23	0.00	3,584.29	
		1/9/2003	61.38	0.00	3,584.14	
		3/6/2003	61.45	0.00	3,584.07	
		6/19/2003	61.58	0.00	3,583.94	
		10/2/2003	61.70	0.00	3,583.82	
		12/17/2003	61.93	0.00	3,583.59	
		3/29/2004	62.04	0.00	3,583.48	
MW-14	3,642.45	3/8/2001	61.07	0.00	3,581.38	
		6/21/01	61.71	0.00	3,580.74	
		9/10/01	62.31	0.00	3,580.14	
		12/6/2001	62.80	0.00	3,579.65	
		3/11/2002	62.70	0.00	3,579.75	
		6/17/02	62.65	0.00	3,579.80	
		9/16/2002	62.55	0.00	3,579.90	
		1/9/2003	62.59	0.00	3,579.86	
		3/6/2003	62.64	0.00	3,579.81	
		6/19/2003	62.64	0.00	3,579.81	
		10/2/2003	62.73	0.00	3,579.72	
		12/17/2003	62.93	0.00	3,579.52	
		3/29/2004	63.04	0.00	3,579.41	
MW-15	3,643.24	3/8/2001	59.79	0.00	3,583.45	
		6/21/01	60.49	0.00	3,582.75	
		9/10/01	61.02	0.00	3,582.22	
		12/6/2001	61.47	0.00	3,581.77	
		3/11/2002	61.65	0.00	3,581.59	
		6/17/02	61.68	0.00	3,581.56	
		9/16/2002	61.47	0.00	3,581.77	
		1/9/2003	61.59	0.00	3,581.65	
		3/6/2003	61.63	0.00	3,581.61	
		6/19/2003	61.62	0.00	3,581.62	
		10/2/2003	61.70	0.00	3,581.54	
		12/17/2003	61.83	0.00	3,581.41	
		3/29/2004	62.01	0.00	3,581.23	
MW-16	3,643.73	6/19/2003	66.50	0.00	3,577.23	
		10/2/2003	66.61	0.00	3,577.12	
		12/17/2003	66.72	0.00	3,577.01	
		3/29/2004	66.86	0.00	3,576.87	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
OW-4	3,644.06	7/2/1999	58.18	0.00	3,585.88	(8)
		9/14/1999	58.63	0.00	3,585.43	
		12/9/1999	58.92	0.00	3,585.14	
		3/9/2000	59.19	0.00	3,584.87	
		6/8/2000	59.56	0.00	3,584.50	
		9/13/2000	60.16	0.00	3,583.90	
		12/7/2000	61.15	0.00	3,582.91	
		3/8/2001	61.43	0.00	3,582.63	(10)
		6/21/01	61.48	0.00	3,582.58	
		9/10/01	61.53	0.00	3,582.53	
		12/6/2001	well dry during this and subsequent monitoring events			

(1) - Top of casing elevations and groundwater elevations of all monitor wells were relative to an arbitrary datum of 100.00 feet prior to March 1997 and have been converted to Mean Sea Level (MSL).

(2) - For wells having measurable thickness of free product, the groundwater elevation was calculated as follows:
Groundwater Elevation = (TOC elevation)-(depth to groundwater)+[(free product thickness)x(SG of free product)]
Note: The specific gravity (SG) of the free product is 0.82.

(3) - Not measured.

(4) - Monitor well MW-2 could not be located after January 1994.

(5) - Well plugged and abandoned July 2, 1999.

(6) - Monitor well MW-11 could not be located after September 12, 1997.

(7) - TOC elevations for MW-11A and MW-12 estimated relative to TOC elevation for MW-10.

(8) - TOC elevations for MW-12D and OW-4 estimated relative to TOC elevation for MW-12.

(9) - TOC elevation for MW-13 estimated relative to TOC elevation for MW-7.

(10) - Well dry (measured depth to water is below base of screen); true groundwater elevation is less than listed groundwater elevation.

Table 3
March 30, 2004 Field Screening Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Cumulative Liters Removed	pH	Temperature (°C)	Conductivity (umhos/cm)	Redox (mV)	Dissolved Oxygen (meter) (mg/L)	Dissolved Oxygen (Hach kit) (mg/L)	Ferrous Iron (mg/L)
MW-5	4.0	6.92	18.86	1,055	-92	6.18	3.5	0
MW-10	1.9(1)	7.22	19.32	4,441	-91	-1.06	0	10
MW-11A	3.8(1)	6.94	18.80	9,674	-82.3	-0.46	0	10
MW-12D	5.0	7.18	19.69	1,132	-123	0.57	0	1.0
MW-14	5.7(1)	7.39	18.91	1,400	-125	9.52	5.4	0
MW-15	9.5(1)	6.98	19.34	1,554	-120	6.64	7	0
MW-16	5.0	6.64	20.14	3,295	-109	0.4	3.5	0

Monitor well MW-2 not operative after January 1994; P&A'd 7/1/99.

Monitor well MW-6 P&A'd 7/1/99.

Monitor well MW-11 not operative after September 1997; P&A'd 7/1/99.

Monitor wells MW-12 and OW-4 were dry.

Monitor wells MW-10, MW-11A, MW-14, and MW-15 were purged by removing 3 well volumes of groundwater from each well.

(1) - Well was purged dry using bailing techniques.

Table 4
Cumulative Results[1] for Chloride[2] Analyses
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Sample Date	Monitor Wells[3]																	
	MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
8/1/95	160	150	310	130	380	310	350	110	2,200	3,400	NP	NP	NP	NP	NP	NP	NP	NS
8/23/96	130	140	100	99	210	250	360	140	2,000	2,900	NP	NP	NP	NP	NP	NP	NP	NS
3/23-24/98	212	206	126	151	183	223	364	164	2,390	NS	940	1,200	NP	NP	NP	NP	NP	NS
3/9-10/99	163	156	142	155	411	238	274	123	1,160	NS	834	314	NP	NP	NP	NP	NP	NS
6/10-7/2/99	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	195	496	NP	NP	NP	266
3/9-10/00	258	196	196	196	NP	224	241	131	474	NP	1,290	327	117	276	NP	NP	NP	258
1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	368	219	NP	NS
3/8-9/01	NA	165	172	152	NP	224	250	127	879	NP	1,720	586	NS	276	327	NA	NP	NS-D
6/21/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NS	NA	222	222	NP	NS-D
9/10/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	245	228	NP	NS-D
9/18/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	79	NA	NA	NA	NP	NS-D
12/6/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	276	215	NP	NS-D
3/11-12/02	177	172	183	127	NP	188	241	110	861	NP	1,230	NS-D	76	207	284	224	NP	NS-D
6/18/2002	NS	NA	NA	NA	NP	NA	NS	NS	NA	NP	NA	NS-D	NA	145	258	233	NP	NS-D
9/16/2002	NS	NS	NS	121	NP	NS	NS	NS	1,030	NP	1,550	NS-D	86	NS	293	246	NP	NS-D
1/9/2003	NS	NS	NS	123	NP	NS	NS	NS	525	NP	3,150	NS-D	95	NS	179	228	NP	NS-D
3/6/2003	NS	NS	NS	116	NP	NS	NS	NS	363	NP	2,900	NS-D	102	NS	163	272	NP	NS-D
6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	89.3	NS	NS	NS	983	NS-D
8/22/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NS	NS	182	280	841	NS-D
10/2/2003	NS	NS	NS	194	NP	NS	NS	NS	420	NP	3,240	NS-D	99.8	NS	175	298	963	NS-D
12/18/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	123	263	823	NS-D
3/30/2004	NS	NS	NS	70	NP	NS	NS	NS	928	NP	2,980	NS-D	116	NS	119	245	753	NS-D

(1) - in mg/L.

(2) - NMWQCC standard for chloride is 250 mg/L.

(3) - MW-2 not operative after May 3, 1995; P&A'd 7/1/99.

MW-6 P&A'd 7/1/99.

MW-11 P&A'd 7/1/99.

MW-11A installed February 1998.

MW-12 installed February 1998 (screened at the top of the saturated zone).

MW-12D installed June 1999, adjacent to MW-12 (screened in a lower portion of the uppermost saturated zone).

MW-13 installed June 1999.

MW-14 installed January 2001.

MW-15 installed January 2001.

MW-16 installed May 2003.

NP = not present at time of sampling event.

NS = not sampled during applicable sampling event.

NA = not analyzed for chloride during applicable sampling event.

NS-D = not sampled because well was dry during applicable sampling event.

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Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-1	8/10/1992	Regular	5550.0	12090.0	2160.0	7370.0	NA	NA
	2/9/1993	Regular	2100.0	6500.0	1300.0	7400.0	NA	NA
	8/19/1993	Regular	3200.0	7300.0	1200.0	3700.0	NA	NA
	1/27/1994	Regular	1930.0	4580.0	672.0	2390.0	NA	NA
	5/3/1995	Regular	NSP	NSP	NSP	NSP	NA	NSP
	8/1/1995	Regular	390.0	1300.0	230.0	800.0	NA	5.7
	11/15/1995	Regular	880.0	1800.0	300.0	970.0	NA	6.8
	2/23/1996	Regular	1500.0	3700.0	620.0	2200.0	NA	21
	5/31/1996	Regular	1100.0	1700.0	380.0	990.0	NA	7.5
	8/23/1996	Regular	1800.0	3300.0	570.0	2100.0	NA	17
	12/2/1996	Regular	5600.0	9600.0	2100.0	9600.0	100	64
	3/12/1997	Regular	5500.0	9700.0	2600.0	8200.0	22	62
	6/12/1997	Regular	5300.0	34000.0	7500.0	27000.0	180	160
	9/12/1997	Regular	1800.0	4400.0	1000.0	3000.0	23	21
	12/10/1997	Regular	7600.0	12000.0	2800.0	8200.0	11	71
	3/24/1998	Regular	4800.0	7200.0	1200.0	2400.0	4.2	38
	6/23/1998	Regular	53.0	680.0	580.0	1400.0	1.4	9.2
	9/30/1998	Regular	3.2	90.0	280.0	970.0	2.5	3.6
	12/10/1998	Regular	< 1.0	1.5	17.0	110.0	1.4	0.31
	3/10/1999	Regular	< 1.0	< 1.0	8.2	110.0	0.62	0.85
	3/10/1999	Duplicate	< 1.0	< 1.0	7.9	110.0	0.66	0.84
	6/10/1999	Regular	< 1.0	1.1	< 1.0	28.0	0.53	0.55
	6/10/1999	Duplicate	< 1.0	1.8	< 1.0	41.0	0.69	0.76
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	-	NS	NS	NS	NS	NS	NS
	3/9/2000	Regular	< 1	< 1	< 1	9.1	14	1.3
	6/8/2000	-	NS	NS	NS	NS	NS	NS
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	Regular	2.0	< 1	< 1	< 1	0.49	0.58
	6/21/2001	-	NS	NS	NS	NS	NS	NS
	9/10/2001	-	NS	NS	NS	NS	NS	NS
	12/6/2001	-	NS	NS	NS	NS	NS	NS
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/18/2002 through March 2004	- - -	NS	NS	NS	NS	NS	NS
MW-2 [1]	8/10/1992	Regular	14.9	< 4	< 4	< 4	NA	NA
	2/9/1993	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/1993	Regular	100.0	12.0	3.0	13.0	NA	NA
	1/27/1994	Regular	< 1	1.2	2.0	2.5	NA	NA
MW-3	8/10/1992	Regular	304.9	2099.0	6760.0	1586.0	NA	NA
	2/9/1993	Regular	130.0	< 10	< 10	190.0	NA	NA
	8/19/1993	Regular	560.0	3100.0	630.0	1900.0	NA	NA
	1/27/1994	Regular	1070.0	5380.0	510.0	3120.0	NA	NA
	5/4/1995	Regular	770.0	3300.0	470.0	1800.0	NA	NA
	8/1/1995	Regular	490.0	2900.0	890.0	1600.0	NA	14
	11/15/1995	Regular	250.0	1000.0	180.0	440.0	NA	2.9
	2/23/1996	Regular	120.0	810.0	170.0	560.0	NA	4
	5/31/1996	Regular	670.0	3900.0	1200.0	2300.0	NA	15
	8/23/1996	Regular	330.0	2200.0	590.0	1500.0	NA	12

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-3	12/2/1996	Regular	220.0	1800.0	670.0	1000.0	0.89	7.4
(cont.)	3/12/1997	Regular	370.0	2000.0	960.0	1400.0	1.8	11
	6/12/1997	Regular	860.0	4800.0	1700.0	2600.0	1.9	20
	9/11/1997	Regular	770.0	3000.0	1600.0	1900.0	1.6	16
	12/10/1997	Regular	240.0	740.0	500.0	450.0	0.59	5.3
	3/24/1998	Regular	140.0	630.0	360.0	310.0	0.56	3.9
	6/23/1998	Regular	100.0	720.0	350.0	490.0	0.40	4.9
	9/30/1998	Regular	42.0	470.0	450.0	530.0	1.0	3.8
	12/10/1998	Regular	13.0	220.0	160.0	290.0	1.3	0.43
	3/10/1999	Regular	3.2	7.4	42.0	32.0	0.2	0.44
	6/10/1999	Regular	1.7	3.1	<1.0	36.0	< 0.20	0.18
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.32	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.22	< 0.1
	9/13/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/7/2000	Regular	< 1	< 1	< 1	< 1	< 0.25	< 0.1
	3/8/2001	Regular	< 1	< 1	< 1	< 1	0.42	< 0.1
	6/21/2001	Regular	< 1	< 1	< 1	< 1	< 0.22	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/18/2002	Regular	<1	<1	<1	<1	<0.2	<0.1
	9/16/2002	-						
	through	-	NS	NS	NS	NS	NS	NS
	March 2004	-						
MW-4	8/10/1992	Regular	2594.0	10360.0	2160.0	6740.0	NA	NA
	2/9/1993	Regular	5200.0	15000.0	2200.0	10000.0	NA	NA
	8/19/1993	Regular	3000.0	12000.0	< 2000	7000.0	NA	NA
	1/27/1994	Regular	NSP	NSP	NSP	NSP	NA	NSP
	5/3/1995	Regular	NSP	NSP	NSP	NSP	NA	NSP
	8/1/1995	Regular	5700.0	17000.0	3500.0	13000.0	NA	120
	11/15/1995	Regular	490.0	1600.0	310.0	1100.0	NA	5.2
	2/23/1996	Regular	360.0	2800.0	560.0	2500.0	NA	18
	5/31/1996	Regular	84.0	830.0	280.0	1100.0	NA	6.2
	8/23/1996	Regular	110.0	1400.0	430.0	1800.0	NA	9.8
	12/2/1996	Regular	190.0	2000.0	1800.0	7200.0	56	43
	3/12/1997	Regular	220.0	1500.0	1500.0	4400.0	27	27
	6/12/1997	Regular	47.0	270.0	360.0	950.0	2.5	6.2
	9/12/1997	Regular	92.0	840.0	670.0	2100.0	15	7.6
	12/10/1997	Regular	230.0	750.0	970.0	2300.0	3.7	16
	3/24/1998	Regular	150.0	510.0	270.0	620.0	1.2	5.6
	6/23/1998	Regular	160.0	890.0	590.0	1600.0	0.69	10
	9/30/1998	Regular	80.0	180.0	370.0	840.0	2.0	3.9
	12/10/1998	Regular	28.0	70.0	210.0	960.0	9.3	4.3
	12/10/1998	Duplicate	26.0	62.0	180.0	830.0	3.9	4.3
	3/10/1999	Regular	8.0	20.0	250.0	1400.0	13.0	13
	6/10/1999	Regular	<1.0	<1.0	12.0	12.0	0.44	0.63
	9/14/1999	Regular	< 1.0	< 1.0	3.3	13.1	0.35	0.17
	12/9/1999	Regular	< 1	2.5	2.3	20.1	2	0.53
	3/10/2000	Regular	< 1	< 1	< 1	3.6	2.6	0.15

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-4	6/8/2000	Regular	< 1	< 1	< 1	< 1	0.44	0.23
(cont.)	9/13/2000	Regular	< 1	< 1	< 1	< 1	0.61	< 0.1
	12/7/2000	Regular	< 1	< 1	1.3	< 1	0.53	0.16
	3/8/2001	Regular	< 1	< 1	< 1	< 1	0.43	0.16
	6/21/2001	Regular	< 1	< 1	< 1	< 1	< 0.25	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	0.6	< 1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/18/2002	Regular	<1	<1	<1	<1	<0.2	<0.1
	9/16/2002 through March 2004	-	NS	NS	NS	NS	NS	NS
MW-5	8/10/1992	Regular	< 4	< 4	< 4	< 4	NA	NA
	2/9/1993	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/1993	Regular	< 2	< 2	< 2	< 6	NA	NA
	1/27/1994	Regular	8.7	29.9	4.0	11.3	NA	NA
	5/3/1995	Regular	3.7	5.3	0.9	4.6	NA	NA
	8/1/1995	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	NA
	11/15/1995	Regular	< 0.3	1.2	< 0.3	1.5	NA	NA
	2/23/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	NA
	5/31/1996	Regular	31.0	86.0	10.0	20.0	NA	NA
	8/23/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	12/2/1996	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	3/12/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	6/12/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	9/12/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	12/10/1997	Regular	< 5	< 5	< 5	< 5	< 0.2	< 0.1
	3/23/1998	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/23/1998	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/30/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	12/10/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	3/9/1999	Regular	<1.0	<1.0	<1.0	<1.0	< 0.20	< 0.1
	6/10/1999	Regular	<1.0	<1.0	<1.0	<1.0	< 0.20	< 0.1
	9/14/1999	Regular	<1.0	<1.0	<1.0	<2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.55	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/13/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/7/2000	Regular	< 1	< 1	< 1	< 1	< 0.25	< 0.1
	3/8/2001	Regular	< 1	< 1	< 1	< 1	0.56	< 0.1
	6/21/2001	Regular	< 1	< 1	< 1	< 1	0.26	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	0.49	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	< 0.24	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	< 0.074	< 0.11	< 0.068	< 0.082	0.3 J	< 0.05
	1/9/2003	Regular	< 1	< 1	< 1	< 1	< 1.0	< 0.1
	3/6/2003	Regular	< 1	< 1	< 1	< 1	NA	< 0.1
	8/21/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	< 1	< 1	< 1	< 1	< 1.1	< 0.1

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-5	12/18/2003	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
(cont.)	3/30/2004	Regular	< 1	< 1	< 1	< 1	< 0.2	NA
MW-6[1]	8/10/1992	Regular	NS	NS	NS	NS	NA	NS
	2/9/1993	Regular	7000.0	19000.0	3100.0	7200.0	NA	
	8/19/1993	Regular	8100.0	19000.0	3500.0	6400.0	NA	NA
	1/27/1994	Regular	7960.0	20200.0	3830.0	6150.0		NA
	5/4/1995	Regular	11000.0	17000.0	2900.0	6000.0	NA	NA
	8/1/1995	Regular	8300.0	12000.0	2500.0	5100.0	NA	60
	11/15/1995	Regular	8900.0	17000.0	2900.0	5500.0	NA	57
	2/23/1996	Regular	8100.0	10000.0	2300.0	4000.0	NA	58
	5/31/1996	Regular	83.0	150.0	15.0	51.0	NA	0.57
	5/31/1996	Duplicate	87.0	160.0	13.0	47.0	NA	0.52
	8/23/1996	Regular	31.0	28.0	9.4	7.9	NA	0.46
	12/2/1996	Regular	< 1	< 1	< 1	1.7	5.6	< 0.1
	3/12/1997	Regular	12.0	< 5	6.8	18.0	12	< 0.5
	6/12/1997	Regular	1900.0	1400.0	410.0	310.0	7.8	7.4
	9/11/1997	Regular	11.0	1.3	3.4	< 1	1	< 0.1
	12/10/1997	Regular	3.0	4.2	1.2	3.9	1.7	0.14
	3/24/1998	Regular	3.6	< 1	4.0	< 1	< 0.2	< 0.1
	6/23/1998	Regular	170.0	4.1	15.0	7.2	1.2	0.51
	9/30/1998	Regular	1000.0	420.0	140.0	270.0	4.0	3.3
	12/10/1998	Regular	7.6	6.6	1.7	5.8	2.0	< 0.1
	3/10/1999	Regular	2500.0	930.0	590.0	1400.0	11.0	13
MW-7	8/10/1992	Regular	NS	NS	NS	NS	NA	NS
	2/9/1993	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/1993	Regular	< 2	3.0	< 2	< 2	NA	NA
	1/27/1994	Regular	1.1	< 1	< 1	< 1	NA	NA
	5/3/1995	Regular	52.0	3.4	0.7	2.8	NA	NA
	8/1/1995	Regular	22.0	2.2	0.9	2.8	NA	< 0.1
	11/15/1995	Regular	8.4	0.8	< 0.3	0.9	NA	< 0.1
	2/23/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	2/23/1996	Duplicate	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	5/31/1996	Regular	29.0	83.0	10.0	21.0	NA	0.25
	8/23/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	12/2/1996	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	3/12/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	6/12/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	9/11/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	12/10/1997	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/24/1998	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/23/1998	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/30/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	12/10/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	3/9/1999	Regular	<1.0	<1.0	<1.0	<1.0	4.7	< 0.1
	6/10/1999	Regular	<1.0	<1.0	<1.0	<1.0	< 0.20	< 0.1
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 5	< 5	< 5	< 5	1.8	< 0.5
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.66	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.21	< 0.1
	9/13/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/7/2000	Regular	< 1	< 1	< 1	< 1	< 0.29	< 0.1

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-7 (cont.)	3/8/2001	Regular	< 1	< 1	< 1	< 1	1.2	< 0.1
	6/21/2001	Regular	3.1	< 1	< 1	< 1	< 0.22	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	< 0.33	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	1.3	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	NA	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002 through March 2004	-	NS	NS	NS	NS	NS	NS
MW-8	8/10/1992	Regular	NS	NS	NS	NS	NA	NS
	2/9/1993	Regular	< 2	< 2	< 2	< 6	NA	NA
	8/19/1993	Regular	< 2	< 2	< 2	< 2	NA	NA
	1/27/1994	Regular	< 1	< 1	< 1	< 1	NA	NA
	5/3/1995	Regular	3.0	4.9	0.8	3.7	NA	NA
	8/1/1995	Regular	3.1	1.2	0.5	1.6	NA	< 0.001
	11/15/1995	Duplicate	3.6	1.5	0.5	1.5	NA	< 0.1
	11/15/1995	Regular	< 0.3	0.5	< 0.3	< 0.6	NA	< 0.1
	2/23/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	5/31/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	8/23/1996	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	< 0.1
	12/2/1996	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	3/12/1997	Regular	< 1	< 1	< 1	1.8	< 0.1	< 0.1
	6/12/1997	Regular	< 1	< 1	< 1	< 1	< 0.1	< 0.1
	9/12/1997	Regular	< 1	< 1	< 1	< 1	0.1	< 0.1
	12/10/1997	Regular	< 1	< 1	< 1	< 1	0.3	< 0.1
	3/23/1998	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	6/23/1998	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/30/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	12/10/1998	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	3/9/1999	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	6/10/1999	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.20	< 0.1
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	-	NS	NS	NS	NS	NS	NS
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.55	< 0.1
	6/8/2000	-	NS	NS	NS	NS	NS	NS
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	Regular	< 1	< 1	< 1	< 1	1.6	< 0.1
	6/21/2001	-	NS	NS	NS	NS	NS	NS
	9/10/2001	-	NS	NS	NS	NS	NS	NS
	12/6/2001	-	NS	NS	NS	NS	NS	NS
	3/12/2002	Regular	< 1	< 1	< 1	< 1	0.38	< 0.1
	6/18/2002	-	NS	NS	NS	NS	NS	NS
	9/16/2002 through March 2004	-	NS	NS	NS	NS	NS	NS
MW-9	4/22/1993	Regular	570.0	380.0	< 50	870.0	NA	NA
	7/15/1993	Regular	121.0	7.3	3.0	458.0	NA	NA
	8/19/1993	Regular	390.0	290.0	40.0	250.0	NA	NA
	1/27/1994	Regular	327.0	357.0	51.1	293.0	NA	NA
	5/3/1995	Regular	380.0	110.0	19.0	120.0	NA	NA
	8/1/1995	Regular	660.0	410.0	91.0	310.0	NA	6.2

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-9 (cont.)	11/15/1995	Regular	240.0	24.0	11.0	140.0	NA	1.5
	11/15/1995	Duplicate	170.0	18.0	10.0	120.0	NA	1.9
	2/23/1996	Regular	170.0	18.0	2.3	160.0	NA	4.3
	5/31/1996	Regular	120.0	16.0	3.0	200.0	NA	NA
	8/23/1996	Regular	82.0	13.0	6.0	270.0	NA	4
	8/23/1996	Duplicate	76.0	14.0	4.8	250.0	NA	4.4
	12/2/1996	Regular	61.0	< 25	< 25	210.0	2.6	2.8
	12/2/1996	Duplicate	86.0	13.0	2.4	270.0	3.7	2.9
	3/12/1997	Regular	30.0	48.0	420.0	880.0	8.2	19
	6/12/1997	Regular	4.7	2.1	11.0	97.0	2.6	2.2
	6/12/1997	Duplicate	< 5	< 5	6.6	69.0	5.2	1.9
	9/12/1997	Regular	2.1	2.3	2.1	120.0	1.2	1.9
	12/10/1997	Regular	4.9	9.0	6.8	62.0	0.86	0.92
	3/24/1998	Regular	< 1	< 1	< 1	26.0	0.9	1
	6/23/1998	Regular	2.4	22.0	10.0	36.0	< 0.2	0.25
	9/30/1998	Regular	1.1	5.5	21.0	59.0	0.27	0.27
	12/10/1998	Regular	< 1.0	1.9	17.0	79.0	5.1	0.25
	3/10/1999	Regular	< 1.0	< 1.0	5.7	68.0	< 0.2	0.22
	6/10/1999	Regular	< 1.0	1.8	1.8	71.0	< 0.20	0.43
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	<0.10
	12/9/1999	-	NS	NS	NS	NS	NS	NS
	3/9/2000	Regular	< 1	< 1	< 1	64.0	0.66	1.3
	6/8/2000	-	NS	NS	NS	NS	NS	NS
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	Regular	< 1	< 1	< 1	< 1	1.4	< 0.1
	6/21/2001	-	NS	NS	NS	NS	NS	NS
	9/10/2001	-	NS	NS	NS	NS	NS	NS
	12/6/2001	-	NS	NS	NS	NS	NS	NS
	3/12/2002	Regular	1	< 1	< 1	< 1	0.37	< 0.1
	6/18/2002	-	NS	NS	NS	NS	NS	NS
	9/16/2002 through March 2004	-	NS	NS	NS	NS	NS	NS
MW-10	8/19/1993	Regular	190.0	460.0	< 200	240.0	NA	NA
	1/27/1994	Regular	13.4	4.0	5.5	33.6	NA	NA
	5/4/1995	Regular	980.0	15.0	11.0	84.0	NA	NA
	8/1/1995	Regular	1300.0	32.0	32.0	100.0	NA	3.6
	11/15/1995	Regular	1000.0	24.0	15.0	36.0	NA	1.7
	2/23/1996	Regular	810.0	23.0	27.0	44.0	NA	2.4
	5/31/1996	Regular	700.0	24.0	34.0	28.0	NA	2
	8/23/1996	Regular	290.0	3.4	6.4	13.0	NA	1.4
	12/2/1996	Regular	280.0	1.3	17.0	8.0	0.94	0.97
	3/12/1997	Regular	110.0	< 5	17.0	< 5	0.61	0.57
	6/12/1997	Regular	150.0	12.0	30.0	< 5	0.68	< 0.5
	9/12/1997	Regular	87.0	2.3	26.0	2.7	0.76	0.33
	9/12/1997	Duplicate	87.0	2.4	26.0	2.8	0.79	0.33
	12/10/1997	Regular	41.0	9.8	12.0	7.7	1.1	0.28
	12/10/1997	Duplicate	36.0	8.5	10.0	6.7	1.2	0.24
	3/23/1998	Regular	36.0	< 5	5.9	< 5	1.6	< 0.5

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-10 (cont.)	3/23/1998	Duplicate	36.0	< 1	5.3	1.3	1.7	0.18
	6/23/1998	Regular	37.0	< 5	< 5	< 5	2.1	< 0.5
	9/30/1998	Regular	84.0	3.2	30.0	2.2	1.4	0.36
	12/10/1998	Regular	29.0	1.0	7.0	1.0	0.86	0.18
	3/9/1999	Regular	28.0	<5.0	5.8	<5.0	0.92	<0.5
	6/10/1999	Regular	17.0	<1.0	<1.0	<1.0	0.30	0.16
	9/14/1999	Regular	10.0	< 1.0	< 1.0	< 2.0	<0.20	<0.10
	12/9/1999	Regular	23.0	< 1	< 1	1.2	0.44	0.16
	3/10/2000	Regular	300.0	4.3	6.6	43.2	1.2	0.85
	6/8/2000	Regular	78.0	1.7	7.2	9.0	0.67	0.74
	9/13/2000	Regular	23.0	1.5	1.1	2.9	1.6	0.41
	12/7/2000	Regular	7.2	< 1	< 1	< 1	1.5	0.15
	3/8/2001	Regular	3.4	1.1	< 1	< 1	3.4	0.2
	6/22/2001	Regular	< 1	< 1	< 1	< 1	1.2	<0.1
	9/10/01 and 9/18/01	Regular	2	< 1	< 1	< 1	2.3	<0.1
	12/6/2001	Regular	No Valid Data					
	3/12/2002	Regular	< 1	< 1	< 1	< 1	3.2	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	1.2	< 0.1
	9/16/2002	Regular	< 0.074	< 0.11	0.1	<0.082	3 J	< 0.05
	1/9/2003	Regular	< 1	< 1	< 1	< 1	< 1.0	< 0.1
	3/6/2003	Regular	< 1	< 1	18	< 1	NA	< 0.1
	8/21/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	< 1	< 1	< 1	< 1	< 1.2	< 0.1
	12/18/2003	Regular	< 1	< 1	< 1	< 1	0.9	< 0.1
	3/30/2004	Regular	< 1	< 1	< 1	< 1	< 0.2	NA
MW-11[1]	8/19/1993	Regular	< 2	< 2	< 2	< 2	NA	NA
	1/27/1994	Regular	< 1	< 1	< 1	< 1	NA	NA
	5/4/1995	Regular	< 0.3	< 0.3	< 0.3	< 0.6	NA	NA
	8/1/1995	Regular	44.0	29.0	5.5	13.0	NA	0.2
	11/15/1995	Regular	190.0	2.8	6.2	11.0	NA	0.4
	2/23/1996	Regular	49.0	1.2	0.5	4.0	NA	0.25
	5/31/1996	Regular	300.0	83.0	12.0	28.0	NA	0.8
	8/23/1996	Regular	100.0	1.2	0.3	4.7	NA	0.26
	12/2/1996	Regular	970.0	< 5	6.0	8.1	2	1.3
	3/12/1997	Regular	130.0	< 5	13.0	5.8	0.42	< 0.5
	3/12/1997	Duplicate	100.0	< 5	10.0	5.1	0.43	< 0.5
	6/12/1997	Regular	150.0	23.0	19.0	< 5	1.1	0.55
	9/12/1997	Regular	220.0	15.0	27.0	13.0	1	0.46
MW-11A	3/24/1998	Regular	24.0	5.0	< 5	< 5	0.28	0.14
	6/23/1998	Regular	9.9	< 5	< 5	< 5	< 0.2	< 0.5
	9/30/1998	Regular	9.3	3.7	2.2	7.0	<0.20	0.1
	12/10/1998	Regular	1.7	<1.0	<1.0	<1.0	<0.20	<0.1
	3/10/1999	Regular	<5	< 5	< 5	< 5	0.3	<0.5
	6/10/1999	Regular	<1.0	< 1.0	< 1.0	< 1.0	<0.20	<0.10
	9/13/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	<0.20	<0.10
	12/9/1999	Regular	< 5	< 5	< 5	< 5	< 0.2	< 0.1
	3/9/2000	Regular	1.2	< 1	< 1	< 1	0.43	< 0.1
	6/8/2000	Regular	3.6	< 1	< 1	< 1	0.37	< 0.1
	9/13/2000	Regular	1.4	< 1	< 1	< 1	0.36	< 0.1
	12/7/2000	Regular	26	< 1	< 1	3.3	0.3	0.12

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-11A (cont.)	3/8/2001	Regular	12	< 5	< 5	< 5	2.2	< 0.5
	6/22/2001	Regular	1.5	< 1	< 1	< 1	1	< 0.1
	9/10/2001	Regular	7.9	< 1	< 1	< 1	1.1	< 0.1
	12/6/2001	Regular	<1	< 1	< 1	< 1	1	< 0.1
	3/12/2002	Regular	1.8	< 1	< 1	1	1.6	< 0.1
	6/18/2002	Regular	2.9	< 0.1	1.3	< 1	0.91	<0.1
	9/16/2002	Regular	9	< 0.11	41	< 0.082	1 J	0.2
	1/9/2003	Regular	12	< 1	< 1	1.2	< 1.0	0.4
	3/6/2003	Regular	3.2	< 1	< 1	1.2	< 1	0.13
	8/21/2003	Regular	3.7	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	3.7	< 1	< 1	< 1	< 1.2	< 0.1
	12/18/2003	Regular	3.4	< 1	1.1	< 1	0.63	0.28
	3/30/2004	Regular	< 1	< 1	1.4	< 1	0.5	NA
MW-12	3/24/1998	Regular	100.0	11.0	6.0	8.0	0.29	0.41
	6/23/1998	Regular	88.0	< 5		< 5	< 0.2	< 0.5
	6/23/1998	Duplicate	89.0	< 5	< 5	< 5	0.31	< 0.5
	9/30/1998	Regular	260.0	3.0	1.2	7.9	<0.20	0.62
	12/10/1998	Regular	160.0	< 1.0	< 1.0	1.2	0.21	0.36
	3/10/1999	Regular	160.0	1.1	< 1.0	2.9	0.38	0.45
	6/10/1999	Regular	49.0	1.4	< 1.0	< 1.0	0.22	0.13
	9/14/1999	Regular	75.0	< 1.0	< 1.0	< 2.0	<0.20	0.23
	12/9/1999	Regular	64.0	< 1	< 1	< 1	< 0.2	0.21
	3/10/2000	Regular	93.0	< 1	< 1	< 1	< 0.2	0.21
	3/10/2000	Duplicate	99.0	< 1	< 1	< 1	0.22	0.22
	6/8/2000	Regular	62.0	< 1	< 1	< 1	< 0.2	< 0.1
	9/13/2000	Regular	34.0	< 1	< 1	< 1	0.23	< 0.1
	12/7/2000	Regular	27	< 1	2.9	1.9	<0.25	< 0.1
	3/8/2001	Regular	14	< 1	< 1	< 1	2.1	0.1
	6/22/2001	Regular	12	< 1	< 1	< 1	0.51	0.11
	9/10/2001	Well Dry (Not Sampled) During This and Subsequent Monitoring Events						
MW-12D	7/2/1999	Regular	< 5	< 5	< 5	< 5	<0.20	<0.10
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	<0.10
	12/9/1999	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/9/2000	Regular	< 1	< 1	< 1	< 1	0.24	< 0.1
	6/8/2000	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/13/2000	-	NS	NS	NS	NS	NS	NS
	12/7/2000	-	NS	NS	NS	NS	NS	NS
	3/8/2001	-	NS	NS	NS	NS	NS	NS
	6/22/2001	-	NS	NS	NS	NS	NS	NS
	9/18/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	0.44	< 0.1
	6/18/2002	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	< 0.074	< 0.11	< 0.068	< 0.082	0.2 J	< 0.05
	1/9/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	3/6/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	6/20/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	8/21/2003	Regular	< 1	< 1	< 1	< 1	< 1	< 0.1
	10/2/2003	Regular	< 1	< 1	< 1	< 1	< 1.2	< 0.1
	12/18/2003	Regular	< 1	< 1	< 1	< 1	<0.2	< 0.1
	3/30/2004	Regular	< 1	< 1	< 1	< 1	< 0.2	NA

Table 5
Cumulative BTEX and TPH Analytical Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Sample Date	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D	TPH-G
			micrograms per liter, ug/L				milligrams per liter, mg/L	
MW-13	7/2/1999	Regular	1500.0	23.0	750.0	58.0	2.2	5.1
	9/14/1999	Regular	860.0	16.0	450.0	34.4	2.1	3.1
	12/9/1999	Regular	430.0	16.0	410.0	40.9	0.46	3.2
	3/10/2000	Regular	88.0	2.8	200.0	1.3	1.9	0.99
	6/8/2000	Regular	6.0	< 1	63.0	3.3	1.1	0.91
	9/13/2000	Regular	<1.0	<1.0	3.4	<1.0	0.44	0.12
	12/7/2000	Regular	<1	<1	<1	<1	0.43	< 0.1
	3/8/2001	Regular	<1	<1	1.2	<1	2	< 0.1
	6/22/2001	Regular	< 1	< 1	< 1	< 1	0.31	< 0.1
	9/10/2001	Regular	< 1	< 1	< 1	< 1	0.3	< 0.1
	12/6/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	3/12/2002	Regular	< 1	< 1	< 1	< 1	0.84	< 0.1
	6/18/2002	Regular	<1	<1	<1	<1	0.3	<0.1
	9/16/2002 through March 2004	-	NS	NS	NS	NS	NS	NS
MW-14	1/14/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	NA	NA	NA	NA	NA	NA
	1/9/2003	Regular	NA	NA	NA	NA	NA	NA
	March 2003	Regular	NA	NA	NA	NA	NA	NA
	June 2003	Regular	NA	NA	NA	NA	NA	NA
	October 2003	Regular	NA	NA	NA	NA	NA	NA
	12/18/03	Regular	NA	NA	NA	NA	NA	NA
	3/30/2004	Regular	< 1	< 1	< 1	< 1	< 0.2	NA
MW-15	1/14/2001	Regular	< 1	< 1	< 1	< 1	< 0.2	< 0.1
	9/16/2002	Regular	NA	NA	NA	NA	NA	NA
	1/9/2003	Regular	NA	NA	NA	NA	NA	NA
	March 2003	Regular	NA	NA	NA	NA	NA	NA
	June 2003	Regular	NA	NA	NA	NA	NA	NA
	October 2003	Regular	NA	NA	NA	NA	NA	NA
	12/18/03	Regular	NA	NA	NA	NA	NA	NA
	3/30/2004	Regular	< 1	< 1	< 1	< 1	< 0.2	NA
MW-16	6/20/2003	Regular	< 5	< 5	< 5	< 5	NA	NA
	October 2003	Regular	NA	NA	NA	NA	NA	NA
	12/18/03	Regular	NA	NA	NA	NA	NA	NA
	3/30/2004	Regular	< 1	< 1	< 1	< 1	< 0.2	NA
OW-4	6/10/1999	Regular	<1.0	<1.0	<1.0	4.4	< 0.2	< 0.10
	9/14/1999	Regular	< 1.0	< 1.0	< 1.0	< 2.0	< 0.20	< 0.10
	12/9/1999	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.2	< 0.1
	3/9/2000	Regular	< 1.0	< 1.0	< 1.0	< 1.0	0.25	< 0.1
	6/8/2000	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.21	< 0.1
	9/13/2000	Regular	< 1.0	< 1.0	< 1.0	< 1.0	< 0.2	< 0.1
	12/7/2000	Well Dry (Not Sampled) During This and Subsequent Monitoring Events						

[1] Well plugged and abandoned 7/1/99
NA = Not Analyzed
NS = Not Sampled
NS-D = Not Sampled because well was dry
NSP = Not Sampled due to Phase-Separated Hydrocarbons

Table 6
Current and Historical Nitrate, Sulfate, and Dissolved Methane Data for Monitor Wells MW-5, MW-10, MW-11A, MW-12, and MW-12D
Hobbs, New Mexico
BJ Services Company, U.S.A.

Well	Date	Nitrate[1] (mg/L)	Sulfate[1] (mg/L)	Dissolved Methane (mg/L)
MW-5	3/23/1998	3.87	190	< 0.0012
	3/9/1999	< 0.1	195	< 0.0012
	6/10/1999	4.73	209	< 0.0012
	9/14/1999	4.3	210	< 0.0012
	12/9/1999	4.2	210	< 0.0012
	3/9/2000	5.3	260	< 0.0012
	6/8/2000	4.7	240	< 0.0012
	9/13/2000	3.93	200	< 0.0012
	12/7/2000	3.27	160	< 0.0012
	3/8/2001	3.24	180	< 0.0012
	6/21/2001	2.74	150	0.0017
	9/10/2001	NA[2]	130	< 0.0012
	12/6/2001	2.38	120	< 0.0012
	3/12/2002	2.98	120	< 0.0012
	6/18/2002	2.56	110	0.002
	9/16/2002	2.4	105	0.002
	1/9/2003	2.1	97	0.004
	3/6/2003	2.75	110	< 0.0012
	8/21/2003	2.4	100	< 0.0012
	10/2/2003	2.5	100	<0.0012
	12/18/2003	2.5	110	<0.0012
	3/30/2004	2.6	110	<0.0012
MW-10	3/23/1998	0.07	320	0.91
	6/23/1998	< 0.1	325	0.55
	9/30/1998	< 0.1	204	0.81
	12/10/1998	< 0.1	180	0.091
	3/9/1999	< 0.1	142 223[3]	0.035
	9/14/1999	< 0.10	160	0.0049
	12/9/1999	0.49	170	0.0039
	3/10/2000	0.1	160	0.0056
	6/8/2000	< 0.1	150	0.031
	9/13/2000	< 0.1	160	0.031
	12/7/2000	< 0.1	190	0.17
	3/8/2001	< 0.1	270	< 0.0012
	6/22/2001	< 0.1	270	0.044
	9/10/2001	NA	NA	NA
	3/12/2002	< 0.1	230	NA
	6/18/2002	< 0.1	240	0.007

Table 6
Current and Historical Nitrate, Sulfate, and Dissolved Methane Data for Monitor Wells MW-5, MW-10, MW-11A, MW-12, and MW-12D
Hobbs, New Mexico
BJ Services Company, U.S.A.

Well	Date	Nitrate[1] (mg/L)	Sulfate[1] (mg/L)	Dissolved Methane (mg/L)
MW-10 (cont.)	9/16/2002	< 0.03	318	0.006
	1/9/2003	< 0.1	280	0.0024
	3/6/2003	< 0.1	270	0.0031
	8/21/2003	0.21	350	< 0.0012
	10/2/2003	0.11	360	<0.0012
	12/18/2003	0.28	350	<0.0012
	3/30/2004	0.25	350	<0.0012
MW-11A	3/23/1998	< 0.05	190	0.14
	6/23/1998	< 0.1	225	0.11
	9/30/1998	0.4	196	0.043
	12/10/1998	0.7	188	0.033
	3/10/1999	< 0.1	164	0.094
		< 0.1[4]	227[3]	
	6/10/1999	< 0.1	181	0.0036
	9/13/1999	0.22	250	< 0.0012
	12/9/1999	< 0.1	290	0.0079
	3/9/2000	0.11	270	0.037
	6/8/2000	< 0.1	240	0.0069
	9/13/2000	< 0.1	320	< 0.0012
	12/7/2000	< 0.1	260	0.0096
	3/8/2001	< 0.1	330	0.0028
	6/22/2001	< 0.1	180	0.0074
	9/10/2001	NA	280	< 0.0012
	12/6/2001	< 0.1	240	0.0041
	3/12/2002	< 0.1	350	0.0044
	6/18/2002	< 0.1	560	0.0028
	9/16/2002	0.3	383	< 0.0012
	1/9/2003	< 0.5	290	0.0063
	3/6/2003	< 0.1	290	0.0044
	8/21/2003	0.68	340	< 0.0012
	10/2/2003	1.4	350	< 0.0012
	12/18/2003	<0.1	320	<0.0012
	3/30/2004	1.9	380	<0.0012
MW-12	3/23/1998	< 0.05	240	< 0.0012
	6/23/1998	< 0.1	240	< 0.0012
	9/30/1998	< 0.1	168	< 0.0012
	12/10/1998	< 0.1	202	< 0.0012
	3/10/1999	< 0.1	137	< 0.0012
		< 0.1[4]	193[3]	
	6/10/1999	< 0.1	217	< 0.0012
	9/14/1999	< 0.10	230	< 0.0012
	12/9/1999	< 0.1	180	< 0.0012
	3/10/2000	< 0.1	210	< 0.0012

Table 6
Current and Historical Nitrate, Sulfate, and Dissolved Methane Data for Monitor Wells MW-5, MW-10, MW-11A, MW-12, and MW-12D
Hobbs, New Mexico
BJ Services Company, U.S.A.

Well	Date	Nitrate[1] (mg/L)	Sulfate[1] (mg/L)	Dissolved Methane (mg/L)
MW-12 (cont.)	6/8/2000	< 0.1	220	< 0.0012
	9/13/2000	< 0.1	240	< 0.0012
	12/7/2000	< 0.1	260	< 0.0012
	3/8/2001	< 0.1	300	< 0.0012
	6/22/2001	< 0.1	360	0.0021
	9/10/2001	Well Dry (Not Sampled) During This and Subsequent Monitoring Events		
MW-12D	9/18/2001	NA	190	< 0.0012
	12/6/2001	< 0.1	200	< 0.0012
	3/12/2002	< 0.1	200	< 0.0012
	6/18/2002	< 0.1	180	0.0012
	9/16/2002	0.06	172	< 0.0012
	1/9/2003	< 0.1	150	0.005
	3/6/2003	0.705	170	0.0038
	6/20/2003	< 0.1	160	< 0.0012
	8/22/2003	< 0.1	160	< 0.0012
	10/2/2003	< 0.1	140	< 0.0012
	12/18/2003	<0.1	160	<0.0012
	3/30/2004	<0.1	160	<0.0012

(1) - By EPA Method 300, except as noted
(2) - NA indicates not analyzed
(3) - By EPA Method 375.4
(4) - By EPA Method 353.3
(5) - NS-D indicates not sampled (well dry)
mg/L = milligrams per liter

Table 7
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Bicarbonate, as $CaCO_3$ (mg/L)	8/1/1995	380	430	490	290	670	440	360	570	520	560	NP[2]	NP	NP	NP	NP	NP	NP	NS[3]
	8/23/1996	310	310	210	270	120	400	280	390	520	430	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	286	214	175	247	180	309	260	306	557	NS	319	451	NP	NP	NP	NP	NP	NS
	3/9-10/1999	92	309	186	283	286	358	317	333	278	NS	335	386	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	200	520	NP	NP	NP	316
	3/9-10/2000	89.1	248	160	253	NP	301	362	279	455	NP	703	402	244	240	NP	NP	NP	1020
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	374	250	NP	NS
	3/8-9/2001	90.9	242	232	222	NP	283	252	252	586	NP	646	475	NS	131	NA[4]	NS	NP	NS-D[5]
	3/11-12/2002	230	230	210	260	NP	260	340	260	784	NP	520	NS-D	260	164	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	243	NP	NS	NS	NS	273	NP	401	NS-D	241	NS	373	231	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	232	NS	NA	NA	163	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	214	NP	NS	NS	NS	582	NP	378	NS-D	214	NS	368	209	279	NS-D
Carbonate, as $CaCO_3$ (mg/L)	8/1/1995	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	NS	< 1	< 1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	NS	< 1	< 1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<1	<1	NP	NP	NP	<1
	3/9-10/2000	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	NP	NP	<4
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<2	<2	NP	NS
	3/8-9/2001	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	<2	NS	<2	NA	NS	NP	NS-D
	3/11-12/2002	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	NS-D	<2	<2	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	<2	NP	NS	NS	NS	<2	NP	<2	NS-D	<2	NS	3.03	<2	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NA	NS-D	<2	NS	NA	NA	<2	NS-D
	12/18/2004	NS	NS	NS	234	NP	NS	NS	NS	279	NP	386	NS-D	189	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<2	NP	NS	NS	NS	<2	NP	<2	NS-D	<2	NS	<2	<2	<2	NS-D
Hardness-Total, as $CaCO_3$ (mg/L)	3/23-24/1998	430	430	275	342	440	670	740	510	1,450	NP	1,000	1,600	NP	NP	NP	NP	NP	NS
	3/9-10/1999	250	440	310	340	640	780	680	370	720	NS	1,150	460	NP	NP	NP	NP	NP	NS
	3/9-10/2000	600	450	500	1,200	NP	660	760	430	760	NP	880	700	260	540	NP	NP	NP	3,000
	3/8-9/2001	310	470	610	440	NP	590	590	1,000	1,300	NP	1,900	1,300	NS	670	NA	NS	NP	NS-D
	3/11-12/2002	420	420	450	420	NP	ND[6]	ND	ND	1,200	NP	1,400	NS-D	330	750	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	690	NP	NS	NS	NS	NA	NP	1,500	NS-D	360	NS	NA	NA	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	790	NP	NA	NS-D	NA	NS	600	660	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	220	NP	NS	NS	NS	1,300	NP	2,200	NS-D	380	NS	800	760	640	NS-D
Hydroxide (mg/L)	8/1/1995	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NS
Methane (mg/L)	3/23-24/1998	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	0.039	< 0.0012	0.91	NS	0.14	< 0.0012	NP	NP	NP	NP	NP	NS
	3/9-10/1999	NS	NS	NS	<0.0012	NS	NS	NS	NS	0.035	NS	0.094	< 0.0012	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NA	NA	0.0015	0.0017	NP	NP	NP	< 0.0012
	3/9-10/2000	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	< 0.0012	0.13	< 0.0012	0.0056	NP	0.037	< 0.0012	< 0.0012	< 0.0012	NP	NP	NP	< 0.0012
	3/8-9/2001	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	0.0028	< 0.0012	NS	< 0.0012	NA	NS	NP	NS-D
	3/11-12/2002	0.007	< 0.0012	0.0024	< 0.0012	NP	ND	ND	ND	ND	NP	0.0044	NS-D	< 0.0012	< 0.0012	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	< 0.0012	NP	NS	NS	NS	0.0031	NP	0.0044	NS-D	0.0038	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	< 0.0012	NS	NS	NS	< 0.0012	NS-D
	8/21-22/2003	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	< 0.0012	NS	< 0.0012	< 0.0012	NS	NS-D
	12/18/2004	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	<0.0012	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	<0.0012	NS	< 0.0012	< 0.0012	< 0.0012	NS-D

Table 7
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Anions (mg/L)																			
Chloride	See Table 4																		
Fluoride	3/23-24/1998	0.9	1.2	1.2	0.6	1.1	0.8	0.9	1.3	6.1	NS	2.9	4.2	NP	NP	NP	NP	NP	NS
	3/9-10/1999	1.54	1.46	1.5	1.38	1.79	1.56	1.44	1.84	4.93	NS	3.08	3.13	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	1.83	2.22	NP	NP	NP	3.45
	3/9-10/2000	1.7	1.1	1.1	1.1	NP	0.75	0.69	1.5	1	NP	<0.1	1.7	1.3	1.7	NP	NP	NP	3.8
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	3.5	1.2	NP	NS
	3/8-9/2001	1.3	0.77	0.63	0.86	NP	0.69	0.66	0.92	1.2	NP	1.1	1.9	NS	1.6	NA	NS	NP	NS-D
	3/11-12/2002	1.2	1.4	1.2	1.4	NP	1.3	1.1	1.5	1.8	NP	2.1	NS-D	1.4	2.3	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	1.1	NP	NS	NS	NS	1.6	NP	4.1	NS-D	1.2	NS	2.3	0.91	NP	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	1.1	NP	NS	NS	NS	2.2	NP	3.5	NS-D	1.1	NS	2.5	1.1	5.3	NS-D
Nitrate (Nitrogen as N)	8/1/1995	4.7	5.6	15	28	1.3	9.2	11	38	< 0.1	5.5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	11	7.6	7.6	12	< 0.5	10	8.6	24	< 5	11	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	1.78	3.07	2.59	3.87	0.69	3.92	1.84	4.27	0.07	NS	< 0.05	< 0.05	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.7	2.1	2.6	NA	<0.1	3.3	0.7	3.7	NA	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	2.1	2.4	NP	NP	NP	3.96
	3/9-10/2000	0.33	2.9	3.7	5.3	NP	3.6	0.35	7.2	0.1	NP	0.11	<0.1	0.14	<0.1	NP	NP	NP	3.6
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	4.5	4.88	NP	NS
	3/8-9/2001	4.31	2.56	4.75	3.24	NP	2.82	0.664	7.9	<0.1	NP	<0.1	<0.1	NS	<0.1	NA	NS	NP	NS-D
	3/11-12/2002	5.7	3.86	8.55	2.98	NP	3.23	0.607	6.34	<0.1	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	2.75	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	0.705	NS	5.82	3.67	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	<0.1	NS	NS	NS	4.4	NS-D
	8/21/2003	NS	NS	NS	2.4	NP	NS	NS	NS	NA	NP	NA	NS-D	< 0.1	NS	NA	NA	NS	NS-D
	12/18/2004	NS	NS	NS	2.5	NP	NS	NS	NS	0.28	NP	<0.1	NS-D	< 0.1	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	2.6	NP	NS	NS	NS	0.25	NP	1.9	NS-D	< 0.1	NS	4.9	3	5.8	NS-D
Sulfate	8/1/1995	150	150	210	230	6.7	180	160	150	130	230	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	130	150	150	140	85	80	160	180	120	130	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	130	180	160	190	230	310	250	230	320	NS	190	240	NP	NP	NP	NP	NP	NS
	3/9-10/1999	196	162	178	195	72	246	240	146	223	NP	227	193	NP	NP	NP	NP	NP	NS
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	249	334	NP	NP	NP	192
	3/9-10/2000	530	190	250	260	NP	280	260	170	160	NP	270	210	200	170	NP	NP	NP	200
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	180	130	NP	NS
	3/8-9/2001	210	170	180	180	NP	260	240	150	270	NP	330	300	NS	380	NA	NS	NP	NS-D
	3/11-12/2002	190	150	160	120	NP	240	250	130	230	NP	350	NS-D	200	380	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	110	NP	NS	NS	NS	270	NP	290	NS-D	170	NS	150	150	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	160	NS	NS	NS	200	NS-D
	8/21/2003	NS	NS	NS	100	NP	NS	NS	NS	NA	NP	NA	NS-D	160	NS	NA	NA	NS	NS-D
	12/18/2004	NS	NS	NS	110	NP	NS	NS	NS	350	NP	320	NS-D	160	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	110	NP	NS	NS	NS	350	NP	380	NS-D	160	NS	150	140	180	NS-D
Cations (mg/L)																			
Calcium	8/1/1995	120	120	220	160	320	300	300	180	610	490	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	120	130	89	110	62	270	230	190	390	440	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	129	122	79	109	94	208	215	142	417	NS	259	388	NP	NP	NP	NP	NP	NS
	3/9-10/1999	80.2	129	90.8	116	141	233	197	122	214	NP	308	148	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	113	389	NP	NP	NP	141
	3/9-10/2000	155	119	147	387	NP	167	215	110	177	NP	229	180	78.1	122	NP	NP	NP	882
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	179	150	NP	NS
	3/8-9/2001	86.8	148	214	157	NP	172	183	381	331	NP	466	338	NS	198	NA	NS	NP	NS-D
	3/11-12/2002	112	121	130	143	NP	ND	ND	ND	303	NP	330	NS-D	120	225	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	288	NP	NS	NS	NS	NA	NP	470	NS-D	135	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	219	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	108	NP	NA	NS-D	NA	NS	62.2	107	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	80.1	NP	NS	NS	NS	308	NP	763	NS-D	142	NS	205	255	210	NS-D
Magnesium	8/1/1995	34	36	58	27	72	42	49	43	130	130	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	120	32	21	18	28	40	48	44	84	120	NP	NP	NP	NP	NP	NP	NP	NS

Table 7
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Magnesium (continued)	3/23-24/1998	36	30	18	20	42	47	52	36	130	NS	96	108	NP	NP	NP	NP	NP	NS
	3/9-10/1999	19.7	31.5	20.4	21.6	62.2	54.4	47.7	28.5	43	NP	101	32.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	16.6	83.9	NP	NP	NP	44.3
	3/9-10/2000	41.3	27.5	26.3	29.2	NP	44.3	39.1	26.2	61	NP	47.7	30.6	7.25	38.8	NP	NP	NP	74.5
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	87.5	28.3	NP	NS
	3/8-9/2001	20.7	24.9	25.9	16.6	NP	41.1	37.4	28.2	95.1	NP	93.4	95.3	NS	52.3	NA	NS	NP	NS-D
	3/11-12/2002	27.3	20.7	20.7	13	NP	ND	ND	ND	ND	NP	103	NS-D	6.06	44.7	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	19.6	NP	NS	NS	NS	NA	NP	160	NS-D	6.74	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	45.4	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	41.1	NP	NA	NS-D	NA	NS	35.5	17.3	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	12.4	NP	NS	NS	NS	128	NP	134	NS-D	7.63	NS	66.4	31.5	39.2	NS-D
Potassium	8/1/1995	2.4	2.6	3.5	4.2	3	3.4	5	4.1	35	46	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	2.4	3	2.2	3.1	2.4	3.7	3.9	2.6	41	53	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<20	<20	<20	<20	<20	<20	<20	<20	20	NS	30	70	NP	NP	NP	NP	NP	NS
	3/9-10/1999	3	4	3	4	4	9	4	3	15	NP	21	101	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	66	6	NP	NP	NP	3
	3/9-10/2000	4.01	4.11	3.95	5.61	NP	6.98	4.53	4.08	18.3	NP	18.6	104	70.6	2.84	NP	NP	NP	10.7
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	3.59	4.59	NP	NS
	3/8-9/2001	<2	2.56	2.76	2.25	NP	5.15	2.94	3.84	19.5	NP	33.5	47.2	NS	2.26	NA	NS	NP	NS-D
	3/11-12/2002	2.82	4.05	2.79	3.55	NP	ND	ND	ND	ND	NP	41.5	NS-D	72	2.82	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	3.72	NP	NS	NS	NS	NA	NP	39.4	NS-D	55.6	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	4.78	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	4.61	NP	NA	NS-D	NA	NS	<2	3.98	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	4.15	NP	NS	NS	NS	10.8	NP	28.6	NS-D	50.4	NS	3.07	3.55	4.02	NS-D
Sodium	8/1/1995	100	93	140	110	130	95	94	98	660	2000	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	100	110	88	120	120	96	100	83	960	2600	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	113	126	109	130	100	92	101	118	1090	NS	312	381	NP	NP	NP	NP	NP	NS
	3/9-10/1999	126	135	124	155	141	110	115	122	856	NP	225	180	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	121	165	NP	NP	NP	103
	3/9-10/2000	123	112	115	123	NP	95.1	95.4	99.1	181	NP	608	129	103	114	NP	NP	NP	97.3
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	144	108	NP	NS
	3/8-9/2001	141	124	135	147	NP	121	118	119	410	NP	801	185	NS	142	NA	NS	NP	NS-D
	3/11-12/2002	147	133	128	145	NP	ND	ND	ND	ND	NP	660	NS-D	79.4	127	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	144	NP	NS	NS	NS	NA	NP	1550	NS-D	68.8	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	436	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	170	NP	NA	NS-D	NA	NS	53.3	63.8	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	115	NP	NS	NS	NS	408	NP	1370	NS-D	54	NS	80.7	88.1	382	NS-D
Metals (mg/L)																			
Arsenic	8/1/1995	0.0076	0.0043	<0.002	0.0059	0.028	0.0033	0.0034	0.0055	0.015	0.0086	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	0.0078	0.0066	0.0059	0.0067	0.018	0.0036	0.0033	0.0044	0.028	0.011	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	0.007	0.007	0.008	0.007	0.013	<0.005	<0.005	0.005	0.035	NS	0.019	0.013	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.013	0.009	0.012	0.005	0.02	0.006	0.005	0.007	0.026	NP	0.036	0.066	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.022	0.008	NP	NP	NP	<0.005
	3/9-10/2000	0.0178	0.00817	0.0178	0.0173	NP	0.00849	0.00953	0.00757	0.0474	NP	0.108	0.0948	0.0143	<0.005	NP	NP	NP	0.034
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	0.00511	<0.005	NP	NS
	3/8-9/2001	0.0205	0.0094	0.0386	0.00974	NP	0.00694	NA	0.013	0.133	NP	0.08	0.0445	NS	0.00673	NA	NS	NP	NS-D
	3/11-12/2002	0.00939	0.00889	0.0101	0.0104	NP	ND	ND	ND	0.286	NP	0.086	NS-D	0.0471	0.012	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	0.0125	NP	NS	NS	NS	NA	NP	0.0387	NS-D	0.0491	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	0.00674	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	0.0598	NP	NA	NS-D	NA	NS	<0.005	<0.005	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	0.00836	NP	NS	NS	NS	0.052	NP	0.0559	NS-D	0.045	NS	0.00911	0.00841	0.00869	NS-D
Barium	8/1/1995	0.069	0.38	0.34	0.049	1.1	0.069	0.075	0.089	0.37	0.2	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	0.064	0.24	0.069	0.038	0.29	0.061	0.066	0.089	0.26	0.2	NP	NP	NP	NP	NP	NP	NP	NS

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BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Barium (continued)	3/23-24/1998	0.11	0.182	0.044	0.044	0.208	0.059	0.074	0.066	0.287	NS	0.163	0.157	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.058	0.059	0.045	0.054	0.555	0.076	0.052	0.043	0.17	NP	0.174	0.144	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.155	0.333	NP	NP	NP	0.062
	3/9-10/2000	0.0917	0.108	0.0694	0.184	NP	0.046	0.236	0.0419	0.281	NP	0.872	0.245	0.0962	0.113	NP	NP	NP	1.49
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	0.0833	0.073	NP	NS
	3/8-9/2001	0.044	0.119	0.0978	0.0055	NP	0.043	0.0512	0.111	0.23	NP	0.401	0.603	NS	0.171	NA	NS	NP	NS-D
	3/11-12/2002	0.06	0.0797	0.0805	0.0524	NP	ND	ND	ND	0.294	NP	0.348	NS-D	0.0865	0.109	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	0.15	NP	NS	NS	NS	NA	NP	0.297	NS-D	0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	0.0728	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	0.04	NP	NA	NS-D	NA	NS	0.0262	0.0326	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	0.0464	NP	NS	NS	NS	0.0922	NP	0.221	NS-D	0.104	NS	0.0699	0.0772	0.0596	NS-D
Cadmium	8/1/1995	<0.001	<0.001	0.0052	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.005	<0.005	NP	NP	NP	<0.005
	3/9-10/2000	<0.005	<0.005	0.0178	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	NP	NP	<0.005
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	<0.005	NP	NS
	3/8-9/2001	<0.005	<0.005	0.0121	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NS	<0.005	NA	NS	NP	NS-D
	3/11-12/2002	<0.005	<0.005	<0.005	<0.005	NP	ND	ND	ND	<0.005	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.005	NP	NA	NS-D	NA	NS	62.2	107	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	<0.005	NP	<0.005	NS-D	<0.005	NS	<0.005	<0.005	<0.005	NS-D
Chromium	8/1/1995	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.01	<0.01	<0.01	<0.01	0.049	<0.01	<0.01	<0.01	<0.01	<0.01	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	<0.01	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NP	<0.01	<0.01	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.02	0.02	NP	NP	NP	<0.01
	3/9-10/2000	<0.01	<0.01	<0.01	0.0248	NP	<0.01	<0.01	<0.01	0.031	NP	0.0342	0.0124	<0.01	<0.01	NP	NP	NP	0.105
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.01	<0.01	NP	NS
	3/8-9/2001	<0.01	<0.01	0.0104	0.0101	NP	<0.01	<0.01	0.013	0.0109	NP	0.0392	0.0469	NS	0.0104	NA	NS	NP	NS-D
	3/11-12/2002	<0.01	<0.01	<0.01	<0.01	NP	ND	ND	ND	0.0246	NP	0.023	NS-D	<0.01	0.0114	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	0.0174	NP	NS	NS	NS	NA	NP	0.0168	NS-D	0.01	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.01	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.01	NP	NA	NS-D	NA	NS	<0.01	<0.01	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.01	NP	NS	NS	NS	<0.01	NP	0.0441	NS-D	<0.01	NS	<0.01	<0.01	<0.01	NS-D
Lead	8/1/1995	<0.002	<0.002	0.0044	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0025	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.005	<0.005	<0.005	<0.005	0.013	<0.005	<0.005	<0.005	<0.005	NP	0.009	<0.005	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.005	<0.005	NP	NP	NP	<0.005
	3/9-10/2000	<0.005	<0.005	<0.005	0.00565	NP	<0.005	<0.005	<0.005	0.00661	NP	0.00595	<0.005	<0.005	<0.005	NP	NP	NP	0.0355
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	<0.005	NP	NS
	3/8-9/2001	<0.005	<0.005	0.00602	<0.005	NP	<0.005	<0.005	0.00597	0.0222	NP	0.0119	0.00627	NS	<0.005	NA	NS	NP	NS-D
	3/11-12/2002	<0.005	<0.005	<0.005	<0.005	NP	ND	ND	ND	0.0234	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.005	NP	NA	NS-D	NA	NS	<0.005	<0.005	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	<0.005	NP	0.00901	NS-D	<0.005	NS	<0.005	<0.005	<0.005	NS-D
Mercury	8/1/1995	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	NS	<0.0002	<0.0002	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	NP	NP	NP	NP	NP	NS

Table 7
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Mercury (continued)	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.0002	<0.0002	NP	NP	NP	<0.0002
	3/9-10/2000	NS	NS	NS	NS	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	NP	NP	<0.0002
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.0002	<0.0002	NP	NS
	3/8-9/2001	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	NS	<0.0002	NA	NS	NP	NS-D
	3/11-12/2002	<0.0002	<0.0002	<0.0002	0.000243	NP	ND	ND	ND	<0.0002	NP	<0.0002	NS-D	<0.0002	<0.0002	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	<0.0002	NP	NS	NS	NS	NA	NP	<0.0002	NS-D	<0.0002	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.0002	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.0002	NP	NA	NS-D	NA	NS	<0.0002	<0.0002	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.0002	NP	NS	NS	NS	<0.0002	NP	<0.0002	NS-D	<0.0002	NS	<0.0002	<0.0002	<0.0002	NS-D
Selenium	8/1/1995	<0.004	<0.004	<0.004	<0.004	<0.004	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.004	<0.004	<0.004	<0.004	<0.004	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.005	0.006	<0.005	0.006	<0.005	0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NP	NP	NS
	3/9-10/2000	<0.005	<0.005	<0.005	<0.005	NP	0.00926	<0.005	<0.005	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	NP	NP	<0.005
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	0.00523	NP	NS
	3/8-9/2001	<0.005	0.00702	0.00508	0.00587	NP	0.00617	<0.005	0.0054	<0.005	NP	<0.005	<0.005	NS	<0.005	NA	NS	NP	NS-D
	3/11-12/2002	0.00549	0.00625	<0.005	0.00558	NP	ND	ND	ND	<0.005	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NS-D
	8/21-22/2003	NS	NS	NS	NS	NP	NS	NS	NS	< 0.005	NP	NS	NS-D	NA	NS	< 0.005	< 0.005	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	< 0.005	NP	<0.005	NS-D	<0.005	NS	< 0.005	< 0.005	< 0.005	NS-D
PAHs (µg/L)																			
Acenaphthene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	NS	<0.3	<0.3	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	<2.0	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	<0.1
	3/9-10/2000	0.28	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Acenaphthylene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	< 0.1	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	<0.1
	3/9-10/2000	0.91	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	0.4	NP	<0.1	<0.1	<0.1	1.8	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	0.71	NP	0.35	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	1.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Anthracene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	< 0.1	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NS

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BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Anthracene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NP	NP	NP	<0.1
(continued)	3/9-10/2000	0.12	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Benzo(a)anthracene	8/1/1995	<50	<10	<500	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<10	<10	<30	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.1	<0.1	0.2	<0.1	<2.0	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NP	NP	NP	<0.1
	3/9-10/2000	0.18	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Benzo(k)fluoranthene	8/1/1995	<50	<10	<500	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<10	<10	<30	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.1	<0.1	0.2	<0.1	<2.0	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NP	NP	NP	<0.1
	3/9-10/2000	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Benzo(a)pyrene	8/1/1995	<50	<10	<500	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<10	<10	<30	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.1	<0.1	0.2	<0.1	<2.0	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NP	NP	NP	<0.1
	3/9-10/2000	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Fluorene	8/1/1995	<50	<10	<500	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NA	NA	NP	NS
	8/23/1996	<10	<10	<30	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NA	NA	NP	NS
	3/23-24/1998	<10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	NS	<0.3	<0.3	NP	NP	NA	NA	NP	NS
	3/9-10/1999	<0.1	<0.1	<2.0	<0.1	<2.0	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	NP	NP	NA	NA	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NA	NA	NP	<0.1
	3/9-10/2000	25	<0.1	0.36	<0.1	NP	<0.1	<0.1	1.5	<0.1	NP	<0.1	<0.1	<0.1	1.6	NA	NA	NP	<0.1

Table 7
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Fluorene (continued)	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Naphthalene	8/1/1995	<5	210	1700	<5	470	<5	<5	15	92	<5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	230	110	440	<5	<30	<5	<5	<84	<76	<5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	130	23	<0.1	<0.1	<0.1	<0.1	<0.1	4	8	NS	0.8	11	NP	NP	NP	NP	NP	NS
	3/9-10/1999	10	8	170	0.1	160	<0.1	<0.1	<0.1	6	NP	<0.1	19	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.6	34	NP	NP	NP	<0.1
	3/9-10/2000	2.4	<0.1	0.44	<0.1	NP	<0.1	<0.1	0.42	1.5	NP	0.12	0.26	<0.1	56	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	0.15	NP	0.21	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	0.14	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	0.14	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Phenanthrene	8/1/1995	<50	<10	<500	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<10	<10	<30	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.1	<0.1	2	<0.1	<2.0	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NP	NP	NP	<0.1
	3/9-10/2000	0.65	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	0.22	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
Pyrene	8/1/1995	<50	<10	<500	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<10	<10	<30	<5	<30	<5	<5	<5	<5	<5	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.1	<0.1	0.4	<0.1	<2.0	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	<1.0	NP	NP	NP	<0.1
	3/9-10/2000	<2	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NS-D
	3/11-12/2002	<0.1	<0.11	<0.1	<0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<5	NS-D
	8/21-22/2003	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	NA	NS-D	NA	NS	<0.1	<0.1	NS	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	<0.1	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NS-D
VOCs (µg/L)																			
Acetone	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<100	<100	NP	NP	NP	NP	NP	NS
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	130	<100	NP	NP	NP	<100
	6/10-7/2/1999	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<100	<100	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D

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Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
Acetone	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
(continued)	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 100	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
sec-Butylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NA
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	5	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
Isopropylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	31	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
Naphthalene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	190	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
n-Propylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	68	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
1,2,4-Trimethylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
1,3,5-Trimethylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
MTBE	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 10	25	NP	NP	NP	< 10
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NS-D
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
SVOCs (µg/L)																			
2,4-Dimethylphenol	8/1/1995	< 50	97	< 500	< 5	42	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	56	NP	NP	NP	<5

Table 7
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																	
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	OW-4
2,4-Dimethylphenol (continued)	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
2-Methylnaphthalene	8/1/1995	280	62	1500	< 5	150	< 5	< 5	36	23	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	29	NP	NP	NP	<5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
2-Methylphenol	8/1/1995	< 50	56	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	<5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
4-Methylphenol	8/1/1995	< 80	< 20	< 800	< 8	150	< 8	< 8	< 8	< 8	< 8	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	<5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
Bis(2-ethylhexyl)-phthalate	8/1/1995	750	< 20	10000	40	< 40	< 7	< 7	< 7	< 7	< 7	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	<5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D
Phenol	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	8.2	< 5	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<5	6	NP	NP	NP	<5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NP	NP	NS
	3/11-12/2002	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	NS	NS	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NS-D
	3/30/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NS-D

(1) - MW-2 not operative after May 3, 1995; MW-11 not operative after September 1997; MW-2, MW-6, and MW-11 P&A'd 7/1/99.
(2) - NP = Well not present at time of sampling event.
(3) - NS = Well not sampled.
(4) - NA = Not Analyzed.
(5) - NS-D = Well not sampled (dry well).
(6) - ND = No data - sample aliquot not collected due to insufficient well yield.

APPENDICES

APPENDIX A

Groundwater Sampling Forms

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-5

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 3/30/04 Time: 0810

Client: BJ Services Personnel: R. Banda / S. Sale

Project Location: Hobbs, NM Weather: 70°F, No wind.

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.50 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 62.56 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 1.94 feet Well Volume: 0.31 gal Screened Interval (from GS): 45-60

Pump Intake depth 64 (from GS) Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Was well purged dry? ☐ Yes ☑ No Pumping Rate: 0.2 L/min

Equipment Model(s)
1. Fulltz pump
2. YSI 600XL
3. HACH Turbidity meter

Time	Cum. Gallons Removed (Liters)	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity (NTUs)	Depth to Water (TOC)	Comments
0852	~~L~~	—	°F	mS/cm	mV	~~mg/L~~	~~NTUs~~	ft	
0856	0.5	6.65	64.66	1.058	-87	7.05	12.9	62.95	
0900	1.0	6.66	64.74	1.070	-87	7.05	4.26	62.95	
0903	2.0	6.79	65.37	1.057	-89	6.32	4.02	62.95	
0906	3.0	6.87	65.68	1.056	-90	6.20	3.06	62.95	
0910	4.0	6.92	65.95	1.055	-92	6.18	2.41	62.94	

part purging

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: 62.94 Field Filtered? ☐ Yes ☑ No

Sample ID: MW-5 Sample Time: 0915 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 0 mg/L

DO: 3.5 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Sampled for anions, HCO_3, CO_3, PAH, Hardness, Metals, Methane, BTEX, DRO

Note: Include comments such as well condition, odor, presence of NAPL or other items not on the field data sheet.

Signature: [illegible]

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-10

1. PROJECT INFORMATION

Project Number: 12332 Task Number: 019 Date: 3/30/04 Time: 1035

Client: BJ Services Personnel: R. Banda / S. Sale

Project Location: Hobbs, NM Weather: 75°F

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 63.51 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.71 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 1.8 feet Well Volume: 0.288 gal Screened Interval (from GS): —

Pump Intake depth — (from GS) 3 well vol. = 0.864 *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☑ Bailer, Size: ___ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Equipment Model(s)

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

1. Clearview bailer

Materials: Rope/Tubing ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

2. YSI 600XL

Was well purged dry? ☑ Yes ☐ No Pumping Rate: — gal/min

3. —

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1038	0.5	7.22	19.32	4.441	-91	-1.06			

Bailed dry at 0.5 gal.

4. SAMPLING DATA

Method(s): ☑ Bailer, Size: ___ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☑ No

Sample ID: MW-10 Sample Time: 1045 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 10 mg/L

DO: 0.0 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-11A

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 3-30-04 Time: 1020

Client: BJ Services Personnel: R. Banda / S. Sale

Project Location: Hobbs, NM Weather: 75°F

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.72 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☑ Other: measured
Depth to Static Water: 62.25 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 2.47 feet Well Volume: 0.4 gal Screened Interval (from GS): 50-65'

Pump intake depth — (from GS) 0.4 X 3 = 1.2 gal. *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☑ Bailer, Size: ___ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Equipment Model(s)

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: Plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable — 1. Clearview bailer

Materials: Rope/Tubing ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable — 2. 1/ST 600XC

Was well purged dry? ☑ Yes ☐ No Pumping Rate: — gal/min — 3. —

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1000	0.5	7.08	18.68	9.578	-105	0.68			
1010	1.0	6.94	18.80	9.674	-82.3	-0.46			

Bailed dry at 1.0 gal.

4. SAMPLING DATA

Method(s): ☑ Bailer, Size: ___ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: Plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☑ No

Sample ID: MW-11A Sample Time: 1030 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 10 mg/L

DO: 0 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-12D

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 3/30/04 Time: 1020

Client: BJ Services Personnel: R. Banda / S. Sale

Project Location: Hobbs, NM Weather: 75°F / light breeze from South

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 87.58 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☑ Other: Historical
Depth to Static Water: 62.38 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 25.2 feet Well Volume: 4.032 gal Screened Interval (from GS): 77.5 - 87.5

Pump Intake depth 70 (from GS) Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Equipment Model(s)

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Was well purged dry? ☐ Yes ☑ No Pumping Rate: 0.25 L/min

1. HACH TURB
2. YSI
3. FOLTZ

Start Purging

Time	Cum. ~~Gallons~~ Liters Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1050	L.	—	°C	mS/cm	mV	mg/L	NTUs	ft.	
1054	1.0	7.15	19.09	1.128	-119	1.89	22.1	62.62	
1058	2.0	7.14	19.26	1.132	-118	1.38	12.1	62.63	
1102	3.0	7.15	19.49	1.133	-121	0.86	9.86	62.63	
1106	4.0	7.16	19.63	1.132	-122	0.59	7.23	62.63	
1110	5.0	7.18	19.69	1.132	-123	0.57	5.18	62.63	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: 62.63 Field Filtered? ☐ Yes ☑ No

Sample ID: MW-12D Sample Time: 1115 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 1.0 mg/L

DO: 0 mg/L

Nitrate: ___ mg/L

Sulfate: ___ mg/L

Alkalinity: ___ mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL or other items not on the field data sheet.

Signature

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-14

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 3/30/04 Time: 1305

Client: BJ-Services Personnel: R. Banda / S. Sale

Project Location: Hobbs, NM Weather: 80°F / light breeze from the South

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 69.37 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☑ Other: Historical
Depth to Static Water: 63.04 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 6.33 feet Well Volume: 1.01 gal Screened Interval (from GS): 54.9 – 69.5

Pump intake depth ~ (from GS) 3 x 1.01 = 3.03 gal. *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☑ Bailer, Size: — ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: Plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Materials: Rope/Tubing ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Was well purged dry? ☑ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. YSI
2. HACH Turb. Meter
3.

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1315	0.1	7.42	18.86	1.421	-133	9.58	84.5		
1323	1.0	7.39	18.91	1.400	-125	9.52	280		
	~~2.0~~								
	~~3.0~~								
	Bailed dry at 1.5 gal.								

Start

4. SAMPLING DATA

Method(s): ☑ Bailer, Size: — ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: Plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☑ No

Sample ID: MW-14 Sample Time: 1345 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID:

Geochemical Analyses

Ferrous Iron: 0.0 mg/L

DO: 5.4 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL or other items not on the field data sheet.

Signature

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-15

1. PROJECT INFORMATION

Project Number: 12832 Task Number: 019 Date: 3/30/04 Time: 1210

Client: BJ Services Personnel: R. Bands / S. Sale

Project Location: Hobbs, NM Weather: Sunny / 78°F

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 67.01 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 62.01 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 5.0 feet Well Volume: 0.8 gal Screened Interval (from GS): 52 - 67'

Pump Intake depth — (from GS) 3 X 0.8 = 2.4 gal *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☑ Bailer, Size: — ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: Plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Materials: Rope/Tubing ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Was well purged dry? ☐ Yes ☑ No Pumping Rate: — gal/min

Equipment Model(s)
1. YSI 600XL
2. Bailer - Clearview
3. HACH Turb. Meter

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
—	gal.	—	°C	mS/cm	mV	mg/L	NTUs		
1216	0.1	7.29	19.21	1.585	-117	6.50	195		
1218	1.0	7.24	18.85	1.575	-117	9.59	182		
1224	2.0	7.20	19.18	1.588	-119	3.45	205		
1228	2.5	6.98	19.34	1.554	-120	6.64	219		

4. SAMPLING DATA

Method(s): ☑ Bailer, Size: — ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☑ Other: Plastic ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Materials: Tubing/Rope ☐ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☑ No

Sample ID: MW-15 Sample Time: 1235 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 0.0 mg/L

DO: 7.0 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature: [illegible]

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-16

1. PROJECT INFORMATION

Project Number: 12892 Task Number: 019 Date: 3/30/04 Time: 1420

Client: BJ Services Personnel: R. Banks / S. Sale

Project Location: Hobbs, NM Weather: 80°F, light breeze from South

2. WELL DATA

Casing Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☑ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 73 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 66.86 feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☑ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 6.14 feet Well Volume: 0.98 gal Screened Interval (from GS): 48-73' bgs

Pump intake depth 70 (from GS) *Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft*

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Equipment Model(s)

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable — 1. YSI 600XL

Materials: Rope/Tubing ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable — 2. Fultz pump

Was well purged dry? ☐ Yes ☑ No Pumping Rate: ___ gal/min — 3. HACH Turbidity meter

Time	Cum. Liters Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
Start purging 1435	1.	—	°C	mS/cm	mV	mg/L	NTU	ft	
1439	1.0	6.98	20.96	3.247	-123	0.34	537	67.06	
1443	2.0	6.66	19.86	3.275	-116	0.8	458	67.08	
1447	3.0	6.65	20.15	3.272	-113	0.6	298	67.09	
1451	4.0	6.62	20.10	3.294	-111	0.5	217	67.09	
1455	5.0	6.64	20.14	3.295	-109	0.4	200	67.09	
							86		
							35		
							9.8		

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☑ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☑ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☑ Disposable

Depth to Water at Time of Sampling: 67.09 Field Filtered? ☐ Yes ☑ No

Sample ID: MW-16 Sample Time: 1500 # of Containers: 7

Duplicate Sample Collected? ☐ Yes ☑ No ID: —

Geochemical Analyses

Ferrous Iron: 0 mg/L

DO: 3.5 mg/L

Nitrate: — mg/L

Sulfate: — mg/L

Alkalinity: — mg/L

5. COMMENTS

Turbidity at 9.8 NTU when metals jar collected.

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

APPENDIX B

Laboratory Analytical Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

04031164

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2509
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ-Hobbs
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-16	04031164-01	Water	3/30/2004 3:00:00 PM	3/31/2004 9:30:00 AM	215970	☐
MW-10	04031164-02	Water	3/30/2004 10:45:00 AM	3/31/2004 9:30:00 AM	215969	☐
MW-14	04031164-03	Water	3/30/2004 12:35:00 PM	3/31/2004 9:30:00 AM	215969	☐
MW-15	04031164-04	Water	3/30/2004 1:45:00 PM	3/31/2004 9:30:00 AM	215969	☐
Trip Blank	04031164-05	Water	3/30/2004	3/31/2004 9:30:00 AM	215969	☐
MW-5	04031164-06	Water	3/30/2004 9:15:00 AM	3/31/2004 9:30:00 AM	215968	☐
MW-11A	04031164-07	Water	3/30/2004 10:30:00 AM	3/31/2004 9:30:00 AM	215968	☐
MW-12D	04031164-08	Water	3/30/2004 11:15:00 AM	3/31/2004 9:30:00 AM	215968	☐
Trip Blank	04031164-09	Water	3/30/2004	3/31/2004 9:30:00 AM	215968	☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

4/21/2004
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

4/21/2004 3:40:00 PM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

04031164

Report To:		Project Name:	BJ-Hobbs
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2509		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	
ph: (713) 759-0999	fax: (713) 308-3886		

The data in this report applies to the analysis of seven water samples plus two trip blanks for the BJ Services site in Hobbs, New Mexico. These samples were received on March 31, 2004, assigned to SPL Certificate of Analysis No. 04031164, and analyzed for the parameters as noted on Chain-of-Custody Nos.215968- 215970 .

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result pages or the quality control summary pages.

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

4/21/2004
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-16 **Collected:** 03/30/2004 15:00 **SPL Sample ID:** 04031164-01

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	279		2		1		04/12/04 11:30	J_C	2166822
ALKALINITY, CARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166882
CHLORIDE, TOTAL				**MCL**	**E325.3**		**Units: mg/L**		
Chloride	753		10		10		04/12/04 16:00	RA	2167132
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**		**Units: mg/L**		
Diesel Range Organics	ND		0.2		1		04/05/04 4:11	AM	2162238
Surr: n-Pentacosane	58.0	%	39-142		1		04/05/04 4:11	AM	2162238

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	640		50		10		04/08/04 18:00	CV	2165188
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**		**Units: mg/L**		
Methane	ND		0.0012		1		04/08/04 10:57	AE	2161955
ION CHROMATOGRAPHY				**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	5.3		0.5		5		04/05/04 18:42	CV	2158647
Nitrogen,Nitrate (As N)	5.8		0.1		1		03/31/04 16:11	CV	2150329
Sulfate	180		4		20		04/06/04 17:56	CV	2160912
MERCURY, TOTAL				**MCL**	**SW7470A**		**Units: mg/L**		
Mercury	ND		0.0002		1		04/01/04 11:16	JAB	2150997

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				**MCL**	**SW6010B**		**Units: mg/L**		
Arsenic	0.00869		0.005		1		04/08/04 10:20	NS	2164523
Lead	ND		0.005		1		04/08/04 0:27	NS	2164460
Selenium	ND		0.005		1		04/08/04 0:27	NS	2164460
Barium	0.0596		0.005		1		04/05/04 10:21	MW	2158747
Cadmium	ND		0.005		1		04/05/04 10:21	MW	2158747
Calcium	210		0.1		1		04/05/04 10:21	MW	2158747
Chromium	ND		0.01		1		04/05/04 10:21	MW	2158747
Magnesium	39.2		0.1		1		04/05/04 10:21	MW	2158747
Potassium	4.02		2		1		04/05/04 10:21	MW	2158747
Silver	ND		0.01		1		04/05/04 10:21	MW	2158747
Sodium	382		0.5		1		04/12/04 16:27	MW	2167107

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-16 **Collected:** 03/30/2004 15:00 **SPL Sample ID:** 04031164-01

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310		Units: ug/L		
Acenaphthene	ND		0.1	1		04/05/04 18:26	DL	2159142
Acenaphthylene	ND		0.1	1		04/05/04 18:26	DL	2159142
Anthracene	ND		0.1	1		04/05/04 18:26	DL	2159142
Benz(a)anthracene	ND		0.1	1		04/05/04 18:26	DL	2159142
Benzo(a)pyrene	ND		0.1	1		04/05/04 18:26	DL	2159142
Benzo(b)fluoranthene	ND		0.1	1		04/05/04 18:26	DL	2159142
Benzo(g,h,i)perylene	ND		0.1	1		04/05/04 18:26	DL	2159142
Benzo(k)fluoranthene	ND		0.1	1		04/05/04 18:26	DL	2159142
Chrysene	ND		0.1	1		04/05/04 18:26	DL	2159142
Dibenzo(a,h)anthracene	ND		0.1	1		04/05/04 18:26	DL	2159142
Fluoranthene	ND		0.1	1		04/05/04 18:26	DL	2159142
Fluorene	ND		0.1	1		04/05/04 18:26	DL	2159142
Indeno(1,2,3-cd)pyrene	ND		0.1	1		04/05/04 18:26	DL	2159142
Naphthalene	ND		0.1	1		04/05/04 18:26	DL	2159142
Phenanthrene	ND		0.1	1		04/05/04 18:26	DL	2159142
Pyrene	ND		0.1	1		04/05/04 18:26	DL	2159142
Surr: 1-Fluoronaphthalene	104	%	18-130	1		04/05/04 18:26	DL	2159142
Surr: Phenanthrene-d10	124MI	%	21-111	1	*	04/05/04 18:26	DL	2159142

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B		Units: ug/L		
Benzene	ND		1	1		04/03/04 11:00	D_R	2155978
Toluene	ND		1	1		04/03/04 11:00	D_R	2155978
Ethylbenzene	ND		1	1		04/03/04 11:00	D_R	2155978
Xylenes,Total	ND		1	1		04/03/04 11:00	D_R	2155978
Surr: 1,4-Difluorobenzene	104	%	39-163	1		04/03/04 11:00	D_R	2155978
Surr: 4-Bromofluorobenzene	98.0	%	57-157	1		04/03/04 11:00	D_R	2155978

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-10 **Collected:** 03/30/2004 10:45 **SPL Sample ID:** 04031164-02

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	582		2		1		04/12/04 11:30	J_C	2166823
ALKALINITY, CARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166883
CHLORIDE, TOTAL				**MCL**	**E325.3**		**Units: mg/L**		
Chloride	928		10		10		04/12/04 16:00	RA	2167133
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**		**Units: mg/L**		
Diesel Range Organics	ND		0.2		1		04/05/04 4:51	AM	2162240
Surr: n-Pentacosane	64.0	%	39-142		1		04/05/04 4:51	AM	2162240

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	1300		120		25		04/08/04 18:00	CV	2165192
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**		**Units: mg/L**		
Methane	ND		0.0012		1		04/08/04 11:24	AE	2161957
ION CHROMATOGRAPHY				**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	2.2		0.5		5		04/05/04 18:54	CV	2158648
Nitrogen,Nitrate (As N)	0.25		0.1		1		03/31/04 17:13	CV	2150334
Sulfate	350		10		50		04/06/04 18:08	CV	2160913
MERCURY, TOTAL				**MCL**	**SW7470A**		**Units: mg/L**		
Mercury	ND		0.0002		1		04/01/04 11:24	JAB	2151001

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				**MCL**	**SW6010B**		**Units: mg/L**		
Arsenic	0.052		0.005		1		04/08/04 0:32	NS	2164461
Lead	ND		0.005		1		04/08/04 0:32	NS	2164461
Selenium	ND		0.005		1		04/08/04 0:32	NS	2164461
Barium	0.0922		0.005		1		04/05/04 10:25	MW	2158748
Cadmium	ND		0.005		1		04/05/04 10:25	MW	2158748
Calcium	308		0.1		1		04/05/04 10:25	MW	2158748
Chromium	ND		0.01		1		04/05/04 10:25	MW	2158748
Magnesium	128		0.1		1		04/05/04 10:25	MW	2158748
Potassium	10.8		2		1		04/05/04 10:25	MW	2158748
Silver	ND		0.01		1		04/05/04 10:25	MW	2158748
Sodium	408		0.5		1		04/12/04 16:31	MW	2167108

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-10 **Collected:** 03/30/2004 10:45 **SPL Sample ID:** 04031164-02

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310	Units: ug/L		
Acenaphthene	ND		0.1	1	04/05/04 19:04	DL	2159143
Acenaphthylene	ND		0.1	1	04/05/04 19:04	DL	2159143
Anthracene	ND		0.1	1	04/05/04 19:04	DL	2159143
Benz(a)anthracene	ND		0.1	1	04/05/04 19:04	DL	2159143
Benzo(a)pyrene	ND		0.1	1	04/05/04 19:04	DL	2159143
Benzo(b)fluoranthene	ND		0.1	1	04/05/04 19:04	DL	2159143
Benzo(g,h,i)perylene	ND		0.1	1	04/05/04 19:04	DL	2159143
Benzo(k)fluoranthene	ND		0.1	1	04/05/04 19:04	DL	2159143
Chrysene	ND		0.1	1	04/05/04 19:04	DL	2159143
Dibenzo(a,h)anthracene	ND		0.1	1	04/05/04 19:04	DL	2159143
Fluoranthene	ND		0.1	1	04/05/04 19:04	DL	2159143
Fluorene	ND		0.1	1	04/05/04 19:04	DL	2159143
Indeno(1,2,3-cd)pyrene	ND		0.1	1	04/05/04 19:04	DL	2159143
Naphthalene	ND		0.1	1	04/05/04 19:04	DL	2159143
Phenanthrene	ND		0.1	1	04/05/04 19:04	DL	2159143
Pyrene	ND		0.1	1	04/05/04 19:04	DL	2159143
Surr: 1-Fluoronaphthalene	68.3	%	18-130	1	04/05/04 19:04	DL	2159143
Surr: Phenanthrene-d10	98.9	%	21-111	1	04/05/04 19:04	DL	2159143

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND		1	1	04/06/04 0:44	D_R	2161714
Toluene	ND		1	1	04/06/04 0:44	D_R	2161714
Ethylbenzene	ND		1	1	04/06/04 0:44	D_R	2161714
Xylenes,Total	ND		1	1	04/06/04 0:44	D_R	2161714
Surr: 1,4-Difluorobenzene	103	%	39-163	1	04/06/04 0:44	D_R	2161714
Surr: 4-Bromofluorobenzene	97.5	%	57-157	1	04/06/04 0:44	D_R	2161714

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-14 **Collected:** 03/30/2004 12:35 **SPL Sample ID:** 04031164-03

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	368		2		1		04/12/04 11:30	J_C	2166825
ALKALINITY, CARBONATE				MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166886
CHLORIDE, TOTAL				MCL	E325.3		Units: mg/L		
Chloride	119		2		2		04/12/04 16:00	RA	2167134
DIESEL RANGE ORGANICS				MCL	SW8015B		Units: mg/L		
Diesel Range Organics	ND		0.2		1		04/05/04 5:30	AM	2162241
Surr: n-Pentacosane	43.0	%	39-142		1		04/05/04 5:30	AM	2162241

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	800		50		10		04/08/04 18:00	CV	2165193
HEADSPACE GAS ANALYSIS				MCL	RSK147		Units: mg/L		
Methane	ND		0.0012		1		04/08/04 11:34	AE	2161958
ION CHROMATOGRAPHY				MCL	E300.0		Units: mg/L		
Fluoride	2.5		0.1		1		04/05/04 19:07	CV	2158649
Nitrogen,Nitrate (As N)	4.9		0.1		1		03/31/04 17:26	CV	2150335
Sulfate	150		4		20		04/06/04 18:21	CV	2160914
MERCURY, TOTAL				MCL	SW7470A		Units: mg/L		
Mercury	ND		0.0002		1		04/01/04 11:26	JAB	2151002

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				MCL	SW6010B		Units: mg/L		
Arsenic	0.00911		0.005		1		04/08/04 0:49	NS	2164464
Lead	ND		0.005		1		04/08/04 0:49	NS	2164464
Selenium	ND		0.005		1		04/08/04 0:49	NS	2164464
Barium	0.0699		0.005		1		04/05/04 10:29	MW	2158749
Cadmium	ND		0.005		1		04/05/04 10:29	MW	2158749
Calcium	205		0.1		1		04/05/04 10:29	MW	2158749
Chromium	ND		0.01		1		04/05/04 10:29	MW	2158749
Magnesium	66.4		0.1		1		04/05/04 10:29	MW	2158749
Potassium	3.07		2		1		04/05/04 10:29	MW	2158749
Silver	ND		0.01		1		04/05/04 10:29	MW	2158749
Sodium	80.7		0.5		1		04/12/04 16:35	MW	2167109

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-14 **Collected:** 03/30/2004 12:35 **SPL Sample ID:** 04031164-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310	Units: ug/L		
Acenaphthene	ND		0.1	1	04/05/04 19:41	DL	2159144
Acenaphthylene	ND		0.1	1	04/05/04 19:41	DL	2159144
Anthracene	ND		0.1	1	04/05/04 19:41	DL	2159144
Benz(a)anthracene	ND		0.1	1	04/05/04 19:41	DL	2159144
Benzo(a)pyrene	ND		0.1	1	04/05/04 19:41	DL	2159144
Benzo(b)fluoranthene	ND		0.1	1	04/05/04 19:41	DL	2159144
Benzo(g,h,i)perylene	ND		0.1	1	04/05/04 19:41	DL	2159144
Benzo(k)fluoranthene	ND		0.1	1	04/05/04 19:41	DL	2159144
Chrysene	ND		0.1	1	04/05/04 19:41	DL	2159144
Dibenzo(a,h)anthracene	ND		0.1	1	04/05/04 19:41	DL	2159144
Fluoranthene	ND		0.1	1	04/05/04 19:41	DL	2159144
Fluorene	ND		0.1	1	04/05/04 19:41	DL	2159144
Indeno(1,2,3-cd)pyrene	ND		0.1	1	04/05/04 19:41	DL	2159144
Naphthalene	ND		0.1	1	04/05/04 19:41	DL	2159144
Phenanthrene	ND		0.1	1	04/05/04 19:41	DL	2159144
Pyrene	ND		0.1	1	04/05/04 19:41	DL	2159144
Surr: 1-Fluoronaphthalene	55.9	%	18-130	1	04/05/04 19:41	DL	2159144
Surr: Phenanthrene-d10	88.6	%	21-111	1	04/05/04 19:41	DL	2159144

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	1.2		1	1	04/03/04 12:00	D_R	2155979
Toluene	ND		1	1	04/03/04 12:00	D_R	2155979
Ethylbenzene	ND		1	1	04/03/04 12:00	D_R	2155979
Xylenes,Total	ND		1	1	04/03/04 12:00	D_R	2155979
Surr: 1,4-Difluorobenzene	103	%	39-163	1	04/03/04 12:00	D_R	2155979
Surr: 4-Bromofluorobenzene	98.0	%	57-157	1	04/03/04 12:00	D_R	2155979

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-15 **Collected:** 03/30/2004 13:45 **SPL Sample ID:** 04031164-04

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	209		2		1		04/12/04 11:30	J_C	2166826
ALKALINITY, CARBONATE				MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166887
CHLORIDE, TOTAL				MCL	E325.3		Units: mg/L		
Chloride	245		10		10		04/12/04 16:00	RA	2167135
DIESEL RANGE ORGANICS				MCL	SW8015B		Units: mg/L		
Diesel Range Organics	ND		0.2		1		04/05/04 6:09	AM	2162242
Surr: n-Pentacosane	74.2	%	39-142		1		04/05/04 6:09	AM	2162242

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	760		50		10		04/08/04 18:00	CV	2165194
HEADSPACE GAS ANALYSIS				MCL	RSK147		Units: mg/L		
Methane	ND		0.0012		1		04/08/04 11:50	AE	2161959
ION CHROMATOGRAPHY				MCL	E300.0		Units: mg/L		
Fluoride	1.1		0.1		1		04/05/04 19:19	CV	2158650
Nitrogen,Nitrate (As N)	3		0.1		1		03/31/04 17:39	CV	2150336
Sulfate	140		4		20		04/06/04 18:34	CV	2160915
MERCURY, TOTAL				MCL	SW7470A		Units: mg/L		
Mercury	ND		0.0002		1		04/01/04 11:29	JAB	2151003

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				MCL	SW6010B		Units: mg/L		
Arsenic	0.00841		0.005		1		04/08/04 0:54	NS	2164465
Lead	ND		0.005		1		04/08/04 0:54	NS	2164465
Selenium	ND		0.005		1		04/08/04 0:54	NS	2164465
Barium	0.0772		0.005		1		04/05/04 10:33	MW	2158752
Cadmium	ND		0.005		1		04/05/04 10:33	MW	2158752
Calcium	255		0.1		1		04/05/04 10:33	MW	2158752
Chromium	ND		0.01		1		04/05/04 10:33	MW	2158752
Magnesium	31.5		0.1		1		04/05/04 10:33	MW	2158752
Potassium	3.55		2		1		04/05/04 10:33	MW	2158752
Silver	ND		0.01		1		04/05/04 10:33	MW	2158752
Sodium	88.1		0.5		1		04/12/04 16:39	MW	2167110

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-15 **Collected:** 03/30/2004 13:45 **SPL Sample ID:** 04031164-04

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310	Units: ug/L		
Acenaphthene	ND		0.1	1	04/05/04 21:33	DL	2159145
Acenaphthylene	ND		0.1	1	04/05/04 21:33	DL	2159145
Anthracene	ND		0.1	1	04/05/04 21:33	DL	2159145
Benz(a)anthracene	ND		0.1	1	04/05/04 21:33	DL	2159145
Benzo(a)pyrene	ND		0.1	1	04/05/04 21:33	DL	2159145
Benzo(b)fluoranthene	ND		0.1	1	04/05/04 21:33	DL	2159145
Benzo(g,h,i)perylene	ND		0.1	1	04/05/04 21:33	DL	2159145
Benzo(k)fluoranthene	ND		0.1	1	04/05/04 21:33	DL	2159145
Chrysene	ND		0.1	1	04/05/04 21:33	DL	2159145
Dibenzo(a,h)anthracene	ND		0.1	1	04/05/04 21:33	DL	2159145
Fluoranthene	ND		0.1	1	04/05/04 21:33	DL	2159145
Fluorene	ND		0.1	1	04/05/04 21:33	DL	2159145
Indeno(1,2,3-cd)pyrene	ND		0.1	1	04/05/04 21:33	DL	2159145
Naphthalene	ND		0.1	1	04/05/04 21:33	DL	2159145
Phenanthrene	ND		0.1	1	04/05/04 21:33	DL	2159145
Pyrene	ND		0.1	1	04/05/04 21:33	DL	2159145
Surr: 1-Fluoronaphthalene	65.4	%	18-130	1	04/05/04 21:33	DL	2159145
Surr: Phenanthrene-d10	79.8	%	21-111	1	04/05/04 21:33	DL	2159145

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND		1	1	04/03/04 12:30	D_R	2155980
Toluene	ND		1	1	04/03/04 12:30	D_R	2155980
Ethylbenzene	ND		1	1	04/03/04 12:30	D_R	2155980
Xylenes,Total	ND		1	1	04/03/04 12:30	D_R	2155980
Surr: 1,4-Difluorobenzene	102	%	39-163	1	04/03/04 12:30	D_R	2155980
Surr: 4-Bromofluorobenzene	97.9	%	57-157	1	04/03/04 12:30	D_R	2155980

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID Trip Blank | **Collected:** 03/30/2004 0:00 | **SPL Sample ID:** 04031164-05

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS				**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		1		1		04/03/04 12:59	D_R	2155981
Toluene	ND		1		1		04/03/04 12:59	D_R	2155981
Ethylbenzene	ND		1		1		04/03/04 12:59	D_R	2155981
Xylenes,Total	ND		1		1		04/03/04 12:59	D_R	2155981
Surr: 1,4-Difluorobenzene	104	%	39-163		1		04/03/04 12:59	D_R	2155981
Surr: 4-Bromofluorobenzene	98.0	%	57-157		1		04/03/04 12:59	D_R	2155981

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-5 **Collected:** 03/30/2004 9:15 **SPL Sample ID:** 04031164-06

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				MCL	M2320 B		Units: mg/L		
Alkalinity, Bicarbonate	214		2		1		04/12/04 11:30	J_C	2166827
ALKALINITY, CARBONATE				MCL	M2320 B		Units: mg/L		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166888
CHLORIDE, TOTAL				MCL	E325.3		Units: mg/L		
Chloride	70		1		1		04/12/04 16:00	RA	2167136
DIESEL RANGE ORGANICS				MCL	SW8015B		Units: mg/L		
Diesel Range Organics	ND		0.2		1		04/05/04 6:49	AM	2162243
Surr: n-Pentacosane	73.4	%	39-142		1		04/05/04 6:49	AM	2162243

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				MCL	E130.2		Units: mg/L		
Hardness (As CaCO3)	220		25		5		04/08/04 18:00	CV	2165196
HEADSPACE GAS ANALYSIS				MCL	RSK147		Units: mg/L		
Methane	ND		0.0012		1		04/08/04 12:04	AE	2161960
ION CHROMATOGRAPHY				MCL	E300.0		Units: mg/L		
Fluoride	1.1		0.1		1		04/05/04 19:57	CV	2158653
Nitrogen,Nitrate (As N)	2.6		0.1		1		03/31/04 17:51	CV	2150337
Sulfate	110		2		10		04/06/04 19:11	CV	2160918
MERCURY, TOTAL				MCL	SW7470A		Units: mg/L		
Mercury	ND		0.0002		1		04/01/04 11:31	JAB	2151004

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				MCL	SW6010B		Units: mg/L		
Arsenic	0.00836		0.005		1		04/08/04 1:00	NS	2164466
Lead	ND		0.005		1		04/08/04 1:00	NS	2164466
Selenium	ND		0.005		1		04/08/04 1:00	NS	2164466
Barium	0.0464		0.005		1		04/05/04 10:38	MW	2158759
Cadmium	ND		0.005		1		04/05/04 10:38	MW	2158759
Calcium	80.1		0.1		1		04/05/04 10:38	MW	2158759
Chromium	ND		0.01		1		04/05/04 10:38	MW	2158759
Magnesium	12.4		0.1		1		04/05/04 10:38	MW	2158759
Potassium	4.15		2		1		04/05/04 10:38	MW	2158759
Silver	ND		0.01		1		04/05/04 10:38	MW	2158759
Sodium	115		0.5		1		04/12/04 16:43	MW	2167111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-5 **Collected:** 03/30/2004 9:15 **SPL Sample ID:** 04031164-06

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310	Units: ug/L		
Acenaphthene	ND		0.1	1	04/05/04 22:10	DL	2159146
Acenaphthylene	ND		0.1	1	04/05/04 22:10	DL	2159146
Anthracene	ND		0.1	1	04/05/04 22:10	DL	2159146
Benz(a)anthracene	ND		0.1	1	04/05/04 22:10	DL	2159146
Benzo(a)pyrene	ND		0.1	1	04/05/04 22:10	DL	2159146
Benzo(b)fluoranthene	ND		0.1	1	04/05/04 22:10	DL	2159146
Benzo(g,h,i)perylene	ND		0.1	1	04/05/04 22:10	DL	2159146
Benzo(k)fluoranthene	ND		0.1	1	04/05/04 22:10	DL	2159146
Chrysene	ND		0.1	1	04/05/04 22:10	DL	2159146
Dibenzo(a,h)anthracene	ND		0.1	1	04/05/04 22:10	DL	2159146
Fluoranthene	ND		0.1	1	04/05/04 22:10	DL	2159146
Fluorene	ND		0.1	1	04/05/04 22:10	DL	2159146
Indeno(1,2,3-cd)pyrene	ND		0.1	1	04/05/04 22:10	DL	2159146
Naphthalene	ND		0.1	1	04/05/04 22:10	DL	2159146
Phenanthrene	ND		0.1	1	04/05/04 22:10	DL	2159146
Pyrene	ND		0.1	1	04/05/04 22:10	DL	2159146
Surr: 1-Fluoronaphthalene	38.1	%	18-130	1	04/05/04 22:10	DL	2159146
Surr: Phenanthrene-d10	44.1	%	21-111	1	04/05/04 22:10	DL	2159146

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND		1	1	04/03/04 13:29	D_R	2155982
Toluene	ND		1	1	04/03/04 13:29	D_R	2155982
Ethylbenzene	ND		1	1	04/03/04 13:29	D_R	2155982
Xylenes,Total	ND		1	1	04/03/04 13:29	D_R	2155982
Surr: 1,4-Difluorobenzene	103	%	39-163	1	04/03/04 13:29	D_R	2155982
Surr: 4-Bromofluorobenzene	97.9	%	57-157	1	04/03/04 13:29	D_R	2155982

Qualifiers:
ND/U - Not Detected at the Reporting Limit
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
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(713) 660-0901

Client Sample ID MW-11A **Collected:** 03/30/2004 10:30 **SPL Sample ID:** 04031164-07

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	378		2		1		04/12/04 11:30	J_C	2166828
ALKALINITY, CARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166889
CHLORIDE, TOTAL				**MCL**	**E325.3**		**Units: mg/L**		
Chloride	2980		50		50		04/12/04 16:00	RA	2167137
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**		**Units: mg/L**		
Diesel Range Organics	0.5		0.2		1		04/05/04 9:26	AM	2162249
Surr: n-Pentacosane	73.0	%	39-142		1		04/05/04 9:26	AM	2162249

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	2200		120		25		04/08/04 18:00	CV	2165197
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**		**Units: mg/L**		
Methane	ND		0.0012		1		04/08/04 13:19	AE	2161962
ION CHROMATOGRAPHY				**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	3.5		0.5		5		04/05/04 20:10	CV	2158654
Nitrogen,Nitrate (As N)	1.9		0.1		1		03/31/04 18:04	CV	2150338
Sulfate	380		10		50		04/06/04 19:49	CV	2160921
MERCURY, TOTAL				**MCL**	**SW7470A**		**Units: mg/L**		
Mercury	ND		0.0002		1		04/01/04 11:35	JAB	2151005

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				**MCL**	**SW6010B**		**Units: mg/L**		
Arsenic	0.0559		0.005		1		04/08/04 1:05	NS	2164467
Lead	0.00901		0.005		1		04/08/04 1:05	NS	2164467
Selenium	ND		0.005		1		04/08/04 1:05	NS	2164467
Barium	0.221		0.005		1		04/05/04 10:42	MW	2158766
Cadmium	ND		0.005		1		04/05/04 10:42	MW	2158766
Calcium	763		0.5		5		04/08/04 12:54	MW	2167175
Chromium	0.0441		0.01		1		04/05/04 10:42	MW	2158766
Magnesium	134		0.1		1		04/05/04 10:42	MW	2158766
Potassium	28.6		2		1		04/05/04 10:42	MW	2158766
Silver	ND		0.01		1		04/05/04 10:42	MW	2158766
Sodium	1370		2.5		5		04/12/04 16:48	MW	2167112

Qualifiers:

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Client Sample ID MW-11A **Collected:** 03/30/2004 10:30 **SPL Sample ID:** 04031164-07

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310	Units: ug/L		
Acenaphthene	ND		0.1	1	04/05/04 22:47	DL	2159147
Acenaphthylene	ND		0.1	1	04/05/04 22:47	DL	2159147
Anthracene	ND		0.1	1	04/05/04 22:47	DL	2159147
Benz(a)anthracene	ND		0.1	1	04/05/04 22:47	DL	2159147
Benzo(a)pyrene	ND		0.1	1	04/05/04 22:47	DL	2159147
Benzo(b)fluoranthene	ND		0.1	1	04/05/04 22:47	DL	2159147
Benzo(g,h,i)perylene	ND		0.1	1	04/05/04 22:47	DL	2159147
Benzo(k)fluoranthene	ND		0.1	1	04/05/04 22:47	DL	2159147
Chrysene	ND		0.1	1	04/05/04 22:47	DL	2159147
Dibenzo(a,h)anthracene	ND		0.1	1	04/05/04 22:47	DL	2159147
Fluoranthene	ND		0.1	1	04/05/04 22:47	DL	2159147
Fluorene	ND		0.1	1	04/05/04 22:47	DL	2159147
Indeno(1,2,3-cd)pyrene	ND		0.1	1	04/05/04 22:47	DL	2159147
Naphthalene	ND		0.1	1	04/05/04 22:47	DL	2159147
Phenanthrene	ND		0.1	1	04/05/04 22:47	DL	2159147
Pyrene	ND		0.1	1	04/05/04 22:47	DL	2159147
Surr: 1-Fluoronaphthalene	56.0	%	18-130	1	04/05/04 22:47	DL	2159147
Surr: Phenanthrene-d10	51.2	%	21-111	1	04/05/04 22:47	DL	2159147

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND		1	1	04/03/04 14:59	D_R	2155984
Toluene	ND		1	1	04/03/04 14:59	D_R	2155984
Ethylbenzene	1.4		1	1	04/03/04 14:59	D_R	2155984
Xylenes,Total	ND		1	1	04/03/04 14:59	D_R	2155984
Surr: 1,4-Difluorobenzene	102	%	39-163	1	04/03/04 14:59	D_R	2155984
Surr: 4-Bromofluorobenzene	98.0	%	57-157	1	04/03/04 14:59	D_R	2155984

Qualifiers:
ND/U - Not Detected at the Reporting Limit
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Client Sample ID MW-12D **Collected:** 03/30/2004 11:15 **SPL Sample ID:** 04031164-08

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	214		2		1		04/12/04 11:30	J_C	2166829
ALKALINITY, CARBONATE				**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND		2		1		04/12/04 11:30	J_C	2166890
CHLORIDE, TOTAL				**MCL**	**E325.3**		**Units: mg/L**		
Chloride	116		2		2		04/12/04 16:00	RA	2167138
DIESEL RANGE ORGANICS				**MCL**	**SW8015B**		**Units: mg/L**		
Diesel Range Organics	ND		0.2		1		04/05/04 10:05	AM	2162250
Surr: n-Pentacosane	49.0	%	39-142		1		04/05/04 10:05	AM	2162250

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 9:00	K_L	1.00

HARDNESS, TOTAL (TITRIMETRIC, EDTA)				**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	380		50		10		04/08/04 18:00	CV	2165198
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**		**Units: mg/L**		
Methane	ND		0.0012		1		04/08/04 13:29	AE	2161963
ION CHROMATOGRAPHY				**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.1		0.1		1		04/05/04 20:22	CV	2158655
Nitrogen,Nitrate (As N)	ND		0.1		1		03/31/04 18:16	CV	2150339
Sulfate	160		4		20		04/06/04 20:02	CV	2160922
MERCURY, TOTAL				**MCL**	**SW7470A**		**Units: mg/L**		
Mercury	ND		0.0002		1		04/01/04 11:39	JAB	2151006

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	04/01/2004 7:50	JAB	1.00

METALS BY METHOD 6010B, TOTAL				**MCL**	**SW6010B**		**Units: mg/L**		
Arsenic	0.045		0.005		1		04/08/04 1:11	NS	2164468
Lead	ND		0.005		1		04/08/04 1:11	NS	2164468
Selenium	ND		0.005		1		04/08/04 1:11	NS	2164468
Barium	0.104		0.005		1		04/05/04 10:46	MW	2158772
Cadmium	ND		0.005		1		04/05/04 10:46	MW	2158772
Calcium	142		0.1		1		04/05/04 10:46	MW	2158772
Chromium	ND		0.01		1		04/05/04 10:46	MW	2158772
Magnesium	7.63		0.1		1		04/05/04 10:46	MW	2158772
Potassium	50.4		2		1		04/05/04 10:46	MW	2158772
Silver	ND		0.01		1		04/05/04 10:46	MW	2158772
Sodium	54		0.5		1		04/12/04 16:52	MW	2167113

Qualifiers:

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Client Sample ID MW-12D **Collected:** 03/30/2004 11:15 **SPL Sample ID:** 04031164-08

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/31/2004 15:30	MOF	1.00

POLYNUCLEAR AROMATIC HYDROCARBONS			MCL	SW8310	Units: ug/L		
Acenaphthene	ND		0.1	1	04/05/04 23:25	DL	2159148
Acenaphthylene	ND		0.1	1	04/05/04 23:25	DL	2159148
Anthracene	ND		0.1	1	04/05/04 23:25	DL	2159148
Benz(a)anthracene	ND		0.1	1	04/05/04 23:25	DL	2159148
Benzo(a)pyrene	ND		0.1	1	04/05/04 23:25	DL	2159148
Benzo(b)fluoranthene	ND		0.1	1	04/05/04 23:25	DL	2159148
Benzo(g,h,i)perylene	ND		0.1	1	04/05/04 23:25	DL	2159148
Benzo(k)fluoranthene	ND		0.1	1	04/05/04 23:25	DL	2159148
Chrysene	ND		0.1	1	04/05/04 23:25	DL	2159148
Dibenzo(a,h)anthracene	ND		0.1	1	04/05/04 23:25	DL	2159148
Fluoranthene	ND		0.1	1	04/05/04 23:25	DL	2159148
Fluorene	ND		0.1	1	04/05/04 23:25	DL	2159148
Indeno(1,2,3-cd)pyrene	ND		0.1	1	04/05/04 23:25	DL	2159148
Naphthalene	ND		0.1	1	04/05/04 23:25	DL	2159148
Phenanthrene	ND		0.1	1	04/05/04 23:25	DL	2159148
Pyrene	ND		0.1	1	04/05/04 23:25	DL	2159148
Surr: 1-Fluoronaphthalene	22.7	%	18-130	1	04/05/04 23:25	DL	2159148
Surr: Phenanthrene-d10	30.4	%	21-111	1	04/05/04 23:25	DL	2159148

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/01/2004 8:58	K_L	1.00

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND		1	1	04/03/04 15:29	D_R	2155985
Toluene	ND		1	1	04/03/04 15:29	D_R	2155985
Ethylbenzene	ND		1	1	04/03/04 15:29	D_R	2155985
Xylenes,Total	ND		1	1	04/03/04 15:29	D_R	2155985
Surr: 1,4-Difluorobenzene	103	%	39-163	1	04/03/04 15:29	D_R	2155985
Surr: 4-Bromofluorobenzene	97.9	%	57-157	1	04/03/04 15:29	D_R	2155985

Qualifiers:

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Client Sample ID Trip Blank | **Collected:** 03/30/2004 0:00 | **SPL Sample ID:** 04031164-09

Site: Hobbs, NM

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS			MCL	SW8021B		Units: ug/L		
Benzene	ND		1	1		04/03/04 15:59	D_R	2155986
Toluene	ND		1	1		04/03/04 15:59	D_R	2155986
Ethylbenzene	ND		1	1		04/03/04 15:59	D_R	2155986
Xylenes,Total	ND		1	1		04/03/04 15:59	D_R	2155986
Surr: 1,4-Difluorobenzene	103	%	39-163	1		04/03/04 15:59	D_R	2155986
Surr: 4-Bromofluorobenzene	98.0	%	57-157	1		04/03/04 15:59	D_R	2155986

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

ORGANIC ANALYSIS DATA SHEET

Client Sample ID

OU2-30904-MW4-G-W-01DL

Lab Name:	SPL Inc.	SDG:	OU230904
Lab Code:	SPLHOU	Lab Sample ID:	04030340-05IDL
Matrix:	Water	Lab File ID:	n076s06.d
Sample wt/vol:	5 mL	Date Collected:	3/9/2004 15:30
Level:	LOW	Date Extracted:	
% Moisture:	0	Date Analyzed:	3/16/2004
GC Column:	RTX-5 ID: 0.53 (mm)	Dilution Factor:	2
Extract Volume:		Concentration Units:	ug/L

CAS No.	Analyte	ug/L	Q
71-55-6	1,1,1-Trichloroethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
75-34-3	1,1-Dichloroethane	100	D
75-35-4	1,1-Dichloroethene	90	D
107-06-2	1,2-Dichloroethane	2	U
67-64-1	Acetone	200	U
71-43-2	Benzene	22	D
75-00-3	Chloroethane	20	U
156-59-2	cis-1,2-Dichloroethene	350	D
100-41-4	Ethylbenzene	73	D
75-09-2	Methylene chloride	10	U
127-18-4	Tetrachloroethene	6	U
108-88-3	Toluene	11	D
156-60-5	trans-1,2-Dichloroethene	10	U
79-01-6	Trichloroethene	2	U
75-01-4	Vinyl chloride	46	D
1330-20-7	Xylenes,Total	10	DJ

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Diesel Range Organics
Method: SW8015B

WorkOrder: 04031164
Lab Batch ID: 36741A

Method Blank

RunID: HP_V_040405E-2162245 Units: mg/L
Analysis Date: 04/05/2004 8:07 Analyst: AM
Preparation Date: 04/01/2004 9:00 Prep By: K_L Method SW3510C

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.20
Surr: n-Pentacosane	85.6	39-142

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01E	MW-16
04031164-02E	MW-10
04031164-03E	MW-14
04031164-04E	MW-15
04031164-06E	MW-5
04031164-07E	MW-11A
04031164-08E	MW-12D

Laboratory Control Sample (LCS)

RunID: HP_V_040405E-2162244 Units: mg/L
Analysis Date: 04/05/2004 7:28 Analyst: AM
Preparation Date: 04/01/2004 9:00 Prep By: K_L Method SW3510C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics	2.5	2.29	91.5	21	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031158-01
RunID: HP_V_040405E-2162236 Units: mg/L
Analysis Date: 04/05/2004 2:53 Analyst: AM
Preparation Date: 04/01/2004 9:00 Prep By: K_L Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics	ND	5	4.41	88.2	5	4.34	86.8	1.65	39	26	113

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Headspace Gas Analysis
Method: RSK147

WorkOrder: 04031164
Lab Batch ID: R108472

Method Blank

RunID: VARC_040408A-2161951 Units: mg/L
Analysis Date: 04/08/2004 10:05 Analyst: AE

Analyte	Result	Rep Limit
Methane	ND	0.0012

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01C	MW-16
04031164-02C	MW-10
04031164-03C	MW-14
04031164-04C	MW-15
04031164-06C	MW-5
04031164-07C	MW-11A
04031164-08C	MW-12D

Laboratory Control Sample (LCS)

RunID: VARC_040408A-2161950 Units: mg/L
Analysis Date: 04/08/2004 9:34 Analyst: AE

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Methane	1000	882	88.2	70	130

Sample Duplicate

Original Sample: 04031164-01
RunID: VARC_040408A-2161955 Units: mg/L
Analysis Date: 04/08/2004 10:57 Analyst: AE

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Butane	ND	ND	0	50
Ethane	ND	ND	0	50
Ethylene	ND	ND	0	50
Isobutane	ND	ND	0	50
Methane	ND	ND	0	50
Propane	ND	ND	0	50
Propylene	ND	ND	0	50

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 04031164
Lab Batch ID: R108171

Method Blank

RunID: VARD_040403A-2155971 Units: ug/L
Analysis Date: 04/03/2004 7:31 Analyst: D_R

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	102.6	39-163
Surr: 4-Bromofluorobenzene	97.7	57-157

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01F	MW-16
04031164-03F	MW-14
04031164-04F	MW-15
04031164-05F	Trip Blank
04031164-06F	MW-5
04031164-07F	MW-11A
04031164-08F	MW-12D
04031164-09F	Trip Blank

Laboratory Control Sample (LCS)

RunID: VARD_040403A-2155970 Units: ug/L
Analysis Date: 04/03/2004 7:01 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	49.2	98.4	81	125
Ethylbenzene	50	46.8	93.6	85	119
Toluene	50	48.2	96.4	87	120
Xylenes,Total	150	141.8	94.53	83	122

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031156-06
RunID: VARD_040403A-2155972 Units: ug/L
Analysis Date: 04/03/2004 8:00 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	106	20	112	N/C	20	111	N/C	N/C	26	43	155
Ethylbenzene	9.65	20	27.8	90.6	20	27.6	89.6	0.730	34	51	142
Toluene	2.55	20	23.1	103	20	23.1	103	0.287	25	57	142
Xylenes,Total	16.5	60	73.7	95.3	60	73.1	94.3	0.817	27	47	154

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Purgeable Aromatics
Method: SW8021B
WorkOrder: 04031164
Lab Batch ID: R108456

Method Blank

RunID: VARD_040405A-2161697 Units: ug/L
Analysis Date: 04/05/2004 16:44 Analyst: D_R

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-02F	MW-10

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	102.6	39-163
Surr: 4-Bromofluorobenzene	98.7	57-157

Laboratory Control Sample (LCS)

RunID: VARD_040405A-2161696 Units: ug/L
Analysis Date: 04/05/2004 16:14 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	49.2	98.5	81	125
Ethylbenzene	50	47.7	95.4	85	119
Toluene	50	48.8	97.5	87	120
Xylenes,Total	150	144.4	96.27	83	122

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031016-18
RunID: VARD_040405A-2161698 Units: ug/L
Analysis Date: 04/05/2004 17:15 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	34.8	20	49.2	72.0	20	46.6	59.1	5.40	26	43	155
Ethylbenzene	ND	20	19.7	98.6	20	18.5	92.7	6.11	34	51	142
Toluene	ND	20	20.7	102	20	19.4	95.7	6.08	25	57	142
Xylenes,Total	ND	60	60.7	101	60	56.8	94.7	6.64	27	47	154

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Polynuclear Aromatic Hydrocarbons
Method: SW8310

WorkOrder: 04031164
Lab Batch ID: 36740

Method Blank

RunID: 2_040405A-2159138 Units: ug/L
Analysis Date: 04/05/2004 15:57 Analyst: DL
Preparation Date: 04/01/2004 8:58 Prep By: K_L Method SW3510C

Analyte	Result	Rep Limit
Acenaphthene	ND	0.10
Acenaphthylene	ND	0.10
Anthracene	ND	0.10
Benz(a)anthracene	ND	0.10
Benzo(a)pyrene	ND	0.10
Benzo(b)fluoranthene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Benzo(k)fluoranthene	ND	0.10
Chrysene	ND	0.10
Dibenzo(a,h)anthracene	ND	0.10
Fluoranthene	ND	0.10
Fluorene	ND	0.10
Indeno(1,2,3-cd)pyrene	ND	0.10
Naphthalene	ND	0.10
Phenanthrene	ND	0.10
Pyrene	ND	0.10
Surr: 1-Fluoronaphthalene	65.0	18-130
Surr: Phenanthrene-d10	74.8	21-111

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01D	MW-16
04031164-02D	MW-10
04031164-03D	MW-14
04031164-04D	MW-15
04031164-06D	MW-5
04031164-07D	MW-11A
04031164-08D	MW-12D

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: 2_040405A-2159139 Units: ug/L
Analysis Date: 04/05/2004 16:35 Analyst: DL
Preparation Date: 04/01/2004 8:58 Prep By: K_L Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Acenaphthene	0.5	0.358	71.7	0.500	0.370	74.1	3.3	30	35	125
Acenaphthylene	0.5	0.359	71.8	0.500	0.412	82.4	13.7	30	35	122
Anthracene	0.5	0.268	53.6	0.500	0.266	53.2	0.7	30	29	126
Benz(a)anthracene	0.5	0.398	79.6	0.500	0.400	80.0	0.5	30	39	119
Benzo(a)pyrene	0.5	0.395	79.0	0.500	0.382	76.4	3.2	30	34	125
Benzo(b)fluoranthene	0.5	0.403	80.7	0.500	0.405	81.0	0.3	30	42	127
Benzo(g,h,i)perylene	0.5	0.422	84.3	0.500	0.427	85.3	1.2	30	37	125
Benzo(k)fluoranthene	0.5	0.398	79.6	0.500	0.400	79.9	0.4	30	42	125
Chrysene	0.5	0.396	79.2	0.500	0.398	79.5	0.5	30	40	144
Dibenzo(a,h)anthracene	0.5	0.394	78.8	0.500	0.397	79.4	0.7	30	42	130
Fluoranthene	0.5	0.384	76.7	0.500	0.388	77.7	1.2	30	38	126
Fluorene	0.5	0.354	70.8	0.500	0.396	79.3	11.3	30	37	130
Indeno(1,2,3-cd)pyrene	0.5	0.374	74.8	0.500	0.375	75.1	0.4	30	39	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
MI - Matrix Interference
B - Analyte detected in the associated Method Blank
D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Polynuclear Aromatic Hydrocarbons
Method: SW8310
WorkOrder: 04031164
Lab Batch ID: 36740

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: 2_040405A-2159139 Units: ug/L
Analysis Date: 04/05/2004 16:35 Analyst: DL
Preparation Date: 04/01/2004 8:58 Prep By: K_L Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Naphthalene	0.5	0.353	70.5	0.500	0.362	72.5	2.7	30	36	130
Phenanthrene	0.5	0.388	77.5	0.500	0.399	79.9	3.0	30	38	128
Pyrene	0.5	0.434	86.7	0.500	0.443	88.7	2.2	30	39	137

Qualifiers:
ND/U - Not Detected at the Reporting Limit
MI - Matrix Interference
B - Analyte detected in the associated Method Blank
D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 04031164
Lab Batch ID: 36727

Method Blank

RunID: TJA_040405A-2158737 Units: mg/L
Analysis Date: 04/05/2004 9:38 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Result	Rep Limit
Barium	ND	0.005
Cadmium	ND	0.005
Calcium	ND	0.1
Chromium	ND	0.01
Magnesium	ND	0.1
Potassium	ND	2
Silver	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01B	MW-16
04031164-02B	MW-10
04031164-03B	MW-14
04031164-04B	MW-15
04031164-06B	MW-5
04031164-07B	MW-11A
04031164-08B	MW-12D

Laboratory Control Sample (LCS)

RunID: TJA_040405A-2158738 Units: mg/L
Analysis Date: 04/05/2004 9:43 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Barium	1	0.9642	96.42	80	120
Cadmium	1	1.053	105.3	80	120
Calcium	1	1.072	107.2	80	120
Chromium	1	1.038	103.8	80	120
Magnesium	1	1.006	100.6	80	120
Potassium	10	10.15	101.5	80	120
Silver	1	1.045	104.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031134-08
RunID: TJA_040405A-2158740 Units: mg/L
Analysis Date: 04/05/2004 9:51 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Barium	ND	1	1.000	100.0	1	0.9874	98.74	1.287	20	75	125
Cadmium	ND	1	1.063	106.3	1	1.055	105.5	0.7423	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 04031164
Lab Batch ID: 36727

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031134-08
RunID: TJA_040405A-2158740 Units: mg/L
Analysis Date: 04/05/2004 9:51 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	ND	1	1.066	106.6	1	1.070	107.0	0.4298	20	75	125
Chromium	ND	1	1.048	104.8	1	1.049	104.9	0.04578	20	75	125
Magnesium	ND	1	1.005	100.5	1	1.002	100.2	0.3428	20	75	125
Potassium	ND	10	10.21	102.1	10	9.493	94.93	7.302	20	75	125
Silver	ND	1	1.060	106.0	1	1.059	105.9	0.1349	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 04031164
Lab Batch ID: 36727-T

Method Blank

RunID: TJAT_040407D-2164450 Units: mg/L
Analysis Date: 04/07/2004 23:43 Analyst: NS
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Result	Rep Limit
Arsenic	ND	0.005
Lead	ND	0.005
Selenium	ND	0.005

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01B	MW-16
04031164-02B	MW-10
04031164-03B	MW-14
04031164-04B	MW-15
04031164-06B	MW-5
04031164-07B	MW-11A
04031164-08B	MW-12D

Laboratory Control Sample (LCS)

RunID: TJAT_040407D-2164451 Units: mg/L
Analysis Date: 04/07/2004 23:48 Analyst: NS
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Arsenic	0.1	0.1106	110.6	80	120
Lead	0.1	0.1066	106.6	80	120
Selenium	0.1	0.1067	106.7	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031134-08
RunID: TJAT_040407D-2164455 Units: mg/L
Analysis Date: 04/07/2004 23:59 Analyst: NS
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Arsenic	ND	0.1	0.1096	109.6	0.1	0.1102	110.2	0.5733	20	75	125
Lead	ND	0.1	0.1062	106.2	0.1	0.1079	107.9	1.607	20	75	125
Selenium	ND	0.1	0.1072	107.2	0.1	0.1095	109.5	2.132	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 04031164
Lab Batch ID: 36727A

Method Blank

RunID: TJA_040408C-2165501 Units: mg/L
Analysis Date: 04/08/2004 11:38 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Result	Rep Limit
Calcium	ND	0.1
Sodium	ND	0.5

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01B	MW-16
04031164-02B	MW-10
04031164-03B	MW-14
04031164-04B	MW-15
04031164-06B	MW-5
04031164-07B	MW-11A
04031164-08B	MW-12D

Laboratory Control Sample (LCS)

RunID: TJA_040408C-2165503 Units: mg/L
Analysis Date: 04/08/2004 11:42 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	1.005	100.5	80	120
Sodium	1	0.9355	93.55	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031134-08
RunID: TJA_040408C-2165508 Units: mg/L
Analysis Date: 04/08/2004 11:51 Analyst: MW
Preparation Date: 03/31/2004 15:30 Prep By: MOF Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	ND	1	1.026	102.6	1	1.027	102.7	0.09353	20	75	125
Sodium	ND	1	0.9779	97.79	1	0.9737	97.37	0.4376	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Mercury, Total
Method: SW7470A
WorkOrder: 04031164
Lab Batch ID: 36737

Method Blank

RunID: HGLD_040401A-2150979 Units: mg/L
Analysis Date: 04/01/2004 10:32 Analyst: JAB
Preparation Date: 04/01/2004 7:50 Prep By: JAB Method SW7470A

Analyte	Result	Rep Limit
Mercury	ND	0.0002

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01B	MW-16
04031164-02B	MW-10
04031164-03B	MW-14
04031164-04B	MW-15
04031164-06B	MW-5
04031164-07B	MW-11A
04031164-08B	MW-12D

Laboratory Control Sample (LCS)

RunID: HGLD_040401A-2150980 Units: mg/L
Analysis Date: 04/01/2004 10:35 Analyst: JAB
Preparation Date: 04/01/2004 7:50 Prep By: JAB Method SW7470A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mercury	0.002	0.002036	101.8	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031151-30
RunID: HGLD_040401A-2150983 Units: mg/L
Analysis Date: 04/01/2004 10:40 Analyst: JAB
Preparation Date: 04/01/2004 7:50 Prep By: JAB Method SW7470A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	0.002	0.001994	99.72	0.002	0.001993	99.64	0.08485	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 04031164
Lab Batch ID: R107895

Method Blank

RunID: IC1_040331A-2150318 Units: mg/L
Analysis Date: 03/31/2004 13:36 Analyst: CV

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.10

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01A	MW-16
04031164-02A	MW-10
04031164-03A	MW-14
04031164-04A	MW-15
04031164-06A	MW-5
04031164-07A	MW-11A
04031164-08A	MW-12D

Laboratory Control Sample (LCS)

RunID: IC1_040331A-2150319 Units: mg/L
Analysis Date: 03/31/2004 13:48 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10	9.85	98.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031164-01
RunID: IC1_040331A-2150330 Units: mg/L
Analysis Date: 03/31/2004 16:23 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	5.78	10	15.8	99.9	10	16.2	104	2.64	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 04031164
Lab Batch ID: R108302A

Method Blank

RunID: IC1_040405A-2158619 Units: mg/L
Analysis Date: 04/05/2004 12:49 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01A	MW-16
04031164-02A	MW-10
04031164-03A	MW-14
04031164-04A	MW-15
04031164-06A	MW-5
04031164-07A	MW-11A
04031164-08A	MW-12D

Laboratory Control Sample (LCS)

RunID: IC1_040405A-2158620 Units: mg/L
Analysis Date: 04/05/2004 13:02 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	10.4	104	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031164-04
RunID: IC1_040405A-2158651 Units: mg/L
Analysis Date: 04/05/2004 19:32 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.12	10	10.9	97.6	10	11.0	98.5	0.777	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 04031164
Lab Batch ID: R108418

Method Blank

RunID: IC1_040406A-2160906 Units: mg/L
Analysis Date: 04/06/2004 15:42 Analyst: CV

Analyte	Result	Rep Limit
Sulfate	ND	0.20

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01A	MW-16
04031164-02A	MW-10
04031164-03A	MW-14
04031164-04A	MW-15
04031164-06A	MW-5
04031164-07A	MW-11A
04031164-08A	MW-12D

Laboratory Control Sample (LCS)

RunID: IC1_040406A-2160907 Units: mg/L
Analysis Date: 04/06/2004 15:55 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10	9.86	98.6	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031164-04
RunID: IC1_040406A-2160916 Units: mg/L
Analysis Date: 04/06/2004 18:46 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	143	200	349	103	200	364	111	4.39	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

4/21/2004 3:42:34 PM

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Hardness, Total (Titrimetric, EDTA) **WorkOrder:** 04031164
Method: E130.2 **Lab Batch ID:** R108632

Method Blank

RunID: WET_040408ZE-2165184 Units: mg/L
Analysis Date: 04/08/2004 18:00 Analyst: CV

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01B	MW-16
04031164-02B	MW-10
04031164-03B	MW-14
04031164-04B	MW-15
04031164-06B	MW-5
04031164-07B	MW-11A
04031164-08B	MW-12D

Laboratory Control Sample (LCS)

RunID: WET_040408ZE-2165187 Units: mg/L
Analysis Date: 04/08/2004 18:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	62.4	59.0	94.6	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031164-01
RunID: WET_040408ZE-2165189 Units: mg/L
Analysis Date: 04/08/2004 18:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	640	500	1160	104	500	1150	102	0.866	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 04031164
Lab Batch ID: R108705

Method Blank

RunID: WET_040412L-2166819 Units: mg/L
Analysis Date: 04/12/2004 11:30 Analyst: J_C

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01A	MW-16
04031164-02A	MW-10
04031164-03A	MW-14
04031164-04A	MW-15
04031164-06A	MW-5
04031164-07A	MW-11A
04031164-08A	MW-12D

Laboratory Control Sample (LCS)

RunID: WET_040412L-2166821 Units: mg/L
Analysis Date: 04/12/2004 11:30 Analyst: J_C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	101	97.51	96.54	90	110

Sample Duplicate

Original Sample: 04031164-02
RunID: WET_040412L-2166823 Units: mg/L
Analysis Date: 04/12/2004 11:30 Analyst: J_C

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	582	582.1	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Alkalinity, Carbonate
Method: M2320 B
WorkOrder: 04031164
Lab Batch ID: R108707

Method Blank

RunID: WET_040412ZD-2166879 Units: mg/L
Analysis Date: 04/12/2004 11:30 Analyst: J_C

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01A	MW-16
04031164-02A	MW-10
04031164-03A	MW-14
04031164-04A	MW-15
04031164-06A	MW-5
04031164-07A	MW-11A
04031164-08A	MW-12D

Laboratory Control Sample (LCS)

RunID: WET_040412ZD-2166881 Units: mg/L
Analysis Date: 04/12/2004 11:30 Analyst: J_C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	101	97.51	96.54	90	110

Sample Duplicate

Original Sample: 04031164-02
RunID: WET_040412ZD-2166883 Units: mg/L
Analysis Date: 04/12/2004 11:30 Analyst: J_C

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ-Hobbs

Analysis: Chloride, Total
Method: E325.3
WorkOrder: 04031164
Lab Batch ID: R108720

Method Blank

RunID: WET_040412P-2167119 Units: mg/L
Analysis Date: 04/12/2004 16:00 Analyst: RA

Analyte	Result	Rep Limit
Chloride	ND	1.0

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
04031164-01A	MW-16
04031164-02A	MW-10
04031164-03A	MW-14
04031164-04A	MW-15
04031164-06A	MW-5
04031164-07A	MW-11A
04031164-08A	MW-12D

Laboratory Control Sample (LCS)

RunID: WET_040412P-2167121 Units: mg/L
Analysis Date: 04/12/2004 16:00 Analyst: RA

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	78	77.05	98.79	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 04031164-08
RunID: WET_040412P-2167139 Units: mg/L
Analysis Date: 04/12/2004 16:00 Analyst: RA

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	115.6	100	213.6	98.07	100	213.6	98.07	0	20	85	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

4/21/2004 3:42:34 PM

Sample Receipt Checklist
And
Chain of Custody

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 215970

04031164

page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana, Suite 2500
Phone/Fax: 713-759-0999
Client Contact: R. Rexroad Email: —
Project Name/No.: BJ-Hobbs
Site Name: BJ-Hobbs
Site Location: Hobbs, NM
Invoice To: Same Ph: —

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil SL=sludge X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: Method 2320B Bicarbonate and Carbonate	Method E130.2 Hardness	Method 6010B Metals	Method 325.3 Chloride	Method E300 SO4, NO3, F	Method RSK 147 Methane	Method 8310 PAH	Method 8015B DRO	Method 8021B BTEX
MW-16	3-30-04	1500		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓

RUSH

Client/Consultant Remarks: DRO and BTEX sample collected in unpreserved containers. Hold time 7 days. Nitrates samples need 48 hr TAT

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 4.5 c

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☑
48hr ☑
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial): PL

1. Relinquished by Sampler: R. Banda	date 3-30-04	time 17:30	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 3/31/04	time 0930	6. Received by Laboratory:

☑ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 215969

04031164

page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana, Suite 2500
Phone/Fax: 713-759-0999
Client Contact: R. Rexroad Email: —
Project Name/No.: BJ-Hobbs
Site Name: BJ-Hobbs
Site Location: Hobbs, NM
Invoice To: R. Rexroad Ph: —

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	Method 2320B Bicarbonate and Carbonate	Method E 130.2 Hardness	Method 6010 B Metals	Method 325.3 Chloride	Method E300 SO_4 NO_3 F	Method RSK 147 Methane	Method 8310 PAH	Method 8015B DRO	Method 8021B BTEX
MW-10	3-30-04	1045		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-14	3-30-04	1235		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-15	3-30-04	1345		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
Trip Blank	3-30-04				W	V	40	1	2									✓

RUSH

Client/Consultant Remarks: DRO and BTEX samples were collected in unpreserved containers. Hold time 7 days. Nitrate samples need 48hr. TAT

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 5.0 C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☑
48hr ☑
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial): PLL

1. Relinquished by Sampler: R. Banda	date 3/30/04	time 1730	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 3/31/04	time 0930	6. Received by Laboratory:

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☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

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Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 215968

04031164

page 1 of 1

Client Name: Brown and Caldwell
Address: 1415 Louisiana, Suite 2500
Phone/Fax: 713-759-0999
Client Contact: R. Rexroad Email: rrexroad@browncaldwell.com
Project Name/No.: BJ-Hobbs 12832
Site Name: BJ-Hobbs
Site Location: Hobbs, NM
Invoice To: R. Rexroad Ph: 713-759-0999

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil SL=sludge X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Method 2320B Bicarbonate & Carbonate	Method E 130.2 Hardness	Method 6010B Metals	Method 325.3 Chloride	Method E300 SO_4, NO_3, F	Method RSK 147 Methane	Method 8310 PAH	Method 8015B DRO	Method 8021B BTEX
MW-5	3-30-04	0915		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-11A	3-30-04	1030		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
~~MW-10~~		~~1045~~		~~✓~~	~~W~~	~~PAV~~	~~1,40~~	~~2~~										
MW-12D	3-30-04	1115		✓	W	PAV	1,40	2	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
~~MW-15~~		~~1235~~		~~✓~~	~~W~~	~~PAV~~	~~1,40~~	~~2~~	~~7~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~
~~MW-14~~		~~1345~~		~~✓~~	~~W~~	~~PAV~~	~~1,40~~	~~2~~	~~7~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~
~~MW-16~~		~~1500~~		~~✓~~	~~W~~	~~PAV~~	~~1,40~~	~~2~~	~~7~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~
Trip Blank					W	V	40	1	2									✓

RUSH

Client/Consultant Remarks: DRO and BTEX samples were collected in unpreserved containers. Hold time 7 days. Nitrates samples need 48 hr. TAT.

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 5.6c

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☑
48hr ☑
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial): PLL

1. Relinquished by Sampler: R. Banda RBB	date 3/30/04	time 1730	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 3/31/04	time 0930	6. Received by Laboratory:

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☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	04031164	Received By:	NB
Date and Time Received:	3/31/2004 9:30:00 AM	Carrier name:	FedEx
Temperature:	4.5°C	Chilled by:	Water Ice

		Yes	No	Not Present / Not Applicable
1.	Shipping container/cooler in good condition?	☑	☐	☐
2.	Custody seals intact on shippping container/cooler?	☑	☐	☐
3.	Custody seals intact on sample bottles?	☐	☐	☑
4.	Chain of custody present?	☑	☐	
5.	Chain of custody signed when relinquished and received?	☑	☐	
6.	Chain of custody agrees with sample labels?	☑	☐	
7.	Samples in proper container/bottle?	☑	☐	
8.	Sample containers intact?	☑	☐	
9.	Sufficient sample volume for indicated test?	☑	☐	
10.	All samples received within holding time?	☑	☐	
11.	Container/Temp Blank temperature in compliance?	☑	☐	
12.	Water - VOA vials have zero headspace?	☑	☐	Not Applicable ☐
13.	Water - pH acceptable upon receipt?	☑	☐	Not Applicable ☐

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____