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

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

Form C-144
July 21, 2008

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

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

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

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

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

1.
Operator: EnerVest Operating, LLC OGRID #: 143199
Address: 1001 Fannin St. Ste 800 Houston, Texas 77002
Facility or well name: Nordhaus 715 S
API Number: 30-045-32531 OCD Permit Number:
U/L or Qtr/Qtr F Section 12 Township 31N Range 09W County: San Juan
Center of Proposed Design: Latitude 36.915218 Longitude -107.735325 NAD: ☐1927 ☒ 1983
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

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

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

4.
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC PERMIT EXISTING TANK
Volume: 120 bbl Type of fluid: Primarily produced water w/ compressor skid precipitation & incidental lubricating oil
Tank Construction material: Steel Open-top w/ expanded metal cover
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☒ Other Visible sidewalls, 6" lift & electronic monitoring
Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☒ Other 6" cement floor & walls

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

6.

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

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

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

☒ Alternate. Please specify 42" Hog-wire fence with 2 strands barbed-wire on 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

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): Ronnie L. Young Title: Compliance Supervisor

Signature: Ronnie L Young Date: 9-15-10

e-mail address: ryoung@enervest.net Telephone: 713-495-6530

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

OCD Representative Signature: Brandon Powell **Approval Date:** 9/21/10

Title: EnviroSpec **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:

Attachment to Form C-144
Below-grade Tank Permit Application

Introduction:

EnerVest Operating, LLC (EV) is submitting this permit application to operate an existing below-grade tank under the authority of 19.15.17 NMAC. The tank is not currently permitted; therefore this document serves as supporting documentation referenced in the attached Form C-144. EV operates coal bed methane production sites in San Juan County, New Mexico. The below-grade tank at this location is used to collect precipitation and residual lubrication oil from the engine skid drain system and produced water from the primary and secondary separators. Produced water from the secondary separator may have small quantities of entrained lubricating oil from the compressor cylinder. In general, emulsified lubricating oil makes up a small percentage of the overall contents of the below-grade tank.

This application is being submitted for the following well site:

Well Name: Nordhaus 715 S
API No: 30-045-32531
Location: UL F, Sec 12, 31N, 09W

The supporting documentation contained in this C-144 attachment is organized as follows:

Section I – Sitting Criteria Compliance Demonstration
Section II – Design Plan
Section III – Operating and Maintenance Plan
Section IV – Closure Plan
Section V – Hydrogeology Report

Appendices:
01 – USGS 7.5 Minute Topo Map
02 – Groundwater (water well search)
03 – Aerial Photo
04 – Municipal Boundary Map
05 – U.S. Fish & Wildlife Wetland Identification Map
06 – FEMA 100-year Floodplain map
07 – Mine Map
08 – C-102 Location Plat, Facility Inspection Sheet, Below-Grade Tank Diagram
09 – Karst Map for unstable areas

References

Section I

Sitting Criteria Compliance Demonstration

Nordhaus 715 S

API 30-045-32531

Sitting Criteria Compliance Demonstration

Criteria as per 19.15.17.10.(A) (1)	In Compliance	Comments
Ground water > 50' below bottom to tank	Yes	Refer to "Site Hydrology Report" in Section V
Continously flowing water course > 300 ft from tank & significant watercourse or lakebed, sinkhole, or playa lake measured from high water mark > 200 ft. from tank	Yes	Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Permanent Residence, school, hospital, institution, or church > 300 ft from tank	Yes	Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Private, domestic fresh water well or spring > 500 ft from tank.	Yes	Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Any other fresh water well or spring > 1000 ft from tank.	Yes	Underground seepage leaking into containment area; Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Within incorporated municipal boundary of defined municipal fresh water field	Yes	Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Wetland > 500 ft from tank	Yes	Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Not overlying a subsurface mine	Yes	Refer to Observed Setting Requirements completed by field personnel - Appendix 08
Not within an unstable area	Yes	Refer to "Karst Map" in Appendix 09, TOPO Map In Appendix 01, & Observed Setting Req. In Appendix 08
Not within a 100-year floodplain	Yes	Refer to Appendix 6 - 100 year floodplain map

Section II

Design & Construction Plan

EnerVest Operating, LLC (EV)

BELOW-GRADE TANK
DESIGN AND CONSTRUCTION SPECIFICATIONS

Rule 19.15.17.11

C. Enervest Operating is the official operator of record for all wells which have below-grade tanks to be addressed in this specification. All below-grade tanks are located on these leases and will be in full compliance with 19.15.16.8 regarding signage.

D. EV will ensure a fence shall be constructed and maintained in good repair with gates that are closed and locked when responsible personnel are not on site. EV shall insure that all gates are closed and locked when responsible personnel are not on-site.

If the below-grade tank is located within 1,000 feet of a permanent residence, school, hospital, institution or church, the fence shall be a chain link security fence at least 6 feet in height with at least two strands of barbed wire on top.

If the below-grade tank is not within 1,000 feet of the above mentioned structures, the fence shall constructed to exclude livestock with at least four strands of barbed wire evenly spaced between one foot from the ground and four foot above the ground.

EV is requesting administrative approval to use a 42" Hog wire fence with 2 strands barbed-wire on top in lieu of the required four strand barbed wire fence. This will be supported with iron posting at the corners and 10 – 12 feet apart. EV believes this will offer better protection for wildlife in these tank areas. Please refer to Exhibit 2.1 of this Section.

E. EV shall ensure an open top tank is screened with expanded 3/16" metal screen or a fully closed top, both of which are welded on the top of the tank. Such screening will be painted to blend with the below-grade tank. EV believes this is sufficient strength to protect migratory birds or other wildlife.

I. EV will ensure all below-grade tanks will be constructed of 3/16" steel, resistant to the tank's contents and to damage from sunlight. Based on water production and road condition for access during the winter months there are a choice of three different sizes which could be used:

CAPACITY	DIAMETER	HEIGHT
125 bbl	15'	4'
120 bbl	12'	6'
100 bbl	12'	5'

This tank will contain liquids and should prevent contamination of fresh water to protect the public health and environment.

The below-grade system will include a excavated area for the tanks which will be dependent upon the size of the tank used:

18' x 18' x 4' High Square excavated area
18' Diameter x 4' High Circular excavated area
18' Diameter x 5' High Circular excavated area

The particular area and well conditions will determine which design best for that particular well. EV will ensure that there will be room to walk around the tank inside the containment area which will better enable our field personnel to inspect for damage to liners or incidental leaks. Please refer to tank diagram under Exhibit 2.2 of this section for details.

All excavated areas will be reinforced with metal walls to prevent collapse. There will be sufficient open area on all sides of the tank to witness any incidental release that may occur. Please refer to tank diagram under Appendix 8.

EV will ensure the base of any excavated area containing a below-grade tank will be level and free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom.

EV will ensure that any geomembrane liner used shall consist of 30-mil flexible PVC or 60-mil HDPE liner or equivalent liner material. The liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salt and acidic and alkaline solutions and shall be resistant to ultraviolet light. The liner shall have a hydraulic conductivity no greater than 1 x 10^{-9} cm/sec. The liner shall be compatible with EPA SW-846 method 9090A. EV will install the liner in such a manner as to divert any possible leak for visual inspection. EV will demonstrate to the OCD that the liner complies with the specifications within Subparagraph (a) of Paragraph (4) of Section I of 19.156.17.11 NMAC and obtain approval from the division prior to the installation of the new design.

EV is requesting administrative approval to use an equivalent liner. The "Dura-Skirm J45 BB" is a 45-mil reinforced liner which we feels offers the same or better protection as the required 60-mil liner as indicated above. Please refer to Exhibit 2.3 of this Section for the specification sheets for this liner.

EV is requesting administrative approval to line this containment area with a 6" cement, steel rebar reinforced, walls on the four sides and a 6", steel rebar reinforced, cement pad on top of a compacted base on the floor. The below-grade tank will be tied down to the floor with cable tie-downs on each corner. This

cement floor will contain a very slight slope to one corner for water to gather and there will be a 2" x 2" x 1" pump installed to keep the water pumped out of the containment area. This is necessary to prevent underground run-off water from entering the containment during heavy rains or the melting of heavy snow in the area. The below-grade tank will be elevated the required 6" off of the cement floor and due to the cement floor, a liner will not be used for this below-grade tank. Please refer to the diagrams in this section for details.

EV will ensure the fluid levels of tanks will be monitored by automatic high level alarms at 24" from the top and shut-off devise at 10 1/2 inches from the top of the tank. The tanks will be also equipped with a manual shut-off valve in the event it is needed. Please see design specification sheet of this system in this section. The majority of our below-grade tanks are within the berm around our tank battery and as so are protected from run-on water. Those outside this berm will be protected with an earthen berm which will extend at least 6" above surface ground level to divert run-on around the tank. The side walls of the excavated area will extend at least 6" above the ground level to divert run-on water around the tank. Any possible leak will be diverted, on the liner, in such a way can be visually inspected. Please refer to Exhibit 2.4 of this Section for details of this automatic shut-off system.

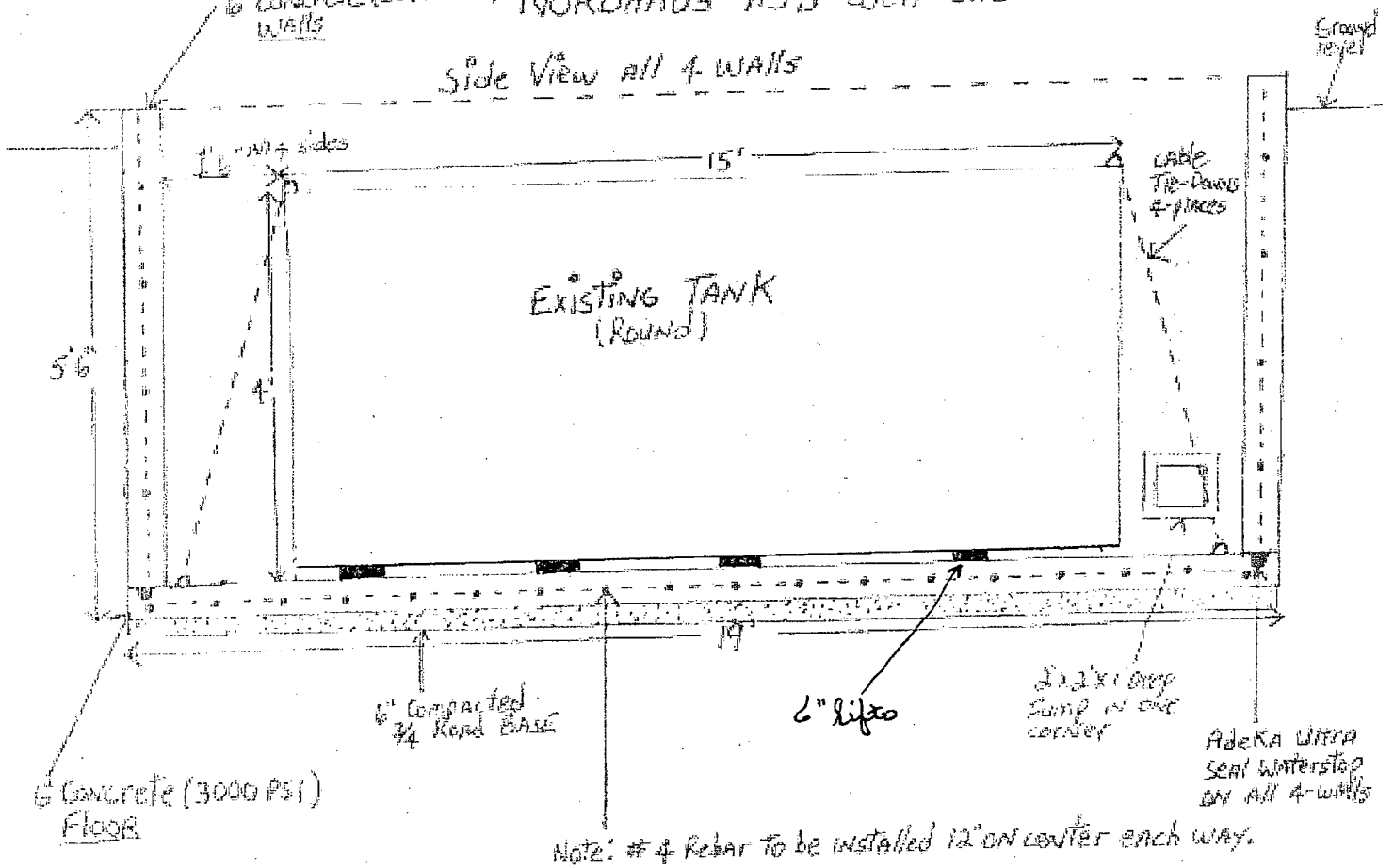
EV tank design will be a single walled tank constructed to ensure that the side walls are open for visual inspection for leaks; the bottom will be elevated six inches above the ground surface and will contain a geomembrane liner, as described above, directly on the ground level of the containment area.

Once a below-grade tank which was installed prior to June 16, 2008 does not demonstrate integrity, EV shall promptly repair or remove that below-grade tank and close the tank or install a below-grade tank that is in full compliance with Paragraph 1 thru 4 of Section I of 19.15.17.11 NMAC. EV shall comply with the operational requirements of 19.15.17.12 NMAC. Please refer to tank diagram under Appendix 8 for details

Any single walled below-grade tank installed before June 16, 2008 where any portion of the tank sidewall is below the ground surface and not totally visible shall be closed, retrofited or replaced before June 15, 2013. EV will fully comply with Paragraph 1 thru 4 of Section I of 19.15.17.11 NMAC for all retrofitting or replacement of below-grade tanks.

Proposed Concrete Containment – Enervest Operating LLC.

NORDHAUS 715 Well Site



TRC CONSTRUCTION INC 8-10-10
789 HWY 516
FLORA VISTA, NM 87415

ENERVEST OPERATING, LLC
210 N. AUBURN ST
FARMINGTON, NM 87401

ATTN: MR JEFF CROSS

RE: QUOTE FOR THE PROPOSED CONCRETE CONTAINMENT, MORDHAUS 715 S WELL SITE

WE ARE PLEASED TO PROVIDE THE FOLLOWING OUTLINED QUOTE TO INCLUDE: MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE ABOVE MENTIONED SCOPE OF WORK

1. MOB/DEMOB
2. REMOVE CONTAINMENT FENCE/REINSTALL AFTER WORK IS COMPLETED
3. REMOVE EXISTING TANK AND DUMP LINES/REINSTALL AFTER WORK IS COMPLETED
4. EXCAVATE FOR CONCRETE CONTAINMENT
5. FURNISH AND PLACE 6" 3/4 BASE UNDER NEW TANK (COMPACT)
6. FURNISH ALL MATERIALS TO FORM, TIE REBAR, POUR 3000PSI CONCRETE(AS SHOWN IN ATTACHED DETAIL)
7. STRIP FORMS
8. BACKFILL AND CONTOUR AROUND NEW CONTAINMENT

LUMP SUM TOTAL $33,774 plus any applicable tax

NOTE: QUOTE IS GOOD FOR 30 DAYS

THANK YOU FOR THE OPPORTUNITY TO QUOTE THIS PROJECT

JIM DUNCAN, PROJECT MANAGER

ENERVEST OPERATING, LLC

Proposed Alternative Fencing

Below-Grade Tank Construction

42" Hogwire Fence with 2 strands barbed-wire on top

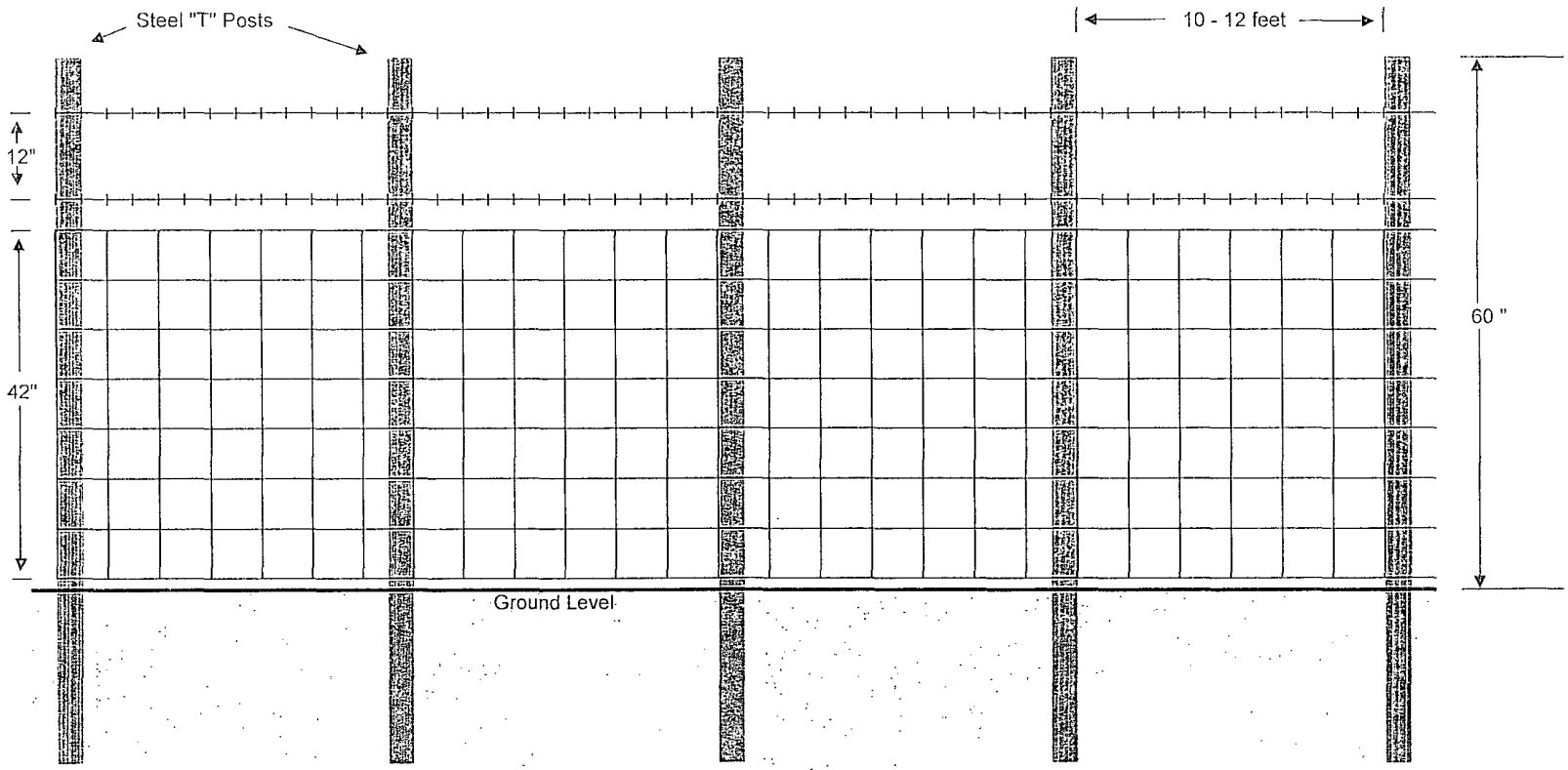
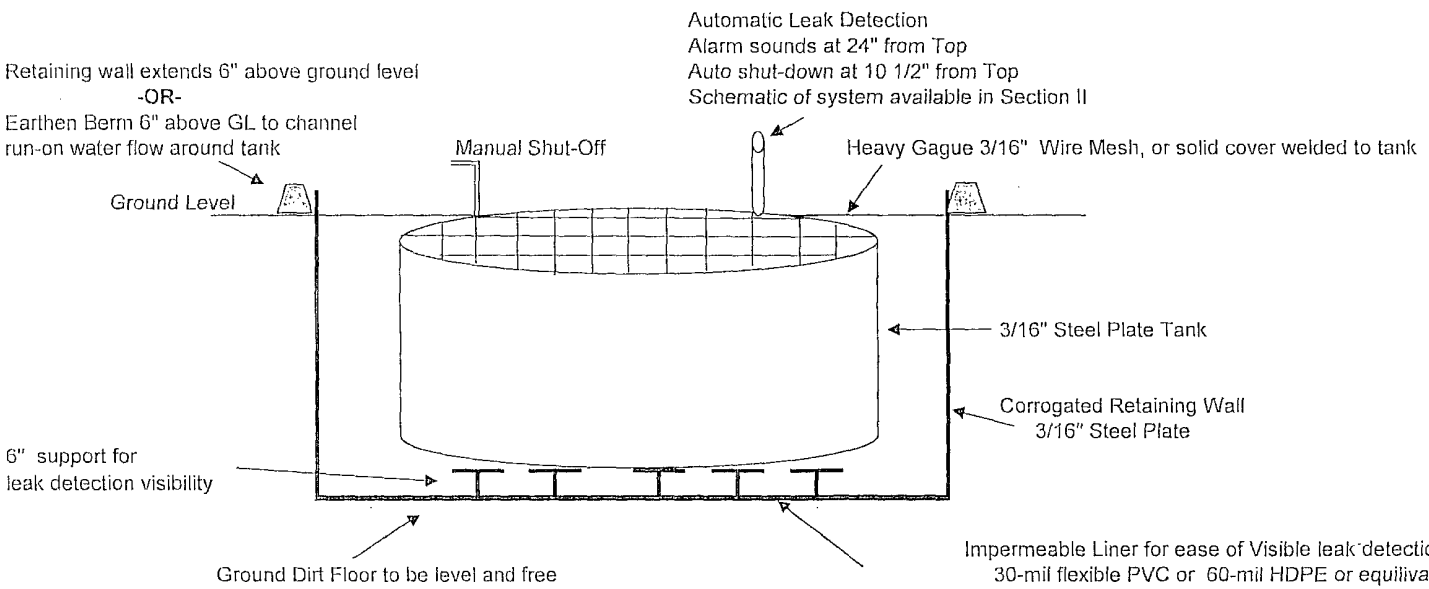


Exhibit 2.1

EnerVest Operating, LLC
Western Division

Below-Grade Tank System

Gravity Fed - Produced Water

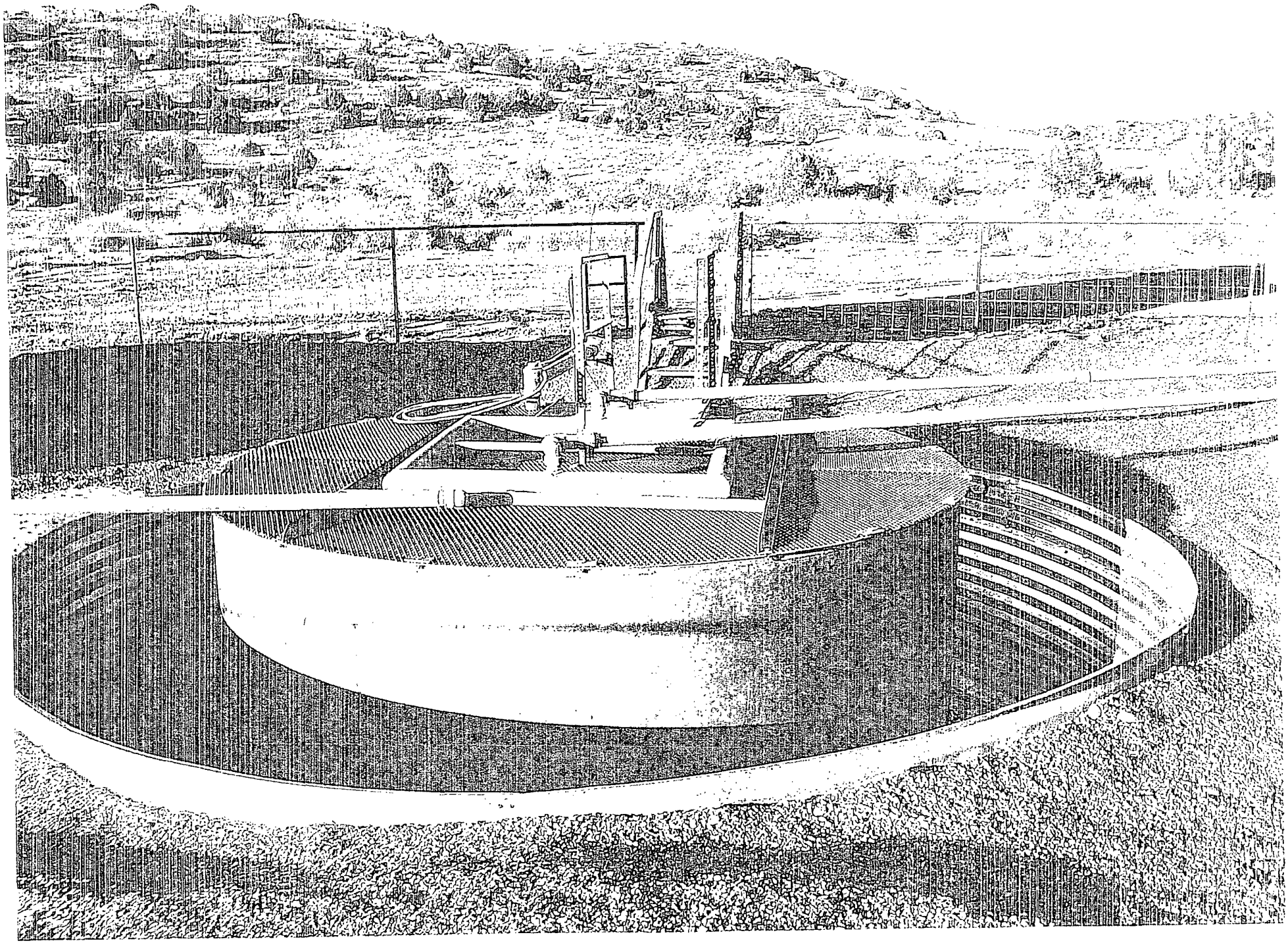


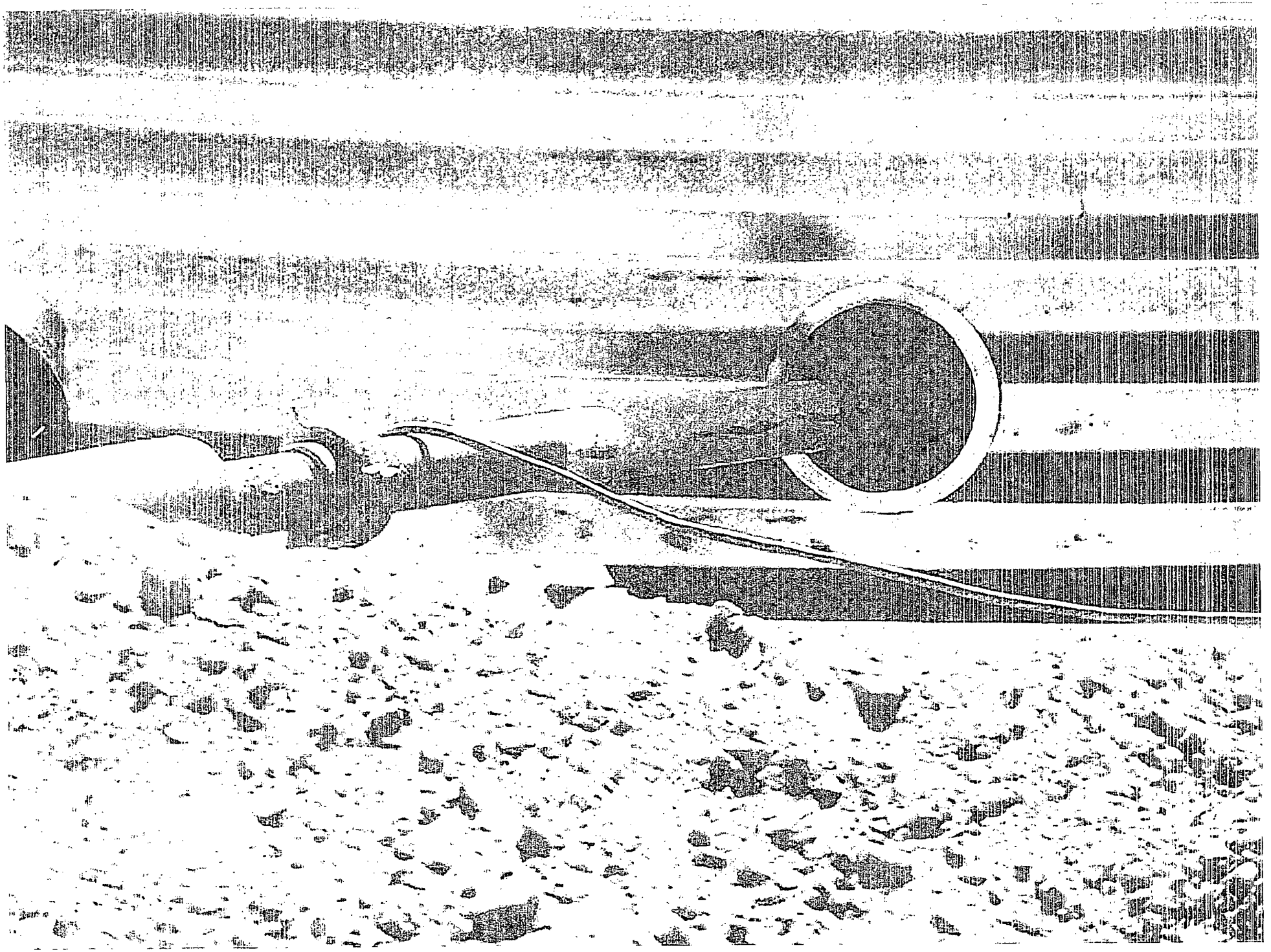
Impermeable Liner for ease of Visible leak detection
30-mil flexible PVC or 60-mil HDPE or equilivant Liner
Liner shall have a hydraulic condictivity no greater than
1×10^{-9} cm/sec.
Liner compatibility shall comply with EPA SW-846 method 9090A.
Liner to be impervious to hydrocarbons, salt &
acidic and alkiline solutions.
Any liner installation will be done in such a way as to easily
detect any possible leak.

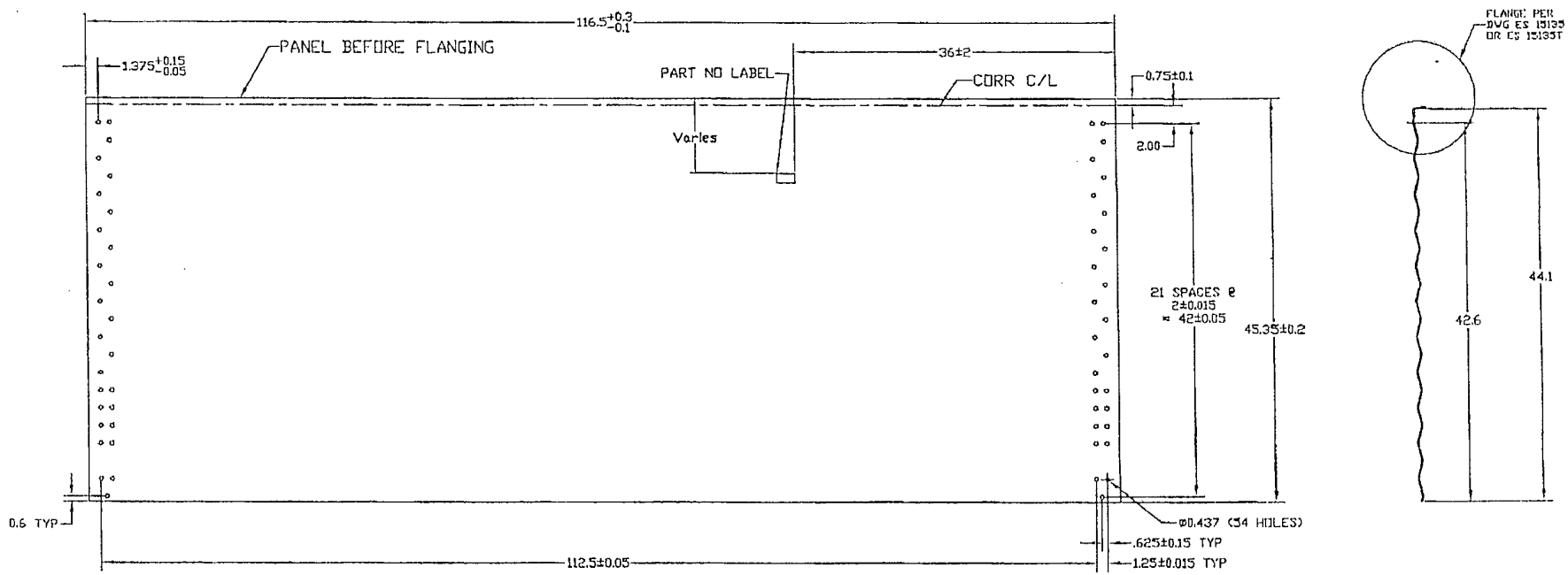
Below-Grade System Components

Tank Size		Excavation Areas
Capacity	Dia x Height	
125 Bbl	15' x 4'	18' x 18' x 4' Square
120 Bbl	12' x 6'	18' x 4' Circular
100 Bbl	12' x 5'	18' x 5' Circular

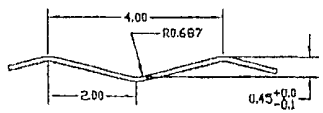
Tank size dependent upon water production & road conditions
Excavation Area size dependent upon tank size







44' WALL PANEL BEFORE FLANGING



CORRUGATING DETAIL

MANUFACTURING NOTES:
1. CORRUGATION..... SEE DETAIL
2. HOLE OFF CENTER OF CORR..... ± .05
3. HOLE BURR MAX..... .01
4. CUT OFF BURR MAX..... .01
5. CORNER HOLE TO HOLE DIAGONAL ± .15

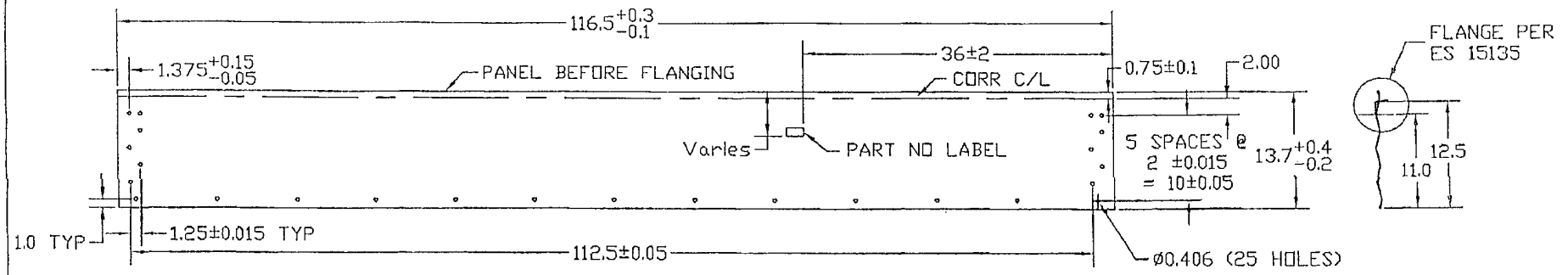
MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	46.5	CW4415F	98.5
0.096	0.088	46.3	CW4413F	143.4

NO	DATE	REVISION	E.C.R.	BY	CH.
1	01.28.04	LOWERED CLAMP LOCATION 4"	A6786	RF	BA

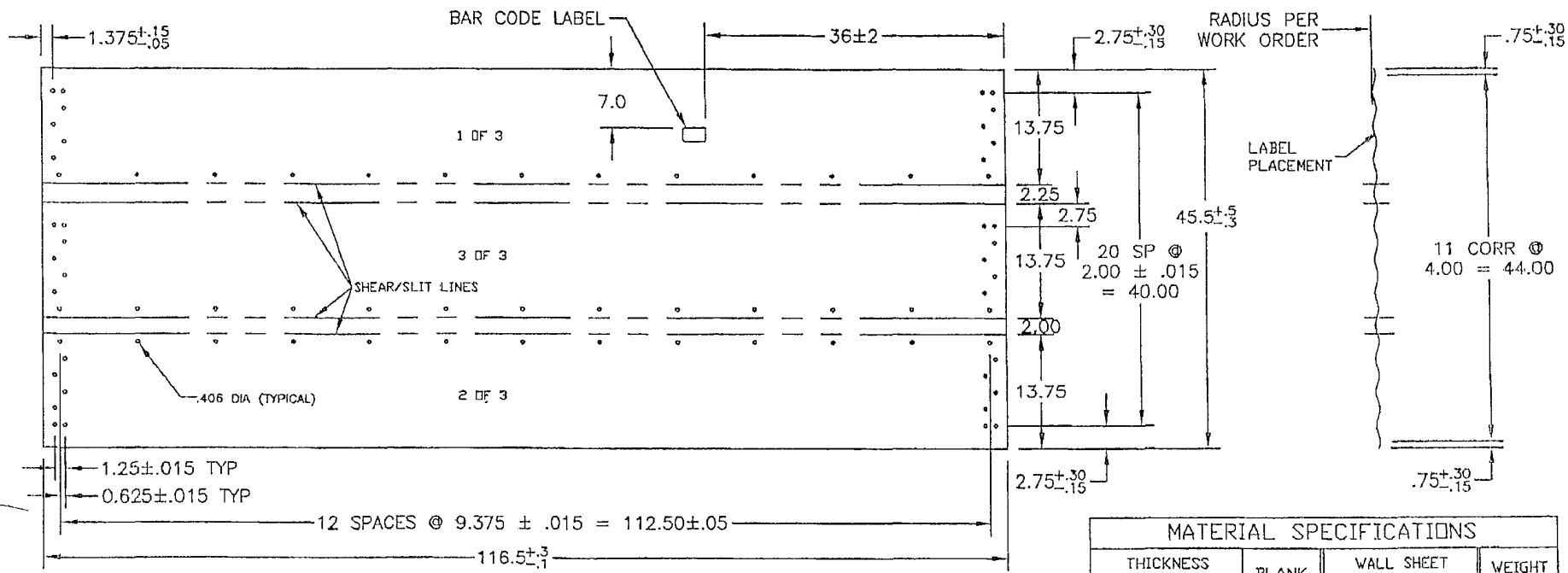
DIMENSIONS SHOWN ARE IMPERIAL
____ UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)
DIMENSIONS:
IMPERIAL (in.): .x ± .1, .xx ±.03, .xxx ±.010
METRIC (mm): x ± 2, .x ± 1.0, .xx ± .50
ANGULAR: ± 1°

MATERIAL	SEE CHART - ASTM A653 SS GR 50 G115 OIL
BLANK SIZE	46.5 x 116.5
SURFACE AREA	
WEIGHT (LBS)	see chart
DESN.	RM
DWN.	RF
CHKD.	BA
APPD.	BA
SCALE	nts
DWN. (Y.M.D.)	02.02.19
LOCATION	WINNIPEG
E.C.R.	A6647
E.P. NO.	02-255
TYPE	ACAD14
DRAWING TITLE	CONTAINMENT RING 44' WALL PANEL
CUSTOMER	
PRINTING DATE	
SIZE	B
DRAWING NO.	ES 15510
REV. NO.	1



13 1/2" WALL PANEL LAYOUT BEFORE FLANGING



MANUFACTURING VIEW ONLY - TRIPLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	14.75	CW1357F	31.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMP
MM UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:

IMPERIAL (in.)	METRIC (mm)
.x ? .1	.x ? 2
.xx ? .03	.x ? 1.0
.xxx ? .010	.xx ? .50

ANGULAR: ± 1°

DES'ND.	BA
DWN.	RF
CHK'D.	BA
APP'D.	BA

MATERIAL: SEE CHART - ASTM A653 SS GR50 G115 OIL
BLANK SIZE: 46.5x116.5 (3 pcs)
WEIGHT (LBS.): 31.5

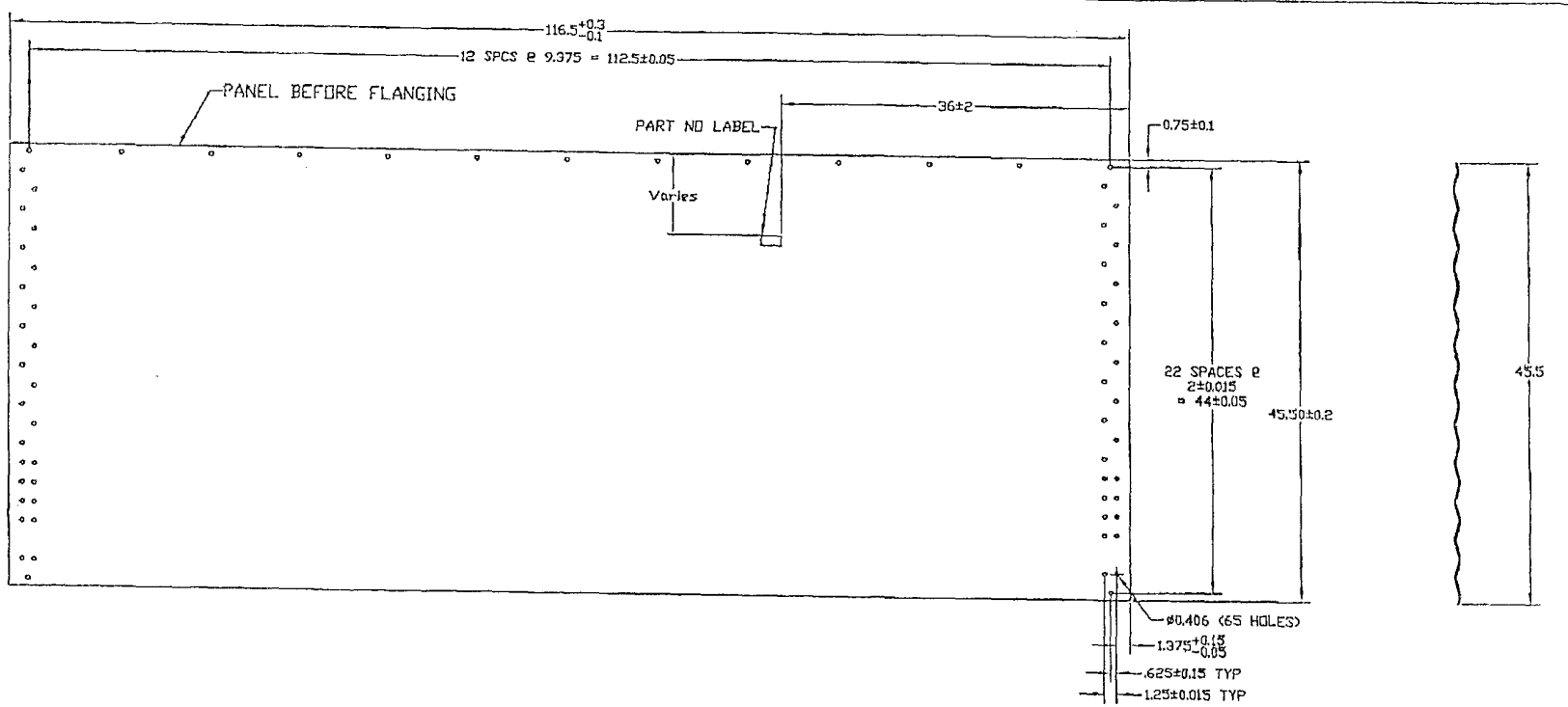
WESTEEL

SCALE	N.T.S.
DWN. (Y.M.D.)	2004.11.30
LOCATION	WPG
E.C.R.	A6834
E.P. NO.	02-255
DWG TYPE	A-2000

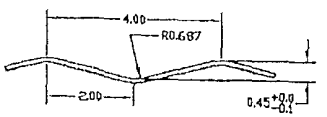
DRAWING TITLE: 13.5' FULL PANEL - 57' ONLY CONTAINMENT RING

SIZE	DRAWING NO.	REV. NO.
A	ES 15516	O

CUSTOMER: -
PRINTING DATE (Y.M.D.): -



44' WALL PANEL AFTER CORRUGATING AND PUNCHING



CORRUGATING DETAIL

MANUFACTURING NOTES:
1. CORRUGATION..... SEE DETAIL
2. HOLE OFF CENTER OF CORR..... ± .05
3. HOLE BURR MAX..... .01
4. CUT OFF BURR MAX..... .01
5. CORNER HOLE TO HOLE DIAGONAL ± .15

MATERIAL SPECIFICATIONS

THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	46.5	CW445715F	97.7
0.139	0.130	46.2	CW445710F	208.5

NO	DATE	REVISION	E.C.R.	BY	CH.

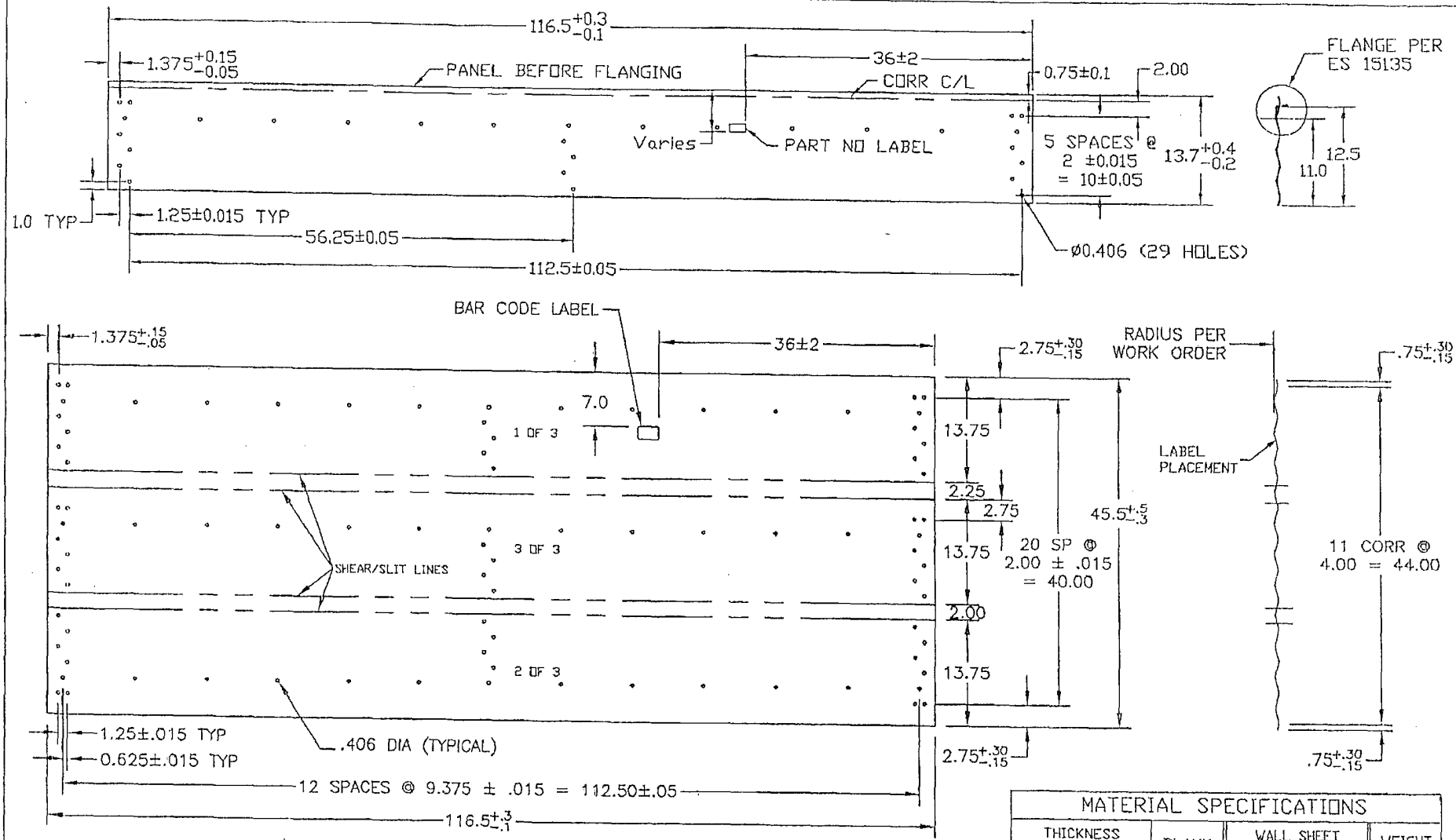
DIMENSIONS SHOWN ARE IMPERIAL
UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:
IMPERIAL (in.) METRIC (mm)
.x ± .1 x ± 2
.xx ±.03 .x ± 1.0
.xxx ±.010 .xx ± .50
ANGULAR: ± 1°

DESND.	BA
DWN.	RF
CHKD.	BA
APPD.	BA

MATERIAL	SEE CHART - ASTM A653 SS GR 50 G115 OIL
BLANK SIZE	46.5 x 116.5
SURFACE AREA	
WEIGHT (LBS)	see chart
SCALE	nts
DWN. (Y.M.D.)	04.12.01
LOCATION	WINNIPEG
E.C.R.	A6834
E.P. NO.	
TYPE	A-2000
DRAWING TITLE	44' FULL PANEL - 57' ONLY CONTAINMENT RING
CUSTOMER	
PRINTING DATE	
SIZE	B
DRAWING NO.	ES 15518
REV. NO.	0



MANUFACTURING VIEW ONLY - TRIPLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	14.75	019401	31.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMP
MM UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:

IMPERIAL (in.)	METRIC (mm)
.x ? .1	x ? .2
.xx ? .03	.x ? 1.0
.xxx ? .010	.xx ? .50

ANGULAR: ± 1°

DESND.	BA
DWN.	RF
CHKD.	BA
APPD.	BA

MATERIAL: SEE CHART - ASTM A653 SS GR50 G115 OIL
BLANK SIZE: 46.5x116.5 (3 pcs)
WEIGHT (LBS.): 31.5

WESTEEL

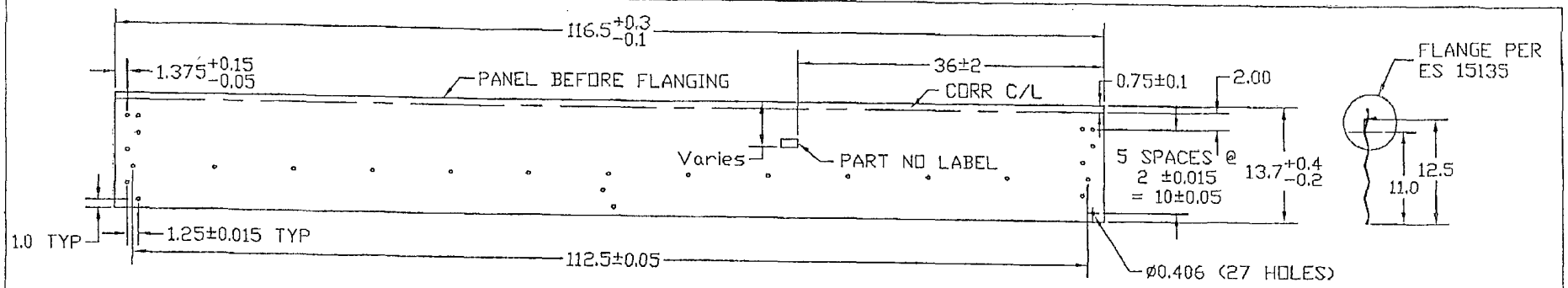
DRAWING TITLE: 13.5' FULL PANEL - 4' RISER CONTAINMENT RING

CUSTOMER: -

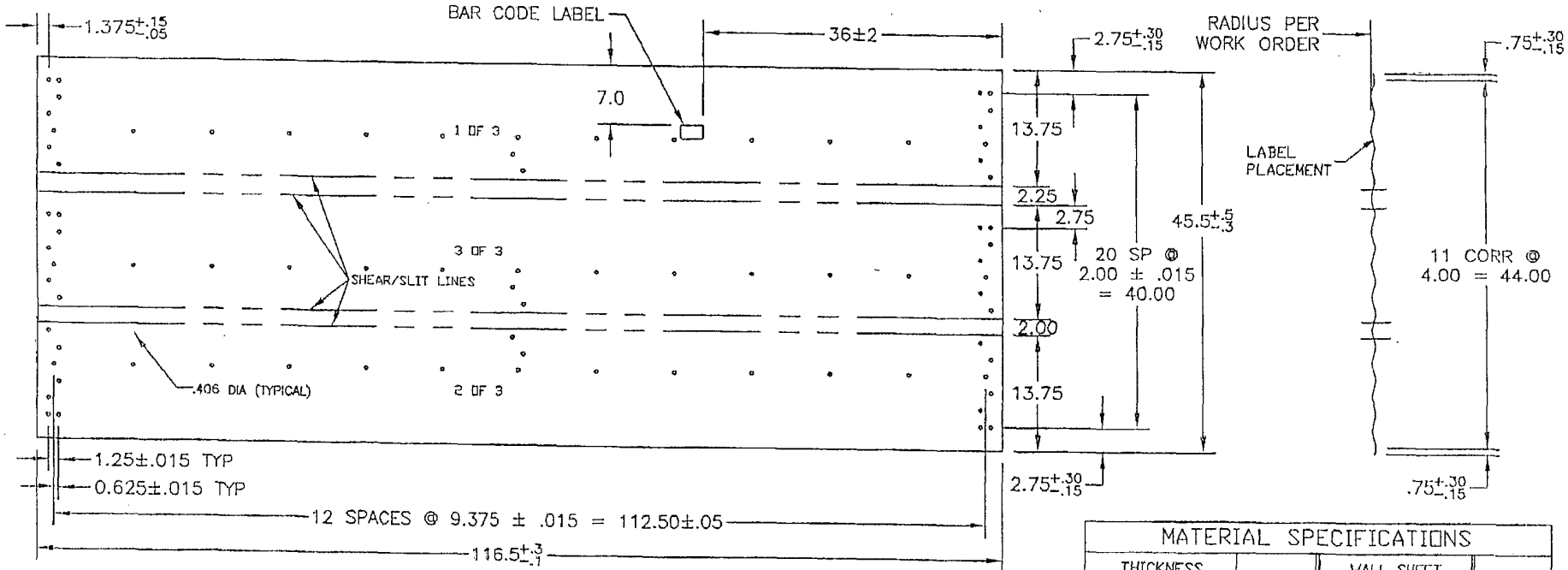
PRINTING DATE (Y.M.D.): -

SCALE	DWN. (Y.M.D.)	LOCATION
N.T.S.	2004.11.30	WPG
E.C.R.	E.P. NO.	DWG TYPE
A6834	02-255	A-2000

SIZE	DRAWING NO.	REV. NO.
A	019401	O



13 1/2" WALL PANEL LAYOUT BEFORE FLANGING



MANUFACTURING VIEW ONLY - TRIPLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	14.75	019419	31.5

NO	DATE	REVISION	E.C.R.	BY	CH.

DIMENSIONS SHOWN ARE IMP
MM UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)

DIMENSIONS:

IMPERIAL (in.)	METRIC (mm)
.x ? .1	x ? 2
.xx ? .03	.x ? 1.0
.xxx ? .010	.xx ? .50

ANGULAR: ± 1°

DESND.	BA
DWN.	RF
CHKD.	BA
APPD.	BA

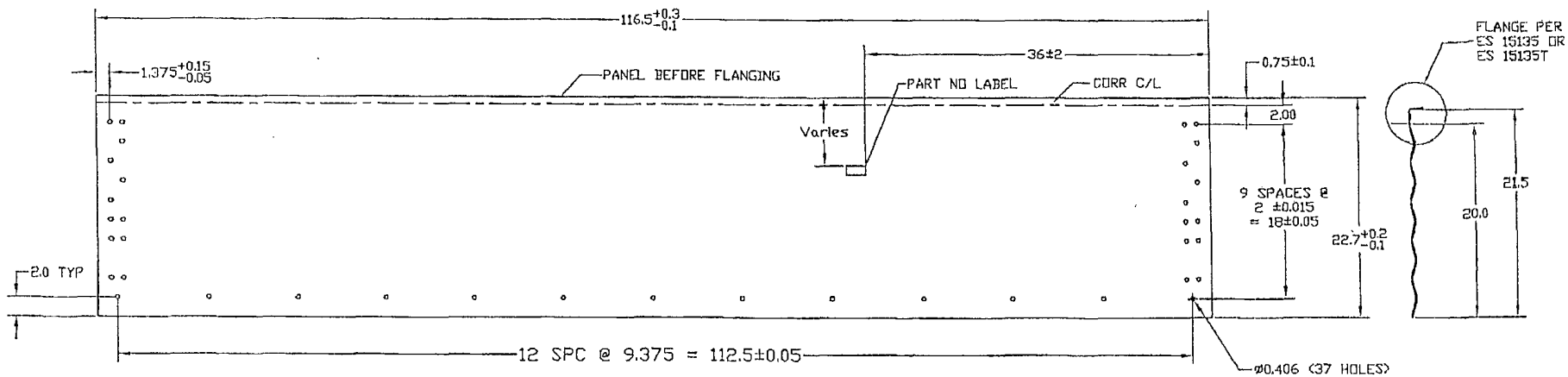
MATERIAL: SEE CHART - ASTM A653 SS GR50 G115 OIL
BLANK SIZE: 46.5x116.5 (3 pcs)
WEIGHT (LBS.): 31.5

SCALE	N.T.S.
DWN. (Y.M.D.)	2006.08.08
LOCATION	WPG
E.C.R.	A6834
E.P. NO.	02-255
DWG TYPE	A-2000

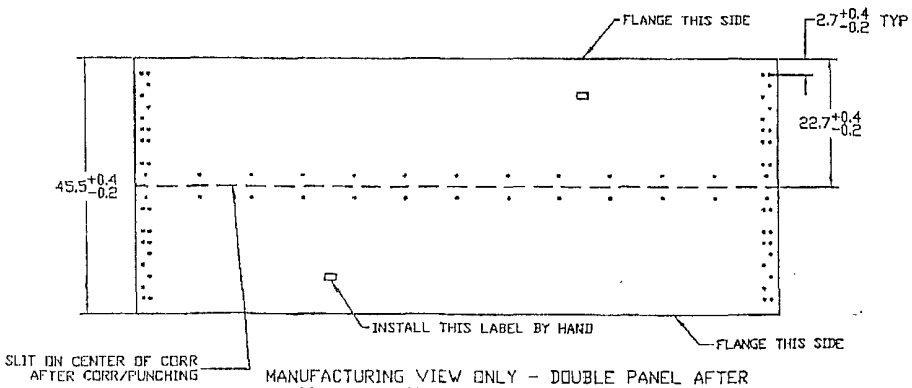
DRAWING TITLE: 9.5" FULL PANEL - 52.5" ONLY CONTAINMENT RING

CUSTOMER: -
PRINTING DATE (Y.M.D.): -

SIZE	DRAWING NO.	REV. NO.
A	019419	O



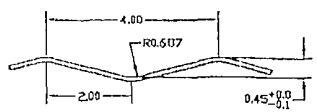
21 1/2" WALL PANEL LAYOUT BEFORE FLANGING



MANUFACTURING VIEW ONLY - DOUBLE PANEL AFTER CORR & PUNCH, BEFORE SLITTING & FLANGING

MANUFACTURING NOTES:
1. CORRUGATION..... SEE DETAIL
2. HOLE OFF CENTER OF CORR..... ± .05
3. HOLE BURR MAX..... .01
4. CUT OFF BURR MAX..... .01
5. CORNER HOLE TO HOLE DIAGONAL. ± .15

MATERIAL SPECIFICATIONS				
THICKNESS		BLANK WIDTH	WALL SHEET PART NO	WEIGHT (lb)
NOMINAL	MINIMUM			
0.066	0.061	23.3	C10514	49.4



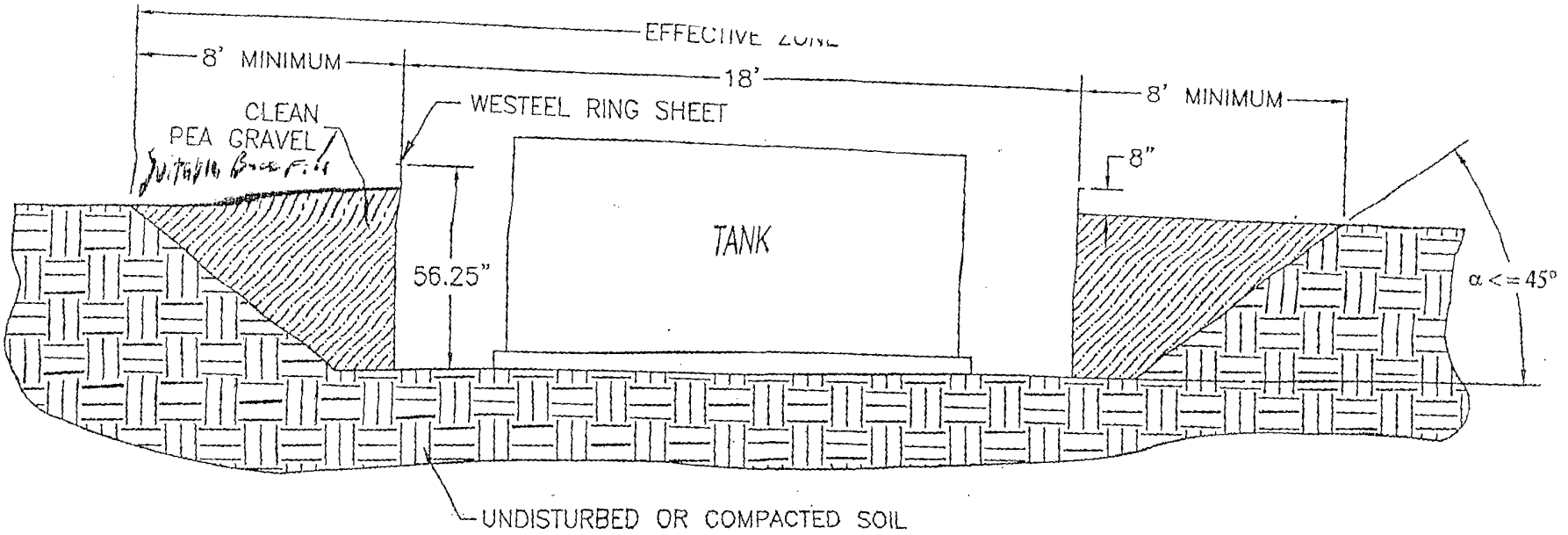
CORRUGATING DETAIL

NO	DATE	REVISION	E.C.R.	BY	CH.
1	06/12/06	CORRECTED HOLE PATTERN ON BOTTOM BLANK	A6898	RF	RF

DIMENSIONS SHOWN ARE IMPERIAL
____ UNITS SHOWN IN BRACKETS

TOLERANCES (UNLESS OTHERWISE NOTED)
DIMENSIONS:
IMPERIAL (in.) .X ± .1, .XX ± .03, .XXX ± .010
METRIC (mm) .X ± 2, .XX ± 1.0, .XXX ± .50
ANGULAR ± 1°

MATERIAL	SEE CHART - ASTM A653 SQ GR50 G115 OIL	BLANK SIZE	46.6x116.5 (2 pcs)	SURFACE AREA	WEIGHT (LBS) 49.4
DESND. RM	WESTEEL	THIS DRAWING IS THE EXCLUSIVE PROPERTY OF WESTEEL AND ALL RIGHTS ARE RESERVED. NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY MANNER WHATSOEVER WITHOUT WRITTEN PERMISSION FROM WESTEEL, a Division of JENISYS ENGINEERED PRODUCTS	SCALE nts	DWN. CYMD 98.08.13	LOCATION WINNIPEG
DWN. RM			E.C.R. A 6428	E.P. NO. 98-197	TYPE ACAD14
CHKD. YS	DRAWING TITLE CONTAINMENT RING 22' WALL PANEL			SIZE B	DRAWING NO. C10514	REV. NO. 1
APPD. RM	CUSTOMER	PRINTING DATE			



INSTALLATION INSTRUCTIONS & SITE REQUIREMENTS

1. EXCAVATE AS PER ABOVE
2. FOR BEST RESULTS, BACKFILL WITH CLEAN PEA GRAVEL (OR EQUIVALENT FREE FLOWING MATERIAL) EVENLY AROUND THE STRUCTURE, TAKING CARE NOT TO FILL IN ANY ONE AREA VERY HIGH RELATIVE TO OTHER AREAS, SO AS TO MAINTAIN THE STRUCTURE AS ROUND. WORKING AROUND THE STRUCTURE IN APPROXIMATELY 6" LIFTS IS RECOMMENDED. (NOTE: ALTERNATIVE MATERIALS CAN BE USED BUT CARE MUST BE TAKEN TO INSURE THAT THE EXTERNAL PRESSURES ACTING ON THE STRUCTURE REMAIN UNIFORM. IF NATIVE SOIL IS USED AS A BACKFILL MATERIAL, IT SHOULD BE UNIFORM IN CONSISTENCY, AND BE FREE OF LARGE ROCKS OR UNBROKEN CLUMPS, WHICH COULD RESULT IN UNEVEN LOADING).
3. THE COMPLETED STRUCTURE SHOULD EXTEND APPROXIMATELY 8" ABOVE GRADE
4. TO INSURE STRUCTURAL INTEGRITY, UNEVEN EXTERNAL WALL PRESSURE IS TO BE AVOIDED. NO VEHICLES OR OTHER SOURCES OF POINT LOADING SHOULD BE PERMITTED WITHIN THE EFFECTIVE ZONE (AS ILLUSTRATED).
5. WESTEEL IS NOT LIABLE FOR ANY DAMAGES OR INJURIES RESULTING FROM ANY FAILURE DUE TO IMPROPER INSTALLATION, IMPROPER SITE CONDITIONS, OR INADEQUATE MAINTENANCE OF THE SITE.

NOTE: THIS SYSTEM IS NOT DESIGNED FOR THE SECONDARY CONTAINMENT OF LIQUIDS, RATHER, TO ALLOW FOR INSPECTION OF THE TANK.

DURA•SKRIM® J30, J36 & J45 BB

PRODUCT DESCRIPTION

DURA•SKRIM J30, J36 and **J45** are Linear Low Density Polyethylene geomembranes reinforced with a heavy encapsulated 1300 Denier polyester reinforcement. In addition to excellent dimensional stability the tri-directional reinforcement provides exceptional tear and tensile strength.

DURA•SKRIM J-Series membranes are formulated with thermal and UV stabilizers to assure a long service life. Custom colors are available based on minimum volume requirements.

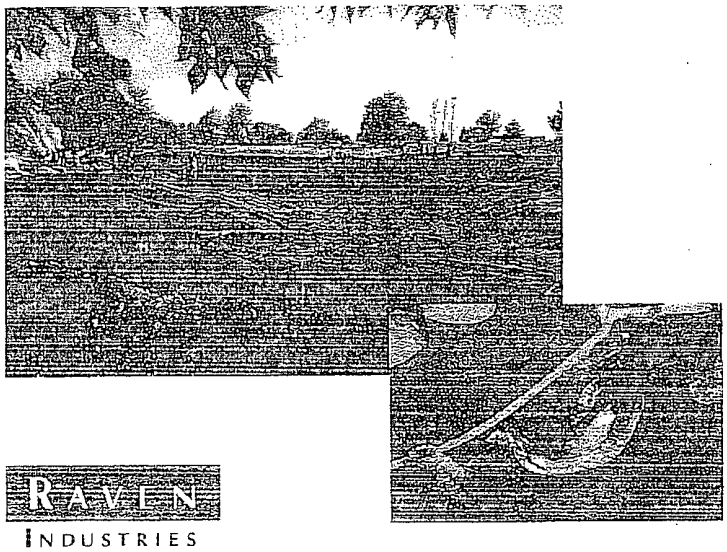
PRODUCT USE

DURA•SKRIM J30, J36 and **J45** are used in applications that require exceptional outdoor life and demand high tear strength and resistance to thermal expansion.

DURA•SKRIM J30, J36 and **J45** are manufactured from a very chemical-resistant, Linear Low Density Polyethylene with excellent cold crack performance.

SIZE & PACKAGING

DURA•SKRIM J30, J36 and **J45** are available in a variety of widths and lengths to meet the project requirements. Large diameter mill rolls are available to assure an efficient seaming process. Factory welded panels are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time saving installation.



RAVEN INDUSTRIES
Engineered Films Division

PRODUCT	PART NUMBER
DURA•SKRIM J30	J30BB
DURA•SKRIM J36	J36BB
DURA•SKRIM J45	J45BB

COMMON APPLICATIONS

- Waste Lagoon Liners
- Floating Covers
- Daily Landfill Covers
- Modular Tank Liners
- Tunnel Liners
- Remediation Liners
- Earthen Liners
- Interim Landfill Covers
- Remediation Covers
- Landfill Caps
- Erosion Control Covers
- Radon Retarder
- Canal Liners
- Disposal Pit Liner
- Water Containment Ponds
- Heap Leach Liner

DURA•SKRIM®

DURA-SKRIM® J30, J36 & J45 BB

PROPERTIES	TEST METHOD	DURA-SKRIM J30BB		DURA-SKRIM J36BB		DURA-SKRIM J45BB	
		Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages
APPEARANCE		Black/Black		Black/Black		Black/Black	
THICKNESS, NOMINAL	ASTM D5199	27 mil	30 mil	32 mil	36 mil	40 mil	45 mil
WEIGHT lbs/MSF (oz/yd²)	ASTM D5261	126 lbs (18.14)	140 lbs (20.16)	151 lbs (21.74)	168 lbs (24.19)	189 lbs (27.21)	210 lbs (30.24)
CONSTRUCTION		**Extrusion laminated with encapsulated tri-directional scrim reinforcement					
PLY ADHESION	ASTM D413	16 lbs	20 lbs	19 lbs	27 lbs	25 lbs	33 lbs
1" TENSILE STRENGTH	ASTM D7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	138 lbf MD 105 lbf DD
1" TENSILE ELONGATION @ BREAK % (FILM BREAK)	ASTM D7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD
1" TENSILE ELONGATION @ PEAK % (SCRIM BREAK)	ASTM D7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31 DD	20 MD 20 DD	36 MD 36 DD
TONGUE TEAR STRENGTH	ASTM D5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	114 lbf MD 107 lbf DD	100 lbf MD 100 lbf DD	125 lbf MD 127 lbf DD
GRAB TENSILE	ASTM D7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	295 lbf MD 294 lbf DD	220 lbf MD 220 lbf DD	341 lbf MD 337 lbf DD
TRAPEZOID TEAR	ASTM D4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD
*DIMENSIONAL STABILITY	ASTM D1204	<1	<0.5	<1	<0.5	<1	<0.5
PUNCTURE RESISTANCE	ASTM D4833	50 lbf	64 lbf	65 lbf	83 lbf	80 lbf	99 lbf
MAXIMUM USE TEMPERATURE		180°F	180°F	180°F	180°F	180°F	180°F
MINIMUM USE TEMPERATURE		-70°F	-70°F	-70°F	-70°F	-70°F	-70°F

MD = Machine Direction
DD = Diagonal Directions

Note: Minimum Roll Averages are set to take into account product variability in addition to testing variability between laboratories.

*Dimensional Stability Maximum Value

**DURA-SKRIM J30BB, J36BB and J45BB are a four layer reinforced laminate. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications.

DURA-SKRIM J30BB, J36BB and J45BB are reinforced with a 1300 denier tri-directional scrim reinforcement.

RAVEN INDUSTRIES
RAVEN INDUSTRIES, INC. / Engineered Films Division
P.O. Box 5107 • Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333
Toll Free: 800-635-3456

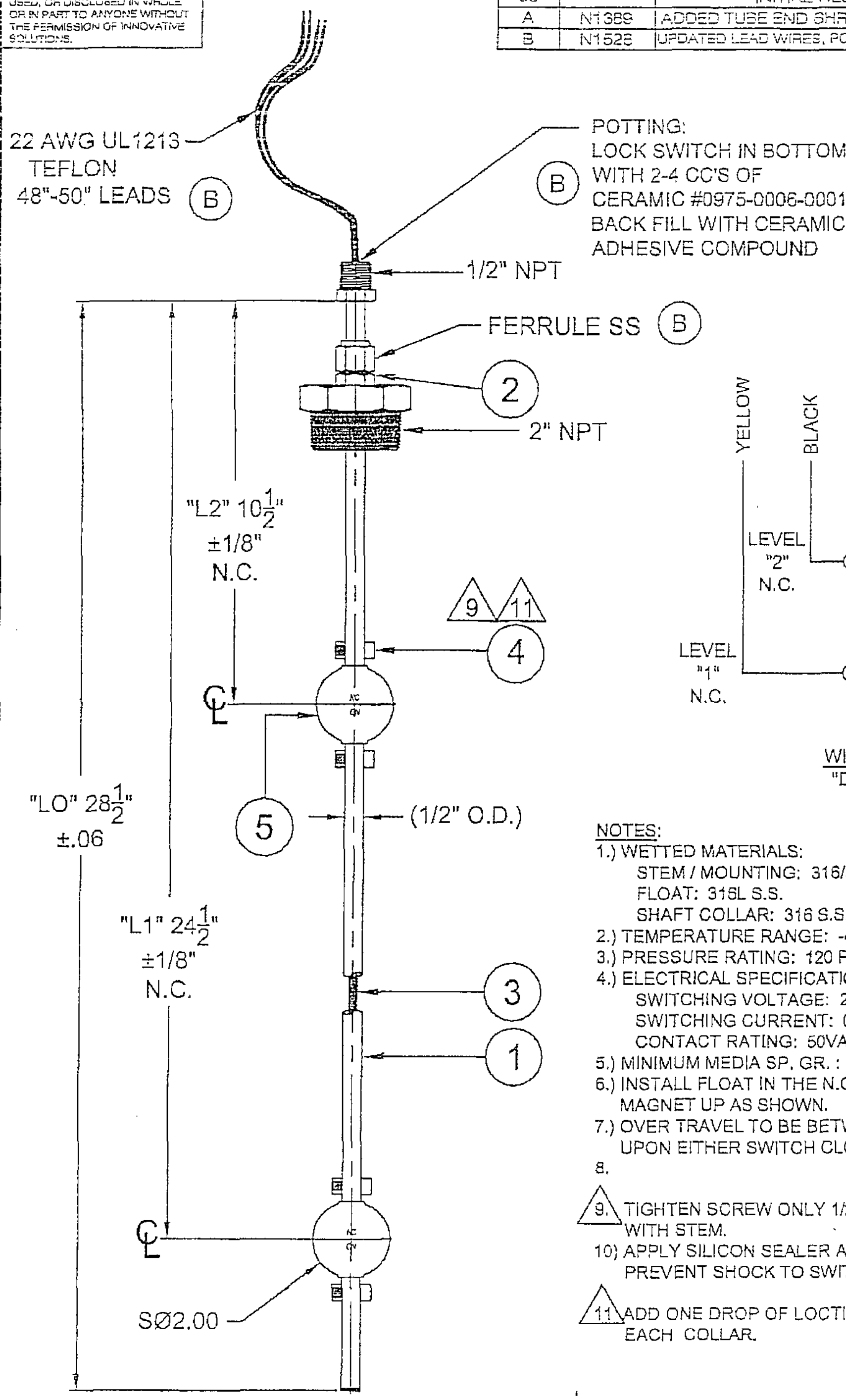
ISO 9001:2000 CERTIFIED MANAGEMENT SYSTEM

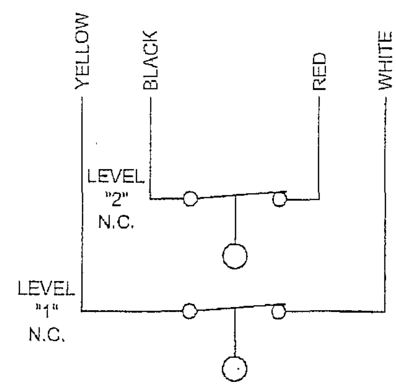
www.ravengeo.com

-PROPRIETARY NOTICE-
THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED, OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT THE PERMISSION OF INNOVATIVE SOLUTIONS.

REVISION BLOCK

REV.	E.C.N. NO.	DESCRIPTION	DATE	APPRV'D.
00		INITIAL RELEASE	6/27/06	D.T.
A	N1369	ADDED TUBE END SHRINK AND POTTING	1/25/07	MJR
B	N1528	UPDATED LEAD WIRES, POTTING AND FERRULE	5/12/09	R.B.





WIRING DIAGRAM
"DRY" CIRCUITS

NOTES:
1.) WETTED MATERIALS:
STEM / MOUNTING: 316/316L S.S.
FLOAT: 316L S.S.
SHAFT COLLAR: 316 S.S.
2.) TEMPERATURE RANGE: -40°F TO +250°F
3.) PRESSURE RATING: 120 PSIG
4.) ELECTRICAL SPECIFICATIONS:
SWITCHING VOLTAGE: 240V AC/DC MAX.
SWITCHING CURRENT: 0.5 AMP MAX.
CONTACT RATING: 50VA MAX.
5.) MINIMUM MEDIA SP. GR. : 0.85 S.G.
6.) INSTALL FLOAT IN THE N.C. POSITION WITH MAGNET UP AS SHOWN.
7.) OVER TRAVEL TO BE BETWEEN 1/16" AND 3/16" MAX. UPON EITHER SWITCH CLOSURE OR OPENING.
8.
9. TIGHTEN SCREW ONLY 1/2 THRU PAST CONTACT WITH STEM.
10) APPLY SILICON SEALER AROUND SWITCHES TO PREVENT SHOCK TO SWITCHES.
11 ADD ONE DROP OF LOCTITE 290 TO THE SET SCREWS OF EACH COLLAR.

ITEM	QTY	PART NUMBER	DESCRIPTION, CATALOG NO. OR FINISHED SIZE	MAT'L
5	2	2000-2000-0006	2000-STD FLOAT	316L S.S.
4	4	0610-0500-0008	1/2" SHAFT COLLAR	316 S.S.
3	1	3000C3890-0001	SWITCH ASSEMBLY	
2	1	0199-0908-0500	AJUSTABLE MOUNTING	316/316L
1	1	5000C3890-0001	STEM/MTG. SUB-ASSEMBLY	316/316L

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, [ ] ARE IN MM (MILLIMETERS)
TOLERANCES:
X=.1 XX=.01 XXX=.005
FRACTIONS ±1/64, ANGLES ±30'
MACHINED SURFACES: 63/RMS
REMOVE ALL BURRS AND SHARP EDGES

NEXT ASS'Y.

MAT'L PART #	DRAWN BY: MJR	DATE: 6/26/06	INNOVATIVE SOLUTIONS, LLC
HEAT TREAT	CHKD. BY: D.T.	DATE: 6/27/06	TITLE 2 LEVEL S.S. / S.S. FLOAT
FINISH	APPRVD. BY: D.T.	DATE: 6/27/06	L500 LEVEL SENSOR
PLATING	PROJECT NO.	SKETCH NO.	SIZE B · FSCM NO. · DWG. NO. L500C3890-0001 · REV. B
MAT'L: AS NOTED			SCALE .25 · SHEET 1 OF

Exhibit 2.4

Section III

Operation & Maintenance Plan

EnerVest Operating, LLC (EV)

BELOW-GRADE TANK
OPERATIONAL REQUIREMENTS

Rule 19.15.17.12

A. EV will operate and maintain Below-Grade Tanks to insure the integrity of the below-grade tank, liner, liner system or berms to prevent contamination of fresh water and protect public health and the environment.

EV will not discharge or store any hazardous waste material of any kind in any Below-Grade Tank.

Any penetration of the below-grade below the liquid's surface that may occur, EV shall remove all liquid above the damage or leak line within 48 hours of the discovery. EV shall notify the appropriate district office within 48 hours of the discovery and repair the damage or replace the liner or below-grade tank.

EV will insure the metal retaining walls of the below-grade system around each tank will extend at least 6" above ground level or be equipped with a 6" earthen berm in an effort to divert run-on water around the below-grade system.

D. EV will insure that a below-grade tank constructed and installed prior to June 16, 2008 that does not meet the requirements of 19.15.17.11 NMAC and does not demonstrate integrity or that the below-grade tank develops any conditions as identified in 19.15.17.12 NMAC shall close the existing below-grade tank pursuant to the closure requirements of 19.15.17.13 NMAC and install a below-grade tank that is in full compliance with our approved design. Please see below-grade system diagram in Appendix 8 for details.

EV will inspect the below-grade tank containment area at least monthly to insure the cement lining of this tank is free of debris and cracks on the floor of the containment area. If cracks are visible, they will be monitored to insure there is no danger of any fluids penetrating to the surface below the tank. Cracks will be repaired in such a manner as to avoid such penetration to the surface below the tank. A written record of each inspection will be maintained for five years.

EV will insure all Below-grade tanks will be equipped with automatic high-level alarm which sounds at 24" and than shut off devise to insure that flow will shut off at the freeboard height of 10 1/2 inches.

The majority of our below-grade tanks are within the berm around our tank battery and as so are protected from run-on water. Those outside this berm will be protected with an earthen berm which will extend at least 6" above surface ground level to divert run-on around the tank.

EV will remove any visible or measurable layer of oil from the fluid surface of a below-grade tank.

With any below-grade tank, installed before June 16, 2008, that is retrofitted or replaced with another tank, EV will insure that the soil beneath the removed soil is inspected for wet, discolored, or any other evidence of release, with photographic evidence. EV will report the results of all testing to the division on form C-141 and demonstrate to the division whether the evidence of contamination indicates at an imminent threat to fresh water, public health, safety of the environmental exists. If the division determines that the contamination does not pose an imminent threat to fresh water, public health, safety or the environment, EV shall complete the retrofit or the replacement of the below-grade tank as per our approved design program as indicated in Appendix 8. If EV or the division determines that the contamination poses an imminent threat to fresh water, public health, safety or the environment, then EV shall close the existing below-grade tank pursuant to the closure requirements of 19.17.15.13 NMAC prior to initiating the retrofit or replacement.

Table 1.1 – GSE HD Smooth Geomembrane

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE VALUE 30 mil	40 mil	60 mil	80 mil	100 mil
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5199	every roll	30 (0.75) 27 (0.69)	40 (1.00) 36 (0.91)	60 (1.50) 54 (1.40)	80 (2.00) 72 (1.80)	100 (2.50) 90 (2.30)
Density, g/cm^3	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction) Strength at Break, lb/in-width (N/mm) Strength at Yield, lb/in-width (N/mm) Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbell, 2 ipm G.L. 2.0 in (51 mm) G.L. 1.3 in (33 mm)	20,000 lb	 120 (21) 66 (11) 700 13	 152 (26) 84 (14) 700 13	 243 (42) 132 (23) 700 13	 327 (57) 177 (30) 700 13	 410 (71) 212 (37) 700 13
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (124)	42 (186)	58 (257)	73 (324)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	65 (289)	85 (378)	125 (556)	160 (711)	195 (867)
Carbon Black Content, % (Range)	ASTM D 1 603*/421 8	20,000 lb	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	Note[1]	Note[1]	Note[1]	Note[1]	Note[1]
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	1000	1000	1000	1000	1000
Oxidative Induction Time, min	ASTM D 3895, 200°C; O_2, 1 atm	200,000 lb	>140	>140	>140	>140	>140
TYPICAL ROLL DIMENSIONS							
Roll Length[2], ft (m)			1,120 (341)	870 (265)	560 (171)	430 (131)	340 (104)
Roll Width[2], ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft^2 (m^2)			25,200 (2,341)	19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- [1]Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- [2]Roll lengths and widths have a tolerance of ± 1%.
- GSE HD is available in rolls weighing approximately 3,900 lb (1,769 kg).
- All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of <-77° C when tested according to ASTM D 746.
- *Modified.

O.R.E. SYSTEMS
P.O. Box 3677
Farmington, NM 87499
(505) 327-2161

Section IV

Closure Plan

EnerVest Operating, LLC (EV)

BELOW-GRADE TANK CLOSURE REQUIREMENTS

Rule 19.15.17.13

Before June 15, 2013, EV shall close, retrofit, or replace an existing below-grade tank that has not demonstrated integrity.

EV shall close a below-grade tank within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.

A. EV shall close an existing below-grade tank that does not meet the requirements of Subsection I, paragraphs (1) through (4), of 19.15.17.11 NMAC if not retrofitted to comply with said requirements prior to any sale or change of operator to 19.15.9.9 NMAC.

Any below-grade tank installed prior to June 16, 2008 that is single walled and where any portion of the tank sidewall is below the ground surface and not visible shall equip or retrofit the below-grade tank to comply with paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, or close it, within 5 years after June 16, 2008.

Within 60 days of cessation of the permitted below-grade tanks operation or as required by Subsection B of 19.15.17.17 NMAC, EV shall close the below-grade tank in accordance with a closure plan that the appropriate division district office approves.

J. Prior to implementing any closure operations EV shall research county tax records to determine the name and address of the surface owner of the properties involved. EV shall notify this surface owner via Certified U.S. Mail, return receipt requested, of their intent to close said below-grade tank.

Upon determination, EV will notify the appropriate district office prior to any closure operations beginning. Such notification shall be at least 72 hours, via U.S. Mail, prior to beginning work but not more than one week prior to beginning work. Such notice shall contain at a minimum the following:

Operators Name
Unit letter, Section, Township, & Range of well
Well name and well number
API Number of well

E. .All free standing liquids and sludge will be removed at the start of the below-grade tank closure process from the below-grade tank and disposed of in one of the below division-approved facility as indicated below:

TNT Land Farm	Permit # NM-01-0008	Liquids & Sludge
Environtech Land Farm	Permit # NM-01-0011	Solids
AguaMoss	Permit # 247130	Liquids

EV will obtain prior approval from the division to dispose, recycle, reuse, or reclaim the below-grade tanks and provide documentation of the final disposition of the below-grade tank in the closure report.

Existing liners that are removed as a result of closure will be wiped cleaned and disposed of at a solid waste facility listed below in compliance with Subparagraph (M) of Paragraph (I) of Subsection C 19.15.35.8 NMAC..

San Juan Regional Landfill	Permit # SWM 052426 or
"	Special Waster Permit # SWM052433 "sp"

If there is any on-site equipment associated with a below0grade tank, EV shall remove the equipment, unless the equipment is required for some other purpose .

Upon removal of the below-grade tank, EV will take, at a minimum, a five point composite sample from where the tank was sitting. EV shall collect individual grab samples will be taken from any area that is wet, discolored or showing other evidence of a release. All samples will be analyzed for the following:

Components	Test Method	Limits (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	100
Chlorides	EPA 300.1	250 or background, whichever is greater

EV will insure that the results of all sampling shall be reported to the division on approved form C-141. EV understands that the division may require additional delineation upon review of the results.

If sampling demonstrates that concentrations specified above have NOT been exceeded, or that a release has NOT occurred, EV will backfill the excavation with compacted, non-waste containing, earthen material, construct a division prescribed soil cover, and recontour and re-vegetate the site. The division prescribed soil cover, recontouring, and re-vegetation shall comply with 19.15.17.13.

If EV or the division determines that a release has occurred, EV shall fully comply with 19.15.29 NMAC and 19.15.30 NMAC as appropriate.

G. Once EV has closed a below-grade tank, we shall reclaim the site to a safe and stable condition that blends with the surrounding undisturbed area. When possible, EV will restore the impacted surface area to the condition that existed prior to oil and gas operations by the placement of soil cover.

If the closed area is within the confines of the pad location EV will blend the site to match the pad location as much as possible. Such activities shall prevent erosion, protect fresh water, human health and the environment. EV will obtain written agreement from the surface owner for any alternate re-vegetation proposals and submit to the division for final approval.

H. The soil cover design will be consistent with the requirements of 19.15.17.13(H)(1)and (3). The soil cover will 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 prevent ponding of water and erosion of the cover material.

I. EV will seed the disturbed areas the first growing season after closing the below grade tank. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will 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 noxious weeds, and maintain that cover through two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.

EV shall notify the division when it has seeded or planted and when it successfully achieves re-vegetation by U.S. Mail.

K. Within 60 days of completion of closure operations, EV will file Form C-144, with attachments, outlining the detailed operations of the closing operations. Such attachments shall include, but not limited to, proof of surface owner and division notifications, confirmation of sampling analysis, disposal facility names and permit numbers, soil backfilling and cover installation, re-vegetation application rates and seeding techniques, and photo documentations.

Section V

Hydrogeology Report

Regional Hydrogeology Report

The San Jose Formation of Eocene age occurs in New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central San Juan Basin. It overlies the Nacimiento Formation in the area generally sourth of the Colorado-New Mexico state line and overlies the Animas Formation in the area generally north of the State line.

The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and variegated shale. Thickness of the San Jose Formation generally increases from west to east, ranging from 200 feet in the west and south to almost 2,700 feet in the center of the structural basin.

Ground water is associated with alluvial and fluvial sandstone aquifers. Therefore the occurrence of ground water is mainly controlled by the distribution of sandstone in the formation. The distribution of such sandstone is the results of original depositional extend plus any post-depositional modifications, namely erosion and structural deformation.

Transmissivity data for the San Jose Formation are minimal. Values of 40 and 120 feet squared per day were determined from two aquifer tests (Stone et al, 1983. table 5). The reported or measured discharge from 46 water wells completed in San Jose Formation ranges from 0.15 to 61 gallons per minute and the median is 5 gallons per minute. Most of the wells provide water for livestock and domestic use.

The San Jose Formation is a very suitable unit for recharge from precipitation because soils that form on the unit are sandy and highly permeable and therefore readily absorb precipitation. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the San Jose Formation by the San Juan River and its tributaries all tend to reduce the effective recharge to the unit.

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.

Site Specific Hydro Geologic Analysis

Nordhaus 715 S

API 30-045-32531

The above referenced well is located at UL F, Sec 12, 31N, 09W at am elevation of 6540'.

According to the New Mexico Office of State Engineer, water well, SJ00014 on the TOPO Map, drilled was in 1952 by El Paso Natural Gas in the SW/4, Sec 10, 31N, 09W, with no recorded elevation and encountered water at a depth of 312 feet. This well is approximately 2.5 miles West of our location.

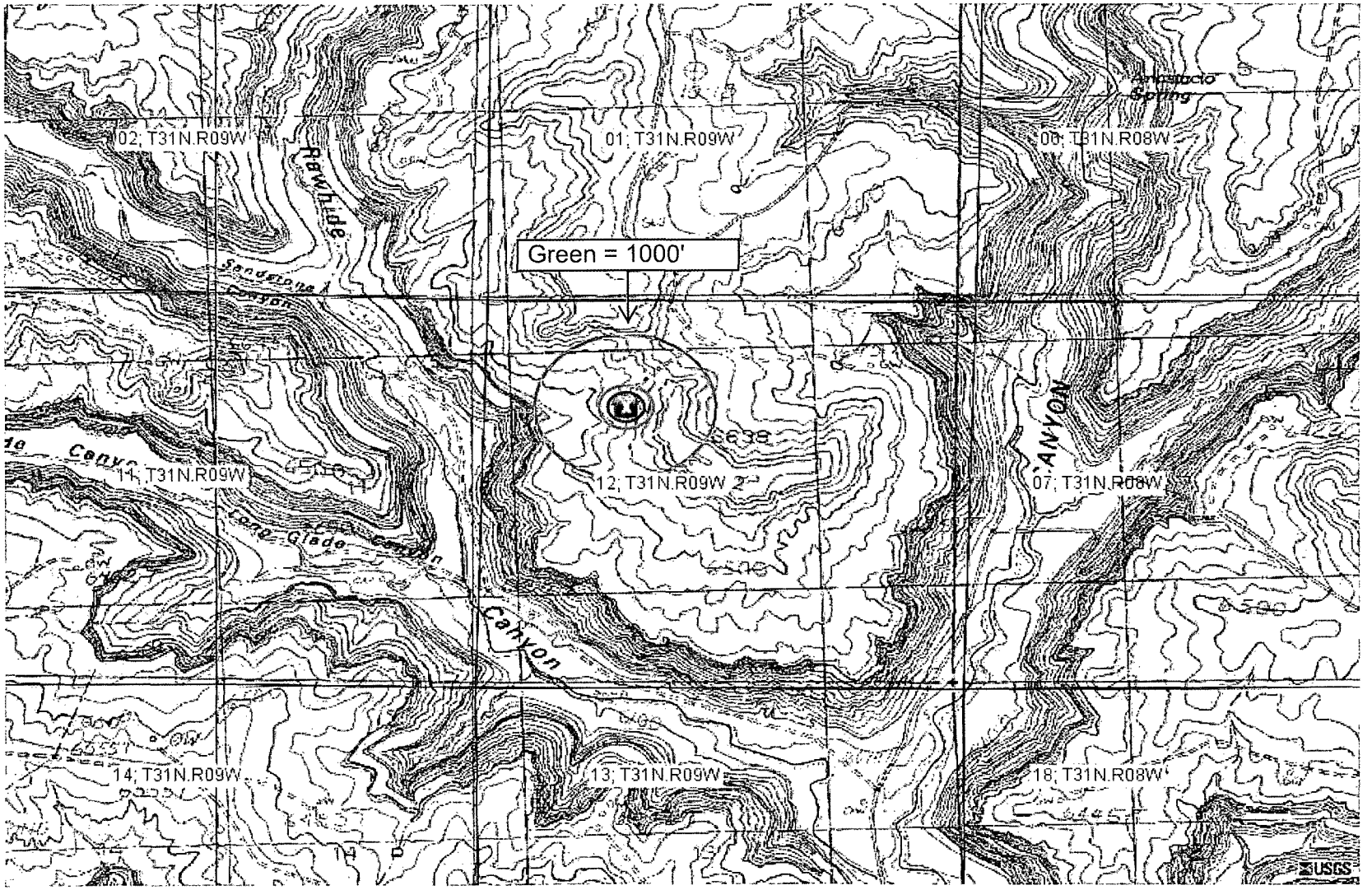
The water well, SJ00013, in the SW/4 of Sec 10, 31N, 09W was drilled in 1953. There was no indication of water and this well was plugged in that same year.

Meridian Oil drilled the Nordhaus #5A (045-24369) in 1987 at an elevation of 6528' about 200 feet East of our well. They set surface casing at 269', which is at a depth of 6259 feet, which is 281' deeper than our well. Their "Cathodic Protection Report" indicates contacting water at 280'. The report indicates a composition of clay and sandstone to a depth of 500 feet. We have no reason to believe our location has the same structure, which will prevent fluids traveling to shallower depths.

The groundwater at our well site would be greater than 200 feet at a minimum. This should allow ample protection for any groundwater in the area.

Appendix 01

U.S. 7.5 Minute TOPO Map



0 1000 2000ft

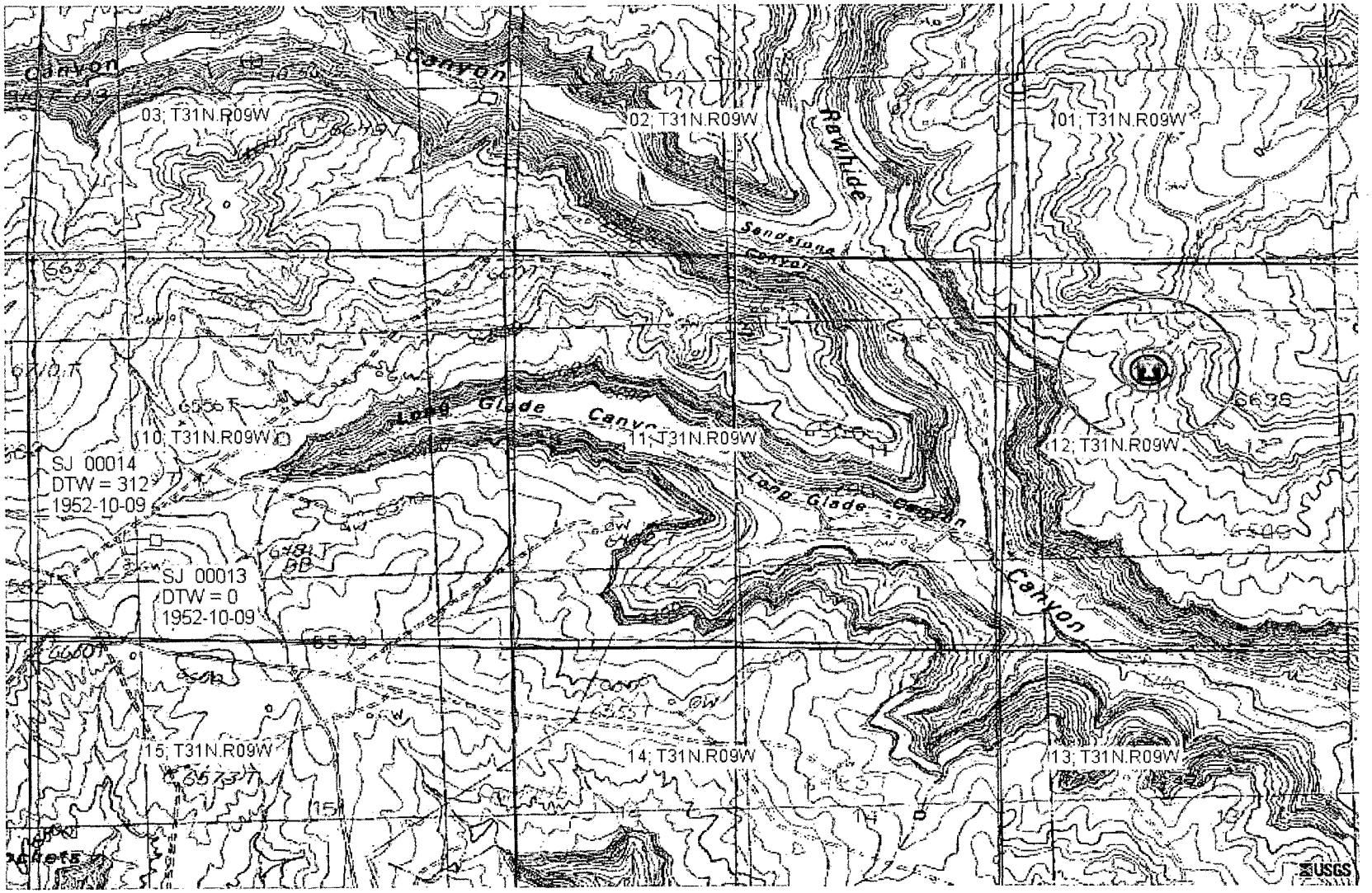
N
W E
S

Petroleum Recovery Research Center	TOPO - Nordhaus 715 S	Figure: 01
	F - Sec 12, 31N, 09W	Oct 15, 2009

API 30-045-32531

Appendix 02

Ground Water Depth



0 1000 2000ft

N W E S

Petroleum Recovery Research Center	OSE Ground Water Depth - Nordhaus 715 S	Figure: 02
	F - Sec 12, 31N, 09W	Oct 15, 2009

API 30-045-32531

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: SJ 00014
Primary Purpose: NOT NO USE OF RIGHT OR POD
Primary Status: WTD WITHDRAWN
Total Acres:
Total Diversion: 0
Owner: U.S. GOVERNMENT

Documents on File

	Doc	File/Act	Status 1	2	3	Transaction Desc.	From/To	Acres	Diversion	Consumptive
get images	DCL	1953-11-17	APP	WDR	ABS	SJ 00014	T	0	0	

Point of Diversion

(NAD83 UTM in meters)

Pod Number	Source	Q Q Q 64 16 4	Sec	Tws	Rng	X	Y	Other Location Desc
SJ 00014	Shallow		3	10	31N	09W	253017	4088369*	

*An (*) after northing value indicates UTM location was derived from PLSS - see Help

S ...ltfeger Water Well No. 4

(This form is to be executed in triplicate)

WELL RECORD

~~Misc. 1-SJ-50~~

Date of Receipt November 17, 1953. Permit No. ~~Misc. 187~~ SJ-14

Name of permitee, El Paso Natural Gas Company

Street or P. O. Box 1492, City and State El Paso, Texas

1. Well location and description: The shallow (shallow or artesian) well is located in ..¼, ..¼, SW ¼ of Section 10, Township 31N, Range 9W; Elevation of top of casing above sea level, ... feet; diameter of hole, ... inches; total depth, 462 feet; depth to water upon completion, 312 feet; drilling was commenced 10-9-52, 19..., and completed 10-19-52, 19...; name of drilling contractor Conley Cox

Box 785; Address, Aztec, New Mexico; Driller's License No. 85-0106595

2. Principal Water-bearing Strata:

	Depth in Feet From	To	Thickness	Description of Water-bearing Formation
No. 1	198	218	20	
No. 2	338	358	20	
No. 3	398	458	60	
No. 4				
No. 5				

3. Casing Record:

Diameter in inches	Pounds per ft.	Threads per inch	Depth of Casing or Liner Top	Bottom	Feet of Casing	Type of Shoe	Perforation From	To

4. If above construction replaces old well to be abandoned, give location: ..¼, ..¼, ..¼ of Section ....., Township ....., Range .....; name and address of plugging contractor,

.....

.....

date of plugging ....., 19...; describe how well was plugged:

.....

.....

.....

STATE ENGINEER SANTA FE, N. M.
RECEIVED
NOV 17 1953
PM
A

SJ-14

~~Misc. 1-SJ-14~~

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: SJ 00013
Primary Purpose: NOT NO USE OF RIGHT OR POD
Primary Status: WTD WITHDRAWN
Total Acres:
Total Diversion: 0
Owner: EL PASO NATURAL GAS COMPANY

Documents on File

	Doc	File/Act	Status 1	2	3	Transaction Desc.	From/To	Acres	Diversion	Consumptive
get images	DCL	1953-11-17	APP	WDR	ABS	SJ 00013	T	0	0	

Point of Diversion

(NAD83 UTM in meters)

Pod Number	Source	Q Q Q 64 16 4	Sec	Tws	Rng	X	Y	Other Location Desc
SJ 00013	Shallow		3	10	31N 09W	253017	4088369*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Point of Diversion Summary

POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
SJ 00013			3	10	31N	09W	253017	4088369*

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

Driller License:
Driller Name: CONLEY COX
Source: Shallow
Drill Start Date: 10/09/1952
Drill Finish Date: 10/19/1952
Log File Date: 11/17/1953
PCW Received Date:
Pump Type:
Pipe Discharge Size:
Casing Size:
Estimated Yield:
Depth Well: 458 feet
Depth Water:

Water Bearing Stratifications:	Top	Bottom	Description
	198	218	Sandstone/Gravel/Conglomerate
	338	358	Sandstone/Gravel/Conglomerate
	398	458	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	198	218
	338	358
	398	458

*UTM location was derived from PLSS - see Help

S w dtfeger Water Well No. 3

IMPORTANT — READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM.

22688

Declaration of Owner of Underground Water Right

~~2543~~ SJ-13 ~~Misc. 1 SJ-13~~ 4 SJ 49

Declaration No. ~~Misc. 186~~ Book Misc. 1 Date received November 17, 1953.

I, John F. Schaffer being first duly sworn upon my oath, depose and say that the following is a full and complete statement prepared in accordance with the instructions on the reverse side of this form and submitted in evidence of ownership of a valid underground water right, that I have carefully read each and all of the items contained therein and that the same are true to the best of my knowledge and belief.

John F Schaffer, declarant.
Chief Civil Engineer
El Paso Natural Gas Company

Subscribed and sworn to before me this 17th day of November, A.D. 1953

My commission expires June 1, 1955

A. H. Viesces
Notary Public

A. H. Viesces
Notary Public, In and for El Paso County, Texas
My commission expires June 1, 1955

STATEMENT

1. Name of water right owner U. S. Government
   of _____
   County of _____, State of _____
2. Source of water supply San Juan River Watershed
   (state whether artesian or shallow water basin)
   located in _____
   (name of underground stream, valley, artesian basin, etc.)
3. The well is located in the _____ ¼, _____ ¼, SW ¼
   of section 10, Township 31N, Range 9W, N.M.P.M.
   on land owned by U. S. Government (Paul Jaquez has Grazing Permit)
4. Description of well: date drilled 10-9-52 driller Conley Cox depth 458 feet.
   diameter (outside) of casing _____ inches; original flow _____ gal. per min.;
   present flow _____ gal. per min.; maximum pumping lift _____ feet;
   make and type of pump _____
   make, type, horsepower, etc., of power plant _____
   Fractional or percentage interest claimed in well 100%
5. Quantity of water appropriated and beneficially used _____
   (feet depth or acre feet per acre)
   for _____ purposes.
6. Acreage actually irrigated and with water right none acres,
   located and described as follows (describe only lands actually irrigated):

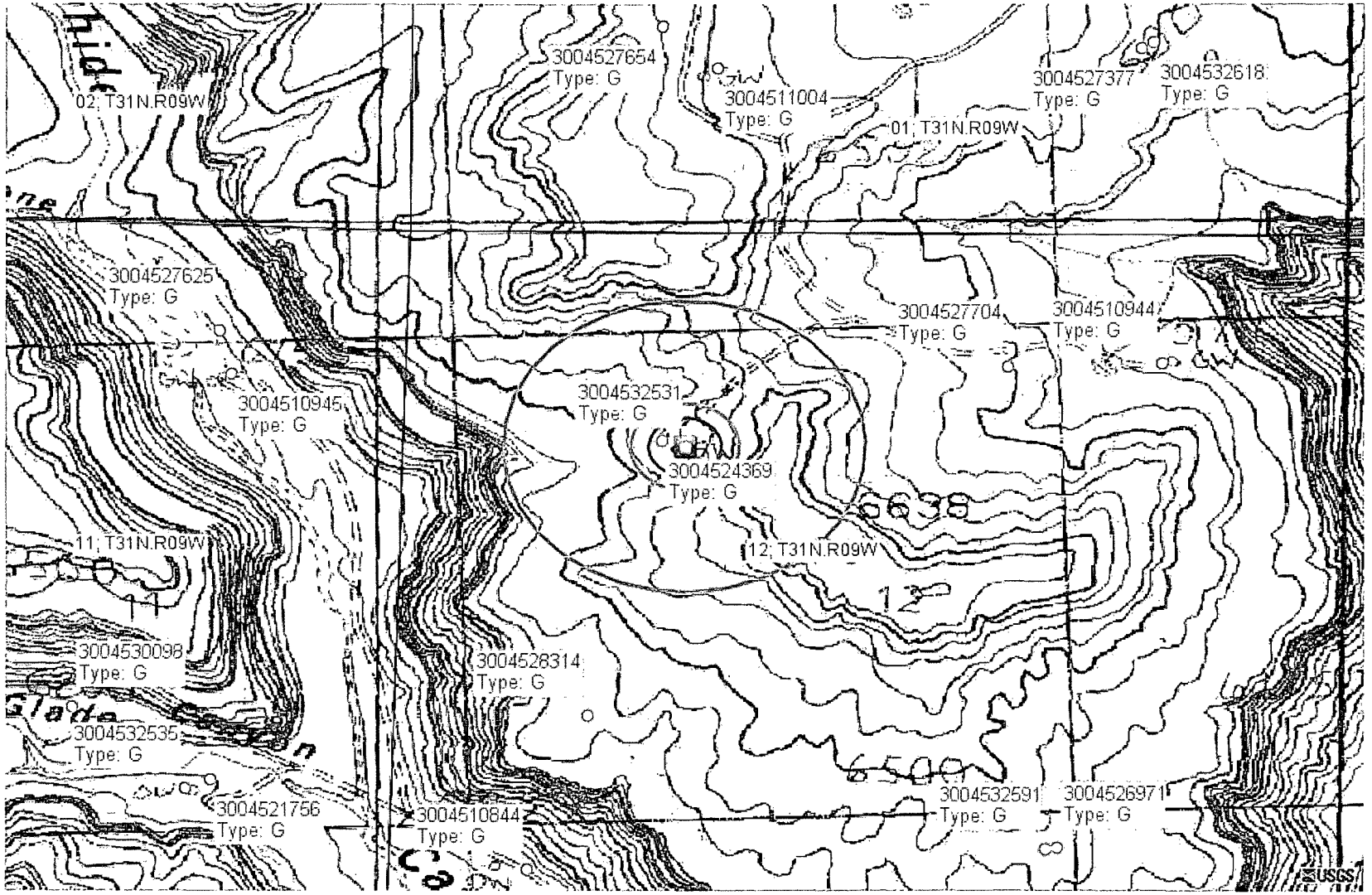
Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner

STATE ENGINEER SANTA FE, N. M.
RECEIVED
NOV 17 1953
A.M. P.M.
7 8 9 10 11 12 1 2 3 4 5 6

(Note: location of well and acreage actually irrigated must be shown on plat on reverse side.)

7. Water was first applied to beneficial use _____ and since that time has been used fully and continuously on all of the above described lands or for the above described purposes except as follows: _____
8. Additional statements or explanations Plugged & Abandoned

~~2543~~ SJ-13



0 500 1000ft

N W E S

Petroleum Recovery Research Center	Offset Wells - Nordhaus 715 S	Figure: 2a
	Offset wells within 1000'	Oct 15, 2009

E

1471

30-045-24369

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit F Sec. 12 Twp 31 Rng 9

Name of Well/Wells or Pipeline Serviced NORDHAUS #5A

cps 6223w

Elevation N/A Completion Date 1/5/87 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 280'

Depths gas encountered: N/A

Type & amount of coke breeze used: 2600 lbs.

Depths anodes placed: 480', 470', 460', 400', 390', 380', 340', 330', 320', 290'

Depths vent pipes placed: 500'

Vent pipe perforations: 260'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Burge Corrosion Systems

P.O. Drawer G
Aztec, New Mexico 87410

Drilling Log (Attach Hereto). ☐ (0223W)

Completion Date January 5, 1987

Well Name	Location	
Nordhaus #~~6~~ A SA	Union Texas Petroleum	
Type & Size Bit Used		Work Order No.

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500'		2600 #		

Anode Depth									
#1 480	#2 470	#3 460	#4 400	#5 390	#6 380	#7 340	#8 330	#9 320	#10 290
Anode Output (Amps)									
#1 3.2	#2 3.4	#3 3.4	#4 3.2	#5 2.6	#6 2.3	#7 3.4	#8 3.9	#9 3.9	#10 2.6
Anode Depth									
#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)									
#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

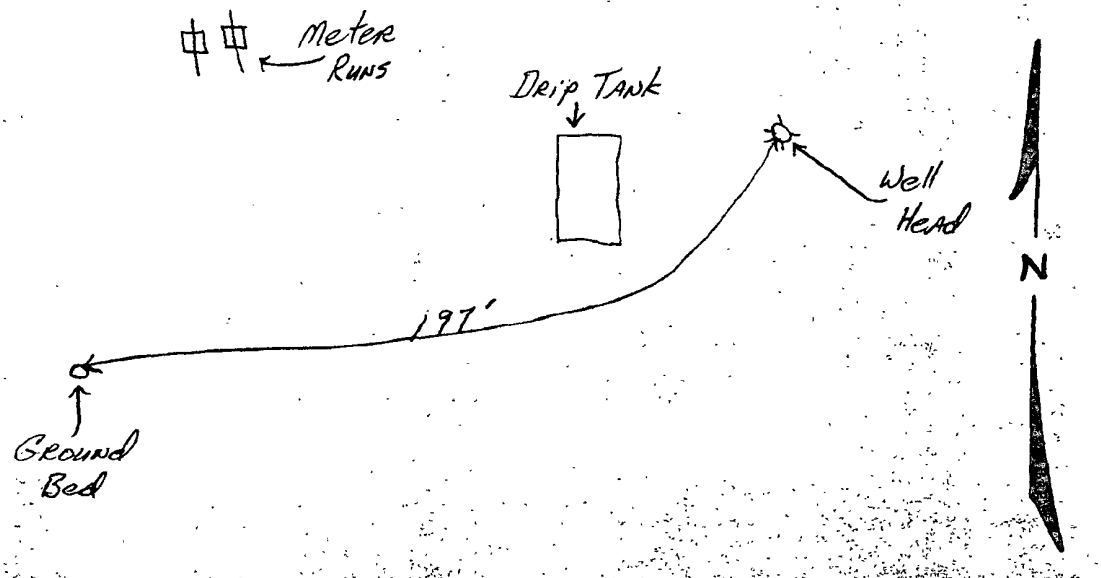
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.0	Amps 13.2	Ohms 0.91	4260'	

Remarks: Had to fill hole w/ water to log hole. Used 500' of 1" vent pipe w/ 260' of perforations.

All Construction Completed

Cody Mumbaugh
(Signature)

GROUND BED LAYOUT SKETCH



CORROSION CONTROL CO. — 301 Ash — Aztec, New Mexico

COMPANY Union Texas Petroleum DAILY DRILLING REPORT January 4, 1987

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Nordhaus	5-A 6-A	1	31	9

WATER AT	FEET	HOLE MADE:
280'		500'

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0'	40'	Clay & sandstone	Tan
40'	190'	Sandstone	Tan
190'	240'	Sandy Shale & sandstone	Gray
240'	280'	Sand	Yellow/Tan
280'	295'	Shale	Gray
295'	320'	Sandstone	Tan
320'	350'	Sandy Shale	Gray
350'	380'	Sandstone	Gray
380'	410'	Sandy Shale	Gray
410'	450'	Sandstone	Gray
450'	500'	Sandy shale	Gray

REMARKS: Water volume was very slight.

Driller Cody Mankress Tool Dresser

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-78

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
SUPRON ENERGY CORPORATION	NORDHAUS	5-A

Unit Letter	Section	Township	Range	County
F	12	31 NORTH	9 WEST, N.M.P.M.	SAN JUAN

Actual Footage Location of Well:
1520 feet from the North line and 1520 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6528	Dakota Mesaverde	Basin Dakota Blanco Mesaverde	W½ 314.98 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

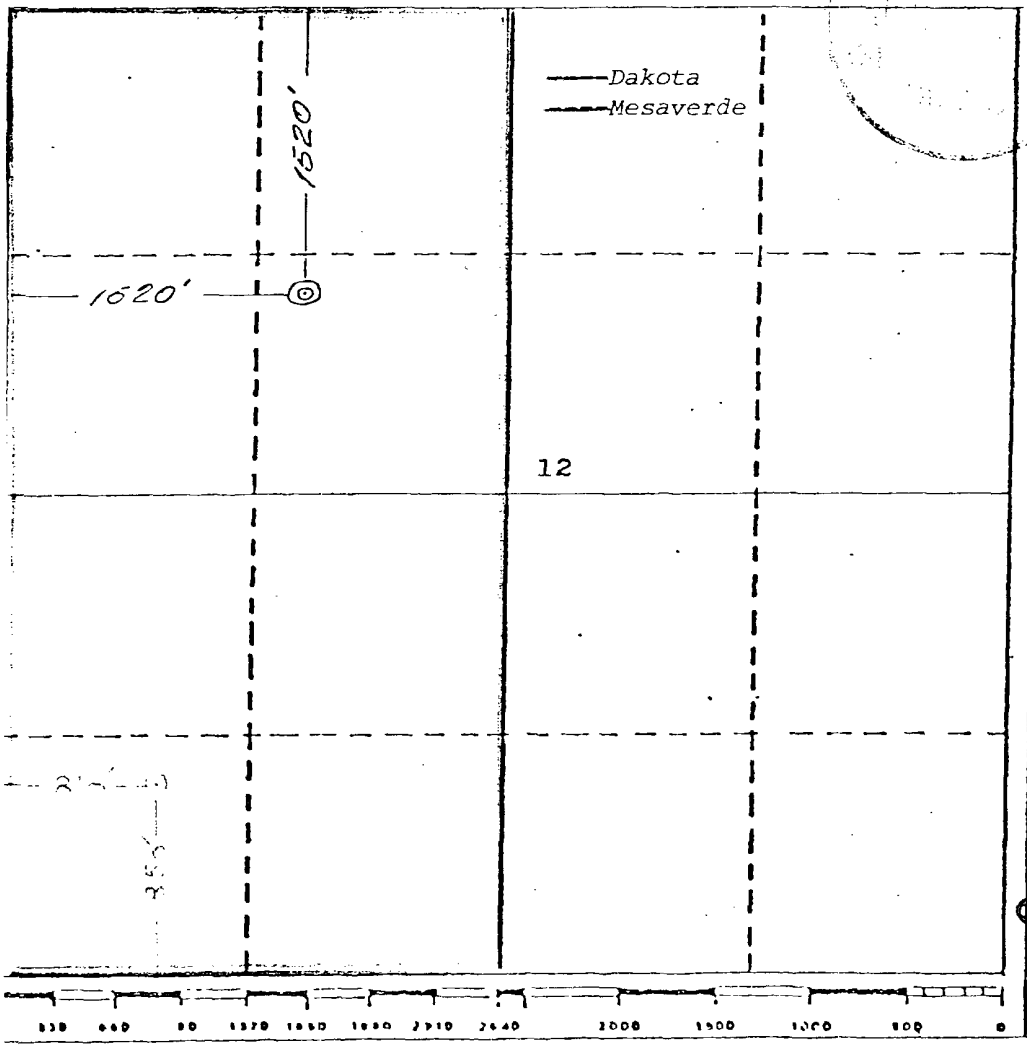
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Lucy D. Motta

Position: Area Superintendent

Company: SUPRON ENERGY CORPORATION

Date: March 19, 1980

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 knowledge and belief.

REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR
STATE OF NEW MEXICO
NO. 1463
JAMES P. LEESE

Date Surveyed: March 13, 1980

Registered Professional Engineer and/or Land Surveyor: James P. Leese

James P. Leese

Certificate No. 1463

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
SUPRON ENERGY CORPORATION

3. ADDRESS OF OPERATOR
P.O. Box 808, Farmington, New Mexico 87401

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1520 ft./N ; 1520 ft./W line
AT TOP PROD. INTERVAL: Same as above
AT TOTAL DEPTH: Same as above

5. LEASE
SF 078508

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Nordhaus

9. WELL NO.
5-A

10. FIELD OR WILDCAT NAME
Blanco Mesaverde-Basin Dakota

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 12, T-31N, R-9W, N.M.P.M.

12. COUNTY OR PARISH: San Juan
13. STATE: New Mexico

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
6541 R.K.B.

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☒
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

RECEIVED
FEB 09 1981
U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

OIL CON. COM.
DIST. 3

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1. Spudded 14-3/4" surface hole at 10:45 p.m. 1-31-81.
2. Drilled 14-3/4" surface hole to total depth of 269 ft. R.K.B.
3. Ran 6 joints of 10-3/4", 32.75#, H-40 casing and set at 268 ft. R.K.B.
4. Cemented with 200 sacks of class "B" with 3% calcium chloride and 1/4 lb. flo-cele per sack. Plug down at 8:30 p.m. 2-1-81. Cement circulated to surface.
5. Waited on cement for 12 hours.
6. Pressure-tested casing to 900 P.S.I. for 15 minutes. Held OK.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Kenneth E. Roddy TITLE Production Supt. DATE February 6, 1981

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

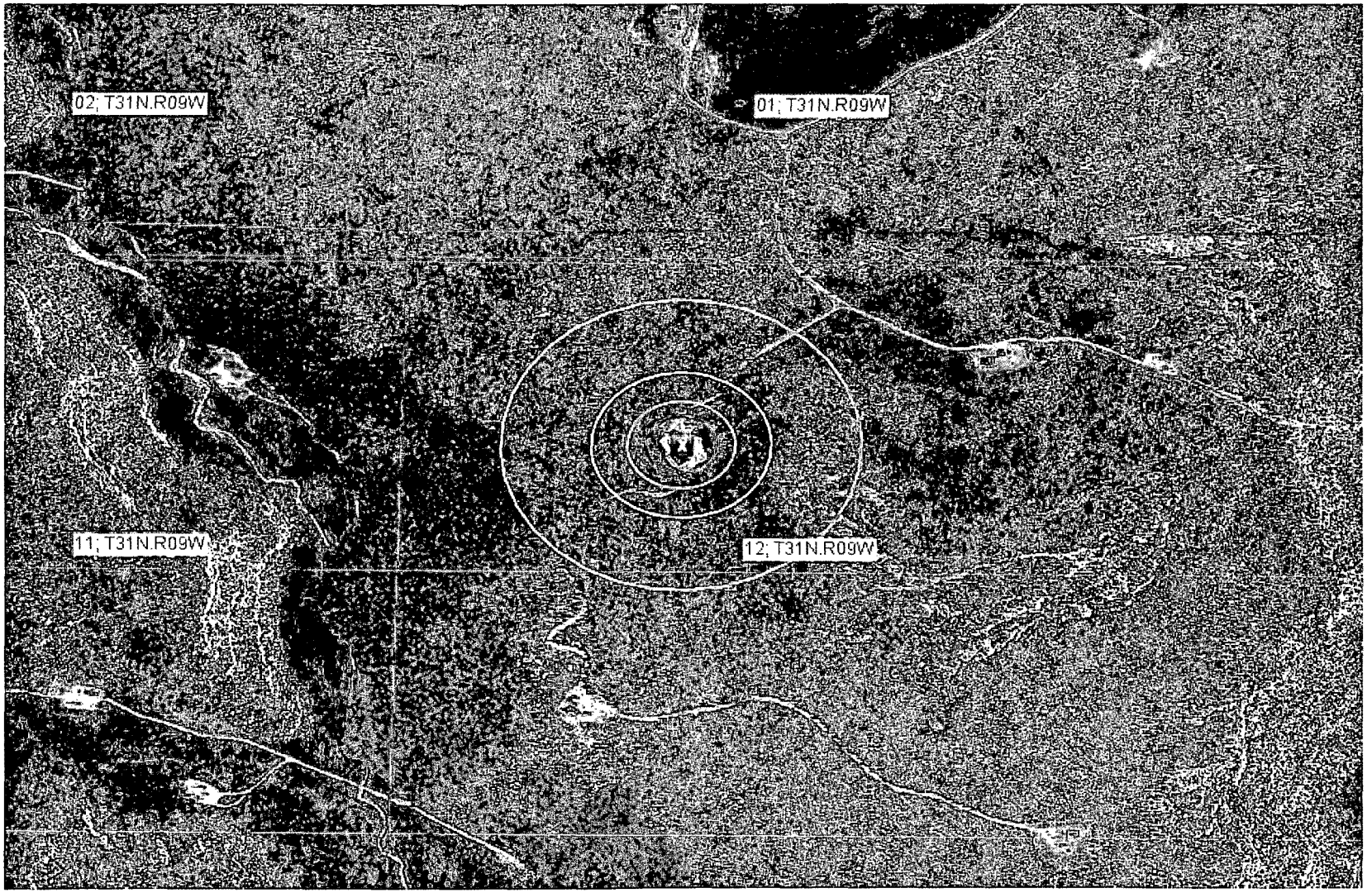
NMOCC

*See Instructions on Reverse Side

BM

Appendix 03

Aerial Photo

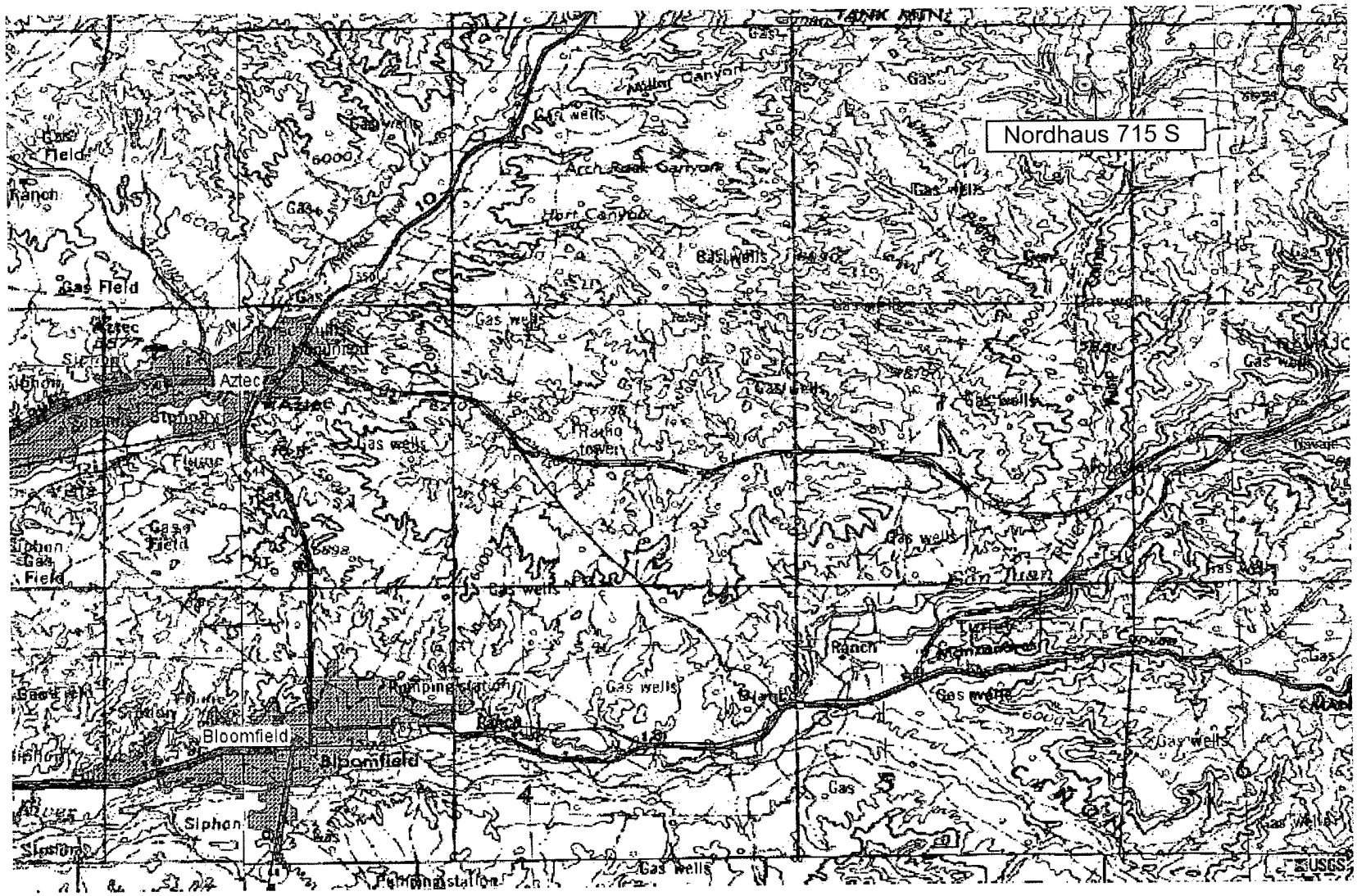


0 500 1000ft

N W E S

Petroleum Recovery Research Center	Aerial - Nordhaus 715 S	Figure: 03
	F - Sec 12, 31N, 09W	Oct 15, 2009

API 30-045-32531



0 2 4mi

N W E S

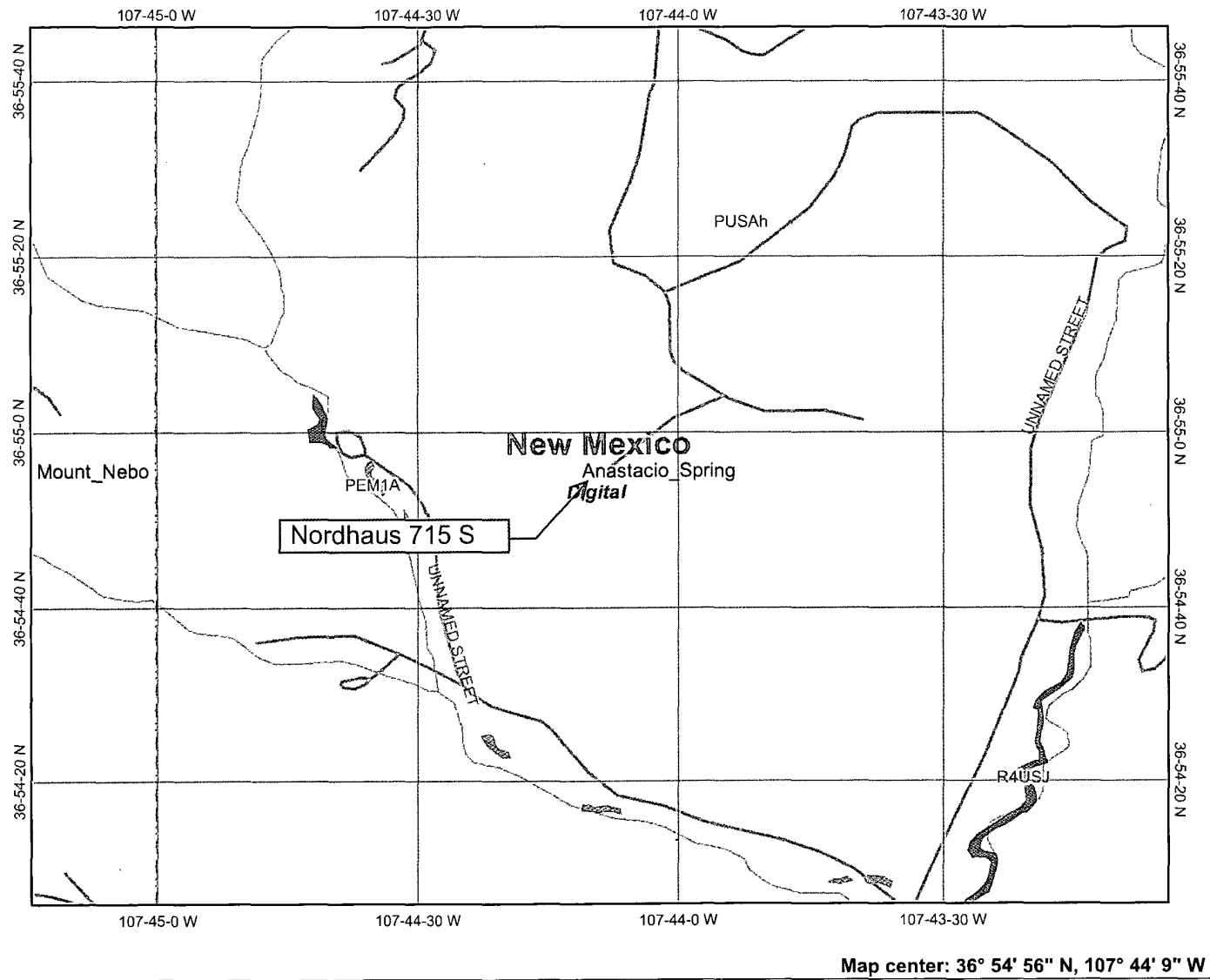
Petroleum Recovery Research Center	Munacapilities - Nordhaus 715 S	Figure: 04
	F - Sec 12, 31N, 09W	Oct 15, 2009

API 30-045-32531

Appendix 05

U.S. Fish & Wildlife Wetland Identification Map

Internet Mapping Framework



Map center: 36° 54' 56" N, 107° 44' 9" W

Legend

Ohio_wet_scan
- 0
- 1
- Out of range

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

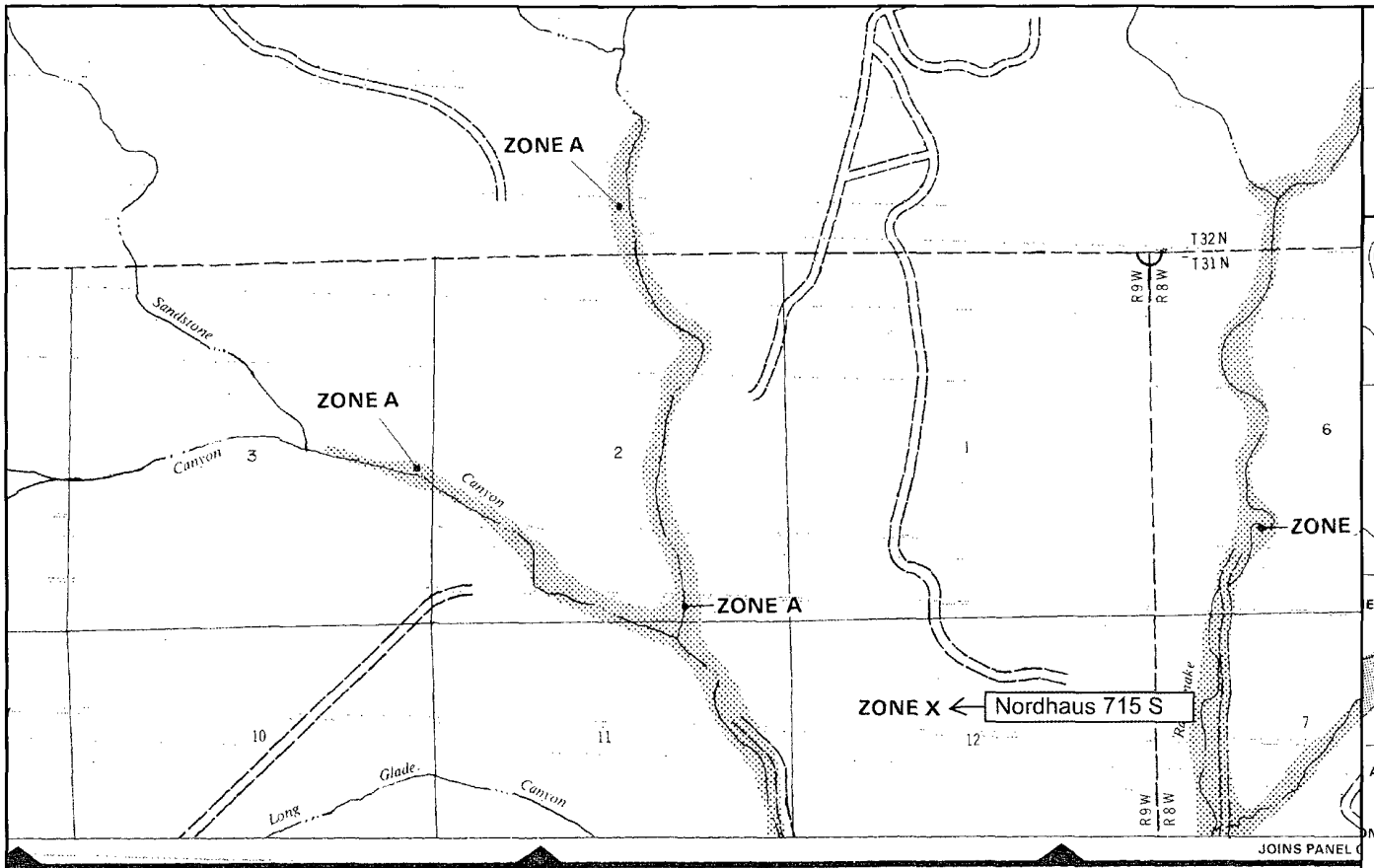
South America

North America

Scale: 1:21,647

Appendix 06

FEMA 100-year Floodplain Map



638-6620.

APPROXIMATE SCALE

2000 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY,
NEW MEXICO
UNINCORPORATED AREAS

PANEL 175 OF 1450
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

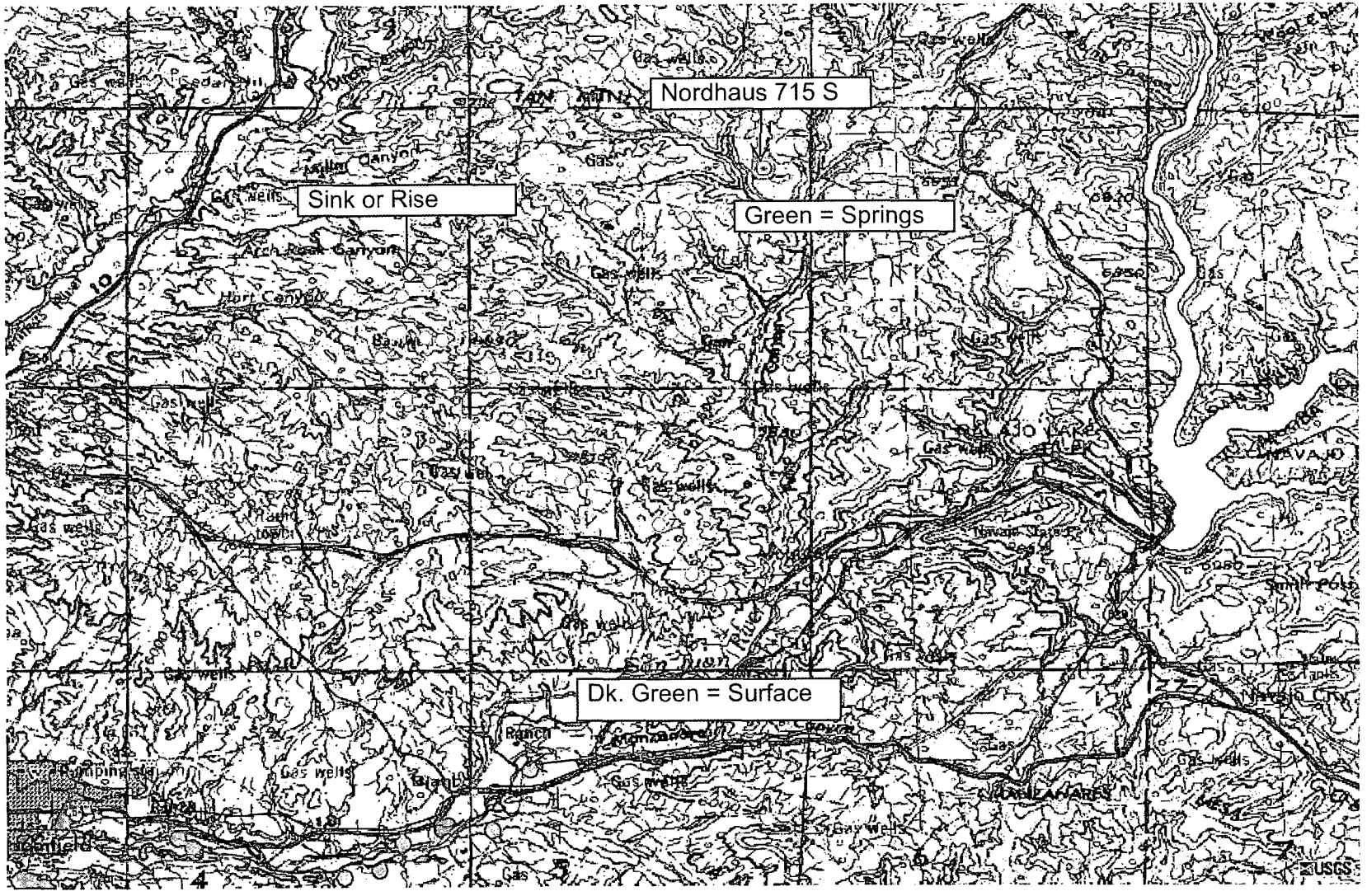
COMMUNITY-PANEL NUMBER
350064 0175 B

EFFECTIVE DATE:
AUGUST 4, 1988

Federal Emergency Management Agency

Appendix 07

Mines, Mills, & Quarires Map



0 2 4mi

N W E S

Petroleum Recovery *Research Center*	Mines, Mills, Quarries - Nordhaus 715 S	Figure: 07
	F - Sec 12, 31N, 09W	Oct 15, 2009

API 30-045-32531

Appendix 08

C-203 Location Plat
Site Physical Inspection Sheet

ENERVEST OPERATING LLC

Below Grade Tank
Observed Sitting Requirements

Lease Name & Well Number: NORD HAUSE 715-S

API No. 30-045-32531

Observed by: Lee Bernhart

Date Observed: 4/23/09

MEASURED FROM THE BELOW-GRADE TANK:	Yes	No	If not within limits, explain:
Continiously flowing water course > 300 ft.	X		
Significant Watercourse, lakebed, sinkhole or playa lake > 200 feet	X		
Permanent Residence > 200 feet	X		
School > 200 feet	X		
Hospital > 200'	X		
Institution or Church > 200'	X		
Private, domestic fresh water well or spring > 500 feet	X		
Any other fresh water well or spring > 1000 feet		X	UNDERGROUND SEEPAGE LEAKING INTO PIT
Within incorporated municipal boundary of defined municipal fresh water field		X	
Wetland area > 500 feet	X		
Overlying a subsurface mine		X	

36.91531 107.73515

Distance to watercourse or dry wash should be to nearest edge

Please include distance & direction to all waterwells and/or wetland areas

Each Below-Grade Tank needing to be permitted, needs a visual inspection of the above Criteria as per Rule 19.15.17.10

DISTRICT I
1 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
811 South First, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

Revised August 15, 2000

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

RECEIVED
AUG 11 2004
Bureau of Land Management
Farmington Field Office

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹API Number	²Pool Code	³Pool Name
30-039-~~05~~-32531	71629	Basin Fruitland Coal

⁴Property Code	⁵Property Name	⁶Well Number
7365	NORDHAUS	715S
⁷OGRID No.	⁸Operator Name	⁹Elevation
14538	BURLINGTON RESOURCES OIL AND GAS COMPANY LP	6540'

¹⁰ Surface Location

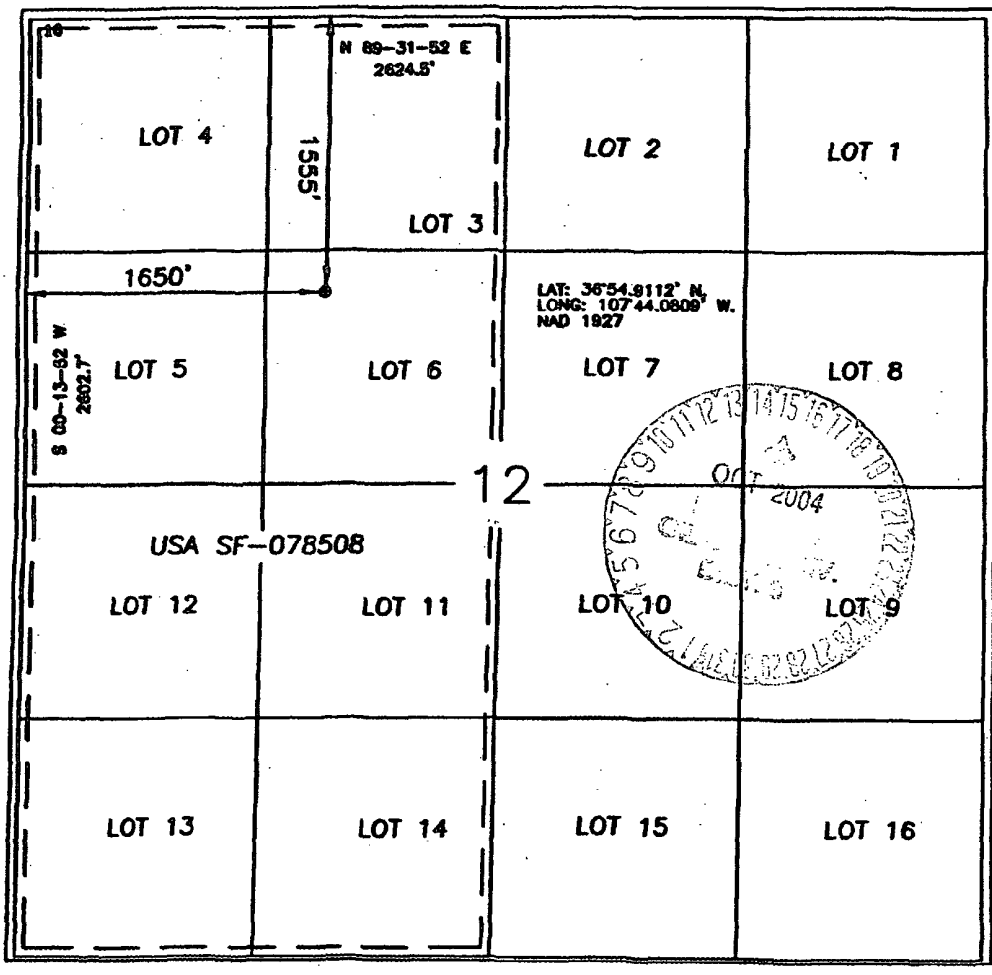
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	12	31-N	9-W		1555'	NORTH	1650'	WEST	SAN JUAN

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

¹²Dedicated Acres	¹³Joint or Infill	¹⁴Consolidation Code	¹⁵Order No.
W/2 314.99			

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.

Joni Clark
Signature

Joni Clark
Printed Name

Regulatory Specialist
Title

8/9/04
Date

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.

Date of Survey: JULY 26, 2004

Signature and Seal of Professional Surveyor:

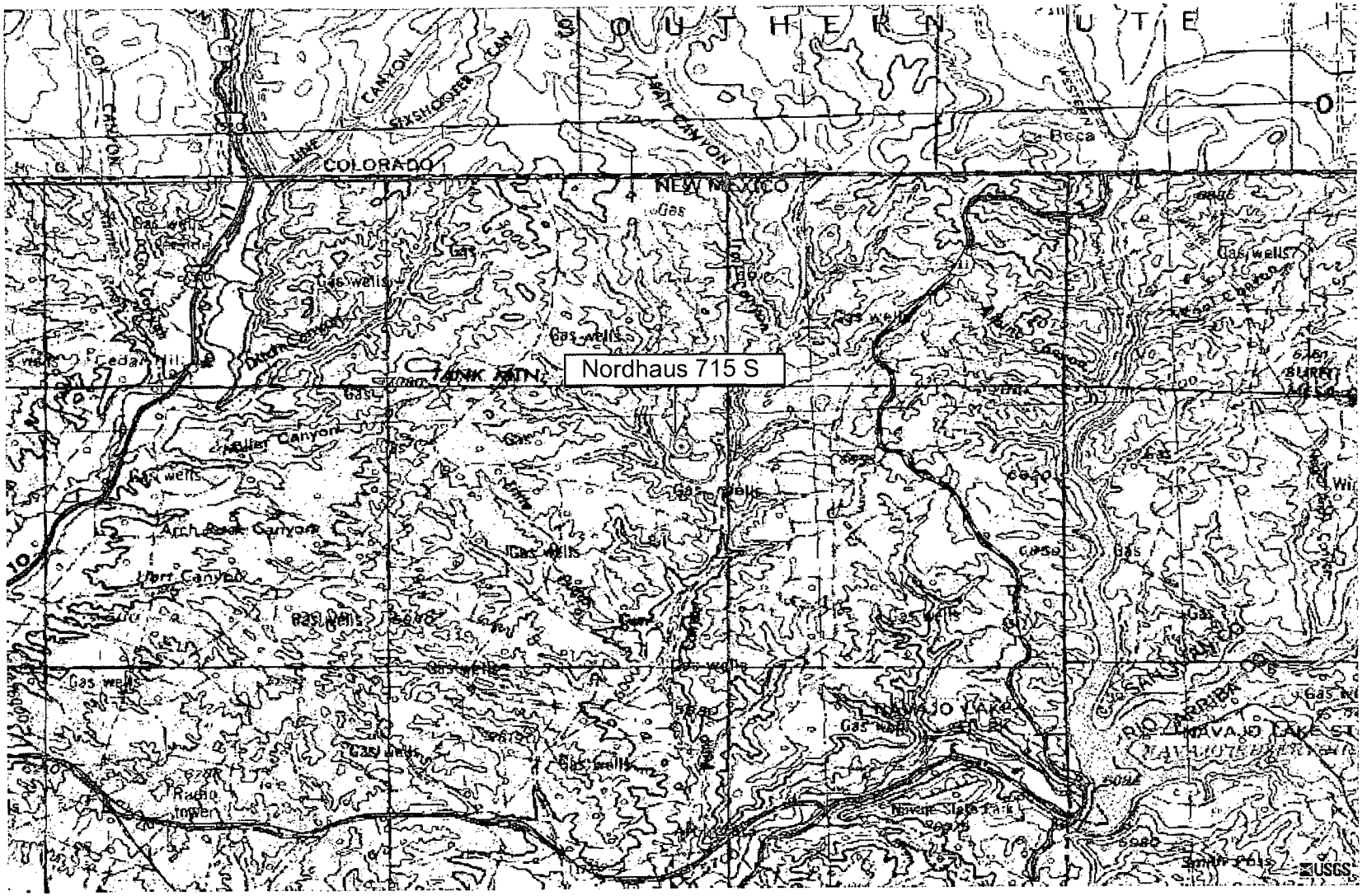
GLEN W. RUSSELL
NEW MEXICO
15703
LICENSED PROFESSIONAL SURVEYOR

Glen W. Russell

Certificate Number 15703

Appendix 09

Karst Map



0 2 4mi

N W E S

Petroleum Recovery Research Center	Karst Map - Nordhaus 715 S	Figure: 09
	No unstable areas noted	Oct 15, 2009

REFERENCES

Wetland Map:
U. S. Fish and Wildlife Service
National Wetlands Inventory
Wetlands Mapper
www.fws/gov/wetlands/data/mapper

Floodplains map:
Federal Emergency Management Agency
National Flood Insurance Program
FIRM (Flood Insurance Rate Map)
Map Service Center
http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1

Depth to Ground Water: Individual water well documentation.
State of New Mexico
Office of the State Engineer
New Mexico Water Rights Reporting System
http://www.ose.state.nm.us/waters_db_index.html

Subsurface Mines:
EMNRD
Mining & Minerals Division
Mines, Mills & Quarries Commodity Group
http://www.emnrd.state.nm.us/MMD/index.htm

Regional Hydrogeology:
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.

Base Maps:
Petroleum Recovery Research Center
PRRC PitRule Web Mapping Portal
USGS Topo
TerraServer – US
www.pitrule.source3.com