GW - 17

WORK PLANS

BROWN AND CALDWELL

WORK PLAN FOR INVESTIGATION AT FORMER SUMP AND RAMP UNIT HOBBS, NEW MEXICO (FORMER NOWSCO FACILITY) BJ SERVICES COMPANY, U.S.A.

APRIL 24, 1998

WORK PLAN FOR INVESTIGATION AT FORMER SUMP AND RAMP UNIT HOBBS, NEW MEXICO (FORMER NOWSCO FACILITY)

Prepared for

BJ Services Company, U.S.A.
8701 New Trails Drive
The Woodlands, Texas 77381

Project Number: 6240-02

Timothy L. Jenkins
Associate Engineer

April 24, 1998

Brown and Caldwell
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1.0 INTRODUCTION

This work plan details sampling activities to be performed in the vicinity of a former concrete sump and ramp unit previously associated with an inactive acid dock at the BJ Services Company, U.S.A. (BJ Services) former NOWSCO Well Services, Inc. (NOWSCO) facility in Hobbs, New Mexico. The facility is located in Lea County, on the north side of the Carlsbad Highway, also known as U.S. Highway 180/U.S. Highway 62. The facility address is 5514 Carlsbad Highway, Hobbs, New Mexico. A site location map and site plan map are attached as Figures 1 and 2, respectively.

The sump and ramp unit was located on the west side of the acid dock area. Brown and Caldwell, under contract with BJ Services, coordinated the removal of the sump and ramp system on February 11 through 13, 1998. These activities were performed as prescribed in the Closure Plan for the Sump and Ramp Unit dated February 6, 1998. The removal activities were summarized in a report submitted to the New Mexico Oil Conservation Division (NMOCD) in a report entitled "Sump and Ramp Unit Field Activity Report", dated March 25, 1998 (Field Activity Report). Pertinent findings of the Field Activity Report are as follows:

- Soil from the south end of the former ramp area was excavated to a depth of 4 to 6 feet below ground surface (bgs).
- Soil was excavated from the north end of the former ramp and sump area to a depth of 15 feet bgs.
- The excavation was laterally limited by a concrete containment structure to the east and concrete pads to the south and north of the sump and ramp unit; therefore, the horizontal extent of soil impact in these directions could not be determined.
- The vertical extent of soil impact was not defined at a depth of 15 feet bgs in the northern end of the former ramp unit.
- Elevated levels of volatile organics and TPH were detected in floor composite samples from the bottom of the north and south portions of the excavation.
- Benzene was not detected in confirmation samples.

Further overexcavation of the sump and ramp area is not practical, as the area is bounded by concrete on three sides, and is currently nearing the limits of the available excavation equipment. Brown and Caldwell will therefore backfill the excavation with clean fill material and proceed with investigative activities specified in the NMOCD correspondence to BJ Services dated April 2, 1998.

The purpose of this work plan is to outline the investigative approach that will be utilized to determine the vertical and lateral extent of hydrocarbon impact in the area of the former sump and ramp unit. Plans for long term monitoring and/or remediation at the site will be developed when the nature and extent of impact in the area of the former sump and ramp unit is more fully defined.

This work plan contains the following elements:

- The procedures that will be used to conduct a soil investigation and the circumstances under which a groundwater assessment will be conducted.
- The procedures that will be used to manage, remediate, or dispose of contaminated soil and groundwater, if any.
- Reporting procedures that will be used to document the investigative activities described herein.

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2.0 SITE ASSESSMENT

BJ Services will perform a site investigation to determine the extent to which soils and possibly groundwater have been impacted by the past operation of the former sump and ramp unit. The results of this site investigation will be used for evaluating the need for additional investigation, continued monitoring, or remediation at the site.

2.1 General Site Characteristics

BJ Services has determined that the depth to groundwater, defined as the vertical distance from the lowermost contaminants to the seasonal high water elevation of the groundwater, is approximately 46 feet below grade based on previous monitor well installations at the site. Therefore, according to the following table, a site ranking score of 20 is assigned for the site groundwater criteria.

Depth to Groundwater:	Ranking Score:
< 50 feet	**20**
50 - 99 feet	10
> 100 feet	0

If necessary, BJ Services will determine the proximity of drinking water sources by performing a search of water wells within a one-mile radius of the facility. The search would provide information (as available) such as the distance from the site to each well, well depth, water quality data and the purpose of the well.

Wellhead Protection Area:	Ranking Score:
< 1000 feet from a water source, or;	
< 200 feet from a private domestic water source:	
Yes	20
No	0

The distance to nearby downgradient surface water bodies will be determined by review of a USGS topographic map for the area. Surface water bodies include rivers, creeks, ponds, lakes, irrigation canals and ditches. Site drainage patterns and off-site receptors of surface drainage will be determined by field observations.

Distance to Surface Water Body:	Ranking Score:
< 200 horizontal feet	20
200 – 1000 feet	10
> 1000 feet	0

2.2 Preliminary Site Scoring

According to the OCD guidance documents, a total ranking score of >19 yields action levels of 10 ppm for benzene, 50 ppm for total BTEX, and 100 ppm for TPH, as outlined in Table 1. These action levels represent the most stringent cleanup levels listed in the guidance document. Based on the groundwater ranking score of 20, the site will be remediated according to Table 1.

2.3 Soil Characterization

BJ Services will complete two soil borings in the area of the former sump and ramp unit to delineate impact. After the former sump and ramp area excavation is backfilled and compacted, a soil boring will be completed in the northern portion of the former ramp area to delineate vertical extent of impact. This soil boring (SB-A) will extend through the backfill material and into the underlying native soil, and will be performed first. An additional soil boring (SB-B) will be completed at a location approximately 15 feet west of the western extent of the northern portion of the former ramp area. This boring is intended to delineate lateral extent, and assumes that impacted soil extends unilaterally in each direction from the center of the former sump location. The proposed locations of soil borings SB-A and SB-B are shown in Figure 3. If horizontal extent is not defined by the installation of SB-B (i.e., impact above NMOCD action levels is observed), an additional boring will be installed 15 feet west of SB-B. This additional boring will be identified as SB-C.

Sampling of each boring will be accomplished using a soil coring device. When possible, a split spoon sampler will be utilized to obtain intact samples. Soil samples will be collected at 5-foot centers from each borehole, with Boring SB-A sampling commencing at the base of the fill material (approximately 15 feet bgs). Soil cores will be collected at 5-foot centers from the surface to total

depth in soil boring SB-B. Recovered samples will be screened with a photoionization device (PID) or flame ionization device (FID) to evaluate organic vapor content. Headspace analysis will be performed in accordance with the procedures outlined in NMOCD guidance documentation. Field screening of total petroleum hydrocarbons (TPH) will also be performed as necessary to characterize the hydrocarbon content of recovered cores. Soil borings SB-A and SB-B will be advanced until a sample displays field TPH measurements of less than 100 parts per million (ppm) or until groundwater is encountered, whichever occurs at the more shallow depth.

Soil samples collected from boring SB-A and SB-B will be submitted for laboratory analysis from the interval displaying the maximum PID response. Additionally, a sample will be collected from the total depth of these borings if they are terminated prior to encountering groundwater or from the interval immediately above the top of the saturated zone in the event that groundwater is encountered. Based on these criteria, at least two samples will be collected from each boring. Samples will be collected with decontaminated sampling equipment, placed in labeled laboratory-supplied jars, and shipped on ice overnight using chain of custody procedures to an off-site environmental laboratory.

The soil samples submitted to the analytical laboratory will be analyzed for diesel-range total petroleum hydrocarbons (TPH-D) by Method 8015, and for benzene, toluene, ethylbenzene and xylenes (BTEX) by Method 8020. Additionally, the sample displaying the highest TPH concentration will be analyzed for polynuclear aromatic hydrocarbons (PAHs) by Method 8310 and the 8 RCRA metals by the SW846 3050/6010/7000 Series.

2.4 Groundwater Characterization

In the event that soil boring SB-A is advanced to the saturated zone, the boring will be extended to a sufficient depth to accommodate installation of a monitor well. In this case, 2-inch diameter slotted PVC screen shall be installed such that approximately 5 feet of screen is positioned above, and 10 feet of screen is positioned below, the apparent top the saturated zone. A sufficient length of 2-inch diameter riser pipe would be installed to bring the top of well casing to grade. An

appropriately graded sand filter pack would be installed from the total depth of the boring to approximately 2 feet above the top of the well screen. A minimum 2-foot thick hydrated bentonite seal would be emplaced atop the filter pack, and the remainder of the annular area would be backfilled with cement grout containing a minimum of 5 percent (by weight) bentonite. The surface completions of the well would be installed in accordance with NMOCD requirements.

In the event that a monitor well is installed in soil borings SB-A, MW-1, an existing monitor well located east of the acid dock area, will be utilized as a downgradient well. Since MW-1 would act as the downgradient well, no additional monitor well or soil boring would be required downgradient from the sump and ramp area.

After well development and purging, groundwater samples would be collected from the monitor well installed plus MW-1, the downgradient monitor well. Samples will be collected with decontaminated or previously unused disposable sampling equipment, placed in labeled laboratory-supplied jars, and shipped on ice overnight using chain of custody procedures to an off-site environmental laboratory.

Groundwater samples will be submitted for laboratory analysis for volatile organic compounds (VOCs) by Method 8240, polynuclear aromatic hydrocarbons (PAHs) by Method 8310, 8 RCRA metals by the SW846 3050/6010/7000 Series, and major anions and cations.

2.5 Waste Management

Soil cuttings will be containerized in clean 55-gallon drums and temporarily stored on-site until subsequently disposed. Decontamination fluids (non-toxic degreasers and water), as well as purge and development water, if generated, will be collected for later disposal.

The options for waste disposal will be evaluated based on the analytical results of the investigation samples. Additional sampling of containerized materials may be performed as necessary to meet the requirements of the disposal facility.

2.6 Schedule of Activities

After approval of this work plan by NMOCD, a minimum of 72 hours notice will be provided to NMOCD prior to commencement of sampling activities.

3.0 REPORT OF INVESTIGATION

3.1 Closure Report

The field procedures and analytical results for the investigation described herein will be presented in a report to the NMOCD within 30 days of receiving complete analytical results for samples collected during this investigation. The analytical results will be used in conjunction with the ranking score to verify final closure status according to the NMOCD closure guidance document. BJ Services will present the ranking score in the site assessment report and either request NMOCD confirmation of closure or, if necessary, propose further activities such as additional investigation of groundwater or soil remediation.

Benzene concentrations in soil exceeding 10 mg/kg, total BTEX concentrations in soil exceeding 50 mg/kg, or TPH concentration in soil exceeding 100 mg/kg may require additional investigation or remediation. In this case, BJ Services may propose alternate cleanup levels for OCD approval or propose no further action by conducting a risk-based evaluation of the site assessment data.

3.2 Cleanup Alternatives

If remediation is necessary, feasible cleanup alternatives will be presented in the site assessment report. Alternatives include excavation and off-site disposal, landfarming, or in-situ treatment such as vapor sparging or bioremediation. In lieu of remediation, BJ Services may recommend an evaluation of risk to demonstrate that remaining chemical residues will not pose a threat to present or foreseeable beneficial use of fresh waters, public health and the environment. BJ Services will not commence remediation until the OCD has reviewed and approved the recommended cleanup alternative. A final closure report documenting closure activities and remediated soil constituent concentrations will be prepared for OCD approval following any required site remediation.

DISTRIBUTION

Work Plan For Investigation at Former Sump and Ramp Unit
Hobbs, New Mexico (Former NOWSCO Facility)
BJ Services Company, U.S.A.

April 24, 1998

1 copy to: New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Attention: Mr. Mark Ashley

1 copy to : New Mexico Oil Conservation Division – Hobbs District 1
Post Office Box 1980
Hobbs, New Mexico 88241

Attention: Mr. Wayne Price

1 copy to: BJ Services Company, U.S.A.
8701 New Trails Drive
The Woodlands, Texas 77381

Attention: Ms. Jo Ann Cobb

1 copy to: Brown and Caldwell
Project File

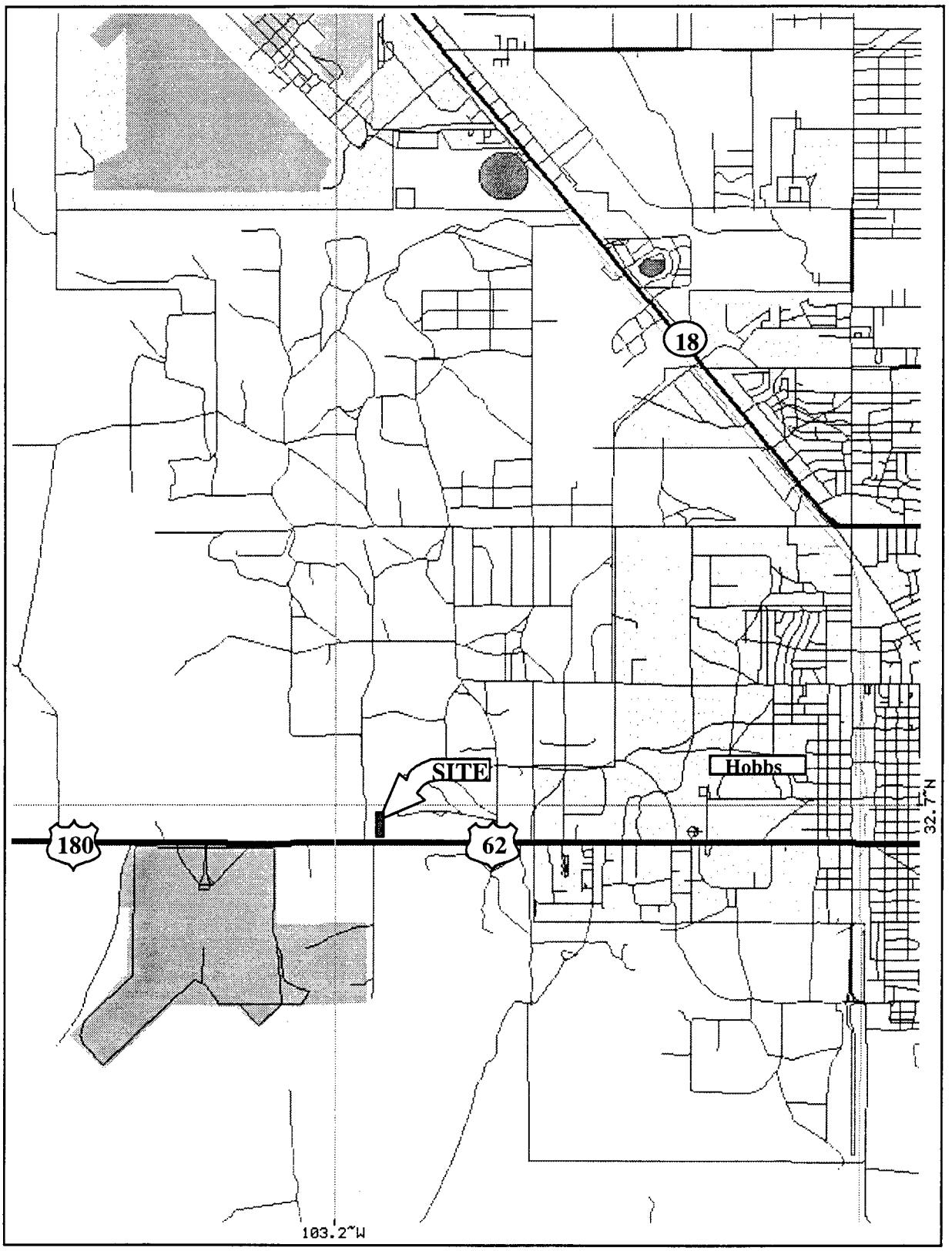
QUALITY CONTROL REVIEWER

Richard Rexroad
Principal Geologist

TLJ:uak

Figures

FIGURES



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		CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NO.: 6240.01
		SITE LOCATION: HOBBS, NEW MEXICO	FIGURE NO.: 1

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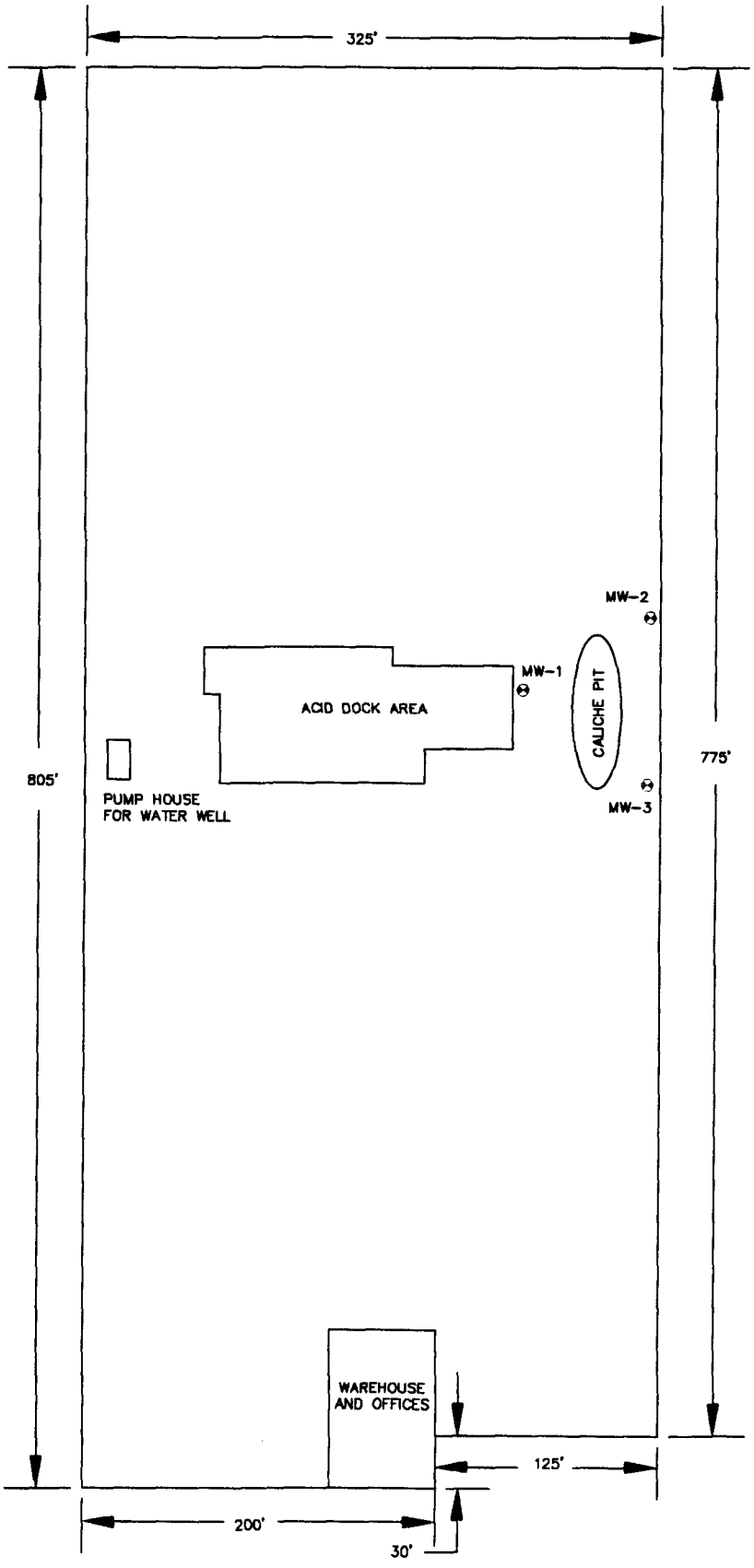

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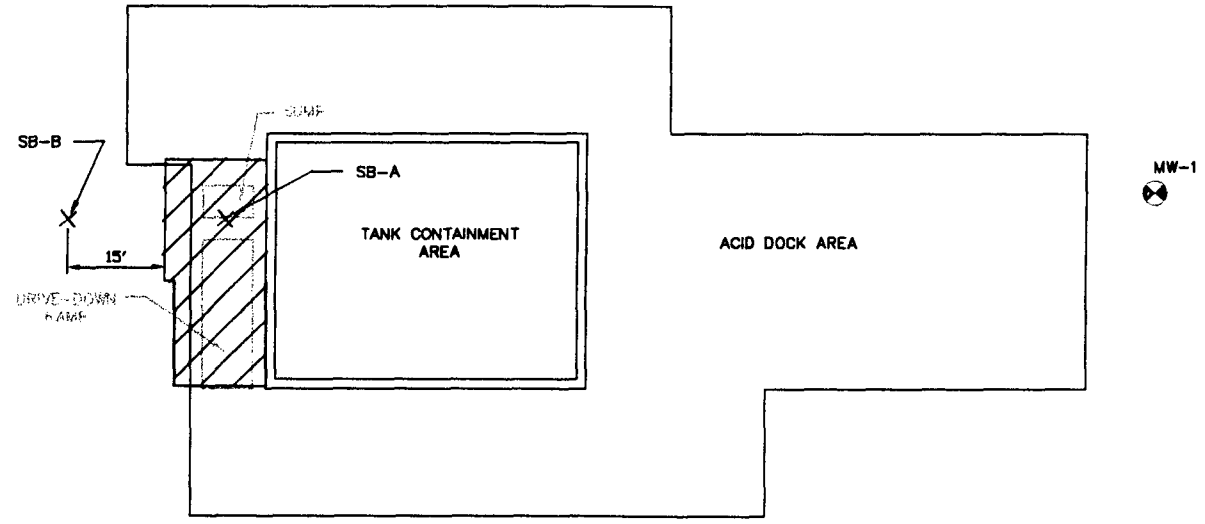

LEGEND

AREA TO BE BACKFILLED

X PROPOSED BORING LOCATIONS

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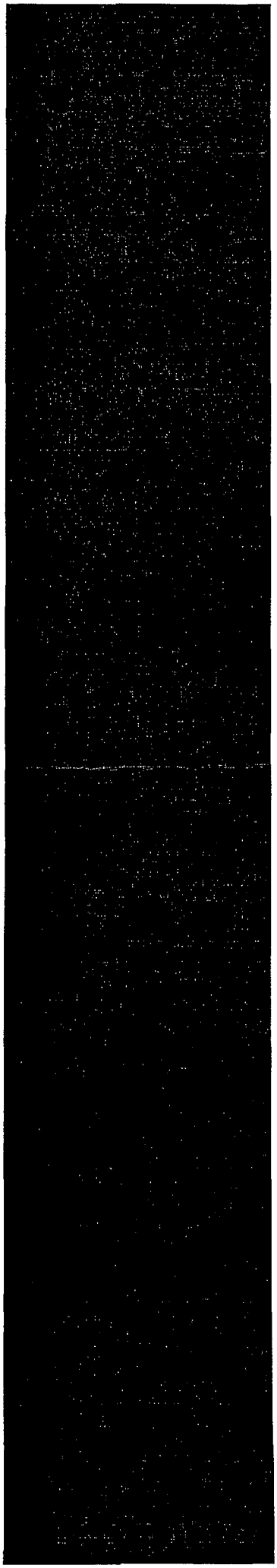
Tables

TABLES

Table 1
Soil Cleanup Goals
Hobbs, New Mexico (Former NOWSCO Facility)
BJ Services Company, U.S.A.

Contaminant	Regulatory Remediation Action Levels (mg/kg)
Benzene	*10
BTEX, Total	*50
TPH	*100
RCRA Metals:	
Arsenic	<5.0 (mg/L TCLP)
Barium	<100.0 (mg/L TCLP)
Cadmium	<1.0 (mg/L TCLP)
Chromium	<5.0 (mg/L TCLP)
Lead	<5.0 (mg/L TCLP)
Mercury	<0.2 (mg/L TCLP)
Selenium	<1.0 (mg/L TCLP)
Silver	<5.0 (mg/L TCLP)

* These limits based on a ranking score >19, and are outlined in the NMOCD guidance documents.



BROWN AND CALDWELL

FINAL

WORK PLAN FOR DRILLING AND ASSESSMENT ACTIVITIES FORMER NOWSCO FACILITY HOBBS, NEW MEXICO

BJ SERVICES COMPANY, U.S.A.

NOVEMBER 17, 1997

FINAL
WORK PLAN FOR DRILLING AND ASSESSMENT ACTIVITIES FORMER NOWSCO FACILITY HOBBS, NEW MEXICO

BJ SERVICES COMPANY, U.S.A.

Prepared for

BJ Services Company U.S. A.
8701 New Trails Drive
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Project Number: 6240-01

Timothy L. Jenkins
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November 17, 1997

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CONTENTS

1.0 INTRODUCTION

On June 12, 1996, BJ Services Company, U.S.A. (BJ Services) purchased the NOWSCO Well Services, Inc. (NOWSCO), including the facility located at 5514 Carlsbad Highway (US 62/US 180) in Hobbs, New Mexico. The facility has been non-operational since this date. The facility was primarily utilized for well stimulation by acidizing, a process that uses hydrochloric acid mixtures, which are blended onsite and delivered to the well location.

In June 1997, Eco-logical Environmental Services, Inc. performed a sump clean out, sampled the monitor well (MW-1), and conducted a brief site inspection.

Based on a Task Order agreement dated November 14, 1997, Brown and Caldwell will serve as a consultant to BJ Services for the work described herein. This Site Assessment Work Plan (Work Plan) will describe the objectives of the site assessment, and the methods to be used for sampling and analysis of soils, the installation of monitor wells, and the sampling of groundwater. The objectives of the project are to assess the potential impact of a caliche pit operated by previous ownership, and to characterize the remaining tank liquids for disposal at a New Mexico Oil Conservation District (NMOCD) approved facility. Specifically, a letter from Mark Ashley of the NMOCD to BJ Services dated October 2, 1997 requested that additional water wells should be installed and sampled, and that the groundwater samples should be analyzed for various VOCs, SVOCs, and metals (See Appendix A). The letter also specified that an existing water supply well located on the west side of the site be sampled for these sample constituents. This Work Plan serves as 72 hour notice of the activities described herein. These activities are currently scheduled to begin Wednesday, November 19, 1997 at 8:00 am Mountain Standard Time.

The following sections describe the planned field activities to meet the objectives of the project and present a schedule to conduct the work and prepare an investigation report as defined in the NMOCD letter of October 2, 1997.

2.0 FACILITY DESCRIPTION

BJ Services intends to close or transfer the Discharge Plan GW-17 at the former NOWSCO facility on Carlsbad Highway in Hobbs, New Mexico. The facility has been inactive since June, 1996. The facility is located in an area of industrial and undeveloped land west of Hobbs, New Mexico, near the Lea County Airport. A site location map is attached as Figure 1.

2.1 Background

A Subsurface Investigation and Site Closure Plan Update was performed in March, 1995 by Ritter Environmental under contract to NOWSCO. A second site inspection, including a sump clean out, was performed in June, 1997 by Eco-logical Environmental. The site inspection identified residual liquids within various tanks located at the Acid Loading Dock.

2.2 Areas of Assessment Activity

Based on these reports, the areas requiring additional assessment and/or removal of material for offsite treatment/disposal are as follows:

- Caliche Pit (Installation of an Upgradient and Two Downgradient Monitor Wells)
- Northwest Corner Fiberglass Tank (Liquid for characterization and disposal)
- Small Fiberglass Tank (Liquids for characterization and disposal)

A facility site plan is presented as Figure 2.

3.0 FIELD PROCEDURES

This section describes the general field procedures that will be used during the Site Assessment activities.

3.1 Monitor Well Locations

A monitor well is currently located to the west of the caliche pit. Based on an assumed east to southeast groundwater flow gradient at the site, two soil borings will be advanced in the area east of the caliche pit (between the pit and the fenceline), and completed as monitor wells. After installation of these two new monitor wells, water level measurement will be taken from these wells and the existing well so that the groundwater flow direction at the site can be confirmed. A third well may be installed, depending on groundwater flow direction, such that at least one well is upgradient, and two wells are downgradient in order to meet the requirements specified in the October 2, 1997 NMOCD directive. Figure 2 depicts the approximate locations of MW-2 and MW-3.

3.2 Sample Collection Method

The soil borings will be installed by a subcontractor using air rotary drilling techniques. Borings will be advanced to a nominal depth of 60 feet, and will be sampled continuously. Samples will be screened by headspace analysis upon recovery using a photoionization device (PID). Three samples from each boring will be held as a contingency for potential future analysis. The samples will be collected from the interval indicating the highest PID response, from the sample collected from the vadose zone immediately above groundwater depth, and from the bottom (total depth) of each boring.

Liquid samples from the tanks containing liquids will be collected using a disposable sample device. A sufficient quantity of sample will be collected to characterize the liquids for disposal and/or treatment by a NMOCD approved facility.

3.3 Monitor Well Installation

Upon completion of soil boring and sampling activities, each boring will be completed as a monitoring well. Based on groundwater elevation data from MW-1, the groundwater level is approximately 50 feet below grade. As required by the NMOCD, and as described in Appendix B, each well will consist of the following:

- 15 feet of well screen (0.010 slot PVC well screen will be used), with approximately 5 foot of screen above the water table and approximately 10 feet of well screen below the water table;
- An appropriately sized sand filter pack, extending from the base of the boring to 2-3 feet above the top of the screen;
- A 2-3 foot bentonite plug placed above the filter pack; and
- Grout from the bentonite plug to the surface with a cement containing 5% bentonite.

The monitor wells will be completed using flush mount man-ways set in concrete pads. All wells shall be equipped with locking water-tight caps and locks.

Upon completion of the well installations, the wells will be developed by surging and bailing/pumping until the wells are relatively free of sediment. Water generated during the development activities will be placed in 55-gallon steel drums. Based on the results of groundwater analysis, purge and development water will be disposed of at an NMOCD-approved facility. All well installation work shall be performed in accordance with the New Mexico Oil Conservation Division drilling regulations under the supervision of a person licensed to conduct monitor well drilling and installation in the State of New Mexico.

3.4 Decontamination Procedures

The downhole drilling and sampling equipment will be decontaminated by pressure washer prior to commencement of sampling activities. All sampling equipment, including liquids collection devices for tank sampling, will be decontaminated prior to use at each boring location and between sample intervals by washing with a laboratory grade detergent, rinsing with potable water, and completing a final rinse with distilled water.

3.5 Analysis Criteria

Waste liquid samples collected from the containment vessels described in Section 2.2 will be characterized for disposal by analyzing for TCLP volatiles, TCLP semivolatiles, TCLP metals, and reactivity, corrosivity, and ignitability (RCI) by standard EPA methods.

Soil samples collected during boring activities will be held as a contingency for potential future analysis.

All wells at the site, including MW-1, the newly installed monitor wells, and the water supply well, if accessible, will be purged approximately three well volumes prior to sampling the groundwater. Each sample will be analyzed for major cations and anions, total metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by SW-846 Method 3050/6010/7000 Series, polynuclear aromatic hydrocarbons (PAHs by Method 8310), and BTEX by Method 8020. The sample indicating the highest levels of BTEX will then be analyzed for aromatic and halogenated organics (volatiles and semivolatiles, including chlorinated compounds) by Methods 8240/8270/8100.

One duplicate groundwater sample will be collected and analyzed for the parameters listed above. One trip blank will be analyzed for BTEX for each sample cooler containing soil and/or groundwater samples being submitted for BTEX analysis.

4.0 WASTE MANAGEMENT AND HANDLING

Wastes generated during the soil boring installation and the waste liquids identified in Sections 3.3 and 3.4 will be managed and handled according to state and federal requirements.

4.1 Waste Soils

Wastes generated during boring activities will be placed on and covered with plastic sheeting. The soils will be disposed on the basis of the analytical results obtained during the investigation and any additional analyses required by the disposal facility.

4.2 Waste Liquids

Liquids generated from decontamination and groundwater sample collection will be placed in a 55 gallon steel drum for future treatment/disposal based as classified by analytical results obtained during the investigation and any additional analyses required by the disposal facility.

Based on the analytical results for the liquids contained in the various Acid Dock Area Tanks, the liquid wastes will be properly disposed at an NMOCD-approved facility.

5.0 SITE ASSESSMENT REPORT

A report documenting the assessment activities, well installations, groundwater sampling, and removal of tank liquids will be prepared and finalized for submittal to the NMOCD. The report will also include a summary of the assessment activities, a discussion on local geology and hydrogeology, a description of field methods, a groundwater depth and gradient map, field and laboratory analytical results, boring/monitor well completion diagrams, a sample location map, and documentation of the disposition of waste materials. The report will also present the recommendations for future actions pertaining to the closure or transfer of the discharge plan based on these results.

6.0 SCHEDULE

The well installation activities are anticipated to begin on Wednesday, November 19, 1997 and take two days to complete. Tank sampling will be accomplished during this same time period. The final site assessment report will be submitted to the NMOCD.

DISTRIBUTION

Final
Work Plan for Drilling and Assessment Activities
Former NOWSCO Facility
Hobbs, New Mexico
BJ Services Company, U.S.A.

November 17, 1997

1 copy to: State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Attention: Mr. Mark Ashley

1 copy to: State of New Mexico
Oil Conservation Division, Hobbs District Office
Post Office Box 1980
Hobbs, New Mexico 88240

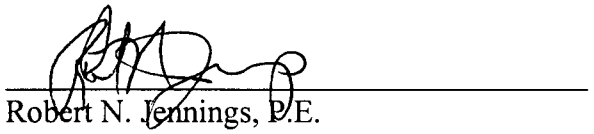
Attention: Mr. Wayne Price

1 copy to: BJ Services Company, U.S.A.
8701 New Trails Drive
The Woodlands, Texas 77381

Attention: Mr. Rick N. Johnson

1 copy to: Brown and Caldwell
Project File

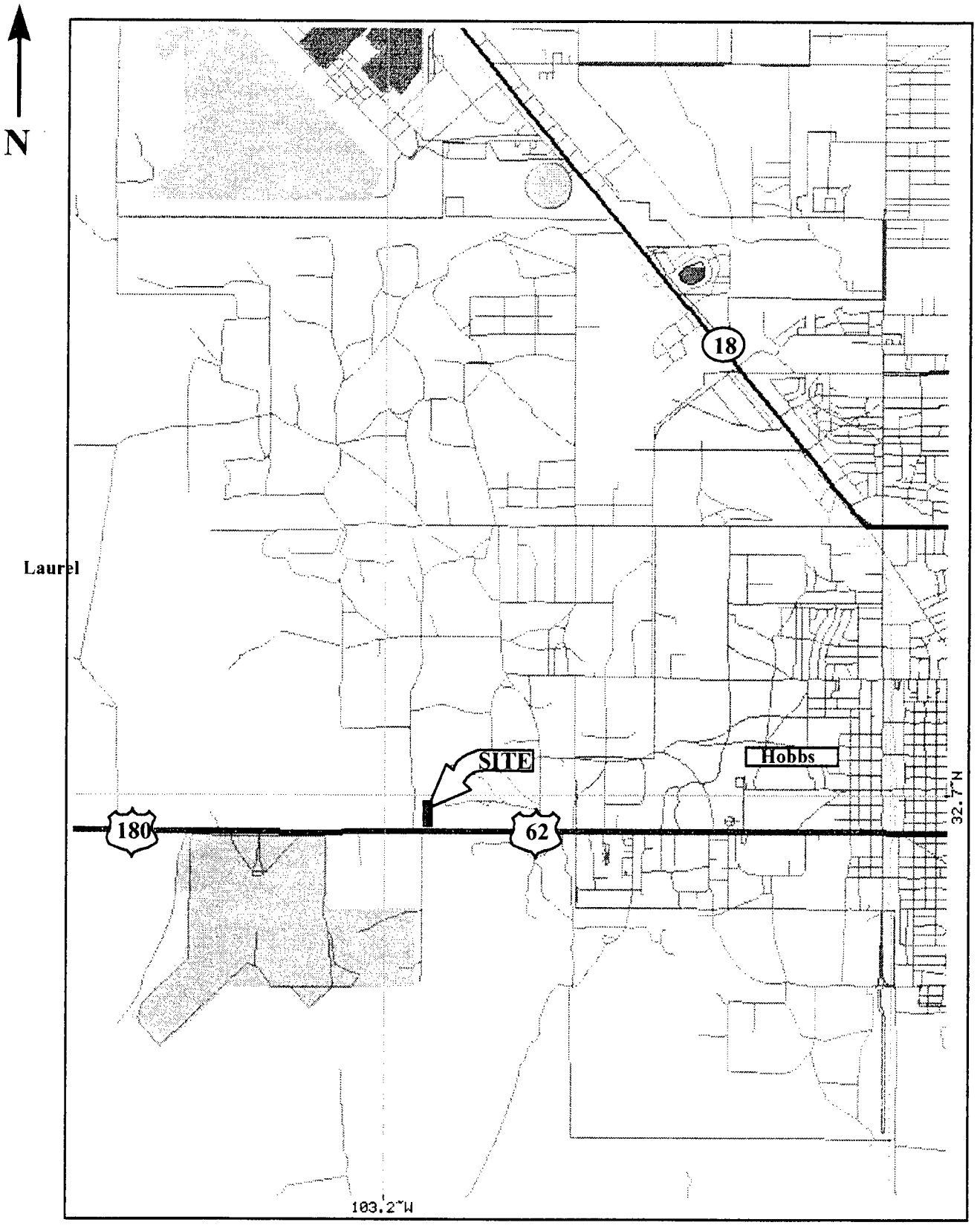
QUALITY CONTROL REVIEWER



Robert N. Jennings, P.E.
Vice President

TLJ:uak

FIGURES



BROWN AND CALDWELL HOUSTON, TEXAS	0 0.5 1 miles	TITLE: SITE PLAN MAP	DATE: 11/14/97
		CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NO.: 6240.01
		SITE LOCATION: HOBBS, NEW MEXICO	FIGURE NO.: 2

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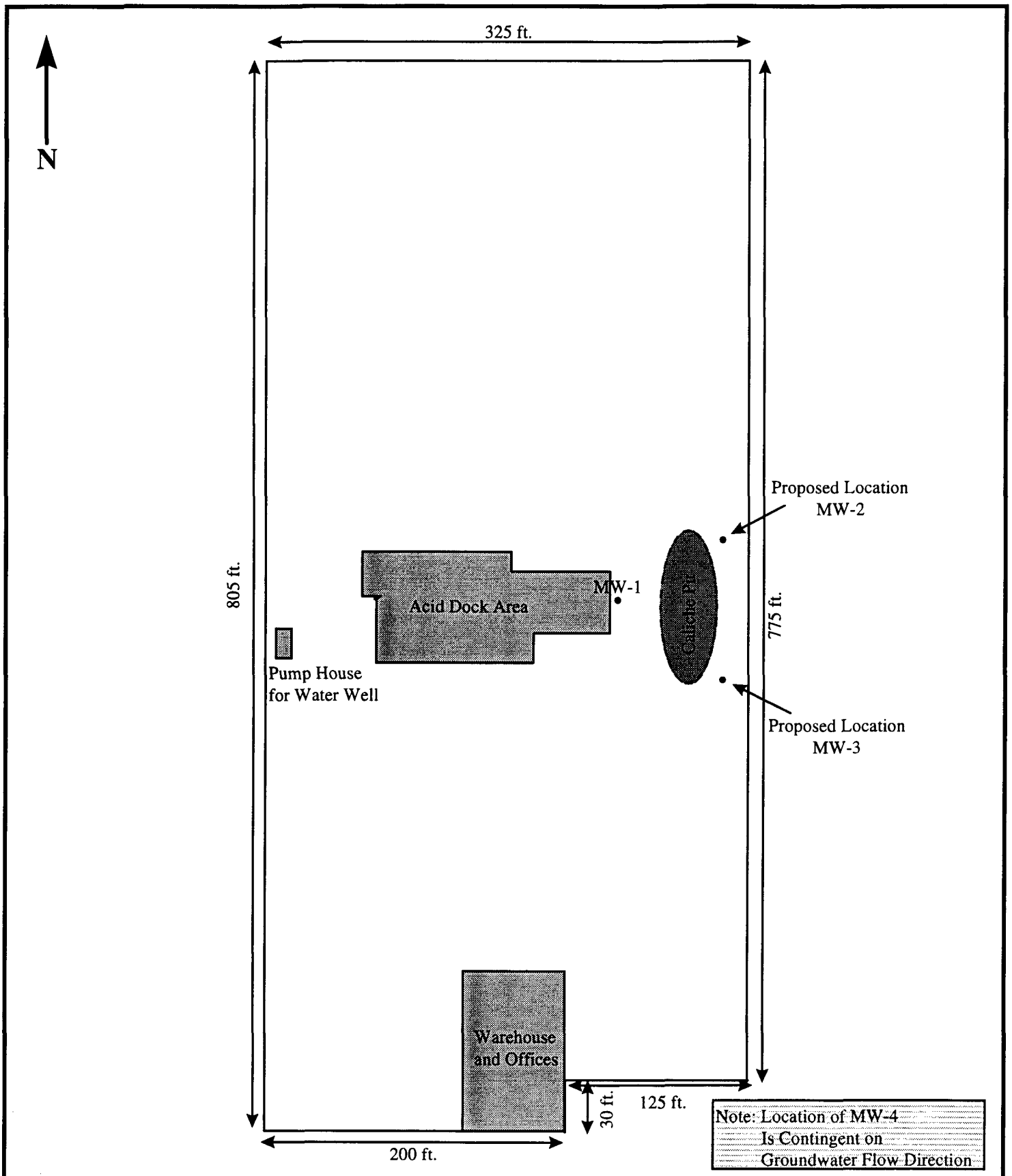

BROWN AND CALDWELL HOUSTON, TEXAS		TITLE: SITE PLAN MAP (FORMER NOWSCO FACILITY)	DATE: 11/14/97
		CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NO.: 6240.01
		SITE LOCATION: HOBBS, NEW MEXICO	FIGURE NO.: 2

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APPENDIX A

NMOCD Letter - October 2, 1997

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

October 2, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-982

Mr. Rick N. Johnson
BJ Services Company, U.S.A.
8701 New Trails Drive
Woodlands, Texas 77381

RE: Closure Approval of Discharge Plan GW-17 (Formerly Nowsco)
Hobbs Facility
Lea County, New Mexico

Dear Mr. Johnson:

The New Mexico Oil Conservation Division (OCD) has received the letter dated July 11, 1997 for the Closure of the BJ Services Company, U.S.A. (BJ) GW-17 Discharge Plan located in the SW/4 SW/4 of Section 36, Township 18 South, Range 37 East, NMPM, Lea County, New Mexico. The closure of the Hobbs facility was submitted pursuant to Section 3107 A.11 of the Water Quality Control Commission Regulations. Based on information gathered to date, it is unclear if ground water at the site has been impacted by activities associated with the caliche pit.

The OCD requires further investigation by BJ that will include, at a minimum, the following information:

1. A ground water depth and gradient map.

2. A minimum of one monitor well installed upgradient and a minimum of two monitor wells installed downgradient from the caliche pit.

3. Monitor wells will be constructed with:

   a. A minimum of fifteen feet of well screen, with at least five feet of well screen above the water table and ten feet of well screen below the water table.

   b. An appropriately sized gravel pack will be set around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.

   c. A 2-3 foot bentonite plug will be placed above the gravel pack.

d. The remainder of the hole will be grouted to the surface with cement containing 5% bentonite.

4. All soils generated from drilling activities will be characterized for hazardous constituents and disposed of at an OCD approved site.

5. Ground water from the monitor wells will be sampled and analyzed for concentrations of major cations and anions, heavy metals, polynuclear aromatic hydrocarbons, and aromatic and halogenated organics using EPA approved methods.

6. The existing ground water supply well located on the facility will be sampled for the constituents listed in number 4 above.

7. BJ will submit a report on the investigation to the OCD by January 5, 1998. The report will include a description of the actions performed and the results of all sampling activities. The report will also include recommendations for future actions based on the results of ground water sampling.

8. BJ will notify the OCD at least 72 hours in advance of all activities.

9. All original documents will be submitted to the OCD Santa Fe Office with copies to the OCD Hobbs District Office.

If BJ has any further questions or comments please contact me at (505)-827-7155.

Sincerely,

Mark Ashley
Geologist

xc: OCD Hobbs Office