

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

9197

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	MARCOTTE GAS COM 001
API Number	3004511067
OCD Permit Number	
U/L or Qtr/Qtr	H Section 5 0 Township 31 0N Range 10W County San Juan County
Center of Proposed Design	Latitude 36.93003 Longitude -107.900193 NAD <input type="checkbox"/> 1927 <input checked="" type="checkbox"/> 1983
Surface Owner	<input type="checkbox"/> Federal <input type="checkbox"/> State <input checked="" type="checkbox"/> Private <input type="checkbox"/> Tribal Trust or Indian Allotment

2	
<input type="checkbox"/> <b>Pit:</b> Subsection F or G of 19 15 17 11 NMAC	
Temporary <input type="checkbox"/> Drilling <input type="checkbox"/> Workover	
<input type="checkbox"/> Permanent <input type="checkbox"/> Emergency <input type="checkbox"/> Cavitation <input type="checkbox"/> P&A	
<input type="checkbox"/> Lined <input type="checkbox"/> Unlined Liner type Thickness _____ mil <input type="checkbox"/> LLDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____	
<input type="checkbox"/> String-Reinforced	
Liner Seams <input type="checkbox"/> Welded <input type="checkbox"/> Factory <input type="checkbox"/> Other _____ Volume _____ bbl Dimensions L _____ x W _____ x D _____	

3	
<input type="checkbox"/> <b>Closed-loop System:</b> Subsection H of 19 15 17 11 NMAC	
Type of Operation <input type="checkbox"/> P&A <input type="checkbox"/> Drilling a new well <input type="checkbox"/> Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)	
<input type="checkbox"/> Drying Pad <input type="checkbox"/> Above Ground Steel Tanks <input type="checkbox"/> Haul-off Bins <input type="checkbox"/> Other _____	
<input type="checkbox"/> Lined <input type="checkbox"/> Unlined Liner type Thickness _____ mil <input type="checkbox"/> LLDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____	
Liner Seams <input type="checkbox"/> Welded <input type="checkbox"/> Factory <input type="checkbox"/> Other _____	

4	
<input checked="" type="checkbox"/> <b>Below-grade tank:</b> Subsection I of 19 15 17 11 NMAC	Tank ID: C
Volume 21 bbl	Type of fluid Produced Water
Tank Construction material Steel	
<input type="checkbox"/> Secondary containment with leak detection <input type="checkbox"/> Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off	
<input type="checkbox"/> Visible sidewalls and liner <input checked="" type="checkbox"/> Visible sidewalls only <input type="checkbox"/> Other SINGLE WALLED DOUBLE BOTTOMED SIDEWALLS VISIBLE . 3	
Liner type: Thickness _____ mil <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____	

5	
<input type="checkbox"/> <b>Alternative Method:</b>	
Submittal of an exception request is required Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval	

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**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

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**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

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**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  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| - NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells   |   |
| 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 checked="" 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 ( <i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i> )  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image  | <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> )   | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| - Visual inspection (certification) of the proposed site, Aerial photo, Satellite image  | <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 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| - NM Office of the State Engineer - iWATERS database search, 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> No |
| - FEMA map   |   |

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**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 \_\_\_\_\_

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**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)

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**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

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**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)

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**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

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**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 indentify 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

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**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

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**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

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**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 Peace Title Field Environmental Advisor

Signature Jeffrey Peace Date November 9, 2011

e-mail address Peace Jeffrey@bp.com Telephone 505-326-9479

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

OCD Representative Signature: Joan D. Kelly Approval Date: 11/15/2011

Title: Compliance Officer OCD Permit Number: \_\_\_\_\_

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**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: \_\_\_\_\_

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**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

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**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

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**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

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**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 MARCOTTE GAS COM 001**

### **Siting Criteria 19.15.17.10 NMAC**

Depth to groundwater at the site is estimated to be less than 50 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 are 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 within 300 feet of a permanent residence. Figure 4 demonstrates, based on a search of the OSE database and USGS topographic maps, that there are two domestic freshwater wells 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.

The BGT subject to the attached application for a permit under 19.15.17 NMAC (New Mexico Administrative Code) was in existence prior to promulgation of 19.15.17 NMAC. A review of the best available data and a visual inspection of the siting criteria of 19.15.17 NMAC specific to the BGT in question demonstrate that the BGT does not appear to pose an imminent threat to public health and the environment.

### **Local Geology and Hydrology**

This particular site is located amongst agricultural fields just north of Route 550 south of the Animas River. Topography is dominated by the main channel of the river, its floodplain and terrace deposits. Moving away from the Animas River, eroded surfaces of the Nacimiento Formation form slopes that rise away from the main channel.

### **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 predominant geologic formation this close to the San Juan River is Quaternary alluvium. Alluvial valley fill consists of gravel, sand, silt and clay (Stone et al., 1983). In the valleys of the San Juan River and its tributaries, the alluvium does not exceed 100 feet in thickness. Terrace deposits consist of boulder gravel resting on benches cut into the Tertiary bedrock of the area. Numerous shallow wells produce water from valley fill for stock and domestic uses along the river and transmissivities are generally high. Much of the water in the valley fill of the Animas River comes from drainage of irrigated lands, as well as from underlying and adjacent bedrock units.

### **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

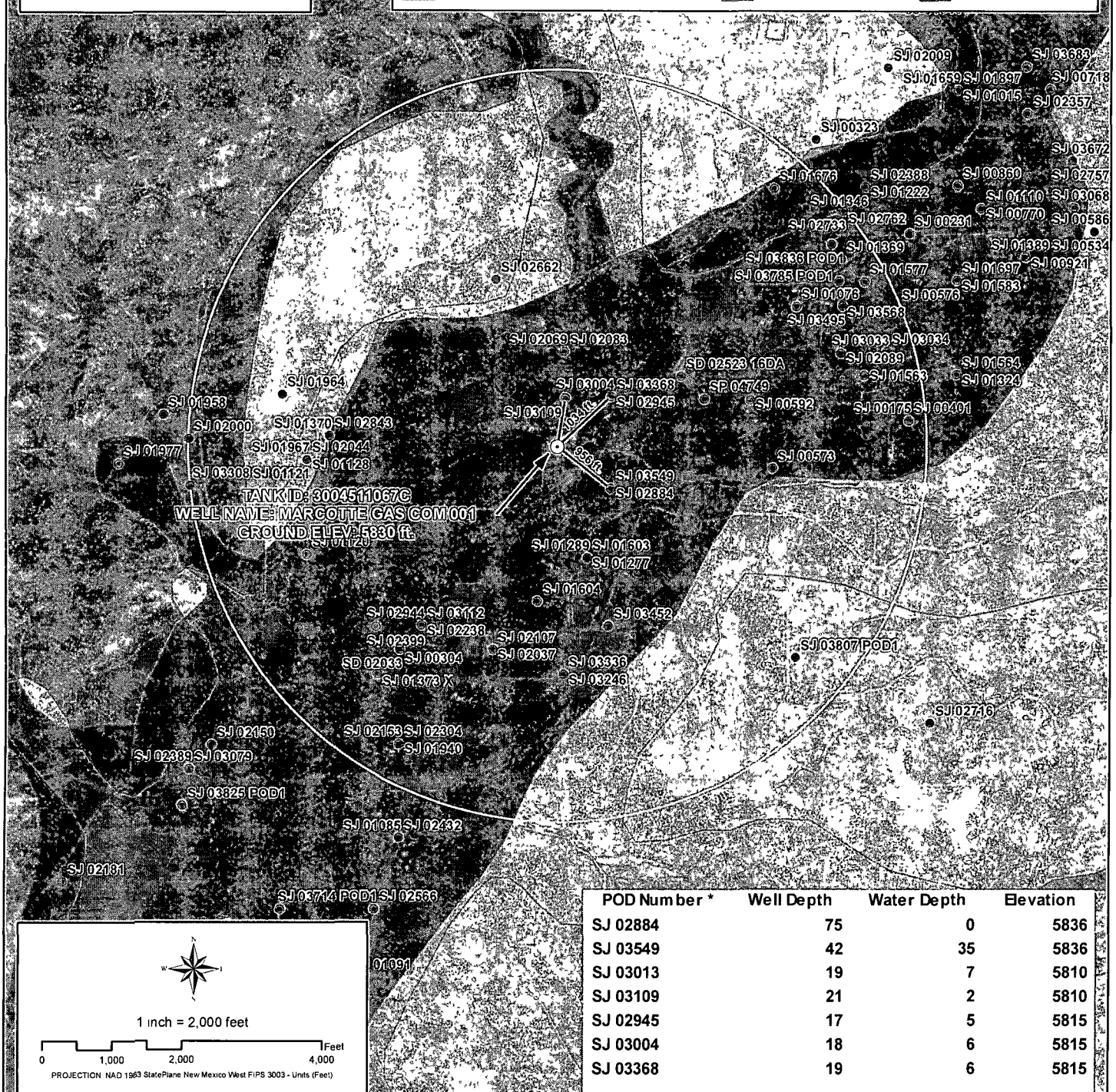
# LEGEND

- BGT Location
- Water Well 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

- Ka - Animas formation
- Kch - Cliff House sandstone
- Kf - Fruitland formation
- Kkl - Kirtland shale, lower shale member
- Kkm - Kirtland shale, Farmington sandstone member
- Kku - Kirtland shale, upper shale member
- Kl - Lewis shale
- Kmf - Menefee formation
- Koa - Ojo Alamo sandstone

## Surficial Geology Units

- Kpc - Pictured Cliffs sandstone
- Kpl - Point Lookout sandstone
- Lake
- Qa - Alluvium
- Qal - Alluvium
- Qap - Pediment gravel
- Qat - Terrace gravel
- Qes - Eolian sand
- Qg - Terrace gravel
- Qgs - Gravelly sand
- Qsw - Sheetwash alluvium
- Tbg - Bndgetimber Gravel
- Ti - Intrusive rocks
- Tn - Nacimiento formation
- Tsc - Cuba Mesa Member
- Tsj - San Jose Formation
- Tsr - Regina Member



Creation Date: 2/1/2011  
 File Path: F:\Requests\3004511067C.mxd

Created by: PRV  
 Reviewed by: AGH

bp



## GROUNDWATER LESS THAN 50 FT.

**WELL NAME: MARCOTTE GAS COM 001**

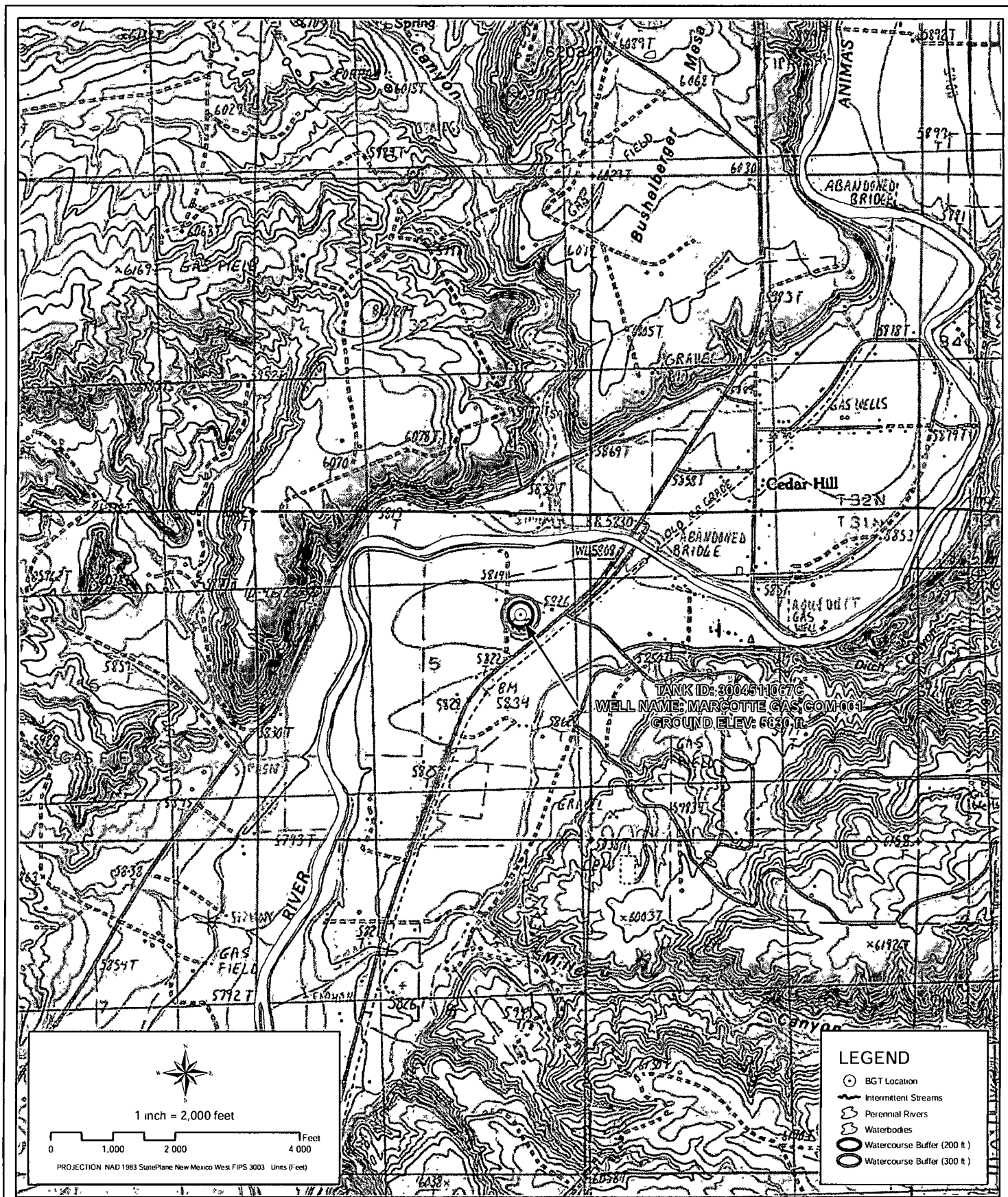
**API NUMBER: 3004511067 TANK ID 3004511067C**

**SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M. NM23**

**FIGURE**

**1**



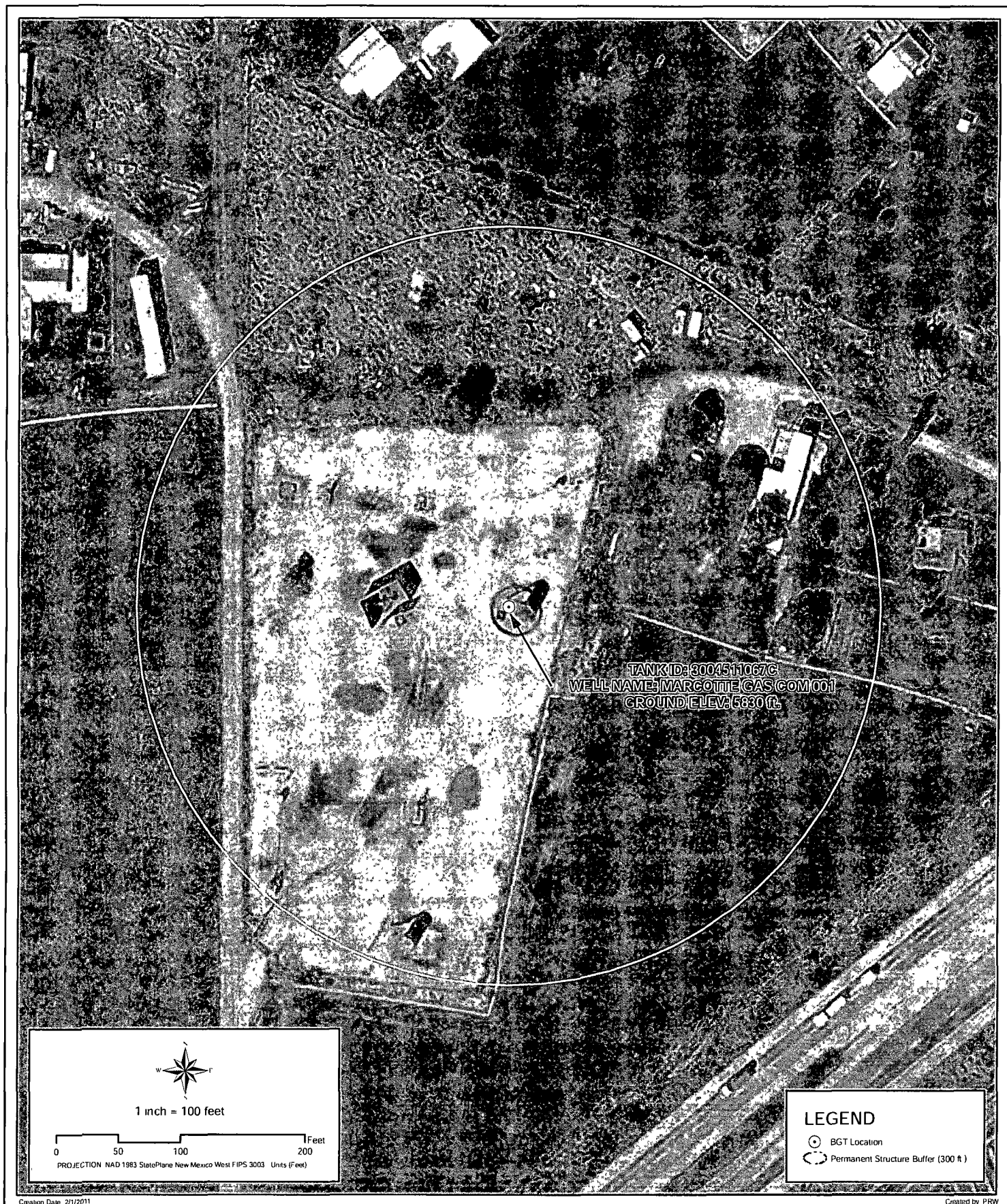


File Path: F:\Requests\3004511067C\3004511067C.mxd



**PROXIMITY TO WATERCOURSES**  
 WELL NAME: MARCOTTE GAS COM 001  
 API NUMBER: 3004511067 TANK ID: 3004511067C  
 SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M. NM23

**FIGURE**  
**2**



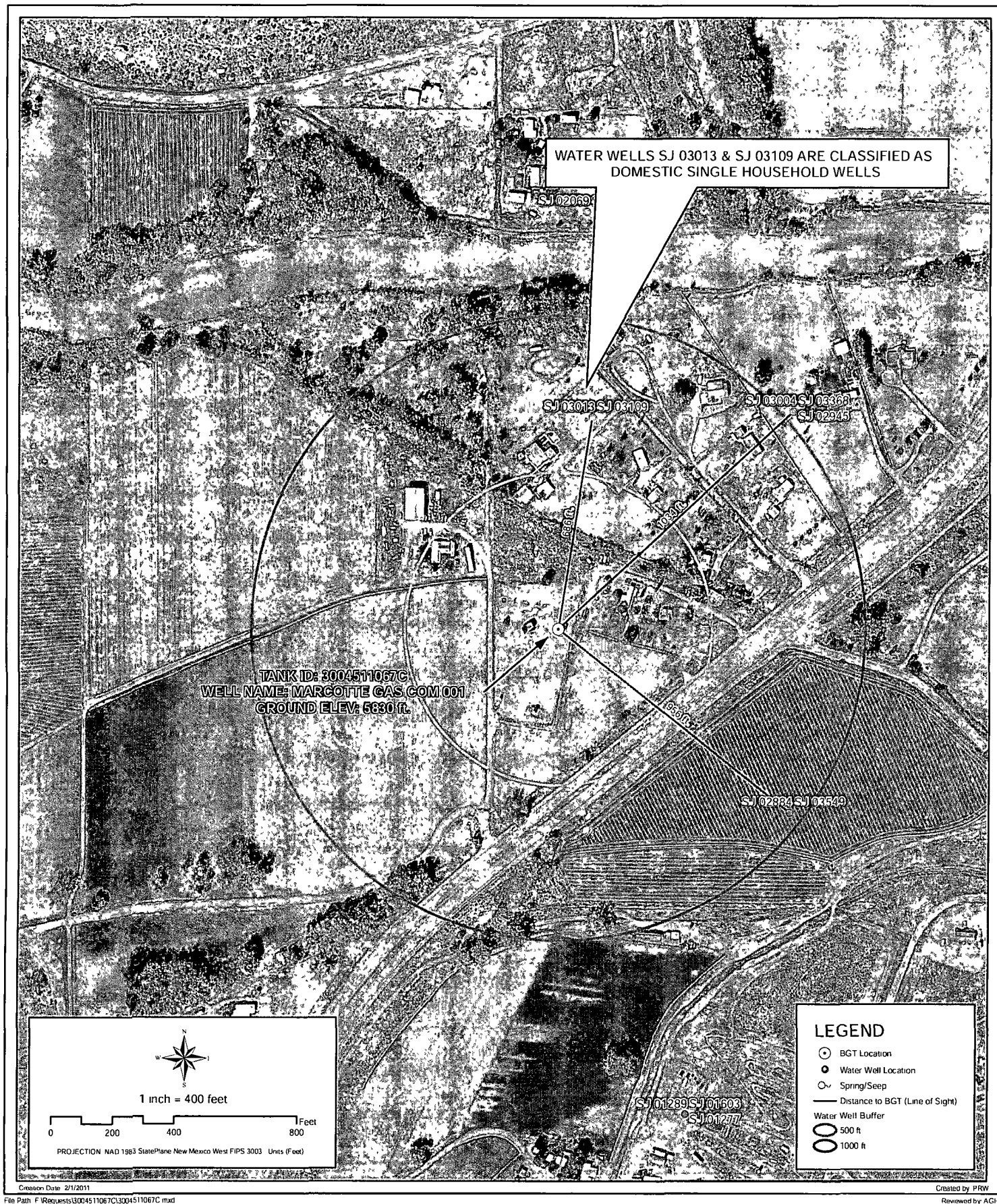
## PROXIMITY TO PERMANENT STRUCTURE

WELL NAME: MARCOTTE GAS COM 001

API NUMBER: 3004511067 TANK ID: 3004511067C  
 SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M. NM23

FIGURE  
 3





## PROXIMITY TO WATER WELLS

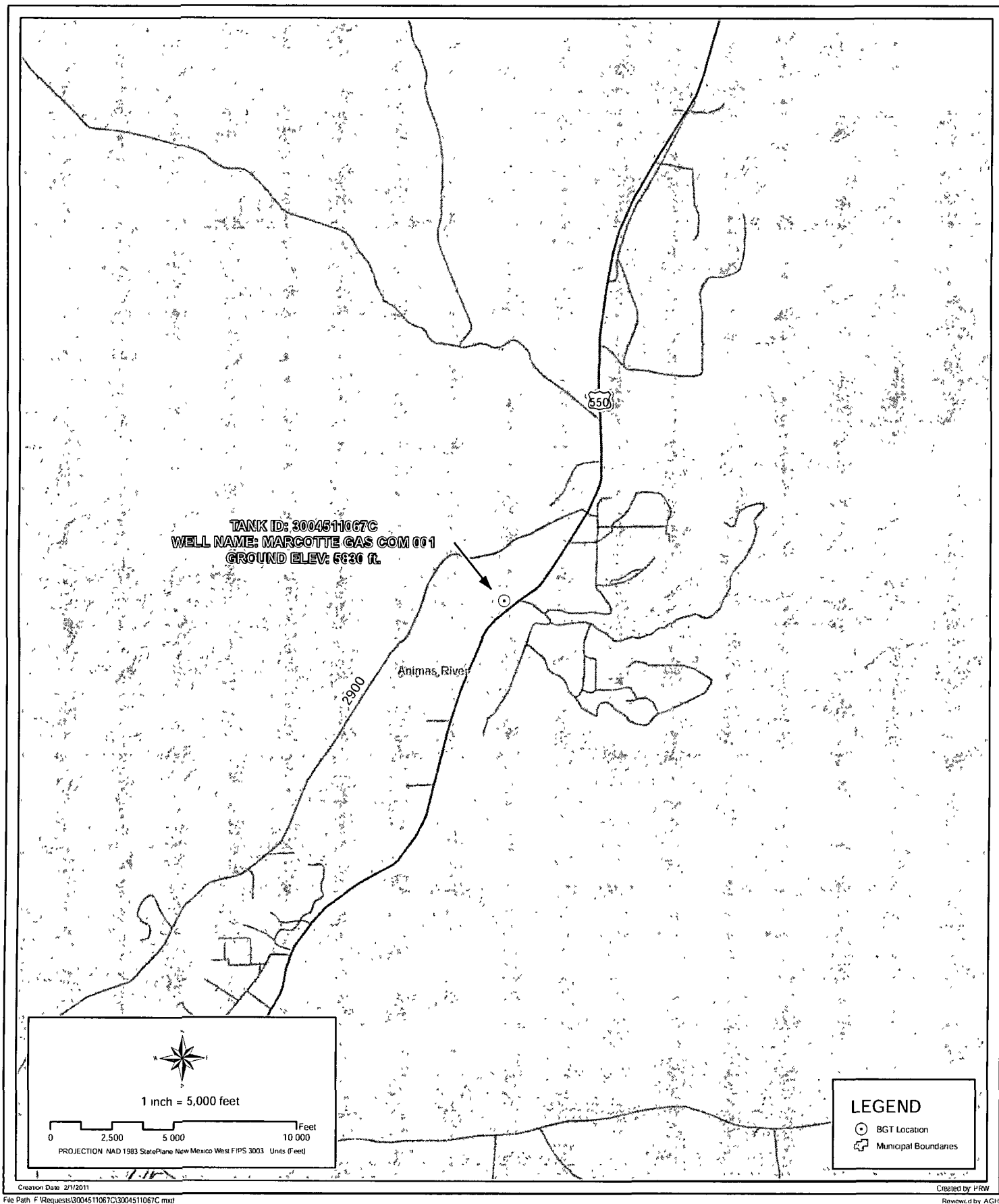
WELL NAME: MARCOTTE GAS COM 001

API NUMBER: 3004511067 TANK ID: 3004511067C

SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M. NM23

FIGURE

4



## PROXIMITY TO MUNICIPAL BOUNDARY

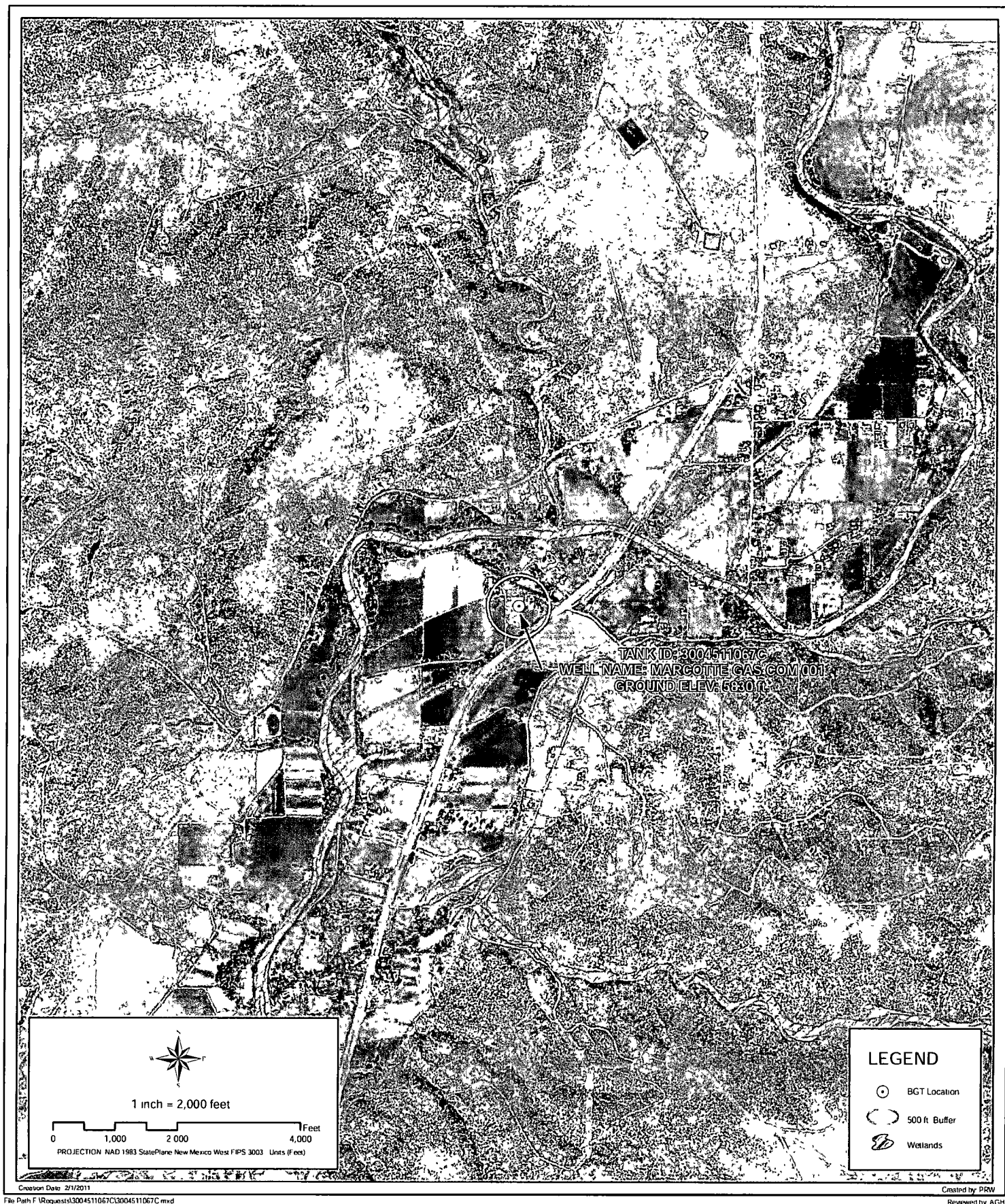
WELL NAME: MARCOTTE GAS COM 001

API NUMBER: 3004511067 TANK ID: 3004511067C

SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M. NM23

FIGURE

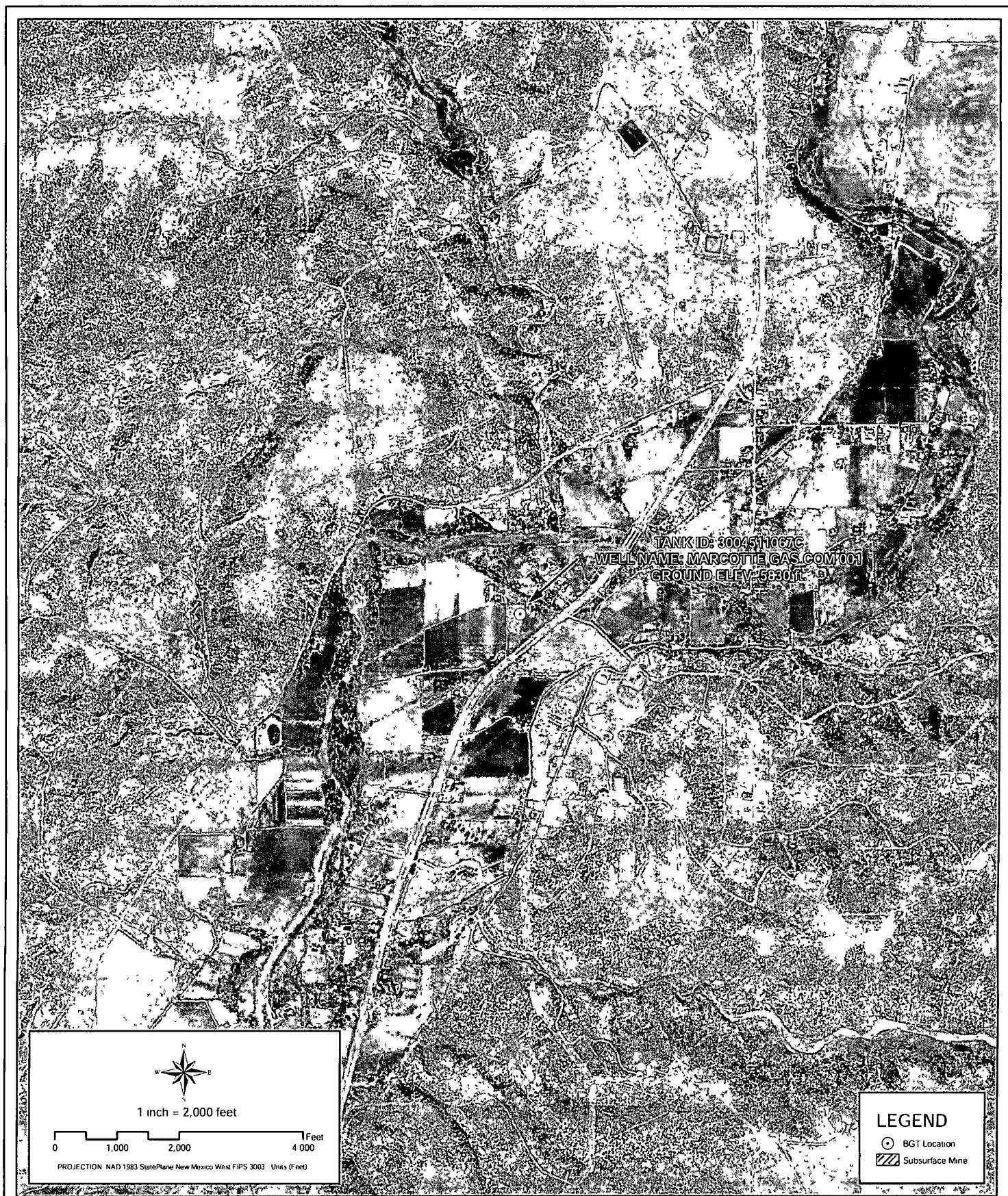
5



**PROXIMITY TO WETLANDS**  
WELL NAME: MARCOTTE GAS COM 001  
API NUMBER: 3004511067 TANK ID: 3004511067C  
SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M. NM23

**FIGURE**  
**6**





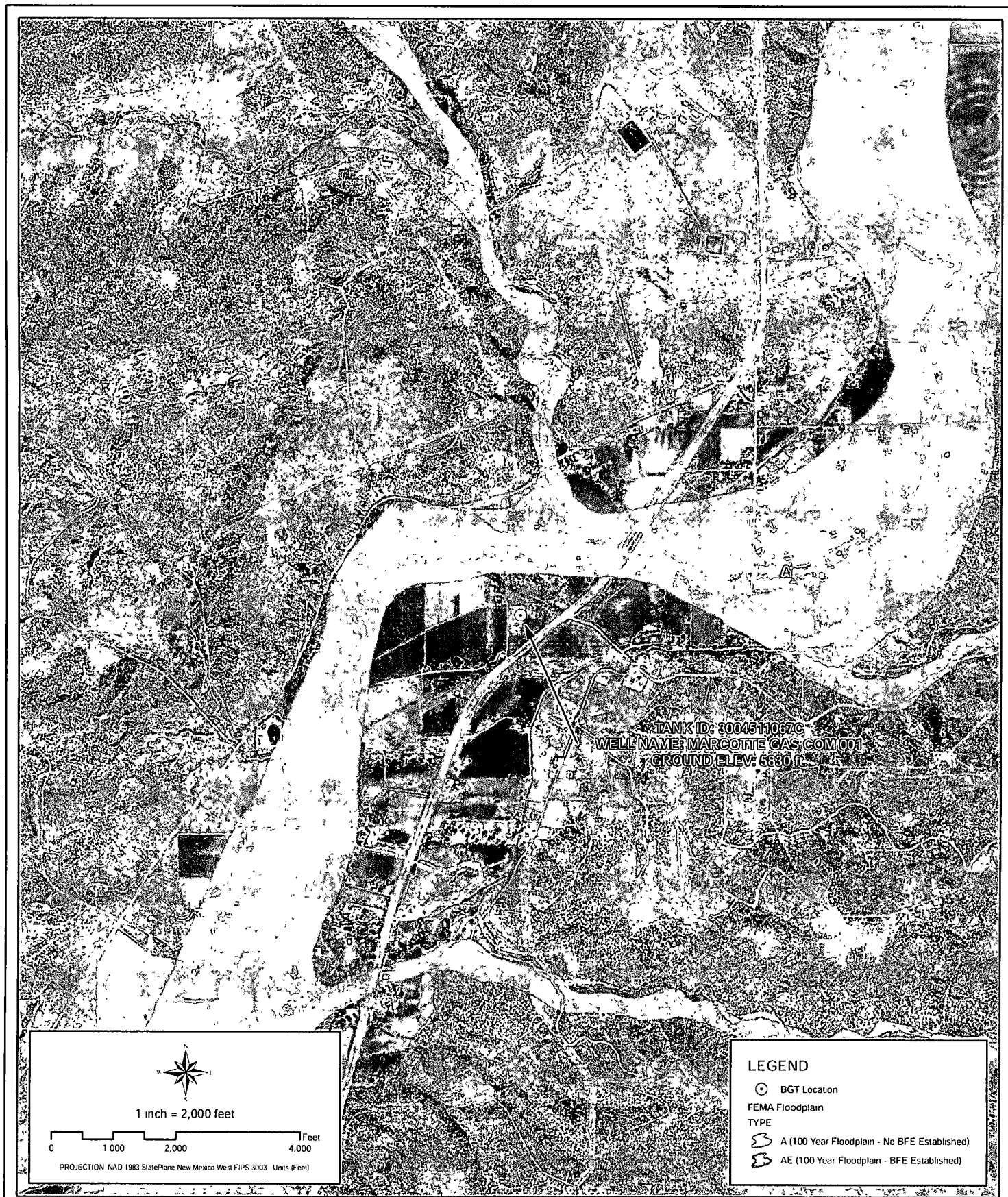
# PROXIMITY TO SUBSURFACE MINES

WELL NAME: MARCOTTE GAS COM 001

API NUMBER: 3004511067 TANK ID: 3004511067C  
SECTION 5, TOWNSHIP 31.0N, RANGE 10W, P.M.NM23

FIGURE

7



**PROXIMITY TO FLOODPLAIN**  
WELL NAME: MARCOTTE GAS COM 001  
 API NUMBER: 3004511067 TANK ID: 3004511067C  
 SECTION 5, TOWNSHIP 31.0N, RANGE 10W, 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. 1 - 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. 1 - 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 within 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 cover will be constructed to the site's existing grade and all practicable efforts will be made to prevent ponding of water and erosion of the cover material.
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.
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.