

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

2847

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

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

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

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

1  
Operator HALLADOR PETROLEUM LLP OGRID #. 12672  
Address 1660 LINCOLN ST., SUITE 2700, DENVER, CO 80264  
Facility or well name HORTON 2 (north tank)  
API Number: 30-045-11371 OCD Permit Number \_\_\_\_\_  
U/L or Qtr/Qtr A Section 22 Township 32 N Range 11 W County SAN JUAN  
Center of Proposed Design. Latitude 36.97614° N Longitude 107.97254° W NAD. ☐ 1927 ☒ 1983  
Surface Owner. ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

RCVD DEC 15 '08  
OIL CONSV. DIV.

DIST. 3

2  
☐ **Pit:** Subsection F or G of 19 15.17.11 NMAC  
Temporary: ☐ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A  
☐ Lined ☐ Unlined Liner type: Thickness mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
☐ String-Reinforced  
Liner Seams ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_ Volume bbl Dimensions. L' x W' x D'

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

4  
☒ **Below-grade tank:** Subsection I of 19 15 17 11 NMAC  
Volume 25 bbl Type of fluid. produced water  
Tank Construction material single wall fiberglass  
☐ 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

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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 **48" high (= 36" hog wire + rebar top)**

7

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

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

8

**Signs:** Subsection C of 19.15.17.11 NMAC

- ☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- ☐ Signed in compliance with 19.15.3.103 NMAC

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**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. ☐ Yes ☒ 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). ☐ Yes ☒ 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 ☐ Yes ☒ No
- (Applies to temporary, emergency, or cavitation pits and below-grade tanks) ☐ NA
- Visual inspection (certification) of the proposed site, Aerial photo, Satellite image
- Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application ☐ Yes ☒ No
- (Applies to permanent pits) ☐ NA
- Visual inspection (certification) of the proposed site, Aerial photo; Satellite image
- Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application ☐ Yes ☒ 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 ☐ Yes ☒ No
- Written confirmation or verification from the municipality; Written approval obtained from the municipality
- Within 500 feet of a wetland. ☐ Yes ☒ No
- US Fish and Wildlife Wetland Identification map, Topographic map, Visual inspection (certification) of the proposed site
- Within the area overlying a subsurface mine ☐ Yes ☒ No
- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division
- Within an unstable area ☐ Yes ☒ No
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources, USGS, NM Geological Society, Topographic map
- Within a 100-year floodplain. ☐ Yes ☒ 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)

13.

**Permanent Pits Permit Application Checklist:** Subsection B of 19 15 17 9 NMAC**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19 15 17 9 NMAC  
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15 17 10 NMAC  
☐ Climatological Factors Assessment  
☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15 17 11 NMAC  
☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19 15 17 11 NMAC  
☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC  
☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15 17 11 NMAC  
☐ Quality Control/Quality Assurance Construction and Installation Plan  
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15.17.12 NMAC  
☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19 15.17 11 NMAC  
☐ Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan  
☐ Emergency Response Plan  
☐ Oil Field Waste Stream Characterization  
☐ Monitoring and Inspection Plan  
☐ Erosion Control Plan  
☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17 13 NMAC

14.

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

- Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☒ Below-grade Tank ☐ Closed-loop System  
☐ Alternative  
 Proposed Closure Method: ☒ Waste Excavation and Removal  
☐ Waste Removal (Closed-loop systems only)  
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)  
☐ In-place Burial ☐ On-site Trench Burial  
☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.

**Waste Excavation and Removal Closure Plan Checklist:** (19 15 17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ Protocols and Procedures - based upon the appropriate requirements of 19 15.17 13 NMAC  
☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19 15 17 13 NMAC  
☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)  
☒ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19 15 17 13 NMAC  
☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19 15 17 13 NMAC  
☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

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

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

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

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

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

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

☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19 15 17 13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19 15 17 13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

17.

**Siting Criteria (regarding on-site closure methods only):** 19 15 17 10 NMAC

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

Ground water is less than 50 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS, Data obtained from nearby wells

☐ 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

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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) **BRIAN WOOD** Title **CONSULTANT**

Signature \_\_\_\_\_

Date **12-9-08**

e-mail address **brian@permitswest.com** Telephone **(505) 466-8120**

20.

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

OCD Representative Signature: \_\_\_\_\_

Approval Date: **4/05/2012**

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

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

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

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

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

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

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

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

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

24.

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

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

On-site Closure Location Latitude \_\_\_\_\_

Longitude \_\_\_\_\_

NAD: ☐ 1927 ☐ 1983

25.

**Operator Closure Certification:**

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

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

Title \_\_\_\_\_

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

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

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

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

Hallador Petroleum LLP

PAGE 1

Horton 2 below grade tanks proposed closure

990' FNL & 990' FEL Sec. 22, T. 32 N., R. 11 W.

San Juan County, New Mexico

API # 30-045-11371

### Current Situation

There are two 25 barrel single wall fiberglass tanks. Tanks are surrounded by hog wire fences topped with rebar. There is no secondary containment. The tanks have nylon net tops. After removal of the existing tanks, water will be piped to a planned below grade tank. Application for it will be made once the design is finalized.

### Time Line

Will close after approval of this application and before June 16, 2013. Will close earlier if OCD determines there is an imminent danger to fresh water, public health, or the environment.

### Siting Criteria

1. Depth to ground water is >100'. Closest reported water depth is the Decker water well which is  $\approx$ 1 mile east in Section 23. Office of the State Engineer records are attached as Exhibit A.

$\approx$ 6,243' Decker water well ground elevation

- 50' depth to water

$\approx$ 6,193' water level elevation

6,452' gas well elevation

- 3' depth to bottom of tanks

6,449' tank bottom elevation

6,449' tank bottom elevation

- 6,193' water level elevation

$\approx$ 256' depth to water

2. Tank is not within 300' of a continuously flowing watercourse. Tank is not within 200' of any other significant watercourse as defined by OCD. Closest first order tributary of Cox Canyon is over a mile east (Exhibits B & C).

3. Tank is not within 300' of any building. Closest buildings are more than 1/4 mile distant (Exhibit D).

Horton 2 below grade tanks proposed closure  
990' FNL & 990' FEL Sec. 22, T. 32 N., R. 11 W.  
San Juan County, New Mexico  
API # 30-045-11371

4. Tank is not within 1,000' of any fresh water well or spring (Exhibits A & B).
5. Tank is not within municipal boundaries or within a municipal fresh water well field (Exhibits A & B).
6. Tank is not within 500' of a wetland (Exhibit E).
7. Tank does not overly a mine (Exhibit F).
8. Tank is not in an unstable area. No evidence of earth movement was found during a November 6, 2008 field inspection.
9. Tank is not within a 100 year flood plain (Exhibit G).
10. C-102 is attached as Exhibit H.
11. Closure notice to the surface owner (BLM) is attached as Exhibit I.

### **Hydrogeology**

Surface formation is the Nacimiento. According to Stone et al in Hydrogeology and water resources of San Juan Basin, New Mexico, the Nacimiento is mainly a mudstone. There are also medium to coarse grained sandstone layers in the Nacimiento. Transmissivities of 100 feet<sup>2</sup> per day can be found in the coarser continuous sandstones. Water in the more extensive sandstones has a specific conductance of 1,500  $\mu$ mhos. Specific conductance is >2,000  $\mu$ mhos in the finer grained sandstones.

Horton 2 below grade tanks proposed closure  
990' FNL & 990' FEL Sec. 22, T. 32 N., R. 11 W.  
San Juan County, New Mexico  
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### Closure Plan

Surface owner has been notified via certified return receipt requested mail of the proposed closure.

Will verbally notify OCD at least 72 hours and no more than 1 week before closure. Notice to OCD will include operator name, location (quarter-quarter, section, township, & range), well name & number, and API number.

Will pump out any remaining water and haul to Basin Disposal (NM-01-005)

Will haul sludge to J F J Land Farm (NM-01-010).

Will truck waste qualifying under OCD Rule 19.15.9.712 to the San Juan County landfill.

Will remove tank, pipes, and associated equipment and store at company yard for future reuse.

Will test soil under tank to determine if a release has occurred, even if there is no visible contamination. Will collect, at a minimum, a five point composite sample. Will collect individual grab samples from any area that is wet, discolored, or showing other evidence of a release. Will analyze all samples for:

<u>Component</u>	<u>Test Method</u>	<u>Not to Exceed (mg/kg)</u>
benzene	EPA SW-846 8021B or 8260B	0.2
total BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA 418.1	100
chlorides	EPA 300.1	250 or background

If the operator or OCD determines that a release has occurred, then the operator will comply with OCD rules 19.15.3.116 NMAC and 19.15.1.19 NMAC,



Horton 2 below grade tanks proposed closure  
990' FNL & 990' FEL Sec. 22, T. 32 N., R. 11 W.  
San Juan County, New Mexico  
API # 30-045-11371

as appropriate. A major (>25 barrels) release requires immediate verbal notice and timely written notice to OCD. A minor release (more than 5 barrels and less than 25 barrels) requires timely written notice to OCD. Timely is defined as 15 days. Written notice will include Form C-141. OCD may require additional sampling delineation upon its review of the results.

If the sampling program demonstrates that a release has not occurred, or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC (table on preceding page); then the operator will back fill the excavation with compacted waste free earthen material, construct an OCD prescribed soil cover, recontour, and revegetate the site. The soil cover, recontouring and re-vegetation requirements will comply with Subsections G, H and I of 19.15.17.13 NMAC. Specific steps are:

- \_\_\_ back fill to within 12" of grade
- \_\_\_ bring to grade with 12" topsoil or background thickness, whichever is more
- \_\_\_ contour to prevent ponding or erosion
- \_\_\_ seed first growing season after closure
- \_\_\_ seed with at least 3 native species, at least 1 of which must be a grass  
(recommend grass species only for safety & keep seed bag tag)
- \_\_\_ seed mix will exclude noxious weeds
- \_\_\_ cover seed

Will file closure report on Form C-144 within 60 days of closure completion with necessary attachments to document all closure activities including:

- \_\_\_ proof of notice to surface owner
- \_\_\_ proof of notice to OCD
- \_\_\_ plot plan
- \_\_\_ chemical sampling analysis results
- \_\_\_ disposal facility name and permit number
- \_\_\_ back filling & cover details
- \_\_\_ seeding rate per species
- \_\_\_ how seeded
- \_\_\_ photograph of seeded area

Hallador Petroleum LLP

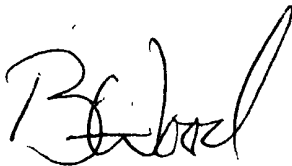
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Horton 2 below grade tanks proposed closure  
990' FNL & 990' FEL Sec. 22, T. 32 N., R. 11 W.  
San Juan County, New Mexico  
API # 30-045-11371

Successful revegetation will be accomplished if:

- \_\_\_ plant cover equals 70% of adjacent impact free native perennial vegetation  
(noxious weeds are not counted toward 70% goal)
- \_\_\_ 70% goal maintained for 2 consecutive growing seasons without irrigation  
if unsuccessful, repeat until goals is achieved
- \_\_\_ notify OCD when 70% goal has been met for 2 consecutive growing seasons
- \_\_\_ file Form C-144
- \_\_\_ include photograph of revegetated area

Executed this 9th day of December, 2008.



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Brian Wood, Consultant  
Permits West, Inc.

37 Verano Loop, Santa Fe, NM 87508

(505) 466-8120

FAX: (505) 466-9682

Cellular: (505) 699-2276

The operator's representative is:

Tim Lovseth

Hallador Petroleum LLP

1660 Lincoln St., Suite 2700

Denver, CO 80264

(303) 839-5504, Extension 317

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)  ☐ Non-Domestic ☐ Domestic ☒ All

**WATER COLUMN REPORT 12/08/2008**

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water (in feet) Column
<u>SJ 01360</u>	32N	11W	19	2	2					180	155	25
<u>SJ 01327</u>	32N	11W	23	2	2	3				90	50	40
<u>SJ 00021</u>	32N	11W	23	3						585		
<u>SJ 00017</u>	32N	11W	24	2						105		
<u>SJ 00020</u>	32N	11W	29	3						588		
<u>SJ 00026</u>	32N	11W	33	2						321		

Record Count: 6

**EXHIBIT A**



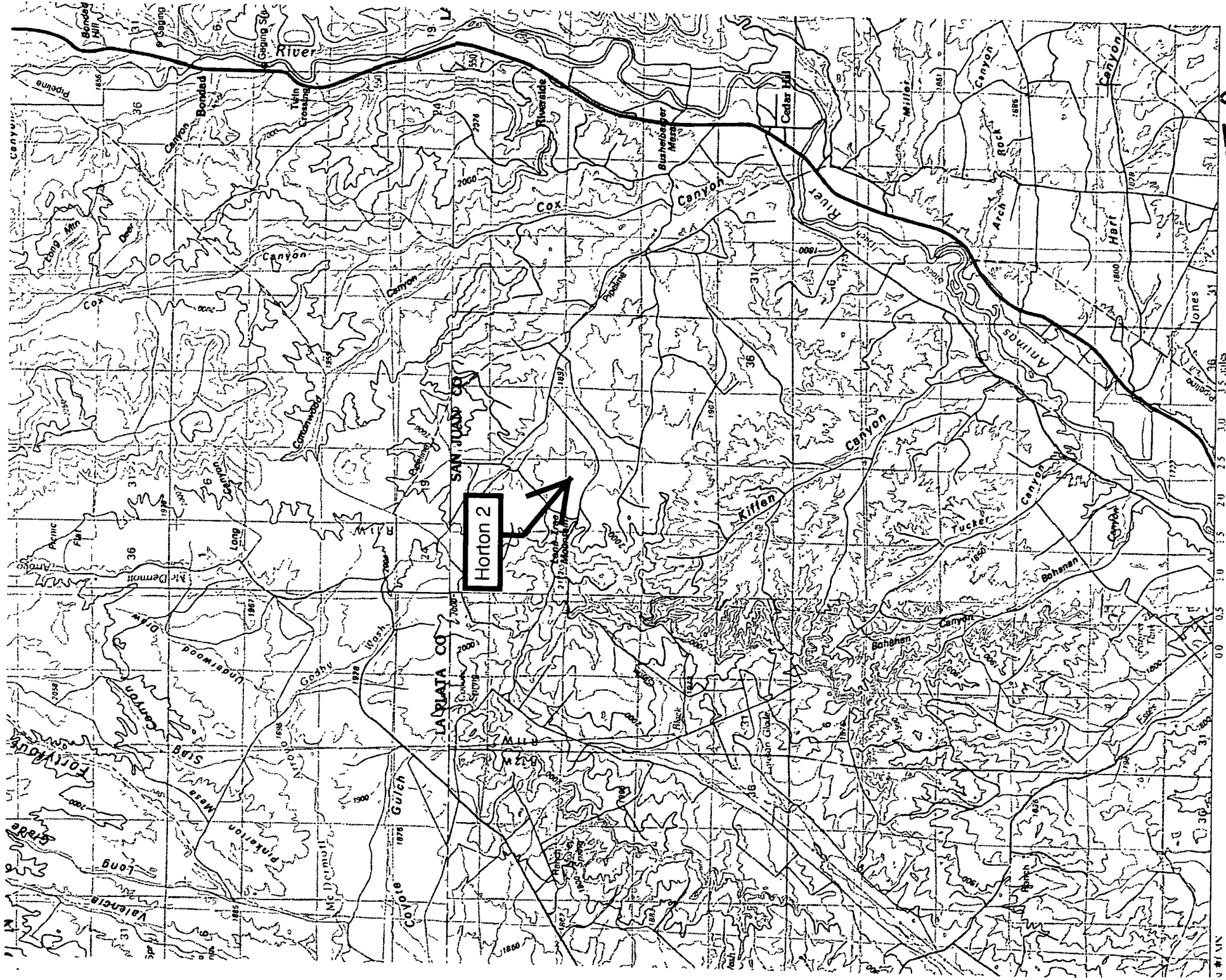
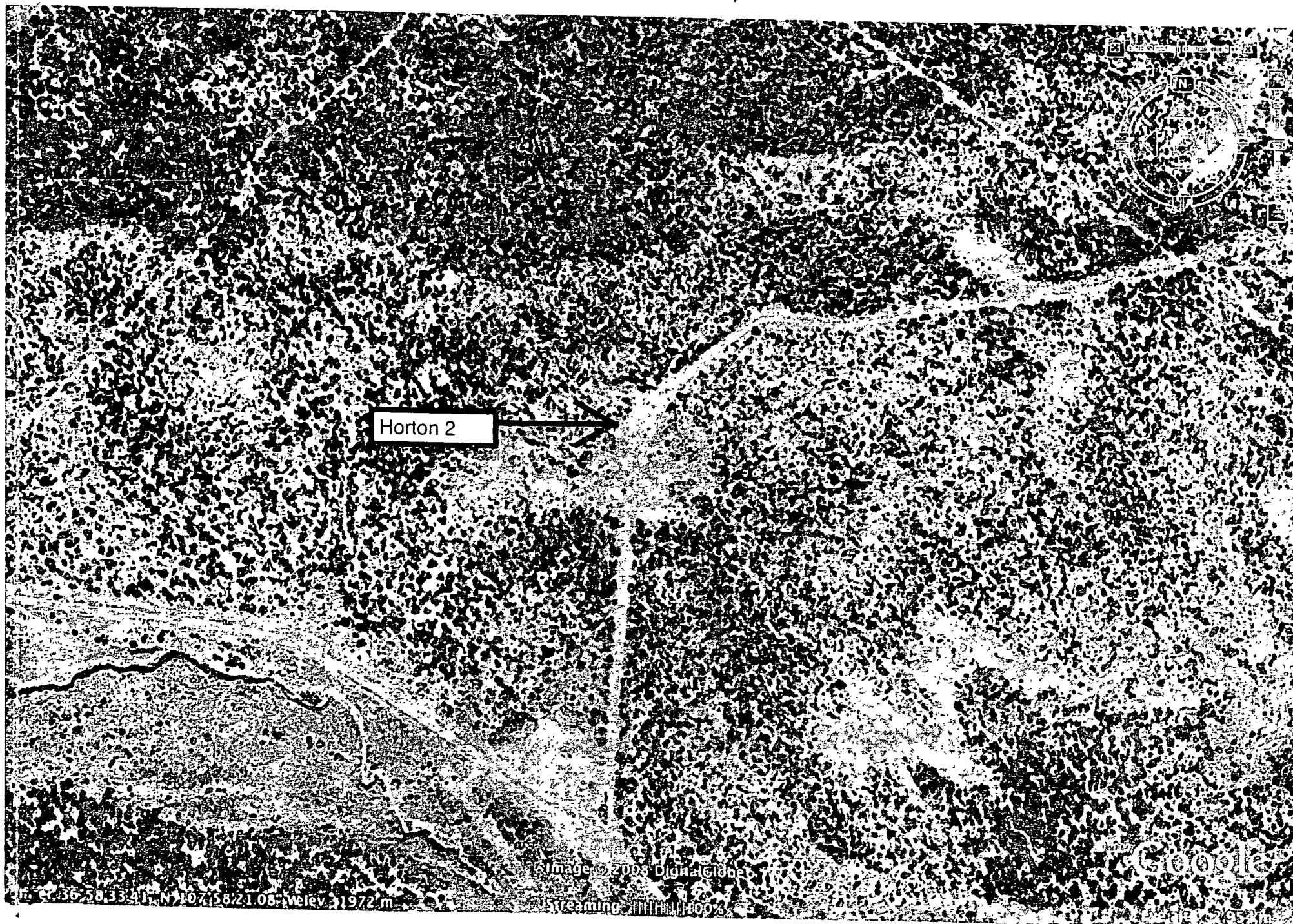


EXHIBIT C

# EXHIBIT D



Horton 2

Image © 2003 DigitalGlobe

Lat: 36.583341, N 107.582106, elev: 1972 m

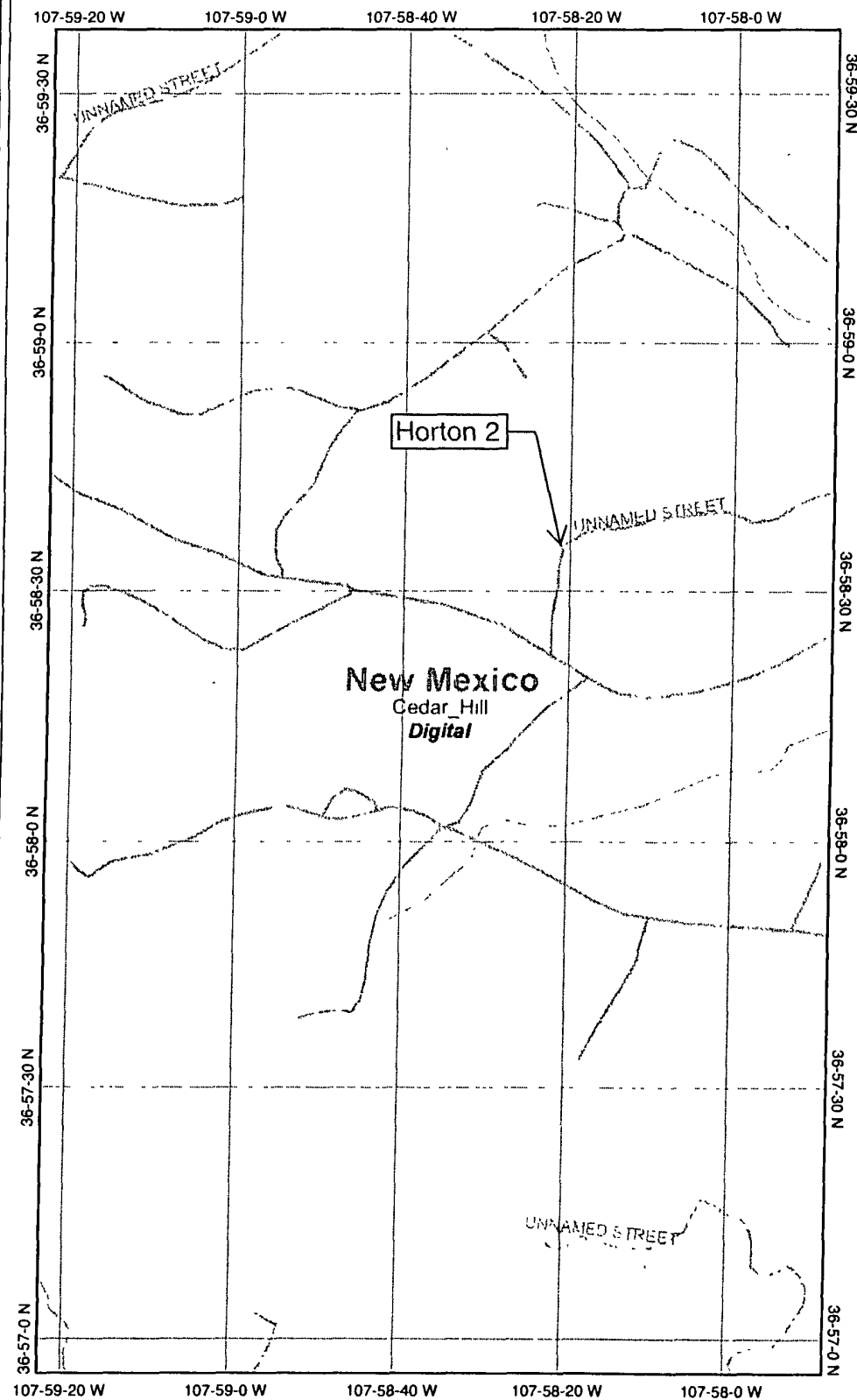
Streaming 100%

Google

2952 m



# 22-32n-11w wetland map



## Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

EXHIBIT E



Scale: 1:24,000

Map center: 36° 58' 17" N, 107° 58' 35" W

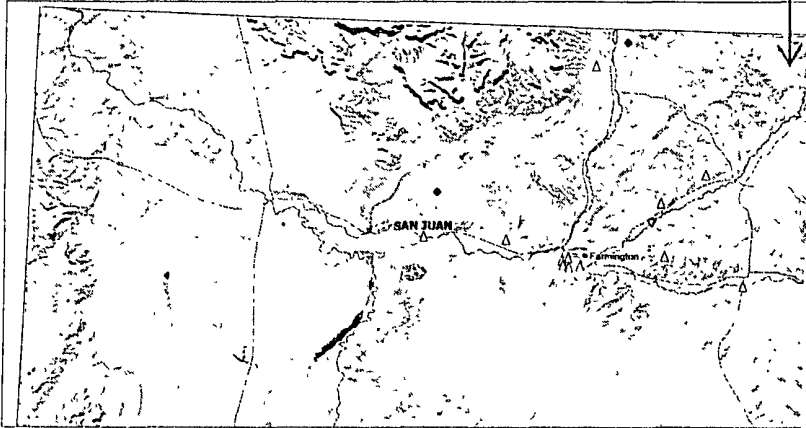
This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

# MMQonline Public Version

Horton 2

**Mines, Mills & Quarries Commodity Groups**

-  **Aggregate & Stone Mines**
-  **Coal Mines**
-  **Industrial Minerals Mines**
-  **Industrial Minerals Mills**
-  **Metal Mines and Mill Concentrate**
-  **Potash Mines & Refineries**
-  **Smelters & Refinery Ops.**
-  **Uranium Mines**



SCALE 1 : 974,401

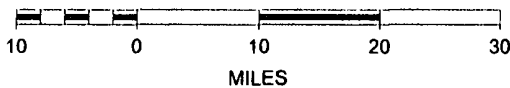
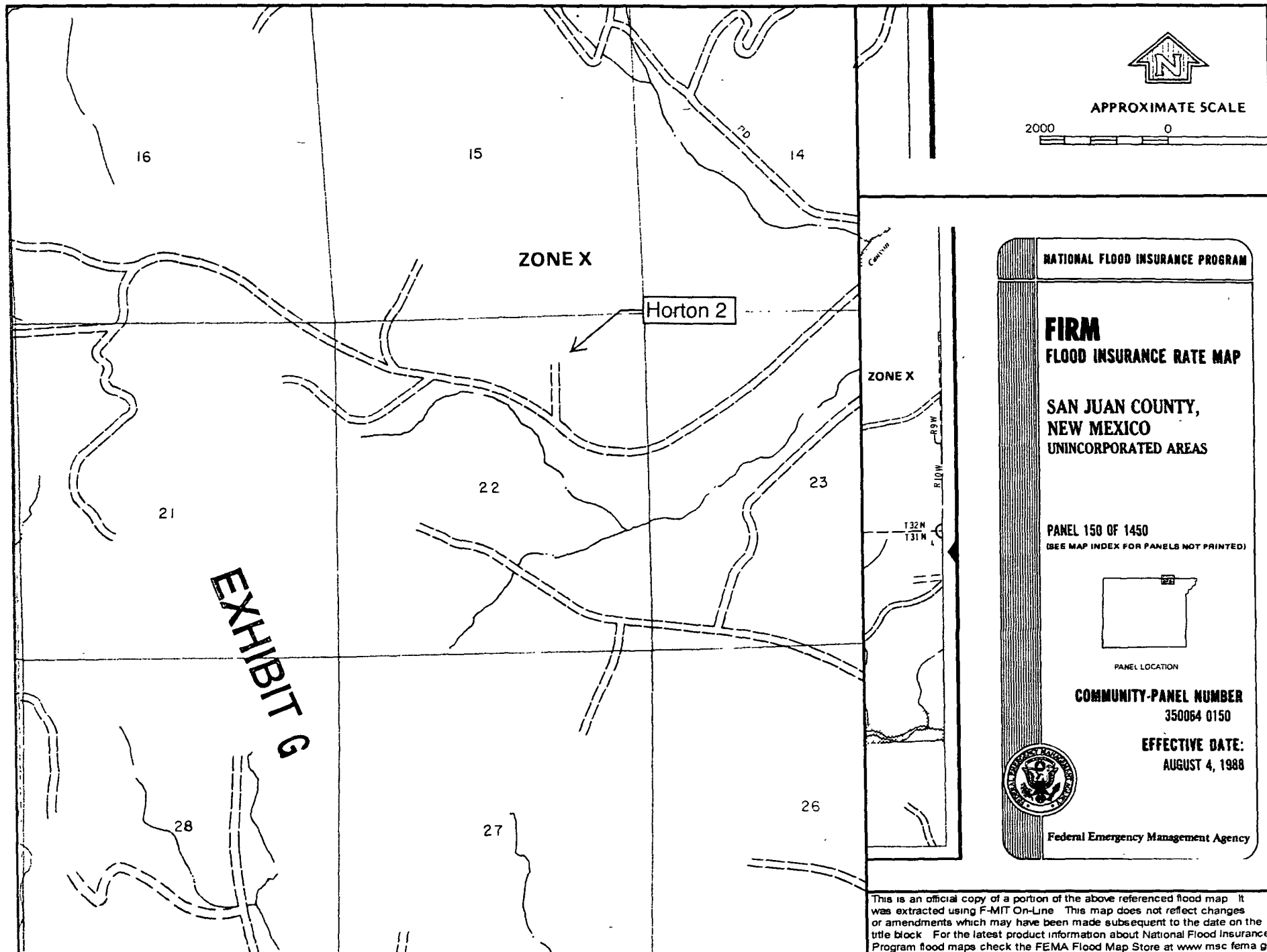


EXHIBIT F





APPROXIMATE SCALE

2000

0

ZONE X

Horton 2

ZONE X

22

23

21

EXHIBIT G

28

27

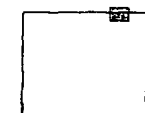
26

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY,  
NEW MEXICO  
UNINCORPORATED AREAS

PANEL 150 OF 1450  
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER  
350064 0150

EFFECTIVE DATE:  
AUGUST 4, 1988



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

NEW MEXICO  
OIL CONSERVATION COMMISSION

Gas Well Plat

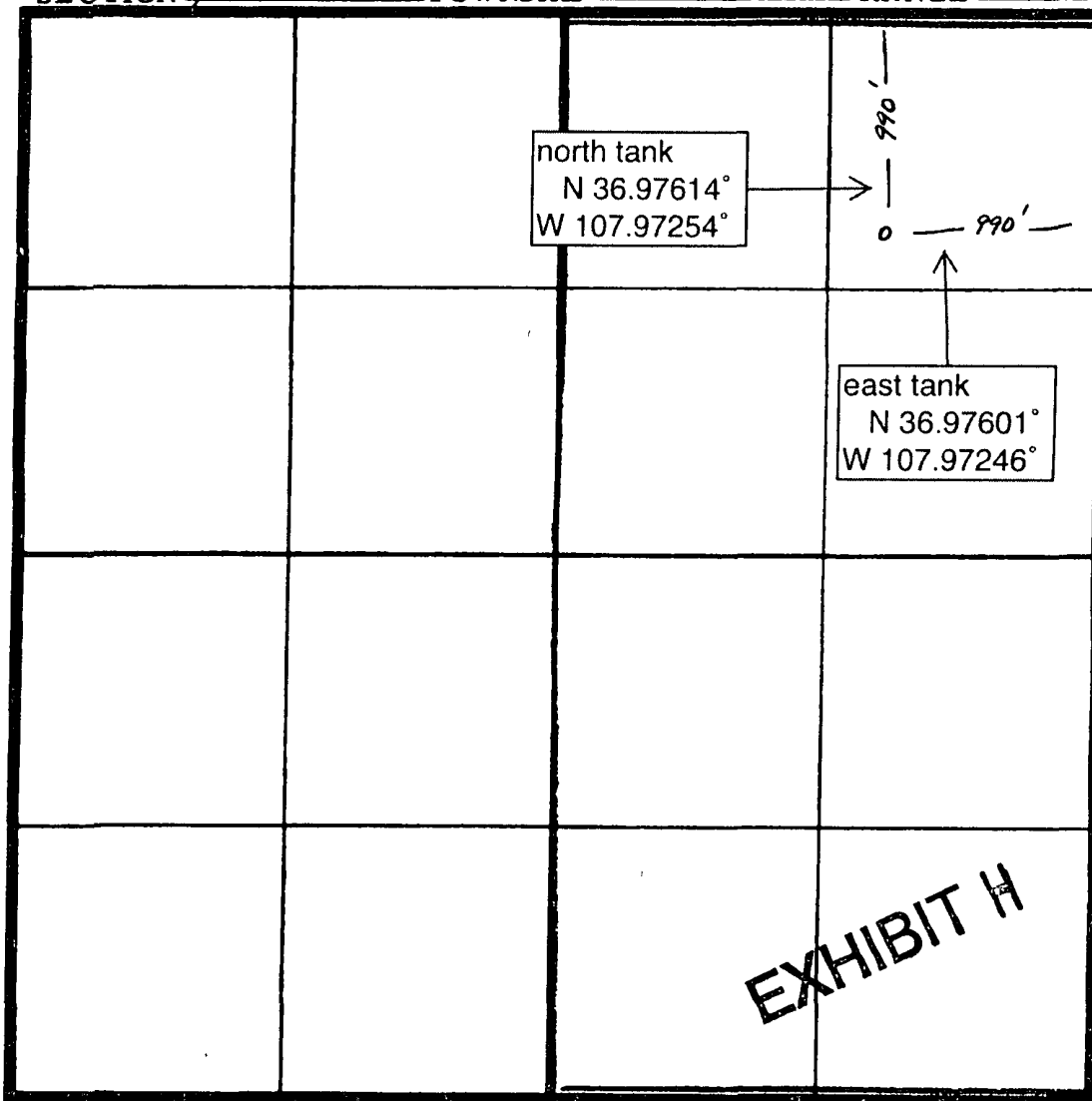
Date \_\_\_\_\_

KENNETH MURCHISON HORTON 2  
Operator Lease Well No.

Name of Producing Formation Mesa Verde Pool BLANCO

No. Acres Dedicated to the Well 3202

Indicate land status and show ownership Federal  
SECTION E/2-22 TOWNSHIP 32N RANGE 11W



I hereby certify that the information given above is true and complete to the best of my knowledge.

Name Mitchell  
Position Agent  
Representing Kenneth Murchison  
Address 1215 Pacific, Dallas, Texas

(over)

**PERMITS WEST, INC.**  
 PROVIDING PERMITS for LAND USERS  
 37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

December 8, 2008

BLM  
 1235 LaPlata Highway  
 Farmington, NM 87401

As required by NMOCD rule Subsection J of 19.15.17.13 NMAC, I am notifying BLM that Hallador Petroleum LLP plans to close the following below grade tanks on BLM surface in San Juan County, NM:

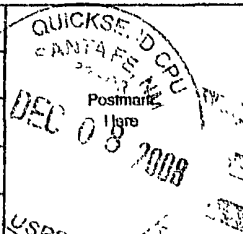
<u>Well</u>	<u>API Number</u>	<u>Lease</u>	<u>Location</u>
Horton 1A	30-045-21955	NMSF-078095-A	SWNE 7-31n-11w
Horton 1B	30-045-30165	NMSF-078095-A	NWSE 7-31n-11w
Horton 1C	30-045-33061	NMSF-078095-A	NENE 7-31n-11w
Horton 1D	30-045-33065	NMSF-078095-A	NESE 7-31n-11w
Horton 2	30-045-11371	NMSF-078039	NENE 22-32n-11w
Horton 2A	30-045-23392	NMSF-078039-B	SESE 22-32n-11w
Horton 3B	30-045-31703	NMSF-078147-A	NENE 13-32n-12w
Horton 5	30-045-22933	NMSF-078095-A	SWNE 7-31n-11w
Horton 7	30-045-21362	NMSF-078039	SWSE 22-32n-11w
Storey 1A	30-045-21957	NMSF-078051-A	SESE 34-32n-11w
Storey 1B	30-045-30164	NMSF-078051-A	SESW 34-32n-11w
Storey 1C	30-045-31704	NMSF-078051-A	NWSE 34-32n-11w

I have attached a copy of this letter for each of the 12 well files. Please call me if you have any questions.

Sincerely,



Brian Wood

U.S. Postal Service <b>CERTIFIED MAIL RECEIPT</b> <small>(Domestic Mail Only. No Insurance Coverage Provided.)</small>	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
<b>OFFICIAL USE</b>	
Postage	\$ 1.17
Certified Fee	2.70
Return Receipt Fee (Endorsement Required)	2.20
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$6.07
	
Sent To <u>BLM</u>	
Street, Apt. No., or PO Box No.	
City, State, ZIP+4	

**EXHIBIT 1**

## Power of Attorney

Know All Men By These Presents:

That I, Victor P. Stabio, Chief Executive Officer and President of Hallador Petroleum Company, with offices at 1660 Lincoln Street, Suite 2700, Denver, Colorado 80264, have made, constituted, and appointed, and by these presents do make, constitute and appoint Brian Wood of Permits West, Inc., whose address is 37 Verano Loop, Santa Fe, New Mexico 87505, my true and lawful attorney, for me, and in my name, place and stead, and to my use to sign any and all forms submitted on behalf of Hallador Petroleum Company to the New Mexico Oil Conservation Division.

This Power of Attorney is execute this 8th day of December, 2008, but shall be effective for all intents and purposes as of June 16, 2008.

By: 

Victor P. Stabio

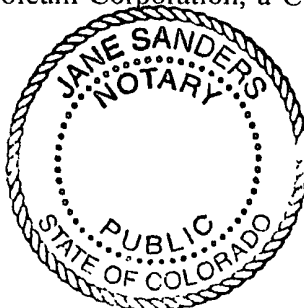
Chief Executive Officer and President of  
Hallador Petroleum Company

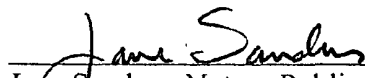
## Corporate Acknowledgment

STATE OF COLORADO }  
CITY AND } §  
COUNTY OF DENVER }

Before me, a Notary Public in and for said County and State, on this 8th day of December, 2008, personally appeared Victor P. Stabio, Chief Executive Officer and President of Hallador Petroleum Corporation, a Colorado corporation, on behalf of said corporation.

My commission expires:  
June 7, 2011



  
Jane Sanders, Notary Public  
1660 Lincoln Street, Suite 2700  
Denver, Colorado 80264

My Commission Expires 06/07/2011