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.

8315

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

Type of action: X 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: ROBERT L BAYLESS, PRODUCER LLC OGRID #: 150182
Address. PO BOX 168 FARMINGTON, NM 87499
Facility or well name: HORSESHOE GALLUP 18-16H
API Number: 30-045-35300 OCD Permit Number: NOT ASSIGNED
U/L or Qtr/Qtr P Section 18 Township 30N Range 15W County: SAN JUAN
Center of Proposed Design: Latitude 36.80744 N Longitude 108 44983 W NAD ☐1927 X 1983
Surface Owner: X Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
X **Pit:** Subsection F or G of 19.15 17.11 NMAC
Temporary: X Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded X Factory ☐ Other _____ Volume: 16,000 bbl Dimensions: L 150' x W 60' x D 10'

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 _____

RECEIVED
MAY 2011
OIL CONS. DIV.

4
☐ **Below-grade tank:** Subsection I of 19.15 17 11 NMAC
Volume: _____bbl Type of fluid: _____
Tank Construction material. _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
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)*

X Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

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

X Signed in compliance with 19.15.3.103 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	☐ Yes ☒ 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	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ 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	☐ Yes ☒ 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	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS, NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ 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_2S, 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 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

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	☐ Yes ☒ No ☐ 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	☐ Yes ☒ No ☐ 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	☐ Yes ☒ No ☐ 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	☐ Yes ☒ 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	☐ Yes ☒ 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	☐ Yes ☒ 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	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map, Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ 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): John D. Thomas Title: Operations Engineer

Signature: John D Thomas Date: 5/16/11

e-mail address jthomas@rlbayless.com Telephone: 505-326-2659

20.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: Jonathan D. Kelly **Approval Date:** 7/19/2011

Title: Compliance Officer **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 indentify 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.

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name

4 Property Code	5 Property Name	6 Well Number
	HORSESHOE GALLUP 18	16H

7 OGRID No	8 Operator Name	9 Elevation
150182	ROBERT L. BAYLESS, PRODUCER LLC	5377

10 Surface Location

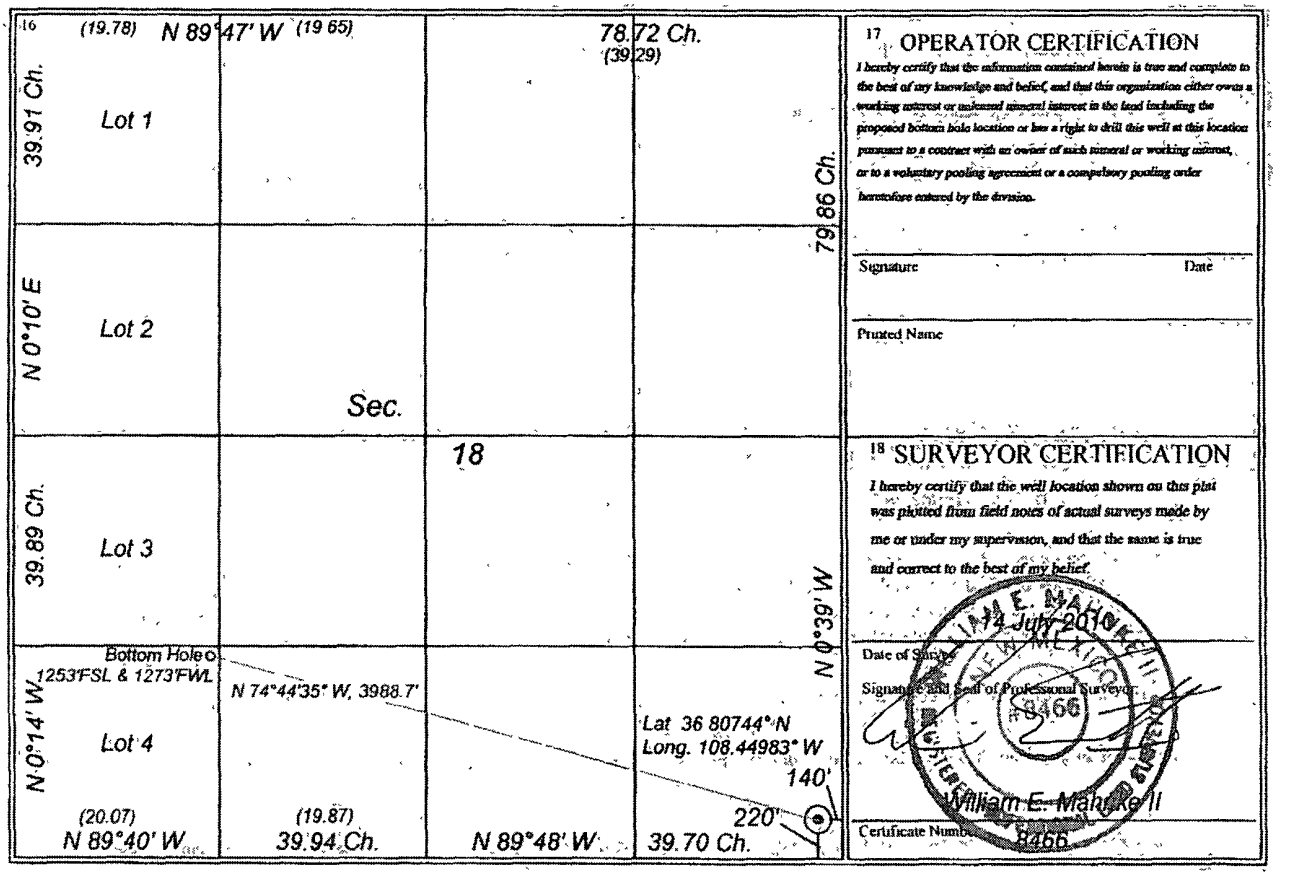
UL or Lot No	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
P	18	30 N	15 W		220	South	140	East	San Juan

11 Bottom Hole Location If Different From Surface

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
M	18	30 N	15 W		1253	South	1273	West	San Juan

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

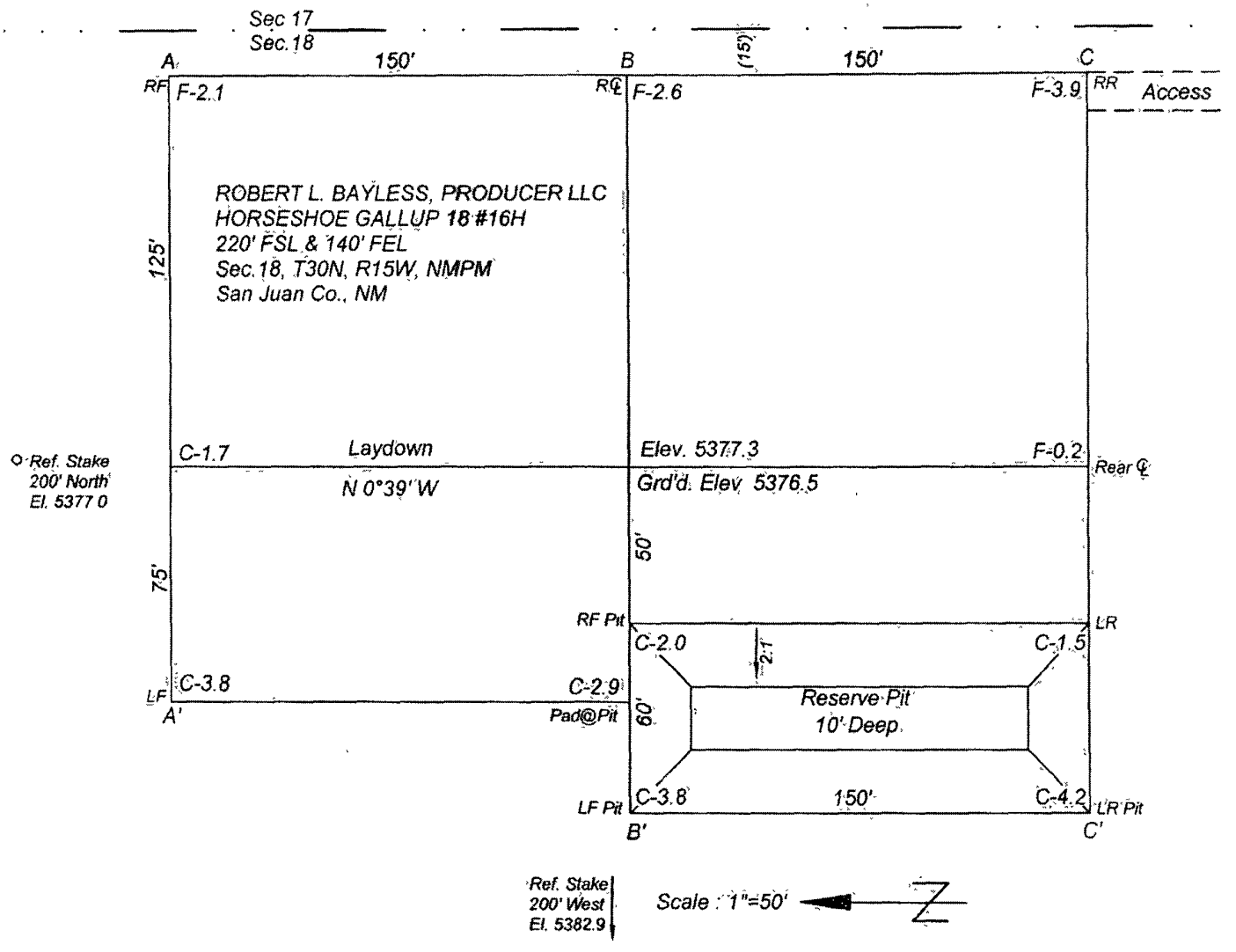
14 July 2010

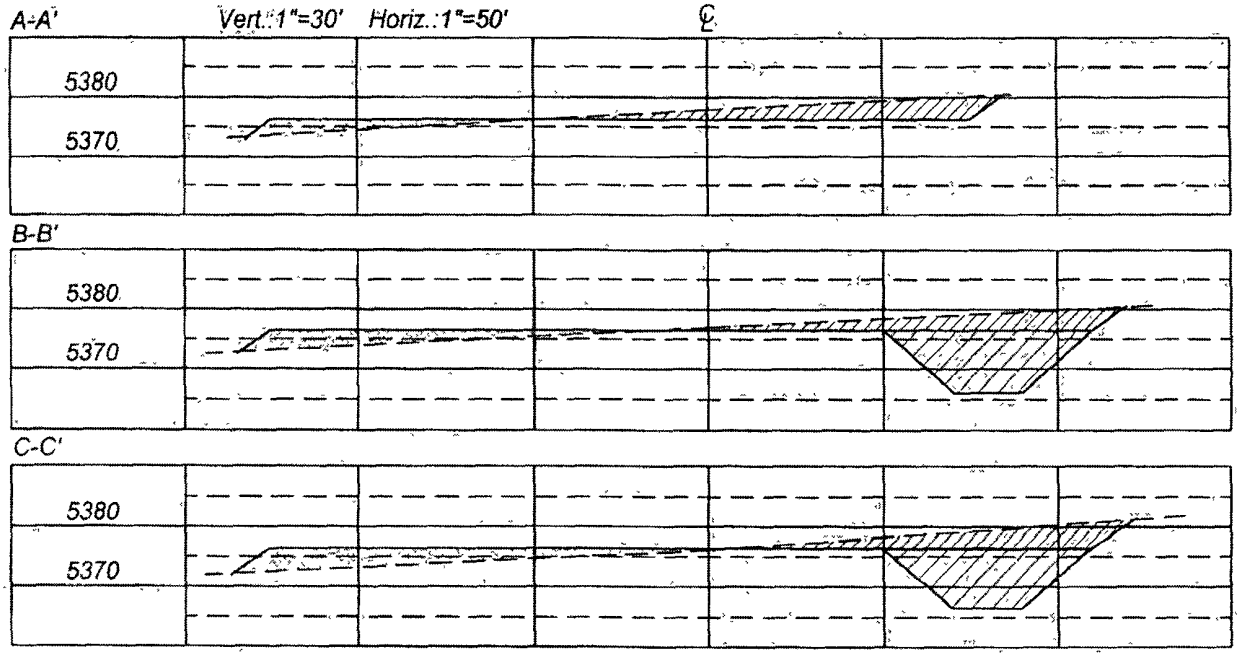
Date of Survey

Signature and Seal of Professional Surveyor

William E. Mahnke II

Certificate Number 9466


Sec 17
Sec.18
A
150'
B
(15)
150'
C
RF
F-2.1
RC
F-2.6
F-3.9
RR
Access
ROBERT L. BAYLESS, PRODUCER LLC
HORSESHOE GALLUP 18 #16H
220' FSL & 140' FEL
Sec.18, T30N, R15W, NMPM
San Juan Co., NM
125'
Ref. Stake
200' North
El. 5377.0
C-1.7
Laydown
N 0°39' W
Elev. 5377.3
F-0.2
Rear C
Grd'd. Elev. 5376.5
75'
50'
RF Pit
LR
C-2.0
2.1
C-1.5
LF
C-3.8
C-2.9
Pad@Pit
A'
60'
Reserve Pit
10' Deep
LF Pit
C-3.8
150'
C-4.2
LR Pit
B'
C'
Ref. Stake
200' West
El. 5382.9
Scale: 1"=50'


A-A'
Vert. 1"=30'
Horiz. 1"=50'
5380
5370
B-B'
5380
5370
C-C'
5380
5370

Pit Permit Siting Criteria Information Sheet	Company:	Robert L Bayless, Producer LLC
	Project:	Pit Permit
	Revised:	7/29/2010
	Prepared by:	John D Thomas

API #:	NA	**USPLSS:**	S18P, T30N, R15W
Name:	Horseshoe Gallup 18-16H	**Lat/Long:**	36.80744, -108.44983
Distance to closest continuously flowing watercourse:	4.25 miles Northeast of the San Juan River	**Geologic Formation:**	
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	4896' SE of Westwater Arroyo; 1462' S of second order tributary; 387' N of first order tributary	**Soil Type:**	
Permanent residence, school, hospital, institution or church within 300'	NO	**Annual Precipitation:**	8.39" - Farmington; 7.62" - Shiprock; 8.34"-Kirtland
Domestice fresh water well or spring within 500'	NO	**Precipitation Notes:**	
Any other fresh water well or spring within 1000'	NO		
with incorporated municipal boundaries	NO	**Attached Documents:**	Site Visit Survey Hydrogeologic report Topograpic Map Aerial Photo Mines, Mills and Quarries Map-1 Mines, Mills, and Quarries-2 FEMA Flood Map
Within defined municipal fresh water well field	NO		
Wetland within 500'	NO	**Mining Activity:**	1.75 Miles west of San Juan Coal Mine
Within unstable area	NO		
Within 100 year flood plain	NO - located within Zone X (500-yr floodplain)		

Additional Notes:

Robert L Bayless, Producer LLC
San Juan Basin
Pit Design and Construction Plan

In accordance with Rule 19.15.7.11 NMAC the following information describes the design and construction of temporary pits on Robert L Bayless, Producer LLC locations. This is Bayless' standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

General Plan

1. Bayless will design and construct a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public and environment.
2. Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.
3. Bayless will post a well sign in compliance with 19.15.3.103 NMAC, on the well site prior to construction of the temporary pit. The sign will list the Operator on record as the operator, the location of the well site by unit letter, section, township, range, and emergency telephone numbers.
4. Bayless shall construct all new fences utilizing 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.
5. Bayless shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure.
6. Bayless shall construct the pit so that the slopes are no steeper than two horizontal feet to one vertical foot.
7. Pit walls will be walked down by a crawler type tractor following construction.
8. All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.
9. Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided.
10. All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep.
11. Bayless will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used when possible. Bayless will ensure all field seams are welded by qualified personnel. Field Seams will be overlapped four to six inches and will be oriented parallel to the line for maximum slope. Bayless will minimize the number of field seams in corners and irregularly shaped areas.
12. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
13. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some areas.
14. The volume of the pit shall not exceed, 10 acre-feet, including freeboard.

Robert L Bayless, Producer LLC
San Juan Basin
Maintenance and Operating Plan

In accordance with Rule 19.15.7.12 NMAC the following information describes the design and construction of temporary pits on Robert L Bayless, Producer LLC locations. This is Bayless' standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

General Plan

1. Bayless will operate and maintain a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public and environment.
2. Bayless will conserve drilling fluids by transmitting liquids to pits ahead of the rigs whenever possible. All drilling fluids will be disposed at Basin Disposal Inc, Permit #NM-01-005.
3. Bayless will not discharge or store any hazardous waste in any temporary pit.
4. If any pit liner integrity is compromised, or if any penetration of the liner occurs above the liquid surface, then Bayless shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner.
5. If a leak develops below the liquid level, Bayless shall remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner. Bayless shall notify the Aztec Division office by phone or email within 48 hours of the discovery for leaks less than 25 barrels. Bayless shall notify the Aztec division office as required pursuant to Subsection B of 19.15.3.116 NMAC within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19.15.3.116 NMAC shall be reported to the division's Environmental Bureau Chief.
6. The liner shall be protected from any fluid force or mechanical damage through the use of mud pits slides, or a manifold system.
7. The pit shall be protected from run-off by construction and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
8. Bayless shall immediately remove any visible layer of oil from the surface of the temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from pits surface. An oil absorbent boom will be stored on-site until closure of pit.
9. Only fluids generated during the drilling or workover process will be discharged into a temporary pit.
10. Bayless will maintain the temporary pit free of miscellaneous solid waste or debris.
11. During drilling or workover operations, Bayless will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspection will logged and logs maintained for review. Bayless will file this log with the Aztec Division office upon closure of the pit.
12. After drilling or workover operations, Bayless will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspection will be stored at Bayless' office electronically and will be filed with the Aztec Division office upon closure of the pit.
13. Bayless shall maintain at least two feet of freeboard for a temporary pit.
14. Bayless shall remove all free liquids from a temporary pit within 30 days from the date the operator releases the drilling or workover rig.

Robert L Bayless, Producer LLC
San Juan Basin
Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of temporary pits on Robert L Bayless, Producer LLC locations. This is Bayless' standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of pit closure. Closure report will be filed on C-144 and incorporate the following:

- Details on Capping and Covering, where applicable.
- Plot Plan (Pit Diagram)
- Inspection Reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk

General Plan

1. All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycled, reused, or reclaimed in a manner that the Aztec Division office approves.
2. The preferred method of closure for all temporary pits will be on-site, in-place burial, assuming that all criteria listed in sub-section (B) of 19.15.17.13 are met.
3. The surface owner shall be notified of Bayless' proposed closure plan u sing a means that provides proof of notice i.e., Certified mail, return receipt requested.
4. Within 6 months of the Rig Off Status occurring Bayless will ensure that temporary pits are closed, re-contoured, and reseeded.
5. Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally. The notification of closure will include the following:
    i. Operators Name
    ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.
6. Liner of temporary pit shall be removed above "mud level" after stabilization. Removal of liner will consist of manually or mechanically cutting liner at mud level and removing all remaining liner. Care will be taken to remove "ALL" of the liner i.e., edges of liner entrenched or buried. All excessive liner will be disposed of at a licensed disposal facility.
7. Pit contents shall be mixed with non-waste containing, earthen material in order to achieve appropriate solidification. The solidification process will be mixed with no-waste, earthen material to a consistency that is deemed safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents.
8. A five point composite sample will be taken of the pit using sampling tolls and all samples tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the criteria are not met, all contents

will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul. Disposal facility to be utilized should this method be required will be Envirotech Permit No. NM01-0011 or IEI, Permit No. NM01-0010B.

Components	Test Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500

9. Upon completion of solidification and testing, the pit area will be backfield with compacted, non-waste containing, earthen material. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, ponding prevention, and erosion prevention. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
11. Notification will be sent to OCD when the reclaimed area is seeded.
12. Bayless shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division approved methods. BLM of Forest Service stipulated seed mixes will be used on Federal Lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including consisting of at least three native perennial vegetative growth occurs.
13. The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon abandonment of all the wells on the pad. The marker will be flush with the ground to allow access of the active will pad and for safety concerns. The marker will include a threaded collar to be used for future abandonment. The top of the marker will contain a welded steel 12" square place that indicates the onsite burial of the temporary pit. The plate will be easily removable and a four foot tall riser will be threaded into the top of the collar marker and welded around the base with the operator's information at the time all wells on the pad are abandoned. The operator's information will include the following: Operators Name, Lease Name, Well name and Number, Unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location.

Horsheshoe Gallup 18-16H
Hydrogeological report for Siting Criteria

Regional Geological context:

The project is located in the northwestern corner of the San Juan Basin, a geologic sub-province of the Colorado Plateau. The San Juan Basin is approximately 140 miles wide (east to west) and approximately 200 miles long (north to south). The basin is primarily located in northwest New Mexico with a portion located in southwestern Colorado.

Surface geologic material in the proposed project area is Pictured Cliffs Sandstone Formation (see Figure 1) of Late Cretaceous age (Fassett and Hinds, 1971). This formation outcrops near the north, west and southern boundaries of the central San Juan Basin. The Pictured Cliffs is a gas reservoir formation consisting of sandstone, siltstone and shale. The formation contains an upper cliff forming sandstone and lower fine grained sandstone with inter bedded shales and siltstones (Fassett and Hinds, 1971; Molenaar, 1977).

The Fruitland Formation conformably overlies the Pictured Cliffs Sandstone, with a prominent transition apparent from the shale to the sandstone formation. The Pictured Cliffs Sandstone conformably overlies the Lewis Shale with intertonguing of the formations at the contact (Baltz, 1967; Fassett and Hinds, 1971; Molenaar, 1977).

Thickness of the Pictured Cliff Sandstone Formation ranges from zero on the east side of the San Juan Basin, to a maximum of approximately 400 feet in the north central part of the basin (Fassett and Hinds, 1971, Molenaar, 1977). In the vicinity of the project area the thickness is approximately 150 to 200 feet.

Hydraulic Properties:

Reported transmissivity and hydraulic conductivity data for the Pictured Cliff Sandstone were determined from aquifer tests associated with coal development activities. The transmissivity determined from these tests ranges from 0.001 to 3 feet squared per day. Based on permeability data, an estimated hydraulic conductivity is 0.007 feet per day (Stone et al, 1983).

Specific conductance of water produced from the Pictured Cliffs Sandstone formation range from 2,000 umhos in near surface areas to 30,000 umhos in deeper areas of the formation. The formation is not considered a ground water aquifer, although shallow wells are present near outcrop areas (Stone, et al, 1983).

Site Specific Hydrogeology:

A search of water log/meter reports from the New Mexico State Engineers Office – WATERS Database was completed for Sections 17, 18, 19 and 20; Township 30 North;

Range 15 West. No wells were found in the database for these sections. No records for water column or average depth to water were available for these sections from the WATERS Database.

The primary aquifers in the general San Juan Basin area are the Uinta-Animas and the Mesaverde aquifers, which are sandstone based. The potentiometric surface of the Uinta-Animas and the Mesa Verde aquifer system are highly variable.

The project area is located immediately west of the San Juan Generating Station and east of the Hogback monocline (see Figures 1 and 2). The general topography of the project area consists of broad alluvial fans and flats areas intersected by dry washes and arroyos. Vegetation type in the project area consists of Inter-Mountain Basins Semi-Desert Grassland, Inter-Mountain Basins Mixed Salt Desert Scrub and Inter-Mountain Basins Shale Badland (USGS 2008). Soil types in the project area consist of Blancot – Notal Association and Badland – Monierco – Rock Outcrop Complex (USDA 2010).

References:

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east-central San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.

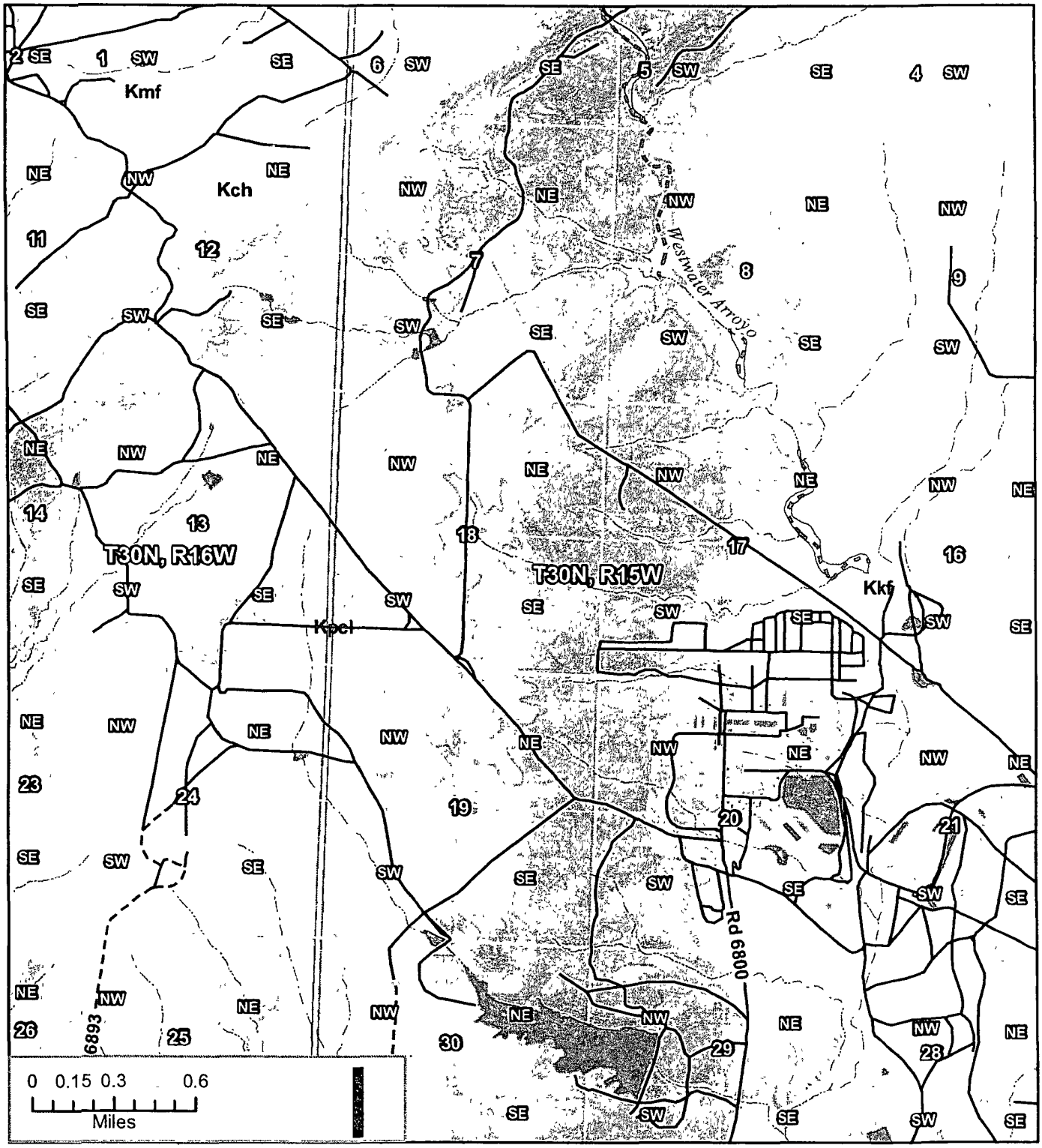
Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.

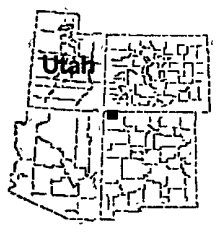
Molenaar, C.M., 1977, Stratigraphy and depositional history of Upper Cretaceous rocks of the San Juan Basin area, New Mexico and Colorado, with a note on Economic resources, in Fassett, J.E., ed., Guidebook of San Juan Basin III: New Mexico Geological Society, 28th Field Conference, p. 159-166.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

US Department of Agriculture, Natural Resources Conservation Service. 2010. Soil Survey Geographic (SSURGO) Database (Computer File).

U.S. Geological Society Gap Analysis Program. 2008. 'PROVISIONAL' Digital Landcover Dataset for the Southwestern United States (Computer file). Logan, Utah, USA: RS/GIS Laboratory, College of Natural Resources, Utah State University,



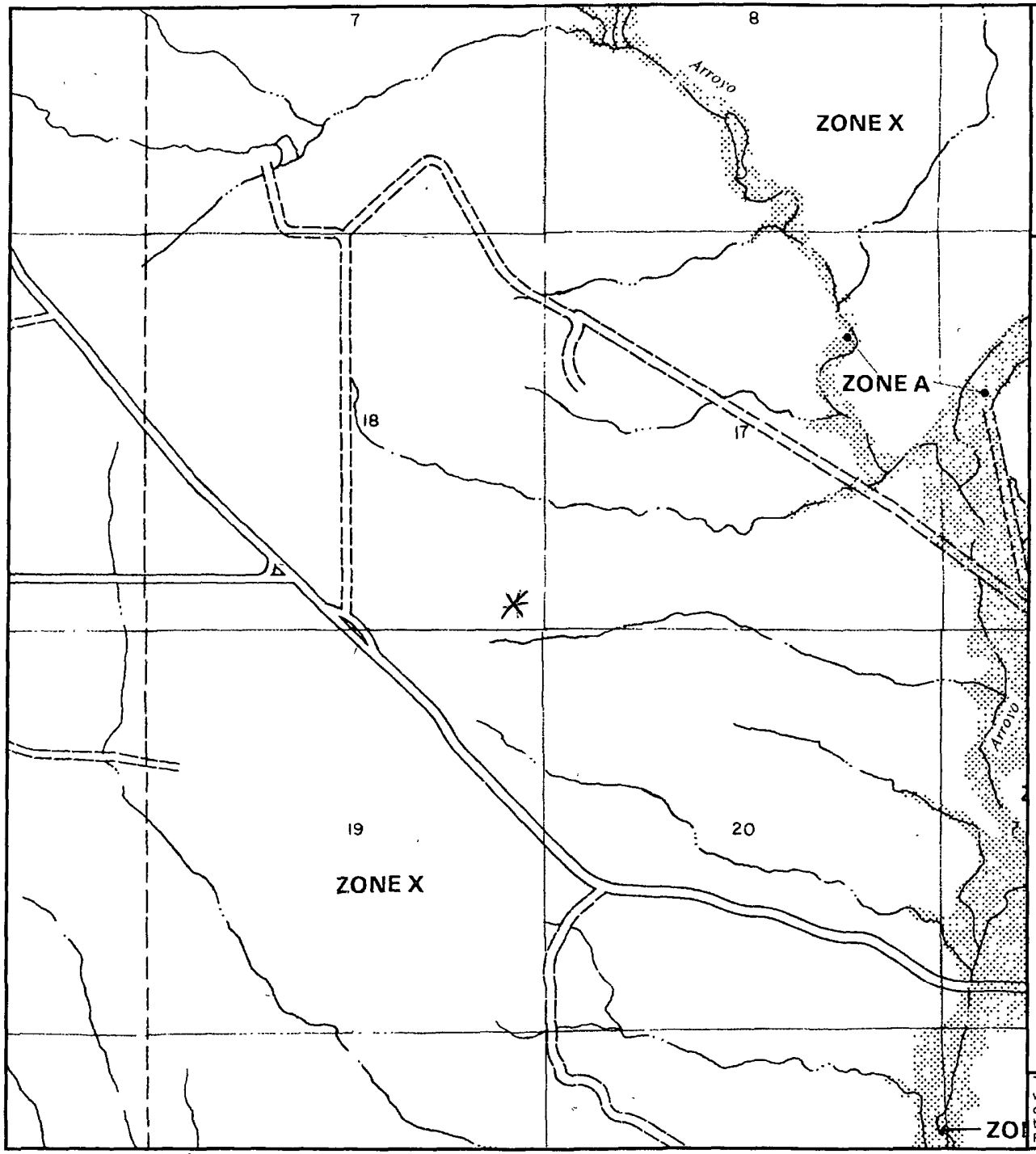


Robert L Bayless, Producer LLC

Horseshoe Gallup 18-16H

TOWNSHIP 30 NORTH RANGE 15 WEST SECTION 18	FIGURE 1
WATERFLOW, NM QUADRANGLE	SURFACE GEOLOGY
SAN JUAN COUNTY, NEW MEXICO	8/3/2010

ECOSPHERE
ENVIRONMENTAL SERVICES



N

APPROXIMATE SCALE

2000 0 2000 FEET

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined
- ZONE AE — Base flood elevations determined
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 100-year flood

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones

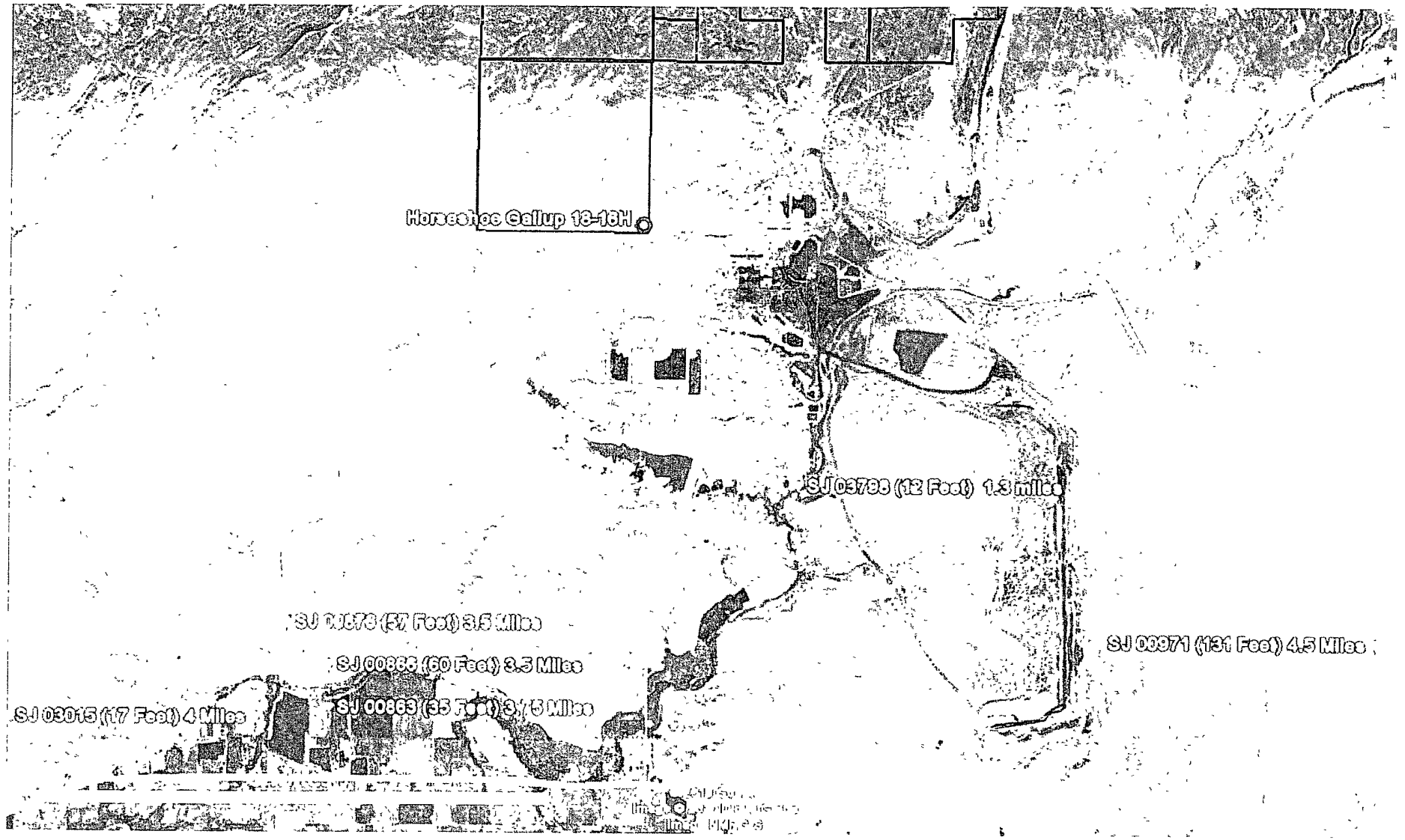
513 — Base Flood Elevation Line, Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

$RM7_X$ — Elevation Reference Mark

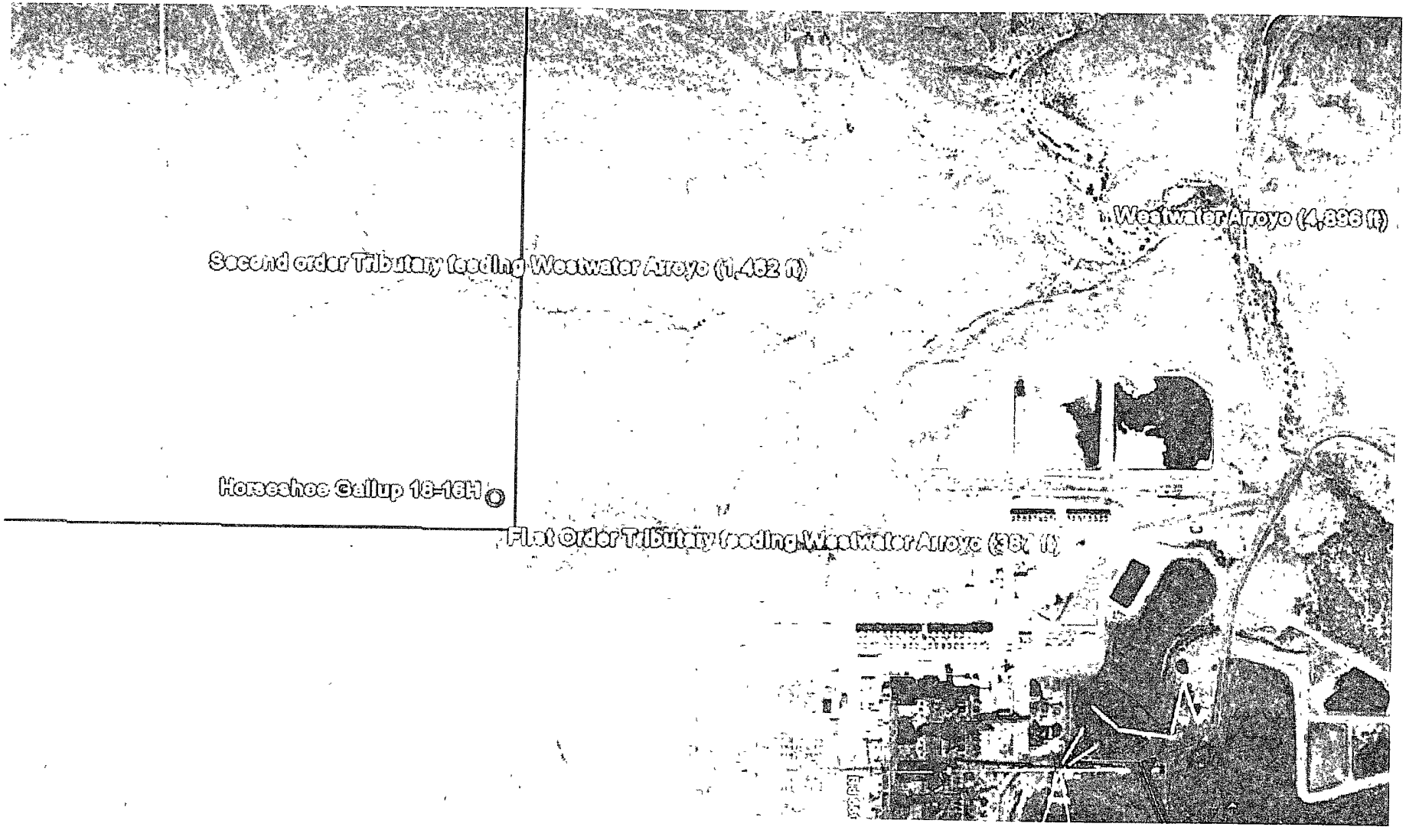
*Referenced to the National Geodetic Vertical Datum of 1929



Robert L Bayless, Producer LLC
368 NM HWY 170
Farmington, NM 87401

Horseshoe Gallup 18-16H
(S18P T30N R15W)

iWaters Groundwater Data Map



Robert L Bayless, Producer LLC
368 NM HWY 170
Farmington, NM 87401

Horseshoe Gallup 18-16H
(S18P T30N R15W)

Ariel Photograph / Distance to Water Course

Robert L Bayless, Producer LLC
368 NM HWY 170
Farmington, NM 87401

Horseshoe Gallup 18-16H
(S18P T30N R15W)

Mines, Mills, and Quarries Map

New Mexico Office of the State Engineer
Wells with Well Log Information

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

POD Number	Sub basin	Use	County	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Start Date	Finish Date	Log File Date	Depth Well	Depth Water
SJ 00876		DOM	SJ	Shallow	4 2	35	30N	16W	188709	4075324*	06/27/1979	06/30/1979	07/11/1979	77	57
SJ 02392		PUB	SJ		4 2	35	30N	16W	188709	4075324*	08/07/1992	08/10/1992	09/04/1992	133	
SJ 03015		DOM	SJ	Shallow	4 3 4	35	30N	16W	188377	4074432*	06/22/2000	06/22/2000	07/03/2000	43	17

Record Count: 3

PLSS Search:

Township: 30N **Range:** 16W

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Wells with Well Log Information

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

POD Number	Sub basin	Use	County	Source	q q q 64 16 4	Sec	Tws	Rng	X	Y	Start Date	Finish Date	Log File Date	Depth Well	Depth Water
SJ 00815 0		MON	SJ	Artesian	3 3 4	27	30N	15W	196254	4075749*	10/17/1978	10/17/1978	11/07/1978	231	
SJ 00815 EXPLOR-2		MON	SJ	Artesian	4 3 3	22	30N	15W	195711	4077373*	10/14/1978	10/14/1978	11/07/1978	240	
SJ 00815 EXPLORE-1		MON	SJ	Artesian	1 3 4	27	30N	15W	196254	4075949*	10/10/1978	10/10/1978	11/07/1978	234	
SJ 00815 O-EXPLORE		MON	SJ	Artesian	1 3 4	27	30N	15W	196254	4075949*	10/17/1978	10/17/1978	11/07/1978	231	
SJ 00971 EXPLORE-1		EXP	SJ	Shallow	3 4 1	36	30N	15W	198976	4074792	04/04/1978	04/12/1978	08/13/1980	532	102
SJ 00971 EXPLORE-2		EXP	SJ	Shallow	3 4 1	36	30N	15W	198976	4074792	04/07/1978	04/11/1978	08/13/1980	524	131
SJ 03798 POD1		PRO	SJ	Shallow	2 2 4	29	30N	15W	193601	4076464	06/15/2007	06/15/2007	06/29/2007	35	12

Record Count: 7

PLSS Search:

Township: 30N **Range:** 15W

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00863		DOM	SJ		3	3	36	30N	16W	189081	4074503*	45	35	10
SJ 00866		IRR	SJ		1	3	36	30N	16W	189096	4074906*	90	60	30
SJ 00876		DOM	SJ		4	2	35	30N	16W	188709	4075324*	77	57	20
SJ 02392		PUB	SJ		4	2	35	30N	16W	188709	4075324*	133		
SJ 03015		DOM	SJ	4	3	4	35	30N	16W	188377	4074432*	43	17	26
SJ 03232		DOM	SJ	2	3	4	35	30N	16W	188377	4074632*	40		

Average Depth to Water: **42 feet**
Minimum Depth **17 feet**
Maximum Depth. **60 feet**

Record Count: 6

Basin/County Search:

Basin: San Juan

PLSS Search:

Township: 30N **Range:** 16W

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00815 0		MON	SJ	3	3	4	27	30N	15W	196254	4075749*	231		
SJ 00815 EXPLOR-2		MON	SJ	4	3	3	22	30N	15W	195711	4077373*	240		
SJ 00815 EXPLORE-1		MON	SJ	1	3	4	27	30N	15W	196254	4075949*	234		
SJ 00815 O-EXPLORE		MON	SJ	1	3	4	27	30N	15W	196254	4075949*	231		
SJ 00971 EXPLORE-1		EXP	SJ	3	4	1	36	30N	15W	198976	4074792	532	102	430
SJ 00971 EXPLORE-2		EXP	SJ	3	4	1	36	30N	15W	198976	4074792	524	131	393
SJ 03798 POD1		PRO	SJ	2	2	4	29	30N	15W	193601	4076464	35	12	23

Average Depth to Water. **81 feet**

Minimum Depth: **12 feet**

Maximum Depth: **131 feet**

Record Count: 7

Basin/County Search:

Basin: San Juan

PLSS Search:

Township: 30N **Range:** 15W

***UTM location was derived from PLSS - see Help**