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

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company - Texas ReExploration Operating LC	Contact - Dean Brooks
Address –One Petroleum Center, 3300 North A., Bldg.1-234, Midland, TX 79707	Telephone No. 432-432-618-2202
Facility Name – Chalupa SWD #004	Facility Type - Injection

Surface Owner – State of New Mexico	Mineral Owner	API No. 30-025-29184

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	South Line	Feet from the	East/West Line	County
M	13	14S	33E	330	South Line	330	West Line	Lea

Latitude 33.10041 **Longitude** -103.57570

NATURE OF RELEASE

Type of Release - Produced Water/Saltwater – approximately 30,400 PPM chloride content	Volume of Release – estimated 60bbls	Volume Recovered - 0bbls
Source of Release – Flow Line	Date and Hour of Occurrence ?	Date and Hour of Discovery 8/8/07
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom? OCD Compliance Officer	Date and Hour - 8/8/07	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A flow line connection/union was replaced which later developed into a leak resulting in the brine water spill. The recent spill at this site was considered to be approximately 20bbls and a historic spill approximately 40bbs. had The analysis for produced water with this injection well is approximately 30,400 PPM chloride content. The leak has been properly repaired.
No remedial action has been taken yet. A remediation plan has been compiled and will be implemented upon NMOCD approval. Please see attached Remediation Action Plan.

Describe Area Affected and Cleanup Action Taken.*
The approximate area effected is 150ft X 180ft. Vegetation shows signs of stress within approximately 50% of the contaminated area. The entire area indicating elevated levels of chlorides will be remediated. The choice of remediation is to remove contaminated soil to a locally approved disposal site – Gandy Marley Land Farm in Chaves County.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Dean Brooks	Approved by District Supervisor: ENVIRONMENTAL ENGINEER	
Title: Vice President of Engineering	Approval Date: 7-10-08	Expiration Date: ←
E-mail Address: dbrooks@tex-rex.com	Conditions of Approval:	Attached ☐
Date: 10/09/07 Phone: 432-618-2202		

* Attach Additional Sheets If Necessary

RP# 1890

PGRL0822031690

CLOSING REPORT

Saltwater Spill Remediation
Chalupa #004 SWD
Texas ReExploration Operating, LC

Site location: Chalupa #004 SWD
Flow Line Leak/Spill
Section 13, T14S – R33E
Lea County, NM
Coordinates:
Longitude -103.57570
Latitude 33.10041

Prepared for
New Mexico Oil Conservation Division
&
Texas ReExploration Operating, LC
Mr. Dean Brooks

January 28th, 2008

Prepared by:
Andy Price
Midland, Texas

TABLE OF CONTENTS

Executive Summary

REMEDIATION COMPLETED

Texas ReExploration Operating (TREX) received a letter of violation 8/07. A C141 was submitted along with a site remediation plan to OCD. Approval was given to TREX to begin remediation operations. Field sampling investigation was conducted on 10/25 & 10/30. The sampling investigation report with analytical results was submitted on 11/29 to OCD.
Site remediation operations consisted of the following operations.

A. Soil Remediation - Excavation

- Excavation began on 12/5/07 and completed on 12/17/07
- Contaminated soil was excavated at depths up to 3 ft.
- Soil was removed from the delineated area until representative soil samples from the walls and bottom of the excavation were below OCD specified standard - listed in Section 3-A of this report.

B. Lab Analysis results for excavated area (see app. F)

- **Chlorides:** All samples taken upon excavation were below 250ppm.
- Grab samples were taken on 12/1707, using a representative sampling grid. Six composite samples were taken from the walls and bottom of excavated area. Samples were delivered to "Trace Analysis" Laboratory in Midland. Analytical results determined all samples were below 250ppm.
- **TPH Levels:** The original sampling investigation determined that Total Petroleum Hydrocarbon levels were less than 50ppm which is well below OCD action level. These results were included in the Sampling report dated November 29th, submitted to OCD.

C. Contaminated Soil Removal

- 1370 Cubic yard of contaminated soil was excavated and disposed of OCD approved disposal facility **"Gandy Marley Land Farm - Disposal".**

D. Back Fill Soil

- Top Soil was obtained from Rancher Clyde Forte – on his property approximately 8 miles from the Chalupa #4. The excavated area was backfilled with quality top soil, spread and leveled to represent original terrain.

E. Re-Seeding (see app. A)

- The entire area was re-seeded with BLM #2 Grass Mix #1
- The entire area was fertilized using ZIPP 15-5-10
- Entire area was dragged to mix seed and fertilizer into soil.

INTRODUCTION

Purpose:

The purpose of the environmental action taken by Texas ReExploration Operating LC (TREX), was to conduct a proper, remediation of the saltwater spill which occurred near the Chalupa #004 SWD well.

Scope:

The scope of the project was to adhere to New Mexico Oil Conservation Division guidelines as well as well as good and prudent environmental practices. The remediation guidelines/steps taken are listed in the body of this report.

1. NOTIFICATION OF LEAK/SPILL

The following information may be found on form C-141 (see app. E).

A. RESPONSIBLE PARTY AND LOCAL CONTACT

Texas ReExploration Operating LC (TREX)
Dean Brooks 432-618-2202
One Petroleum Center, 3300 North A., Bldg.1-234
Midland, TX 79707

B. SPILL LOCATION (see app. B)

- Legal Description:
  Chalupa #004
  Flow Line Leak/Spill approximately 300yds north of wellhead
  330' FSL & 330' FSL Unit "M"
  Section 13, T14S – R33E
  Lea County, NM
  Coordinates: Longitude -103.57570 - Latitude 33.10041
  Lease #LG-2414 – API#30-025-29184
- Driving Directions: The location may be reach by heading west out of Lovington on Hwy 82 about 25 miles – come to Hwy 459 and turn north/right, go approximately 8 miles to Anderson Rd., turn east/right, immediately past S curve turn south, follow lease road south, unit arriving at the Chalupa #004, SWD injection well. The spill area is approximately 300yds north of well head.

C. TIME OF INCIDENT

The specific date, time and duration of the saltwater leak is not known. It is noted the OCD Compliance Officer conducted his inspection on 8/8/07.

D. DISCHARGE EVENT

A flow line connection/union was replaced which later developed into a leak resulting in the saltwater spill. The approximate spill area is 150ft X 180ft.

E. TYPE OF DISCHARGE – Produced Water

The flow line transports produced water. According to water analysis, produced water for this injection well has an approximate chloride content of 30,400ppm. A minor amount of crude oil is apparent (see photos app. A).

F. QUANTITY

The estimated volume of the discharge is considered to be 60bbs.

2. SITE ASSESSMENT

A. GENERAL SITE CHARACTERISTICS

1. Overall Site Data (see app/s. C&D)

- Precipitation - Mean annual precipitation: 12 to 15 inches
- Temperature - Mean annual air temperature: 58 to 60 degrees F
- Soil type – Kimbrough Lea complex (see soil survey app. D).

Description of Kimbrough complex for specific spill location

Setting

- Landform: Plains
- Landform position (three-dimensional): Rise
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Calcareous alluvium and/or calcareous eolian deposits derived from sedimentary rock

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: 4 to 20 inches to petrocalcic
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 20 percent
- Gypsum, maximum content: 1 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 2.0
- Available water capacity: Very low (about 0.8 inches)

Interpretive groups

- Land capability (nonirrigated): 7s
- Ecological site: Very Shallow (R077XD074NM)

Typical profile

- 0 to 6 inches: Gravelly loam
- 6 to 16 inches: Cemented material

Description of Lea

Setting

- Landform: Plains
- Landform position (three-dimensional): Rise
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Loamy alluvium derived from sedimentary rock

Properties and qualities

- Slope: 0 to 3 percent
- **Depth to restrictive feature: 20 to 40 inches to petrocalcic**
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
- Frequency of flooding: None

- Frequency of ponding: None
- Calcium carbonate, maximum content: 35 percent
- Gypsum, maximum content: 1 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 2.0
- Available water capacity: Low (about 4.6 inches)

Interpretive groups

- Land capability classification (irrigated): 4e
- Land capability (nonirrigated): 4s
- Ecological site: Loamy (R077XD073NM)

Typical profile

- 0 to 10 inches: Loam
- 10 to 26 inches: Loam
- 26 to 36 inches: Cemented material

2. Depth To Ground Water (see app. C)

- 73.3' according to USGS Data
- 80' according to the NM State Engineer database
- **76.6'** - combining the two groundwater measurements equals an average of **76.6'** vertical depth to groundwater.
- The NMOCD rating is considered to be **10.**
- Please note in section 2A under "Depth to restrictive feature" a restrictive feature (petrocalcic), is identified at a depth of 20 to 40 inches.

3. Area Water Sources (see app. C)

The nearest water source (wells, springs or other sources of fresh water extraction), was identified as a water well. This well is located an estimated 3520' or ¾ of a mile to the northeast of the spill area.

4. Distance to Nearest Surface Water Body (see app. C)

- No surface body of water was identified within a radius of one mile or more from the spill site.
- The gradient for the specific spill area is considered to be linear. The larger surrounding area is considered to be mostly linear with a 0% to 3% slope to the east and southeast.

B. SOIL/WASTE CHARACTERISTICS

- The approximate spill area is 150ft X 180ft. Stressed vegetation is visible within the spill area. Sodium chloride crystals can be seen in a small portion of the spill area (see app. A). Some crude oil may be present due to the produced water spill.
- Soil Sampling were conducted to determine the horizontal and vertical extent of soil contamination.
- Constituents to be tested for include:
    - Sodium Chloride

- Total Petroleum Hydrocarbons (TPH)
- Analysis
  - Field instrumentation such as an electro-conductivity meter and a photoionization detector were used to screen field samples for excavation purposes only.
  - Samples to establish formal levels of Chlorides and TPH or lack of, were taken to an EPA certified lab for analysis. The results of the lab analysis were used to determine the degree of contamination remediation.

3. SAMPLING INVESTIGATION ANALYSIS and Results

A. TARGET SOIL REMEDIATION ACTION LEVELS

- Sodium Chloride levels reduced to **250 mg/kg chloride or Less**
- Total Petroleum Hydrocarbon levels were **reduced to 5000ppm or Less**

B. Soil Sampling Procedures For Laboratory Analysis

A. Sampling Procedures

Soil sampling for laboratory analysis were conducted according to OCD approved industry standards or other OCD-approved procedures. Soil sampling procedures and laboratory analytical methods were as follows:

- Collect samples in clean, air-tight glass jars supplied by the laboratory which will conduct the analysis.
- Label the samples with a unique code for each sample.
- Cool and store samples with or on ice.
- Promptly deliver samples to the lab for analysis following chain of custody procedures.
- All samples were analyzed within the holding times for the laboratory analytical method specified by EPA.

C. Analytical Methods

- All soil samples were analyzed using EPA methods, or by other OCD approved methods and were analyzed within the holding time specified by the method.

D. Lab results for Chloride levels are listed below (please see app. G).

Sample field code	Chloride PPM		Sample field code	TPH PPM
1-A - surface	5020		1-A - surface	<50.0
1-B – 1ft. depth	36.7		1-B – 1ft. depth	<50.0
2-A - surface	8780		2-A - surface	<50.0
2-B - 1ft. depth	190		2-B - 1ft. depth	<50.0
3-A - surface	3690		3-A - surface	<50.0
3-B - 1ft. depth	<50.0		3-B - 1ft. depth	<50.0
4-A - surface	230		4-A - surface	<50.0

E. Contaminated Area Delineated:
Soil borings with field and laboratory analysis indicate the saltwater spill area to be approximately 150ft X 180ft.

F. Sampling Investigation Conclusion:
Chloride levels for the "produced water" spill area were lower than expected which is most likely the result of above average rainfall for this area this year. However Chloride levels in some hot spots were above 8,000ppm which exceed the OCD action level of 250ppm. TPH levels within the spill area did not exceed OCD action levels of 5,000ppm and in fact were below 50ppm. The expected excavation area is considered to be 150'X180' and to an average depth of 18". The estimated soil to be removed is 1,500 cubic yards.

4. REMEDIATION (app. A & F)
Site remediation operations consisted of the following operations.

A. Soil Remediation - Excavation

- Excavation began on 12/5/07 and completed on 12/17/07
- Contaminated soil was excavated at depths up to 3 ft in depth.
- Soil was removed from the delineated area until representative soil samples from the walls and bottom of the excavation were below OCD specified standard - listed in Section 3-A of this report.

C. Lab Analysis results for excavated area (see app. F)

- **Chlorides:** All samples take were below the OCD Standard of 250ppm.
- Grab samples were taken on 12/1707, using a representative sampling grid. Six composite samples were taken including the walls and bottom of excavated area. Samples were delivered to "Trace Analysis" Laboratory in Midland. The analytical results were as follows:
  Sample 1 <250
  Sample 2 <250
  Sample 3 <250
  Sample 4 <250
  Sample 5 <250
  Sample 6 <250

- **TPH Levels:** The original sampling investigation determined that Total Petroleum Hydrocarbon levels were less than 50ppm which is well below OCD action level. These results were included in the Sampling report dated November 29th, submitted to OCD.

C. Contaminated Soil Removal

- 1370 Cubic yard of contaminated soil was excavated and disposed of at OCD approved disposal facility **"Gandy Marley Land Farm - Disposal".**

D. Back Fill Soil

- Top Soil was obtained from Rancher Clyde Forte – on his property approximately 8 miles from the Chalupa #4. The excavated area was backfilled with quality top soil, leveled to represent original terrain.

E. Re-Seeding (see app. A)

- The entire area was re-seeded with BLM #2 Grass Mix #1
- The entire area was fertilized using ZIPP 15-5-10
- The entire area dragged to mix seed and fertilizer into soil.

5. TERMINATION OF REMEDIAL ACTION (please see app. E).

The remedial action was terminated when OCD standards were met and confirmed by Laboratory analysis, back fill soil spread and leveled, area re-seeded and fertilized.

8. FINAL REPORT

This report summarizes all actions taken to mitigate environmental damage related to the subject saltwater spill. This document is considered to be the final report upon OCD approval.

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Appendices

Appendices A – Photos

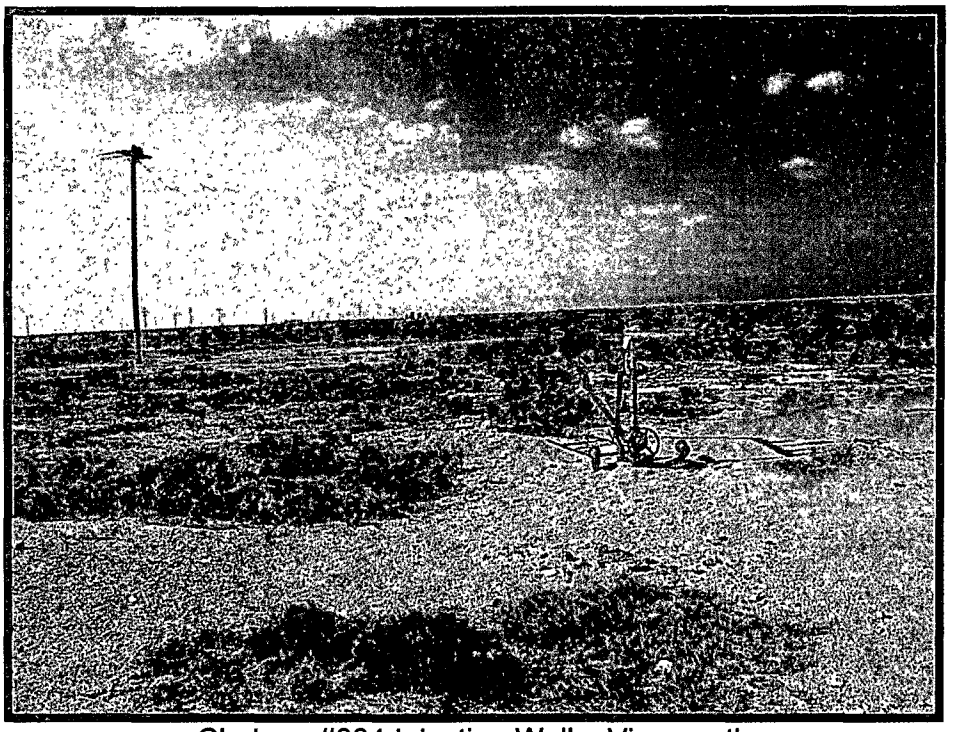
Appendices B – Maps

Appendices C – Hydrology

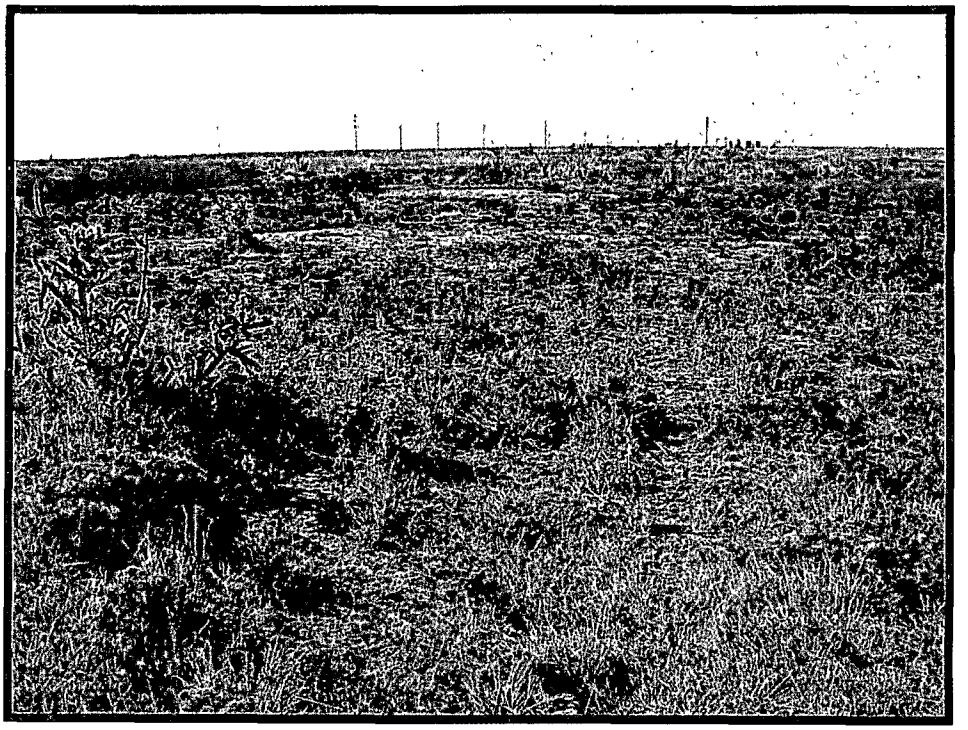
Appendices D – Soil Survey

Appendices E – OCD Form C-141

Appendices F – Laboratory Results Report



Chalupa #004 Injection Well – View north



Spill area – view north