

**Jones, Brad A., EMNRD**

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**From:** Peace, Jeffrey [Peace.Jeffrey@bp.com]  
**Sent:** Friday, March 02, 2012 11:32 AM  
**To:** Jones, Brad A., EMNRD  
**Cc:** Shaw, Buddy D; Schwab, Lorinda A  
**Subject:** BGT permit approval modification request  
**Attachments:** Lawson 1A C-144.pdf; Lawson 1A water depth.pdf

Brad,

Attached are a C-144 modification request and water depth evaluation for the 95 bbl BGT on the Lawson LS 1A (API No. 3004522513A). Please change the permit for this BGT from closure to operating. The water depth analysis provided by Blagg Engineering shows the depth to water at a nearby water well is 85 feet, as opposed to 35 ft as shown in the original permit application. The new data supports the conclusion that groundwater below the Lawson LS 1A is greater than 50 ft and the BGT is permissible. If you have any questions or need additional information please let me know. Thanks.

<<Lawson 1A C-144.pdf>> <<Lawson 1A water depth.pdf>>

Jeff Peace, PE  
Field Environmental Advisor  
B. P. America  
200 Energy Court  
Farmington, NM 87401  
[peace.jeffrey@bp.com](mailto:peace.jeffrey@bp.com)  
(505) 326-9479 - Office  
(505) 330-4937 - Cell

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

Form C-144  
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.  
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

**Pit, Closed-Loop System, Below-Grade Tank, or  
Proposed Alternative Method Permit or Closure Plan Application**

- Type of action: ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method  
☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method  
☒ Modification to an existing permit  
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

**Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request**

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.  
Operator: BP AMERICA PRODUCTION COMPANY OGRID #: 778  
Address: 200 Energy Court, Farmington, NM 87401  
Facility or well name: LAWSON LS 001A  
API Number: 3004522513 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr J Section 11.0 Township 31.0N Range 11W County: San Juan County  
Center of Proposed Design: Latitude 36.910737 Longitude -107.956463 NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.  
☐ **Pit:** Subsection F or G of 19.15.17.11 NMAC  
Temporary: ☐ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A  
☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
☐ String-Reinforced  
Liner Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_ Volume: \_\_\_\_\_ bbl Dimensions: L \_\_\_\_\_ x W \_\_\_\_\_ x D \_\_\_\_\_

3.  
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC  
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)  
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other \_\_\_\_\_  
☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
Liner Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_

4.  
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC **Tank ID:** A  
Volume: 95.0 bbl Type of fluid: Produced Water  
Tank Construction material: Steel  
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off  
☐ Visible sidewalls and liner ☒ Visible sidewalls only ☐ Other SINGLE WALLED DOUBLE BOTTOMED  
Liner type: Thickness \_\_\_\_\_ mil ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_

5.  
☐ **Alternative Method:**  
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

**Fencing:** Subsection D of 19.15.17.11 NMAC (*Applies to permanent pits, temporary pits, and below-grade tanks*)

- ☐ Chain link, six feet in height, two strands of barbed wire at top (*Required if located within 1000 feet of a permanent residence, school, hospital, institution or church*)
- ☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
- ☒ Alternate. Please specify 4' Hogwire with single barbed wire

7.

**Netting:** Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

- ☐ Screen ☐ Netting ☐ Other \_\_\_\_\_
- ☐ Monthly inspections (If netting or screening is not physically feasible)

8.

**Signs:** Subsection C of 19.15.17.11 NMAC

- ☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- ☒ Signed in compliance with 19.15.16.8 NMAC

9.

**Administrative Approvals and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

**Please check a box if one or more of the following is requested, if not leave blank:**

- ☒ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.
- ☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

**Instructions:** The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. ( <i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i> ) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. ( <i>Applies to permanent pits</i> ) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

11.

**Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

12.

**Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_

☐ Previously Approved Operating and Maintenance Plan API Number: \_\_\_\_\_ (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

13.

**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.

**Proposed Closure:** 19.15.17.13 NMAC**Instructions:** Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☒ Below-grade Tank ☐ Closed-loop System

☐ Alternative

Proposed Closure Method: ☒ Waste Excavation and Removal

☐ Waste Removal (Closed-loop systems only)

☐ On-site Closure Method (Only for temporary pits and closed-loop systems)

☐ In-place Burial ☐ On-site Trench Burial

☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.

**Waste Excavation and Removal Closure Plan Checklist:** (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☒ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

**Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:** (19.15.17.13.D NMAC)

*Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.*

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

*Required for impacted areas which will not be used for future service and operations:*

☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

*Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.*

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

18.

**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.

**Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Jeffrey PeaceTitle: Field Environmental AdvisorSignature: Jeffrey PeaceDate: March 2, 2012e-mail address: Peace.Jeffery@bp.comTelephone: 505-326-9479

20.

**OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: [Signature]Approval Date: 3/5/12Title: Environmental Engineer

OCD Permit Number: \_\_\_\_\_

21.

**Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

*Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.*

☐ Closure Completion Date: \_\_\_\_\_

22.

**Closure Method:**

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)  
☐ If different from approved plan, please explain.

23.

**Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

*Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.*

Disposal Facility Name: \_\_\_\_\_

Disposal Facility Permit Number: \_\_\_\_\_

Disposal Facility Name: \_\_\_\_\_

Disposal Facility Permit Number: \_\_\_\_\_

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

*Required for impacted areas which will not be used for future service and operations:*

- ☐ Site Reclamation (Photo Documentation)  
☐ Soil Backfilling and Cover Installation  
☐ Re-vegetation Application Rates and Seeding Technique

24.

**Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Proof of Closure Notice (surface owner and division)  
☐ Proof of Deed Notice (required for on-site closure)  
☐ Plot Plan (for on-site closures and temporary pits)  
☐ Confirmation Sampling Analytical Results (if applicable)  
☐ Waste Material Sampling Analytical Results (required for on-site closure)  
☐ Disposal Facility Name and Permit Number  
☐ Soil Backfilling and Cover Installation  
☐ Re-vegetation Application Rates and Seeding Technique  
☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ NAD: ☐ 1927 ☐ 1983

25.

**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_

Telephone: \_\_\_\_\_

***BLAGG ENGINEERING, INC.***

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

March 2, 2012

Mr. Jeffrey Peace, P.E.  
BP America Production Company  
200 Energy Court  
Farmington, New Mexico 87401

**Re: Lawson LS 1A Depth to Water Evaluation  
Unit Letter J, Section 11, T31N, R11W, NMPM  
San Juan County, New Mexico**

Dear Mr. Peace:

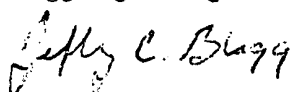
Pursuant to the request of BP America Production Company (BP), Blagg Engineering, Inc. (BEI) has evaluated the estimated depth to groundwater at the Lawson LS 1A gas well, located in Unit Letter J Section 11 – T31N – R11W, San Juan County, New Mexico. The purpose of this evaluation is for permitting a below-grade tank (BGT), identified as the 95 barrel tank, API 30-045-22513(A). It is BEI's understanding that a second BGT on the site, a 21 barrel unit identified as 30-045-22513(B), is to be permanently closed out and an operating permit will not be required.

A data search of records on file with the New Mexico's Office of State Engineer (NMOSE) identifies two (2) privately owned wells within 1 mile of the site. The nearest water well, identified as SJ 03857 POD1, is found approximately 3,225 feet towards the southwest, in an adjacent watershed basin in Unit Letter C – Sec. 14 – T31N – R11W. NMOSE records indicate this well was drilled to a total depth of 220 feet and had a water depth of 60 feet. On February 22, 2012, BEI field visited the water well and found it to be out of service. A Solinst water level probe was lowered into the well and detected groundwater at approximately 133 ft from the ground surface. Based on the USGS "Cedar Hill" topographic sheet, the surface elevation at this well is approximately 5,940 feet above mean sea level. With the water level recorded, groundwater at this well is thus estimated to be at an elevation of 5,807 feet above mean sea level, or about 86 feet lower than the approximate elevation of the Lawson LS 1A of 5,893 feet.

NMOSE records indicate that the second closest water well, identified as SJ 02395 (document attached), is approximately 3,370 feet southeast of the Lawson gas well site in the northwest quarter of Section 14 – T31N – R11W. This location places the well at about the same surface elevation as the Lawson gas well site. Drillers records indicate the water bearing strata at this water well is approximately 85 feet below surface grade, thus indicating that the depth to water at the Lawson LS 1A is greater than 50 feet below surface grade. With this information, it is BEI's opinion that the Lawson LS 1A meets all requirements for permitting of a BGT pursuant to NMOCD "Pit Rule" stipulations.

If you have any questions concerning this transmittal, please contact myself at (505) 632-1199.

Respectfully submitted:  
***Blagg Engineering, Inc.***

  
Jeffrey C Blagg, P.E.  
President

Attachment

STATE ENGINEER OFFICE  
WELL RECORD

229099

## Section 1. GENERAL INFORMATION

(A) Owner of well Bodie Brown Owner's Well No. \_\_\_\_\_  
 Street or Post Office Address 817 McCoy  
 City and State AZTEC, N.M. 87410  
 Well was drilled under Permit No. SJ-2395 and is located in the: STATE ENGINEER OFFICE  
SANTA FE NEW MEXICO  
92 OCT 20 AM 10 46  
 a. SW 1/4 NW 1/4 NW 1/4 of Section 13 Township 31N  
 b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_  
 c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
 Subdivision, recorded in SANTUAN County.  
 d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
 the \_\_\_\_\_ Grant.  
 (B) Drilling Contractor D.K. McDonald License No. WD-725  
 Address P.O. Box 854 Bloomfield, N.M. 87413  
 Drilling Began SEPT. 15, 1992 Completed SEPT. 30, 1992 Type tools CABLE Size of hole 8 3/4 in.  
 Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 95 ft.  
 Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 35 ft.

## Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
<u>85</u>	<u>90</u>	<u>5</u>	<u>WATER BEARING SAND</u>	<u>6-8</u>

## Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
<u>6" PVC</u>	<u>12</u>		<u>0</u>	<u>95</u>	<u>95</u>	<u>NONE</u>	<u>75</u>	<u>95</u>

## Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

## Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_  
 Address \_\_\_\_\_  
 Plugging Method \_\_\_\_\_  
 Date Well Plugged \_\_\_\_\_  
 Plugging approved by: \_\_\_\_\_

State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
<u>1</u>			
<u>2</u>			
<u>3</u>			
<u>4</u>			

## FOR USE OF STATE ENGINEER ONLY

Date Received 10-15-92 Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_  
 File No. SJ-2395 Use Dom Location No. 31N.11W.B.113



[illegible]

Section 7. REMARKS AND ADDITIONAL INFORMATION

*D. K. McDonald*  
Driller

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

## Jones, Brad A., EMNRD

---

**From:** Peace, Jeffrey [Peace.Jeffrey@bp.com]  
**Sent:** Wednesday, March 16, 2011 8:15 AM  
**To:** Jones, Brad A., EMNRD  
**Cc:** Shaw, Buddy D; Schwab, Lorinda A  
**Subject:** BGT closure permit

Brad,

When you have a chance please approve the closure permit application for the 21-bbl BGT on the Lawson LS 1-A. The API number is 3004522513A, the location is Unit Letter J, Section 11, T31N,R11W and it is in Sector 2. Thanks.

Jeff Peace, P. E.  
Field Environmental Advisor  
BP America  
200 Energy Court  
Farmington, NM 87401  
[Peace.Jeffrey@bp.com](mailto:Peace.Jeffrey@bp.com)  
(505) 326-9479  
(505) 330-4937 (Cell)



# New Mexico Energy, Minerals and Natural Resources Department

**Susana Martinez**

Governor

**John H Bemis**

Cabinet Secretary-Designate

**Brett F. Woods, Ph D**

Deputy Cabinet Secretary

**Daniel Sanchez**

Acting Division Director

Oil Conservation Division



March 23, 2011

Buddy Shaw  
BP America Production Company  
200 Energy Court  
Farmington, New Mexico 87401

**RE: C-144 Conditions of Approval for a Below-grade Tank Permit**

**Facility or Well Name: LAWSON LS 001A - Tank A**

**API Number: 30-045-22513**

**Location: Unit Letter J, Section 11, Township 31 North, Range 11 West, NMPM  
San Juan County, New Mexico**

Dear Mr. Shaw:

The Oil Conservation Division (OCD) has reviewed BP America Production Company's (BP) application, dated June 9, 2010, to permit an existing below-grade tank pursuant to 19.15.17 NMAC. BP provided information in the application packet which revealed issues with the operation of the current design in regards to the conditions at the proposed location. The application revealed issues of concern regarding the separation to ground water beneath the existing below-grade tank. A review of the supporting documentation for the assessment of the local hydrology revealed that the depth to ground water not between 50 and 100 feet, but was less than 20 feet below the ground surface.

Based upon the information provided in the permit application packet, OCD hereby approves only the closure of the existing below-grade tank identified above with the following condition:

- BP shall complete the closure of the below-grade tank pursuant to the approved closure plan within one calendar year of this approval, by March 22, 2012.

The OCD considers the continued operation of the existing below-grade tank's design, combined with the identified siting issue is an imminent danger to fresh water, public health and the



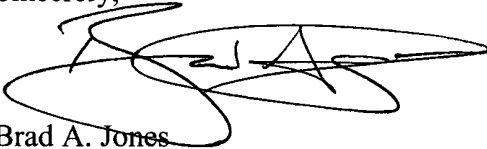
Mr. Buddy Shaw  
BP America Production Company  
March 23, 2011  
Page 2 of 2

environment. The approval of the permit for the above referenced existing below-grade tank is contingent upon BP's willingness and ability to comply with the conditions above.

Please be advised that approval of this request does not relieve BP of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve BP of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or [brad.a.jones@state.nm.us](mailto:brad.a.jones@state.nm.us).

Sincerely,

A handwritten signature in black ink, appearing to read 'Brad A. Jones', with a large, stylized flourish at the end.

Brad A. Jones  
Environmental Engineer

BAJ/baj

cc: OCD District III Office, Aztec

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

Form C-144  
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office  
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office

Pit, Closed-Loop System, Below-Grade Tank, or  
Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☒ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method  
☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method  
☐ Modification to an existing permit  
☒ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

*Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request*

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances

1  
Operator BP AMERICA PRODUCTION COMPANY OGRID # 778  
Address 200 Energy Court, Farmington, NM 87401  
Facility or well name LAWSON LS 001A  
API Number 3004522513 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr J Section 11.0 Township 31.0N Range 11W County San Juan County  
Center of Proposed Design Latitude 36.910737 Longitude -107.956463 NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2  
☐ Pit Subsection F or G of 19.15.17.11 NMAC  
Temporary: ☐ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A  
☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
☐ String-Reinforced  
Liner Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_ Volume \_\_\_\_\_ bbl Dimensions L \_\_\_\_\_ x W \_\_\_\_\_ x D \_\_\_\_\_

3  
☐ Closed-loop System Subsection H of 19.15.17.11 NMAC  
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)  
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other \_\_\_\_\_  
☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
Liner Seams ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_

4  
☒ Below-grade tank Subsection I of 19.15.17.11 NMAC Tank ID A  
Volume: 95.0 bbl Type of fluid Produced Water  
Tank Construction material Steel  
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off  
☐ Visible sidewalls and liner ☒ Visible sidewalls only ☐ Other SINGLE WALLED DOUBLE BOTTOMED  
Liner type: Thickness \_\_\_\_\_ mil ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_

5  
☐ Alternative Method  
Submittal of an exception request is required Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval

6

**Fencing** Subsection D of 19 15 17.11 NMAC (*Applies to permanent pits, temporary pits, and below-grade tanks*)

- ☐ Chain link, six feet in height, two strands of barbed wire at top (*Required if located within 1000 feet of a permanent residence, school, hospital, institution or church*)
- ☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
- ☒ Alternate Please specify 4' Hogwire with single barbed wire

7

**Netting** Subsection E of 19 15 17 11 NMAC (*Applies to permanent pits and permanent open top tanks*)

- ☐ Screen ☐ Netting ☐ Other \_\_\_\_\_
- ☐ Monthly inspections (If netting or screening is not physically feasible)

8

**Signs** Subsection C of 19.15 17 11 NMAC

- ☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- ☒ Signed in compliance with 19 15 16 8 NMAC

9

**Administrative Approvals and Exceptions**

Justifications and/or demonstrations of equivalency are required Please refer to 19 15 17 NMAC for guidance.

*Please check a box if one or more of the following is requested, if not leave blank.*

- ☒ Administrative approval(s) Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval
- ☐ Exception(s) Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval

10

**Siting Criteria (regarding permitting)** 19 15 17 10 NMAC

*Instructions The applicant must demonstrate compliance for each siting criteria below in the application Recommendations of acceptable source material are provided below Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.*

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank - NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application ( <i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i> ) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application ( <i>Applies to permanent pits</i> ) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application - NM Office of the State Engineer - iWATERS database search, Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map, Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design, NM Bureau of Geology & Mineral Resources, USGS, NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain - FEMA map	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No

11

**Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist** Subsection B of 19 15.17 9 NMAC*Instructions Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.*

- ☒ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19 15 17 9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15 17.9 NMAC
- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15.17 10 NMAC
- ☒ Design Plan - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15 17.12 NMAC
- ☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17 13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number \_\_\_\_\_

12

**Closed-loop Systems Permit Application Attachment Checklist** Subsection B of 19 15 17.9 NMAC*Instructions Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19 15 17 9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19 15 17 10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19 15.17 11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15 17 12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17 13 NMAC

☐ Previously Approved Design (attach copy of design) API Number \_\_\_\_\_

☐ Previously Approved Operating and Maintenance Plan API Number: \_\_\_\_\_ (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

13

**Permanent Pits Permit Application Checklist** Subsection B of 19 15 17.9 NMAC*Instructions Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19 15 17 9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15 17 10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19 15.17 11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19 15 17 11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17 12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15.17.13 NMAC

14

**Proposed Closure** 19 15 17.13 NMAC*Instructions Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.*

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☒ Below-grade Tank ☐ Closed-loop System

☐ Alternative

Proposed Closure Method: ☒ Waste Excavation and Removal

☐ Waste Removal (Closed-loop systems only)

☐ On-site Closure Method (Only for temporary pits and closed-loop systems)

☐ In-place Burial ☐ On-site Trench Burial

☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15

**Waste Excavation and Removal Closure Plan Checklist** (19.15 17 13 NMAC) *Instructions Each of the following items must be attached to the closure plan Please indicate, by a check mark in the box, that the documents are attached.*

- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15 17 13 NMAC
- ☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17 13 NMAC
- ☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☒ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19 15 17 13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17 13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15.17.13 NMAC

16

**Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only** (19 15.17 13 D NMAC)

*Instructions. Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required*

Disposal Facility Name \_\_\_\_\_ Disposal Facility Permit Number \_\_\_\_\_  
 Disposal Facility Name \_\_\_\_\_ Disposal Facility Permit Number \_\_\_\_\_

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

*Required for impacted areas which will not be used for future service and operations*

- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15 17 13 NMAC  
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19 15 17 13 NMAC  
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

17

**Siting Criteria (regarding on-site closure methods only)** 19 15.17.10 NMAC

*Instructions Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.*

- |  |  |
|--|--|
| Ground water is less than 50 feet below the bottom of the buried waste   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - NM Office of the State Engineer - iWATERS database search; USGS, Data obtained from nearby wells   | <input type="checkbox"/> NA                              |
| Ground water is between 50 and 100 feet below the bottom of the buried waste   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - NM Office of the State Engineer - iWATERS database search; USGS, Data obtained from nearby wells   | <input type="checkbox"/> NA                              |
| Ground water is more than 100 feet below the bottom of the buried waste  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells   | <input type="checkbox"/> NA                              |
| Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Topographic map, Visual inspection (certification) of the proposed site  |  |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Visual inspection (certification) of the proposed site; Aerial photo, Satellite image  |  |
| Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - NM Office of the State Engineer - iWATERS database, Visual inspection (certification) of the proposed site   |  |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Written confirmation or verification from the municipality, Written approval obtained from the municipality  |  |
| Within 500 feet of a wetland   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - US Fish and Wildlife Wetland Identification map, Topographic map, Visual inspection (certification) of the proposed site   |  |
| Within the area overlying a subsurface mine  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division  |  |
| Within an unstable area.   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Engineering measures incorporated into the design, NM Bureau of Geology & Mineral Resources; USGS, NM Geological Society, Topographic map  |  |
| Within a 100-year floodplain.  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - FEMA map   |  |

18

**On-Site Closure Plan Checklist** (19 15 17 13 NMAC) *Instructions Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15 17.10 NMAC  
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19 15 17 13 NMAC  
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19 15 17 11 NMAC  
☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19 15.17 11 NMAC  
☐ Protocols and Procedures - based upon the appropriate requirements of 19 15.17 13 NMAC  
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  
☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19 15 17 13 NMAC  
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)  
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19 15 17.13 NMAC  
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19 15 17 13 NMAC  
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC



19

**Operator Application Certification**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief

Name (Print) Jeffrey PeaceTitle Field Environmental AdvisorSignature: Jeffrey H. PeaceDate 6/2/10e-mail address Peace.Jeffery@bp.comTelephone 505-326-9479

20

**OCD Approval** ☐ Permit Application (including closure plan) ☒ Closure Plan (only) ☒ OCD Conditions (see attachment)

OCD Representative Signature [Signature]Approval Date 3/22/11Title Environmental Engineer

OCD Permit Number \_\_\_\_\_

21

**Closure Report (required within 60 days of closure completion)** Subsection K of 19 15.17 13 NMAC

*Instructions Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.*

☐ Closure Completion Date \_\_\_\_\_

22

**Closure Method**

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)  
☐ If different from approved plan, please explain \_\_\_\_\_

23

**Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only**

*Instructions Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.*

Disposal Facility Name: \_\_\_\_\_

Disposal Facility Permit Number: \_\_\_\_\_

Disposal Facility Name: \_\_\_\_\_

Disposal Facility Permit Number: \_\_\_\_\_

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

*Required for impacted areas which will not be used for future service and operations*

- ☐ Site Reclamation (Photo Documentation)  
☐ Soil Backfilling and Cover Installation  
☐ Re-vegetation Application Rates and Seeding Technique

24

**Closure Report Attachment Checklist** *Instructions Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Proof of Closure Notice (surface owner and division)  
☐ Proof of Deed Notice (required for on-site closure)  
☐ Plot Plan (for on-site closures and temporary pits)  
☐ Confirmation Sampling Analytical Results (if applicable)  
☐ Waste Material Sampling Analytical Results (required for on-site closure)  
☐ Disposal Facility Name and Permit Number  
☐ Soil Backfilling and Cover Installation  
☐ Re-vegetation Application Rates and Seeding Technique  
☐ Site Reclamation (Photo Documentation)

On-site Closure Location. Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ NAD: ☐ 1927 ☐ 1983

25

**Operator Closure Certification**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print) \_\_\_\_\_

Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

e-mail address \_\_\_\_\_

Telephone: \_\_\_\_\_

## **SITING AND HYDRO-GEOLOGICAL REPORT FOR LAWSON LS 001 A**

### **Siting Criteria 19.15.17.10 NMAC**

Depth to groundwater at the site is estimated to be between 50 and 100 feet. This estimation is based on data from Stone and others (1983), and depth to groundwater data obtained from water wells permitted by the New Mexico State Engineer's Office (OSE, Figure 1). Local topography and proximity to adjacent water features is also considered. A topographic map of the site is provided as Figure 2 and demonstrates that the below grade tank (BGT) is not within 300 feet of any continuously flowing watercourse or within 200 feet of any other significant watercourse, lakebed, sinkhole or playa lake as measured from the ordinary high water mark. Figure 3 demonstrates that the BGT is not within 300 feet of a permanent residence, school, hospital, institution or church. Figure 4 demonstrates, based on a search of the OSE database and USGS topographic maps, that there are no freshwater wells or springs within 1000 feet of the BGT. Figure 5 demonstrates that the BGT is not within a municipal boundary or a defined municipal freshwater well field. Figure 6 demonstrates that the BGT is not within 500 feet of a wetland. Figure 7 demonstrates that the BGT is not in an area overlying a subsurface mine. The BGT is not located in an unstable area. Figure 8 demonstrates that the BGT is not within the mapped FEMA 100-year floodplain.

### **Local Geology and Hydrology**

This particular site is located west of the Animas River between Aztec and Cedar Hill, New Mexico. The Nacimiento Formation of Tertiary age is exposed as interbedded siltstones, shales and sandstones that form steep to gentle slopes. The slopes are dissected by arroyos draining to the Animas River. The Nacimiento Formation is capped to the north by the more resistant cliff-forming sandstones of the San Jose Formation. The site is located greater than 1 mile northwest of the Animas River and greater than 100 feet higher in elevation.

Groundwater is estimated to be between 50 and 100 feet below ground surface (bgs) at this site. This is based on the elevation difference between the site and Kiffen Canyon of 80 feet. Kiffen Canyon is 650 feet from the site.

### **Regional Geology and Hydrology**

The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional system with fluvial having a lesser impact.

Cretaceous and Tertiary sandstones, as well as Quaternary Alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). The Nacimiento Formation of Paleocene age occurs at the surface in a broad belt at the western and southern edges of the central San Juan Basin and dips beneath the San Jose Formation in the center. The lower part of the Nacimiento Formation is composed of interbedded black, carbonaceous mudstones and white coarse-grained sandstones. The upper part is comprised of mudstone and sandstone. It is generally slope-forming, even within the sandstone units. Thickness of the Nacimiento ranges from 418 to 2232 feet. Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation are between 0 and 1000 feet deep in this section of the basin. Wells within these bodies flow from 16 to 100 gallons per minute (gpm), and transmissivities are expected to be 100 ft<sup>2</sup>/d (Stone et al, 1983). Groundwater within these aquifers flows toward the Animas River.

### **References**

Circular 154—Guidebook to coal geology of northwest New Mexico By E. C. Beaumont, J. W. Shomaker, W. J. Stone, and others, 1976

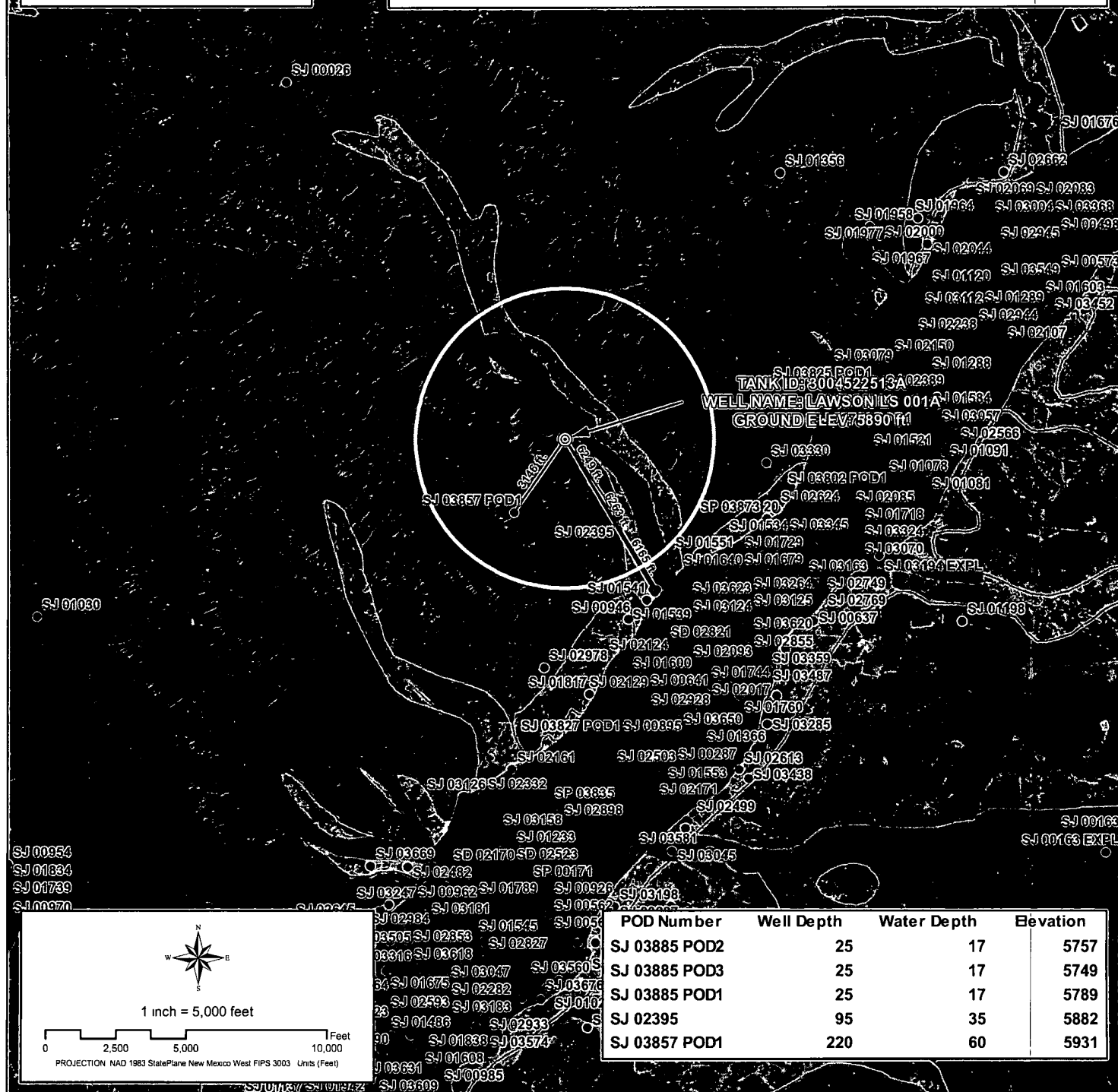
Stone, et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico, Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p

# LEGEND

- BGT Location
- Water Wells Location
- Distance to BGT (Line of Sight)
- 1 Mile Buffer
- Groundwater Evaluation (Alluvial Geology)
  - Groundwater Likely Less Than 50 Feet BGS
  - Groundwater Suspected to be Less Than 50 Feet BGS

# Surficial Geology Units

- |   |                                 |                           |
|---|---------------------------------|---------------------------|
| Ka - Animas formation                             | Kpc - Pictured Cliffs sandstone | Qg - Terrace gravel       |
| Kch - Cliff House sandstone                       | Kpl - Point Lookout sandstone   | Qgs - Gravelly sand       |
| Kf - Fruitland formation                          | Lake                            | Qsw - Sheetwash alluvium  |
| Kkl - Kirtland shale, lower shale member          | Qa - Alluvium                   | Tbg - Bndgetumber Gravel  |
| Kkm - Kirtland shale, Farmington sandstone member | Qal - Alluvium                  | Ti - Intrusive rocks      |
| Kku - Kirtland shale, upper shale member          | Qap - Pediment gravel           | Tn - Nacimiento formation |
| Kl - Lewis shale                                  | Qat - Terrace gravel            | Tsc - Cuba Mesa Member    |
| Kmf - Menefee formation                           | Qes - Eolian sand               | Tsj - San Jose Formation  |
| Koa - Ojo Alamo sandstone                         |                                 | Tsr - Regina Member       |



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 Reviewed by AGH



## GROUNDWATER LESS THAN 50 FT.

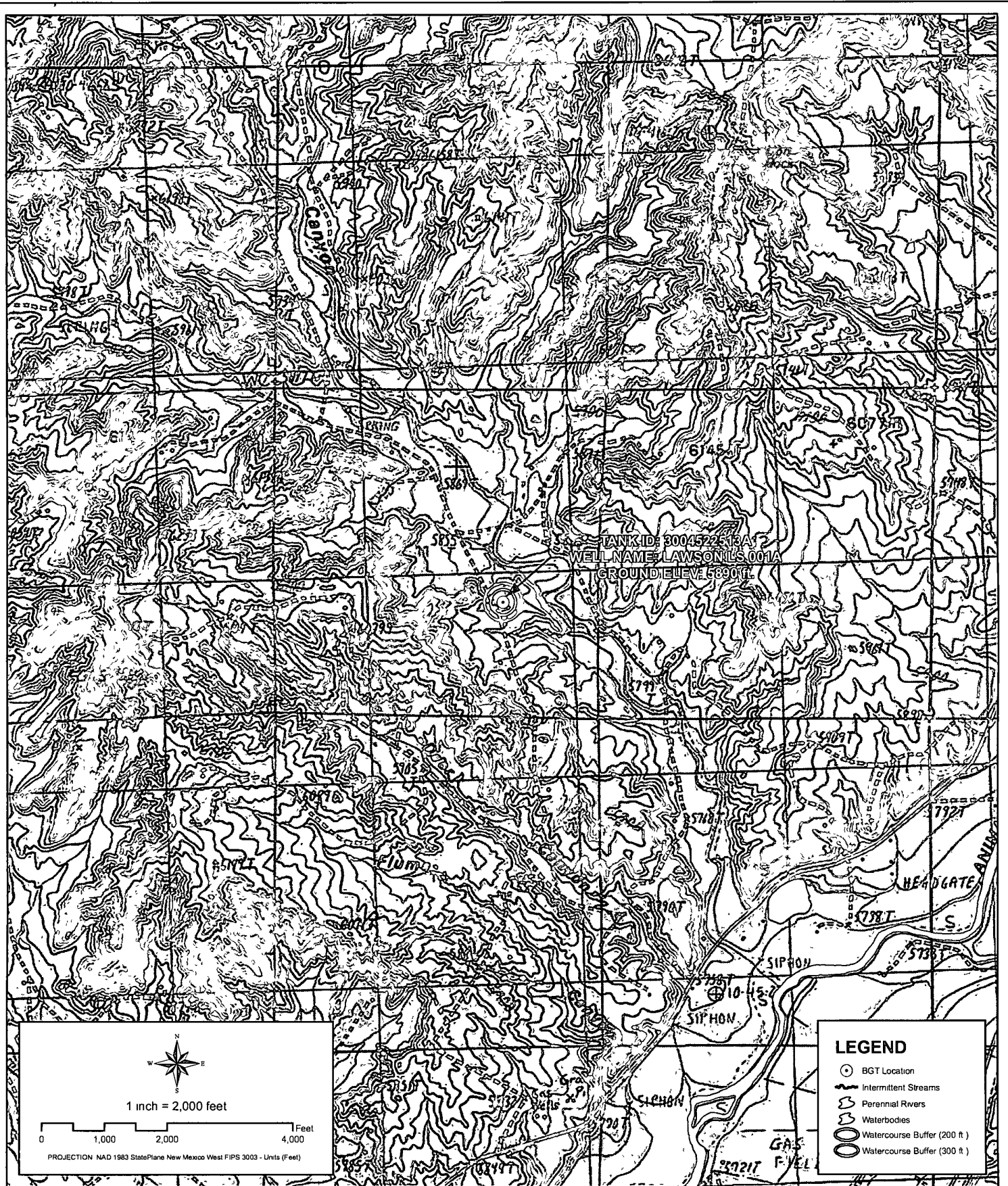
WELL NAME: LAWSON LS 001A

API NUMBER: 3004522513 TANK ID: 3004522513A

SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23

FIGURE

1



## PROXIMITY TO WATERCOURSES

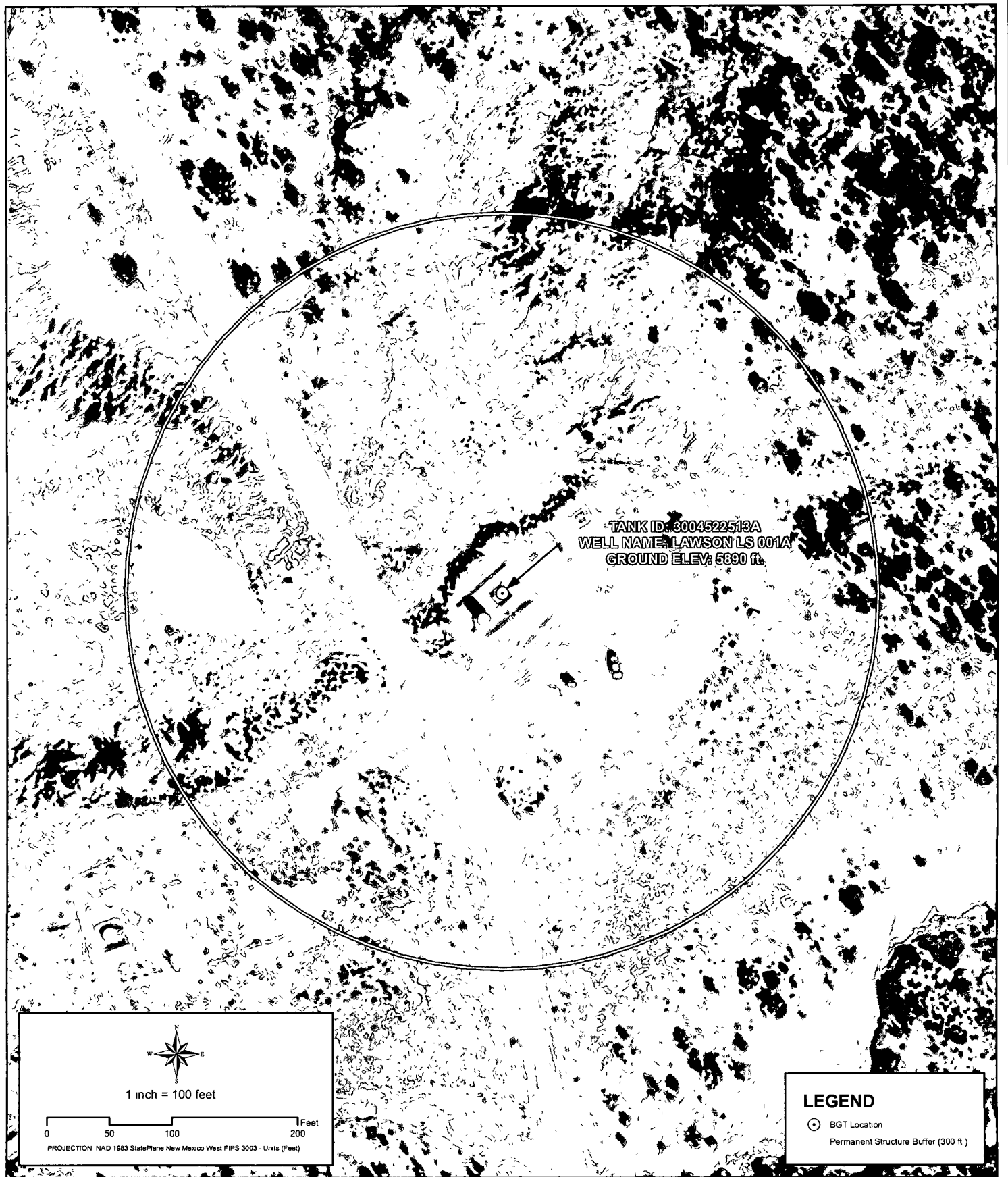
**WELL NAME: LAWSON LS 001A**

**API NUMBER: 3004522513 TANK ID: 3004522513A**

**SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23**

**FIGURE**

**2**



Creation Date: 4/13/2010  
File Path: X:\BIP\PASS\Sector\_2\MXDs\3004522513A.mxd  
Created by: EBB  
Reviewed by: AGH



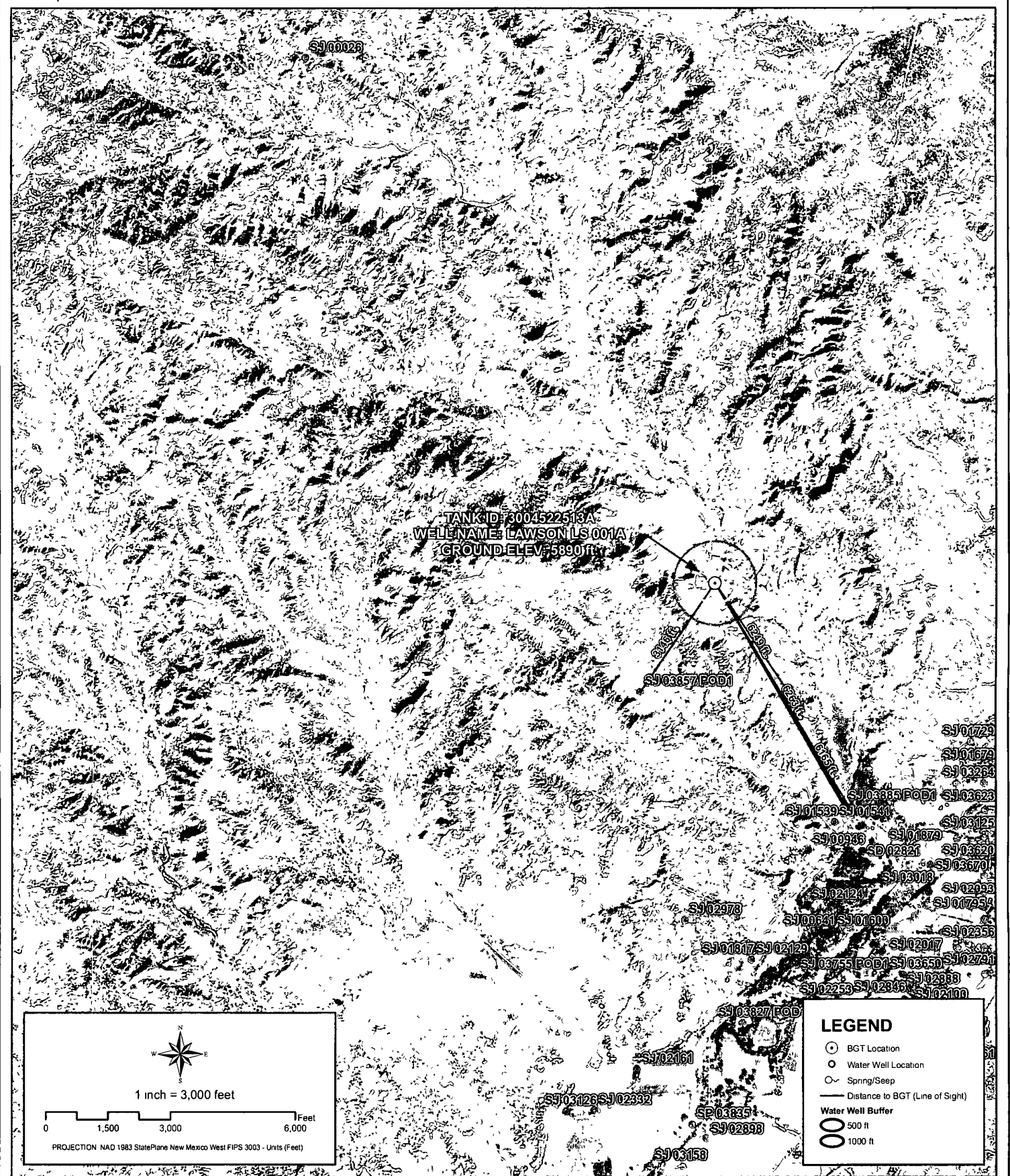
# PROXIMITY TO PERMANENT STRUCTURE

**WELL NAME: LAWSON LS 001A**

API NUMBER: 3004522513 TANK ID: 3004522513A

SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23

FIGURE  
**3**



**LEGEND**

- BGT Location
- Water Well Location
- Spring/Seep
- Distance to BGT (Line of Sight)
- Water Well Buffer
  - 500 ft
  - 1000 ft



**PROXIMITY TO WATER WELLS**

**WELL NAME: LAWSON LS 001A**

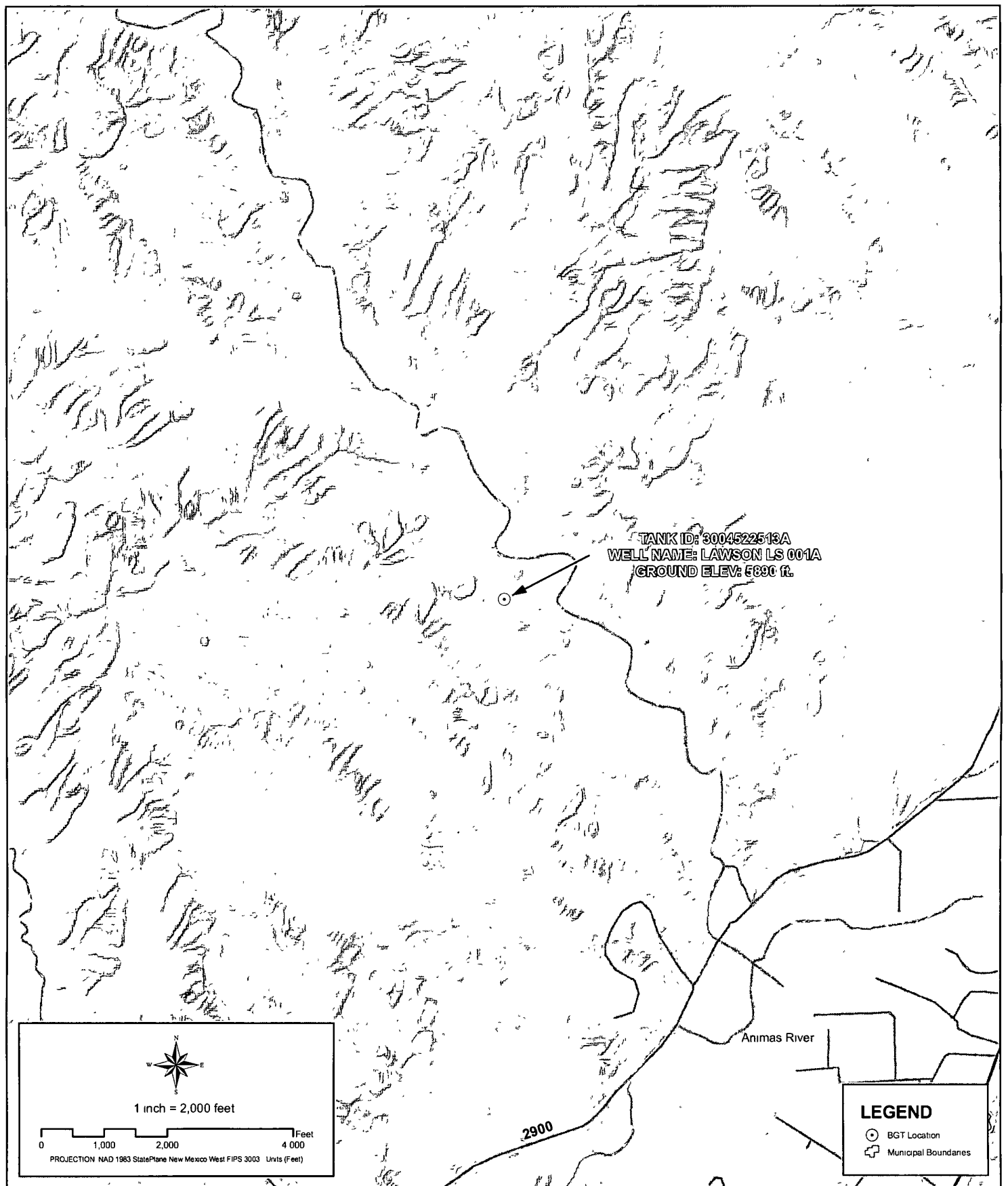
API NUMBER: 3004522513 TANK ID: 3004522513A

**SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23**

**FIGURE**

**4**





Creation Date: 4/13/2010 File Path: X:\BP\PASS\Sector\_ZMXDs\3004522513A.mxd Created by: EBB Reviewed by: AGH



# **PROXIMITY TO MUNICIPAL BOUNDARY**

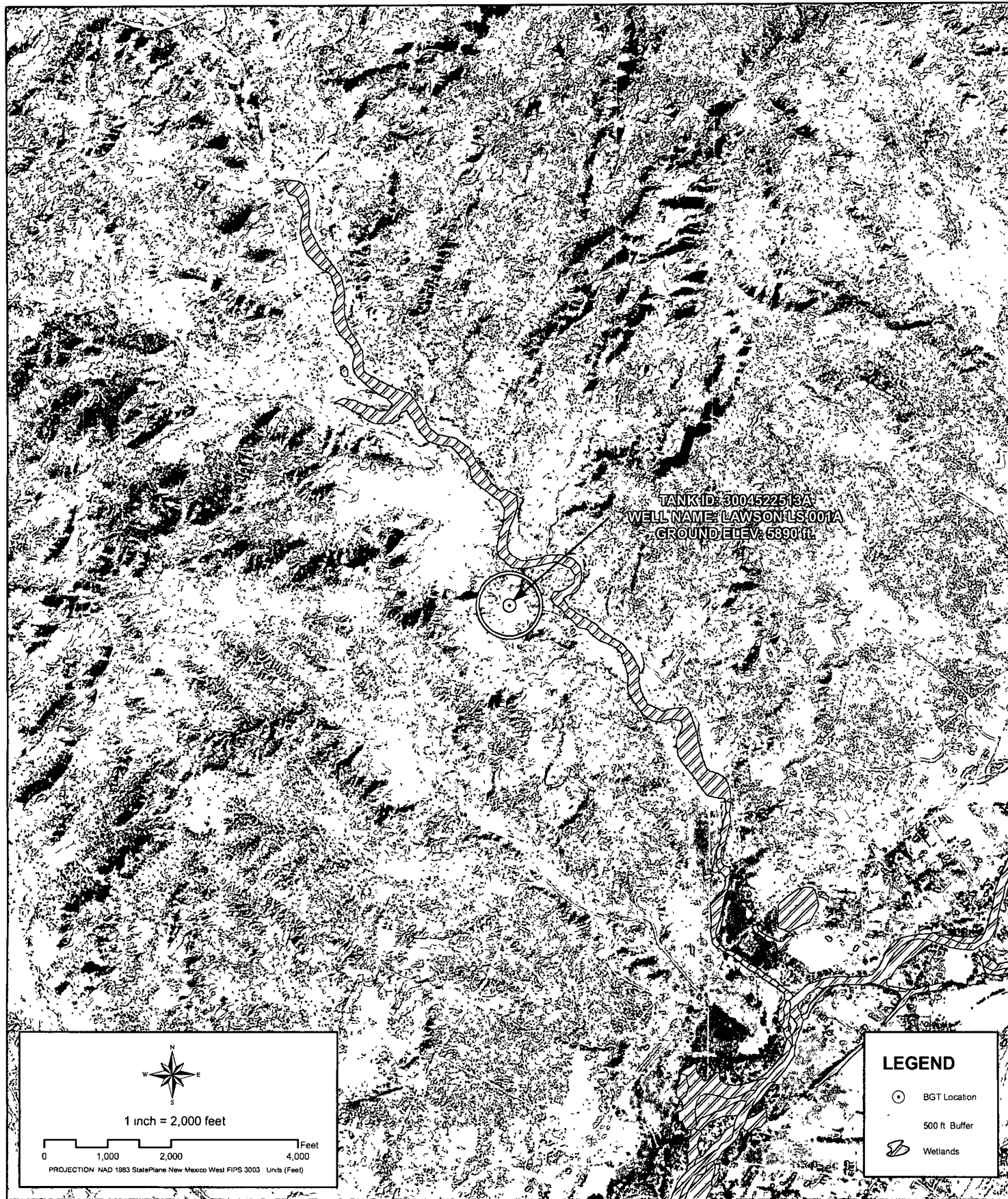
**WELL NAME: LAWSON LS 001A**

API NUMBER: 3004522513 TANK ID: 3004522513A

SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23

**FIGURE**  
**5**





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File Path X:\BP\PASS\Sector\_2\MXDs\3004522513A.mxd

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Reviewed by AGH



## PROXIMITY TO WETLANDS

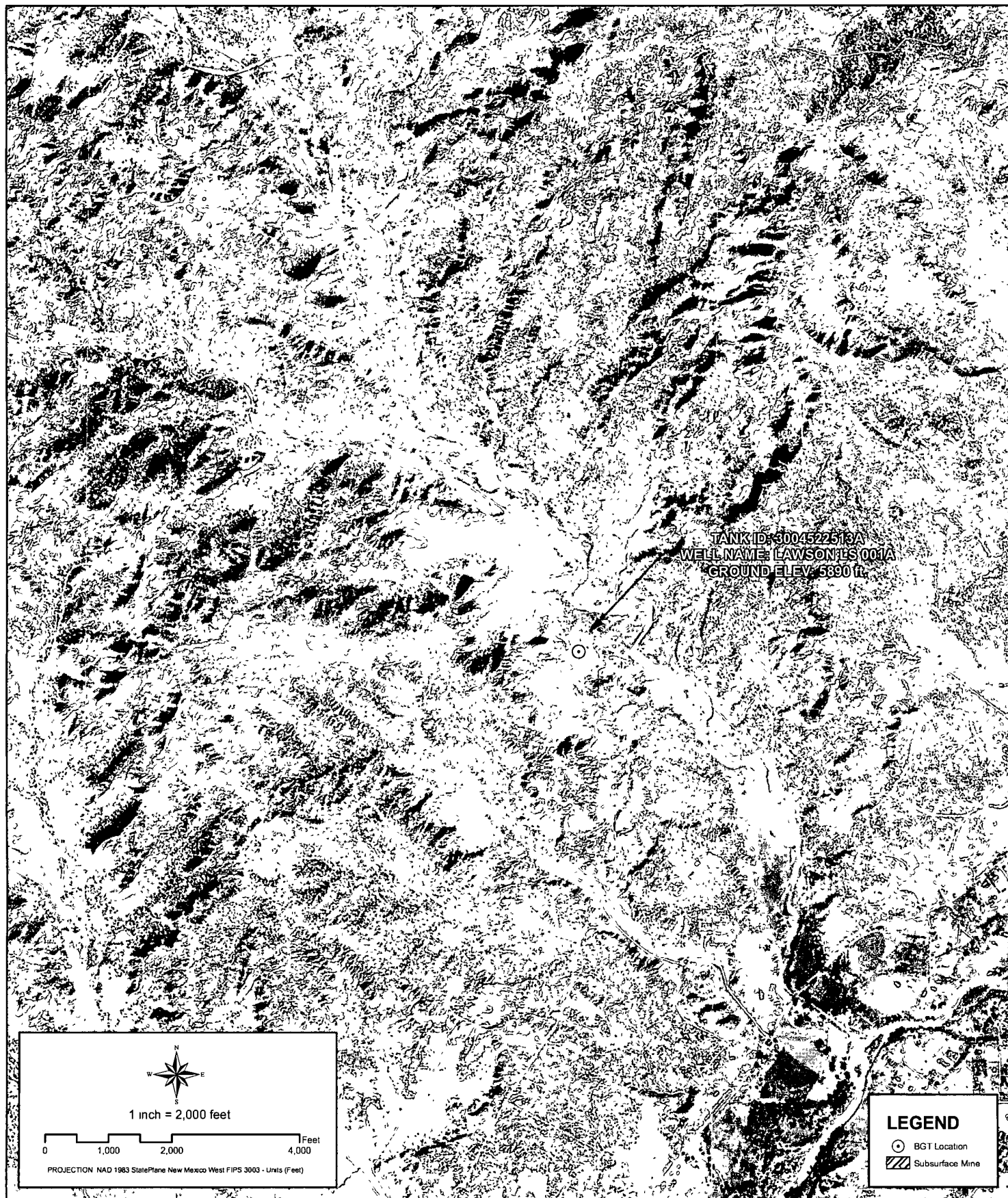
**WELL NAME: LAWSON LS 001A**

API NUMBER: 3004522513 TANK ID: 3004522513A

SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23

FIGURE

6



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File Path: X:\BP\PASS\Sector\_2\MXDs\3004522513A.mxd

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Reviewed by: AGH

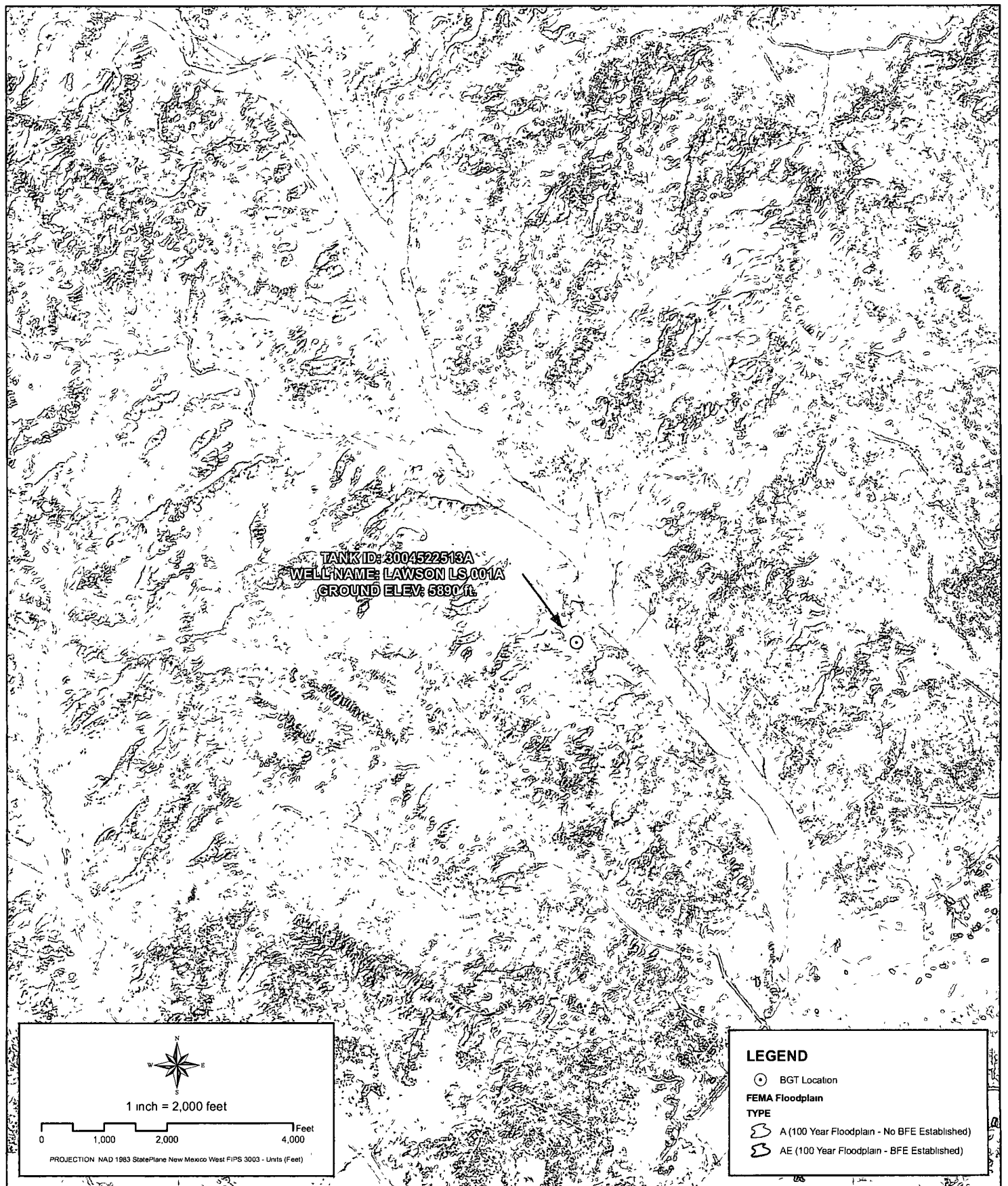


## PROXIMITY TO SUBSURFACE MINES

**WELL NAME: LAWSON LS 001A**

API NUMBER: 3004522513 TANK ID: 3004522513A  
SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M.NM23

FIGURE  
7



Creation Date: 4/13/2010  
File Path: X:\BP\PASS\Sector\_ZM\DX\3004522513A.mxd  
Created by: EBB  
Reviewed by: AGH



**PROXIMITY TO FLOODPLAIN**  
**WELL NAME: LAWSON LS 001A**  
API NUMBER: 3004522513    TANK ID: 3004522513A  
**SECTION 11, TOWNSHIP 31.0N, RANGE 11W, P.M. NM23**

**FIGURE**  
**8**

# **SOUTHERN SAN JUAN BASIN (SSJB)**

## **Figure Citation List**

**March 2010**

### **Figure 1: Groundwater Less Than 50 ft.**

#### **Layers:**

##### **Water Wells:**

**iWaters Database: NMOSE/ISC (Dec. 2009)**

New Mexico Office of the State Engineer (OSE) /ISC iWaters database. (Data updated: 12/2009. Data received: 03/09/2010). Data available from:  
[http://www.ose.state.nm.us/waters\\_db\\_index.html](http://www.ose.state.nm.us/waters_db_index.html).

##### **Cathodic Wells:**

**Tierra Corrosion Control, Inc. (Aug. 2008)**

Tierra Corrosion Control, Inc. 1700 Schofield Ln. Farmington, NM 87401. Driller's Data Log. (Data collected: All data are associated with cathodic protection wells installed at BP facilities between 2008-2009. Data received: 05/06/2010).

##### **Hydrogeological Evaluation:**

**Wright Water Engineers, Inc. (2008)**

Evaluation completed by Wright Water Engineers, Inc. Durango Office. Data created using digital statewide geology at 1:500,000 from USGS in combination with 10m Digital Elevation Model (DEM) from NRCS. (Data compiled: 2008.)

Results: Spatial Polygons representing "Groundwater likely to be less than 50 ft." and "Groundwater suspected to be less than 50 ft.".

##### **Surficial Geology:**

**USGS (1963/1987)**

Data digitized and rectified by Geospatial Consultants. (Data digitized: 03/23/ 2010). Original hard copy maps sourced from United States Geological Survey (USGS). Data available from:  
<http://pubs.er.usgs.gov/>.

*Geology, Structure and Uranium Deposits of the Shiprock Quadrangle, New Mexico and Arizona.* 1:250,000. I - 345. Compiled by Robert B. O'Sullivan and Helen M. Beikman. 1963.

*Geologic Map of the Aztec 1 x 2 Quadrangle, Northwestern New Mexico and Southern Colorado.* 1:250,000. I - 1730. Compiled by Kim Manley, Glenn R. Scott, and Reinhard A. Wobus. 1987.

##### **Aerial Imagery:**

**Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:  
NAD\_1983\_StatePlane\_New\_Mexico\_West\_FIPS\_3003\_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

## **Figure 2: Proximity to Watercourses**

### **Layers:**

#### **Perennial Streams:**

**NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital Representation of USGS 24k Topographic map series with field updates as required. Data available from: <http://nhd.usgs.gov/>.

#### **Intermittent Streams:**

**NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital Representation of USGS 24k Topographic map series with field updates as required. Data available from: <http://nhd.usgs.gov/>.

#### **Water Bodies:**

**NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital representation of USGS 24k Topographic map series with field updates as required. Data available from: <http://nhd.usgs.gov/>.

#### **USGS Topographic Maps:**

**USGS (2007)**

USGS 24k Topographic map series. 1:24000. Maps are seamless, scanned images of USGS paper topographic maps. Data available from: <http://store.usgs.gov>.

## **Figure 3: Proximity to Permanent Structure**

### **Layers:**

#### **Aerial Imagery:**

**Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD\_1983\_StatePlane\_New\_Mexico\_West\_FIPS\_3003\_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

#### **Figure 4: Proximity to Water Wells**

##### **Layers:**

##### **Water Wells: iWaters Database: NMOSE/ISC (Dec. 2009)**

New Mexico Office of the State Engineer (OSE) /ISC iWaters database. (Data updated: 12/2009. Data received: 03/09/2010). Data available from: [http://www.ose.state.nm.us/waters\\_db\\_index.html](http://www.ose.state.nm.us/waters_db_index.html).

##### **Springs/Seeps: NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital representation of USGS 24k Topographic map series with field updates as required. Data available from: <http://nhd.usgs.gov/>.

##### **Aerial Imagery: Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD\_1983\_StatePlane\_New\_Mexico\_West\_FIPS\_3003\_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

#### **Figure 5: Proximity to Municipal Boundary**

##### **Layers:**

##### **Municipal Boundary: San Juan County, New Mexico (2010)**

Data provided by San Juan County GIS Division. (Data received: 03/25/2010).

##### **Shaded Relief: NED, USGS (1999)**

National Elevation Dataset (NED). U.S. Geological Survey, EROS Data Center. (Data created: 1999. Data downloaded: April, 2010). Resolution: 10 meter (1/3 arc-second). Data available from: <http://ned.usgs.gov/>.

##### **StreetMap North America: Tele Atlas North America, Inc., ESRI (2008)**

Data derived from Tele Atlas Dynamap/Transportation North America, version 5.2. (Data updated: annually. Data series issue: 2008).

### **Figure 6: Proximity to Wetlands**

#### **Layers:**

##### **Wetlands:**

##### **NWI (2010)**

National Wetlands Inventory (NWI). U.S Fish and Wildlife Service. (Data last updated: 09/25/2009. Data received: 03/21/2010). Data available from: <http://www.fws.gov/wetlands/>.

##### **Aerial Imagery:**

##### **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery.

Projected coordinate system name:

NAD\_1983\_StatePlane\_New\_Mexico\_West\_FIPS\_3003\_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

### **Figure 7: Proximity to Subsurface Mine**

#### **Layers:**

##### **Subsurface Mine:**

##### **NM Mining and Minerals Division ( 2010)**

New Mexico Mining and Minerals Division. (Data received: 03/12/2010). Contact: Susan Lucas Kamat, Geologist. Provided PLSS NM locations (Sections) for the two subsurface mines located in San Juan and Rio Arriba counties.

##### **Aerial Imagery:**

##### **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery.

Projected coordinate system name:

NAD\_1983\_StatePlane\_New\_Mexico\_West\_FIPS\_3003\_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

## **Figure 8: Proximity to FEMA Floodplain**

### **Layers:**

#### **FEMA Floodplain:**

#### **FEMA (varying years)**

Data digitized and rectified by Wright Water Engineers, Inc. (Data digitized: August 2008).  
Digitized from hard copy Flood Insurance Rate Maps (FIRMs) (varying years) of San Juan County.

#### **Aerial Imagery:**

#### **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery.

Projected coordinate system name:

NAD\_1983\_StatePlane\_New\_Mexico\_West\_FIPS\_3003\_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.



**BP AMERICA PRODUCTION COMPANY**  
**SAN JUAN BASIN, NORTHWEST NEW MEXICO**

**BELOW-GRADE TANK CLOSURE PLAN**

This plan will address the standard protocols and procedures for closure of below-grade tanks (BGTs) on BP America Production Company (BP) well sites. As stipulated in Paragraph A of 19.15.17.13 NMAC, BP shall close a BGT within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the New Mexico Oil Conservation Division (NMOCD) requires because of imminent danger to fresh water, public health, safety or the environment. If deviations from this plan are necessary, any specific changes will be included on form C-144 and approved by the NMOCD. BP shall close an existing BGT that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofit with a BGT that complies with the BP NMOCD approved BGT design attached to the BP Design and Construction Plan. BP shall close an existing BGT that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, if not previously retrofitted to comply with the BP NMOCD approved BGT Design attached to the BP Design and Construction Plan, prior to any sale or change in operator pursuant to 19.15.9.9 NMAC. BP shall close the permitted BGT within 60 days of cessation of the BGTs operation or as required by the transitional provisions of Subsection B, D, or E of 19.15.17.17 NMAC.

**General Closure Plan**

1. BP shall notify the surface owner by certified mail that it plans to close a BGT. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records demonstrates compliance with this requirement.
2. BP shall notify the division District III office verbally or by other means at least 72 hours, but not more than one (1) week, prior to any closure operation. The notice shall include the operator's name, and the location to be closed by unit letter, section, township and range. If the BGT closure is associated with a particular well, then the notice shall also include the well's name, number and API number.
3. BP shall remove liquids and sludge from the BGT prior to implementing a closure method and dispose of the liquids and sludge in a NMOCD's division-approved facility. The facilities to be used are:
  - a. BP Crouch Mesa Landfarm, Permit NM-02-003 (Solids)
  - b. JFJ Landfarm, Permit NM-01-010(B) (Solids and Sludge)
  - c. Basin Disposal, Permit NM-01-0005 (Liquids)
  - d. Envirotech Inc Soil Remediation Facility, Permit NM-01-0011 (Solids and Sludge)
  - e. BP Operated E.E. Elliott SWD #1, API 30-045-27799 (Liquids)
  - f. BP Operated 13 GCU SWD #1, API 30-045-28601 (Liquids)
  - g. BP Operated GCU 259 SWD, API 30-045-20006 (Liquids)
  - h. BP Operated GCU 306 SWD, API 30-045-24286 (Liquids)
  - i. BP Operated GCU 307 SWD, API 30-045-24248 (Liquids)
  - j. BP Operated GCU 328 SWD, API 30-045-24735 (Liquids)
  - k. BP Operated Pritchard SWD #1, API 30-045-28351 (Liquids)

4. BP shall remove the BGT and dispose of it in a NMOCD approved facility or recycle, reuse, or reclaim it in a manner that the NMOCD approves. If a liner is present and must be disposed of it will be cleaned by scraping any soils or other attached materials on the liner to a de minimus amount and disposed at a permitted solid waste facility, pursuant to Subparagraph (m) of Paragraph (1) of Subsection C of 19.15.35.8 NMAC. Documentation as to the final disposition of the removed BGT will be provided in the final closure report.
5. BP shall remove any on-site equipment associated with a BGT unless the equipment is required for well production.
6. BP shall test the soils beneath the BGT to determine whether a release has occurred. BP shall collect at a minimum: a five (5) point composite sample and individual grab samples from any area that is wet, discolored or showing other evidence of a release and analyze for BTEX, TPH and chlorides. The testing methods for those constituents are as follows;

Constituents	Testing Method	Release Verification (mg/Kg)
Benzene	US EPA Method SW-846 8021B or 8260B	0.2
Total BTEX	US EPA Method SW-846 8021B or 8260B	50
TPH	US EPA Method SW-846 418.1	100
Chlorides	US EPA Method 300.0 or 4500B	250 or background

**Notes: mg/Kg = milligram per kilogram, BTEX = benzene, toluene, ethylbenzene, and total xylenes, TPH = total petroleum hydrocarbons. Other EPA methods that the division approves may be applied to all constituents listed. Chloride closure standards will be determined by which ever concentration level is greatest.**

7. BP shall notify the division District III office of its results on form C-141.
8. If it is determined that a release has occurred, then BP will comply with 19.15.30 NMAC and 19.15.29 NMAC, as appropriate.
9. If the sampling demonstrates that a release has not occurred or that any release does not exceed the concentrations specified above, then BP shall backfill the excavation, with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover, re-contour and re-vegetate the location. The location will be reclaimed if it is not with in the active process area.
10. BP shall reclaim the BGT location and all areas associated with the BGT including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. BP shall substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC, re-contour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate according to Subsection I of 19.15.17.13 NMAC.
11. The soil cover for closures where the BGT has been removed or remediated to the NMOCD's satisfaction shall consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater. The soil

12. BP shall seed the disturbed area the first growing season after closure of the BGT. Seeding will be accomplished by drilling on the contour whenever practical or by other division-approved methods. Vegetative cover will be, at a minimum, 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation), consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintenance of that cover through two successive growing seasons. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.
13. BP shall seed, plant and re-seed pursuant to Paragraph (3) of Subsection I of 19.15.17.13 NMAC, until the location successfully achieves the required vegetative cover.
14. Pursuant to Paragraph (5) of Subsection I of 19.15.17.13 NMAC, BP shall notify the NMOCD when it has seeded or planted and when it successfully achieves re-vegetation.
15. Within 60 days of closure completion, BP shall submit a closure report on NMOCD's form C-144, and will include the following;
  - a. proof of closure notification (surface owner and NMOCD)
  - b. sampling analytical reports; information required by 19.15.17 NMAC;
  - c. disposal facility name and permit number
  - d. details on back-filling, capping, covering, and where applicable re-vegetation application rates and seeding techniques and
  - e. site reclamation, photo documentation. Disposal Facility Name and Permit Number
16. BP shall certify that all information in the report and attachments is accurate, truthful, and compliant with all applicable closure requirements and conditions specified in the approved closure plan.

# BP AMERICA PRODUCTION COMPANY

## San Juan Basin in Northwest New Mexico Below-Grade Tank Design and Construction Plan

Pursuant to Rule 19.15.17.11 NMAC, BP America Production Company (BP) shall construct a below-grade tank (BGT) or modify an existing permitted BGT according to the following plan. Any deviations from this plan will be addressed on the New Mexico Oil Conservation Division's (NMCOD) form C-144 at the time of submittal.

### **Design and Construction Plan**

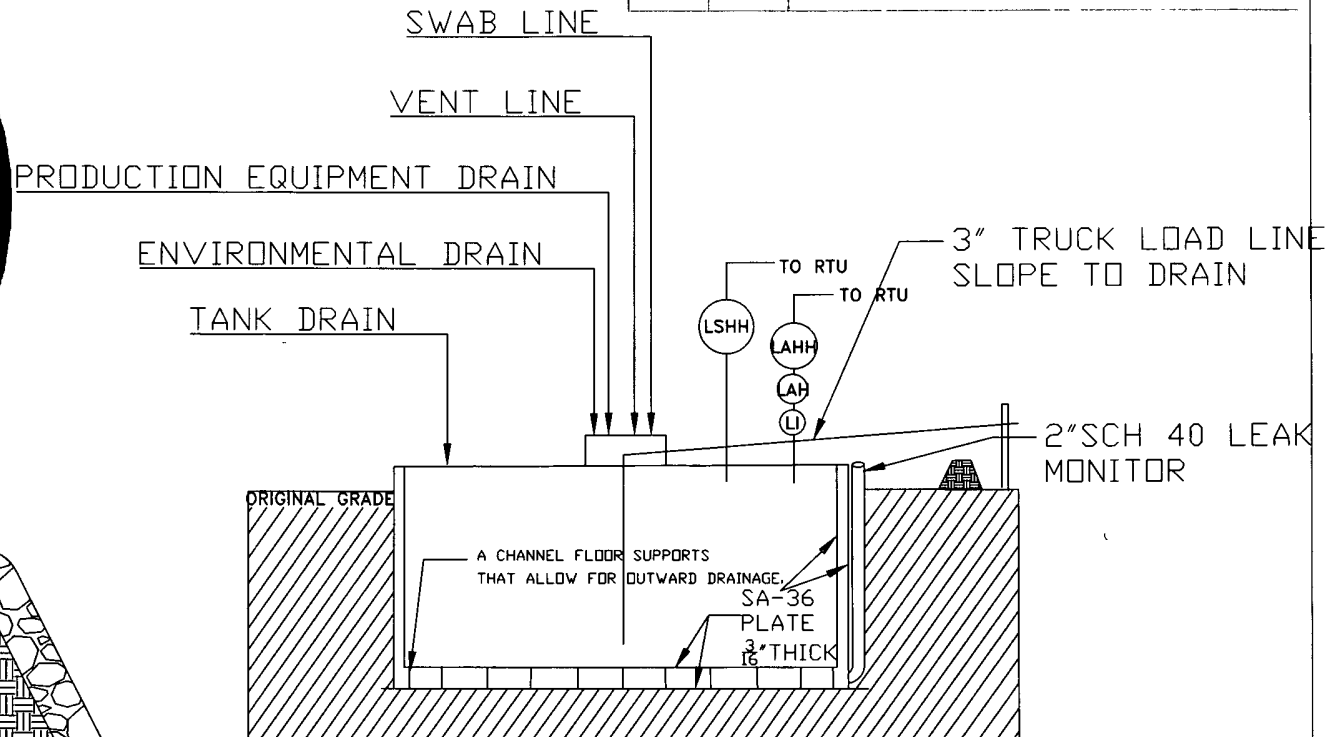
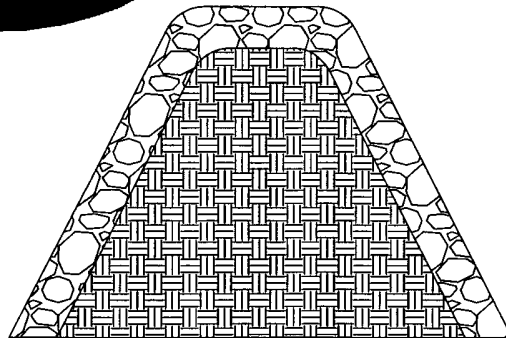
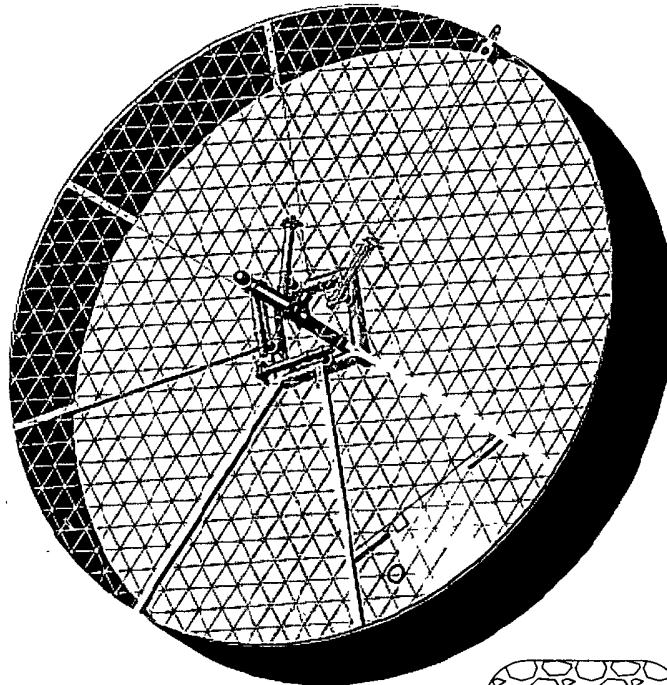
1. BP will design and construct a BGT which will be constructed to contain liquids and prevent contamination of fresh water and protect public health and the environment.
2. BP is the well operator and shall install and maintain a well sign that is in compliance with 19.15.16.8 NMAC. The sign will be posted at the well site to address, at a minimum;
  - a. Well Number
  - b. Property name
  - c. Operators name
  - d. Location by footage, quarter-quarter section, township and range (or unit letter)
  - e. API number
  - f. Emergency contact information
3. BP will fence or enclose its BGTs in a manner that prevents unauthorized access and shall maintain its fence in good repair.
4. BP will fence or enclose a BGT located within 1,000 feet of a permanent residence, school, hospital, institution or church with, at a minimum a chain link security fence at least six (6) feet in height with at least two (2) strands of barbed wire at the top. BP will ensure that all gates associated with the fence are closed and locked when responsible personnel are not on-site.
5. BP is requesting NMOCD's approval for an alternative fence design that provides, at a minimum, equivalent protection to the design specified in Paragraph 3 of Subsection D of 19.15.17.11 NMAC for BGTs beyond the stated distance in paragraph 4 of this document. BP's proposed design for its BGTs will utilize 48" steel mesh field-fence (hogwire) with a metal or steel top rail. Perimeter T-post will be installed roughly every 10 feet.
6. BP will construct an expanded metal covering that completely covers the top of the BGT. The covering will be constructed such that it will prevent hazardous conditions to wildlife, including migratory birds
7. BP shall construct the BGT of materials that are resistant to produced water, any contained liquids, and damage from sunlight. BP's BGTs will be constructed of carbon steel that meets the requirements of ASTM A36.
8. BP's BGTs shall have a properly constructed earthen foundation consisting of a level base free of rocks, debris, sharp edges, or irregularities as to prevent punctures, cracks or indentations to the tank bottom as demonstrated on the design drawing.
9. BP will construct and operate the BGT to prevent surface water run-on by using both earthen

*BP Design Construction Plan-  
BGT\_04012010.doc*

berms and leaving a portion of the BGT above the original grade as demonstrated on the design drawing.

10. BP will construct and operate the BGT to prevent overflow and overfilling of the BGT. Overflow will be prevented by use of an electronic high fluid level detector that will automatically engage an electronic shut-off valve when a 1 foot freeboard is reached. The Hi-level automatic alarm notifies well optimizers when liquid level has reached within a pre-set distance to the top of the BGT. The Hi Hi alarm will trigger the Hi-level automatic shutdown valve which will close in the well until the liquid level can be lowered.
11. BP will construct and install a double-walled tank design per Subparagraph (b) of Paragraph (4) of Subsection I of 19.15.17.11 NMAC with a two (2) inch diameter leak detection port. The floor supports located in the annular space of the tank bottom will be channeled to allow outward movement of liquid between the walls. Leak detection will be monitored per BP's Operating and Maintenance Plan. The walls of the BGT will be constructed of carbon steel that meets the ASTM A36 standard. BP's BGT design will insure containment of tank contents and protect underlying groundwater. The production equipment line drain is an automated drain that allows water level in production equipment (generally the separator) to be maintained within the equipment's operating parameters. The environmental drain is a manually operated drain that is used to drain liquids off of equipment. The tank drain is a manually operated drain, typically in the closed position that is used to rid the condensate tank of any water accumulation. The vent drain is a manually operated drain off the discharge of production equipment (usually the separator) and is used to blowdown the wellsite. The swab drain line is a manually operated drain originating between the wellhead and separator and is used during well workovers when large amounts of liquid are removed from the well and sent straight to the BGT.
12. BP owned and operated BGTs that were constructed and installed prior to June 16, 2008 that do not meet all the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC and are not included in Paragraph (6) of Subsection I of 19.15.17.11 NMAC are not required to equip or be retrofit to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC so long as the BGT demonstrates integrity. If the existing BP BGT does not demonstrate integrity, BP shall promptly remove the BGT and install a BGT that complies with the BP NMOCD approved BGT design attached to the Design and Construction Plan. BP shall comply with the operational requirements of 19.15.17.12 NMAC.
13. BP owned and operated BGTs that were constructed and installed prior to June 16, 2008 that are single walled and where any portion of the tank side wall is below ground surface and not visible shall be retrofit or replaced to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or shall be closed within 5 years of June 16, 2008. If the existing BP owned and operated BGT does not demonstrate integrity, BP shall promptly remove the BGT and install a BGT that complies with the BP NMOCD approved BGT design attached to the Design and Construction Plan. BP shall comply with the operational requirements of 19.15.17.12 NMAC.
14. The general specifications for the design and construction of the BGT have been provided in the attached BP design and construction schematic.

# DOUBLE WALLED BGT

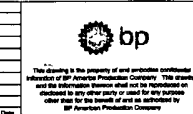


PROPERLY CONSTRUCTED FOUNDATION CONSISTING OF A LEVEL BASE - FREE OF ROCKS, DEBRIS, SHARP EDGES OR IRREGULARITIES TO PREVENT PUNCTURES CRACKS OR INDENTATIONS TO THE TANK BOTTOM.

MANUAL OPERATION	
1.)	PRODUCTION TANK DRAIN LINE
2.)	SWAB LINE
3.)	ENVIRONMENTAL DRAIN
AUTOMATED OPERATION	
1.)	VENT LINE DRAIN LINE
2.)	SEPARATOR DRAIN LINE
3.)	AUTOMATIC SHUT OFF LSHH ACTIVATES AT 12" FROM TOP OF TANK



Rev	By	Date	Revised	By	Date



SAN JUAN OPERATIONS CENTER FARMINGTON, NEW MEXICO BP AMERICA PRODUCTION COMPANY					
FACILITIES LAYOUT DOUBLE WALLED BELOW GRADE TANK					
Scale	Drawn By	Date	Checked By	Rev No	Control Desc.
				1	
Filename: P11-0086L-QD-P11-01-05.dwg					

# BP AMERICA PRODUCTION COMPANY

## San Juan Basin in Northwest New Mexico Below-Grade Tank Operating and Maintenance Plan

Pursuant to Rule 19.15.17.12 NMAC, BP America Production Company (BP) shall maintain and operate a below-grade tank (BGT) with the following requirements. Deviations from this plan will be addressed with a submittal to the New Mexico Oil Conservation Division's (NMOCD) using form C-144 at the time of the BGT permit or modification to an existing permitted BGT application.

### **Operating and Maintenance Plan**

1. BP's BGTs will be operated and maintained to contain liquids and solids and promptly identify a release or potential release. BP's BGTs will be operated and maintained to prevent contamination to freshwater and protect public health and the environment. BP will use automated high fluid level alarms and automated shut-off valves to insure that liquids are contained within the vessel and that the vessel does not overflow. These alarms and shut-off valves will be consistent with those demonstrated in the design plan. BP will perform and document inspections of the BGTs on a monthly basis to confirm the integrity of the vessel.
2. BP will not knowingly discharge or store any hazardous waste into a BGT
3. If a BGT develops a leak, or a release occurs due to mechanical failure or vandalism, or if a penetration of the BGT occurs below the liquid's surface, BP shall: 1) evacuate liquids from the BGT to a level below the damage or leak line within 48 hours; and 2) notify the NMOCD's District III office within 48 hours of the discovery. BP will review #4 of the BP Operating and Maintenance plan prior to any repair or replacement to determine if the BGT and location will require closure. If appropriate BP shall repair or replace the BGT with the BP NMOCD approved design. If a release from the BGT occurs BP shall follow the release reporting procedures of 19.15.29 NMAC. If closure of the BGT is required, BP shall implement the approved closure plan for the BGT.
4. If a BP operated BGT that was constructed and installed prior to June 16, 2008 that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC does not demonstrate integrity or if the BGT develops any of the conditions identified in Paragraph (5) of Subsection A of 19.15.17.12 NMAC, BP shall close the existing BGT pursuant to the closure requirements of 19.15.17.13 NMAC and will install a BGT that complies with BP NMOCD approved BGT design attached to the Design and Construction Plan.
5. If a BP operated BGT that was constructed and installed prior to June 16, 2008 that does not comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC is equipped or retrofit to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, BP shall visually inspect the area beneath the BGT during the retrofit and shall document any areas that are wet, discolored or showing other evidence of a release on Form C-141. BP shall demonstrate to the division whether evidence of contamination indicates that an imminent threat to fresh water, public health, safety or the environment exists. If the division

6. BP will install and construct the BGT following the BP NMOCD approved Design and Construction Plan, and will control surface water run on by the use of a berm or leaving a portion of the tank wall exposed. BP will use high level shut-off devices to insure that the BGT does not overflow.
7. The following requirements adhere to Subsection D of 19.15.17.12 NMAC.
  - a. BP will remove any visible or measurable layer of oil from the fluid surface of the BGT.
  - b. BP will inspect the BGT monthly. The monthly inspection will consist of the following:
    - i. Personnel will conduct a walk-around of the BGT to observe any abnormalities or signs of corrosion on the vessel. Personnel will inspect the surface run-on berm. Where applicable, inspection of the BGT's double wall – double bottom inspection port, tank flanges and valves for signs of leakage or spills will be conducted. Personnel will record any BGT deficiencies, repair as necessary and report to BP Dispatch Office immediately if an imminent danger to fresh water, public health, or to the environment is observed. BP will maintain a written record of the monthly inspections on the BP inspection form referred to as the San Juan Lease Inspection Form. BP will maintain these written records for at least five (5) years. A copy of the San Juan Lease Inspection Form is attached.
8. BP will maintain sufficient freeboard of one foot in the BGT to prevent overtopping.



Managed Form NOP-5878 Revision 1

**San Juan Lease Inspection**

Custodian Field Environmental Coordinator

Date:	Run:	Location:	Name of Inspector:
Yes	Action	N/A	<b>Required Signs</b>
			Does location have Well Sign and emergency phone number?
			Do compressor engines have Hearing Protection signs?
			Hydrogen Sulfide Signs (where applicable)
			Chemical containers and tanks have proper Hazcom label or BP Multi-Product Hazcom numbers?
Yes	Action	N/A	<b>Location- General</b>
			<b>Housekeeping satisfactory?</b>
			Tripping or falling hazards are absent? <b>If NO, identify and report to FSC.</b>
			Rig anchors/Deadmen adequately marked and visible if they present a hazard to drivers?
			Driving hazards such as risers are marked or flagged?
			Painting meets safety standards?
			Cattleguards/gates properly maintained?
			Tarps in good repair?
			Seeps, drips, or leaks are absent?
			Is weed control adequate?
			Stains on ground are absent? <b>If NO, remediate immediately, identify and report to FEC.</b>
			Are there any open ended valves that are not plugged?
Yes	Action	N/A	<b>Vessel/Tank</b>
			Adequate fencing around below grade tank?
			Are the dike/berm walkover in place, used and stable?
			Are dikes/berms in good condition?
			Is there adequate and safe access to pit for gauging?
			Does the pit have a high level alarm?
			Are stairways and catwalks properly maintained and in good condition?
			Toprail, midrail and toeboard in place?
			Are thief hatches in good condition, seal properly, and in the closed position?
			Is tank vent line equipped with a PV valve? (Enardo)
			Does the tank have a high level alarm?
			Are open ended load lines and pipes capped?
			Is soil around load lines clean of oil stains?
			Is tank area free of any evidence of seeps or leaks (including manway cover)?
			Are there proper seals on sales and drain valves?
			Are all suspected dump lines well supported?
			Are above ground dump lines marked with t-posts and plastic covers?
			Have all fiberglass drip pits been removed?
Yes	Action	N/A	<b>Treaters/Separators/Compressors/Pump Jacks</b>
			If there is a block valve upstream of the relief valve, is the block valve secured in the open position?
			Are relief valve discharge and blow downs piped to a safe area and secured against movement?
			Has flame arrestor been inspected within the last 5 years?
			Is flame port closed?
			Do all lines pass through a super muffler or swirl pot to the pit/tank? If not, are all lines secured?
			Is starting gas vented to a safe area, at least 10' vertically?
			No excessive vibration, knocking or unusual noises anywhere on unit or piping?
			Are site glasses in operating condition?
			Are environmental rails piped to a pit in a dedicated line?
			Do all blow downs, relief valve discharges, and risers have rain caps?
			Stuffing box leaks are absent?
			Are the weight guards and belt guard in place?
			Are skids in good condition?
			Are concrete bases / foundations in good condition?
			Are concrete bases free from erosion or settlement problems?
			Is secondary containment in place for day tanks?

Comments:

Signature of Inspector:

My signature assures that this location is SAFE, is in compliance with the LAW, and exhibits high standards of Pride, Ownership and Excellence