GW - 72

GENERAL CORRESPONDENCE

YEAR(S):

2007 - 1999

GW-0072

February 6, 2007

UPS OVERNIGHT

New Mexico Oil Conservation Division
Attn: Mr. Glenn Von Gonten
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED

FEB 07 2007

Oil Conservation Division
Environmental Bureau

RE: Discharge Plan Renewal & Associated Filing Fee
Discharge Permit - GW-72
BJ Services Company, USA
11211 FM 2920
Tomball, TX 77375

Dear Mr. Von Gonten:

Enclosed is the discharge plan renewal application for the BJ Services Company, USA (BJ Services) Hobbs Facility operating under Discharge Permit No. GW-72 located at 2708 West County Road, Hobbs, NM. Also enclosed is check number 3006038 in the amount of $100.00 for payment of the associated filing fee.

In accordance with NMAC Subsection C of 20.6.2.3108, relating to discharge plan renewal notifications, BJ Services will place public notification in the Hobbs News-Sun newspaper once the application has been approved.

BJ Services apologizes for the delay in submitting this renewal application and will make every attempt in the future to submit documents to the OCD in a timely manner. If there are any questions or comments, please contact me at (281) 357-2573.

Thank You.

Josh Morrissette
HSE Specialist

Cc: Jo Ann Cobb - BJ Services, Tomball
Mike Carter - BJ Services, Hobbs

Enclosures

GW072

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES,GAS PLANTS, REFINERIES, COMPRESSOR, GEOTHERMAL FACILITES AND CRUDE OIL PUMP STATIONS

RECEIVED
FEB 07 2007
Oil Conservation Division
Environmental Bureau

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal ☐ Modification

1. Type: OIL FIELD SERVICES
2. Operator: BJ SERVICES COMPANY, USA

   Address: 2708 WEST COUNTY ROAD, HOBBS, NM 88240

   Contact Person: JOSH MORRISSETTE Phone: 281.357.2573

3. Location: NORTH /4 EAST /4 Section 20 Township 18 SOUTH Range 38 EAST
   Submit large scale topographic map showing exact location.

4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

14. CERTIFICATIONI hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: JOSH MORRISSETTE Title: HSE SPECIALIST

Signature: [signature] Date: 2-6-2007

E-mail Address: joshua.morrissette@bjservices.com

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

March 7, 2006

Ms. Jo Ann Cobb
Manager, Environmental Services
BJ Services Company, U.S.A.
11211 FM 2920
Tomball, TX 77375

RE: DISCHARGE PLAN FOR BJ SERVICES COMPANY, U.S.A. FACILITY – GW-072
SECTION 20, TOWNSHIP 18 SOUTH, RANGE 38 EAST
HOBBS, NEW MEXICIO

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (OCD) is returning Check No. 2808821 to BJ Services Company (BJ) because the check was made out to the wrong account. OCD will hold BJ's Discharge Plan until you resubmit the new check. Please make the check payable to *"New Mexico Environment Department – Water Quality Management Fund"* and send the check and any future correspondence to my attention.

If you have any questions, please call me at 505-476-3488.

Sincerely,

Glenn von Gonten
Senior Hydrologist

xc: Larry Johnson, OCD Hobbs District Office

GW072

VonGonten, Glenn, EMNRD

From: JCobb@bjservices.com
Sent: Wednesday, December 27, 2006 1:39 PM
To: VonGonten, Glenn, EMNRD
Cc: Joshua.Morrisette@bjservices.com
Subject: Re: Expired Discharge Permit (GW72) BJ Services - Hobbs Facility

Attachments: Renewal WQCC Notice Regs.pdf; Discharge Plan App Form.pdf; Guidelines For Discharge Plans.pdf; PN Flow Chart.20.6.2renewal.pdf

Renewal WQCC otice Regs.pdf (.\pp Form.pdf (5.Discharge Plans..t.20.6.2renewal.| PN Flow

Glenn,

I sent you an e-mail but I imagine it did not reach you since I now see that I had your name misspelled. We will get this to you as soon as possible.

Jo Ann Cobb
Manager, Environmental Services
Office: 281-357-2572; Mobile: 713-898-6635 e-mail jcobb@bjservices.com

"VonGonten, Glenn, EMNRD" <Glenn.VonGonten@state.nm.us>
12/27/2006 02:05 PM

To: <JCOBB@BJSERVICES.COM>
cc:
Subject: Expired Discharge Permit (GW72) BJ Services - Hobbs Facility

Dear Jo An Cobb:

Oil Conservation Division (OCD) records indicate that your discharge plan has expired. New Mexico Water Quality Control Commission regulations (WQCC) Section 3106.F (20.6.2.3106.F NMAC) specifies that if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. You may be operating without a permit. Please submit a permit renewal application with a filing fee (20.6.2.3114 NMAC) of $100.00 by January 5, 2007. Please make all checks payable to the Water Quality Management Fund and addressed to the OCD Santa Fe Office. There is also a discharge plan permit fee, based on the type of facility, which OCD will assess after processing your application. An application form and guidance document is attached in order to assist in expediting this process.

In accordance with the public notice requirements (Subsection A of

20.6.2.3108 NMAC) of the newly revised (July 2006) WQCC regulations, "…to be deemed administratively complete, an application shall provide all of the information required by Paragraphs (1) through (5) of Subsection F of
20.6.2.3108 NMAC and shall indicate, for department approval, the proposed locations and newspaper for providing notice required by Paragraphs (1) through (4) of Subsection B or Paragraph (2) of Subsection C of 20.6.2.3108 NMAC." You are required to provide the information specified above in your permit renewal application submittal. Attached are a flow chart and the regulatory language pertaining to the new WQCC public notice requirements for your convenience. After the application is deemed administratively complete, the revised public notice requirements of 20.6.2.3108 NMAC must be satisfactory demonstrated to OCD. OCD will provide public notice pursuant to the revised WQCC notice requirements of 20.6.2.3108 NMAC to determine if there is any public interest.

Please contact me by phone at 505-476-3488 or email glenn.vongonten@state.nm.us if you have any questions regarding this matter.

Glenn von Gonten
Senior Hydrologist

(See attached file: Renewal WQCC Notice Regs.pdf)(See attached file:
Discharge Plan App Form.pdf)(See attached file: Guidelines For Discharge Plans.pdf)(See attached file: PN Flow Chart.20.6.2renewal.pdf)

GW72

VonGonten, Glenn, EMNRD

From: VonGonten, Glenn, EMNRD
Sent: Wednesday, December 27, 2006 1:05 PM
To: 'JCOBB@BJSERVICES.COM'
Subject: Expired Discharge Permit (GW72) BJ Services - Hobbs Facility
Attachments: Renewal WQCC Notice Regs.pdf; Discharge Plan App Form.pdf; Guidelines For Discharge Plans.pdf; PN Flow Chart.20.6.2renewal.pdf

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Please contact me by phone at 505-476-3488 or email glenn.vongonten@state.nm.us if you have any questions regarding this matter.

Glenn von Gonten
Senior Hydrologist

12/27/2006

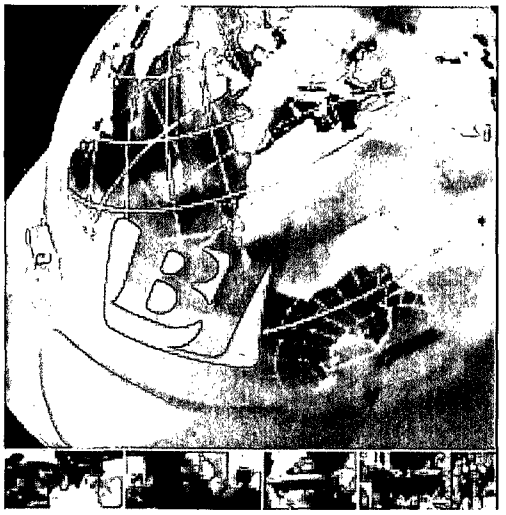
GW-072

Hobbs Discharge Plan

RECEIVED

FEB 07 2007

Oil Conservation Division
Environmental Bureau



BJ Services Company, USA

2708 West County Road

Hobbs, NM 88240

January ~~2006~~ 2007

Table of Contents

Appendices

Management Approval

Management has reviewed the following Discharge Plan for the Hobbs facility. This plan has been prepared in accordance with New Mexico Oil Conservation Divisions (NMOCD) discharge plan guidance and will be implemented immediately upon the following signature and peridocially updated as necessary.

District Manager

Signature

Michael Carter

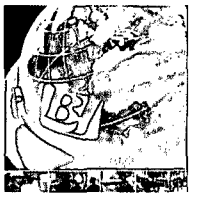
Name

Sr. District Manager

Title

2/6/07

Date



I. Type of Operation

BJ Services Company, U.S.A. provides oilfield services, including cementing, acidizing, and fracturing services at oil and gas well sites.

II. Operator

BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240
(505) 392-5556
Contact: Mike Carter – District Manager
Dale Thompson – Facility Supervisor

III. Location

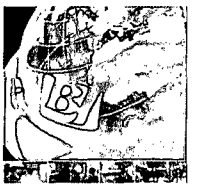
Northeast Quarter of Section 20
Township 18 South
Range 38 East
N.M.P.M.
Lea County, New Mexico

IV. Landowner of Facility Site

BJ Services Company, U.S.A.
11211 FM 2920
Houston, TX 77375
Contact: Jo Ann Cobb 281-357-2572

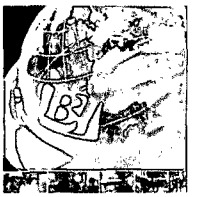
V. Facility Description

See Appendix A, Site Plans



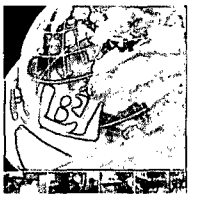
VI. Materials Stored or Used at the Facility

Material	General Makeup (includes additives)	Form	Type of Container	Estimated Volume Stored	Location
Drilling Fluids	Not Applicable (N/A)	N/A	N/A	N/A	N/A
Brines	N/A	N/A	N/A	N/A	N/A
Acids	Hydrochloric Acetic Anhydride	Liquid Liquid	Tank Tote	20,000 gallons 330 gallons	Acid dock Warehouse
Detergents	Detergent	Liquid	Fiberglass Tank	330 gallons	Yard next to Wash Bay
Solvents	Aliphatic Degreasing Solvent	Liquid	Drum	55 gallons	Shop
Paraffin Treatment, Emulsion Breakers, Surfactants	Various products serve these functions	Liquid	Drums	550 gallons	Warehouse
Biocides	Bactericide for treating water	Liquid	Jug	12.6 Gallons	Warehouse
Cement and Additives	Cement	Solid	Silos and Bags	850 tons	Cement Bulk Plant



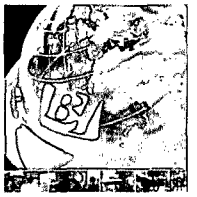
VII. Sources of Effluent and Waste Solids

Waste Type	Source and Composition	Volume per Month	Major Additives
Truck Wastes	Off-spec cement and cement or water not used on the job	Cement: 141 Tons Water: 2000 gallons	N/A
Washing Operations	Waste water from truck wash bay	20,000 gallons	Detergent
Steam Cleaning	N/A	N/A	N/A
Solvent Use	Degreasing solvent from cleaning truck parts in the shop	30 gallons	Grease, oil, Aliphatic Solvent
Spent Fluids	N/A	N/A	N/A
Waste Slop Oil	N/A	N/A	N/A
Waste Motor Oil	Shop	500 gallons	Oil
Oil Filters	Shop	5 drums	N/A
Solids and Sludge	Dirt from wash bay	200 gallons	Soil, oil
Painting Wastes	N/A	N/A	N/A
Other Waste Liquids	Lab waste	55 gallons	Oil, water, chemicals from testing from testing of fluids
Other Waste Solids	Tires Batteries Scrap Metal	10 5 1000 pounds	None



VIII. Current Liquid and Solid Waste Collection/Treatment/Disposal Procedures

Waste Type	On Site Handling	Disposal	Disposal Facilities
Truck Wastes	Cement is transferred to the reclaim silo	Offsite	Guichen Trucking 8416 White Water El Paso,Tx. 79907 915-731-1999 Cemex-Odessa Plant P.O.Box 1547 Odessa,Tx. 79760 1-800 927-4838
Washing Operations	Water flows into sumps/oil water separator then to the POTW	POTW	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 505-397-9315
Steam Cleaning of Parts	N/A	N/A	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 505-397-9315
Solvent/Degreaser Use	Drum	Recycled Offsite	Safety Kleen 10607 WCR 127th Midland, Texas 79711 915-563-2305
Spent Acids	N/A	N/A	Reclaim Tank Recycle BJ Services Yard Hobbs,New Mexico 88240
Waste Slop Oil	N/A	N/A	E&E Enterprises P.O.Box 683 Brownfield Tx. 79316 1-800 658-2137
Waste Lubrication and Motor Oils	Oil pans are emptied into a receptacle and then pumped from the receptacle to a tank outside the shop.	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Oil Filters	Stored in drums	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Sludge from Wash Bay Sumps	Collected in sumps on wash bay	Offsite Disposal at Landfill	Controlled Recovery,Inc. P.O.Box 388 Hobbs,New Mexico 88241 1-505-393-1079
Painting Waste	N/A	N/A	N/A
Sewage	POTW	POTW	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 1-505-397-9315
Other Waste Liquids: Lab Wastes	Drums	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137



VIII. Current Liquid and Solid Waste Collection/Treatment/Disposal Procedures (Continued)

Other Waste Solids: Tires Batteries Scrap Metal	 Bin	Tires taken by vendor Batteries taken by vendor Recycled Offsite	Forrest Tire Co. 1703 N. Turner Hobbs,New Mexico 88240 1-505-393-2186 Interstate Batteries 2400 West County Hobbs,New Mexico 88240 Hobbs Iron & Metal 920 S. Grimes Hobbs,New Mexico 88240 1-505-393-1726

IX. Proposed Modifications

There are no proposed modifications to the facility at this time.

X. Inspection and Maintenance

- See Appendix B, Permit Requirements
- See Appendix C, Base/District HSE Inspection Form
- See Appendix D, Inspection Checklist
- See Appendix E, Storm Water Best Management Practices
- All facility sumps are inspected on an annual basis using NMOCD approved methods.
- All underground lines are inspected every five years using NMOCD approved methods.
- Wastewater line discharging from the lift station to the City of Hobbs POTW will be inspected annually for a total of two years using NMOCD approved methods.

XI. Contingency Plan

See Appendix F, Facility Emergency Response and Contingency Plan

XII. Site Characteristics

Bodies of Water: None within 1 mile. Green Meadows Lake is the nearest body of water.

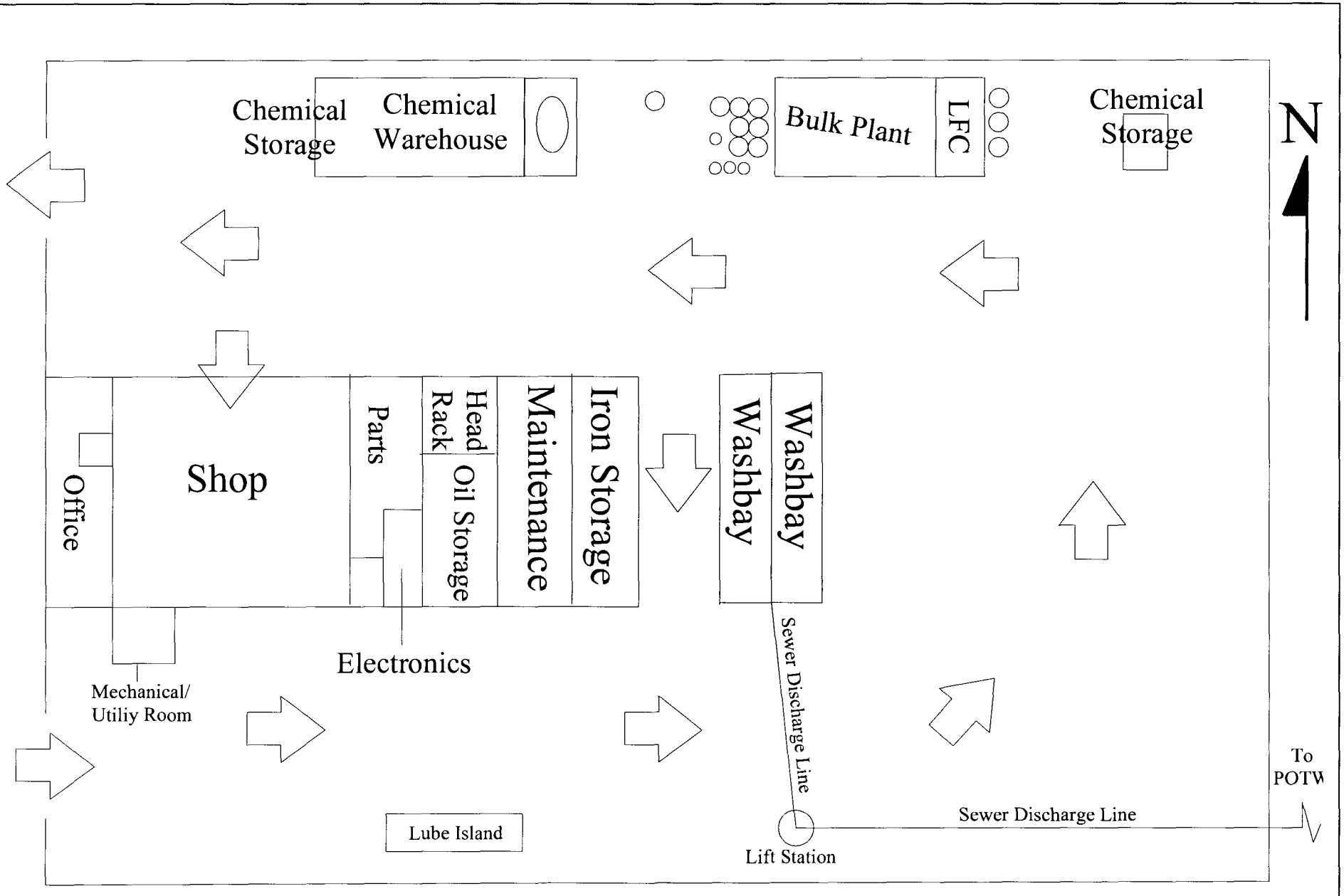
Arroyos: None

Groundwater Characteristics: Depth to: 52 feet (see boring log in Appendix G)

Flooding Potential: None

Appendix A

Site Plan



BJ Services Company, USA
11211 FM 2920
Tomball, Texas 77375

Figure 2: Facility Layout

Hobbs District **2708 West County Road** **Hobbs, NM 88240**	**Not To Scale**	**REVISION DATE:** **02/24/06**	**DRAWN BY** **JSG**

Appendix B

Permit

NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

October 25, 2001

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7423

Ms. Jo Ann Cobb
BJ Services Company
11211 FM 2920
Tomball, Texas 77375

Re: Renewal of Discharge Plan GW-072
Hobbs, NM Facility

Dear Ms.Cobb:

The groundwater discharge plan GW-072 for the BJ Services Company , Hobbs Facility, located in the NE/4, Section 20, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge plan application was submitted on June 18, 1991 and approved on October 02, 1991 with an expiration date of October 02, 1996. The discharge plan renewal application dated July 09, 2001 and subsequent submittal dated September 13, 2001, including attachments, submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals.

The discharge plan is renewed pursuant to Section 3109.C. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve BJ Services Company of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does it relieve BJ Services Company of its responsibility to comply with any other governmental authority's rules and regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., BJ Services Company is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire October 02, 2006** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 3106.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved.

The discharge plan application for the BJ Services Company , Hobbs Facility, is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of $100.00 plus a flat fee of $1700.00 for oilfield service companies. The OCD has not received the $1700.00 flat fee. The flat fee may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

Please make all checks payable to: Water Quality Management Fund
C/o: Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505.

If you have any questions, please contact Wayne Price of my staff at (505-476-3487). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/lwp
Attachment-1
Xc: OCD Hobbs Office

ATTACHMENT TO THE DISCHARGE PLAN GW-072 APPROVAL
BJ Services Company , Hobbs Facility
DISCHARGE PLAN APPROVAL CONDITIONS
October 25, 2001

1. Payment of Discharge Plan Fees: The $100.00 filing fee has been received by the OCD. There is a required flat fee of $1700.00 for oilfield service companies. The flat fee required for this facility may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan, with the first payment due upon receipt of this approval. The filing fee is payable at the time of application and is due upon receipt of this approval.

2. Commitments: BJ Services Company will abide by all commitments submitted in the discharge plan renewal application dated July 09, 2001 and subsequent submittal dated September 13, 2001, including attachments, and these conditions for approval.

3. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.

4. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

5. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.

6. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

7. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

8. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than December 15, 2001 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD by December 31 of each year.

9. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than December 15, 2001 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD by December 31, 2001.

10. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

11. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspections will be retained on site for a period of five years.

12. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. And WQCC 1203. to the OCD Hobbs District Office.

13. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

14. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.

15. Storm Water Plan: BJ Services Company shall submit a copy of the EPA Federal Stormwater Plan by December 31, 2001.

16. Vadose Zone and Water Pollution: The previously submitted investigation and remediation plans were submitted pursuant to the discharge plan and all future discoveries of contamination will be addressed through the discharge plan process.

17. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

18. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

19. Certification: **BJ Services Company** by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. **BJ Services Company** further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: **BJ Services Company**

ROGER SULLIVAN
Company Representative- print name

Roger Sullivan Date 12/20/01
Company Representative- Sign

Title DISTRICT MANAGER

Appendix C

Base/ District HSE Inspection Form

US Inspection - 2007
Base/District HSE Inspection Report

Region: Permian Basin
District/Base: Hobbs
Inspector: _____

Job Title of Inspector(s): _____

Date of Inspection: _____

Product Line : Pumping Services

Key
N/A - Not Applicable (Default Value)
0 - Needs Immediate Attention
1 - Needs Attention
2 - Meets Standards

Housekeeping Key
N/A - Note Applicable (Default Value)
0 - Needs Immediate Attention
1 - Poor
2 - Needs some attention
4 - Good - Meets Standards

SUMMARY - AREAS

HSE Management Standards
General Facility Conditions
Shop(s)
Locker Room(s) - Washroom(s) - Break Area(s)
Wash Bay
Laboratory
Mixing Tanks/LFC Mixing Area
Forklift
Cement Warehouse & Bulk Plant
Chemical Warehouse
Acid Storage
Head Rack / Iron Rebuild
Fuel Island
Water Tanks - Test Tanks - Water Supply
Radiation Storage Area
Vehicle
Environmental

QUESTIONS

HSE Management Standards

1	Managers and Supervisors demonstrate ability to navigate QHSE Standards and other HSE system databases
2	Managers and Supervisors are knowledgable of the QHSE Standards that apply to their area of responsibility (have read the standards)
3	HSE Plan for facility, region, or country in place per standard (QHSE Standard - Health & Safety 3.8)
4	All Trainers are competent (demonstrated by CAP participation, certifications, education, or Training Plan in place)
5	Field personnel oriented per standards prior to field assignment (QHSE Standard - Health & Safety 6.3 plus Region Req'd orientation)
6	Facility APT in place per standard (QHSE Standards - Health & Safety 5.2)
7	HSE Facility and Jobsite Inspections by region/district staff are current for previous quarter
8	Corrective actions from previous inspections (30 days and older) are closed out
9	Journey Management guidelines followed (QHSE Standard - Health & Safety Section 14._)

10	Quality of accident reports - complete, corrective action taken, and closed out

General Facility Conditions

1	Emergency plans for fire, injury or chemical spill (posted, current)
2	Fire extinguishers - (operable, inspected, proper location, proper type)
3	Personal protective equipment (used as required)
4	PPE available for visitors or vendors
5	Trained first aiders at facility (sufficient number, identified, posted)
6	Safety signs and notices (sufficient number, all hazards, current)
7	Safety bulletin board (current)
8	Entryway/gateway (signed, unobstructed)
9	Parking (sufficient, unobstructed, signed)
10	Road surfaces (safe, maintained)
11	Lighting (sufficient, working, assess both internal and external)
12	Heating and cooling system (radiators free/clear, system checked annually, adequate records)
13	Electrical panels and wiring (labeled, secure, maintained)
14	Landscape (presentable, maintained)
15	Safety signs for LTI free days (up to date, visible)
16	Notice to visitors and vendors (where to go, posted)
17	Speed limit signs (posted, visible, adhered to)
18	Security fence (sufficient, maintained)
19	Fixed stairs, ladders, walkways, handrails, gates and doors (maintained, clear, safe)
20	Material safety data sheets (accessible locally, current) Dispatch?
21	Containers (appropriate, stacked, labeled)
22	Pallets (adequate, maintained, safe)
23	Noise levels (signage, measured)
24	Flammable gas (caged, signed, segregated)
HK	Housekeeping (Rating 0,1,2,4)

Shop(s)

1	Hand tools (condition, noise, sufficient number, proper storage)

2	Grinding equipment (signs/visibility, tool rests, wheels inspected/maintained)
3	Welding and cutting equipment (stored properly, flash back arrestors, welding screens)
4	Cranes, hoists and jacks (capacity signed, periodic inspection, tested, records)
5	Lubrication area (clean, labeled, spill controls)
6	Parts storage (secure, labeled, clean, records)
7	Overhead storage area (posted for capacity, heavy items below, undamaged, secured to hazard points on floor)
8	Battery charging and storage area (separate, clean, ventilated)
9	Painting and paint storage area (contained, labeled, appropriate)
10	Cleaning agents and solvents area (storage, ventilated or enclosed, hazard signage, MSDS available)
11	Work benches (clean, tidy, vice condition)
12	Oily rag containers (enclosed, metal, labeled)
13	Lockout/tagout procedures (adhered, monitored, effective, understood)
14	Ladders (checked periodically and tagged, not painted)
15	Machine tools (pillar drill, lathe, etc.) (maintained, guarded, PPE available, signage, tested)
16	Used oil and filters being properly handled
17	Used anti-freeze being properly handled
18	Air compressors (belts guarded, auto start signage, PRV's checked annually/tagged)
19	Overhead doors (height marked, good working order)
20	Aerosols free of chlorinated hydrocarbons
HK	Housekeeping (Rating 0,1,2,4)

Locker Room(s) - Washroom(s) - Break Area(s)	
1	Ventilation (adequate)
2	Showers and sinks (adequate, clean, maintained)
3	Toilets (adequate, clean, maintained)
4	Lockers (sufficient size/number, accessible, lockable)
5	Drinking water (available)
6	Sufficient personal storage and changing space (clean, maintained, adequate)
7	Any required regulations/posters
HK	Housekeeping (Rating 0,1,2,4)

Wash Bay

1	Pressure Washer in separate room
2	Sumps clean & routinely maintained
3	Wash water contained on wash bay
4	Wash water and sump sludge properly managed
5	Wash wands in good condition
HK	Housekeeping (Rating 0,1,2,4)

Laboratory

1	Chemical containers (labeled, secure)
2	Local extraction ventilation (installed, operable, maintained, records)
3	Gas bottle storage (secured, external where possible, regulators checked, labeled)
4	Safety shower and eyewash (maintained, tested)
5	Samples stored and labeled properly
HK	Housekeeping (Rating 0,1,2,4)

Mixing Tanks/LFC Mixing Area

1	Condition of tanks
2	Products protected from weather
3	Hoses, pumps, piping in good condition
4	Diesel tank containment adequate and free of spills
5	Cranes & hoists adequate, inspected, labeled
HK	Housekeeping (Rating 0,1,2,4)

Forklift

1	Forks (condition, maintained, appropriate)
2	Pre-use check sheets (available, utilized)
3	Area FLT warning signage (visible)
4	Rated capacity shown on FLT

5	FLT Operators (trained, licensed, nominated)

Cement Warehouse & Bulk Plant

1	Gates, walkways, railings and ladders (maintained, clear, safe)
2	Climbing safety devices, harness (inspected, records, sufficient, available, utilized)
3	Dust collector (working properly, maintained, inspected)
4	Silo pressure relief valves (periodic inspection/ test /calibration, records)
5	Air compressors (belts guarded, auto start signage, PRV's checked annually/tagged)
6	Partial bags properly stored
HK	Housekeeping (Rating 0,1,2,4)

Chemical Warehouse

1	All chemicals (identified, labeled)
2	Dry chemicals stored properly
3	Safety shower and eyewash (maintained, tested)
4	Hoses, piping and valves (clear, operable, stowed appropriately)
5	Tanks vented to outside
6	Proper Handling of empty containers
7	Floors (flat, clean, impermeable)
8	Sump (empty, clean, isolated)
9	Racking (capacity signed, inspections)
10	Waste/surplus chemicals (routinely identified, correct storage, correct and regular disposal)
11	Proper stacking (drums and bag pallets no more than three [3] high)
12	Empty containers being removed frequently & properly
HK	Housekeeping (Rating 0,1,2,4)

Acid Storage

1	Gates, walkways, railings and ladders (maintained, clear, safe)
2	Pump, fittings, valves, piping and hoses (condition, maintained)
3	Tank contents identified and measured (type, capacity, labeled)

4	Scrubber (maintained, inspected)
5	Acid loading area clean and free of spills
6	Acid tank containment viable (walls and bottom)
7	UN specification buckets being used for hazardous material
8	Safety shower and eyewash (maintained, tested)
9	Spill kit (shovel, neutralizer)
10	Bulk tanks in good condition
11	Chemical additive system (present, working, maintained)
12	Reclaim tank installed & working properly if required
HK	Housekeeping (Rating 0,1,2,4)

Head Rack / Iron Rebuild

1	Heads, manifolds, swages stored safely
2	Thread protectors
3	Baker vise or better
4	Hoist Adequate
5	Lifting chains safe
6	Adequate pipe wrenches
HK	Housekeeping (Rating 0,1,2,4)

Fuel Island

1	Pumps (barriered off)
2	Fuel storage (barriered off)
3	Hoses and pumps (condition, clean, proper type, date, stowed appropriately)
4	Waste container (metal, lidded, labeled)
5	Fuel and oil tanks in secondary containment and free of spills
6	Fuel island area clean and free of spills
7	Fuel and oil tanks properly labeled
HK	Housekeeping (Rating 0,1,2,4)

Water Tanks - Test Tanks - Water Supply

1	Condition of tanks, hoses, valves and connections
2	Test tank area free of spill & discharges

Radiation Storage Area

1	Current copy of RA licenses on display
2	Copy of RA "Notice to Employees" on display
3	BJ Services Radiation Protection Manual available
4	Country/State NRC regulations available
5	Storage area locked
6	Are sources properly labeled ?
7	Utilization log available and current
8	Bill of Lading being used
HK	Housekeeping (Rating 0,1,2,4)

Vehicle

1	Seat Belt Operational
2	Seat Condition
3	Loose Objects in Cab
4	Loads Secure
5	Deck Equipment Secure
6	Vehicle Coupling Device
7	Air Hoses and Connections
8	Ladders
9	Fire Extingusher (UL Rating of 10B:C or more)
10	First Aid Kit
11	Cab Glass
12	Wipers
13	Placard Holders
14	Mirrors

15	Lights and Reflectors
16	Break / Engine / Washer Fluid Levels
17	Tyres and Rims Condition
18	Tool Box
19	Spillage control Materials and Equipment
20	All documents current
21	Annual inspection current

Additional Information Required
Please enter unit numbers of the vehicles inspected :

Environmental

1	Environmental recordkeeping systems established
2	Permits & registrations available & current when applicable
3	Waste records maintained (Bill of lading, manifests)
4	Waste disposed of by certified or Company approved vendor
5	Environmental plans current (storm water, spill prevention, emergency response)
6	Proper storage of waste mateials (segerated and labeled)
7	Spill control material (available, appropriate, utilized)
8	Surface-water/storm-water drains & discharge points free of oil, debris, etc
9	No open containers outside collecting water
10	Yard free of leaks and spills
11	Trash containers closed - Lids viable
12	Containers present to contain leaking drums, fluids or clean up materials
13	All fuel, oil and diesel tanks in good condition
14	All fuel and oil tanks have adequate containment and free of spills

CORRECTIVE ACTION RESPONSIBILITY

Corrective Actions Assigned to: _____ **Due Date for Completion:** _____

Corrective Action Status: _____

SIGNATURE SECTION

If you are the relevant District/Facility Manager, Region/Country/Area Manager, District/ HSE Officer or Other Relevant Manager you should sign the report when you have read it. To add your signature to the appropriate section, click the **Edit** button (to enter Edit mode), then click on the **Review and Sign Off** button. This will add your name and the current date to the Accident Report in the relevant section below.

Reviewed and Signed Off by the Following:-

District Safety/Training Supervisor _____

District Manager _____

Region Safety/Training Manager _____

Region Manager _____

Facility / Service Supervisor _____

Other Relevant Personnel _____

Appendix D

Inspection Checklist

Discharge Plan Inspection Record
BJ Services Company, USA
Artesia, New Mexico

Note: Record the date in each column that the maintenance or inspection was performed and intial the entry.

Year	Required Inspections	
	Sump Inspection	Underground Process Lines
2007		
2008		
2009		
2010		
2011		
2012		
2013		
2014		
2015		
2016		

Appendix E

Storm Water Best Management Practices

STORM WATER BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) must be implemented in the areas identified in below to ensure that storm water runoff is not impacted when it is discharged from the facility. The following table outlines all of the BMPs that are in-place and being implemented at the facility.

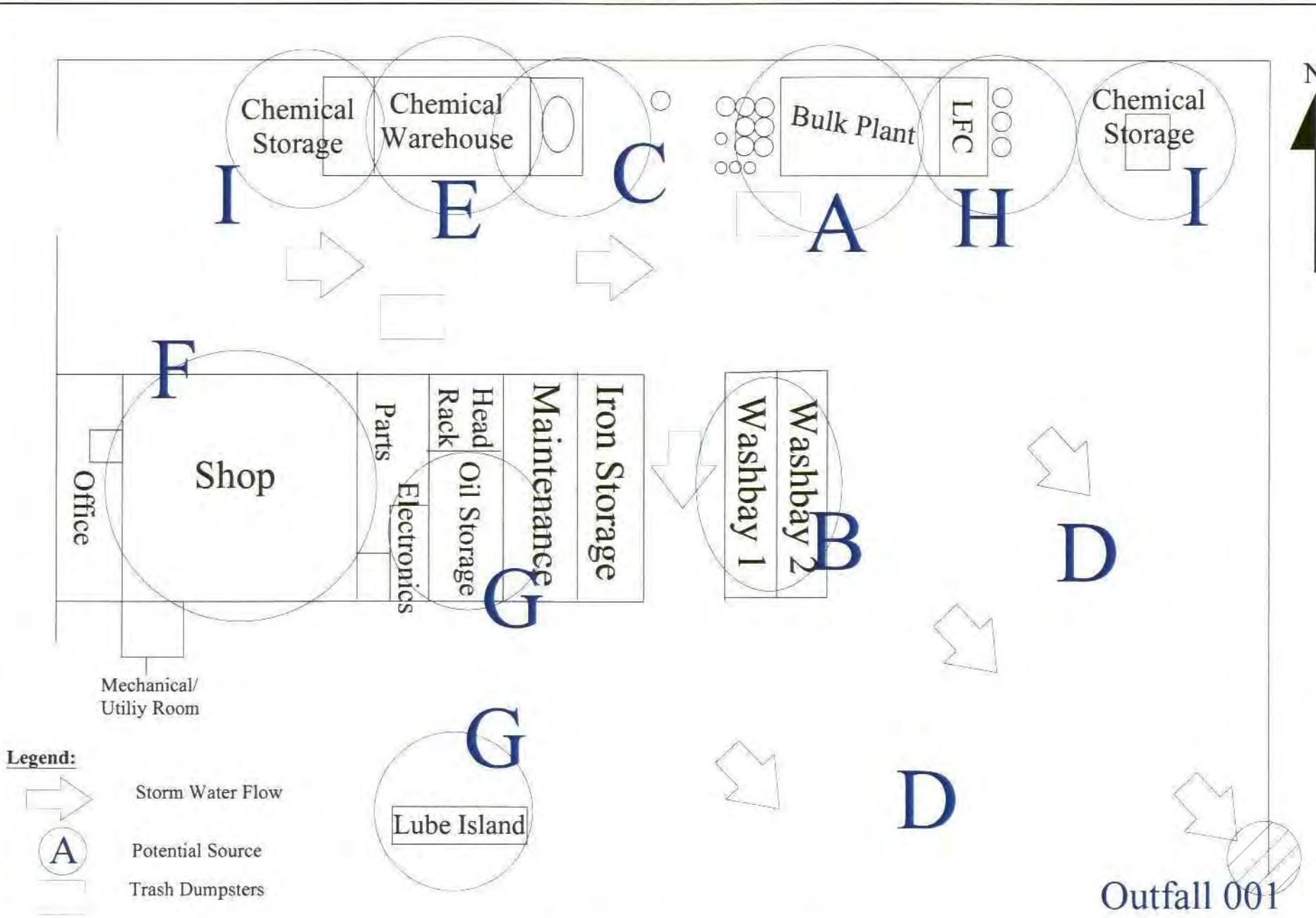
Location/Area	BMPs and Description
Bulk Plant / Area A	*Structural* ▪ Dust Control – The bulk plant is a completely enclosed pneumatic system. A dust collector is in place and maintained to control dust emissions from the system (see permit). *Non-Structural* ▪ Spill Clean-up – Spills of dry material will be swept up immediately and either reused or disposed of properly. ▪ Good Housekeeping – The bulk plant area will be kept clean and orderly. ▪ Inspection – The bulk plant is inspected regularly during facility reviews. Any visible dust emissions will be corrected immediately.
Wash Bay 1 / Area B	*Structural* ▪ Sump - The wash bay is sloped towards an in-ground sump that collects all wastewater. ▪ Curbs - A surrounding curb prevents water from escaping the wash bay and impacting storm water. ▪ Covered Wash rack – The wash bay is covered by a permanent roof structure. This greatly minimizes the potential for impacting storm water runoff. ▪ Walls – The washbay is a completely enclosed building to prevent any potential impact of wash waters to storm water. *Non-Structural* ▪ Overspray Control – Overspray of washwater will be minimized by the washbay operator. Operators will be sufficiently trained to prevent overspray from leaving the confines of the washbay. ▪ Good Housekeeping – The washbay area will be kept clean and orderly. ▪ Inspections – The washbay is inspected regularly during facility reviews. Any overspray or evidence of washwater releases from the washbay area will be corrected immediately.

Table 4 Continued – BMP Identification

Washbay 2 / Area B	*Structural* ▪ Sump - The wash bay is sloped towards an in-ground sump that collects all wastewater. ▪ Curbs - A surrounding curb prevents water from escaping the wash bay and impacting storm water. *Non-Structural* ▪ Overspray Control – Overspray of washwater will be minimized by the washbay operator. Operators will be sufficiently trained to prevent overspray from leaving the confines of the washbay. ▪ Good Housekeeping – The washbay area will be kept clean and orderly. ▪ Inspections – The washbay is inspected regularly during facility reviews. Any overspray or evidence of washwater releases from the washbay area will be corrected immediately.
Acid and Liquid Chemical Storage Area / Area C	*Structural* ▪ Secondary Containment – The acid tank is contained in an impervious concrete containment area. If a release did occur from this tank, the berm will provide sufficient containment. ▪ Loading area – There is a concrete catch basin directly below the acid/chemical loading area. If chemicals are released during loading, all fluids will enter this catch basin. ▪ Containment Berm – The liquid chemical storage area is surrounded by a containment berm that will prevent any spills or leaks from leaving the area and impacting storm water. *Non-Structural* ▪ Good Housekeeping – The acid storage area will be kept clean and orderly. ▪ Inspections – The acid tank, associated piping, secondary containment, loading area, and drum storage area are all inspected regularly during facility reviews. Any problems with this equipment will be corrected immediately. ▪ Drum Storage – Drums are stored on racks to allow easy inspection of the surface below the drum for any leaks. Drums are stored on an impervious surface.

Truck/Equipment Parking/ Storage Area / Area D	*Non-Structural* ▪ Area Maintenance – The soil and/or pavement in this area will be spot treated as necessary to address any leaks from equipment. ▪ Preventative Maintenance – The facility has a preventative maintenance program in place to keep equipment in good working order. This program will help keep equipment from leaking. ▪ Absorbent material – Employees will place absorbent pads or catchment pans under equipment that leak. The leak should be reported to the Maintenance Supervisor. ▪ Absorbent material - Absorbent socks will be placed inside the fence at the facilities two discharge points to prevent oil from leaving the property if the district deems it necessary. ▪ Good Housekeeping – The truck parking area will be kept clean and orderly. ▪ Inspections – This area is regularly inspected during facility reviews. Any areas, which need attention, will receive it immediately.
Chemical Warehouse / Area E	*Structural* ▪ Covered Building – The chemical warehouse is a covered building which greatly minimizes any products exposure to storm water. *Non-Structural* ▪ Spill Clean-up – Spills inside and outside the building will be cleaned-up immediately to prevent the spill from migrating out of the building and impacting storm water runoff. ▪ Good Housekeeping – The chemical warehouse area will be kept clean and orderly. ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified will be addressed immediately.
Maintenance Shop / Area F	*Structural* ▪ Covered Building – The maintenance shop is a covered building which greatly minimizes any exposure to storm water. ▪ Sump System – contains leaks, spills, or wash down fluids. *Non-Structural* ▪ Spill Clean-up – Spills inside and outside the shop will be cleaned-up immediately to prevent the spill from migrating out of the shop and impacting storm water runoff. ▪ Good Housekeeping – The maintenance shop will be kept clean and orderly. ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified will be addressed immediately.
Lubrication Oils Storage Area / Area G	*Structural* ▪ Secondary Containment - All lube oil storage tanks have secondary containment sufficient to contain a catastrophic failure of the largest tank plus adequate freeboard for precipitation. ▪ Cover – Lube oils are stored within a completely enclosed building which greatly minimizes impact to storm water.

	Non-Structural ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The lubrication oils storage area will be kept clean and orderly. ▪ Inspection – The lubrication oils storage area is inspected regularly during facility reviews. Any spills or other problems identified will be addressed immediately.
LFC Blending Area / Area H	*Structural* ▪ Secondary Containment - Diesel tank is placed in a secondary containment sufficient to contain a catastrophic failure plus adequate freeboard for precipitation. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The LFC blending area will be kept clean and orderly. ▪ Inspection – The LFC blending area is inspected regularly during facility reviews. Any spills or other problems identified will be addressed immediately.
Outdoor Storage Area / Area I	*Structural* ▪ Secondary Containment – Chemicals are placed within a secondary containment sufficient to contain a catastrophic failure plus adequate freeboard for precipitation. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The chemical storage area will be kept clean and orderly. ▪ Inspection – The chemical storage area is inspected regularly during facility reviews. Any spills or other problems identified will be addressed immediately.
Trash Dumpsters / See Figure 3	*Structural* ▪ Lids – Trash dumpsters must remain closed when not in use. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The trash dumpster area will be kept clean and orderly. ▪ Inspection – The Trash Dumpster area is inspected regularly during facility reviews. Any corrective actions will be addressed immediately.



BJ Services Company, USA 11211 FM 2920 Tomball, Texas 77375	**Facility Layout and Drainage Plan**			
	Hobbs District **2708 West County Road** **Hobbs, NM 88240**	**Not To Scale**	**REVISION DATE:** **12/09/04**	**DRAWN BY** **JSG**

Appendix F

Facility Emergency Response Contingency Plan

BJ SERVICES

Facility Emergency Response Contingency Plan

FACILITY EMERGENCY RESPONSE CONTINGENCY PLAN

BJ SERVICES COMPANY, U.S.A.
2708 NORTH WEST COUNTY ROAD
HOBBS, NEW MEXICO 88240
(505) 392-5556

August 19, 2002

EMERGENCY RESPONSE CONTINGENCY

DESCRIPTION OF FACILITY

BJ Services Company is an oil and gas well cementing and treatment service company using various chemicals for specific stimulation and cementing applications.

Our Hobbs, New Mexico facility is the primary location for servicing contract activities. Like most of our other locations, the Hobbs station is expected to maintain on its premises various quantities of chemicals stored in 55 gallon drums, a bulk cement plant, and a bulk hydrochloric acid tank.

The general types of hazardous materials which could be stored at this facility are cationic, anionic, and non-ionic surfactants which are dissolved in one or more of the following fluids: water, metanol, isopropyl alcohol, glycols, xylene, and aromatic or mineral spirits. Wastes would be generated by products not meeting BJ Services specified quality parameters or by contaminated products. These materials would then have the following EPA hazardous waste codes:

(D001) general ignitable wastes with flash points below 140 degrees F

(D002) general corrosive wastes with a ph below 2 or above 12.5

EPA IDENTIFICATION NUMBER: NMD 052377637

This number provides access to stored information pertaining to this operation and should be utilized in any correspondence with the United States Environmental Protection Agency.

EMERGENCY RESPONSE CONTINGENCY

MUTUAL AID AGREEMENT

BJ Services Company will assist the surrounding businesses and communities in an emergency condition with the aid of personnel and equipment whenever possible. Due to our policy on IDHL situations, we will not allow our personnel or equipment to be placed at risk below a level 3 P.P.E. condition.

FIRE FIGHTING EQUIPMENT

Dry chemical charged extinguishers, 2.5#, 5#, 10#, and 25# are located at several strategic stations throughout the facility. Each stationary fire extinguisher station is visibly marked with proper placarding. Each company vehicle is also equipped with a portable fire extinguisher. A 1.5" water line is located inside the dry chemical warehouse.

Various pumping units could be rigged up to pump high volumes of water to inside an/or outside fires.

CHEMICAL SPILL STATIONS

Chemical spill stations are located in the warehouse and on the acid dock. Equipment at each station is one shovel, soda ash, buckets, all purpose absorbent, chemical goggles, a respirator and a rubber apron and gloves.

TRAINING OF EMPLOYEES IN CONTAINMENT AND FIGHTING OF FIRES AND CHEMICAL SPILL

In the event of a chemical spill, all employees are trained in the procedures of notification and methods of cleanup. New employees are trained in all hazards related to our chemicals including fire, health, reactivity, and any special hazards as indicated by product labels and MSDS information. All employees are updated during regular safety meetings regarding current procedures on fire fighting, chemical spills and evacuation plans. Each employee is alerted to any special conditions at the well site during a mandatory pre-job safety meeting. Fire drills and emergency procedures are performed at the facility on a continuing basis. Safety is stressed at all times and is the most paramount consideration during any task performed by our employees. All employees are issued a complete set of personal safety equipment. This equipment is each employee's personal responsibility and is to be readily accessible at all times.

EMERGENCY RESPONSE CONTINGENCY

EVACUATION PLAN

In the event it is determined that evacuation is necessary, employees will be notified by the public address system. Escape routes taken will be determined by wind speed and direction, weather conditions, type of condition that created the emergency, and the location of employees. The buddy system will be used during evacuation as employees go to a designated safe area and a head count will be taken immediately.

The level of emergency response outside of the facility will be determined by the quantity of spillage, size of fire, wind direction, weather conditions, and the evaluation of the safest methods of response; i.e., leave immediate area, stay in buildings and close all doors and windows, etc. Roads will be closed in accordance with the level of the emergency.

Special areas of concern are:

1) Weatherford northeast of yard
2) House northwest of yard across W. County Road
3) Pipe storage yard across W. County Road

All individuals in these areas would be notified by phone, public address system, or in person.

Notification information will include:

1) The type of emergency situation that exists
2) Procedures to follow
3) Routes to be taken
4) Proper medical attention to be sought if needed
5) An all clear will be issued when the hazard has been contained and it is safe to return

EMERGENCY RESPONSE CONTINGENCY

CONTIGENCY PLANS AND EMERGENCY PROCEDURES

The purpose of the following is to set forth contingency plans which will minimize hazards to human health and the environment in the event of fires, explosion, or uncontrolled release of hazardous chemicals. Should any of these events occur at this facility the emergency coordinator will take action as described in the following sections:

The Emergency Coordinator

A. Designation of Emergency Coordinator

1. The principal emergency coordinator of the facility is:

   Mike Carter — Office: 505-392-5556
   2708 NW County Rd — Mobile: 505-631-1370
   Hobbs NM 88240

2. The alternate emergency coordinators are:

   Greg Badgett — Office: 505-392-5556
   2708 NW County Rd — Mobile: 505-441-5705
   Hobbs NM 88240

   Troy Harris — Office: 505-392-5556
   2708 NW County Rd — Mobile: 505-390-8084
   Hobbs NM 88240

3. During non-working hours, the police or fire department will notify one or all designated coordinators if an emergency should occur.

B. Responsibility of the Emergency Coordinator

1. The emergency coordinator or his designee muxt activate the alarm system and notify employees of the imminent or actual emergency.

EMERGENCY RESPONSE CONTINGENCY

2. In the event of an actual emergency, the coordinator or his designee will notify the appropriate local, state, and federal authorities as required:

a) Hobbs Fire Department
Local Emergency 911

b) Hobbs Police Department
Local Emergency 911

c) Ambulance Service 911

d) Carelink Helicopter
1-800-743-4444
1-800-456-5465

e) Flight for Life
1-806-796-6575

f) Emergency Medical and Poison Center
Galveston 1-409-765-1420
National Hot Line 1-800-541-5624
Spokane Washington

g) EPA Hazardous Substance Spill
National Response Center
HOT LINE 1-800-424-8802
Information 1-800-424-9346

h) Chemtrec (Chemical Transportation)
Emergency Center) 1-800-424-9300

i) National Weather Service Information
1-817-334-3401

j) JoAnn Cobb 1-281-351-8131
BJ Services Co.
Manager-Field Safety
Tomball, Tx 77375

3. The emergency coordinator will also determine the extent of the danger

   a) he should note the exact locations of the dangerous areas

   b) he should note whether fire or threat of fire is involved

   c) he should note any injuries requiring medical attention

   d) he should attempt to identify the types of hazardous chemical involved and most appropriate equipment needed to contain the incident

   e) he should determine which, if any, local agencies should be summoned

   f) he should order the evacuation of the employees if necessary

   g) he should direct the activities of the emergency response team

4. In the event of fire, the emergency coordinator will immediately call the fire department, and upon their arrival, have the emergency team cease their control efforts.

2) Emergency Procedures

A. In the event of fire, the emergency coordinator or his alternate must be notified immediately.

   1. An attempt should be made to extinguish the fire with on-site fire fighting equipment.

   2. The Hobbs Fire Department will assume control of the situation upon arrival at the scene.

B. In the event of an explosion, the emergency coordinator or his alternate must be notified immediately.

1. An attempt should be made by facility personnel to prevent or minimize any recurring explosions by re-positioning hazardous chemical drums away from the hazard area if this can be accomplished safely.

2. Medical help should be requested immediately.

C. In the event of a sudden or non-sudden release of hazardous chemical, the emergency coordinator or his alternate shall be notfied immediately.

1. Efforts should commence immediately to contain the spill with appropriate dike and/or absorbent material. Acid wastes will be neutralized with soda ash prior to adding absorbent.

2. Sources of heat, sparks, and flames should immediately be removed to prevent fires or explosions.

3. If a non-sudden release of hazardous chemical is discovered, the source of this leak should be found and appropriate action taken to stop the leak.

3) Notification Procedures

A. If, in the opinion of the emergency coordinator or his alternates, a possibility of harm to human health or the environment could result from an incident of fire, explosion or release of hazardous chemical shall require the immediate notification of the local fire police, ambulance and/or hospital services

1. The caller to the agencies will furnish the following:

a. Name and telephone number of the caller

b. Name and address of the warehouse

c. Time and nature of the emergency

d. Type and quantity of material involved (to the extent known)

e. Extent of any injuries

f. Possible health and/or environmental hazards outside the warehouse facility

C. Any incident which is large enough to involve property or possessions of a third part will require the notification of all applicable agencies listed in Section 1-B,

Responsibilities of the Emergency Coordinator

1. The caller to these agencies will furnish the following:

a. Name and telephone number of the caller

b. Name and address of the warehouse

c. Time and nature of the emergency

d. Type and quantity of material involved (to the extent known)

e. Extent of any injuries

f. Possible health and/or environmental hazards outside the warehouse facility

4. Clean-up and Post Emergency Procedures

A. Small scale incidents will be cleaned up with absorbent material and picked up with non-sparking shovels and other equipment and placed in a competent drum, sealed and disposed of properly.

B. Larger scale incidents will be diked to prevent run-off of fire fighting water and/or spilled hazardous chemical as feasible.

EMERGENCY RESPONSE CONTINGENCY

1. Vacuum trucks will be used to take away as much of the liquid as possible and then absorbent material will be used to finish removing the liquid remaining.

2. The absorbed hazardous chemical will then be placed in sealable drums using equipment suitable to the size and amount of material needed to be removed.

3. All hazardous chemicals collected in vacuum trucks will be reclaimed immediately after the emergency.

4. All reclaimed hazardous chemicals collected on absorbent material and sealed in drums will be disposed in an appropriate disposal site as soon as normal working procedures permit.

C. After the emergency is over, the emergency coordinator will make sure that in all the affected areas of the warehouse and all the emergency equipment is cleaned, replenished

D. If the severity of the incident requires an investigation by the O.C.D., the emergency coordinator should make an effort to accumulate the following information as outlined in the Hazardous Substances Spill Contingency Plan:

1. Date and time of the spill

2. The type of material spilled

3. Quantity of material spilled

4. The exact location of the spill, including the name of the waters involved or threatened

5. The source of the spill

6. Party responsible for the spill (name, address, phone number, permit number)

7. The extent of actual and potential water pollution

8. The party at the spill site who is in charge of operations at the site and the telephone number of this party

9. The steps being taken or proposed to contain and clean up the spilled material

10. The extent of injuries, if any

11. Possible hazards to human health, and the environment (air, soil, water, wildlife, etc.)

PROCEDURE GUIDELINES FOR INCIDENTS NOT COVERED BY THIS PLAN

If an incident should occur that is not specifically discussed in this plan, the Emergency Coordinator shall use as a guideline the following publication:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONVERSATION DIVISION

A copy of the BJ Services Company contingency plan shall be located in the dispatch area immediately alongside the master copy of the facility Master MSDS chemical listing.

EMERGENCY RESPONSE CONTINGENCY

RISK ANALYSIS
WORST CASE INCIDENT/MOST PROBABLE INCIDENT

AMMONIUM BIFLUORIDE

1. Worst Case Incident:
Fire inside of building, water used to fight fire. Water mixed with ABF produces hydrofluoric acid. Fumes from hydrofluoric acid inside confined area could exceed threshold limits for life without SCBA.

   A. Probability of hazard occurrence: Low-- product is kept away from flammable products. Fire in compound will be fought with dry chemical, nitrogen, or foam. Good security arrangement that would deter tampering or accident resulting from civil uprising

   B. Consequences if people are exposed: TLV-2.5 mg/m3 as fluoride. Acute irritation & chemical burns over exposed area of body. If fumes are above lethal concentrations, they would create an IDLH situation.

   C. Consequences for property: Possible superficial damage to facility equipment and structure from corrosive fumes (repairable).

   D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

   E. Probability of simultaneous emergencies: Low

   F. Unusual environmental conditions: None-- Area is not subject to flooding. No other contributing factor.

2. Most Probable Incident:

Damage to container (sack) spilling some or all of product into environment. Product is kept in 50# sacks. Amount of spill would probably be less than reportable quantity.

   A. Probability of hazard occurrence: Medium-- reinforced sack could be ripped or a spill could occur during loading.

B. Consequences if people are exposed: Irritation and chemical burns over exposed area of body. Extremely low respiratory irritation.

C. Consequences for property: None -- cleanup procedures would eliminate any product.

D. Consequences of environmental exposure: None-- cleanup procedures would eliminate contamination from the product.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None. Area is not subject to flooding, No other contributing factor.

ACETIC ANHYDRIDE

1. Worst Case Incident:
Rupture of drum. Product mixes with alkalies, oxidizing material, or strong mineral acids creating gas and heat.

A. Probability of hazard occurrence: Low-- product is stored away from all alkalies, oxidizing materials, and mineral acids. Good security arrangement that would deter tampering or accident resulting from civil uprising.

B. Consequences if people are exposed: IDLH situation until gas cloud and heat dissipate. High humidity and low wind would prolong hazardous conditions. Acute immediate effect to respiratory system. Severe damage and blindness if acetic anhydride residue enters eyes. Thermal decomposition may produce carbon monoxide and/or carbon dioxide.

C. Consequences for property: May produce superficial damage to facility, equipment, and structure from heat (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None. Area is not subject to flooding. No other contributing factors.

2. Most Probable Incident:

Rupture or spillage of 55 gallon drum into environment. Product does not mix with alkalies, oxidizing materials, or mineral acids. Amount of spill would probably be less than reportable quantity.

A. Probability of hazard occurrence: Low/Medium-- Highest risk would be human error, lowest risk would be rupture of drum.

B. Consequences if people are exposed: Eyes-- Severe damage and blindness rapidly; Skin-- Causes burns; Breathing mist causes damage to mucous membranes and deep tissue damage; if swallowed, severe damage to mucous membranes and deep tissue.

C. Consequences for property: May produce minor superficial damage to facility, equipment and structure (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

CAUSTIC SODA

1. Worst Case Incident:

Rupture of drum, product mixes with strong acid causing violent reaction. Product is an inorganic compound which is highly alkaline in nature. It is very reactive and can generate tremendous amounts of heat during such reactions.

EMERGENCY RESPONSE CONTINGENCY

A. Probability of hazard occurrence: Low-- product is kept in enclosed shed away from all other chemicals. Drum is made of an extremely heavy plastic. Probability of more than one drum rupturing at any time is highly unlikely.

B. Consequences if people are exposed: IDLH situation until gas cloud and heat dissipate. High humidity and low wind would prolong hazardous condition. Acute immediate effect to respiratory system, destructive to all human tissue giving severe burns, eye contact will produce severe or permanent injury.

C. Consequences for property: May product superficial damage to facility, equipment, and structure from heat (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is subject to flooding, not other contributing factors.

2. Most Probable Incident:

Rupture or spillage of 55 gallon drum into environment. Product does not mix with any strong acid. Amount of spill would be less than reportable quantity.

A. Probability of hazard occurrence: Low/Medium-- highest risk would be human error; lowest risk would be rupture of drum.

B. Consequences if people are exposed: TLC-Sodium Hydroxide-2 mg/m3 (dust). Destructive to all human tissue giving severe burns. Eye contact will produce severe or permanent injury. Inhalation of mist or spray can injure respiratory tract.

C. Consequences for property: May produce superficial damage to facility, equipment, and structure from corrosion (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

HYDROCHLORIC ACID

1. Worst Case Incident:

Rupture of tank spilling contents into containment dike, releasing hydrochloric fumes into atmosphere.

A. Probability of hazard occurrence: Low/Medium Tank is lined and inspected daily, maintenance is performed as needed. Most likely cause of rupture to tank would be due to severe weather (lightning strike or tornado).

B. Consequences if people are exposed: TLV-5PPM- acute irritation, choking, damage to tissue, chronic severe tissue damage. Probable IDLH.

C. Consequences for property: Highly corrosive to many materials, will be contained in containment dikes. Damage repairable.

D. Consequences of environmental exposure: Probable damage to fauna and flora by hydrochloric fumes (replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

2. Most Probable Incident:

Spillage during loading or unloading. Amount of spill would be below reportable quantity.

A. Probability of hazard occurrence: Medium/Low-- loading or unloading line could rupture, releasing product until valve is closed.

B. Consequences if people are exposed: Irritation, choking, damage to tissue.

C. Consequences for property: Product is easily neutralized with soda ash and will not harm property if taken care of quickly.

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora. (Replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

H.A.S. (XYLENE)

1. Worst Case Incident:

Fire by various causes, reaction with oxidizing agent producing CO2, SO2 gas, rupture of drum spilling contents into environment.

A. Probability of hazard occurrence: Medium-- highest risk would be fire by various causes; next highest risk would be rupture of drum spilling contents. Lowest risk would be reaction with oxidizing agent (no oxidizing agent is kept near product).

B. Consequences if people are exposed: Product TVL 500 mg/m3- minimum damage except if ingested, high risk of burns from fire, possible IDLH situation if exposed to oxidizer.

C. Consequences for property: Fire damage to immediate area, soil contamination.

D. Consequences of environmental exposure: Contamination of soil. Damage to flora and fauna (replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None- area is not subject to flooding, no other contributing factors.

2. Most Probable Incident:

Fire by various causes.
All other areas are covered by worst case incident.

Appendix G

Boring Log

BROWN AND CALDWELL

BORING LOG

Project Name: BI. SERVICES - SYSTEM INSTALLATION Project Number: 2832.31

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: AV-5 Sheet 1 of 1

Boring Location: Hobbs, NM FACILITY		Elevation and Datum:	
Drilling Contractor: GPI	Driller: JOSE'	Date Started: 8/5/95	Date Finished: 8/5/95
Drilling Equipment: CME '75	Borehole Diameter: "6"	Completed Depth: (feet) 61.8'	Water Depth: (feet) 52.0'
Sampling Method: SPLIT SPOON		WELL CONSTRUCTION	
Drilling Method: HOLLOW STEM	Drilling Fluid: H_2O	Type and Diameter of Well Casing: 1" & 2" SCH 40 PVC	
Backfill Material: GROUT 2-6'		Slot Size: .010	Filter Material: 10-20
Logged By:	Checked By:	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Recovery %	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Backfill	Readings OVA PPM	Remarks	Elevation (feet)
0		CONCRETE / SURFACE GRAVEL								1" WELL COMPLETION	
		BRN SAND/CLAY (CL) MOIST, FIRM w/ gravel							67.8	SCREEN = 56.8 - 61.8 (5')	
		SILTY GRAVEL (GM) - CALICHE dry, hard w/ sand							141.5	SAND = 53.0 - 61.8'	
		- INC. in SAND @ 60.0'								BENT = 51.0 - 53.0'	
20		SILTY SAND (SM) w/ gravel med to fine grain								2" WELL COMPLETION	
		SAND / GRAVEL (SP) med., dry w/ silt.								SCREEN = 10-30'	
30		SANDSTONE, CONSOLIDATED MEDIUM								SAND = 8-30'	
		SILTY SAND (SM) dry med to fine grain w/ gravel								BENT = 6-8'	
40										37'-38' SS SEAM	
										42-43' SS SEAM	
50		FINE SAND (SP) dense, SATURATED								GW @ 52.0'	
60		TD = 61.8'								TD = 61.8'	
5											

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

March 7, 2006

Ms. Jo Ann Cobb
Manager, Environmental Services
BJ Services Company, U.S.A.
11211 FM 2920
Tomball, TX 77375

RE: DISCHARGE PLAN FOR BJ SERVICES COMPANY, U.S.A. FACILITY – GW-072
SECTION 20, TOWNSHIP 18 SOUTH, RANGE 38 EAST
HOBBS, NEW MEXICIO

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (OCD) is returning Check No. 2808821 to BJ Services Company (BJ) because the check was made out to the wrong account. OCD will hold BJ's Discharge Plan until you resubmit the new check. Please make the check payable to *"New Mexico Environment Department – Water Quality Management Fund"* and send the check and any future correspondence to my attention.

If you have any questions, please call me at 505-476-3488.

Sincerely,

Glenn von Gonten
Senior Hydrologist

xc: Larry Johnson, OCD Hobbs District Office

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

2006 APR 17 PM 12 47

March 7, 2006

4/19/2006 → LAWRENCE

Ms. Jo Ann Cobb
Manager, Environmental Services
BJ Services Company, U.S.A.
11211 FM 2920
Tomball, TX 77375

RE: DISCHARGE PLAN FOR BJ SERVICES COMPANY, U.S.A. FACILITY – GW-072
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If you have any questions, please call me at 505-476-3488.

PERMIT RENEWAL
RAILS

Sincerely,

Glenn von Gonten
Senior Hydrologist

xc: Larry Johnson, OCD Hobbs District Office

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 3/29/06

or cash received on _____ in the amount of $ 1800 00

from BJ Services Company

for GW-072

Submitted by: Lawrence Romero Date: 4/19/06

Submitted to ASD by: Lawrence Romero Date: 4/19/06

Received in ASD by: _____ Date: _____

Filing Fee ✓ New Facility _____ Renewal _____

Modification _____ Other _____

Organization Code 521.07 Applicable FY 2004

To be deposited in the Water Quality Management Fund.

Full Payment ✓ or Annual Increment _____

BJ SERVICES COMPANY
BJ Services Company U.S.A.
P.O. BOX 4442
HOUSTON, TX 77210
713/462-4239

JPMorgan Chase Bank, N.A.
North Syracuse, NY 13212-4710

50-937
213

VENDOR NO.	CHECK NO.
157889	[redacted]

CHECK DATE	CHECK AMOUNT
03/29/06	*****1,800.00

PAY ONE THOUSAND EIGHT HUNDRED AND 00/100 **********

NEW MEXICO ENVIRONMENTAL DEPT
WATER QUALITY MANAGEMENT FUND
OIL CONSERVATION DIVISION
1220 SOUTH ST FRANCIS DR
SANTA FE NM 87505

VOID AFTER 90 DAYS
AS AN AUTHORIZED SIGNER OF BJ SERVICES COMPANY, U.S.A.

GW-072

[redacted]

Jo Ann Cobb, REM
Manager, Environmental Services
281-357-2572 FAX 281-357-2585

2006 MAR 3 PM 1 20

March 2, 2006

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Discharge Plan for BJ Services Company, U.S.A. Facility – GW-072

Dear Mr. Price,

BJ Services Company, U.S.A. would like to submit the enclosed Discharge Plan Application for the Hobbs, NM facility located at 2708 W. County Road. If you have any questions, please contact me at 281-357-2572.

Regards,

Jo Ann Cobb, REM

C: John Adcock, BJ, Hobbs
OCD, District I

GW-072

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES,GAS PLANTS, REFINERIES, COMPRESSOR, GEOTHERMAL FACILITES AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☑ Renewal ☐ Modification

1. Type: _____

2. Operator: BJ SERVICES COMPANY, USA

   Address: 2708 W. County Rd. Hobbs NM 88240

   Contact Person: JOHN ADCOCK Phone: (505) 392-5556

3. Location: _____ /4 NW /4 Section 30 Township 18S Range 38E
   Submit large scale topographic map showing exact location.

4. Attach the name, telephone number and address of the landowner of the facility site.

5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.

6. Attach a description of all materials stored or used at the facility.

7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.

8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.

9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.

10. Attach a routine inspection and maintenance plan to ensure permit compliance.

11. Attach a contingency plan for reporting and clean-up of spills or releases.

12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.

13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

14. CERTIFICATIONI hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Jo Ann Cobb Title: Mgr. Environmental Services

Signature: Jo Ann Cobb Date: 3-2-06

E-mail Address: jcobb@bjservices.com

Hobbs Discharge Plan

BJ Services Company, USA

2708 West County Road

Hobbs, NM 88240

February 2006

Table of Contents

Appendices

Management Approval

Management has reviewed the following Discharge Plan for the Hobbs facility. This plan has been prepared in accordance with New Mexico Oil Conservation Divisions (NMOCD) discharge plan guidance and will be implemented immediately upon the following signature and peridocially updated as necessary.

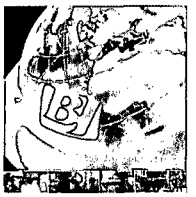
District Manager

_____
Signature

_____
Name

_____
Title

_____
Date



I. Type of Operation

BJ Services Company, U.S.A. provides oilfield services, including cementing, acidizing, and fracturing services at oil and gas well sites.

II. Operator

BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240
(505) 392-5556
Contact: John Adcock – District Manager
Dale Thompson – Facility Supervisor

III. Location

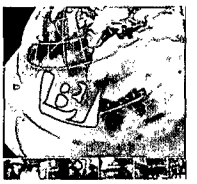
Northeast Quarter of Section 20
Township 18 South
Range 38 East
N.M.P.M.
Lea County, New Mexico

IV. Landowner of Facility Site

BJ Services Company, U.S.A.
5500 Northwest Central Drive
Houston, TX 77092
Contact: Jo Ann Cobb 281-357-2572

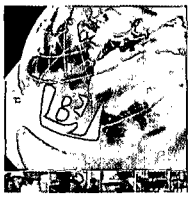
V. Facility Description

See Appendix B, Site Plans



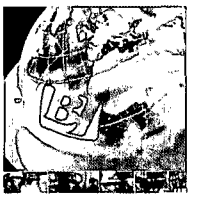
VI. Materials Stored or Used at the Facility

Material	General Makeup (includes additives)	Form	Type of Container	Estimated Volume Stored	Location
Drilling Fluids	Not Applicable (N/A)	N/A	N/A	N/A	N/A
Brines	N/A	N/A	N/A	N/A	N/A
Acids	Hydrochloric Acetic Anhydride	Liquid Liquid	Tank Tote	20,000 gallons 330 gallons	Acid dock Warehouse
Detergents	Detergent	Liquid	Fiberglass Tank	330 gallons	Yard next to Wash Bay
Solvents	Aliphatic Degreasing Solvent	Liquid	Drum	55 gallons	Shop
Paraffin Treatment, Emulsion Breakers, Surfactants	Various products serve these functions	Liquid	Drums	550 gallons	Warehouse
Biocides	Bactericide for treating water	Liquid	Jug	12.6 Gallons	Warehouse
Cement and Additives	Cement	Solid	Silos and Bags	850 tons	Cement Bulk Plant



VII. Sources of Effluent and Waste Solids

Waste Type	Source and Composition	Volume per Month	Major Additives
Truck Wastes	Off-spec cement and cement or water not used on the job	Cement: 141 Tons Water: 2000 gallons	N/A
Washing Operations	Waste water from truck wash bay	20,000 gallons	Detergent
Steam Cleaning	N/A	N/A	N/A
Solvent Use	Degreasing solvent from cleaning truck parts in the shop	30 gallons	Grease, oil, Aliphatic Solvent
Spent Fluids	N/A	N/A	N/A
Waste Slop Oil	N/A	N/A	N/A
Waste Motor Oil	Shop	500 gallons	Oil
Oil Filters	Shop	5 drums	N/A
Solids and Sludge	Dirt from wash bay	200 gallons	Soil, oil
Painting Wastes	N/A	N/A	N/A
Other Waste Liquids	Lab waste	55 gallons	Oil, water, chemicals from testing from testing of fluids
Other Waste Solids	Tires Batteries Scrap Metal	10 5 1000 pounds	None



VIII. Current Liquid and Solid Waste Collection/Treatment/Disposal Procedures

Waste Type	On Site Handling	Disposal	Disposal Facilities
Truck Wastes	Cement is transferred to the reclaim silo	Offsite	Guichen Trucking 8416 White Water El Paso,Tx. 79907 915-731-1999 Cemex-Odessa Plant P.O.Box 1547 Odessa,Tx. 79760 1-800 927-4838
Washing Operations	Water flows into sumps/oil water separator then to the POTW	POTW	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 505-397-9315
Steam Cleaning of Parts	N/A	N/A	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 505-397-9315
Solvent/Degreaser Use	Drum	Recycled Offsite	Safety Kleen 10607 WCR 127th Midland, Texas 79711 915-563-2305
Spent Acids	N/A	N/A	Reclaim Tank Recycle BJ Services Yard Hobbs,New Mexico 88240
Waste Slop Oil	N/A	N/A	E&E Enterprises P.O.Box 683 Brownfield Tx. 79316 1-800 658-2137
Waste Lubrication and Motor Oils	Oil pans are emptied into a receptacle and then pumped from the receptacle to a tank outside the shop.	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Oil Filters	Stored in drums	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Sludge from Wash Bay Sumps	Collected in sumps on wash bay	Offsite Disposal at Landfill	Controlled Recovery,Inc. P.O.Box 388 Hobbs,New Mexico 88241 1-505-393-1079
Painting Waste	N/A	N/A	N/A
Sewage	POTW	POTW	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 1-505-397-9315
Other Waste Liquids: Lab Wastes	Drums	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137

VIII. Current Liquid and Solid Waste Collection/Treatment/Disposal Procedures (Continued)

Other Waste Solids: Tires Batteries Scrap Metal	 Bin	Tires taken by vendor Batteries taken by vendor Recycled Offsite	Forrest Tire Co. 1703 N. Turner Hobbs,New Mexico 88240 1-505-393-2186 Interstate Batteries 2400 West County Hobbs,New Mexico 88240 Hobbs Iron & Metal 920 S. Grimes Hobbs,New Mexico 88240 1-505-393-1726

IX. Proposed Modifications

There are no proposed modifications to the facility at this time.

X. Inspection and Maintenance

- See Appendix G, Inspection Checklist
- See Appendix C, Base/District HSE Inspection Form
- See Appendix A, Permit Requirements
- All facility sumps are inspected on an annual basis using NMOCD approved methods.
- All underground lines are inspected every five years using NMOCD approved methods.
- Wastewater line discharging from the lift station to the City of Hobbs POTW will be inspected annually for a total of two years using NMOCD approved methods.

XI. Contingency Plan

See Appendix D, Facility Emergency Response and Contingency Plan

XII. Site Characteristics

Bodies of Water: None within 1 mile. Green Meadows Lake is the nearest body of water.

Arroyos: None

Groundwater Characteristics: Depth to: 52 feet (see boring log in Appendix E)

Flooding Potential: None

Appendix A

Permit

NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

October 25, 2001

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7423

Ms. Jo Ann Cobb
BJ Services Company
11211 FM 2920
Tomball, Texas 77375

Re: Renewal of Discharge Plan GW-072
Hobbs, NM Facility

Dear Ms.Cobb:

The groundwater discharge plan GW-072 for the BJ Services Company , Hobbs Facility, located in the NE/4, Section 20, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge plan application was submitted on June 18, 1991 and approved on October 02, 1991 with an expiration date of October 02, 1996. The discharge plan renewal application dated July 09, 2001 and subsequent submittal dated September 13, 2001, including attachments, submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals.

The discharge plan is renewed pursuant to Section 3109.C. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve BJ Services Company of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does it relieve BJ Services Company of its responsibility to comply with any other governmental authority's rules and regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., BJ Services Company is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire October 02, 2006** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 3106.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved.

The discharge plan application for the BJ Services Company , Hobbs Facility, is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of $100.00 plus a flat fee of $1700.00 for oilfield service companies. The OCD has not received the $1700.00 flat fee. The flat fee may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

Please make all checks payable to: Water Quality Management Fund
C/o: Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505.

If you have any questions, please contact Wayne Price of my staff at (505-476-3487). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/lwp
Attachment-1
Xc: OCD Hobbs Office

ATTACHMENT TO THE DISCHARGE PLAN GW-072 APPROVAL
BJ Services Company , Hobbs Facility
DISCHARGE PLAN APPROVAL CONDITIONS
October 25, 2001

1. Payment of Discharge Plan Fees: The $100.00 filing fee has been received by the OCD. There is a required flat fee of $1700.00 for oilfield service companies. The flat fee required for this facility may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan, with the first payment due upon receipt of this approval. The filing fee is payable at the time of application and is due upon receipt of this approval.

2. Commitments: BJ Services Company will abide by all commitments submitted in the discharge plan renewal application dated July 09, 2001 and subsequent submittal dated September 13, 2001, including attachments, and these conditions for approval.

3. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.

4. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

5. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.

6. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

7. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

8. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than December 15, 2001 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD by December 31 of each year.

9. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than December 15, 2001 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD by December 31, 2001.

10. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

11. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspections will be retained on site for a period of five years.

12. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. And WQCC 1203. to the OCD Hobbs District Office.

13. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

14. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.

15. Storm Water Plan: BJ Services Company shall submit a copy of the EPA Federal Stormwater Plan by December 31, 2001.

16. Vadose Zone and Water Pollution: The previously submitted investigation and remediation plans were submitted pursuant to the discharge plan and all future discoveries of contamination will be addressed through the discharge plan process.

17. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

18. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

19. Certification: **BJ Services Company** by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. **BJ Services Company** further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: **BJ Services Company**

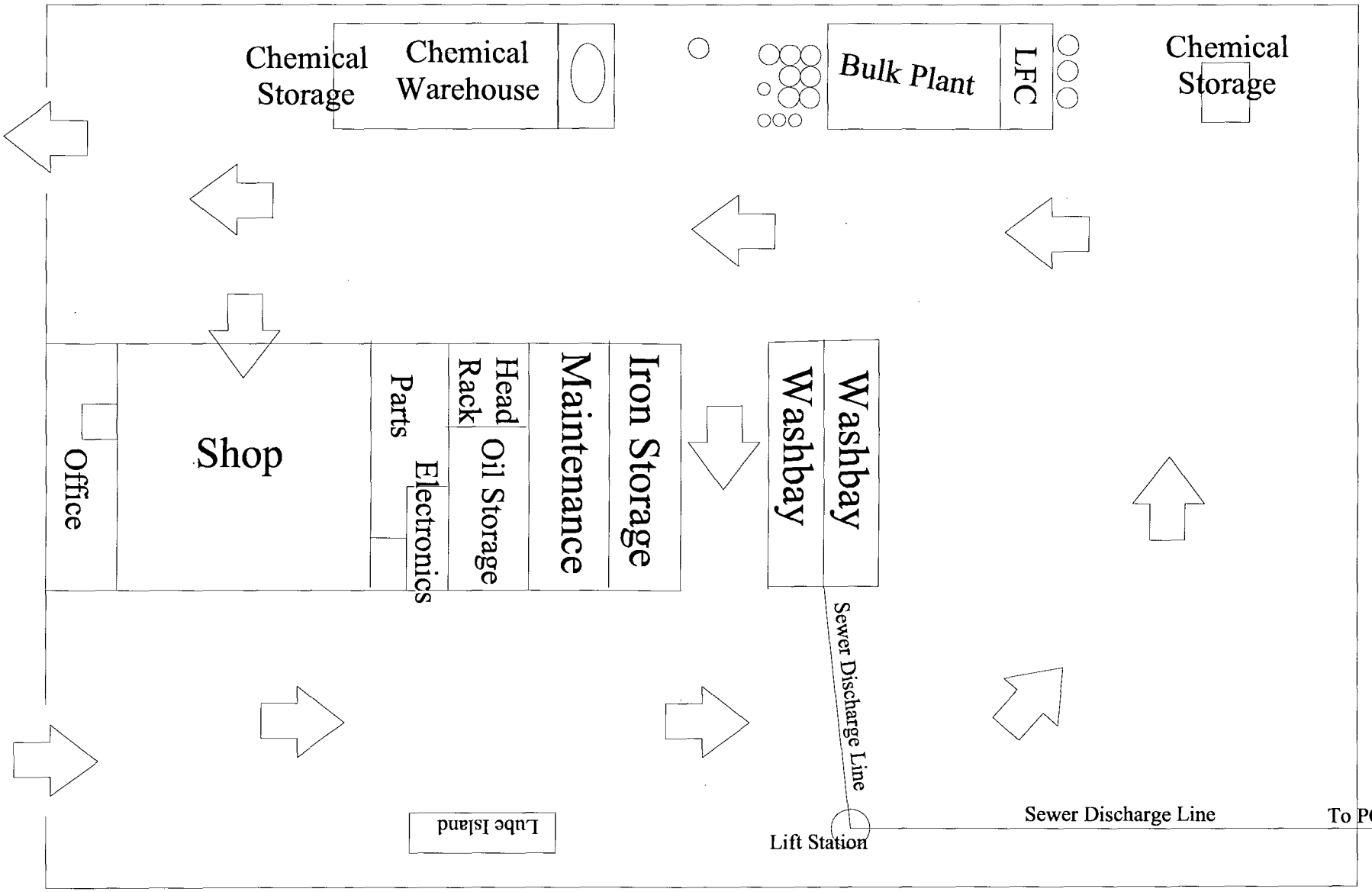
ROGER SULLIVAN
Company Representative- print name

Roger Sullivan Date 12.12.01
Company Representative- Sign

Title DISTRICT MANAGER

Appendix B

Site Plans



BJ Services Company, USA
11211 FM 2920
Tomball, Texas 77375

Figure 2: Facility Layout and Proposed Modification

	Not To Scale	REVISION DATE: 02/24/06	DRAWN BY: JSG

Appendix C

Base/ District HSE Inspection Form

US Inspection - 2006
Base/District HSE Inspection Report

Region: Permian Basin
District/Base: Hobbs
Inspector: _____

Job Title of Inspector(s): _____

Date of Inspection: _____

Product Line : Pumping Services

Key
N/A - Not Applicable (Default Value)
0 - Needs Immediate Attention
1 - Needs Attention
2 - Meets Standards

Housekeeping Key
N/A - Note Applicable (Default Value)
0 - Needs Immediate Attention
1 - Poor
2 - Needs some attention
4 - Good - Meets Standards

SUMMARY - AREAS

HSE Management Standards
General Facility Conditions
Shop(s)
Locker Room(s) - Washroom(s) - Break Area(s)
Wash Bay
Laboratory
Mixing Tanks/LFC Mixing Area
Forklift
Cement Warehouse & Bulk Plant
Chemical Warehouse
Acid Storage
Head Rack / Iron Rebuild
Fuel Island
Water Tanks - Test Tanks - Water Supply
Radiation Storage Area
Vehicle
Environmental

QUESTIONS

HSE Management Standards

1	Managers and Supervisors demonstrate ability to navigate QHSE Standards and other HSE system databases
2	Managers and Supervisors are knowledgable of the QHSE Standards that apply to their area of responsibility (have read the standards)
3	HSE Plan for facility, region, or country in place per standard (QHSE Standard - Health & Safety 3.8)
4	All Trainers are competent (demonstrated by CAP participation, certifications, education, or Training Plan in place)
5	Field personnel oriented per standards prior to field assignment (QHSE Standard - Health & Safety 6.3 plus Region Req'd orientation)
6	Facility APT in place per standard (QHSE Standards - Health & Safety 5.2)
7	HSE Facility and Jobsite Inspections by region/district staff are current for previous quarter
8	Corrective actions from previous inspections (30 days and older) are closed out
9	Journey Management guidelines followed (QHSE Standard - Health & Safety Section 14._)

10	Quality of accident reports - complete, corrective action taken, and closed out

General Facility Conditions

1	Emergency plans for fire, injury or chemical spill (posted, current)
2	Fire extinguishers - (operable, inspected, proper location, proper type)
3	Personal protective equipment (used as required)
4	PPE available for visitors or vendors
5	Trained first aiders at facility (sufficient number, identified, posted)
6	Safety signs and notices (sufficient number, all hazards, current)
7	Safety bulletin board (current)
8	Entryway/gateway (signed, unobstructed)
9	Parking (sufficient, unobstructed, signed)
10	Road surfaces (safe, maintained)
11	Lighting (sufficient, working, assess both internal and external)
12	Heating and cooling system (radiators free/clear, system checked annually, adequate records)
13	Electrical panels and wiring (labeled, secure, maintained)
14	Landscape (presentable, maintained)
15	Safety signs for LTI free days (up to date, visible)
16	Notice to visitors and vendors (where to go, posted)
17	Speed limit signs (posted, visible, adhered to)
18	Security fence (sufficient, maintained)
19	Fixed stairs, ladders, walkways, handrails, gates and doors (maintained, clear, safe)
20	Material safety data sheets (accessible locally, current) Dispatch?
21	Containers (appropriate, stacked, labeled)
22	Pallets (adequate, maintained, safe)
23	Noise levels (signage, measured)
24	Flammable gas (caged, signed, segregated)
HK	Housekeeping (Rating 0,1,2,4)

Shop(s)

1	Hand tools (condition, noise, sufficient number, proper storage)

2	Grinding equipment (signs/visibility, tool rests, wheels inspected/maintained)
3	Welding and cutting equipment (stored properly, flash back arrestors, welding screens)
4	Cranes, hoists and jacks (capacity signed, periodic inspection, tested, records)
5	Lubrication area (clean, labeled, spill controls)
6	Parts storage (secure, labeled, clean, records)
7	Overhead storage area (posted for capacity, heavy items below, undamaged, secured to hazard points on floor)
8	Battery charging and storage area (separate, clean, ventilated)
9	Painting and paint storage area (contained, labeled, appropriate)
10	Cleaning agents and solvents area (storage, ventilated or enclosed, hazard signage, MSDS available)
11	Work benches (clean, tidy, vice condition)
12	Oily rag containers (enclosed, metal, labeled)
13	Lockout/tagout procedures (adhered, monitored, effective, understood)
14	Ladders (checked periodically and tagged, not painted)
15	Machine tools (pillar drill, lathe, etc.) (maintained, guarded, PPE available, signage, tested)
16	Used oil and filters being properly handled
17	Used anti-freeze being properly handled
18	Air compressors (belts guarded, auto start signage, PRV's checked annually/tagged)
19	Overhead doors (height marked, good working order)
20	Aerosols free of chlorinated hydrocarbons
HK	Housekeeping (Rating 0,1,2,4)

Locker Room(s) - Washroom(s) - Break Area(s)

1	Ventilation (adequate)
2	Showers and sinks (adequate, clean, maintained)
3	Toilets (adequate, clean, maintained)
4	Lockers (sufficient size/number, accessible, lockable)
5	Drinking water (available)
6	Sufficient personal storage and changing space (clean, maintained, adequate)
7	Any required regulations/posters
HK	Housekeeping (Rating 0,1,2,4)

Wash Bay

1	Pressure Washer in separate room
2	Sumps clean & routinely maintained
3	Wash water contained on wash bay
4	Wash water and sump sludge properly managed
5	Wash wands in good condition
HK	Housekeeping (Rating 0,1,2,4)

Laboratory

1	Chemical containers (labeled, secure)
2	Local extraction ventilation (installed, operable, maintained, records)
3	Gas bottle storage (secured, external where possible, regulators checked, labeled)
4	Safety shower and eyewash (maintained, tested)
5	Samples stored and labeled properly
HK	Housekeeping (Rating 0,1,2,4)

Mixing Tanks/LFC Mixing Area

1	Condition of tanks
2	Products protected from weather
3	Hoses, pumps, piping in good condition
4	Diesel tank containment adequate and free of spills
5	Cranes & hoists adequate, inspected, labeled
HK	Housekeeping (Rating 0,1,2,4)

Forklift

1	Forks (condition, maintained, appropriate)
2	Pre-use check sheets (available, utilized)
3	Area FLT warning signage (visible)
4	Rated capacity shown on FLT

5	FLT Operators (trained, licensed, nominated)

Cement Warehouse & Bulk Plant

1	Gates, walkways, railings and ladders (maintained, clear, safe)
2	Climbing safety devices, harness (inspected, records, sufficient, available, utilized)
3	Dust collector (working properly, maintained, inspected)
4	Silo pressure relief valves (periodic inspection/ test /calibration, records)
5	Air compressors (belts guarded, auto start signage, PRV's checked annually/tagged)
6	Partial bags properly stored
HK	Housekeeping (Rating 0,1,2,4)

Chemical Warehouse

1	All chemicals (identified, labeled)
2	Dry chemicals stored properly
3	Safety shower and eyewash (maintained, tested)
4	Hoses, piping and valves (clear, operable, stowed appropriately)
5	Tanks vented to outside
6	Proper Handling of empty containers
7	Floors (flat, clean, impermeable)
8	Sump (empty, clean, isolated)
9	Racking (capacity signed, inspections)
10	Waste/surplus chemicals (routinely identified, correct storage, correct and regular disposal)
11	Proper stacking (drums and bag pallets no more than three [3] high)
12	Empty containers being removed frequently & properly
HK	Housekeeping (Rating 0,1,2,4)

Acid Storage

1	Gates, walkways, railings and ladders (maintained, clear, safe)
2	Pump, fittings, valves, piping and hoses (condition, maintained)
3	Tank contents identified and measured (type, capacity, labeled)

4	Scrubber (maintained, inspected)
5	Acid loading area clean and free of spills
6	Acid tank containment viable (walls and bottom)
7	UN specification buckets being used for hazardous material
8	Safety shower and eyewash (maintained, tested)
9	Spill kit (shovel, neutralizer)
10	Bulk tanks in good condition
11	Chemical additive system (present, working, maintained)
12	Reclaim tank installed & working properly if required
HK	Housekeeping (Rating 0,1,2,4)

Head Rack / Iron Rebuild

1	Heads, manifolds, swages stored safely
2	Thread protectors
3	Baker vise or better
4	Hoist Adequate
5	Lifting chains safe
6	Adequate pipe wrenches
HK	Housekeeping (Rating 0,1,2,4)

Fuel Island

1	Pumps (barriered off)
2	Fuel storage (barriered off)
3	Hoses and pumps (condition, clean, proper type, date, stowed appropriately)
4	Waste container (metal, lidded, labeled)
5	Fuel and oil tanks in secondary containment and free of spills
6	Fuel island area clean and free of spills
7	Fuel and oil tanks properly labeled
HK	Housekeeping (Rating 0,1,2,4)

Water Tanks - Test Tanks - Water Supply

1	Condition of tanks, hoses, valves and connections
2	Test tank area free of spill & discharges

Radiation Storage Area

1	Current copy of RA licenses on display
2	Copy of RA "Notice to Employees" on display
3	BJ Services Radiation Protection Manual available
4	Country/State NRC regulations available
5	Storage area locked
6	Are sources properly labeled ?
7	Utilization log available and current
8	Bill of Lading being used
HK	Housekeeping (Rating 0,1,2,4)

Vehicle

1	Seat Belt Operational
2	Seat Condition
3	Loose Objects in Cab
4	Loads Secure
5	Deck Equipment Secure
6	Vehicle Coupling Device
7	Air Hoses and Connections
8	Ladders
9	Fire Extingusher (UL Rating of 10B:C or more)
10	First Aid Kit
11	Cab Glass
12	Wipers
13	Placard Holders
14	Mirrors

15	Lights and Reflectors
16	Break / Engine / Washer Fluid Levels
17	Tyres and Rims Condition
18	Tool Box
19	Spillage control Materials and Equipment
20	All documents current
21	Annual inspection current

Additional Information Required
Please enter unit numbers of the vehicles inspected :

Environmental

1	Environmental recordkeeping systems established
2	Permits & registrations available & current when applicable
3	Waste records maintained (Bill of lading, manifests)
4	Waste disposed of by certified or Company approved vendor
5	Environmental plans current (storm water, spill prevention, emergency response)
6	Proper storage of waste mateials (segerated and labeled)
7	Spill control material (available, appropriate, utilized)
8	Surface-water/storm-water drains & discharge points free of oil, debris, etc
9	No open containers outside collecting water
10	Yard free of leaks and spills
11	Trash containers closed - Lids viable
12	Containers present to contain leaking drums, fluids or clean up materials
13	All fuel, oil and diesel tanks in good condition
14	All fuel and oil tanks have adequate containment and free of spills

CORRECTIVE ACTION RESPONSIBILITY

Corrective Actions Assigned to: _____

Due Date for Completion: _____

Corrective Action Status: _____

SIGNATURE SECTION

If you are the relevant District/Facility Manager, Region/Country/Area Manager, District/ HSE Officer or Other Relevant Manager you should sign the report when you have read it. To add your signature to the appropriate section, click the **Edit** button (to enter Edit mode), then click on the **Review and Sign Off** button. This will add your name and the current date to the Accident Report in the relevant section below.

Reviewed and Signed Off by the Following:-

District Safety/Training Supervisor _____

District Manager _____

Region Safety/Training Manager _____

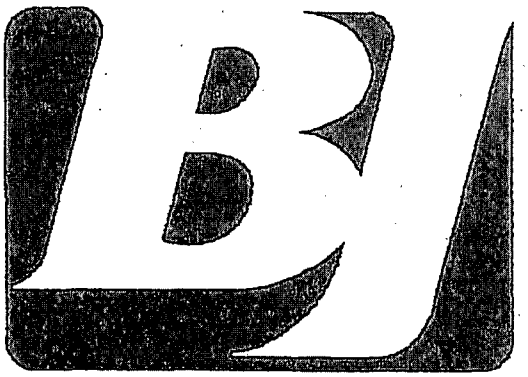
Region Manager _____

Facility / Service Supervisor _____

Other Relevant Personnel _____

Appendix D

Facility Emergency Response Contingency Plan



BJ SERVICES

Facility Emergency Response Contingency Plan

FACILITY EMERGENCY RESPONSE CONTINGENCY PLAN

BJ SERVICES COMPANY, U.S.A.
2708 NORTH WEST COUNTY ROAD
HOBBS, NEW MEXICO 88240
(505) 392-5556

August 19, 2002

EMERGENCY RESPONSE CONTINGENCY

TABLE OF CONTENTS

EMERGENCY RESPONSE CONTINGENCY

DESCRIPTION OF FACILITY

BJ Services Company is an oil and gas well cementing and treatment service company using various chemicals for specific stimulation and cementing applications.

Our Hobbs, New Mexico facility is the primary location for servicing contract activities. Like most of our other locations, the Hobbs station is expected to maintain on its premises various quantities of chemicals stored in 55 gallon drums, a bulk cement plant, and a bulk hydrochloric acid tank.

The general types of hazardous materials which could be stored at this facility are cationic, anionic, and non-ionic surfactants which are dissolved in one or more of the following fluids: water, metanol, isopropyl alcohol, glycols, xylene, and aromatic or mineral spirits. Wastes would be generated by products not meeting BJ Services specified quality parameters or by contaminated products. These materials would then have the following EPA hazardous waste codes:

(D001) general ignitable wastes with flash points below 140 degrees F

(D002) general corrosive wastes with a ph below 2 or above 12.5

EPA IDENTIFICATION NUMBER: NMD 052377637

This number provides access to stored information pertaining to this operation and should be utilized in any correspondence with the United States Environmental Protection Agency.

EMERGENCY RESPONSE CONTINGENCY

STORAGE AND HANDLING

All liquid bulk tanks have containment dikes built around them. Chemical inventories are kept at a minimum to lower the risk factor. Storage of drums are such that no incompatible chemical or reactive chemical is stored together. When possible, less toxic chemicals are the chemical of choice for storage. Employees are rewarded for safe handling practices and are encouraged to present new safety procedures. All equipment and procedures are modified to reduce hazards and effects of hazards.

IDLH POLICY
(Immediately Dangerous Life and Health Level)

It is BJ Service Companies policy that human life takes priority over all other things. In the event an IDLH situation is present or may be present, no employee and/or non-employee will be allowed in the IDLH area without Level 1 or Level 2 P.P.E. (Personal Protection Equipment) and appropriate documents showing they are qualified to use Level 1 or Level 2 P.P.E. and have supportive training in a hazardous environment.

In the event of an IDLH situation, evacuation of facilities and/or surrounding areas will take priority over the immediate incident until properly equipped and trained personnel arrive at the incident. Fire will be fought by remote equipment unless it can be contained without endangering personnel. Major spills that would include an IDLH situation would be contained to the extent that no person would be placed in jeopardy. The buddy system will apply in all situations.

The following is a list of the PPE levels referred to above:

PPE 4: Minimum protection is chemical resistant boots, gloves, and glasses
PPE 3: Minimum protection is chemical resistant boots, gloves, glasses, and a respirator
PPE 2: Minimum protection is chemical resistant boots, gloves, glasses, a self-contained breathing apparatus, and a personal environment suit
PPE 1: Minimum protection is chemical resistant boots, gloves, glasses, a self-contained breathing apparatus, and a totally enclosed sarnes suit (a self-sustained/chemical resistant suit)

EMERGENCY RESPONSE CONTINGENCY

MUTUAL AID AGREEMENT

BJ Services Company will assist the surrounding businesses and communities in an emergency condition with the aid of personnel and equipment whenever possible. Due to our policy on IDHL situations, we will not allow our personnel or equipment to be placed at risk below a level 3 P.P.E. condition.

FIRE FIGHTING EQUIPMENT

Dry chemical charged extinguishers, 2.5#, 5#, 10#, and 25# are located at several strategic stations throughout the facility. Each stationary fire extinguisher station is visibly marked with proper placarding. Each company vehicle is also equipped with a portable fire extinguisher. A 1.5" water line is located inside the dry chemical warehouse.

Various pumping units could be rigged up to pump high volumes of water to inside an/or outside fires.

CHEMICAL SPILL STATIONS

Chemical spill stations are located in the warehouse and on the acid dock. Equipment at each station is one shovel, soda ash, buckets, all purpose absorbent, chemical goggles, a respirator and a rubber apron and gloves.

TRAINING OF EMPLOYEES IN CONTAINMENT AND FIGHTING OF FIRES AND CHEMICAL SPILL

In the event of a chemical spill, all employees are trained in the procedures of notification and methods of cleanup. New employees are trained in all hazards related to our chemicals including fire, health, reactivity, and any special hazards as indicated by product labels and MSDS information. All employees are updated during regular safety meetings regarding current procedures on fire fighting, chemical spills and evacuation plans. Each employee is alerted to any special conditions at the well site during a mandatory pre-job safety meeting. Fire drills and emergency procedures are performed at the facility on a continuing basis. Safety is stressed at all times and is the most paramount consideration during any task performed by our employees. All employees are issued a complete set of personal safety equipment. This equipment is each employee's personal responsibility and is to be readily accessible at all times.

EMERGENCY RESPONSE CONTINGENCY

EVACUATION PLAN

In the event it is determined that evacuation is necessary, employees will be notified by the public address system. Escape routes taken will be determined by wind speed and direction, weather conditions, type of condition that created the emergency, and the location of employees. The buddy system will be used during evacuation as employees go to a designated safe area and a head count will be taken immediately.

The level of emergency response outside of the facility will be determined by the quantity of spillage, size of fire, wind direction, weather conditions, and the evaluation of the safest methods of response; i.e., leave immediate area, stay in buildings and close all doors and windows, etc. Roads will be closed in accordance with the level of the emergency.

Special areas of concern are:

1) Weatherford northeast of yard
2) House northwest of yard across W. County Road
3) Pipe storage yard across W. County Road

All individuals in these areas would be notified by phone, public address system, or in person.

Notification information will include:

1) The type of emergency situation that exists
2) Procedures to follow
3) Routes to be taken
4) Proper medical attention to be sought if needed
5) An all clear will be issued when the hazard has been contained and it is safe to return

EMERGENCY RESPONSE CONTINGENCY

CONTIGENCY PLANS AND EMERGENCY PROCEDURES

The purpose of the following is to set forth contingency plans which will minimize hazards to human health and the environment in the event of fires, explosion, or uncontrolled release of hazardous chemicals. Should any of these events occur at this facility the emergency coordinator will take action as described in the following sections:

1) The Emergency Coordinator

A. Designation of Emergency Coordinator

1. The principal emergency coordinator for the facility is:

John Adcock — Office: 505 392-5556
2708 N.W. County Road — Mobile: 505 390-1818
Hobbs, N.M. 88240

2. The alternate emergency coordinators are:

Walter Freeman — Office: 505 392-5556
2708 N.W. County Road — Home: 505 392-9939
Hobbs, N.M. 898240

Troy Harris — Office: 505 392-5556
2708 N.W. County Road — Mobile: 505-390-8084
Hobbs, N.M. 88240

3. During non-working hours, the police or fire department will notify one or all desingated coordinators if an emergency should occur.

B. Responsibility of the Emergency Coordinator

1. The emergency coordinator or his designee must activate the alarm system and notify employees of the imminent or actual
emergency.

EMERGENCY RESPONSE CONTINGENCY

2. In the event of an actual emergency, the coordinator or his designee will notify the appropriate local, state, and federal authorities as required:

a) Hobbs Fire Department
Local Emergency 911

b) Hobbs Police Department
Local Emergency 911

c) Ambulance Service 911

d) Carelink Helicopter
1-800-743-4444
1-800-456-5465

e) Flight for Life
1-806-796-6575

f) Emergency Medical and Poison Center
Galveston 1-409-765-1420
National Hot Line 1-800-541-5624
Spokane Washington

g) EPA Hazardous Substance Spill
National Response Center
HOT LINE 1-800-424-8802
Information 1-800-424-9346

h) Chemtrec (Chemical Transportation)
Emergency Center) 1-800-424-9300

i) National Weather Service Information
1-817-334-3401

j) JoAnn Cobb 1-281-351-8131
BJ Services Co.
Manager-Field Safety
Tomball, Tx 77375

3. The emergency coordinator will also determine the extent of the danger

   a) he should note the exact locations of the dangerous areas

   b) he should note whether fire or threat of fire is involved

   c) he should note any injuries requiring medical attention

   d) he should attempt to identify the types of hazardous chemical involved and most appropriate equipment needed to contain the incident

   e) he should determine which, if any, local agencies should be summoned

   f) he should order the evacuation of the employees if necessary

   g) he should direct the activities of the emergency response team

4. In the event of fire, the emergency coordinator will immediately call the fire department, and upon their arrival, have the emergency team cease their control efforts.

2) Emergency Procedures

A. In the event of fire, the emergency coordinator or his alternate must be notified immediately.

   1. An attempt should be made to extinguish the fire with on-site fire fighting equipment.

   2. The Hobbs Fire Department will assume control of the situation upon arrival at the scene.

B. In the event of an explosion, the emergency coordinator or his alternate must be notified immediately.

1. An attempt should be made by facility personnel to prevent or minimize any recurring explosions by re-positioning hazardous chemical drums away from the hazard area if this can be accomplished safely.

2. Medical help should be requested immediately.

C. In the event of a sudden or non-sudden release of hazardous chemical, the emergency coordinator or his alternate shall be notfied immediately.

1. Efforts should commence immediately to contain the spill with appropriate dike and/or absorbent material. Acid wastes will be neutralized with soda ash prior to adding absorbent.

2. Sources of heat, sparks, and flames should immediately be removed to prevent fires or explosions.

3. If a non-sudden release of hazardous chemical is discovered, the source of this leak should be found and appropriate action taken to stop the leak.

3) Notification Procedures

A. If, in the opinion of the emergency coordinator or his alternates, a possibility of harm to human health or the environment could result from an incident of fire, explosion or release of hazardous chemical shall require the immediate notification of the local fire police, ambulance and/or hospital services

1. The caller to the agencies will furnish the following:

a. Name and telephone number of the caller

b. Name and address of the warehouse

c. Time and nature of the emergency

d. Type and quantity of material involved (to the extent known)

e. Extent of any injuries

f. Possible health and/or environmental hazards outside the warehouse facility

C. Any incident which is large enough to involve property or possessions of a third part will require the notification of all applicable agencies listed in Section 1-B,

Responsibilities of the Emergency Coordinator

1. The caller to these agencies will furnish the following:

a. Name and telephone number of the caller

b. Name and address of the warehouse

c. Time and nature of the emergency

d. Type and quantity of material involved (to the extent known)

e. Extent of any injuries

f. Possible health and/or environmental hazards outside the warehouse facility

4. Clean-up and Post Emergency Procedures

A. Small scale incidents will be cleaned up with absorbent material and picked up with non-sparking shovels and other equipment and placed in a competent drum, sealed and disposed of properly.

B. Larger scale incidents will be diked to prevent run-off of fire fighting water and/or spilled hazardous chemical as feasible.

EMERGENCY RESPONSE CONTINGENCY

1. Vacuum trucks will be used to take away as much of the liquid as possible and then absorbent material will be used to finish removing the liquid remaining.

2. The absorbed hazardous chemical will then be placed in sealable drums using equipment suitable to the size and amount of material needed to be removed.

3. All hazardous chemicals collected in vacuum trucks will be reclaimed immediately after the emergency.

4. All reclaimed hazardous chemicals collected on absorbent material and sealed in drums will be disposed in an appropriate disposal site as soon as normal working procedures permit.

C. After the emergency is over, the emergency coordinator will make sure that in all the affected areas of the warehouse and all the emergency equipment is cleaned, replenished

D. If the severity of the incident requires an investigation by the O.C.D., the emergency coordinator should make an effort to accumulate the following information as outlined in the Hazardous Substances Spill Contingency Plan:

1. Date and time of the spill

2. The type of material spilled

3. Quantity of material spilled

4. The exact location of the spill, including the name of the waters involved or threatened

5. The source of the spill

6. Party responsible for the spill (name, address, phone number, permit number)

7. The extent of actual and potential water pollution

8. The party at the spill site who is in charge of operations at the site and the telephone number of this party

9. The steps being taken or proposed to contain and clean up the spilled material

10. The extent of injuries, if any

11. Possible hazards to human health, and the environment (air, soil, water, wildlife, etc.)

PROCEDURE GUIDELINES FOR INCIDENTS NOT COVERED BY THIS PLAN

If an incident should occur that is not specifically discussed in this plan, the Emergency Coordinator shall use as a guideline the following publication:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONVERSATION DIVISION

A copy of the BJ Services Company contingency plan shall be located in the dispatch area immediately alongside the master copy of the facility Master MSDS chemical listing.

EMERGENCY RESPONSE CONTINGENCY

RISK ANALYSIS
WORST CASE INCIDENT/MOST PROBABLE INCIDENT

AMMONIUM BIFLUORIDE

1. Worst Case Incident:
Fire inside of building, water used to fight fire. Water mixed with ABF produces hydrofluoric acid. Fumes from hydrofluoric acid inside confined area could exceed threshold limits for life without SCBA.

   A. Probability of hazard occurrence: Low-- product is kept away from flammable products. Fire in compound will be fought with dry chemical, nitrogen, or foam. Good security arrangement that would deter tampering or accident resulting from civil uprising

   B. Consequences if people are exposed: TLV-2.5 mg/m3 as fluoride. Acute irritation & chemical burns over exposed area of body. If fumes are above lethal concentrations, they would create an IDLH situation.

   C. Consequences for property: Possible superficial damage to facility equipment and structure from corrosive fumes (repairable).

   D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

   E. Probability of simultaneous emergencies: Low

   F. Unusual environmental conditions: None-- Area is not subject to flooding. No other contributing factor.

2. Most Probable Incident:

   Damage to container (sack) spilling some or all of product into environment. Product is kept in 50# sacks. Amount of spill would probably be less than reportable quantity.

   A. Probability of hazard occurrence: Medium-- reinforced sack could be ripped or a spill could occur during loading.

B. Consequences if people are exposed: Irritation and chemical burns over exposed area of body. Extremely low respiratory irritation.

C. Consequences for property: None -- cleanup procedures would eliminate any product.

D. Consequences of environmental exposure: None-- cleanup procedures would eliminate contamination from the product.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None. Area is not subject to flooding. No other contributing factor.

ACETIC ANHYDRIDE

1. Worst Case Incident:
Rupture of drum. Product mixes with alkalies, oxidizing material, or strong mineral acids creating gas and heat.

A. Probability of hazard occurrence: Low-- product is stored away from all alkalies, oxidizing materials, and mineral acids. Good security arrangement that would deter tampering or accident resulting from civil uprising.

B. Consequences if people are exposed: IDLH situation until gas cloud and heat dissipate. High humidity and low wind would prolong hazardous conditions. Acute immediate effect to respiratory system. Severe damage and blindness if acetic anhydride residue enters eyes. Thermal decomposition may produce carbon monoxide and/or carbon dioxide.

C. Consequences for property: May produce superficial damage to facility, equipment, and structure from heat (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None. Area is not subject to flooding. No other contributing factors.

2. Most Probable Incident:

Rupture or spillage of 55 gallon drum into environment. Product does not mix with alkalies, oxidizing materials, or mineral acids. Amount of spill would probably be less than reportable quantity.

A. Probability of hazard occurrence: Low/Medium-- Highest risk would be human error, lowest risk would be rupture of drum.

B. Consequences if people are exposed: Eyes-- Severe damage and blindness rapidly; Skin-- Causes burns; Breathing mist causes damage to mucous membranes and deep tissue damage; if swallowed, severe damage to mucous membranes and deep tissue.

C. Consequences for property: May produce minor superficial damage to facility, equipment and structure (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

CAUSTIC SODA

1. Worst Case Incident:

Rupture of drum, product mixes with strong acid causing violent reaction. Product is an inorganic compound which is highly alkaline in nature. It is very reactive and can generate tremendous amounts of heat during such reactions.

EMERGENCY RESPONSE CONTINGENCY

A. Probability of hazard occurrence: Low-- product is kept in enclosed shed away from all other chemicals. Drum is made of an extremely heavy plastic. Probability of more than one drum rupturing at any time is highly unlikely.

B. Consequences if people are exposed: IDLH situation until gas cloud and heat dissipate. High humidity and low wind would prolong hazardous condition. Acute immediate effect to respiratory system, destructive to all human tissue giving severe burns, eye contact will produce severe or permanent injury.

C. Consequences for property: May product superficial damage to facility, equipment, and structure from heat (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is subject to flooding, not other contributing factors.

2. Most Probable Incident:

Rupture or spillage of 55 gallon drum into environment. Product does not mix with any strong acid. Amount of spill would be less than reportable quantity.

A. Probability of hazard occurrence: Low/Medium-- highest risk would be human error; lowest risk would be rupture of drum.

B. Consequences if people are exposed: TLC-Sodium Hydroxide-2 mg/m3 (dust). Destructive to all human tissue giving severe burns. Eye contact will produce severe or permanent injury. Inhalation of mist or spray can injure respiratory tract.

C. Consequences for property: May produce superficial damage to facility, equipment, and structure from corrosion (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

HYDROCHLORIC ACID

1. Worst Case Incident:

Rupture of tank spilling contents into containment dike, releasing hydrochloric fumes into atmosphere.

A. Probability of hazard occurrence: Low/Medium Tank is lined and inspected daily, maintenance is performed as needed. Most likely cause of rupture to tank would be due to severe weather (lightning strike or tornado).

B. Consequences if people are exposed: TLV-5PPM-acute irritation, choking, damage to tissue, chronic severe tissue damage. Probable IDLH.

C. Consequences for property: Highly corrosive to many materials, will be contained in containment dikes. Damage repairable.

D. Consequences of environmental exposure: Probable damage to fauna and flora by hydrochloric fumes (replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

2. Most Probable Incident:

Spillage during loading or unloading. Amount of spill would be below reportable quantity.

A. Probability of hazard occurrence: Medium/Low-- loading or unloading line could rupture, releasing product until valve is closed.

B. Consequences if people are exposed: Irritation, choking, damage to tissue.

C. Consequences for property: Product is easily neutralized with soda ash and will not harm property if taken care of quickly.

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora. (Replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

H.A.S. (XYLENE)

1. Worst Case Incident:

Fire by various causes, reaction with oxidizing agent producing CO2, SO2 gas, rupture of drum spilling contents into environment.

A. Probability of hazard occurrence: Medium-- highest risk would be fire by various causes; next highest risk would be rupture of drum spilling contents. Lowest risk would be reaction with oxidizing agent (no oxidizing agent is kept near product).

B. Consequences if people are exposed: Product TVL 500 mg/m3- minimum damage except if ingested, high risk of burns from fire, possible IDLH situation if exposed to oxidizer.

C. Consequences for property: Fire damage to immediate area, soil contamination.

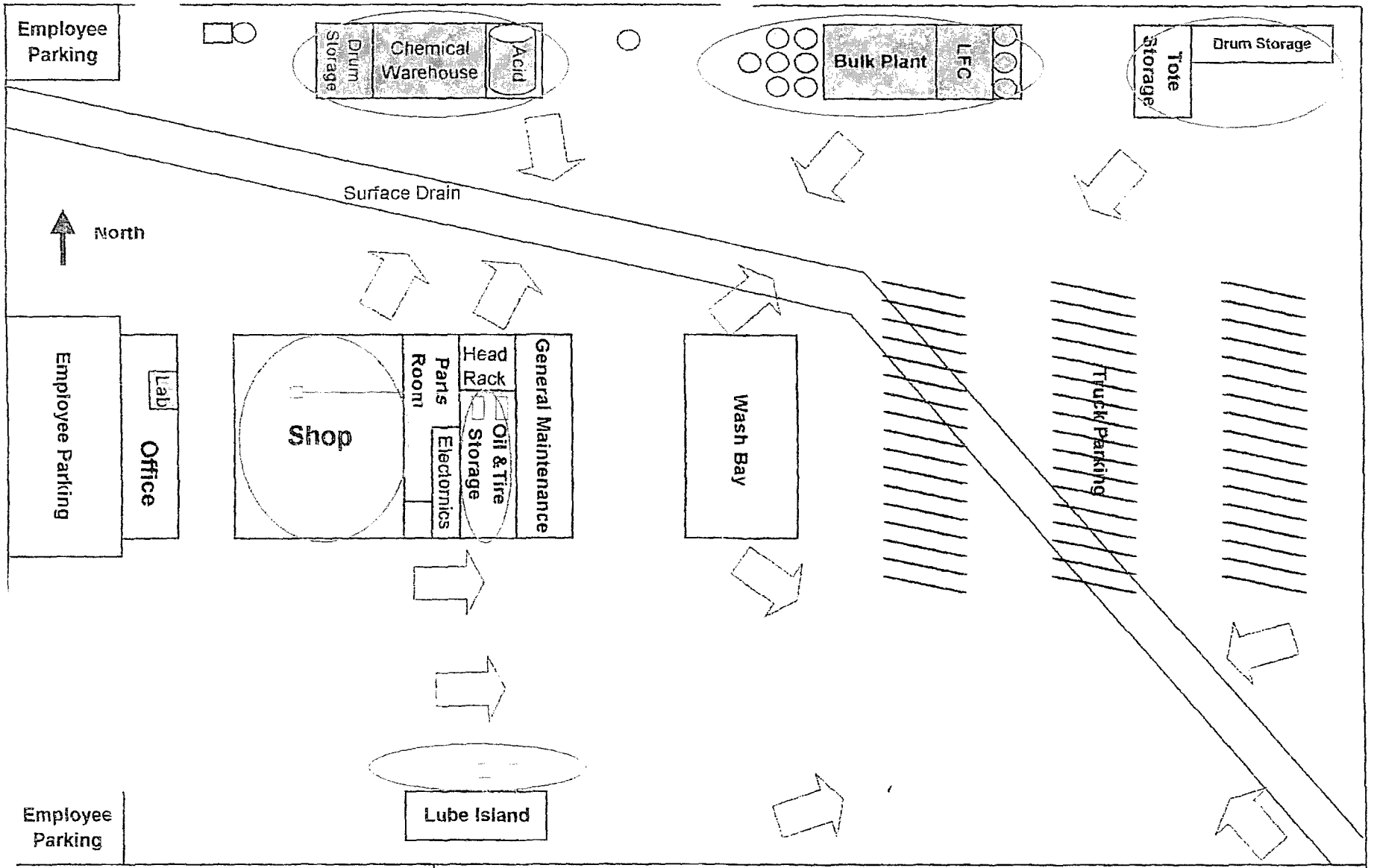
D. Consequences of environmental exposure: Contamination of soil. Damage to flora and fauna (replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None- area is not subject to flooding, no other contributing factors.

2. Most Probable Incident:

Fire by various causes.
All other areas are covered by worst case incident.



Hobbs District
2708 West County Road
Hobbs, New Mexico 88240

Not to Scale

Legend

Potential Spill Area

Drainage Flow

Piping / Dispensers

Appendix E

Boring Log

BROWN AND CALDWELL

BORING LOG

Project Name: B.I. SERVICES - SYSTEM INSTALLATION Project Number: 2832.31

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: AV-5 Sheet 1 of 1

Boring Location: HOBBS, NM FACILITY		Elevation and Datum:	
Drilling Contractor: APT	Driller: JOSE	Date Started: 8/5/95	Date Finished: 8/5/95
Drilling Equipment: CME 75	Borehole Diameter: 6"	Completed Depth: (feet) 61.8'	Water Depth: (feet) 52.0'
Sampling Method: SPLIT SPOON		WELL CONSTRUCTION	
Drilling Method: HOLLOW STEM	Drilling Fluid: H_2O	Type and Diameter of Well Casing: 1" & 2" SCH 40 PVC	
Backfill Material: GROUT 2-6'		Slot Size: 0.010	Filter Material: 10-20
Logged By:	Checked By:	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Recovery %	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Backfill	OVA PPM Readings	Remarks	Elevation (feet)
		CONCRETE/SURFACE GRAVEL								1" WELL COMPLETION	
		BRN SAND/CLAY (SC) MOIST, FIRM w/gravel							67.8	SCREEN = 56.8 - 61.8 (5')	
0		SILTY GRAVEL (GM) - CALICHE dry, hard w/sand							191.5	SAND = 53.0 - 61.8'	
		- inc. in sand @ 60'								BENT = 51.0 - 53.0'	
20		SILTY SAND (SM) w/gravel med-fine grain								2" WELL COMPLETION	
5		SAND/GRAVEL (SP) med., clay w/silt.								SCREEN = 10-30'	
30		SANDSTONE, CONSOLIDATED MEDIUM								SAND = 8-30'	
		SILTY SAND (SM) dry med to fine grain w/gravel.								BENT = 6-8'	
40										37'-38' SS SEAM	
										42-43' SS SEAM	
50		FINE SAND (SP) dense, SATURATED								GW @ 52.0'	
60		TD = 61.8'								TD = 61.8'	
5											

Appendix F

Storm Water Best Management Practices

3.0 STORM WATER BEST MANAGEMENT PRACTICES

BMPs must be implemented in the areas identified in Section 2.3 of this report to ensure that storm water runoff is not impacted when it is discharged from the facility. The following chart outlines all of the BMPs that are in-place and being implemented at the facility.

Table 4 – BMP Identification

Location/Area	BMPs and Description
Bulk Plant / Area A	*Structural* ▪ Dust Control – The bulk plant is a completely enclosed pneumatic system. A dust collector is in place and maintained to control dust emissions from the system (see permit). *Non-Structural* ▪ Spill Clean-up – Spills of dry material will be swept up immediately and either reused or disposed of properly. ▪ Good Housekeeping – The bulk plant area will be kept clean and orderly. ▪ Inspection – The bulk plant is inspected regularly during facility reviews. Any visible dust emissions will be corrected immediately.
Wash Bay 1 / Area B	*Structural* ▪ Sump - The wash bay is sloped towards an in-ground sump that collects all wastewater. ▪ Curbs - A surrounding curb prevents water from escaping the wash bay and impacting storm water. ▪ Covered Wash rack – The wash bay is covered by a permanent roof structure. This greatly minimizes the potential for impacting storm water runoff. ▪ Walls – The washbay is a completely enclosed building to prevent any potential impact of wash waters to storm water. *Non-Structural* ▪ Overspray Control – Overspray of washwater will be minimized by the washbay operator. Operators will be sufficiently trained to prevent overspray from leaving the confines of the washbay. ▪ Good Housekeeping – The washbay area will be kept clean and orderly. ▪ Inspections – The washbay is inspected regularly during facility reviews. Any overspray or evidence of washwater releases from the washbay area will be corrected immediately.

Table 4 Continued – BMP Identification

Washbay 2 / Area B	*Structural* ▪ Sump - The wash bay is sloped towards an in-ground sump that collects all wastewater. ▪ Curbs - A surrounding curb prevents water from escaping the wash bay and impacting storm water. *Non-Structural* ▪ Overspray Control – Overspray of washwater will be minimized by the washbay operator. Operators will be sufficiently trained to prevent overspray from leaving the confines of the washbay. ▪ Good Housekeeping – The washbay area will be kept clean and orderly. ▪ Inspections – The washbay is inspected regularly during facility reviews. Any overspray or evidence of washwater releases from the washbay area will be corrected immediately.
Acid and Liquid Chemical Storage Area / Area C	*Structural* ▪ Secondary Containment – The acid tank is contained in an impervious concrete containment area. If a release did occur from this tank, the berm will provide sufficient containment. ▪ Loading area – There is a concrete catch basin directly below the acid/chemical loading area. If chemicals are released during loading, all fluids will enter this catch basin. ▪ Containment Berm – The liquid chemical storage area is surrounded by a containment berm that will prevent any spills or leaks from leaving the area and impacting storm water. *Non-Structural* ▪ Good Housekeeping – The acid storage area will be kept clean and orderly. ▪ Inspections – The acid tank, associated piping, secondary containment, loading area, and drum storage area are all inspected regularly during facility reviews. Any problems with this equipment will be corrected immediately. ▪ Drum Storage – Drums are stored on racks to allow easy inspection of the surface below the drum for any leaks. Drums are stored on an impervious surface.
Truck/Equipment Parking/ Storage Area / Area D	*Non-Structural* ▪ Area Maintenance – The soil and/or pavement in this area will be spot treated as necessary to address any leaks from equipment. ▪ Preventative Maintenance – The facility has a preventative maintenance program in place to keep equipment in good working order. This program will help keep equipment from leaking. ▪ Absorbent material – Employees will place absorbent pads or catchment pans under equipment that leak. The leak should be reported to the Maintenance Supervisor. ▪ Absorbent material - Absorbent socks will be placed inside the fence at the facilities two discharge points to prevent oil from leaving the property if the district deems it necessary. ▪ Good Housekeeping – The truck parking area will be kept clean and orderly. ▪ Inspections – This area is regularly inspected during facility reviews. Any areas, which need attention, will receive it immediately.
Chemical Warehouse /	*Structural*

Area E	▪ Covered Building – The chemical warehouse is a covered building which greatly minimizes any products exposure to storm water. *Non-Structural* ▪ Spill Clean-up – Spills inside and outside the building will be cleaned-up immediately to prevent the spill from migrating out of the building and impacting storm water runoff. ▪ Good Housekeeping – The chemical warehouse area will be kept clean and orderly. ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified will be addressed immediately.
Maintenance Shop / Area F	*Structural* ▪ Covered Building – The maintenance shop is a covered building which greatly minimizes any exposure to storm water. ▪ Sump System – contains leaks, spills, or wash down fluids. *Non-Structural* ▪ Spill Clean-up – Spills inside and outside the shop will be cleaned-up immediately to prevent the spill from migrating out of the shop and impacting storm water runoff. ▪ Good Housekeeping – The maintenance shop will be kept clean and orderly. ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified will be addressed immediately.
Lubrication Oils Storage Area / Area G	*Structural* ▪ Secondary Containment - All lube oil storage tanks have secondary containment sufficient to contain a catastrophic failure of the largest tank plus adequate freeboard for precipitation. ▪ Cover – Lube oils are stored within a completely enclosed building which greatly minimizes impact to storm water. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The lubrication oils storage area will be kept clean and orderly. ▪ Inspection – The lubrication oils storage area is inspected regularly during facility reviews. Any spills or other problems identified will be addressed immediately.
LFC Blending Area / Area H	*Structural* ▪ Secondary Containment - Diesel tank is placed in a secondary containment sufficient to contain a catastrophic failure plus adequate freeboard for precipitation. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The LFC blending area will be kept clean and orderly. ▪ Inspection – The LFC blending area is inspected regularly during facility reviews. Any spills or other problems identified will be addressed immediately.
Outdoor Storage Area / Area I	*Structural*

	▪ Secondary Containment – Chemicals are placed within a secondary containment sufficient to contain a catastrophic failure plus adequate freeboard for precipitation. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The chemical storage area will be kept clean and orderly. ▪ Inspection – The chemical storage area is inspected regularly during facility reviews. Any spills or other problems identified will be addressed immediately.
Trash Dumpsters / See Figure 3	*Structural* ▪ Lids – Trash dumpsters must remain closed when not in use. *Non-Structural* ▪ Spill Clean-up – Spills will be cleaned up with absorbent material immediately and disposed of properly. ▪ Good Housekeeping – The trash dumpster area will be kept clean and orderly. ▪ Inspection – The Trash Dumpster area is inspected regularly during facility reviews. Any corrective actions will be addressed immediately.

Appendix G

Inspection Checklist

Discharge Plan Inspection Record
BJ Services Company, USA
Artesia, New Mexico

Note: Record the date in each column that the maintenance or inspection was performed and intial the entry.

Year	Required Inspections	
	Sump Inspection (Annual)	Underground Process Lines
2005 Example	12/1/2005	12/1/2005
2006		
2007		
2008		
2009		
2010		
2011		
2012		
2013		
2014		

Price, Wayne, EMNRD

From: Price, Wayne, EMNRD **Sent:** Fri 8/12/2005 11:20 AM
To: jcobb@bjservices.com
Cc: Johnson, Larry, EMNRD; jason_goodwin@bjservices.com
Subject: BJ Ser. GW-72 Hobbs Effluent Water Release #2
Attachments:

OCD is in receipt of the site remediation and closure request for the above subject site.

OCD hereby approves of the plan and requires no further action at this time.

Please be advised that NMOCD approval of this plan does not relieve (BJ) of Responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (BJ) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Wayne Price-Senior Environmental Engr.
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3487
Fax: 505-4763462

Price, Wayne

From: Price, Wayne
Sent: Friday, May 27, 2005 2:56 PM
To: Jason Goodwin (E-mail); Jo Ann Cobb (E-mail)
Cc: Sheeley, Paul; Johnson, Larry
Subject: Wash Bay Sewer Line BW-072

OCD is in receipt of the Site Remediation Report dated February 15, 2005. This leak occured on July 09, 2004 and the report request that no further action be required. OCD hereby approves of the closure request.

Please be advised that NMOCD approval of this plan does not relieve (BJ Services Company) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (BJ Services Company) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

Price, Wayne

From: Price, Wayne
Sent: Friday, May 27, 2005 2:28 PM
To: Jason Goodwin (E-mail); Jo Ann Cobb (E-mail)
Cc: Sheeley, Paul; Johnson, Larry
Subject: BJ Services GW-072 Hobbs Yard 2708 West County Road

OCD is in receipt of the Final Closure report dated April 13, 2005 for the former fueling island groundwater remediation project and hereby approves with no further action required at this time.

Please be advised that NMOCD approval of this plan does not relieve (BJ Services Company) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (BJ Services Company) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
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E-mail: WPRICE@state.nm.us

1415 Louisiana
Suite 250[illegible]
Houston, Texas 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

www.brownandcaldwell.com

April 13, 2005

BROWN AND CALDWELL

Mr. Wayne Price
State of New Mexico
Energy, Minerals, and natural Resources Department
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Subject: **Final Closure Report – GW-072**
BJ Services Company U.S.A.
2708 West County Road
Hobbs, New Mexico

Dear Mr. Price:

In accordance with New Mexico Oil Conservation Division (NMOCD) correspondence dated November 8, 2004 approving implementation of final site closure activities, Brown and Caldwell, on behalf of BJ Services Company, U.S.A. (BJ Services), plugged and abandoned six groundwater monitoring wells installed as part of site investigation activities related to the former fueling island at the subject facility that were conducted under the direction of the NMOCD. Monitor well MW-12, which was installed in the eastern portion of the facility in association with the investigation pertaining to the facility's former field waste tanks, had gone dry and was therefore also plugged and abandoned. In addition, Brown and Caldwell decommissioned the biosparging system and plugged and abandoned the associated vapor extraction and air injection wells.

On March 8, 2005, the seven monitoring wells were plugged and abandoned by a State of New Mexico licensed professional well driller in accordance with the current rules and regulations in effect by the New Mexico State Engineer's office and the New Mexico Environment Department. No waste was generated during the plugging activities except for concrete from the former well pads. This material was removed for offsite disposal by the drilling contractor. Bentonite chips were used to plug the seven wells from the total depth of each well to 2 feet below ground surface. Cement was then used to backfill each well from 2 feet below ground surface, creating a seal flush with the ground surface.

The vapor extraction wells and air injection wells were plugged and abandoned following the abandonment of the seven monitoring wells. The extraction wells and air injection wells were components of the decommissioned biosparging system. The wells were plugged using cement that was backfilled into the wells from total depth to ground surface. The following list describes the wells that were plugged and abandoned.

- Monitor wells MW-1, MW-3, MW-4, MW-7, MW-8, MW-12 and MW-13.
- Vapor extraction wells VE-1, VE-2, VE-3, VE-4, VE-5, VE-6 and VE-7.
- Air injection wells AI-20, AI-21, AI-22, AI-23 and AI-24.
- Dual vapor extraction / air injection wells AV-1, AV-2, AV-3, AV-4, AV-5, AV-6, AV-7, AV-8, AV-9, AV-10, AV-11, AV-12, AV-13, AV-14, AV-15, AV-16, AV-17, AV-18 and AV-19.

On March 09, 2005 the biosparging system piping was removed. Inlets of short vertical span (approximately 1 foot to 2 feet) that trended downward from the horizontal at-grade PVC piping to the underground air distribution system for the extraction wells and air injection wells were produced after removing the at-grade PVC piping. These inlets, which had diameters ranging from 2 inches to 4 inches, were plugged and abandoned using cement.

Based on the information provided herein, Brown and Caldwell, on behalf of BJ Services Company, U.S.A, requests that NMOCD grant final closure status for environmental concerns associated with the former fueling island at the BJ Services Hobbs, New Mexico facility.

If you have any questions regarding this report, please contact the undersigned at 713-646-1129 or Jason Goodwin of BJ Services at 281-357-2573.

Sincerely,

BROWN AND CALDWELL

Richard Rexroad

Richard L. Rexroad, P.G.
Project Manager

cc: Ms. Jo Ann Cobb, BJ Services Company, U.S.A.
Mr. Jason Goodwin, BJ Services Company, U.S.A.
Brown and Caldwell Project File

Price, Wayne

From: Price, Wayne
Sent: Monday, February 07, 2005 2:18 PM
To: 'Rexroad, Richard'
Subject: RE: Closure Report for GW-072 Former Fueling Area

Approved!

-----Original Message-----
From: Rexroad, Richard [mailto:RRexroad@brwncald.com]
Sent: Monday, February 07, 2005 2:16 PM
To: wprice@state.nm.us
Cc: Wright, Lynn
Subject: Closure Report for GW-072 Former Fueling Area

Wayne: Per our telephone conversation today, BJ Services intends in the near future to implement the chloride-related groundwater investigation workplan that you recently approved pertaining to their Hobbs, New Mexico facility. Brown and Caldwell, on behalf of BJ Services, has submitted an access request document to the owner of the land to the east of the BJ Services Hobbs facility, where installation of monitor well MW-19 and soil boring SB-16 will occur. We will mobilize to the facility to conduct the chloride-related field activities when we receive this authorization from the land owner.

For resources efficiency, Brown and Caldwell intends to perform decommissioning activities for the biosparging system at the former fueling area of the Hobbs facility in conjunction with implementation of the chloride investigation workplan. We therefore request that the required date for submittal of the closure report for the former fueling area be postponed until April 15, 2005 so that the required decommissioning activities can be performed during the same mobilization as the chloride-related groundwater investigation.

Your attention to this request is greatly appreciated. Please call me at 713-646-1129 if necessary.

Thanks,

Rick Rexroad
Project Manager

Price, Wayne

From: Rexroad, Richard [RRexroad@brwncald.com]
Sent: Monday, February 07, 2005 2:16 PM
To: wprice@state.nm.us
Cc: Wright, Lynn
Subject: Closure Report for GW-072 Former Fueling Area

Wayne: Per our telephone conversation today, BJ Services intends in the near future to implement the chloride-related groundwater investigation workplan that you recently approved pertaining to their Hobbs, New Mexico facility. Brown and Caldwell, on behalf of BJ Services, has submitted an access request document to the owner of the land to the east of the BJ Services Hobbs facility, where installation of monitor well MW-19 and soil boring SB-16 will occur. We will mobilize to the facility to conduct the chloride-related field activities when we receive this authorization from the land owner.

For resources efficiency, Brown and Caldwell intends to perform decommissioning activities for the biosparging system at the former fueling area of the Hobbs facility in conjunction with implementation of the chloride investigation workplan. We therefore request that the required date for submittal of the closure report for the former fueling area be postponed until April 15, 2005 so that the required decommissioning activities can be performed during the same mobilization as the chloride-related groundwater investigation.

Your attention to this request is greatly appreciated. Please call me at 713-646-1129 if necessary.

Thanks,

Rick Rexroad
Project Manager

Price, Wayne

From: Price, Wayne
Sent: Monday, January 24, 2005 1:13 PM
To: Jo Ann Cobb (E-mail); Jason Goodwin (E-mail)
Cc: Sheeley, Paul; Johnson, Larry
Subject: HOBBS facility GW-072

Dear Ms. Cobb:

OCD is in receipt of the December 13, 2004 groundwater investigation plan. OCD hereby approves of the plan with the following conditions:

1. Notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

2. Submit your findings by March 15, 2005.

Please be advised that NMOCD approval of this plan does not relieve (BJ Services) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (BJ Services) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

1415 Louisiana
Suite 2500
Houston, Texas 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

www.brownandcaldwell.com

December 13, 2004

BROWN AND CALDWELL

Mr. Wayne Price
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Subject: **BJ Services Company U.S.A. – Hobbs Facility: GW-072**
2708 West County Road
Hobbs, New Mexico

Reference: **Letter to J. Cobb (BJ Services) from W. Price (NMOCD) dated 11/8/04; Subject: Groundwater Remediation, Discharge Plan GW-72, Hobbs, NM Facility**

Dear Mr. Price:

In response to the Reference correspondence, enclosed please find a Groundwater Investigation and Remediation Plan to address chloride impact at and in the vicinity of the subject facility. The objectives of the investigation phase of the Groundwater Investigation and Remediation Plan are as follows:

- Identify and confirm the source(s) of chloride impact;
- Assess the potential for off-site migration of chloride to the north and east of the subject facility;
- Delineate the downgradient extent of chloride impact to groundwater to the east of existing monitor well MW-16; and
- Characterize subsurface chloride impact as necessary to develop and evaluate appropriate remedial alternatives.

If you have any questions regarding the information presented herein, please contact Ms. Jo Ann Cobb at 281-357-2572 or the undersigned at 713-759-0999.

Sincerely,

BROWN AND CALDWELL

Richard L. Rexroad
Project Manager

Attachment

cc: Chris Williams (NMOCD – Hobbs, New Mexico)
Jo Ann Cobb (BJ Services – Tomball, Texas)
John Adcock (BJ Services – Hobbs, New Mexico)
Brown and Caldwell File: 12832

P:\Wp\BJSERV\126238\001L.doc

Groundwater Investigation and Remediation Plan
BJ Services Company, U.S.A.
Hobbs, New Mexico

The following sections describe the installation and sampling of soil borings and monitor wells at the BJ Services, U.S.A. (BJ Services) Hobbs, New Mexico Facility. These soil borings and monitor wells will be 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.

Soil borings will be completed at three locations for subsequent installation of new monitor wells. Soil samples will be collected from these and an additional soil boring to evaluate the vertical distribution of chloride impact to soil at these locations. Groundwater samples will be collected from new and existing monitor wells at the facility to characterize groundwater quality, groundwater geochemistry, and the current distribution of chloride impact to groundwater in this area.

In its 11/8/04 correspondence, NMOCD approved the closure request for the former fueling area at the Facility and requested submittal of a final closure report for this area by March 1, 2005. The biosparging system will therefore be decommissioned and the following monitor wells will be plugged and abandoned (P&A'd) during the course of the investigation-related activities described herein (see Figure 1):

- MW-1;
- MW-3;
- MW-4;
- MW-7;
- MW-8;
- MW-9; and
- MW-13.

Monitor well MW-12, which has gone dry, will also be P&A'd.

New Monitor Well and Soil Boring Locations

Monitor well MW-17 will be installed at a location near the north fenceline of the Facility, approximately midway between existing monitor wells MW-12D and MW-14 (see Figure 1). The purpose of monitor well MW-17 is to verify that chloride-impacted groundwater has not migrated northward from the Facility, in accordance with a directive provided in NMOCD's 11/8/04 correspondence.

Monitor well MW-18 will be installed at a location in the eastern portion of the Facility, as indicated in Figure 1. The purpose of monitor well MW-18 is to verify that chloride-impacted groundwater has not migrated off-site to the east of the Facility, in accordance with a directive provided in NMOCD's 11/8/04 correspondence.

Monitor well MW-19 will be installed at a location approximately 250 feet downgradient (i.e., northeast) of existing off-site monitor well MW-16, as indicated in Figure 1. The purpose of monitor well MW-19 is to define the downgradient extent of chloride impact to groundwater detected at the monitor well MW-16 location.

Soil boring SB-16 will be installed in proximity to previously installed monitor well MW-16 to evaluate the vertical distribution of chloride impact to soil at this location.

Installation of Soil Borings and Collection of Soil Samples

Soil samples will be collected from non-indurated vadose zone soil materials at approximate 10-foot centers from the monitor well MW-17, MW-18, and MW-19 soil borings and at approximate 5-foot centers from soil boring SB-16. These samples will be analyzed for chloride by Method 325.2 to determine the vertical distribution of chloride in vadose zone soils at these locations.

Soil boring SB-16 will be terminated upon reaching the top of the saturated zone and will be backfilled with cement-bentonite grout. The soil borings for monitor wells MW-17, MW-18, and MW-19 will be advanced into the saturated zone as necessary for subsequent installation of the monitor wells, as described below. A Brown and Caldwell field geologist will lithologically log soil boring SB-16 and each of the monitor well soil borings.

Installation and Development of Monitor Wells

Monitor wells MW-17, MW-18, and MW-19 will be constructed as 2-inch diameter Schedule 40 PVC wells and installed in accordance with the following specifications:

- The wells will be equipped with PVC top and bottom caps and an approximate 2-foot PVC sediment sump;
- 15 feet of 0.010-inch machine-slotted PVC screen will be set straddling the apparent top of 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;
- PVC riser pipe will extend from the top of the screen to approximately 2.5 feet above grade for above-grade completed wells and approximately 0.5 feet below grade for flush-mounted wells;
- An appropriately graded sand filter pack will be installed from the total depth of the soil boring to approximately 2 feet above the top of the well screen;
- An approximate 1-foot thick hydrated bentonite seal will be placed atop the filter pack; and
- The remaining annular area will be tremie-backfilled with cement-bentonite grout.

For above-grade completed wells (i.e., MW-19 and, if feasible, MW-17), a locking steel protective casing set within a 3-foot by 3-foot by 4-inch thick concrete surface pad (sloped away from the well) will encase the above-grade portion of the riser pipe. Up to four bollards will be set in concrete surrounding the well pad.

For flush-mounted wells (MW-18, and possibly MW-17), the uppermost portion of the riser pipe will be set within a steel vault placed in a 3-foot by 3-foot by 4-inch thick concrete surface pad that slopes away from the well.

Newly installed monitor wells will be developed with a surge block, bailer, and/or a low discharge rate submersible pump for a period of up to 1 hour per well until produced groundwater is clear and reasonably free of suspended sediment.

The horizontal locations of the new monitor wells will be measured relative to existing features shown in Figure 1. The top-of-casing elevations of the new wells will be determined relative to the top-of-casing elevation of one or more existing monitor wells using field surveying techniques.

Collection of Groundwater Samples

Groundwater samples will be collected from the newly installed monitor wells and the existing monitor wells that will not be P&A'd. Prior to sampling, each of the wells will be gauged to determine depth to groundwater. The wells will then be purged. Field parameter measurements for pH, temperature, specific conductivity, oxidation-reduction potential (ORP), dissolved oxygen, and turbidity will be collected after each well volume is purged. Each well will be purged until the well goes dry, until three well volumes of water are removed from the well, or (preferably) until stabilization occurs. Groundwater will be considered stabilized when all of the following criteria are met, as measured during successive incremental measurements:

- Variability of less than 3 percent for specific conductivity,
- Variability of less than 10 mV for ORP,
- Variability of less than 0.1 pH units; and
- Variability of less than 10 percent for dissolved oxygen is achieved.

To characterize the groundwater geochemistry at the new monitor well locations, groundwater from monitor wells MW-17, MW-18, and MW-19 will be analyzed for the following parameters:

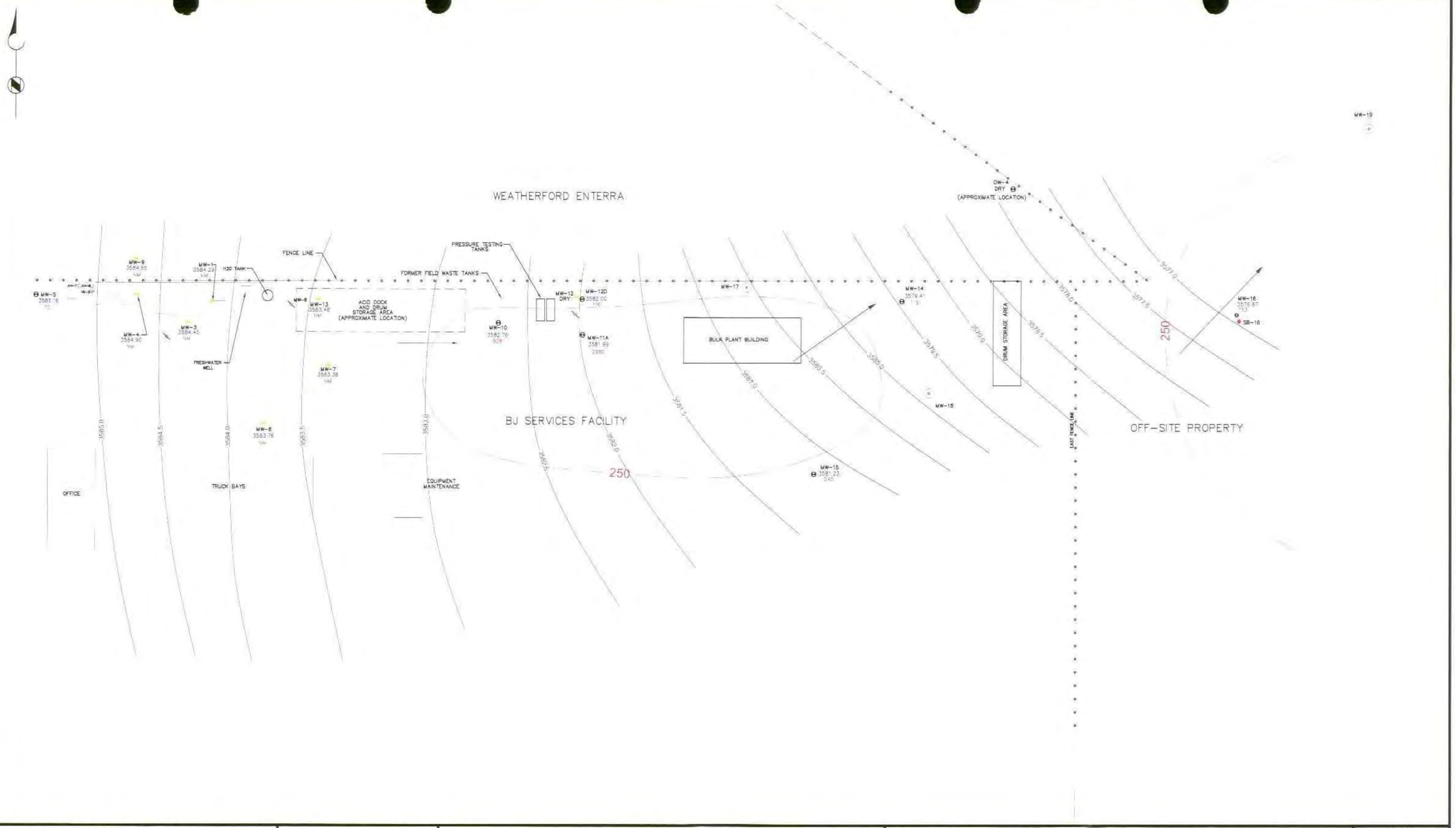
- Cations (Ca, Mg, K, and Na) by Method 6010;
- Anions (chloride by Method 325.3 and nitrate, sulfate, and fluoride by Method 300.0);
- Total hardness (CaCO3) by Method 130.1; and
- Carbonate (CO3) and bicarbonate (HCO3) by Standard Method 4500-CO2-D.

For comparative purposes, contemporaneous groundwater samples will be collected from the following existing wells at and in the vicinity of the Facility and analyzed for the geochemical parameters listed above:

- MW-5 (upgradient, non-impacted well);
- MW-10;
- MW-11A;
- MW-12D;
- MW-14;
- MW-15; and
- MW-16.

Reporting

The field and laboratory data produced during implementation of this workplan will be evaluated upon completion of laboratory analyses. Remedial alternatives will be evaluated if sufficient data are available at that time. If acquisition of additional data is necessary to evaluate remedial alternatives, then an addendum to this workplan, describing the additional data requirements and the associated data collection methodology, will be submitted to NMOCD.



BROWN AND CALDWELL HOUSTON, TEXAS SUBMITTED: _____ DATE: _____ PROJECT MANAGER APPROVED: _____ DATE: _____ BROWN AND CALDWELL	0 50 100 SCALE: 1" = 100' DRAWN BY: ____ DATE ____ CHK'D BY: ____ DATE ____ APPROVED: ____ DATE ____	LEGEND MW-10 / 3582.76 / 928 — EXISTING MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (FEET AMSL) AND CHLORIDE CONCENTRATION (MG/L) MW-2 — MONITOR WELL (PLUGGED AND ABANDONED) GROUNDWATER FLOW DIRECTION MW-18 * — PROPOSED MONITOR WELL LOCATION SB-16 — PROPOSED SOIL BORING LOCATION MW-8 — MONITOR WELL TO BE PLUGGED AND ABANDONED NM = NOT MEASURED	TITLE: GROUNDWATER ELEVATION AND CHLORIDE DISTRIBUTION MAP FOR MARCH 29, 2004, WITH PROPOSED INVESTIGATION LOCATIONS CLIENT: BJ SERVICES COMPANY, U.S.A. SITE: HOBBS, NEW MEXICO	DATE: 11/23/04 PROJECT NUMBER: 126238.019 FIGURE NUMBER: 1

Nov 24, 2004 - 8:39am ckelly
P:\Cad\JOBS\BJServices\112832\2003\019\GWEChlorideDist.dwg

Price, Wayne

From: Price, Wayne
Sent: Tuesday, November 30, 2004 10:23 AM
To: Jason Goodwin (E-mail); Jo Ann Cobb (E-mail)
Cc: Williams, Chris; Johnson, Larry
Subject: BJ Services GW-072

Dear Mr. Goodwin and Ms Cobb:

On November 08, 2004 OCD approved the closure (see attached report) of the formal fuel area. In addition OCD has required that BJ Services start remediation of the former underground waste water tank area and continue the investigation of that area. Upon reviewing the permit file OCD does not have any record of the permit being officially modified to dispose of the facilities waste water at the City of Hobbs POTW. However, OCD was aware that BJ was performing this best management practice. Therefore, you are hereby ordered to modify your permit to include this practice and perform the following action items.

1. The permit shall be modified to include pressure testing this line once a year.
2. BJ shall have on file for inspection verification of the POTW permit.
3. BJ shall provide a written statement signed by a corporate official that the waste water was indeed going to the City of HOBBS POTW. Any violation of that permit process shall be between BJ and the City of Hobbs. Once Water enters the POTW OCD does not regulate that waste from that point source.
4. BJ shall immediately properly close the excavated area where a waste water line leak occurred recently. Before closure, BJ shall submit to this office for approval (today via E-mail) a copy of the analytical bottom hole results for TPH, BTEX, and chlorides, the wastewater analytical, photos of spill area, copy of spill report, and a statement concerning contamination found that does not belong to BJ and why BJ's remaining contamination will not impact groundwater. OCD will review and approve with conditions.

OCD is very concerned that the open excavation will possibly cause a conduit to groundwater due to the heavy rainfall recently in the area.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

GW closure
November 08_04.doc

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

November 08, 2004

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 7923 4405

Ms. Jo Ann Cobb
BJ Services Company (BJ)
11211 FM 2920
Tomball, Texas 77375

Re: Groundwater Remediation
Discharge Plan GW-072
Hobbs, NM Facility

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (OCD) is in receipt of BJ Services Company's (BJ) letter dated July 16, 2004 and groundwater monitoring reports. The letter requested OCD grant closure for the former fueling area groundwater remediation system and former field underground wastewater tank area. ***OCD hereby approves of the closure request for the former fueling area.*** Please provide a final closure report by March 01, 2005.

The OCD does not approve closure for the former field waste tank area for the following reasons:

1. The underground wastewater tanks leaked and contaminated underlying groundwater. The area still has contaminants (i.e. chlorides) that exceed the WQCC groundwater standards. Monitor well MW-10, MW-11a, MW-16 are reported to have chlorides levels of 928 mg/l, 2980 mg/l and 753 mg/l respectively, which exceed the WQCC standard of 250 ppm.

2. BJ's July 16, 2004 letter and groundwater monitoring reports hypothesized that the off-site contamination found in MW-16 is from another source. There was no documentation to substantiate this claim except hypothetical listing of possible sources located in the area.

3. The underground wastewater field tanks were an active source of chloride contamination. The up-gradient wells on site did not show any significant

chlorides. Monitor wells at the former field waste tank area and down-gradient wells from the site are impacted.

4. BJ points out there are no water wells within one mile of the source area. OCD points out that BJ Services does not own the off-site property and has no control of new water wells being installed.

5. OCD has in the past required an investigation and remediation plan for this issue. BJ Services has not completely defined the contamination and has not proposed an adequate remediation plan. The contamination has left the property on the east side and most likely on the north side. The method BJ Services proposed has failed to contain the contamination on their property.

6. The last groundwater gradient map shows a gradient to the northeast. There is no monitoring well on the north side of the property line to ensure contamination has not migrated off of the property. OW-4 (abandoned) which is located northeast of the former waste tanks showed chlorides in 1999-2000 that slightly exceeded the groundwater standard of 250 ppm. OCD contends that BJ does not have adequate monitoring on the north side of its property.

7. OCD's experience is that chloride plumes can move away from the source area over time and continue to contaminate and degrade down-gradient groundwater for years. OCD is concerned this scenario is happing now and OCD has a fiduciary duty to prevent future groundwater contamination. OCD is concerned that BJ Services was notified over a year ago by E-mail on October 23, 2003 to submit an active remediation and investigation plan and no remediation has taken place as of to date.

BJ Services is hereby order to submit a groundwater investigation and remediation plan for OCD approval by December 17, 2004. This plan shall include installing monitor wells on the north and east side of the property. A sampling plan, a plan to remove the groundwater contaminants from the former waste tank and MW-16 areas.

If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price-Senior Environmental Engr.

cc: OCD Hobbs Office

1415 Louisiana
Suite 250[redacted]
Houston, Texas 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

www.brownandcaldwell.com

July 16, 2004

BROWN AND CALDWELL

Mr. Wayne Price
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Subject: **BJ Services Company U.S.A. – Hobbs Facility: GW-072**
2708 West County Road
Hobbs, New Mexico

Dear Mr. Price:

Enclosed please find quarterly groundwater monitoring reports June-August 2003, October 2003, December 2003, and March 2004 for the BJ Services, U.S.A. (BJ Services) facility in Hobbs, New Mexico. The environmental issues addressed in these reports are as follows:

- Historic hydrocarbon impacts to soil and groundwater associated with a former on-site fueling system that was taken out of service in July 1995;
- Historic hydrocarbon impact to groundwater associated with three former field waste tanks that were removed in March 1997; and
- On-site chloride impact to groundwater (associated with the former field waste tanks) and off-site chloride impact to groundwater.

In accordance with a Remedial Action Plan (RAP) approved by the New Mexico Oil Conservation Division (NMOCD) on August 11, 1994, Brown and Caldwell installed a biosparging system to address hydrocarbon impacts to soil and groundwater associated with the former on-site fueling system. 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 was 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, a request to decommission the biosparging system was submitted to the NMOCD in the June 2002 Groundwater Sampling and Biosparging System Closure Report.

Groundwater sampling activities for wells associated with the former fueling system were suspended after the June 2002 sampling event, pending NMOCD approval of this closure request.

Natural attenuation processes have resulted in substantial reductions in hydrocarbon concentrations in groundwater in the area of the three former field waste tanks, as measured in monitor wells MW-10, MW-11A, and MW-12D. In monitor wells MW-10 and MW-11A, concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) and diesel- and gasoline-range total petroleum hydrocarbons (TPH-D and TPH-G) have generally been non-detect and have been uniformly less than applicable New Mexico Water Quality Control Commission (NMWQCC) standards for the past 12 quarterly sampling events, dating back through March 2001 and June 2001, respectively. With the exception of two detections of TPH-D, each at a concentration less than 1 milligram per liter (mg/L), there have been no detections of TPH or BTEX in monitor well MW-12D for the past 12 sampling events, dating back through September 2001.

Groundwater modeling conducted by Brown and Caldwell prior to installation of off-site monitor well MW-16 to the east of the BJ Services facility in May 2003 indicated an anticipated chloride concentration of less than the NMWQCC standard of 250 mg/L at the proposed MW-16 location, based on historic data that defined an eastward decrease in chloride concentrations associated with the former field waste tanks source area. Off-site monitor well MW-16 has been sampled five times since 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 from these wells. 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 enclosed report for the December 2003 groundwater sampling event provides documentation of this off-site chloride source. This documentation consists of records, from NMOCD files, of permitted oil & gas exploration and production activities. These records are supplemented by historical aerial photographs, which indicate the presence of an active injection well located east/northeast of the BJ Services facility and additional historical oil & gas-related activities conducted in proximity to the subject facility. The December 2003 report also presents the results of a current water well search, which indicates that there are no active water wells within 1 mile downgradient of the facility. The data presented in Figure 4 of the enclosed report for the March 2004 groundwater sampling event demonstrate that chloride impact associated with the former field waste tanks at the BJ Services facility is limited to within the boundaries of the subject 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.

Based on the conclusive demonstration that natural attenuation processes have consistently reduced hydrocarbon concentrations in groundwater to less than applicable NMWQCC standards and on the chloride-related data presented above, BJ Services and Brown and Caldwell request that NMOCD grant closure for the former fueling area and the former field waste tanks at the subject facility. Further sampling of monitor wells at and in the vicinity of the facility will be discontinued pending NMOCD's evaluation of this closure request.

If you have any questions regarding the information presented herein, please contact Ms. Jo Ann Cobb at 281-357-2572 or the undersigned at 713-759-0999.

Sincerely,

BROWN AND CALDWELL

Richard L. Rexroad, P.G.
Project Manager

Attachments (4)

cc: Chris Williams (NMOCD – Hobbs, New Mexico)
Jo Ann Cobb (BJ Services – Tomball, Texas)
John Adcock (BJ Services – Hobbs, New Mexico)
Brown and Caldwell File: 12832

ATTACHMENT 1

June-August 2003 Groundwater Sampling Report
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

ATTACHMENT 2

October 2003 Groundwater Sampling Report
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

ATTACHMENT 3

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

ATTACHMENT 4

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

Price, Wayne

From: Price, Wayne
Sent: Thursday, October 23, 2003 2:34 PM
To: Jo Ann Cobb (E-mail)
Cc: Jason Goodwin (E-mail); Sheeley, Paul; Johnson, Larry; 'Wright, Lynn'
Subject: BJ Hobbs Service Yard GW-072 Groundwater Contamination

Dear Jo Ann:

OCD is in receipt of the analysis of the off-site monitor well MW-16. Please note the chlorides (ranging from 841-983 mg/l) exceed the NM WQCC groundwater standards of 250 mg/l. OCD had allowed and accepted BJ's remediation method of natural attenuation concerning this issue, however, since this method has not controlled contaminants from leaving your properly BJ shall submit an active remediation and investigation plan for OCD approval by December 15, 2003. OCD is concerned about contaminating down gradient water well receptors.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

Table 4
Cumulative Results[1] for Chloride[2] Analyses
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

MW-14	MW-15	MW-16	OW-4
NP	NP		NS
NP	NP	NP	NS
NP	NP	NP	NS
NP	NP	NP	NS
NP	NP	NP	266
NP	NP	NP	258
368	219	NP	NS
327	NA	NP	NS-D
222	222	NP	NS-D
245	228	NP	NS-D
NA	NA	NP	NS-D
276	215	NP	NS-D
284	224	NP	NS-D
258	233	NP	NS-D
293	246	NP	NS-D
179	228	NP	NS-D
163	272	NP	NS-D
NS	NS	983	NS-D
182	280	841	NS-D
175	298	963	NS-D

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
8/1/95	160	150	310	130	380	310	350	110	2,200	3,400	NP	NP	NP	NP
8/23/96	130	140	100	99	210	250	360	140	2,000	2,900	NP	NP	NP	NP
3/23-24/98	212	206	126	151	183	223	364	164	2,390	NS	940	1,200	NP	NP
3/9-10/99	163	156	142	155	411	238	274	123	1,160	NS	834	314	NP	NP
6/10-7/2/99	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	195	496
3/9-10/00	258	196	196	196	NP	224	241	131	474	NP	1,290	327	117	276
1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS
3/8-9/01	NA	165	172	152	NP	224	250	127	879	NP	1,720	586	NS	276
6/21/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NS	NA
9/10/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA
9/18/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	79	NA
12/6/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA
3/11-12/02	177	172	183	127	NP	188	241	110	861	NP	1,230	NS-D	76	207
6/18/2002	NS	NA	NA	NA	NP	NA	NS	NS	NA	NP	NA	NS-D	NA	145
9/16/2002	NS	NS	NS	121	NP	NS	NS	NS	1,030	NP	1,550	NS-D	86	NS
1/9/2003	NS	NS	NS	123	NP	NS	NS	NS	525	NP	3,150	NS-D	95	NS
3/6/2003	NS	NS	NS	116	NP	NS	NS	NS	363	NP	2,900	NS-D	102	NS
6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	89.3	NS
8/22/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NS	NS
10/2/2003	NS	NS	NS	194	NP	NS	NS	NS	420	NP	3,240	NS-D	99.8	NS

[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.
MW-12D installed June 1999.
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.

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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
Fluoride (continued)	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

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
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
	6/10/1999-7/2/1999	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
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
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
	6/10/1999-7/2/1999	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
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
	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
	6/10/1999-7/2/1999	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
Magnesium (continued)	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
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

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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
	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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	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
	6/10/1999-7/2/1999	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
Barium (continued)	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
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

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
	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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
Mercury (continued)	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
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
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NP	NP	NS

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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	OW-4
	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	<0.1
Anthracene (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		NS	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
	6/10/1999-7/2/1999	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

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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
	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NA	NA	NP	<0.1
Fluorene (continued)	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
	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
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
	6/10/1999-7/2/1999	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

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
	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
Acetone (continued)	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
	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	NS	NA	NP	NA	NS-D	NA	NS	NA	< 100	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
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	5	NP	NP	NP	< 5
	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	<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	NS	NA	< 5	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
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	31	NP	NP	NP	< 5
	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	<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
Naphthalene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS

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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	OW-4
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	190	NP	NP	NP	< 5
	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	<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
n-Propylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	68	NP	NP	NP	< 5
	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	<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
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
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	< 5
	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	<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
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
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	< 5
	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	<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
MTBE	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 10	25	NP	NP	NP	< 10
MTBE (continued)	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	<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
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
	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
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
2-Methylphenol	8/1/1995	< 50	56	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	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
	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
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
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
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
Phenol (continued)	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	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.

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)																			
Cations (mg/L)																			
Metals (mg/L)																			
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.0002	<0.0002	NP	NS
Mercury (continued)	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	<0.1
Anthracene (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

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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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	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
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
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NA	NA	NP	<0.1
Fluorene (continued)	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
	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

SVOCs (µg/L)

(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.

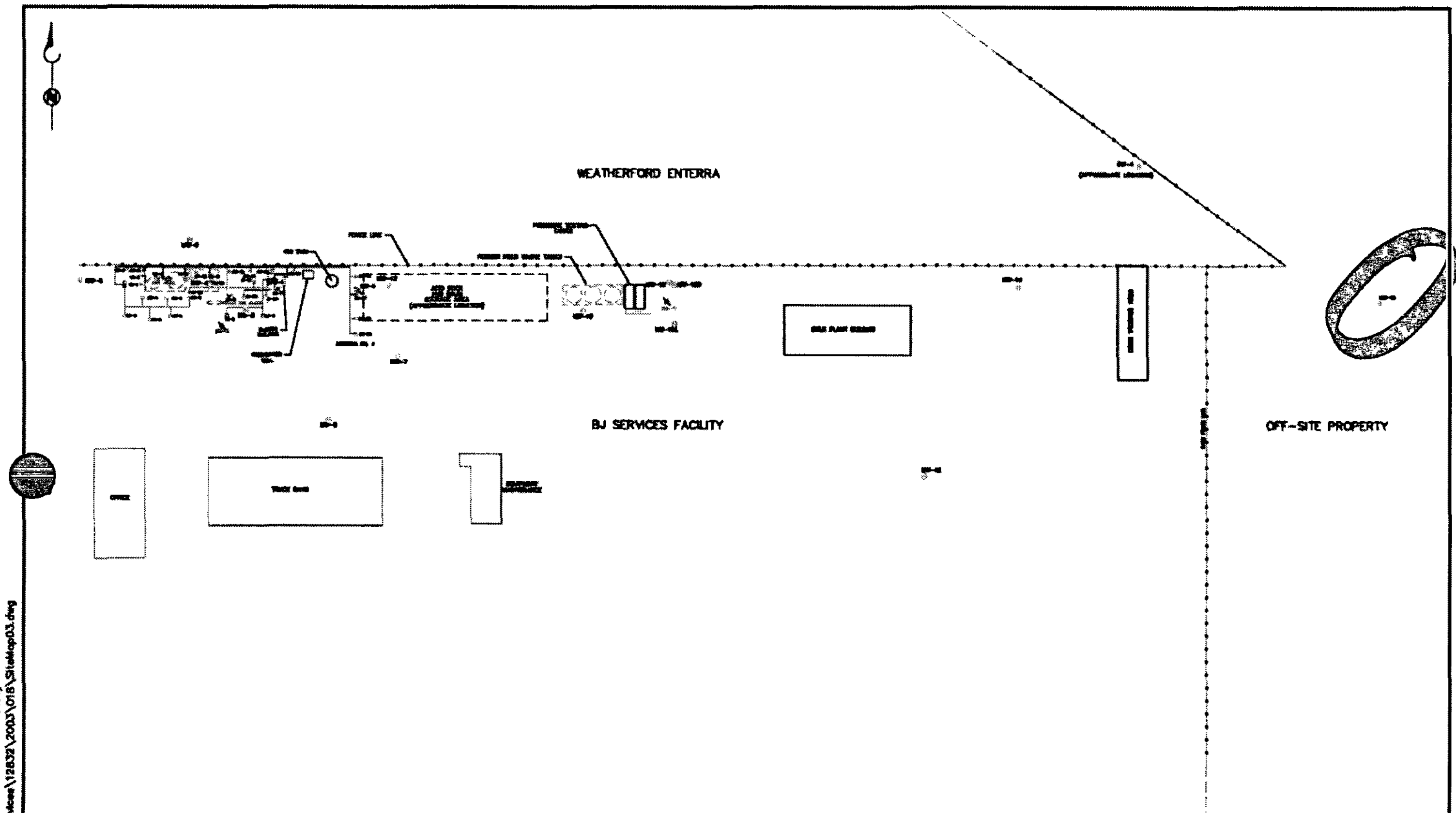
(2) - NP = Well not present at time of sampling event.

(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.



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

1415 Louisiana
Suite 25[illegible]
Houston, Texas 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

www.brownandcaldwell.com

December 10, 2003

Mr. Wayne Price
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Subject: **BJ Services Company U.S.A. – Hobbs Facility: GW-072**
2708 West County Road
Hobbs, New Mexico

Dear Mr. Price:

BJ Services, U.S.A. (BJ Services) installed monitor well MW-16 at an off-site location approximately 175 feet east of the eastern boundary of the subject facility, as indicated in the site map provided in Attachment 1. The intended purposes of this well were to replace off-site monitor well OW-4, which has gone dry, and to define the downgradient extent of groundwater chloride concentrations in excess of the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 milligrams per liter (mg/L) for domestic water supply. Groundwater flow is in a generally eastward direction in the area of the subject facility, as indicated by the recent groundwater gradient map presented in Attachment 2.

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 monitor well MW-16 location, based on historic data that defined an eastward decrease in chloride concentrations within the subject 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 in the eastern portion of the subject facility, ranged from 163 mg/L to 368 mg/L (see tabulation of chloride data provided in Attachment 3).

Off-site monitor well MW-16 has been sampled three times since its installation in May 2003, with chloride concentrations in the well ranging from 841 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 175 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 subject facility. Moreover, the historic and current eastward decrease 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 the apparent off-site source of chloride impact was not present.

Attachment 4 contains a recent aerial photograph showing the BJ Services facility and surrounding properties. This aerial photograph shows an apparently non-vegetated area

immediately east of the monitor well MW-16 location. Field observations in October 2003 confirm an area of stressed vegetation at this location. This area of stressed vegetation may be the result of previous oil- and gas-related exploration activities conducted on the property to the east of the BJ Services facility. Brown and Caldwell is currently conducting a search of New Mexico Oil Conservation Division files to determine whether permitted drilling activities have been conducted to the east of the BJ Services facility. Brown and Caldwell is also seeking to obtain historic aerial photographs of the area that may further document these activities. The complete results of these investigations will be provided when they are available.

In conclusion, the data presented herein indicate the following:

- An apparent off-site source of chloride impact to groundwater is present to the east of the BJ Services facility;
- Groundwater chloride concentrations east of the BJ Services facility would be at or below 250 mg/L if this apparent off-site source of chloride impact to groundwater were not present;
- With the exception of the apparent off-site chloride source, groundwater impacted by chloride at concentrations greater than 250 mg/L appears to be contained within the BJ Services property and thus poses no environmental threat to any receptors; and
- When the presence of the apparent off-site source of chloride impact to groundwater is confirmed, no further investigation or remediation related to presence of chloride in groundwater at the BJ Services facility is warranted.

If you have any questions regarding the information presented herein, please contact Ms. Jo Ann Cobb at 281-357-2572 or the undersigned at 713-759-0999.

Sincerely,

BROWN AND CALDWELL

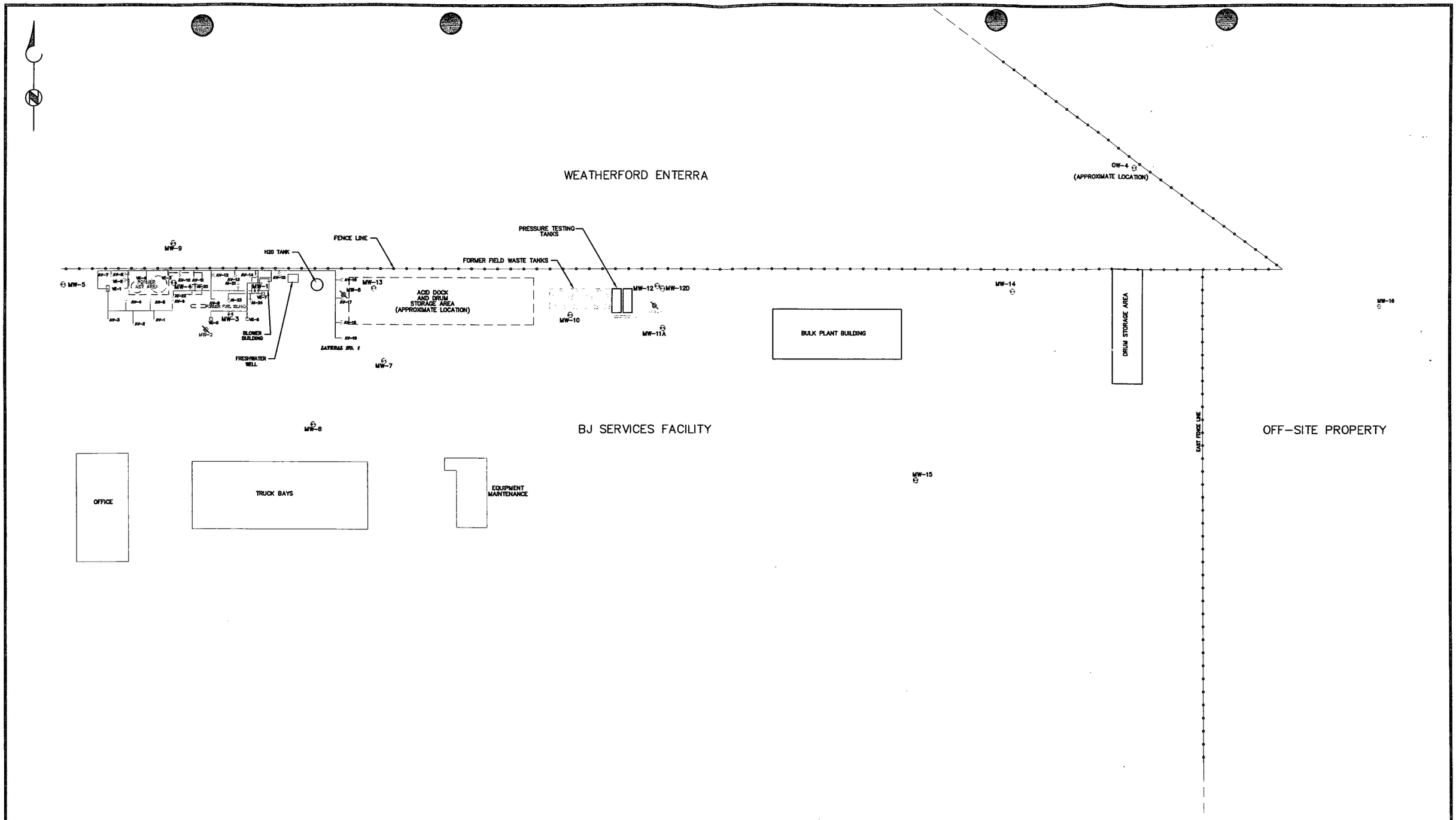
Richard Rexroad
Project Manager

Attachments (4)

cc: Chris Williams (NMOCD – Hobbs, New Mexico)
Jo Ann Cobb (BJ Services – Tomball, Texas)
John Adcock (BJ Services – Hobbs, New Mexico)
Brown and Caldwell File: 12832

Attachment 1

Site Map



Oct 14, 2003 - 3:20pm ckelly
P:\Cad\JOBS\BJServices\12832\2003\018\SiteMap03.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 EXISTING MONITOR WELL LOCATION

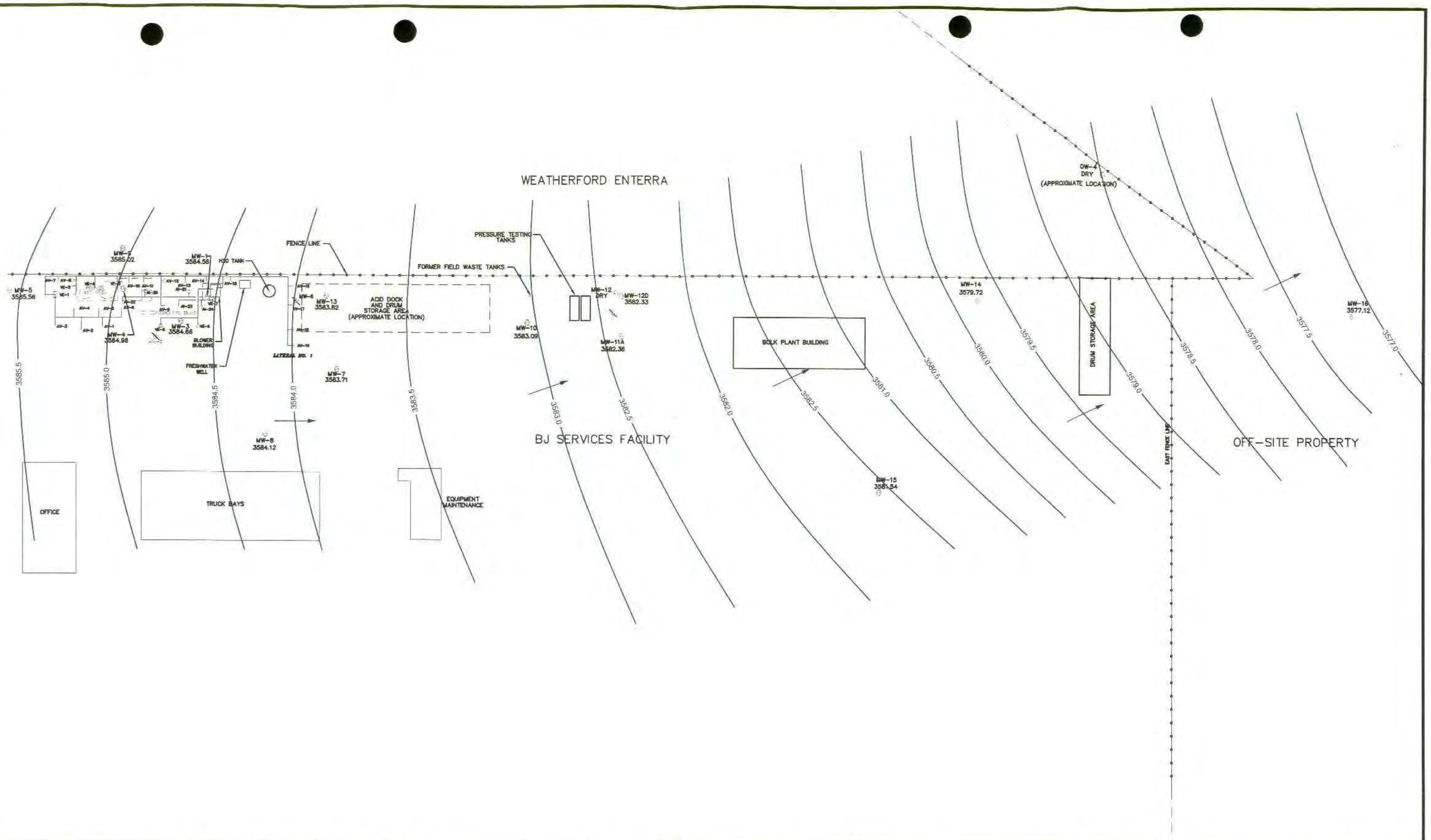
BIOSPARGING SYSTEM

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

Attachment 2

Groundwater Gradient Map for October 2, 2003



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

3584.66 / MW-3 — EXISTING MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (FEET AMSL)

BIOSPARGING SYSTEM

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

GROUNDWATER FLOW DIRECTION

TITLE: GROUNDWATER ELEVATION MAP FOR OCTOBER 2, 2003	DATE: 10/15/03
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.018
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 2

Oct 23, 2003 - 1:22pm ckelly
P:\Cad\JOBS\BJServices\12832\2003\018\GWE-Oct2,2003.dwg

Attachment 3

Tabulation of Current and Historic Chloride Concentration Data

Table 1
Current and Historic Chloride Concentration Data[1],[2]
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

[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.
MW-12D installed June 1999.
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.

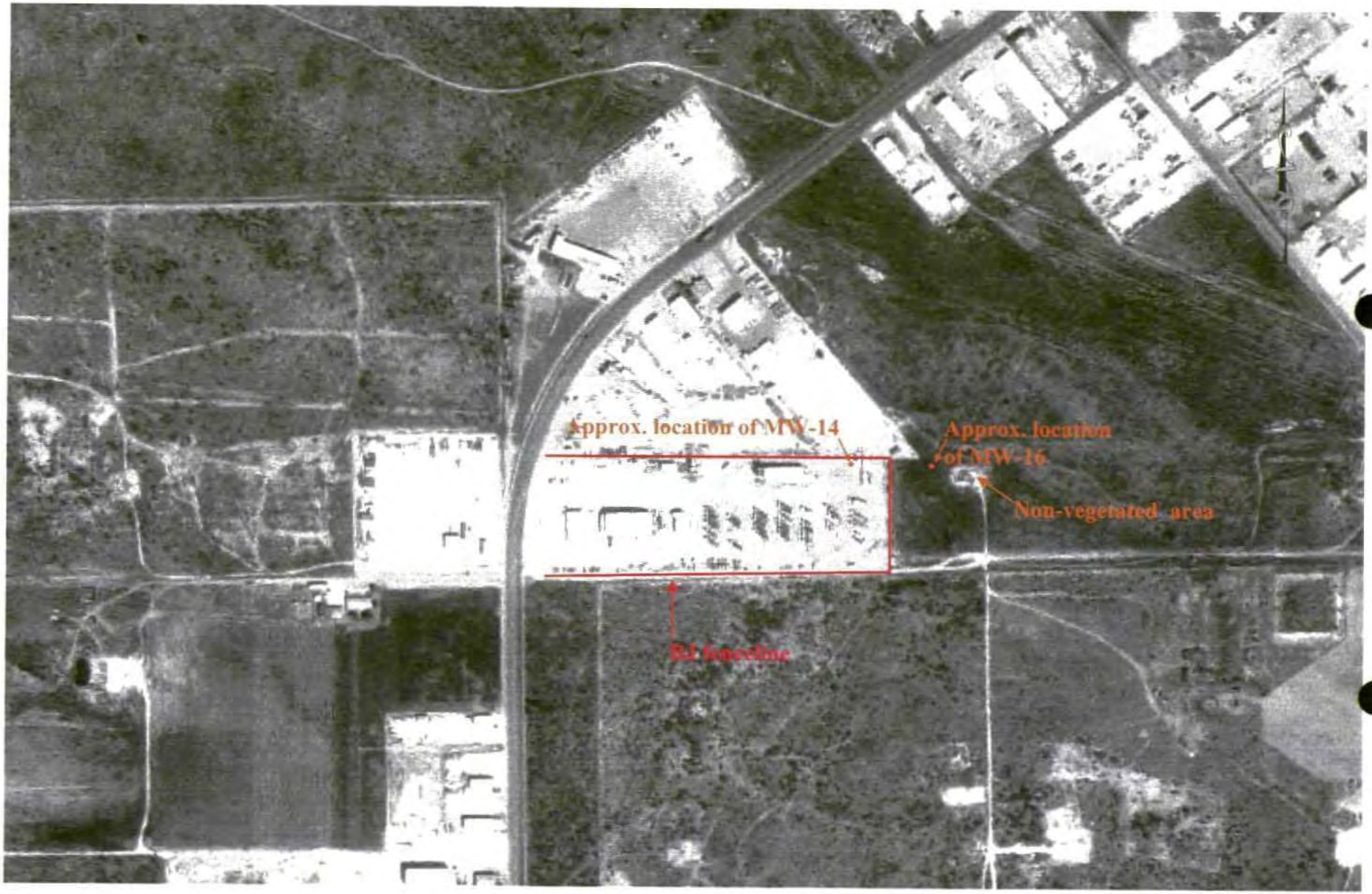
NS = not sampled during applicable sampling event.

NA = not analyzed for chloride during applicable sampling event.

NS-D = not sampled because well was dry during applicable sampling event.

Attachment 4

Recent Aerial Photograph of BJ Services Facility and Vicinity



Recent Aerial Photograph of BJ Services – Hobbs, New Mexico Facility

Price, Wayne

From: Price, Wayne
Sent: Wednesday, October 22, 2003 1:31 PM
To: Jason Goodwin (E-mail)
Subject: BJ Hobbs Yard-w cty rd.

Dear Jason:

OCD is in receipt of the March 2003 Groundwater sampling report dated August 6, 2003. When will MW-16 be put in and how soon can we have the results?

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

Price, Wayne

From: Price, Wayne
Sent: Tuesday, January 07, 2003 1:59 PM
To: 'Jason_Goodwin@bjservices.com'
Subject: RE: Hobbs ???

Will the new sump have secondary containment with leak detection?

-----Original Message-----
From: Jason_Goodwin@bjservices.com [mailto:Jason_Goodwin@bjservices.com]
Sent: Tuesday, January 07, 2003 2:00 PM
To: Price, Wayne
Subject: RE: Hobbs ???

Wayne,

BJ was very limited on the amount of soil it could remove. BJ only removed approximately 3 yards if that. We have some very serious overhead constraints from the proximity of the acid dock. In order for BJ to remove any more soil we would have to remove part of the existing acid dock. The soils removed are being profiled using samples collected and should be disposed of as non-hazardous within the week. The sample collected by Ecological represent the worst of the contamination still present in the bottom of the excavation. No detectable concentrations were reported in soils after 14 feet and groundwater is currently being monitored using the existing monitoring well network downgradient from the former sump.

BJ Services plans to re-install another sump in the same hole that will be constructed to protect underlying soils.

Let me know,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

"Price, Wayne" <WPrice@state.nm.us>
01/07/2003 02:34 PM

To: "'Jason_Goodwin@bjservices.com'" <Jason_Goodwin@bjservices.com>
cc:
Subject: RE: Hobbs ???

Dear Jason:

I have the following questions:

1. Did BJ remove any contaminated soil, if so how much and where was it disposed of?
2. Are you planning on placing a barrier over the top the the excavated area?

-----Original Message-----
From: Jason_Goodwin@bjservices.com [mailto:Jason_Goodwin@bjservices.com]
Sent: Friday, January 03, 2003 8:16 AM
To: wprice@state.nm.us
Subject: Hobbs ???

Wayne,

In regards to our sump investigation at Hobbs. We currently have an open hole from our investigation and would like to possibly re-insert a new sump. Can you tell me whether you expect the state to recommend any further investigation?

Thanks,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

Price, Wayne

From: Jason_Goodwin@bjservices.com
Sent: Friday, January 03, 2003 8:16 AM
To: wprice@state.nm.us
Subject: Hobbs ???

Wayne,

In regards to our sump investigation at Hobbs. We currently have an open hole from our investigation and would like to possibly re-insert a new sump. Can you tell me whether you expect the state to recommend any further investigation?

Thanks,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

Price, Wayne

From: Jason_Goodwin@bjservices.com
Sent: Tuesday, January 07, 2003 2:00 PM
To: Price, Wayne
Subject: RE: Hobbs ???

Wayne,

BJ was very limited on the amount of soil it could remove. BJ only removed approximately 3 yards if that. We have some very serious overhead constraints from the proximity of the acid dock. In order for BJ to remove any more soil we would have to remove part of the existing acid dock. The soils removed are being profiled using samples collected and should be disposed of as non-hazardous within the week. The sample collected by Ecological represent the worst of the contamination still present in the bottom of the excavation. No detectable concentrations were reported in soils after 14 feet and groundwater is currently being monitored using the existing monitoring well network downgradient from the former sump.

BJ Services plans to re-install another sump in the same hole that will be constructed to protect underlying soils.

Let me know,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

"Price, Wayne" <WPrice@state.nm.us>
01/07/2003 02:34 PM

To: "'Jason_Goodwin@bjservices.com'" <Jason_Goodwin@bjservices.com>
cc:
Subject: RE: Hobbs ???

Dear Jason:

I have the following questions:

1. Did BJ remove any contaminated soil, if so how much and where was it disposed of?
2. Are you planning on placing a barrier over the top the the excavated area?

-----Original Message-----
From: Jason_Goodwin@bjservices.com [mailto:Jason_Goodwin@bjservices.com]
Sent: Friday, January 03, 2003 8:16 AM
To: wprice@state.nm.us
Subject: Hobbs ???

Wayne,

In regards to our sump investigation at Hobbs. We currently have an open hole from our investigation and would like to possibly re-insert a new sump. Can you tell me whether you expect the state to recommend any further investigation?

Thanks,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

Price, Wayne

From: Price, Wayne
Sent: Thursday, May 09, 2002 2:41 PM
To: 'Jason_Goodwin@bjservices.com'; Price, Wayne
Cc: CRivas@bjservices.com; Kieling, Martyne
Subject: RE: Test Tank Water Disposal

Approved!!

-----Original Message-----
From: Jason_Goodwin@bjservices.com [mailto:Jason_Goodwin@bjservices.com]
Sent: Thursday, May 09, 2002 2:38 PM
To: wprice@state.nm.us
Cc: CRivas@bjservices.com
Subject: Test Tank Water Disposal

Wayne,

The waste associated with the test tank is non-exempt and the company that will be disposing of it will be Controlled Recovery Inc. (CRI). Tests will be performed to verify that the material is a non-hazardous material before disposal is conducted. I would appreciate it if you could approve this waste for disposal using the above information.

Thanks,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

Tracking:

Recipient	Read
'Jason_Goodwin@bjservices.com'	
Price, Wayne	Read: 5/9/2002 2:55 PM
CRivas@bjservices.com	
Kieling, Martyne	

Price, Wayne

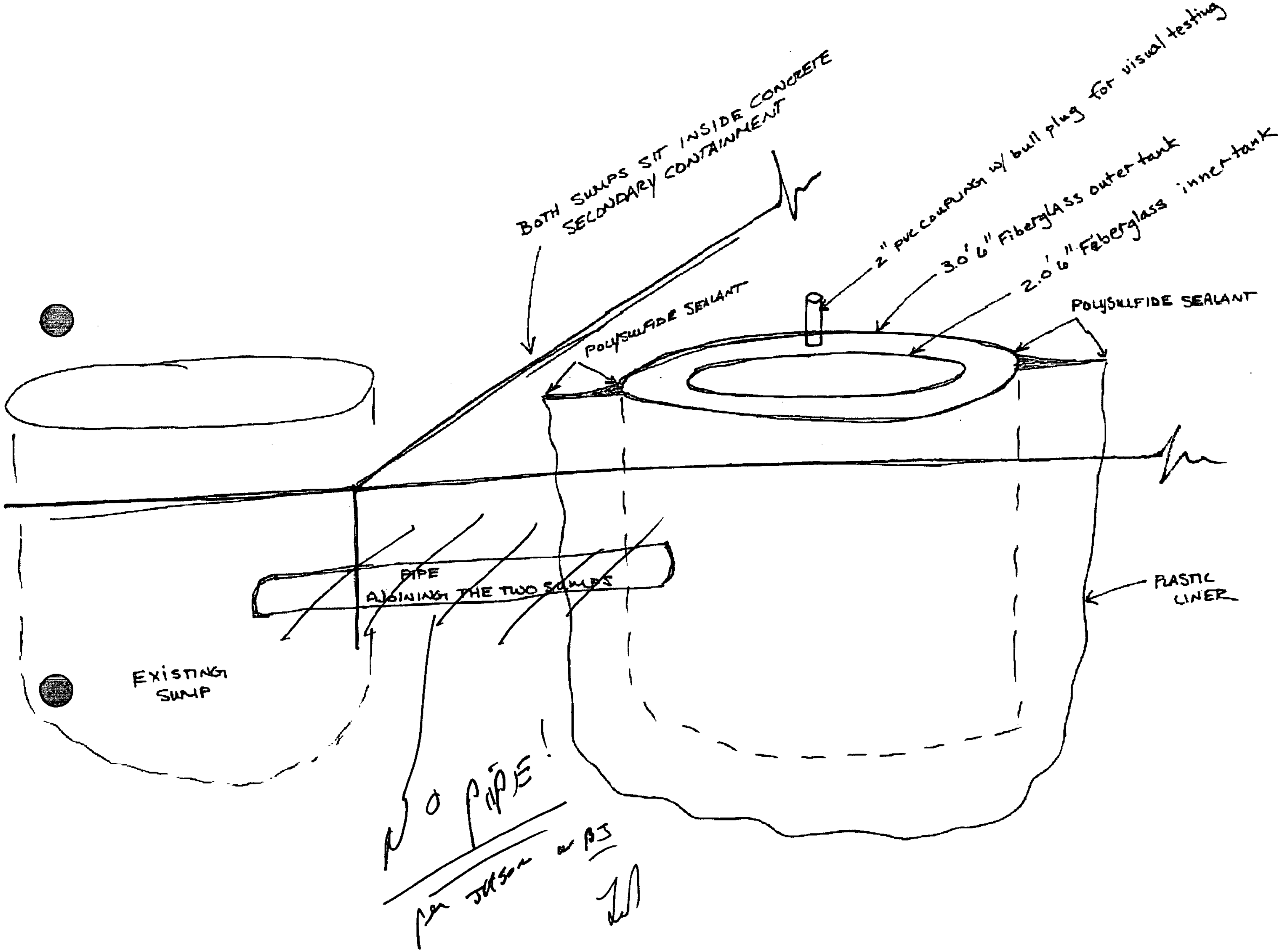
From: Price, Wayne
Sent: Monday, March 18, 2002 2:19 PM
To: 'jason_goodwin@bjservices.com'
Subject: Hobbs Yard-below grade tank (sump) project

Contacts: Jason Goodwin

Dear Jason:

The OCD hereby approves of the below grade sump project. OCD understands there is no pipe connection between the two sumps. BJ shall report any contamination upon discovery.

Thank You!


BOTH SUMPS SIT INSIDE CONCRETE SECONDARY CONTAINMENT
2" pvc coupling w/ bull plug for visual testing
3.0'6" Fiberglass outer tank
2.0'6" Fiberglass inner tank
POLYSULFIDE SEALANT
POLYSULFIDE SEALANT
PIPE ADJOINING THE TWO SUMPS
PLASTIC LINER
EXISTING SUMP
NO PIPE!
per JASON w BJ

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

February 28, 2002

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7171

Ms. Jo Ann Cobb
BJ Services Company
11211 FM 2920
Tomball, Texas 77375

Re: BJ Hobbs Facility GW-072
Evaluation of Groundwater Chloride Content

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Brown and Caldwell's Delineation of Chloride Plume letter dated February 06, 2002. The letter requested that OCD's asking for further delineation and a remediation plan for the chloride impacted groundwater be deferred until the lateral extent of the plume has been defined. The OCD hereby approves of your request with the following conditions:

1. Monitor wells MW-12 and OW-4 were reported to be dry. These wells shall be re-established for sampling or new wells shall be installed in these areas.

2. Provide chloride isoconcentration maps for the entire site.

Please submit the results of your findings with conclusions and recommendations by April 30, 2002 with copies provided to the Hobbs District office. Please note, if the findings reveal contaminants that exceed the WQCC groundwater standards have migrated off-site, or will migrate off-site in the foreseeable future then the recommendations shall include a groundwater remediation plan as requested by OCD on December 13, 2001.

If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail WPRICE@state.nm.us.

Sincerely,

Wayne Price- Engineer

cc: OCD Hobbs Office

1415 Louisiana, Suite 2500
Houston, TX 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

February 6, 2002

Mr. Wayne Price
Environmental Bureau
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87006

BROWN AND CALDWELL
Environmental Engineering & Consulting

12832.022

Subject: **Delineation of Chloride Plume**
BJ Services Company U.S.A. – Hobbs Facility: GW-072
2708 West County Road
Hobbs, New Mexico

Reference: **Letter from W. Price (NMOCD) to J. Cobb (BJ Services) dated 12/13/01; subject: BJ Hobbs Facility GW-072, Evaluation of Groundwater Chloride Content**

Dear Mr. Price:

In response to the Reference New Mexico Oil Conservation Division (NMOCD) correspondence, Brown and Caldwell, on behalf of BJ Services Company, U.S.A. (BJ Services), reviewed available data pertaining to the occurrence of chloride in groundwater within the uppermost aquifer at the BJ Services facility at Hobbs, New Mexico. These data are summarized in Table 1. Figure 1 presents a groundwater elevation map at the facility for December 6, 2001. The generally eastward to north-northeastward groundwater flow direction at the facility as indicated by the December 6, 2001 groundwater elevation data is consistent with groundwater flow directions determined on the basis of data from previous sampling events.

In the Reference correspondence, NMOCD requested that BJ Services submit a work plan to:

1. Install a sufficient number of groundwater monitor wells to define the extent of the plume, taking into account any density gradient effects.

2. Submit a remediation plan addressing the contamination related to the former underground field wastewater tanks.

Brown and Caldwell used the BIOSCREEN model to predict the downgradient extent of chloride in groundwater at concentrations in excess of the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 milligrams per

liter (mg/L) for chloride. Based on input of available historic data from March 2000 to present for monitor wells MW-10, MW-11A, MW-12, MW-14, MW-15, and OW-4, the BIOSCREEN model predicts that the downgradient extent of chloride at concentrations in excess of 250 mg/L is currently located approximately 60 feet to 100 feet east of monitor well MW-14. In assessing the output of the BIOSCREEN model, it should be noted that:

- Downgradient monitor wells MW-14 and MW-15 had not been installed in March 2000;
- No wells other than monitor wells MW-14 and MW-15 were sampled for chloride in January 2001;
- Monitor well MW-15 was not sampled in March 2001;
- No wells other than monitor wells MW-14 and MW-15 were sampled for chloride in June 2001;
- No wells other than monitor wells MW-12D, MW-14, and MW-15 were sampled for chloride in September 2001; and
- No wells other than monitor wells MW-14 and MW-15 were sampled for chloride in December 2001.

Brown and Caldwell proposes to defer delineation of the lateral extent of chloride impact until after the analytical results of groundwater samples to be collected from all wells at and in the vicinity of the facility in March 2002 can be evaluated. All wells will be sampled for chloride in March 2002. Then the complete set of contemporaneous chloride data will be used to confirm the results of the BIOSCREEN model that, as previously stated, were based on temporally incomplete data from wells pertinent to evaluation of chloride impact.

After the results of the BIOSCREEN model have been confirmed on the basis of complete chloride data from the March 2002 groundwater sampling event, Brown and Caldwell will collect a groundwater sample at one or more on-site or off-site locations to delineate the extent of chloride impact to groundwater at concentrations in excess of 250 mg/L.

The potential presence of a density gradient effect associated with chloride impact in the uppermost aquifer at the facility can be evaluated by examining historic data relating to the vertical distribution of chloride concentrations in groundwater samples from monitor wells MW-12 and MW-12D. These nested wells are located immediately adjacent to one another downgradient of the former

underground field wastewater tanks, as shown in Figure 1. Monitor well MW-12 was screened from 50 feet below ground surface (bgs) to 65 feet bgs in order to intercept the top of the water table in the uppermost aquifer, which was present at approximately 54 feet bgs at the time of installation of monitor well MW-12 in February 1998. Monitor well MW-12D was screened from 77.5 feet bgs to 87.5 feet bgs in order to assess groundwater quality within a deeper interval of the uppermost aquifer than was tested by monitor well MW-12. Boring logs and well construction diagrams for monitor wells MW-12 and MW-12D are attached.

Contemporaneous chloride data from monitor wells MW-12 and MW-12D exist for the March 2000 groundwater sampling event. Chloride was present at a concentration of 327 mg/L in monitor well MW-12 and at a concentration of 117 mg/L in monitor well MW-12D in March 2000. These data indicate that chloride concentrations decrease substantially with depth in the uppermost aquifer at the facility.

Other historic chloride data from monitor wells MW-12 and MW-12D confirm that chloride concentrations decrease substantially with depth in the uppermost aquifer at the facility. Historic chloride concentrations in shallow monitor well MW-12 range from 314 mg/L to 1,200 mg/L, whereas historic chloride concentrations in deep monitor well MW-12D range from 78.8 mg/L to 195 mg/L.

Thus, data from monitor wells MW-12 and MW-12D indicate that chloride impact to groundwater at concentrations in excess of the NMWQCC standard of 250 mg/L is present only in the upper portion of the uppermost aquifer at the facility. It should be noted that, in addition to monitor well MW-12, monitor wells MW-10, MW-11, MW-11A, MW-14, MW-15, and OW-4 were also screened in the upper portion of the uppermost aquifer. On this basis, Brown and Caldwell believes that no further investigation into possible density gradient effects for chloride is warranted.

Brown and Caldwell believes that it is premature to submit a plan for remediation of chloride impact to groundwater until the lateral extent of the plume has been defined. BJ Services will consider a plan for remediation of chloride impact to groundwater after the degree and extent of chloride impact in the area of the eastern portion of the facility have been adequately defined.

If you have any questions regarding the information presented herein, please feel free to contact Mr. Lynn Wright of Brown and Caldwell (713) 759-0999 or Ms. Jo Ann Cobb of BJ Services at (281) 357-2572.

Sincerely,

BROWN AND CALDWELL

Richard L. Rexroad, P.G.
Project Manager

RLR:uak

Attachments (3)

cc: NMOCD – Hobbs, New Mexico Office
Jo Ann Cobb, BJ Services Company, U.S.A.
Lynn Wright, Brown and Caldwell

Attachment 1

Table 1

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	OW-4
8/1/95	160	150	310	130	380	310	350	110	2200	3400	NP[4]	NS[5]	NP	NP	NP	NP	NS
8/23/96	130	140	100	99	210	250	360	140	2000	2900	NP	NS	NP	NP	NP	NP	NS
3/23-24/98	212	206	126	151	183	223	364	164	2390	NS-L[6]	940	1200	NP	NP	NP	NP	NS
3/9-10/99	163	156	142	155	411	238	274	123	1160	NS-L	834	314	NP	NP	NP	NP	NS
6/10-7/2/99	NS	NS	NS	NS	NS-PA[7]	NS	NS	NS	NS	NS-PA	NS	NS	195	496	NP	NP	266
3/9-10/00	258	196	196	196	NS-PA	224	241	131	474	NS-PA	1290	327	117	276	NP	NP	258
1/14/2001	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS	368	219	NS-D[8]
3/8-9/01	NS	165	172	152	NS-PA	224	250	127	879	NS-PA	1720	586	NS	276	327	NS	NS-D
6/21/2001	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS	222	222	NS-D
9/10/2001	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS	NS-PA	NS	NS-D	NS	NS	245	228	NS-D
9/18/2001	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS	NS-PA	NS	NS-D	78.8	NS	NS	NS	NS-D
12/6/2001	NS	NS	NS	NS	NS-PA	NS	NS	NS	NS-D	NS-PA	NS	NS-D	NS	NS	276	215	NS-D

[1] - in mg/L.

[2] - NMWQCC standard for chloride is 250 mg/L.

[3] - MW-2 not operative after May 3, 1995; plugged and abandoned (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.
MW-12D installed June 1999.
MW-13 installed June 1999.
MW-14 installed January 2001.
MW-15 installed January 2001.

[4] - NP indicates that well was not present at the time of the sampling event.

[5] - NS indicates that well was not sampled.

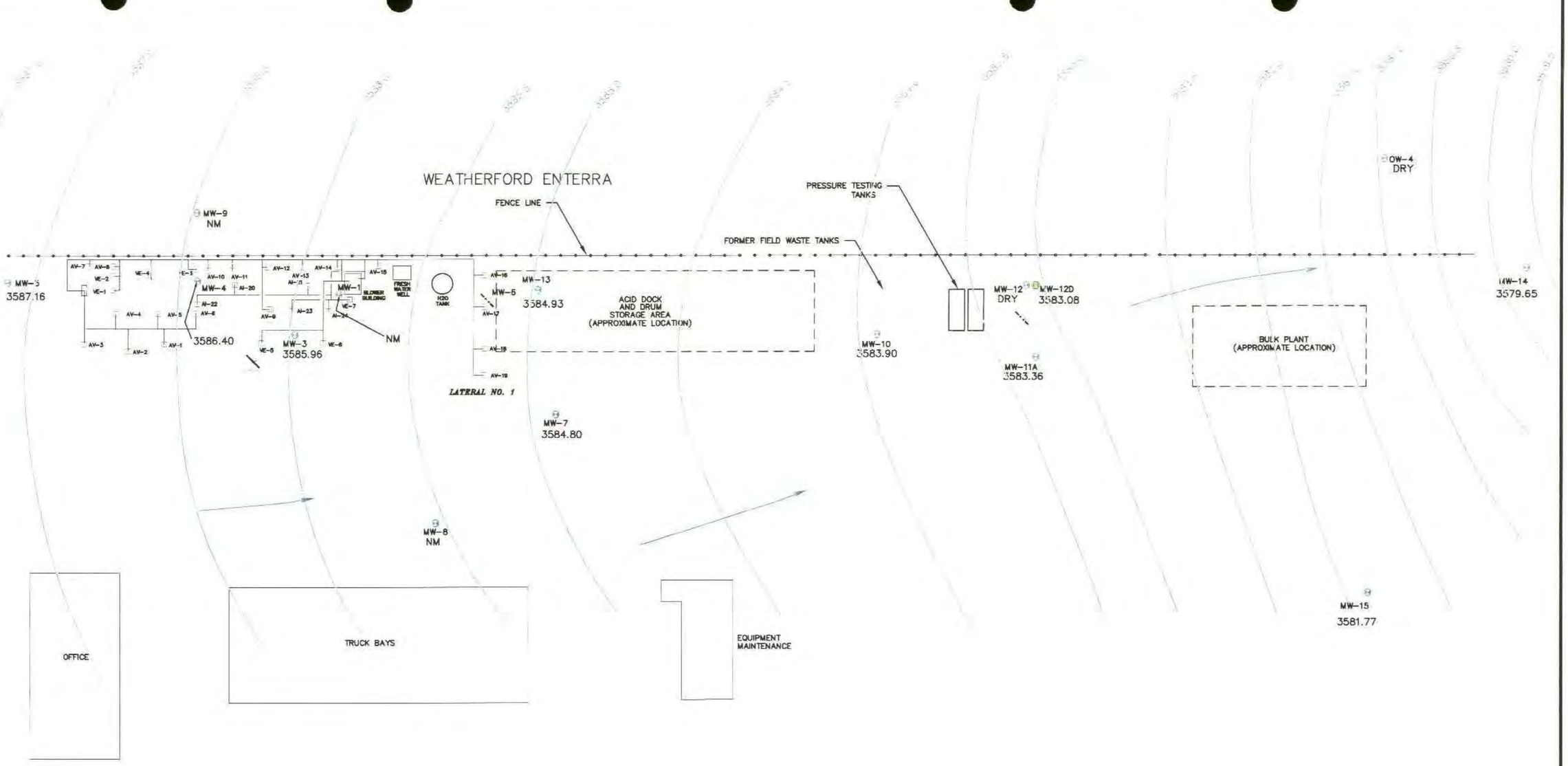
[6] - NS-L indicates that well was not sampled because it could not be located.

[7] - NS-PA indicates that well was not sampled because was P&A'd.

[8] - NS-D indicates that well was not sampled because it was dry.

Attachment 2

Figure 1



P:\Cad\JOBS\BJServices\12832\GWWE12_6_01.Fig1

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 30 60
SCALE IN FEET

DRAWN BY: CLK DATE 1/02
CHK'D BY: ____ DATE ____
REV'D BY: ____ DATE ____

LEGEND

3585.96
MW-3 — MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (feet AMSL)

BIOSPARGING SYSTEM

GROUNDWATER FLOW DIRECTION

MONITOR WELL (PLUGGED AND ABANDONED)

NM – NOT MEASURED

TITLE: GROUNDWATER ELEVATION MAP FOR DECEMBER 6, 2001	DATE: 1/30/02
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.016
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1

Attachment 3

Boring Logs and Monitor Well Construction Diagrams for Monitor Wells MW-12 and MW-12D

BROWN AND CALDWELL

MW-12

Project Name: BJ Services Company, U.S.A. Project Number: 2832 Sheet 1 of 2

Project Location: **Hobbs, New Mexico**		Logged By: **R. Rexroad**	Approved: **R. Rexroad**
Drilling Contractor: **Geo Projects, Inc.**		Date Started: **2/13/98**	Date Finished: **2/13/98**
Drilling Equipment: **Mobile B-61**	Driller: **A. Hinojosa**	Total Boring Depth: (feet) **66.5**	Depth to Static Water: (feet) **54.3**
Drilling Method: **Air Rot./Hol. Stem**	Borehole Diameter: **8"**	TOC Elevation: **NR**	Ground Elevation: **NR**
Sampling Method: **2-foot split spoon**		Diameter and Type of Well Casing: **2-inch PVC**	
Comments:		Slot Size: **0.020 "**	Filter Material: **8-16 silica sand**
		Development Method: **Air surging and bailing**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	Readings	Sampled Interval	Recovery (feet)	Sample ID	Remarks
0				Fill - sand with gravel.					
2		CL		Dark grayish-brown silty clay (CL); slightly moist. Grades at approximately 2 feet to: Light grayish-brown sandy clay (CL).					
4				Whitish sandy silty clay (CL) with caliche at 3.5 feet; soft; slightly moist.					
6				Siltstone and very fine grained sandstone present at 5.5 feet; semi-indurated.					
8									
10				Increased sand content in 8 to 10-foot interval (stringers of interlayered with sands and siltstones).					
12		GP		Whitish fine grained sands with rounded sandstone pebbles (GP) to 1/2-inch in diameter; low moisture content.					
14				Medium brown, very fine grained sandstone; dry.					
16		GP		Whitish fine grained sands with rounded sandstone pebbles (GP) to 1/2-inch in diameter.					
18				Increased amount of pebbles at 18 feet with less sand.					
20				Pebbles up to 1-inch in diameter present below 20 feet.					
22									
24				Hard layer of very fine grained sandstone (SS) present; well indurated.					Cement-bentonite grout.
26		GP		Whitish fine grained sands with rounded sandstone pebbles (GP), with a higher sand content than in 14- to 24-foot interval.					
28		SP		Medium pinkish-brown sand (SP) with scattered rounded gravels to 3/4-inch in diameter.					
30									
32									

BROWN AND CALDWELL

MW-12

Project Name: **BJ Services Company, U.S.A.** Project Number: 2832 Sheet 2 of 2

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	Readings	Sampled Interval	Recovery (feet)	Sample ID	Remarks
34									
36				2 to 3-inch thick layer of pebbles present at 36 feet.					
38									
40									
42									
44									
46									46.0
48									48.0 Hydrated bentonite seal.
50									50.0 8-16 graded silica sand filter pack.
52									
54	▼				0		.75	A	A = Sample MW12-53.5-54.25
56									
58									0.020-inch slotted well screen.
60									
62									
64									
66									65.0 65.3 Bottom cap. 66.5
				Total depth = 66.5 feet.					

Monitoring Well: **MW-12D**

Project Name: **BJ Services Company, U.S.A.** Project Number: **12832.021** Sheet **1** of **3**

Project Location: **Hobbs, New Mexico**		Logged By: **R. Rexroad**	Approved: **R. Rexroad**
Drilling Contractor: **Alliance Environmental, Inc.**		Date Started: **6/30/99**	Date Finished: **6/30/99**
Drilling Equipment: **Mobile B-61**	Driller: **J. Harold**	Total Boring Depth: (feet) **92.0**	Depth to Static Water: (feet) **57.0**
Drilling Method: **Hollow Stem Auger**	Borehole Diameter: **8.5"**	TOC Elevation: **3857.30**	Ground Elevation: **3858**
Sampling Method: **Cuttings**		Diameter and Type of Well Casing: **2" Schedule 40-PVC**	
Comments:		Slot Size: **0.01**	Filter Material: **20/40 Silica Sand**
		Development Method: **Bailer and Surge**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
0				FILL, Sand with gravel					Locking Well Cap (Below grade completion.)
2		CL		SILTY CLAY (CL), Dark grayish brown, slightly moist, grading to light grayish brown sandy clay at approximately 2 fbg.					
4		CL		SANDY SILTY CLAY (CL), Whitish, with caliche, slightly moist, soft.					
6				SILTSTONE, very fine grained, semi-indurated.					Cement Grout
8									
10									2" Diameter Blank PVC Casing
12		GP		SAND (GP), whitish, fine grained, contains rounded siltstone gravel to approximately 1/2 inch in diameter, low moisture content.					
14				SANDSTONE, Medium brown, very fine grained, dry.					
16		GP		SAND (GP), whitish, fine grained, contains rounded siltstone gravel to approximately 1/2 inch in diameter, low moisture content.					
18				Increased pebble content.					
20				Pebbles up to 1 inch diameter present below 20 fbg.					
22									
24				SANDSTONE, Very fine grained, well indurated.					
26		GP		SAND (GP), Whitish, fine grained, less pebbles than above (rounded siltstone gravel to approximately 1/2 inch in diameter), low moisture content.					
28		SP		SAND (SP), Pinkish-brown, with scattered rounded gravel, to approximately 3/4 inch in diameter.					
30									
32									

Monitoring Well: **MW-12D**

Project Name: **BJ Services Company, U.S.A.** Project Number: **12832.021** Sheet 2 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
34									
36				2 inch to 3 inch layer of of pebbles at 36 fbg.					
38									
40									
42									
44									
46									
48									
50				Light pinkish brown, moist, well sorted, generally subrounded quartzose grains.					
52									
54				Moist at 53.5 fbg.					55.0
56	▼								
58				Wet at 57.5 fbg.					
60									
62									
64									
66									
68									
70									
72									
74									

Monitoring Well: **MW-12D**

Project Name: **BJ Services Company, U.S.A.** Project Number: **12832.021** Sheet 3 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
76									76.0 Bentonite Seal 20/40 Silica Sand Filter Pack
78									77.5
80									2" Diameter 0.01" Slotted PVC Well Screen.
82									
84									
86									
88									87.5 2" Diameter Schedule 40-PVC Sediment Sump
90									89.5
92									

Price, Wayne

From: Price, Wayne
Sent: Tuesday, February 26, 2002 2:49 PM
To: 'Jason_Goodwin@bjservices.com'
Subject: RE: Sump Removal/Replacement

The new sump shall incorporate secondary containment with leak detection. After removing the old sump please investigate to determine if the sump was leaking. Provide OCD with the results of your findings.

-----Original Message-----
From: Jason_Goodwin@bjservices.com [mailto:Jason_Goodwin@bjservices.com]
Sent: Tuesday, February 26, 2002 8:53 AM
To: wprice@state.nm.us
Subject: Sump Removal/Replacement

Wayne,

BJ Services Company, USA intends to remove a fiberglass sump from the acid dock of our Hobbs facility and replace it with a new sump. What do we need to do to make the OCD happy?

Thanks for your help,,

Jason Goodwin
HSE Specialist
Phone: 281-357-2573
Fax: 281-357-2585

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 11/15/01

or cash received on _____ in the amount of $ 1700.00

from BJ SERVICES COMPANY

for HOBBS FACILITY GW-072

(Facility Name) (DP No.)

Submitted by: WAYNE PRICE Date: 12/26/01

Submitted to ASD by: [signature] Date: "

Received in ASD by: _____ Date: _____

Filing Fee ___ New Facility ___ Renewal ✓

Modification ___ Other _____

(Specify)

Organization Code 521.07 Applicable FY 2002

To be deposited in the Water Quality Management Fund.

Full Payment ✓ or Annual Increment ___

BJ SERVICES COMPANY
BJ Services Company U.S.A.
P.O. BOX 4442
HOUSTON, TX 77210
713/462-4239

The Chase Manhattan Bank, N.A.
Syracuse, New York

50-937
213

VENDOR NO. 157889

CHECK NO. [redacted]

CHECK DATE	CHECK AMOUNT
11/15/01	*****1,700.00

PAY ONE THOUSAND SEVEN HUNDRED AND 00/100 **********

NEW MEXICO ENVIRONMENTAL DEPT
WATER QUALITY MANAGEMENT FUND
2040 SOUTH PACHECO
SANTA FE NM 87505

VOID AFTER 90 DAYS
AS AN AUTHORIZED SIGNER OF BJ SERVICES COMPANY, U.S.A.

[redacted]

14 December 2001

UPS OVERNIGHT J109 330 105 5

Mr. Wayne Price
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Discharge Plan Approval Conditions GW-072
BJ Services Company, U.S.A.
Hobbs, New Mexico Facility

Dear Mr. Price:

In response to your letter dated 25 October 2001 in reference to our discharge plan approval conditions, BJ Services Company, U.S.A. has enclosed a copy of the Sump and Underground line testing results required by the OCD. Along with testing results, a copy of our Best Management Practices (BMPs) has also been enclosed to satisfy our Stormwater Plan requirements. Also attached is the required flat fee of $1700.00 for oilfield service companies.

If you have any questions regarding this information please don't hesitate to call me at 281-357-2573.

Sincerely,

Jason Goodwin
HSE Specialist

Enclosure

CC. Jo Ann Cobb
Roger Sullivan

Eco-logical
Environmental Services Inc.

RECEIVED
DEC 26 2001
Environmental Bureau
Oil Conservation Division

December 14, 2001

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

Re: Sump and Drain Line Integrity Testing for the BJ Services Hobbs, New Mexico Facility.

Mr. Goodwin:

Beginning on December 11, 2001, Eco-Logical Environmental Services, Inc. (Eco-logical) personnel conducted sump cleanouts for the purpose of visual inspection to determine the sumps integrity. Drain line integrity testing was completed by either a twenty-four (24) hour water test or air pressure test.

After removal of sludge and pressure washing each sump, a visual inspection was conducted for cracks or other signs of integrity loss. All sumps were observed to be in excellent condition with no visual evidence of damage. Sumps inspected include two (2) in the wash bay, four (4) in the main shop building, two (2) located at the acid loading dock and the metal sump at the lift station.

The oil water separators located between the shop and wash bay could not be visually inspected due to the depth and limited access to them. These separators along with the drain lines leading to and from them, to the lift station, were testing by filling with water and monitoring with a water level indicator for twenty-four (24) hours. Water levels were checked with a water level indicator that measures to the 0.01 feet scale. Within the time frame of the water level testing, no loss in water was documented. A drain line leading from the acid loading dock to the associated sump was also testing by filling with water. No loss of water was observed during this test.

The final test was conducted on the drain line from the lift station to a sump located in the Vulcan Chemical yard east of the BJ facility. This line was tested by pressuring it to approximately three (3) pounds per square inch air pressure and monitoring the pressure for twenty (20) minutes. No loss of air pressure was observed during the testing of this line.

Based on the results of the above referenced testing and inspections, the integrity of the sumps and associated drain lines at the BJ Services Hobbs, New Mexico facility is in excellent condition with no indication of leaks.

If you have any questions or need additional information, please call me at 800/375-0100.

Sincerely,
Eco-logical Environmental Services, Inc.

Shane Estep, REM
Project Manager

STORM WATER BEST MANAGEMENT PRACTICES

BMPs must be implemented in the areas identified to ensure that storm water runoff is not impacted when it is discharged from the facility. The following chart outlines all of the BMPs to be implemented at the facility.

BMP Identification

Location	**BMPs and Description** [Status: E=existing, ER=existing revised, I=to be implemented]
Bulk Plant	*Structural* ▪ Dust Control – The bulk plant is a completely enclosed pneumatic system. A dust collector is in place and maintained to control dust emissions from the system (see permit). [E] *Non-Structural* ▪ Spill Clean-up – Spills of dry material should be swept up immediately and either reused or disposed of properly. [E] ▪ Good Housekeeping – The bulk plant area should be kept clean and orderly. [E] ▪ Inspection – The bulk plant is inspected regularly during facility reviews. Any visible dust emissions should be corrected immediately. [E]
Wash Bay	*Structural* ▪ Sump - The wash bay is sloped towards an in-ground sump that collects all wastewater. A surrounding curb prevents water from escaping the wash bay and impacting storm water. [E] ▪ Covered Wash rack – The wash bay is covered by a permanent roof structure. This greatly minimizes the potential for impacting storm water runoff. [E] ▪ Uncovered Wash rack – The uncovered wash bay has a surrounding curb structure to prevent water from escaping the wash bay and impacting stormwater. [E] *Non-Structural* ▪ Overspray Control – Overspray of washwater should be minimized by the washbay operator. No washwater should escape the confines of the washbay. Operators should be sufficiently trained to prevent overspray. [E] ▪ Good Housekeeping – The washbay area should be kept clean and orderly. [E] ▪ Inspections – The washbay is inspected regularly during facility reviews. Any overspray or evidence of washwater releases from the washbay area should be corrected immediately. [E]

Acid and Liquid Chemical Storage Area	*Structural* ▪ Secondary Containment – The acid tank is contained in an impervious concrete containment area. If a release did occur from this tank, the berm would provide sufficient containment. [E] ▪ Loading area – There is a concrete catch basin directly below the acid/chemical loading area. If chemicals are released during loading, all fluids will enter this catch basin. [E] ▪ Containment Berm – The liquid chemical storage area is surrounded by a containment berm that will prevent any spills or leaks from leaving the area and impacting storm water. ▪ Drum Storage – Drums are stored on pallets to allow easy inspection of the surface below the drum for any leaks. *Non-Structural* ▪ Good Housekeeping – The acid storage area should be kept clean and orderly. [E] ▪ Inspections – The acid tank, associated piping, secondary containment, and loading area are all inspected regularly during facility reviews. Any problems with this equipment should be corrected immediately. [E]
Truck/Equipment Parking/ Storage Area	*Non-Structural* ▪ Area Maintenance – The soil and/or pavement in this area should be spot treated as necessary to address any leaks from equipment. [E] ▪ Preventative Maintenance – The facility has a preventative maintenance program in place to keep equipment in good working order. This program will help keep equipment from leaking. [E] ▪ Absorbent material – Employees should place absorbent pads under equipment that is leaking. The leak should be reported to the Maintenance Supervisor. [E] ▪ Good Housekeeping – The truck parking area should be kept clean and orderly. [E] ▪ Inspections – This area is regularly inspected during facility reviews. Any areas which need attention should receive it immediately. [E]
Chemical Warehouse	*Structural* ▪ Covered Building – The chemical warehouse is a covered building which greatly minimizes any products exposure to storm water. [E] *Non-Structural* ▪ Spill Clean-up – Spills inside and outside the building should be cleaned-up immediately to prevent the spill from migrating out of the building and impacting storm water runoff. [E] ▪ Good Housekeeping – The chemical warehouse area should be kept clean and orderly. [E] ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified should be addressed immediately. [E]

LFC Blending Area	*Structural* ▪ Secondary Containment – The diesel storage and blending tanks are located within a secondary containment wall. [E] *Non-Structural* ▪ Spill Clean-up – Spills inside and outside of the secondary containment should be cleaned-up immediately to prevent the spill from migrating out of the area and impacting storm water runoff. ▪ Good Housekeeping – The LFC Blending Area should be kept clean and orderly. [E] ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified should be addressed immediately. [E]
Maintenance Shop	*Structural* ▪ Covered Building – The maintenance shop is a covered building which greatly minimizes any exposure to storm water. [E] *Non-Structural* ▪ Spill Clean-up – Spills inside and outside the shop should be cleaned-up immediately to prevent the spill from migrating out of the shop and impacting storm water runoff. [E] ▪ Good Housekeeping – The maintenance shop should be kept clean and orderly. [E] ▪ Inspections – This area is regularly inspected during facility reviews. Any spills or other problems identified should be addressed immediately. [E]
Sand Storage Area	*Structural* ▪ Dust Control – The sand storage silos are completely enclosed. Various methods (loading through a sock, sand is screened and washed, etc.) are used to control dust emissions from the system (see permit). [E] *Non-Structural* ▪ Spill Clean-up – Spills of sand should be swept up immediately and either reused or disposed of properly. [E] ▪ Good Housekeeping – The sand storage area should be kept clean and orderly. [E] ▪ Inspection – The sand storage area is inspected regularly during facility reviews. Any visible dust emissions should be corrected immediately. [E]

Lubrication Oils Storage Area	*Structural* ▪ All oil storage tanks are placed in a secondary containment sufficient to contain a catastrophic failure of the largest tank plus some freeboard for precipitation. *Non-Structural* ▪ Spill Clean-up – Spills should be cleaned up with absorbent material immediately and disposed of properly. [E] ▪ Good Housekeeping – The lubrication oils storage area should be kept clean and orderly. [E] ▪ Inspection – The lubrication oils storage area is inspected regularly during facility reviews. Any visible dust emissions should be corrected immediately. [E]

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 13, 2001

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7331

Ms. Jo Ann Cobb
BJ Services Company
11211 FM 2920
Tomball, Texas 77375

Re: BJ Hobbs Facility GW-072
Evaluation of Groundwater Chloride Content

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Brown and Caldwell's March 2001 Groundwater report dated October 26, 2001. The report reflects that the new monitor well MW-14 has chloride concentrations that exceed the WQCC groundwater standards. The report shows that the extent of ground water contamination related to BJ Services' activities have not been fully defined and/or remediated. Therefore the OCD requires that BJ Services submit a work plan to:

1. Install a sufficient number of groundwater monitor wells to define the extent of the plume, taking into account any density gradients effects.

2. Submit a remediation plan addressing the contamination related to the former underground field wastewater tanks.

Please submit a plan to address the above action items for OCD approval by February 15, 2002 with a copy provided to the OCD Hobbs District office. If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail WPRICE@state.nm.us.

Sincerely,

Wayne Price- Engineer

cc: OCD Hobbs Office

Price, Wayne

From: Price, Wayne
Sent: Monday, December 10, 2001 9:00 AM
To: 'JCobb@bjservices.com'
Subject: RE: Line & sump inspection

Approved!

Please be advised that NMOCD approval of this plan does not relieve BJ Services of liability should their operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve BJ Services of responsibility for compliance with any other federal, state, or local laws and/or regulations.

-----Original Message-----
From: JCobb@bjservices.com [mailto:JCobb@bjservices.com]
Sent: Monday, December 10, 2001 7:22 AM
To: Price, Wayne
Cc: Jason_Goodwin@bjservices.com
Subject: RE: Line & sump inspection

Sorry Wayne,
I realized that on my way to Dallas Friday afternoon but there was nothing I could do about it. Jason and I were in Kilgore, TX when we sent it. I will attach the letter to this one. Again, I am sorry just an oversight on my part.

(See attached file: Discharge Plan Cond..doc)

"Price, Wayne" <WPrice@state.nm.us> on 12/07/2001 04:49:09 PM

To: JoAnn Cobb/BJS/BJSERVICES@BJSERVICES
cc:

Subject: RE: Line & sump inspection

There was no letter attached!

-----Original Message-----
From: JCobb@bjservices.com [mailto:JCobb@bjservices.com]
Sent: Friday, December 07, 2001 10:32 AM
To: wprice@state.nm.us
Cc: Jason_Goodwin@bjservices.com
Subject: Line & sump inspection

Wayne,
Here is a letter describing the methods for line and sump testing that will be used at the Hobbs facility. Jason Goodwin has been in discussion with you concerning these issues. Please let us know your comments as we have the testing scheduled for next Tues.

Thanks for your assistance with these matters.

04 December 2001

Mr. Wayne Price
State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Discharge Plan Approval Conditions
BJ Services Company, U.S.A.
Hobbs, New Mexico Facility

Dear Mr. Price:

BJ Services Company, USA requests approval for the following methods of underground pipeline and sump integrity testing for the above referenced facility.

Underground Pipeline Testing:

Since the two main sumps were found to be inaccessible to entry by personnel, BJ Services Company will fill the lines with water and conduct monitoring for approximately 4 to 8 hours to confirm that sump and surrounding lines are sealed. Lines shall be inspected up to the POTW. Lines will be pressure tested from the lift station to the POTW.

Sumps:

Sumps located on the facility will be visually inspected for their integrity.

Sincerely,

Jason Goodwin
HSE Specialist

cc: JoAnn Cobb
Roger Sullivanc

Price, Wayne

From: Price, Wayne
Sent: Tuesday, November 06, 2001 11:21 AM
To: 'Jason_Goodwin@bjservices.com'
Subject: RE: Hobbs discharge plan renewal

Dear Jason:

Q1. OCD does not maintain a list of qualified personnel or contractors. OCD encourages BJ to use any innovated method that properly demonstrates mechanical integrity. The bottom line is that if your sumps leak then BJ will be required to investigate and remediate the vadose zone or groundwater if impacted.

Q2. Yes!

Q3. Please submit a plan that demonstrates that BJ's yard will not discharge water contaminants off-site. This is usually demonstrated by the fact of all of your existing Best Management Practices (BMP's) you have in place.

Do not remember getting your modification for Artesia.

-----Original Message-----
From: Jason_Goodwin@bjservices.com [mailto:Jason_Goodwin@bjservices.com]
Sent: Monday, November 05, 2001 9:07 AM
To: WPRICE@state.nm.us
Subject: Hobbs discharge plan renewal

Wayne,

We just recieved your response regarding our discharge plan renewal. We had a few questions regarding some approval conditions.

1. Pre-existing sumps must be tested to demonstrate integrity (yearly).

Who is qualified to complete these annual visual inspections (on-site personel or contractor)?

2. All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity.

Does this mean our drain lines from the washrack to the sewer?

3. BJ Services shall submit a copy of the EPA Federal Stormwater Plan.

Our SIC code does not fall under the NPDES or Federal Stormwater Program.

By the way, I just wanted to ask if you had recieved my discharge plan modification for Artesia (Via Email).

Thankyou for your help,

Jason Goodwin
HSE Specialist
BJ Services - Tomball, Texas

Price, Wayne

From: Jason_Goodwin@bjservices.com
Sent: Thursday, September 13, 2001 2:46 PM
To: wprice@state.nm.us
Cc: JCobb@bjservices.com
Subject: GW-072

Disposal Facilities.doc

Wayne,

Attached is the revised portion of the Hobbs facility discharge plan (GW-072) referenced in your email dated 07/21/01. My apologies for taking so long in getting this to you.

(See attached file: Disposal Facilities.doc)

Thankyou for your attention,

Jason Goodwin
HSE Specialist - BJ Services (Tomball)

VIII. Current Liquid and Solid Waste Collection/Treatment/Disposal Procedures

Waste Type	On Site Handling	Disposal	Disposal Facilities
Truck Wastes	Cement is transferred to the reclaim silo	Offsite	Guichen Trucking 8416 White Water El Paso,Tx. 79907 915-731-1999 Cemex-Odessa Plant P.O.Box 1547 Odessa,Tx. 79760 1-800 927-4838
Washing Operations	Water flows into sumps/oil water separator then to the POTW	POTW	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 505-397-9315
Steam Cleaning of Parts	N/A	N/A	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 505-397-9315
Solvent/Degreaser Use	Drum	Recycled Offsite	Safety Kleen 10607 WCR 127th Midland, Texas 79711 915-563-2305
Spent Acids	N/A	N/A	Reclaim Tank Recycle BJ Services Yard Hobbs,New Mexico 88240
Waste Slop Oil	N/A	N/A	E&E Enterprises P.O.Box 683 Brownfield Tx. 79316 1-800 658-2137
Waste Lubrication and Motor Oils	Oil pans are emptied into a receptacle and then pumped from the receptacle to a tank outside the shop.	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Oil Filters	Stored in drums	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Sludge from Wash Bay Sumps	Collected in sumps on wash bay	Offsite Disposal at Landfill	Controlled Recovery,Inc. P.O.Box 388 Hobbs,New Mexico 88241 1-505-393-1079
Painting Waste	N/A	N/A	N/A
Sewage	POTW	POTW	Hobbs City Sewer East Stanolind Road Hobbs,New Mexico 88240 1-505-397-9315
Other Waste Liquids: Lab Wastes	Drums	Recycled Offsite	E&E Enterprises P.O.Box 683 Brownfield,Tx. 79316 1-800-658-2137
Other Waste Solids: Tires Batteries Scrap Metal	Bin	Tires taken by vendor Batteries taken by vendor Recycled Offsite	Forrest Tire Co. 1703 N. Turner Hobbs,New Mexico 88240 1-505-393-2186 Interstate Batteries 2400 West County Hobbs,New Mexico 88240 Hobbs Iron & Metal 920 S. Grimes Hobbs,New Mexico 88240 1-505-393-1726

Price, Wayne

From: Price, Wayne

Sent: Saturday, July 21, 2001 1:35 PM

To: 'jcobb@bjservices.com'

Subject: Discharge Plan GW-072 Hobbs facility

Dear Jo Ann:

OCD is in receipt of the up-dated DP application dated July 09, 2001 and requires the following information:

Under VIII. for any re-cycling and/or disposal in New Mexico please indicate the disposal company name and locations. There can be more than one, otherwise OCD will have to approve on a case-by-case basis.

Jo Ann Cobb, REM
Manager, Environmental Services
281-357-2572 FAX 281-357-2585

July 9, 2001

Certified Mail #7099 3220 0002 9241 6868

Wayne Price
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87504

RE: Discharge Plan for BJ Services Company, U.S.A. Facility – GW-072

Dear Mr. Price,

BJ Services Company, U.S.A. would like to submit the enclosed updated version of the Discharge Plan for the Hobbs, NM facility. As stated in the application submitted in May this is an updated version of the previous Discharge Plan. I

If you have any questions, please contact me at 281-357-2572.

Regards,

Jo Ann Cobb

Jo Ann Cobb, REM

C: Roger Sullivan, BJ, Hobbs

BJ Services Company, U.S.A.

Discharge Plan – Hobbs, New Mexico

July, 2001

I. Type of Operation

BJ Services Company, U.S.A. provides oilfield services, including cementing, acidizing, and fracturing services at oil and gas well sites.

II. Operator

BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240
(505) 392-5556
Contact: Chon Rivas

III. Location

Northeast Quarter of Section 20
Township 18 South
Range 38 East
N.M.P.M.
Lea County, New Mexico

IV. Landowner of Facility Site

BJ Services Company, U.S.A.
5500 Northwest Central Drive
Houston, TX 77092
281-357-2572
Contact: Jo Ann Cobb

V. Facility Description

See Attachment 1, Site Plans

VI. Materials Stored or Used at the Facility

Material	General Makeup (includes additives)	Form	Type of Container	Estimated Volume Stored	Location
Drilling Fluids	Not Applicable (N/A)	N/A	N/A	N/A	N/A
Brines	N/A	N/A	N/A	N/A	N/A
Acids	Hydrochloric Acetic Anhydride	Liquid Liquid	Tank Tote	20,000 gallons 330 gallons	Acid dock Warehouse
Detergents	Detergent	Liquid	Fiberglass Tank	330 gallons	Yard next to Wash Bay
Solvents	Aliphatic Degreasing Solvent	Liquid	Drum	55 gallons	Shop
Paraffin Treatment, Emulsion Breakers, Surfactants	Various products serve these functions	Liquid	Drums	550 gallons	Warehouse
Biocides	Bactericide for treating water	Liquid	Jug	12.6 Gallons	Warehouse
Others	Cement	Solid	Silos	850 Tons	Yard

VII. Sources of Effluent and Waste Solids

Waste Type	Source and Composition	Volume per Month	Major Additives
Truck Wastes	Off-spec cement and cement or water not used on the job	Cement: 141 Tons Water: 2000 gallons	N/A
Washing Operations	Waste water from truck wash bay	20,000 gallons	Detergent
Steam Cleaning	N/A	N/A	N/A
Solvent Use	Degreasing solvent from cleaning truck parts in the shop	30 gallons	Grease, oil, Aliphatic Solvent
Spent Fluids	N/A	N/A	N/A
Waste Slop Oil	N/A	N/A	N/A
Waste Motor Oil	Shop	500 gallons	Oil
Oil Filters	Shop	5 drums	N/A
Solids and Sludge	Dirt from wash bay	200 gallons	Soil, oil
Painting Wastes	N/A	N/A	N/A
Other Waste Liquids	Lab waste	55 gallons	Oil, water, chemicals from testing from testing of fluids
Other Waste Solids	Tires Batteries Scrap Metal	10 5 1000 pounds	None

VIII. Current Liquid and Solid Waste Collection/Treatment/Disposal Procedures

Waste Type	On Site Handling	Disposal
Truck Wastes	Cement is transferred to the reclaim silo	Offsite
Washing Operations	Water flows into sumps/oil water separator then to the POTW	POTW
Steam Cleaning of Parts	N/A	N/A
Solvent/Degreaser Use	Drum	Recycled Offsite
Spent Acids	N/A	N/A
Waste Slop Oil	N/A	N/A
Waste Lubrication and Motor Oils	Oil pans are emptied into a receptacle and then pumped from the receptacle to a tank outside the shop.	Recycled Offsite
Oil Filters	Stored in drums	Recycled Offsite
Sludge from Wash Bay Sumps	Collected in sumps on wash bay	Offsite Disposal at Landfill
Painting Waste	N/A	N/A
Sewage	POTW	POTW
Other Waste Liquids: Lab Wastes	Drums	Recycled Offsite
Other Waste Solids: Tires Batteries Scrap Metal	 Bin	 Tires taken by vendor Batteries taken by vendor Recycled Offsite

IX. Proposed Modifications

There are no proposed modifications to the facility at this time.

X. Inspection and Maintenance

See Attachment 2, Base/District HSE Inspection Report

XI. Contingency Plan

See Attachment 3, Facility Emergency Response Contingency Plan

XII. Site Characteristics

Bodies of Water: None within 1 mile. Green Meadows Lake is nearest body of water.

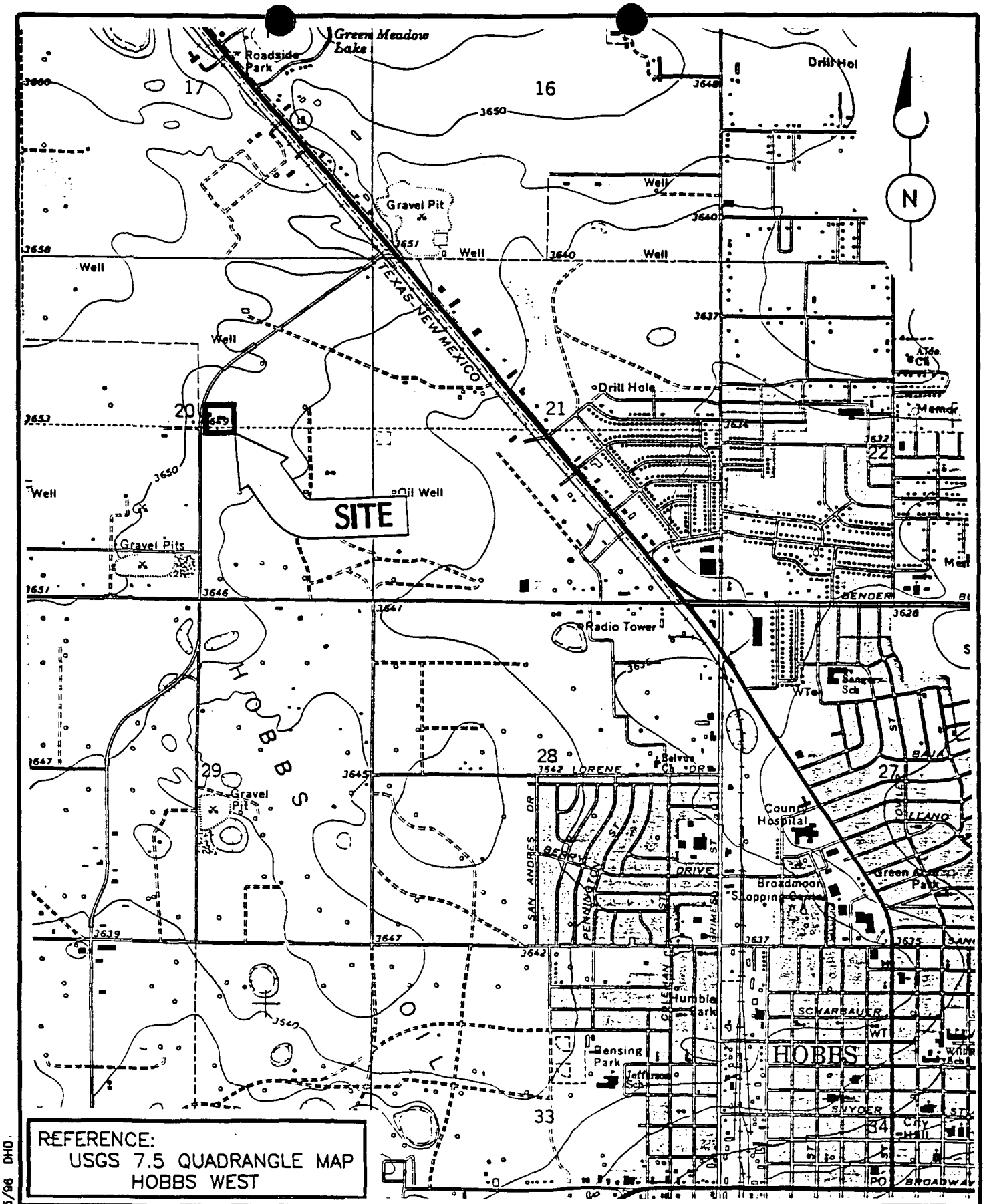
Arroyos: None

Groundwater Characteristics: Depth to: 52 feet (see boring log in Attachment 4)

Flooding Potential: None

ATTACHMENT 1

SITE PLANS

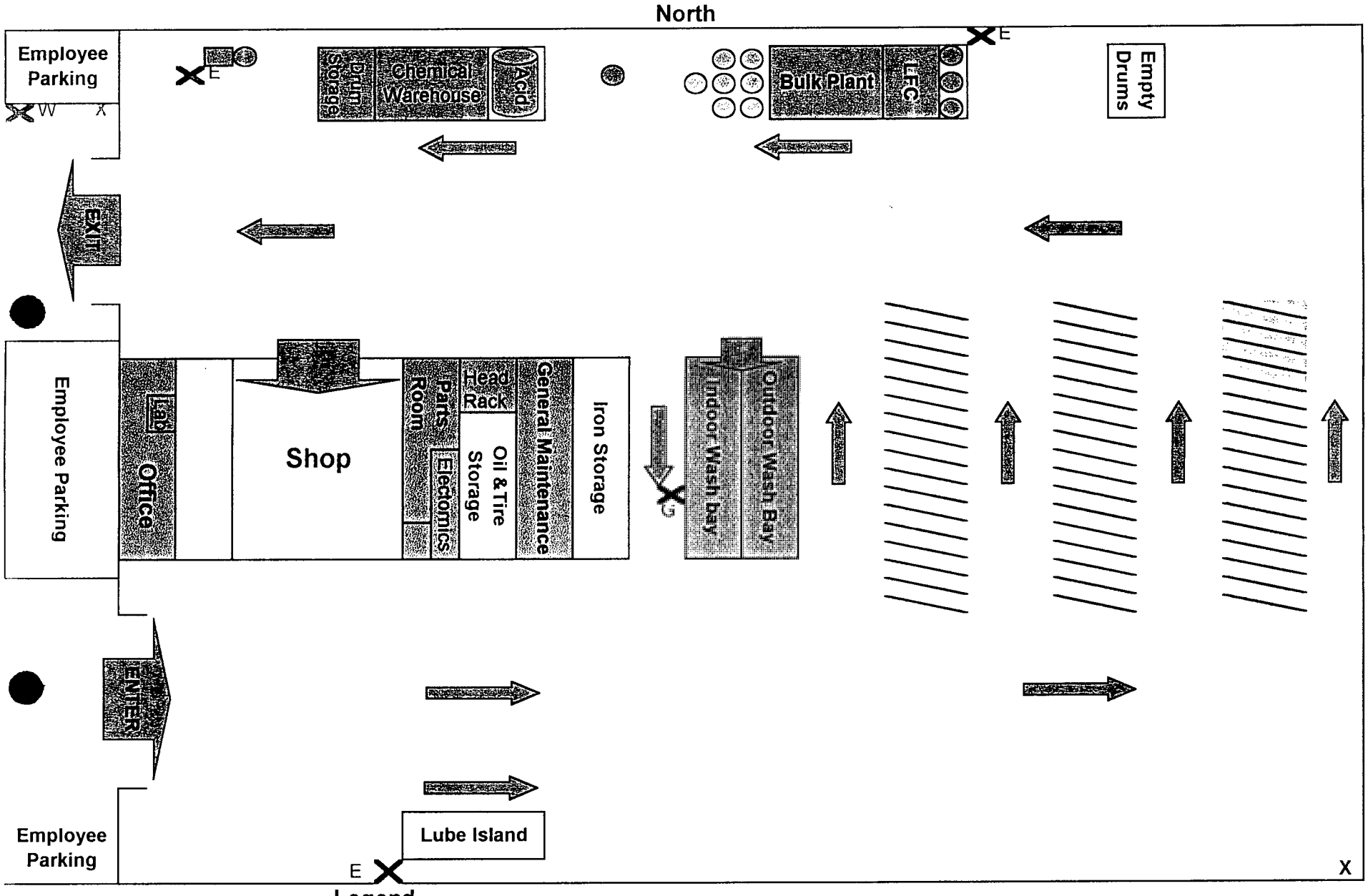


REFERENCE:
USGS 7.5 QUADRANGLE MAP
HOBBS WEST

T:\2830\SVICIN 1/25/96 DHD

BROWN AND CALDWELL HOUSTON, TEXAS SUBMITTED: _____ DATE: _____ PROJECT MANAGER APPROVED: _____ DATE: _____ BROWN AND CALDWELL	0 1000 2000 SCALE: 1" = 2000' DRAWN BY: DHD DATE 1/25 CHK'D BY: _____ DATE _____ APPROVED: _____ DATE _____	TITLE: SITE LOCATION MAP CLIENT: BJ SERVICES COMPANY, U.S.A. SITE LOCATION: HOBBS, NEW MEXICO	DATE: 1/26/96 PROJECT NUMBER: 2830-19 FIGURE NUMBER: 1

Hobbs District Traffic Flow Chart



Hobbs District
2708 West County Road

ATTACHMENT 2

BASE/DISTRICT HSE INSPECTION REPORT

Base/District HSE Inspection Report

Region: Permian Basin
District/Base: Hobbs
Reviewer: JoAnn Cobb/BJS/BJSERVICES
Date of Inspection:
Inspection Status:
Facility Score = / X 100 = %

Key
N/A - Not Applicable (Default Value)
0 - Needs Immediate Attention
1 - Needs Attention
2 - Okay

1. GENERAL FACILITIES CONDITIONS	AREA REQUIRED	RATING
1. Current mandatory safety legislation posters	Office, shops	N/A
2. Local legislative accident log (e.g. OSHA 200 or equivalent)	Office	N/A
3. Emergency evacuation assembly point (posted, visible, unobstructed)	All areas	N/A
4. Emergency plans for fire, injury or chemical spill (posted, current)	All areas, All telephones	N/A
5. Emergency phone numbers posted (fire, ambulance, police, doctor, chemical spills, injuries)	All areas, All telephones	N/A
6. Fire alarm call point (in working order/visible)	All areas	N/A
7. Fire extinguishers - (operable, inspected, proper location, proper type)	All areas	N/A
8. Personal protective equipment (used as required)	All areas (except office)	N/A
9. PPE available for visitors or vendors	All areas (except office)	N/A
10. First aid kit (adequate nunber of, adequately stocked, highly visible)	Offices, shops	N/A
11. Trained first aiders at facility (sufficient number, identified, posted)	Facility	N/A
12. Safety signs and notices (sufficient number, all hazards, current)	All areas	N/A
13. Safety bulletin board (current)	Facility	N/A
14. Employer liability insurance certificate (current, displayed) UK only	Public areas	N/A
15. Entryway/gateway (signed, unobstructed)	Facility	N/A
16. Parking (sufficient, unobstructed, signed)	Facility	N/A
17. Road surfaces (safe, maintained)	Facility	N/A
18. Lighting (sufficient, working, assess both internal and external)	All areas	N/A
19. Heating and cooling system (radiators free/clear, system checked annually, adequate records)	All areas	N/A
20. Electrical panels and wiring (labeled, secure, maintained)	All areas	N/A
21. Landscape (presentable, maintained)	Facility	N/A
22. BJ Services company signs (visible, maintained)	Facility	N/A
23. Prohibited articles/substances sign (visible, maintained)	Facility	N/A
24. Safety signs for LTI free days (up to date, visible)	Facility	N/A
25. Notice to visitors and vendors (where to go, posted)	Facility	N/A
26. Speed limit signs (posted, visible, adhered to)	Facility	N/A
27. Security fence (sufficient, maintained)	Facility	N/A
28. Fixed stairs, ladders, walkways, handrails, gates and doors (maintained, clear, safe)	Facility	N/A
29. Emergency exits/routes (signed, unobstructed, site plan of)	All areas	N/A
30. Hazardous chemicals inventory (held locally, current)	Facility	N/A
31. Material safety data sheets (accessible locally, current) Dispatch?	All areas	N/A
32. Spills or leaks visible	All areas	N/A
33. Spill control material (available, appropriate, utilized)	All areas	N/A
34. Knowledge of environmental and safety (HSE) manuals	Facility	N/A
35. Knowledge of emergency response plans (fire, injury, spillage)	Facility	N/A

36. Surface-water/storm-water drains & discharge points free of oil, debris, etc	All areas	N/A
37. Site isolation valves marked/signed, access to, maintained (electricity, gas, water, drains)	Facility	N/A
38. Drains (surface/foul) emergency cut-off valves - where installed (work properly)	Facility	N/A
39. No open containers outside collecting water	All areas	N/A
	TOTAL	**0**

2. SHOPS(S):	**RATING**
1. Hand tools (condition, noise, sufficient number, proper storage)	N/A
2. Grinding equipment (signs/visibility, tool rests, wheels inspected/maintained)	N/A
3. Welding and cutting equipment (stored properly, flash back arrestors, welding screens)	N/A
4. Cranes, hoists and jacks (capacity signed, periodic inspection, tested, records)	N/A
5. Lubrication area (clean, labeled, spill controls)	N/A
6. Parts storage (secure, labeled, clean, records)	N/A
7. Overhead storage area (posted for capacity, heavy items below, undamaged, secured to hazard points on floor)	N/A
8. Material safety data sheets (accessible locally, current) - Shop materials involved	N/A
9. Battery charging and storage area (separate, clean, ventilated)	N/A
10. Washbay, sump and truck washer (clean)	N/A
11. Painting and paint storage area (contained, labeled, appropriate)	N/A
12. Cleaning agents and solvents area (storage, ventilated or enclosed, hazard signage, MSDS available)	N/A
13. Work benches (clean, tidy, vice condition)	N/A
14. Oily rag containers (enclosed, metal, labeled)	N/A
15. Lockout/tagout procedures (adhered, monitored, effective, understood)	N/A
16. Ladders (checked periodically and tagged, not painted)	N/A
17. Machine tools (pillar drill, lathe, etc.) (maintained, guarded, PPE available, signage, tested)	N/A
18. Used oil and filters being properly handled	N/A
19. Used anti-freeze being properly handled	N/A
20. Air compressors (belts guarded, auto start signage, PRV's checked annually/tagged)	N/A
21. Overhead doors (height marked, good working order)	N/A
TOTAL	**0**

3. LOCKER ROOM(S), WASHROOM(S), BREAK AREA(S)	**RATING**
1. Ventilation (adequate)	N/A
2. Showers and sinks (adequate, clean, maintained)	N/A
3. Toilets (adequate, clean, maintained)	N/A
4. Lockers (sufficient size/number, accessible, lockable)	N/A
5. Drinking water (available)	N/A
6. Sufficient personal storage and changing space (clean, maintained, adequate)	N/A
7. Any required regulations/posters	N/A
TOTAL	**0**

4.CANTEEN/KITCHEN	**RATING**
1. Food storage (refrigerated, contained, labeled, dry, ventilated)	N/A
2. Food segregation (meats, hot/cold, dairy isolated)	N/A
3. Cleanliness (floors, surfaces, preparation areas)	N/A
4. Waste disposal/storage (appropriate, labeled, managed)	N/A
5. Food hygiene signage (posted, appropriate)	N/A

6. Healthy living signage (posted, appropriate)	N/A
7. Washing equipment (adequate, clean maintained)	N/A
8. Cooking equipment (adequate, clean, maintained)	N/A
9. Ventilation (adequate, maintained)	N/A
10. Refrigeration/freezer (maintained)	N/A
11. Vermin (controlled)	N/A
12. Tables and chairs (sufficient, clean, structurally sound)	N/A
13. Utensils (sufficient number, clean, stored)	N/A
TOTAL	0

5. LABORATORY	RATING
1. Chemical containers (labeled, secure)	N/A
2. Only required chemicals on hand (labeled, secure)	N/A
3. Local extraction ventilation (installed, operable, maintained, records)	N/A
4. Gas bottle storage (secured, external where possible, regulators checked, labeled)	N/A
5. Safety shower and eyewash (maintained, tested)	N/A
6. Material safety data sheets (accessible locally, current)	N/A
7. Waste chemicals (correct storage, correct and regular disposal)	N/A
TOTAL	0

6. YARD/EXTERNAL EQUIPMENT STORAGE AREAS	RATING
1. Containers (appropriate, stacked, labeled)	N/A
2. Safe storage of waste (correctly segregated, labeled)	N/A
3. Pallets (adequate, maintained, safe)	N/A
4. Noise levels (signage, measured)	N/A
5. Flammable gas (caged, signed, segregated)	N/A
6. Road traffic signage (speed limits posted, warning signage for pedestrians)	N/A
7. Segregation of pedestrians/vehicles (walkways marked, railings)	N/A
8. PPE (signage, appropriate to risk assessed)	N/A
9. Racking (capacity signed, inspections, records, properly utilized)	N/A
10. Washbay sump(s) clean (routinely maintained and emptied)	N/A
TOTAL	0

7. FORKLIFT	RATING
1. Forks (condition, maintained, appropriate)	N/A
2. Pre-use check sheets (available, utilized)	N/A
3. Area FLT warning signage (visible)	N/A
4. Rated capacity shown on FLT	N/A
5. Backup alarm and/or flashing light (audible, working)	N/A
6. FLT Operators (trained, licensed, nominated)	N/A
7. Controls (operate properly, maintained)	N/A
8. Brakes (operate properly, maintained)	N/A
9. Horn (operates properly, maintained)	N/A
10. Seat condition (maintained, comfortable)	N/A
11. Headlights (sufficient, working)	N/A

12. Rollover protection fitted	N/A
TOTAL	0

8. CEMENT WAREHOUSE & BULK PLANT	RATING
1. Material safety data sheets (accessible locally, current)	N/A
2. Gates, walkways, railings and ladders (maintained, clear, safe)	N/A
3. Climbing safety devices, harness (inspected, records, sufficient, available, utilized)	N/A
4. Dust collector (working properly, maintained, inspected)	N/A
5. Silo pressure relief valves (periodic inspection/ test /calibration, records)	N/A
6. Air compressors (belts guarded, auto start signage, PRV's checked annually/tagged)	N/A
TOTAL	0

9. NITROGEN STORAGE	RATING
1. Warning signs (asphyxiation, cold burns)	N/A
2. Relief valve (checked annually/tagged)	N/A
3. Pumps and packing (operable, maintained)	N/A
4. Condition of equipment (hoses, stowed appropriately, gauges clean, operable)	N/A
TOTAL	0

10. ACID STORAGE	RATING
1. Gates, walkways, railings and ladders (maintained, clear, safe)	N/A
2. Pump, fittings, valves, piping and hoses (condition, maintained)	N/A
3. Tank contents identified and measured (type, capacity, labeled)	N/A
4. Scrubber (maintained, inspected)	N/A
5. Acid loading area clean and free of spills	N/A
6. Acid tank containment viable (walls and bottom)	N/A
7. UN specification buckets being used for hazardous material	N/A
8. Safety shower and eyewash (maintained, tested)	N/A
9. Spill kit (shovel, neutralizer)	N/A
TOTAL	0

11. PRESSURE TEST BAY	RATING
1. Enclosure secure (locks)	N/A
2. Access controlled	N/A
3. Walls/fittings protected	N/A
4. Windows protected	N/A
5. Warning lights (working, sufficient)	N/A
6. Warning signs (local, relevant,sufficient)	N/A
7. Controls and valves (secure area, inspected, tested, records)	N/A
8 Instruments (enter test, calibration date) :	N/A
9. Relief valves (enter test, calibration date) :	N/A
10. Maximum acceptable working pressure of testing system indicated	N/A
11. Risk assessment (available, read, understood, utilized)	N/A
12. Pressure testing procedure (available, read, understood)	N/A
TOTAL	0

12. CHEMICAL WAREHOUSE	RATING
1. All chemicals (identified, labeled)	N/A
2. Proper stacking (drums and bag pallets no more than three [3] high)	N/A
3. Safety shower and eyewash (maintained, tested)	N/A
4. Hoses, piping and valves (clear, operable, stowed appropriately)	N/A
5. Tanks vented to outside	N/A
6. Proper chemical segregation (types, aisles, labeled)	N/A
7. Used spill material container (available, empty, clean, isolated)	N/A
8. Floors (flat, clean, impermeable)	N/A
9. Sump (empty, clean, isolated)	N/A
10. Racking (capacity signed, inspections)	N/A
11. Material safety data sheets (accessible locally, current)	N/A
12. Waste/surplus chemicals (routinely identified, correct storage, correct and regular disposal)	N/A
TOTAL	0

13. FUEL ISLAND	RATING
1. Pumps (barriered off)	N/A
2. Fuel storage (barriered off)	N/A
3. Hoses and pumps (condition, clean, proper type, date, stowed appropriately)	N/A
4. Waste container (metal, lidded, labeled)	N/A
5. Drip trays (drain to interceptor)	N/A
6. Fuel and oil tanks in secondary containment and free of spills	N/A
7. Fuel island area clean and free of spills	N/A
8. Fuel and oil tanks properly labeled	N/A
9. Proper containment (double wall tanks, bunds)	N/A
10. Filling nozzles (good working condition, locked off at night)	N/A
TOTAL	0

14. SAND STORAGE AREA	RATING
1. Electrical safe and clearly marked	N/A
2. Railing, walkways, ladders and stairs safe	N/A
3. Climbing safety devices	N/A
4. All drives guarded	N/A
5. Lighting	N/A
TOTAL	0

15. RADIATION STORAGE AREA	RATING
1. Current copy of RA licenses on display	N/A
2. Copy of RA "Notice to Employees" on display	N/A
3. BJ Services Radiation Protection Manual available	N/A
4. Country/State NRC regulations available	N/A
5. Storage area posted "Caution - Radioactive Material"	N/A
6. Are sources properly labeled ?	N/A
7. Storage area secure (lock working properly)	N/A
8. Utilization log available and current	N/A
9. Bill of Lading being used	N/A
TOTAL	0

16. Housekeeping

Things to look for:

- Cluttered and poorly arranged areas
- Untidy and dangerous piling of materials
- Items that are excess, obsolete or no longer needed
- Blocked aisleways
- Trip hazards (cables, boxes, hoses, loose items)
- Material stuffed in corners, on overcrowded shelves, in overflowing bins and containers
- Tools and equipment left in work areas instead of being returned to tool rooms, racks, cribs or chests
- Broken containers and damaged material
- Materials gathering dirt and rust from disuse
- Waste, scrap and excess materials that congest work areas
- Spills, leaks and hazardous materials creating safety and health hazards

Key
Select only the scores listed below.
N/A - Note Appilicable (Default Value)
0 - Needs Immediate Attention
1 - Poor
2 - Needs some attention
4 - Good - Meets standards

16. HOUSEKEEPING	RATING
A. PREMISES (incl YARD)	N/A
B. SHOP(S)	N/A
C. OFFICE(S)	N/A
D. LOCKER ROOM(S), WASHROOM(S), BREAK AREA(S), MESS ROOMS, CANTEEN(S)	N/A
E. LABORATORY	N/A
F. STORES & EQUIPMENTSTORAGE AREAS	N/A
G. CEMENT WAREHOUSE & BULK PLANT	N/A
H. NITROGEN STORAGE	N/A
I. ACID STORAGE	N/A
J. PRESSURE TEST BAY	N/A
K. CHEMICAL WAREHOUSE	N/A
L. FUEL ISLAND	N/A
M. SAND STORAGE	N/A
N. RADIATION STORAGE	N/A
TOTAL	0

ADDITIONAL COMMENTS

Total Points 0

Facility Corrective Action

ITEM NO.	CORRECTIVE ACTION NEEDED	CORRECTIVE ACTION TAKEN (Name & date & any remarks)

Vehicle Corrective Action

Check a Sample of vehicles in yard for the following items and note any defects

For example check:- Seat Belt Operational, Seat Condition, Loose Objects in Cab, Loads Secure, Deck Equipment Secure, Vehicle Coupling Devices, Air Hoses & Connections, Ladders, Fire Extinguisher (UL Rating of 10B:C or more), First Aid Kit, Cab Glass, Wipers, Placard Holders, Mirrors, Lights & Reflectors, Brake/Engine/Washer Fluid Levels, Tires and Rims Condition, Tool Box, Spillage Control Materials & Equipment, All Documents Current, Annual Inspection Current.

NOTE: You must enter a resulting Corrective Action Taken By for EVERY Corrective Action Needed entry made in the table below and enter the name of the person assigned and the date that they took the action (closed it out).

UNIT #	CORRECTIVE ACTION NEEDED	CORRECTIVE ACTION TAKEN

If you are the relevant District/Facility Manager, Region/Country/Area Manager, District/ HSE Officer or Other Relevant Manager you should sign the report when you have read it. To add your signature to the appropriate section, click the **Edit** button (to enter Edit mode), then click on the **Review and Sign Off** button. This will add your name and the current date to the Accident Report in the relevant section below.

Reviewed and Signed Off by the Following:-

District Safety/Training Supervisor Shermon Walters/OPRHOBB/BJS/BJSERVICES

District Manager Roger Sullivan/OPRHOBB/BJS/BJSERVICES

Region Safety/Training Manager David Winkles/BJS/BJSERVICES

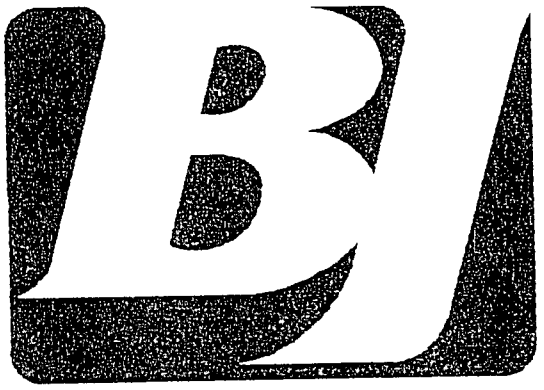
Region Operations Manager Sam Daniel/SALMIDL/BJS/BJSERVICES

Created By: JoAnn Cobb on 05/23/2001

Other Relevant Personnel

ATTACHMENT 3

FACILITY EMERGENCY REPSONSE CONTINGENCY PLAN



BJ SERVICES

Facility Emergency Response Contingency Plan

FACILITY EMERGENCY RESPONSE CONTINGENCY PLAN

BJ SERVICES COMPANY U.S.A.
2708 WEST COUNTY ROAD
HOBBS, NEW MEXICO 88240
(505) 392-5556

JANUARY 1, 1996

EMERGENCY RESPONSE CONTINGENCY

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EMERGENCY RESPONSE CONTINGENCY

DESCRIPTION OF FACILITY

BJ Services Company is an oil and gas well cementing and treatment service company using various chemicals for specific stimulation and cementing applications.

Our Hobbs, New Mexico facility is the primary location for servicing contract activities. Like most of our other locations, the Hobbs station is expected to maintain on its premises various quantities of chemicals stored in 55 gallon drums, a bulk cement plant, and a bulk hydrochloric acid tank.

The general types of hazardous materials which could be stored at this facility are cationic, anionic, and non-ionic surfactants which are dissolved in one or more of the following fluids: water, metanol, isopropyl alcohol, glycols, xylene, and aromatic or mineral spirits. Wastes would be generated by products not meeting BJ Services specified quality parameters or by contaminated products. These materials would then have the following EPA hazardous waste codes:

(D001) general ignitable wastes with flash points below 140 degrees F

(D002) general corrosive wastes with a ph below 2 or above 12.5

EPA IDENTIFICATION NUMBER: NMD 052377637

This number provides access to stored information pertaining to this operation and should be utilized in any correspondence with the United States Environmental Protection Agency.

EMERGENCY RESPONSE CONTINGENCY

STORAGE AND HANDLING

All liquid bulk tanks have containment dikes built around them. Chemical inventories are kept at a minimum to lower the risk factor. Storage of drums are such that no incompatible chemical or reactive chemical is stored together. When possible, less toxic chemicals are the chemical of choice for storage. Employees are rewarded for safe handling practices and are encouraged to present new safety procedures. All equipment and procedures are modified to reduce hazards and effects of hazards.

IDLH POLICY
(Immediately Dangerous Life and Health Level)

It is BJ Service Companies policy that human life takes priority over all other things. In the event an IDLH situation is present or may be present, no employee and/or non-employee will be allowed in the IDLH area without Level 1 or Level 2 P.P.E. (Personal Protection Equipment) and appropriate documents showing they are qualified to use Level 1 or Level 2 P.P.E. and have supportive training in a hazardous environment.

In the event of an IDLH situation, evacuation of facilities and/or surrounding areas will take priority over the immediate incident until properly equipped and trained personnel arrive at the incident. Fire will be fought by remote equipment unless it can be contained without endangering personnel. Major spills that would include an IDLH situation would be contained to the extent that no person would be placed in jeopardy. The buddy system will apply in all situations.

The following is a list of the PPE levels referred to above:

PPE 4: Minimum protection is chemical resistant boots, gloves, and glasses
PPE 3: Minimum protection is chemical resistant boots, gloves, glasses, and a respirator
PPE 2: Minimum protection is chemical resistant boots, gloves, glasses, a self-contained breathing apparatus, and a personal environment suit
PPE 1: Minimum protection is chemical resistant boots, gloves, glasses, a self-contained breathing apparatus, and a totally enclosed sarnes suit (a self-sustained/chemical resistant suit)

EMERGENCY RESPONSE CONTINGENCY

MUTUAL AID AGREEMENT

BJ Services Company will assist the surrounding businesses and communities in an emergency condition with the aid of personnel and equipment whenever possible. Due to our policy on IDHL situations, we will not allow our personnel or equipment to be placed at risk below a level 3 P.P.E. condition.

FIRE FIGHTING EQUIPMENT

Dry chemical charged extinguishers, 2.5#, 5#, 10#, and 25# are located at several strategic stations throughout the facility. Each stationary fire extinguisher station is visibly marked with proper placarding. Each company vehicle is also equipped with a portable fire extinguisher. A 1.5" water line is located inside the dry chemical warehouse.

Various pumping units could be rigged up to pump high volumes of water to inside an/or outside fires.

CHEMICAL SPILL STATIONS

Chemical spill stations are located in the warehouse and on the acid dock. Equipment at each station is one shovel, soda ash, buckets, all purpose absorbent, chemical goggles, a respirator and a rubber apron and gloves.

TRAINING OF EMPLOYEES IN CONTAINMENT AND FIGHTING OF FIRES AND CHEMICAL SPILL

In the event of a chemical spill, all employees are trained in the procedures of notification and methods of cleanup. New employees are trained in all hazards related to our chemicals including fire, health, reactivity, and any special hazards as indicated by product labels and MSDS information. All employees are updated during regular safety meetings regarding current procedures on fire fighting, chemical spills and evacuation plans. Each employee is alerted to any special conditions at the well site during a mandatory pre-job safety meeting. Fire drills and emergency procedures are performed at the facility on a continuing basis. Safety is stressed at all times and is the most paramount consideration during any task performed by our employees. All employees are issued a complete set of personal safety equipment. This equipment is each employee's personal responsibility and is to be readily accessible at all times.

EMERGENCY RESPONSE CONTINGENCY

EVACUATION PLAN

In the event it is determined that evacuation is necessary, employees will be notified by the public address system. Escape routes taken will be determined by wind speed and direction, weather conditions, type of condition that created the emergency, and the location of employees. The buddy system will be used during evacuation as employees go to a designated safe area and a head count will be taken immediately.

The level of emergency response outside of the facility will be determined by the quantity of spillage, size of fire, wind direction, weather conditions, and the evaluation of the safest methods of response; i.e., leave immediate area, stay in buildings and close all doors and windows, etc. Roads will be closed in accordance with the level of the emergency.

Special areas of concern are:

1) Weatherford northeast of yard
2) House northwest of yard across W. County Road
3) Pipe storage yard across W. County Road

All individuals in these areas would be notified by phone, public address system, or in person.

Notification information will include:

1) The type of emergency situation that exists
2) Procedures to follow
3) Routes to be taken
4) Proper medical attention to be sought if needed
5) An all clear will be issued when the hazard has been contained and it is safe to return

EMERGENCY RESPONSE CONTINGENCY

CONTIGENCY PLANS AND EMERGENCY PROCEDURES

The purpose of the following is to set forth contingency plans which will minimize hazards to human health and the environment in the event of fires, explosion, or uncontrolled release of hazardous chemicals. Should any of these events occur at this facility the emergency coordinator will take action as described in the following sections:

1) The Emergency Coordinator

A. Designation of Emergency Coordinator

1. The principal emergency coordinator for the facility is:

Roger Sullivan — Office: 505 392-5556
2708 W. County Rd. — Home: 505 492-1081
Hobbs, N.M. 88240

2. The alternate emergency coordinators are:

Walter Freeman — Office: 505 392-5556
2708 W. County Rd. — Home: 505 397-1802
Hobbs, N. M. 88240

Shermon Walters — Office: 505 392-5556
2708 W. County Rd. — Home: 505-396-5047
Hobbs, N.M. 88240

3. During non-working hours, the police or fire department will notify one or all designated coordinators if an emergency should occur.

B. Responsibility of the Emergency Coordinator

1. The emergency coordinator or his designee must activate the alarm system and notify employees of the imminent or actual emergency.

EMERGENCY RESPONSE CONTINGENCY

2. In the event of an actual emergency, the coordinator or his designee will notify the appropriate local, state, and federal authorities as required:

a) Hobbs Fire Department
Local Emergency 911

b) Hobbs Police Department
Local Emergency 911

c) Ambulance Service 911

d) Carelink Helicopter
1-800-743-4444
1-800-456-5465

e) Flight for Life
1-806-796-6575

f) Emergency Medical and Poison Center
Galveston 1-409-765-1420
National Hot Line 1-800-541-5624
Spokane Washington

g) EPA Hazardous Substance Spill
National Response Center
HOT LINE 1-800-424-8802
Information 1-800-424-9346

h) Chemtrec (Chemical Transportation)
Emergency Center) 1-800-424-9300

i) National Weather Service Information
1-817-334-3401

j) JoAnn Cobb 1-281-351-8131
BJ Services Co.
Manager-Field Safety
Tomball, Tx 77375

3. The emergency coordinator will also determine the extent of the danger

   a) he should note the exact locations of the dangerous areas

   b) he should note whether fire or threat of fire is involved

   c) he should note any injuries requiring medical attention

   d) he should attempt to identify the types of hazardous chemical involved and most appropriate equipment needed to contain the incident

   e) he should determine which, if any, local agencies should be summoned

   f) he should order the evacuation of the employees if necessary

   g) he should direct the activities of the emergency response team

4. In the event of fire, the emergency coordinator will immediately call the fire department, and upon their arrival, have the emergency team cease their control efforts.

2) Emergency Procedures

A. In the event of fire, the emergency coordinator or his alternate must be notified immediately.

   1. An attempt should be made to extinquish the fire with on-site fire fighting equipment.

   2. The Hobbs Fire Department will assume control of the situation upon arrival at the scene.

B. In the event of an explosion, the emergency coordinator or his alternate must be notified immediately.

1. An attempt should be made by facility personnel to prevent or minimize any recurring explosions by re-positioning hazardous chemical drums away from the hazard area if this can be accomplished safely.

2. Medical help should be requested immediately.

C. In the event of a sudden or non-sudden release of hazardous chemical, the emergency coordinator or his alternate shall be notfied immediately.

1. Efforts should commence immediately to contain the spill with appropriate dike and/or absorbent material. Acid wastes will be neutralized with soda ash prior to adding absorbent.

2. Sources of heat, sparks, and flames should immediately be removed to prevent fires or explosions.

3. If a non-sudden release of hazardous chemical is discovered, the source of this leak should be found and appropriate action taken to stop the leak.

3) Notification Procedures

A. If, in the opinion of the emergency coordinator or his alternates, a possibility of harm to human health or the environment could result from an incident of fire, explosion or release of hazardous chemical shall require the immediate notification of the local fire police, ambulance and/or hospital services

1. The caller to the agencies will furnish the following:

a. Name and telephone number of the caller

b. Name and address of the warehouse

c. Time and nature of the emergency

d. Type and quantity of material involved (to the extent known)

e. Extent of any injuries

f. Possible health and/or environmental hazards outside the warehouse facility

C. Any incident which is large enough to involve property or possessions of a third part will require the notification of all applicable agencies listed in Section 1-B,

Responsibilities of the Emergency Coordinator

1. The caller to these agencies will furnish the following:

a. Name and telephone number of the caller

b. Name and address of the warehouse

c. Time and nature of the emergency

d. Type and quantity of material involved (to the extent known)

e. Extent of any injuries

f. Possible health and/or environmental hazards outside the warehouse facility

4. Clean-up and Post Emergency Procedures

A. Small scale incidents will be cleaned up with absorbent material and picked up with non-sparking shovels and other equipment and placed in a competent drum, sealed and disposed of properly.

B. Larger scale incidents will be diked to prevent run-off of fire fighting water and/or spilled hazardous chemical as feasible.

EMERGENCY RESPONSE CONTINGENCY

1. Vacuum trucks will be used to take away as much of the liquid as possible and then absorbent material will be used to finish removing the liquid remaining.

2. The absorbed hazardous chemical will then be placed in sealable drums using equipment suitable to the size and amount of material needed to be removed.

3. All hazardous chemicals collected in vacuum trucks will be reclaimed immediately after the emergency.

4. All reclaimed hazardous chemicals collected on absorbent material and sealed in drums will be disposed in an appropriate disposal site as soon as normal working procedures permit.

C. After the emergency is over, the emergency coordinator will make sure that in all the affected areas of the warehouse and all the emergency equipment is cleaned, replenished

D. If the severity of the incident requires an investigation by the O.C.D., the emergency coordinator should make an effort to accumulate the following information as outlined in the Hazardous Substances Spill Contingency Plan:

1. Date and time of the spill

2. The type of material spilled

3. Quantity of material spilled

4. The exact location of the spill, including the name of the waters involved or threatened

5. The source of the spill

6. Party responsible for the spill (name, address, phone number, permit number)

7. The extent of actual and potential water pollution

8. The party at the spill site who is in charge of operations at the site and the telephone number of this party

9. The steps being taken or proposed to contain and clean up the spilled material

10. The extent of injuries, if any

11. Possible hazards to human health, and the environment (air, soil, water, wildlife, etc.)

PROCEDURE GUIDELINES FOR INCIDENTS NOT COVERED BY THIS PLAN

If an incident should occur that is not specifically discussed in this plan, the Emergency Coordinator shall use as a guideline the following publication:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONVERSATION DIVISION

A copy of the BJ Services Company contingency plan shall be located in the dispatch area immediately alongside the master copy of the facility Master MSDS chemical listing.

EMERGENCY RESPONSE CONTINGENCY

RISK ANALYSIS
WORST CASE INCIDENT/MOST PROBABLE INCIDENT

AMMONIUM BIFLUORIDE

1. Worst Case Incident:
Fire inside of building, water used to fight fire. Water mixed with ABF produces hydrofluoric acid. Fumes from hydrofluoric acid inside confined area could exceed threshold limits for life without SCBA.

   A. Probability of hazard occurrence: Low-- product is kept away from flammable products. Fire in compound will be fought with dry chemical, nitrogen, or foam. Good security arrangement that would deter tampering or accident resulting from civil uprising

   B. Consequences if people are exposed: TLV-2.5 mg/m3 as fluoride. Acute irritation & chemical burns over exposed area of body. If fumes are above lethal concentrations, they would create an IDLH situation.

   C. Consequences for property: Possible superficial damage to facility equipment and structure from corrosive fumes (repairable).

   D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

   E. Probability of simultaneous emergencies: Low

   F. Unusual environmental conditions: None-- Area is not subject to flooding. No other contributing factor.

2. Most Probable Incident:

   Damage to container (sack) spilling some or all of product into environment. Product is kept in 50# sacks. Amount of spill would probably be less than reportable quantity.

   A. Probability of hazard occurrence: Medium-- reinforced sack could be ripped or a spill could occur during loading.

B. Consequences if people are exposed: Irritation and chemical burns over exposed area of body. Extremely low respiratory irritation.

C. Consequences for property: None -- cleanup procedures would eliminate any product.

D. Consequences of environmental exposure: None-- cleanup procedures would eliminate contamination from the product.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None. Area is not subject to flooding. No other contributing factor.

ACETIC ANHYDRIDE

1. Worst Case Incident:
Rupture of drum. Product mixes with alkalies, oxidizing material, or strong mineral acids creating gas and heat.

A. Probability of hazard occurrence: Low-- product is stored away from all alkalies, oxidizing materials, and mineral acids. Good security arrangement that would deter tampering or accident resulting from civil uprising.

B. Consequences if people are exposed: IDLH situation until gas cloud and heat dissipate. High humidity and low wind would prolong hazardous conditions. Acute immediate effect to respiratory system. Severe damage and blindness if acetic anhydride residue enters eyes. Thermal decomposition may produce carbon monoxide and/or carbon dioxide.

C. Consequences for property: May produce superficial damage to facility, equipment, and structure from heat (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None. Area is not subject to flooding. No other contributing factors.

2. Most Probable Incident:

Rupture or spillage of 55 gallon drum into environment. Product does not mix with alkalies, oxidizing materials, or mineral acids. Amount of spill would probably be less than reportable quantity.

A. Probability of hazard occurrence: Low/Medium-- Highest risk would be human error, lowest risk would be rupture of drum.

B. Consequences if people are exposed: Eyes-- Severe damage and blindness rapidly; Skin-- Causes burns; Breathing mist causes damage to mucous membranes and deep tissue damage; if swallowed, severe damage to mucous membranes and deep tissue.

C. Consequences for property: May produce minor superficial damage to facility, equipment and structure (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

CAUSTIC SODA

1. Worst Case Incident:

Rupture of drum, product mixes with strong acid causing violent reaction. Product is an inorganic compound which is highly alkaline in nature. It is very reactive and can generate tremendous amounts of heat during such reactions.

EMERGENCY RESPONSE CONTINGENCY

A. Probability of hazard occurrence: Low-- product is kept in enclosed shed away from all other chemicals. Drum is made of an extremely heavy plastic. Probability of more than one drum rupturing at any time is highly unlikely.

B. Consequences if people are exposed: IDLH situation until gas cloud and heat dissipate. High humidity and low wind would prolong hazardous condition. Acute immediate effect to respiratory system, destructive to all human tissue giving severe burns, eye contact will produce severe or permanent injury.

C. Consequences for property: May product superficial damage to facility, equipment, and structure from heat (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is subject to flooding, not other contributing factors.

2. Most Probable Incident:

Rupture or spillage of 55 gallon drum into environment. Product does not mix with any strong acid. Amount of spill would be less than reportable quantity.

A. Probability of hazard occurrence: Low/Medium-- highest risk would be human error; lowest risk would be rupture of drum.

B. Consequences if people are exposed: TLC-Sodium Hydroxide-2 mg/m3 (dust). Destructive to all human tissue giving severe burns. Eye contact will produce severe or permanent injury. Inhalation of mist or spray can injure respiratory tract.

C. Consequences for property: May produce superficial damage to facility, equipment, and structure from corrosion (repairable).

D. Consequences of environmental exposure: Possible destruction of surrounding flora and fauna.

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

HYDROCHLORIC ACID

1. Worst Case Incident:

Rupture of tank spilling contents into containment dike, releasing hydrochloric fumes into atmosphere.

A. Probability of hazard occurrence: Low/Medium Tank is lined and inspected daily, maintenance is performed as needed. Most likely cause of rupture to tank would be due to severe weather (lightning strike or tornado).

B. Consequences if people are exposed: TLV-5PPM-acute irritation, choking, damage to tissue, chronic severe tissue damage. Probable IDLH.

C. Consequences for property: Highly corrosive to many materials, will be contained in containment dikes. Damage repairable.

D. Consequences of environmental exposure: Probable damage to fauna and flora by hydrochloric fumes (replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

2. Most Probable Incident:

Spillage during loading or unloading. Amount of spill would be below reportable quantity.

A. Probability of hazard occurrence: Medium/Low-- loading or unloading line could rupture, releasing product until valve is closed.

B. Consequences if people are exposed: Irritation, choking, damage to tissue.

C. Consequences for property: Product is easily neutralized with soda ash and will not harm property if taken care of quickly.

D. Consequences of environmental exposure: Possible destruction of surrounding fauna and flora. (Replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None-- area is not subject to flooding, no other contributing factors.

H.A.S. (XYLENE)

1. Worst Case Incident:

Fire by various causes, reaction with oxidizing agent producing CO2, SO2 gas, rupture of drum spilling contents into environment.

A. Probability of hazard occurrence: Medium-- highest risk would be fire by various causes; next highest risk would be rupture of drum spilling contents. Lowest risk would be reaction with oxidizing agent (no oxidizing agent is kept near product).

B. Consequences if people are exposed: Product TVL 500 mg/m3- minimum damage except if ingested, high risk of burns from fire, possible IDLH situation if exposed to oxidizer.

C. Consequences for property: Fire damage to immediate area, soil contamination.

D. Consequences of environmental exposure: Contamination of soil. Damage to flora and fauna (replaceable).

E. Probability of simultaneous emergencies: Low

F. Unusual environmental conditions: None- area is not subject to flooding, no other contributing factors.

2. Most Probable Incident:

Fire by various causes.
All other areas are covered by worst case incident.

ATTACHMENT 4

BORING LOG

BROWN AND CALDWELL

BORING LOG

Project Name: B.I. SERVICES - SYSTEM INSTALLATION Project Number: 2832.31

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: AV-5 Sheet 1 of 1

Boring Location: Hobbs, NM FACILITY		Elevation and Datum:	
Drilling Contractor: EPI	Driller: JOSE'	Date Started: 8/5/95	Date Finished: 8/5/95
Drilling Equipment: CME '75	Borehole Diameter: "6"	Completed Depth: (feet) 61.8'	Water Depth: (feet) 52.0'
Sampling Method: SPLIT SPOON		WELL CONSTRUCTION	
Drilling Method: HOLLOW STEM	Drilling Fluid: H_2O	Type and Diameter of Well Casing: 1" & 2" SCH 40 PVC	
Backfill Material: GROUT 2-6'		Slot Size: .010	Filter Material: 10-20
Logged By:	Checked By:	Development Method: N/A	

Depth (feet)	USC Soil Type	Description	Recovery %	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Backfill	Readings: OVA PPM	Remarks	Elevation (feet)
0		CONCRETE/SURFACE GRAVEL								1" WELL COMPLETION	
		BRN SAND/CLAY (SC) MOIST, FIRM w/ GRAVEL							67.8	SCREEN = 56.8 - 61.8 (5')	
		SILTY GRAVEL (GM) - CALICHE dry, hard w/ SAND							191.5	SAND = 53.0 - 61.8'	
10		- INC. in SAND @ 16.0'								BENT = 51.0 - 53.0'	
		SILTY SAND (SM) w/ GRAVEL med to fine grain								2" WELL COMPLETION	
20		SAND/GRAVEL (SP) med, clay w/ silt.								SCREEN = 10-30'	
5										SAND = 8-30'	
30		SANDSTONE, CONSOLIDATED MEDIUM								BENT = 6-8'	
		SILTY SAND (SM) dry med to fine grain w/ gravel.								37'-38' SS SEAM	
40										42-43' SS SEAM	
50		FINE SAND (SP) dense, SATURATED								GW @ 52.0'	
▼											
60		TD = 61.8'								TD = 61.8'	
5											

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period.

of 1

_____ weeks.

Beginning with the issue dated

June 8 2001

and ending with the issue dated

June 8 2001

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 8th day of

June 2001

Jodi Henson

Notary Public.

My Commission expires
October 18, 2004
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mex[illegible]ater Quality Control Commission Regulations, the following discharge plan applications has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(GW-344) - Dynegy Midstream Services, LP, Cal Wrangham, ES&H Adviser, 6 Desta Drive, Suite 3300, Midland, Texas 79705, has submitted an application for renewal of their previously approved discharge plan for the former Texaco Eunice-South Gas Plant located in the SW/4 of Section 27, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico. The gas plant has been converted to a natural gas compressor station with a combined horsepower rating of 18,000 HP. The discharge plan consist of a gas plant decommissioning plan, a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-345) - Dynegy Midstream Services, LP, Cal Wrangham, ES&H Adviser, 6 Desta Drive, Suite 3300, Midland, Texas 79705, has submitted an application for renewal of their previously approved discharge plan for the former Texaco Eunice-North Gas Plant located in the SE/4 of Section 28, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. The gas plant has been converted to a natural gas compressor station with a combined horsepower rating of 18,000 HP. The discharge plan consist of a gas plant decommissioning plan, a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-252) - Rotary Wireline, Inc., Mickey Welborn, (505) 397-6302, P.O. Box 2735, Hobbs, New Mexico, 88241 has submitted a discharge plan application for the Rotary Wireline, Inc. facility located in the NW/4 NW/4 of Section 5, Township 19 South, Range 38 East, NMPM, Lea County, New Mexico. Approximately 42 gallons per day of waste water is discharged to the City of Hobbs publicly owned treatment works (POTW). Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 55 feet with a total dissolved solids concentration of approximately 1,100 mg/l. The discharge plan consist of a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-253) - Zia Transportation, Terry Wallace, (505) 393-8352, 816 Northwest County Road, Hobbs, New Mexico, 88240 has submitted a discharge plan application for the Zia Transportation, Inc. facility located in the SE/4 NW/4 NW/4 of Section 32, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of 40 mg/l to 1,000 mg/l. The discharge plan consist a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-72) - BJ Services Company, Jo Ann Cobb, (281) 351-8131, 11211 FM 2920, Tomball, Texas, 77375 has submitted an application for renewal of its previously approved discharge plan for the Hobbs Facility 2708 West County Road, located in the NE/4 of Section 20, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 55 feet with a total dissolved solids concentration of approximately 300 mg/l. The discharge plan consists of a waste management plan, soil and groundwater remediation, sampling and monitoring program to be conducted until the groundwater meets standards as contained in 20 NMAC 6.2.3103 of the New Mexico Water Quality Control Commission (WQCC) Regulations.

(GW-240) - Basic Energy Services, David Alvarado, (505) 392-6498, 3400 N. Industrial Blvd, Hobbs, New Mexico 88240, has submitted a Discharge Plan Application for the Hobbs Facility located in the NW/4 NW/4 of Section 21, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 750 mg/L. The discharge plan consist a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 5 Th. day of June 2001.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Approved
Wayne Price
7/6/01

THE SANTA FE
NEW MEXICAN
Founded 1849

OIL CONSERVATION DIVISION
ATTN: WAYNE PRICE
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505

AD NUMBER: 210545 ACCOUNT: 56689
LEGAL NO: 69398 P.O.#: 01199000033
459 LINES 1 time(s) at $ 202.33
AFFIDAVITS: 5.25
TAX: 12.97
TOTAL: 220.55

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE
I, M M Weidemann being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication #69398 a copy of which is hereto attached was published in said newspaper 1 day(s) between 06/11/2001 and 06/11/2001 and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 11 day of June, 2001 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

Approved
7/06/01

/S/ M M Weidemann
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this
11 day of June A.D., 2001

Notary Janet L. Montoya
Commission Expires 12/30/03

OFFICIAL SEAL
Janet L. Montoya
NOTARY PUBLIC - STATE OF NEW MEXICO
MY COMMISSION EXPIRES 12/30/03

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(GW-344) - Dynegy Midstream Services, LP, Cal Wrangham, ES&H Adviser, 6 Desta Drive, Suite 3300, Midland, Texas 79705, has submitted an application for renewal of their previously approved discharge plan for the former Texaco Eunice-South Gas Plant located in the SW/4 of Section 27, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico. The gas plant has been converted to a natural gas compressor station with a combined horsepower rating of 18,000 HP. The discharge plan consist of a gas plant decommissioning plan, a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-345) - Dynegy Midstream Services, LP, Cal Wrangham, ES&H Adviser, 6 Desta Drive, Suite 3300, Midland, Texas 79705, has submitted an application for renewal of their previously approved discharge plan for the former Texaco Eunice-North Gas Plant located in the SE/4 of Section 28, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. The gas plant has been converted to a natural gas compressor station with a combined horsepower rating of 18,000 HP. The discharge plan consist of a gas plant decommissioning plan, a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-252) - Rotary Wireline, Inc., Mickey Welborn, (505) 397-6302, P.O. Box 2735, Hobbs, New Mexico, 88241 has submitted a discharge plan application for the Rotary Wireline, Inc. facility located in the NW/4 NW/4 of Section 5, Township 19 South, Range 38 East, NMPM, Lea County, New Mexico. Approximately 42 gallons per day of waste water is discharged to the City of Hobbs publicly owned treatment works (POTW). Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 55 feet with a total dissolved solids concentration of approximately 1,100 mg/l. The discharge plan consist of a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

(GW-253) - Zia Transportation, Terry Wallace,

(505) 393-8352, 816 Northwest County Road, Hobbs, New Mexico, 88240 has submitted a discharge plan application for the Zia Transportation, Inc. facility located in the SE/4 NW/4 NW/4 of Section

32, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of 40 mg/l to 1,000 mg/l. The discharge plan consist a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

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(GW-240) - Basic Energy Services, David Alvarado, (505) 392-6498, 3400 N. Industrial Blvd, Hobbs, New Mexico 88240, has submitted a Discharge Plan Application for the Hobbs Facility located in the NW/4 NW/4 of Section 21, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 750 mg/L. The discharge plan consist a waste management plan which addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico on this 5th day of June, 2001.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

LORI WROTENBERY, Director
Legal #69398
Pub. June 11, 2001

OK Approval
7/6/01

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 5 Th. day of June 2001.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

LORI WROTENBERY, Director

Price, Wayne

From: JCobb@bjservices.com[SMTP:JCobb@bjservices.com]
Sent: Friday, June 01, 2001 9:21 PM
To: Price, Wayne
Subject: Re: BJ Hobbs Yard DP Inspection 5/31/01

Dear Wayne,
The data for these wells will be in the next report. The report that is coming is the first sampling for these wells.
Thanks for the info. I will be looking forward to the report.
Thanks!

Jo Ann

"Price, Wayne" <WPrice@state.nm.us> on 06/01/2001 05:06:06 PM

To: JoAnn Cobb/BJS/BJSERVICES@BJSERVICES
cc: "Olson, William" <WOLSON@state.nm.us>

Subject: BJ Hobbs Yard DP Inspection 5/31/01

Dear JoAnn:

We inspected the Hobbs Yard on May 31, 2001. The yard looks very good and I
will forward you a copy of the report. While we there I noticed that the Two New Monitor wells are installed, however the last two groundwater reports did not include these wells or any results. Would you please provide.

Thanks!

Price, Wayne

From: Price, Wayne

Sent: Friday, June 01, 2001 4:06 PM

To: 'cobb@bjservices.com'

Cc: Olson, William

Subject: BJ Hobbs Yard DP Inspection 5/31/01

Dear JoAnn:

We inspected the Hobbs Yard on May 31, 2001. The yard looks very good and I will forward you a copy of the report. While we there I noticed that the Two New Monitor wells are installed, however the last two groundwater reports did not include these wells or any results. Would you please provide.

Thanks!

NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

Memorandum of Meeting or Conversation

Telephone _____
Personal _____
E-Mail __X____
FAX: _____

Date: 3/18/01

Originating Party: Wayne Price-OCD

Other Parties: Jo Ann Cobb- BJ SER Rec 3/19/01

Subject: **Discharge Plan Renewal Notice for the following Facilities:**

GW- 072	BJ Service Hobbs Yard	expires 10/02/01
GW-___	Name	expires
GW-___	Name	expires
GW-___	Name	expires

WQCC 3106.F. If the holder of an approved discharge plan submits an application for discharge plan renewal at least 120 days before the discharge plan expires, and the discharger is not in violation of the approved discharge plan on the date of its expiration, then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge plan continued under this provision remains fully effective and enforceable. An application for discharge plan renewal must include and adequately address all of the information necessary for evaluation of a new discharge plan. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [12-1-95]

Discussion: Discussed WQCC 3106F and gave notice to submit Discharge Plan renewal application with $100.00 filing fee for the above listed facilities.

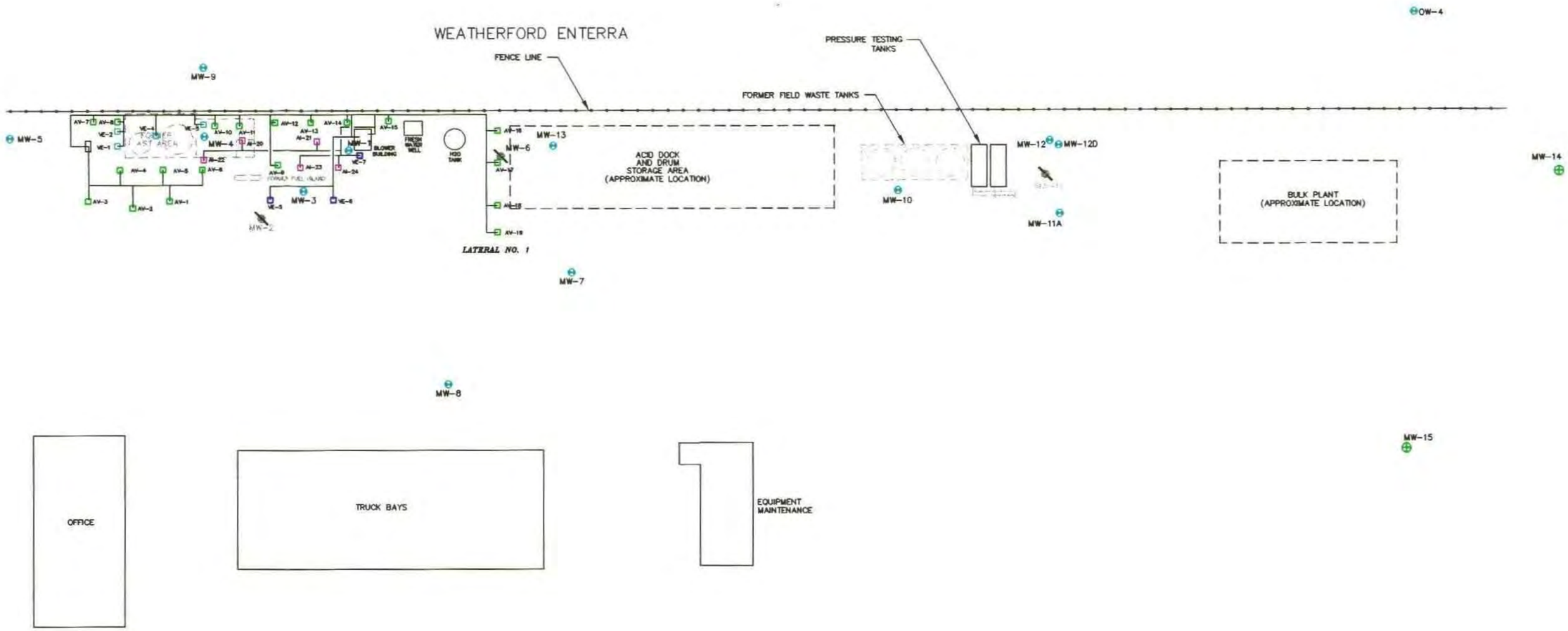
Conclusions or Agreements:

Please send DP application and filing Fee before 6/02/01 to retain WQCC 3106.F provision.

Wayne Price

Signed:_____

called left message @ 5/23/01



P:\CAD\JOBS\12832\PMWLocations2

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 30 60
SCALE: 1" = 60'

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

LEGEND

MW-3 EXISTING MONITOR WELL LOCATION

BIOSPARGING SYSTEM

MW-14 PROPOSED MONITOR WELL LOCATION

MW-2 MONITOR WELL (PLUGGED AND ABANDONED)

TITLE: PROPOSED MONITOR WELL LOCATIONS	DATE: 9/11/00
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.022
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1

1415 Louisiana, Suite 2500
Houston, TX 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

CERTIFIED MAIL
#P077659803

AUG 30 2000

August 28, 2000

BROWN AND CALDWELL
Environmental Engineering & Consulting

Mr. Wayne Price
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

12832-015

Subject: **BJ Services Company, U.S.A.**
Hobbs, New Mexico Facility (GW-072)
Groundwater Chloride Content

Dear Mr. Price:

BJ Services Company, U.S.A. (BJ Services) and Brown and Caldwell received the New Mexico Oil Conservation Division (NMOCD) correspondence dated July 31, 2000, which was submitted in response to the Reference correspondence from Brown and Caldwell.[a]

We felt that our July 24th letter demonstrated that the salt water plume in the former waste tank area had been fully delineated. Monitor well MW-12 and MW-12D demonstrated that the plume was contained within the upper portion of the aquifer. Monitor well OW-4 provided down gradient control. We would appreciate the opportunity to discuss this in more detail, if you are not in agreement.

We apologize for not being more specific regarding the plan for remediation of contamination related to the former underground field waste water tanks. Based upon our other work at the facility, the groundwater system has sufficient capacity to remediate the remaining contaminant concentrations through natural attenuation. Consequently, BJ Services intends to remediate residual dissolved-phase contamination through monitored natural attenuation, in accordance with OSWER Directive 9200.4-17P, "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites," April 21, 1999. Monitor wells MW-10, MW-11A, MW-12, and OW-4 will be monitored on a semi-annual basis. A letter report for each event will be prepared and provided to the OCD until contaminant concentrations are below WQCC standard.

[a] Letter to W. Price (NMOCD) from R. Rexroad (Brown and Caldwell) dated 7/24/00; subject: Evaluation of Groundwater Chloride Content, BJ Services Company, U.S.A., Hobbs, New Mexico Facility

In order to ensure that the requested work plan fully addresses the OCD concerns, BJ Services and Brown and Caldwell request the opportunity either to meet or to conduct a telephone conference with you. We look forward to speaking with you further regarding this facility. Please feel free to contact Ms. Jo Ann Cobb of BJ Services at 281-357-2572 and Mr. Robert Jennings of Brown and Caldwell at 713-759-0999.

Sincerely,

BROWN AND CALDWELL

for Richard Rexroad, P.G.
Project Manager

Robert N. Jennings
Vice President

cc: NMOCD District Office, Hobbs, New Mexico
Jo Ann Cobb, BJ Services Company, U.S.A. – Tomball, Texas
BJ Services Company, U.S.A., Hobbs, New Mexico Facility

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

July 31, 2000

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5051 5192

Ms. Jo Ann Cobb
BJ Services Company
11211 FM 2920
Tomball, Texas 77375

Re: BJ Hobbs Facility GW-072
Evaluation of Groundwater Chloride Content

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Brown and Caldwell's Groundwater report dated July 24, 2000. The report addresses the salt water plume from the old underground field waste water tanks. The report shows that the extent of groundwater contamination related to BJ Services' activities have not been fully defined. Therefore the OCD requires that BJ Services submit a work plan to:

1. Install a sufficient number of groundwater monitor wells to define the extent of the plume, taking into account any density gradients effects.

2. Remediate contamination related to the former underground field waste water tanks.

Please submit a plan to address the above action items for OCD approval by September 01, 2000, with a copy provided to the OCD Hobbs District office. If you have any questions please do not hesitate to call (505-827-7155) or write.

Sincerely;

Wayne Price-Pet. Engr. Spec.

cc: OCD Hobbs Office
Richard Rexroad-Brown and Caldwell

1415 Louisiana, Suite 2500
Houston, TX 77002

Tel: (713) 759-0999
Fax: (713) 308-3886

JUL 28

July 24, 2000

BROWN AND CALDWELL
Environmental Engineering & Consulting

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

12832.015

Subject: **Evaluation of Groundwater Chloride Content**
BJ Services Company, U.S.A.
Hobbs, New Mexico Facility

Reference: Letter to R. Johnson (BJ Services) from W. Price (NMOCD) dated 7/14/00; subject: BJ Hobbs Facility GW-072, Groundwater Sampling Report

Dear Mr. Price:

On behalf of BJ Services Company, U.S.A. (BJ Services), Brown and Caldwell has performed an ongoing evaluation of groundwater chloride content at the BJ Services facility in Hobbs, New Mexico, as requested by the New Mexico Oil Conservation Division (NMOCD) in its correspondence of January 21, 1999. On March 19, 1999, Brown and Caldwell submitted a work plan to NMOCD that proposed the following activities:

- Sampling of a previously unused well downgradient of the former field waste tanks area to delineate the lateral extent of groundwater impacted by constituents at concentrations in excess of applicable New Mexico Water Quality Control Commission (WQCC) standards;
- Installation of a nested well in the former field waste tanks area to investigate possible vertical concentration gradients at the facility;
- Installation of a monitor well to the northeast of monitor well MW-6 at the former fuel island area; and
- Plugging and abandonment of monitor wells MW-2 and MW-11.

This work plan was approved by the NMOCD on May 19, 1999. The downgradient well, OW-4, was sampled on June 10, 1999. The remaining activities specified in the work plan, including installation of monitor wells MW-12D and MW-13, were completed on July 2, 1999. Brown and Caldwell submitted a report to NMOCD on September 29, 1999 that integrated the results of these activities with the June 1999 quarterly sampling event at the facility.

Groundwater chloride content is typically measured in all wells at the facility on an annual basis, and on an immediate basis in any newly installed monitor wells

(e.g., OW-4, MW-12D, and MW-13). Annual chloride sampling and analysis was performed most recently in March 2000. These results were reported to NMOCD on April 21, 2000.

Water level data from numerous monitoring events indicate that groundwater flow is in a generally eastward direction at the facility (see Figures 1 and 2, for example). Table 1 presents cumulative chloride data, as determined by EPA Method 325.3 analysis, for the facility during the period from August 1995 through March 2000. Chloride concentrations in the westernmost (i.e., upgradient well) at the facility, MW-5, have ranged from approximately 100 milligrams per liter (mg/L) to 200 mg/L during this time period.

The New Mexico WQCC standard for chloride is 250 mg/L for domestic water supply. Discussions of chloride content of groundwater at the facility are presented below on an area-by-area basis, on a temporal basis, and on the basis of vertical gradient within the uppermost aquifer at the facility.

Areas of Chloride Impact

1. **Former Field Waste Tanks Area**: The chloride standard has been regularly exceeded during the period from 1995 through 2000 in monitor wells MW-10, MW-11, MW-11A, and MW-12. These wells are located in the area of the facility's former field waste tanks, which apparently served as the source of chloride impact in these wells. The former field waste tanks were removed in March 1997.

2. **Monitor Well MW-8 Area**: The chloride standard was regularly exceeded in monitor well MW-8 during the period from 1995 through 1999. The chloride concentration in MW-8 was less than 250 mg/L in March 2000. No specific on-site or off-site source has been identified in association with the monitor well MW-8 area chloride impact.

3. **Former Fuel Island Area**: The chloride standard has been sporadically exceeded in monitor wells MW-1, MW-4, MW-6, MW-7, and MW-13 during the time period from 1995 through 2000. These wells are located at the former fuel island area of the facility. No specific on-site or off-site source has been identified in association with the sporadically observed chloride impact in this area.

Chloride Impact Versus Time

1. **Former Field Waste Tanks Area**: Monitor well **MW-10**, which is situated immediately adjacent to the former field waste tanks location, is

the only monitor well in this area that has been continually operative from 1995 through 2000. Chloride concentrations in MW-10 groundwater ranged from 2,000 mg/L to 2,200 mg/L prior to removal of the former field waste tanks in March 1997. The maximum chloride concentration of 2,390 mg/L in monitor well MW-10 groundwater was recorded in March 1998. Chloride concentrations in MW-10 then decreased to 1,160 mg/L in March 1999 and to 464 mg/L in March 2000. The elevated chloride concentration in March 1998 may be attributable to the time required for chloride released prior to removal of the former field waste tanks in March 1997 to migrate through the vadose zone to the aquifer in that immediate area.

Monitor well **MW-11** was located approximately 40 feet downgradient of the former field waste tanks. MW-11 was not sampled after August 1996. It was replaced in February 1998 by monitor wells **MW-11A** and **MW-12**, which are located approximately 20 feet south and north, respectively, of the MW-11 location. Chloride concentrations in monitor well MW-11 groundwater ranged from 2,900 mg/L to 3,400 mg/L prior to removal of the former field waste tanks in March 1997. During the time period from March 1998 and March 2000, chloride concentrations ranged from 940 mg/L to 1,290 mg/L in monitor well MW-11A and from 1,200 mg/L to 327 mg/L in monitor well MW-12.

Monitor wells **MW-12D** and **OW-4** were not sampled prior to June/July 1999. Chloride concentrations decreased in both of these wells between June/July 1999 and March 2000.

Thus, chloride concentrations are decreasing over time in the area of the former field waste tanks at the facility. **Figure 1** is a potentiometric surface map and chloride concentration map for March 23-24, 1998. **Figure 2** is a potentiometric surface map and chloride concentration map for March 9-10, 2000. Comparison of Figures 1 and 2 illustrates the decrease in groundwater chloride content over time in the former field waste tanks area.

2. **Monitor Well MW-8 Area**: Chloride concentrations in monitor well MW-8 ranged from 350 mg/L to 364 mg/L during the period from August 1995 through March 1998. MW-8 chloride concentrations decreased to 274 mg/L in March 1999 and to 241 mg/L in March 2000.

Thus, chloride concentrations in monitor well MW-8 have been decreasing over time since 1998.

3. **Former Fuel Island Area**: There have been a total of seven exceedances of the WQCC chloride standard during five sampling events of six monitor wells at the former fuel island area of the facility during the period from 1995 through 2000, as shown in Table 1. Chloride concentrations have never exceeded 250 mg/L in monitor wells MW-3 and MW-9.

   Monitor well MW-13 was installed in July 1999 at a downgradient location relative to the former fuel island area. Chloride concentrations in MW-13 decreased substantially, from 496 mg/L to 276 mg/L, during the time period from July 1999 to March 2000.

   Definitive trends in chloride concentrations are not readily apparent in monitor wells MW-1, MW-4, MW-6, and MW-7.

Vertical Chloride Gradient – Monitor well MW-12D was installed in July 1999 at a location immediately adjacent to monitor well MW-12 in the former field waste tanks area of the facility. MW-12 is screened at the top of the uppermost aquifer, from a depth of 50 feet below ground surface (bgs) to 65 feet bgs. MW-12D is screened from 77.5 feet bgs to 87.5 feet bgs. There are no other sets of nested wells at the facility.

Chloride was measured at 195 mg/L when monitor well MW-12D was first sampled on July 2, 1999. Monitor well MW-12 was not sampled in July 1999, but chloride was measured at 314 mg/L when MW-12 was sampled in March 1999. A vertical gradient characterized by decreasing chloride concentration with depth can be inferred on the basis of these 1999 data.

Monitor wells MW-12 and MW-12D were both sampled on March 9-10, 2000. Chloride was measured at a concentration of 327 mg/L in MW-12 and at a concentration of 117 mg/L in MW-12D in March 2000. These data confirm the pattern of decreasing chloride concentration with depth in the uppermost aquifer at the facility that was inferred on the basis of the 1999 chloride data from monitor wells MW-12 and MW-12D.

The chloride concentrations of 117 mg/L and 195 mg/L in monitor well MW-12D are comparable to the range of chloride concentrations observed in the upgradient well at the facility, MW-5, as shown in Table 1.

Summary

The following conclusions are based on the data presented herein.

- The former field waste tanks, which were removed in March 1997, served as the source of chloride impact in the western portion of the facility.
- Chloride concentrations are decreasing with time in the former field waste tanks area.
- Chloride concentrations in monitor well MW-8 are generally decreasing over time and were below the WQCC standard of 250 mg/L for chloride during the most recent sampling event for chloride.
- Chloride concentrations have typically been less than 250 mg/L in former fuel island area monitor wells between 1995 and 2000.
- Chloride concentrations in monitor well MW-13, which is situated at a downgradient location relative to the former fuel island area, decreased substantially between July 1999 and March 2000.
- The decreasing chloride concentrations over time that have been observed in the former field waste tanks area since source removal in March 1997, in the monitor well MW-8 area since March 1998, and in the monitor well MW-13 area downgradient of the former fuel island indicate that processes of natural attenuation through diffusion are effectively reducing the chloride content of groundwater at the facility. Therefore, no other remediation of chloride is warranted.
- Chloride concentrations decrease with depth in the uppermost aquifer at the facility, as observed in 1999 and 2000 in monitor wells MW-12 and MW-12D at the former field waste tanks area.
- Chloride concentrations in monitor well MW-12D, which is the deeper of the wells at the MW-12/MW-12D well nest location, are comparable to those observed in the upgradient well at the facility.

Recommendations

Brown and Caldwell recommends that the following activities be performed with regard to further evaluation of chloride in groundwater at the BJ Services facility at Hobbs, New Mexico:

- Perform chloride analysis by Method 325.3 on groundwater samples to be collected from all wells at the facility in March 2001; and
- Update the evaluation of chloride in groundwater at the facility on the basis of the March 2001 data and report the findings to the New Mexico Oil Conservation Division.

We appreciate the information provided by NMOCD regarding the irrigation well that has been installed to the southeast of the facility. Brown and Caldwell recommends observation of groundwater elevation data from future groundwater monitoring events to determine whether any changes in groundwater flow conditions are occurring at the facility.

If you have any questions regarding the information presented herein, please contact Ms. Jo Ann Cobb of BJ Services at 281-357-2572 or Mr. Robert Jennings of Brown and Caldwell at 713-759-0999.

Sincerely,

BROWN AND CALDWELL

Richard Rexroad

Richard Rexroad, P.G.
Project Manager

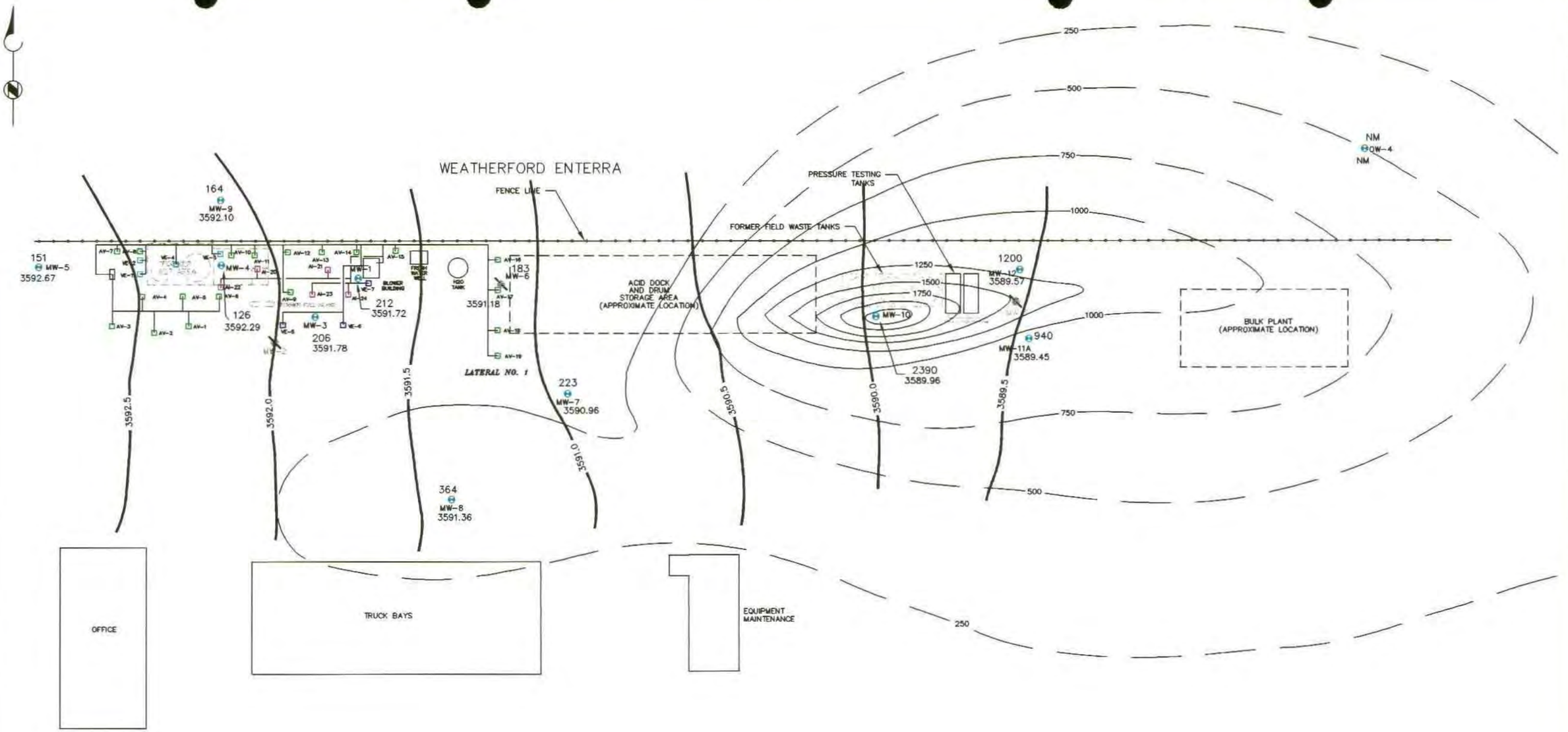
Attachments (3)

cc: Jo Ann Cobb, BJ Services Company, U.S.A. – Tomball, Texas
File 12832

Table 1
Cumulative Groundwater Chloride Data (1)
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Sample Date	Monitor Wells [2]														
	Upgradient	Former Field Waste Tanks Area						MW-8	Former Fuel Island Area						
	MW-5	MW-10	MW-11	MW-11A	MW-12	MW-12D	OW-4		MW-1	MW-3	MW-4	MW-6	MW-7	MW-9	MW-13
8/1/95	130	**2200**	**3400**	NA[3]	NA	NA	NA	**350**	160	150	**310**	**380**	**310**	110	NA
8/23/96	99	**2000**	**2900**	NA	NA	NA	NA	**360**	130	140	100	210	250	140	NA
3/23-24/98	151	**2390**	NA	**940**	**1200**	NA	NA	**364**	212	206	126	183	223	164	NA
3/9-10/99	155	**1160**	NA	**834**	**314**	NA	NA	**274**	163	156	142	**411**	238	123	NA
6/10-7/2/99	NA	NA	NA	NA	NA	195	**266**	NA	NA	NA	NA	NA	NA	NA	**496**
3/9-10/00	196	**474**	NA	**1290**	**327**	117	**258**	241	**258**	196	196	NA	224	131	**276**

(1) - in milligrams per liter (mg/L)
(2) - MW-11 not operative after September 1997; MW-11A and MW-12 not installed prior to March 1998; MW-12D and MW-13 not installed prior to July 1999; OW-4 not sampled prior to June 1999; MW-6 and MW-11 P&A'd 7/1/99.
(3) - NA= not analyzed.
Exceedances of New Mexico WQCC Standard of 250 mg/L for chloride are denoted in **BOLD**.



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BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 30 60
SCALE: 1" = 60'

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

LEGEND

MW-3 EXISTING MONITOR WELL LOCATION

BIOSPARGING SYSTEM

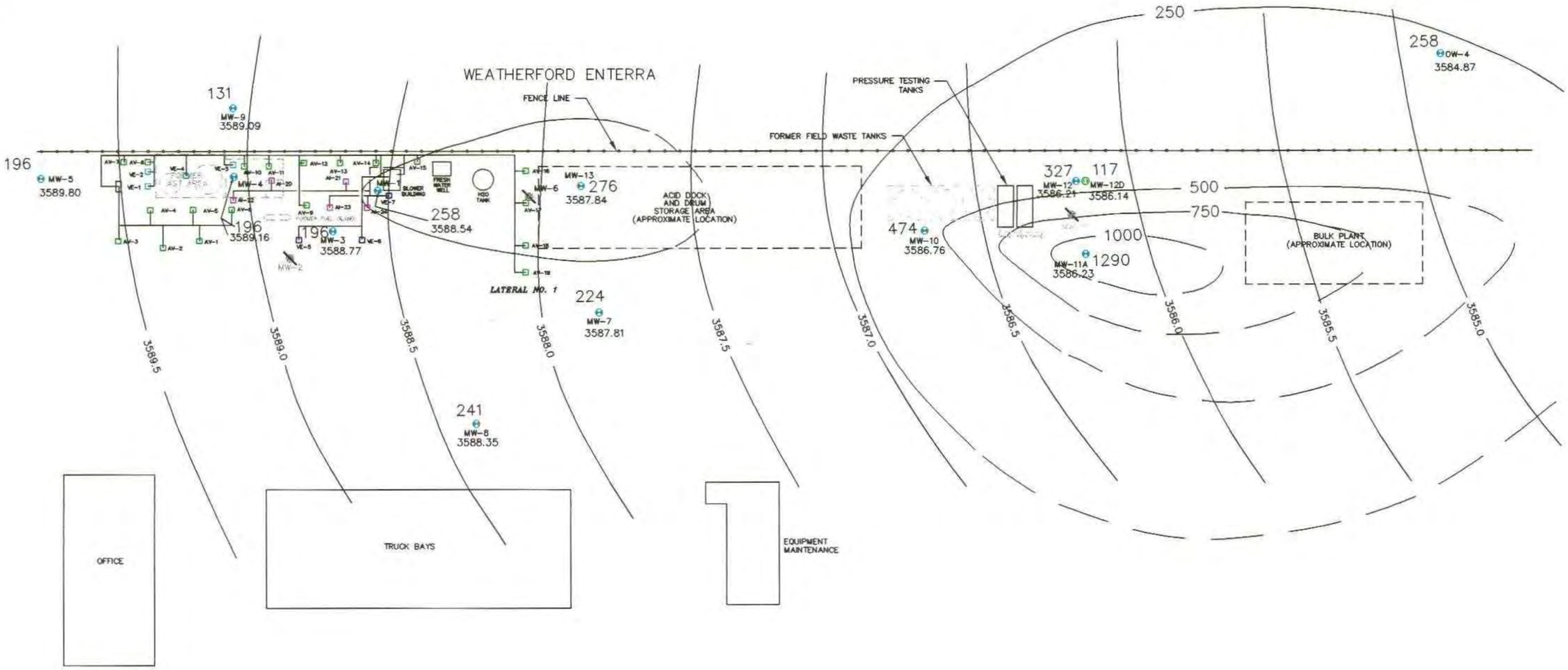
MW-2 MONITOR WELL (PLUGGED AND ABANDONED)

NM — NOT MEASURED

359.5 GROUNDWATER CONTOUR (Interval = 0.5')

250 CHLORIDE CONCENTRATION CONTOUR (Interval = 250 mg/L)

TITLE: CHLORIDE CONCENTRATION AND POTENTIOMETRIC SURFACE MAP FOR MARCH 23-24, 1998	DATE: 7/18/00
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.015
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 30 60
SCALE: 1" = 60'

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

LEGEND

3589.58
MW-3 MONITOR WELL LOCATION WITH GROUNDWATER ELEVATION (feet AMSL)

BIOSPARGING SYSTEM

MW-2 MONITOR WELL (PLUGGED AND ABANDONED)

3589.0 GROUNDWATER CONTOUR (Interval = 0.5')

250 CHLORIDE CONCENTRATION CONTOUR (Interval = 250 mg/L)

TITLE	CHLORIDE CONCENTRATION MAP AND GROUNDWATER ELEVATION MAP FOR MARCH 9–10, 2000
CLIENT	BJ SERVICES COMPANY, U.S.A.
SITE	HOBBS, NEW MEXICO
DATE	7/18/00
PROJECT NUMBER	12832.015
FIGURE NUMBER	2

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

July 14, 2000

CERTIFIED MAIL
RETURN RECEIPT NO. 5051 5260

Mr. Rick N. Johnson
BJ Services Company
11211 FM 2920
Tomball, Texas 77375

Re: BJ Hobbs Facility GW-072
Groundwater Sampling Report

Dear Mr. Johnson:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Brown and Caldwell's Groundwater sampling report dated April 21, 2000. The report does not address the salt water plume from the old underground field waste water tanks. OCD had requested this in our January 21, 1999 letter (copy enclosed). Please include this information in the next report and make recommendations and conclusions concerning this issue. If these groundwater contaminants are leaving your property then BJ Services shall propose a remediation plan to address this issue.

Please note OCD has observed that a large irrigation well has been installed south and east of your site. OCD has a concern this may cause a dynamic groundwater flow and gradient condition. Please investigate this situation.

If you have any questions please do not hesitate to contact me at 505-827-7155.

Sincerely:

Wayne Price-Pet. Engr. Spec.

cc: OCD Hobbs Office

attachment-1

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

May 19, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z 559 573 597

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

Re: Work Plan for Groundwater Delineation
BJ Services Hobbs facility GW-072
2708 West County Road
Hobbs, NM

Dear Ms. Cobb:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of BJ Services Company, U.S.A. (BJSC) March 19, 1999 work plan for the above captioned facility. NMOCD hereby approves of the plan subject to the following conditions:

1. The initial round of sampling for each prospective new monitoring point(s) and/or well(s) shall include analyzing for the complete New Mexico Water Quality Control Commission (WQCC) regulation water contaminants utilizing EPA approved methods, thereafter BJSC may propose analyzing for constituents of concern.

2. BJSC shall notify the OCD Santa Fe office and the OCD District office at least 48 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

Please be advised that NMOCD approval of this work plan does not relieve BJSC of liability should their operations fail to adequately investigate and remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve BJSC of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

cc: OCD Hobbs Office

1415 Louisia[redacted]uite 2500
Houston, TX[redacted]2

Tel: (713) 759-0999
Fax: (713) 308-3886

March 19, 1999

BROWN AND CALDWELL
Environmental Engineering & Consulting

Mr. Wayne Price
Environmental Bureau
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87006

Subject: **Work Plan for Groundwater Delineation**
BJ Services Company U.S.A. – Hobbs Facility: GW-072
2708 West County Road
Hobbs, New Mexico

Dear Mr. Price:

Attached please find a work plan for a delineation of groundwater conditions at the BJ Services Company, U.S.A. Hobbs, New Mexico facility, as requested in the January 21, 1999 correspondence[1].

If you have any questions regarding the information presented herein, please feel free to contact Mr. Robert Jennings or me at (713) 759-0999.

Sincerely,

BROWN AND CALDWELL

Richard Rexroad, P.G.
Project Manager

RNJ/RLR:uak

cc: NMOCD – Hobbs, New Mexico Office
Jo Ann Cobb, BJ Services Company, U.S.A.

[1] Letter From W. Price (NMOCD) to R. Johnson (BJ Services) dated 1-21-99: subject: BJ Services Company U.S.A. – Hobbs Facility: GW-072, 2708 West County Road Hobbs, New Mexico

Work Plan for Groundwater Delineation at BJ Services Facility, Hobbs, New Mexico

I. Technical Understanding

A. Former Underground Field Waste Tanks Area

The New Mexico Oil Conservation Division (NMOCD) desires delineation of the extent of groundwater constituents that exceed New Mexico Water Quality Control Commission (WQCC) standards in the area of the former underground field waste tanks, including evaluation of potential vertical migration of constituents due to possible density gradients.

Based on data from the March, June, and September 1998 groundwater sampling events, the concentrations of the following constituents exceed WQCC standards in one or more wells in the former underground field waste tanks area:

- Benzene;
- Chloride; and
- Fluoride.

Groundwater flow in this area is in a generally eastward direction. Groundwater is first encountered in this area at a depth of approximately 55 feet below grade.

B. Former AST/MW-6 Area

NMOCD desires identification and delineation of groundwater constituents that exceed WQCC standards to the northeast of monitor well MW-6.

Based on data from the March, June, and September 1998 groundwater sampling events, the only constituent that exceeds WQCC standards in the former AST area is benzene. Groundwater flow in this area is in a generally eastward to northeasterly direction. Groundwater is first encountered in this area at a depth of approximately 52 feet below grade. Concentrations of benzene in monitor well MW-6 decreased substantially following startup of the biosparging system at the facility in November 1995. Benzene concentrations in MW-6 ranged from 7 mg/L to 11 mg/L prior to November 1995, but dropped to less than 0.1 mg/L during the period from May 1996 to March 1997. Benzene concentrations in MW-6 have been erratic since March 1997, and have exceeded WQCC standards during four quarterly sampling events since then.

II. Monitor Well Installation Locations

A. Former Underground Field Waste Tanks Area

BJ Services proposes to utilize an existing monitor well (OW-4) at a location approximately 200 feet east of existing monitor wells MW-11A and MW-12 to define the lateral extent of constituents exceeding WQCC standards, as shown in Figure 1. (This well is on an adjacent property and should be made available by the current landowner.)

BJ Services proposes to install a monitor well (MW-12D) adjacent to existing monitor well MW-12 to evaluate the potential for vertical migration of constituents due to possible density gradients. Monitor well MW-12 was selected as the existing monitor well to be twinned because it has the highest concentrations of chloride and benzene in the former underground field waste tank area, based on data from March, June, and September 1998. Details pertaining to well installation and construction activities for this and other proposed monitor wells are presented in Section III.

B. Former AST/MW-6 Area

BJ Services proposes to utilize existing monitor well OW-4 to evaluate groundwater conditions in the area northeast of monitor well MW-6.

Monitor well MW-6 was installed prior to August 1992. In November 1995, Brown and Caldwell completed installation and startup of a biosparging system designed to remove hydrocarbon constituents from groundwater and soil in the former AST area. As previously discussed, benzene concentrations in MW-6 decreased substantially following the startup of the biosparging system, but have been erratic since March 1997. Monitor well MW-6 is located immediately adjacent to (i.e., within approximately 5 feet of) a subsequently installed biosparging system air injection/extraction well, AV-17. It is believed that the close proximity of monitor well MW-6 to air injection/extraction well AV-17 may bias the results obtained from MW-6, due to the effects of continuous air introduction and extraction from AV-17 up until shortly prior to commencement of quarterly groundwater sampling activities at MW-6. Therefore, BJ Services plans to install a monitor well (MW-13) to the northeast of monitor well MW-6, beyond the zone of influence of existing air injection and extraction wells, as shown in Figure 1, in order to accurately characterize groundwater conditions in this area. Monitor well MW-6 will be plugged and abandoned in conjunction with installation of its replacement well, MW-13.

III. Monitor Well Installation Activities

The monitor wells described in Section II will be installed by a driller who is licensed in the State of New Mexico, under the supervision of Brown and Caldwell. Hollow stem auger and/or air rotary drilling techniques will be used as appropriate to the subsurface conditions encountered. The boreholes will be logged and classified in accordance with the Unified Soil Classification System (USCS). The occurrence of the approximate top of the saturated zone will be noted during drilling activities.

The boreholes for proposed monitor well MW-13 will be advanced to a depth sufficient to allow for installation of approximately 10 feet of well screen below the top of the saturated zone. The depth to water will be verified after reaching the proposed total depth of the boring, prior to commencement of monitor well construction activities. The well will be constructed using a total of 15 feet of well screen. The well screen will extend approximately 5 feet above the top of the saturated zone in order to account for seasonal fluctuations of the water table.

The thickness of the uppermost aquifer at the facility is not known. Monitor well MW-12 is screened in the uppermost 10 feet of the aquifer. Therefore, the borehole for monitor well MW-12D will be drilled to a sufficient depth to allow for installation of a well with a 10-foot screen to be set approximately 20 to 30 feet below the top of the saturated zone. If an aquitard is encountered prior to reaching this depth, however, then the well will be set such that the lowermost 10 feet of the aquifer is screened. Additional nested wells could be installed in the future, if warranted based on the results of groundwater sampling of proposed monitor well MW-12D.

The monitor wells will be constructed of 2-inch diameter Schedule 40 PVC. The monitor wells will be equipped with a sealing bottom cap, an approximate 2-foot sediment sump, and 10 to 15 feet of machine-slotted 0.010-inch slot well screen placed as described in the preceding paragraphs. Sufficient riser pipe will be added to extend the well to approximately 3 feet above the ground surface or approximately 6 inches below ground surface, depending on whether the well is to be completed as an above-grade or a flush-mount completion. The type of completion will be selected based on the individual well locations and the types of industrial operations that are conducted in these areas. The annular area surrounding the wells will be backfilled as follows:

- A 20-40 graded filter sand will be installed from the total depth of the boring to approximately 2 feet above the top of the well screen;
- Approximately 2 feet of hydrated bentonite shall be installed atop the sand filter;
- The remainder of the annular area will be backfilled with cement/bentonite grout installed using a tremie pipe.

The depth of the filter pack and bentonite seal will be verified using a weighted tape measure or other appropriate measuring device.

The wells will be equipped with a locking cap. Wells completed as flush-mount wells will be equipped with a traffic-rated protective cover. Wells completed as above-grade wells will be equipped with a protective steel casing, surrounded by protective crash posts as necessary to isolate the well from vehicular traffic. A 4-foot by 4-foot by 3-inch thick concrete pad sloping away from the well shall be set around each well. The wells will be equipped with locking caps and a lock.

The monitor wells will be developed using a surge block and submersible pump or other appropriate methodology for a period of time not to exceed 1 hour per well or until water recovered from the well is free of suspended sediment.

Downhole equipment (e.g., augers, bits, drill rods, etc.) will be decontaminated prior to usage and after usage at each borehole location using a hot water pressure washer. Soil cuttings and development water will be stored in clean 55-gallon drums pending evaluation of disposal options. Drums will be labeled as to contents, source, and date of filling and will be moved to a designated storage location at the facility until analysis of waste characterization samples has been completed. A composite sample of soil cuttings from each borehole will be collected and analyzed for gasoline- and diesel-range petroleum hydrocarbons (TPH-G and TPH-D) by Method 8015. A composite soil sample from the drummed soils will also be analyzed for total RCRA metals using the SW3050B/6010B/7000 Series methodology. Disposal options for investigation-derived wastes will be evaluated after review of the analytical results for the soil cuttings and groundwater samples.

IV. Groundwater Elevation Measurement and Sampling

Groundwater samples will be collected from the monitor wells at the time of the next quarterly sampling event at the facility in June 1999. The static depth to groundwater in each new and existing well at the facility and the adjacent property will be measured prior to commencement of groundwater sampling operations. The elevation of the top of casing for the new monitor wells utilized during these sampling activities will be field surveyed by Brown and Caldwell personnel relative to a previously surveyed elevation of one or more of the existing monitoring wells. The horizontal locations of the wells relative to one another and to points of fixed reference will be determined using a measuring tape. This data will be used in mapping of groundwater flow direction, calculating groundwater gradient, and determining purge volumes to be removed prior to sampling.

Well purging will be performed using a submersible pump. The following parameters will be measured upon removal of each well volume:

- pH,
- Conductivity, and
- Temperature.

Well purging will continue until a minimum of 3 well volumes have been removed and until measurements for the parameters listed above have stabilized, with stabilization being defined as consecutive readings within 10 percent of one another.

Groundwater samples collected from the new wells and OW-4 in June 1999 will analyzed, along with existing monitor wells at the facility, for TPH-D and TPH-D by EPA Method 8015 and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020. Samples from monitor wells MW-12D and OW-4 will also be analyzed for chloride and fluoride to delineate the extent of exceedances of WQCC standards in the area of the former underground field waste tanks.

Additional parameters will be measured in the field during well purging operations to evaluate the potential for natural attenuation of hydrocarbons. These parameters are as follows:

- Dissolved oxygen,
- Oxidation-reduction potential,
- Ferrous iron, and
- Alkalinity.

Laboratory analysis for nitrate and sulfate (Method 300.0) and dissolved methane/ethylene/ethane (Method RSK SOP 147/175) will be performed on samples from monitor well OW-4 to further evaluate the potential for natural attenuation of hydrocarbons at locations that are remote from the biosparging system.

Samples to be submitted for laboratory analysis will be placed in laboratory-supplied clean sample containers, labeled appropriately, placed on ice in sample containment cooler with adequate cushioning material, and forwarded to an analytical laboratory using strict chain-of-custody procedures.

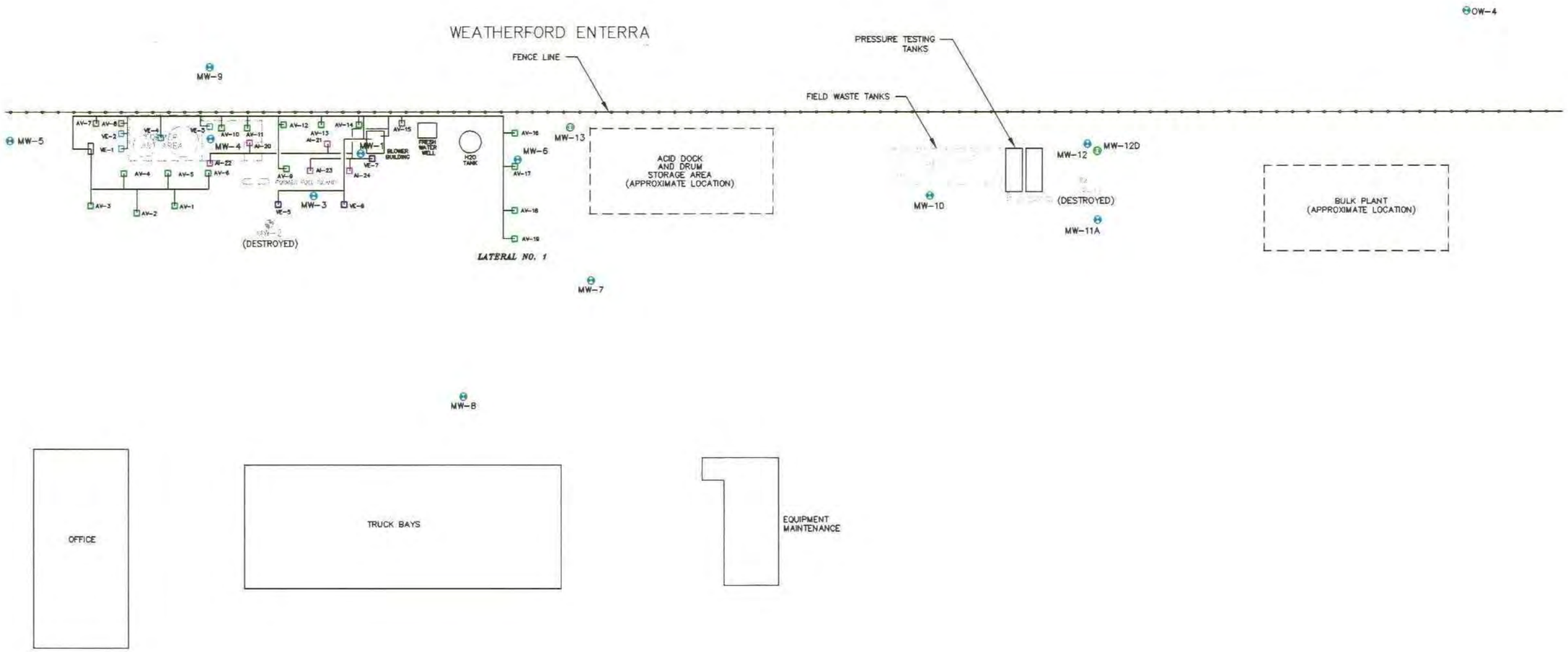
V. Monitor Well Location and Plugging/Abandonment Activities

Monitor wells MW-2 and MW-11 have apparently been covered during grading activities at the facility. Brown and Caldwell will use a magnetometer or other metal-detecting device capable of detecting the ferrous manhole covers and collars of these flush-mounted wells in an attempt to locate these wells. If located, these wells and existing monitor well MW-6 will be plugged and abandoned by a driller licensed in the State of New Mexico. Plugging and abandonment will

consist of pumping cement/bentonite grout down the well casing by means of a tremie pipe until the grout mixture fills the well casing and flows to the ground surface.

VI. Notification and Reporting

Brown and Caldwell will notify the central and district offices of the NMOCD a minimum of 48 hours prior to initiation of the monitor well installation and plugging and abandonment activities described herein. The results of these activities and groundwater sampling to be conducted in June 1999 will be reported to NMOCD in the June 1999 quarterly sampling report.



P:\12832\PMWLocations.dwg 03-16-99 CLK

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 30 60
SCALE: 1" = 60'

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

LEGEND

MW-3 EXISTING MONITOR WELL LOCATION

BIOSPARGING SYSTEM

MW-13 PROPOSED MONITOR WELL LOCATION

TITLE: PROPOSED MONITOR WELL LOCATIONS	DATE: 03/16/99
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 12832.021
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

January 21, 1999

Certified Mail
Return Receipt NO. P 288 259 092

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

Re: GROUNDWATER CONTAMINATION INVESTIGATIONS
BJ Services Hobbs facility GW-072
2708 West County Road
Hobbs, NM

Dear Mr. Johnson:

New Mexico Oil Conservation Division (NMOCD) has reviewed BJ Services March, June and September 1998 Groundwater Sampling Reports and has determined that additional contamination delineation is required in the following areas:

* **Former Underground Field Waste Tanks:**

  The above reports show there is petroleum hydrocarbons (i.e. benzene), and chloride contamination in groundwater in this area that exceeds the New Mexico Water Quality Control Commission (WQCC) standards. The extent of contamination has not been completely defined. Therefore, please provide to NMOCD for approval a work plan to identify and delineate the extent of all groundwater contamination constituents which exceed the WQCC ground water standards. The plan shall include nested wells to address vertical migration of contaminants due to possible density gradients.

  In addition, please provide a plan to locate and properly plug the monitor well MW-11.

* **Former AST/MW-6 Area:**

  The September 1998 Groundwater Sampling Report reflected that groundwater is migrating in a east-northeasterly direction. Presently there are no monitoring wells located northeast of the MW-6 area. Please provide to NMOCD for approval a work plan to identify and delineate the extent of all groundwater contamination constituents that exceed the WQCC standards in this area.

  In addition, please provide a plan to locate and properly plug the monitor well MW-2.

Please provide the above information to this office and a copy to the OCD Hobbs office by March 22, 1999 for NMOCD approval.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price

Wayne Price-Environmental Bureau

cc: OCD Hobbs

file: O/envr../word/way../bj072