



# RAILROAD COMMISSION OF TEXAS

## OIL AND GAS DIVISION

July 8, 2013

DEVON ENERGY PRODUCTION LP  
333 W SHERIDAN AVE  
OKLAHOMA CITY OK 73102

Re: Commercial Landtreatment Facility  
Roberts & Eddleman Facility  
Wheeler County, Texas  
Permit No. LT-0330

Technical permitting has reviewed documentation received on April 19 and April 25, 2013, and June 28, 2013 concerning monitor well installation at the referenced facility. The commission hereby approves the monitor well installation in accordance with Conditions I.E. and IV.D. of the permit.

Also, your amended permit to operate a Commercial Landtreatment Facility under Statewide Rule 8 is enclosed.

You can contact me at (512) 463-6559 should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "David Wuerch".

David Wuerch P.G.  
Environmental Permits & Support  
Technical Permitting

Enclosure

cc: RRC – Pampa / 10

K. Steven Roberts (W/Encs.) Via E-mail



# RAILROAD COMMISSION OF TEXAS

## OIL AND GAS DIVISION

### PERMIT TO RECEIVE, STORE, HANDLE, TREAT AND DISPOSE OF CERTAIN NONHAZARDOUS OIL AND GAS WASTE

Commercial Landtreatment Facility  
Permit No. LT-0330 Supersedes permit issued  
January 7, 2013

DEVON ENERGY PRODUCTION CO LP  
333 W SHERIDAN AVE  
OKLAHOMA CITY OK 73102-5015

Based on information contained in your application dated December 12, 2011, and subsequent information dated March 30, 2012, August 15, 2012, October 11, 2012, and January 7, 2013 you are hereby authorized to receive, store, handle, treat, and dispose of certain non-hazardous oil and gas wastes as specified below at the following facility:

Roberts & Eddlemen Facility  
Section 10, Block RE of the Roberts and Eddlemen Survey  
Wheeler County, Texas  
RRC District 10

Authority is granted to receive, store, handle, treat, and dispose of certain nonhazardous oil and gas wastes in accordance with Statewide Rule 8 and subject to the following minimum conditions:

#### I. GENERAL PERMIT CONDITIONS

- A. The effective date of this permit is July 8, 2013.
- B. The authority granted by this permit expires on the earlier of November 25, 2017, or upon reaching the maximum authorized disposal capacity as indicated in Condition IV.B.5. of this permit.
- C. The financial security approved by the Commission covers the closure of 23 treatment cells on 361 acres as shown on **Permit Appendix A**. No more than 90 acres may be active at any one time. A cell shall be "active" if it is constructed and receiving waste, or has received waste but not yet met closure limits as established in Condition V.A.
- D. No waste may be received at the facility prior to construction of perimeter berms specified in Condition III.B and verified by the Pampa District Office.

- E. No oil and gas waste may be received, stored, handled, or treated at the referenced facility until monitor wells are completed and monitor well information is submitted and approved by the commission as required by Condition IV.D. of this permit.
- F. No waste may be received at the facility prior to financial security in the amount of \$197,500 being submitted to and approved in writing by the Commission.
- G. The permittee must notify Technical Permitting in Austin and the Pampa District Office in writing when construction of the facility or a landtreatment cell is initiated.
- H. Technical Permitting in Austin and the Pampa District Office must be notified upon completion of construction of each treatment cell of the facility. The permittee may not begin using any cell until the District Office has performed its inspection of the completed cell and has verified that the cell is constructed in accordance with the application and this permit.
- I. The permittee must submit a request for administrative renewal of the permit at least 60 days prior to the permit expiration date. Technical Permitting will review the renewal for administrative approval.
- J. The permittee must submit a Semiannual Report containing the applicable information required in Conditions II.B., IV.C., IV.D., and VI.A. of this permit. The first Semiannual Report must cover the period beginning on November 26, 2012 and ending June 30, 2013. The reporting periods must thenceforth be January 1 through June 30 and July 1 through December 31 of each year. The Semiannual Reports must be submitted to Technical Permitting in Austin and the Pampa District Office no later than the 31th day of the month following each reporting period, or each July 31 and January 31 respectively.
- K. This permit is not transferable without the consent of the Commission. Any request for transfer of this permit must be filed with Technical Permitting in Austin at least 60 days before the permittee wishes the transfer to take place.
- L. This permit does not authorize the discharge of any oil and gas waste, including contaminated stormwater, from the facility.
- M. Material Safety Data Sheets must be submitted to the Austin Office for any chemical proposed for use in the treatment of waste at the facility. Use of the chemical is contingent upon Commission approval.
- N. Any soil, media, or other debris contaminated by a spill of waste or any other materials at the facility shall be promptly cleaned up and disposed of in an authorized manner. If the spilled waste is one authorized by Condition II.A., it may be applied to an active treatment cell.
- O. The permittee shall make all records required by this permit available for review and/or copying during normal business hours upon request of Commission personnel.

- P. The permittee shall post a sign at the facility entrance, which shall show the permit number in numerals at least one inch in height.
- Q. Failure to comply with any provision of this permit shall be cause for modification, suspension or termination of this permit. This permit may be cancelled if Technical Permitting determines that the facility is in violation of the conditions of this permit or if operation of the facility is causing or allowing pollution of surface or subsurface water.
- R. An independent laboratory neither owner nor operated by the permittee shall perform all laboratory analyses required by this permit.

## II. INCOMING WASTES

### A. AUTHORIZED WASTES:

Only nonhazardous wastes subject to the jurisdiction of the Railroad Commission of Texas may be received or disposed of at the facility. You may receive, store, handle, treat, and dispose of only the following non-hazardous, non-injectable, non-reclaimable oil and gas wastes:

Water base drilling fluids and associated cuttings; Oil base drilling fluids and associated cuttings.

No waste may be received or disposed of at the facility if it is not a waste under the jurisdiction of the Railroad Commission of Texas. No hazardous waste as defined by the U.S. Environmental Protection Agency in 40 CFR Part 261 or industrial waste may be received or disposed of at the facility.

No asbestos-containing material regulated under the Clean Air Act or PCB (polychlorinated biphenyls) material regulated under the Toxic Substances Control Act may be accepted for disposal at the facility.

No oil and gas NORM (naturally occurring radioactive material) waste as defined in 16 TAC §4.603 or waste from a facility that is licensed by the Texas Department of State Health Services to process or treat oil and gas NORM waste may be received at this facility.

### B. WASTE TESTING AND RECORD KEEPING REQUIREMENTS:

1. For the purposes of this permit, a representative sample of incoming waste is defined as one composite sample from the reserve pit for each job (reserve pit volume is assumed to be less than 350 cubic yards). The composite sample must include a grab sample from every 12 cubic yards. If volume in reserve pit exceeds 350 cubic yards then a second composite sample is required to be collected.

2. Prior to receipt at the site, representative samples of waste from commercial oil and gas facilities must be analyzed and may not exceed the limit for the following parameter:

<u>PARAMETER</u>	<u>LIMITATION</u>
TOX (Total Organic Halides)	100 mg/kg

Special authorization for processing of waste with a TOX >100 mg/kg may be considered. Authority must be obtained from Technical Permitting in Austin prior to acceptance of the waste.

3. Prior to or upon receipt at the site, representative samples of all incoming waste must be analyzed for the following parameters. TPH and Electrical Conductivity results shall be used to assure compliance with the landtreatment operational limits of Condition IV.B.4., and pH levels must be within the following range:

<u>PARAMETER</u>	<u>METHOD</u>	<u>LIMITATION</u>
TPH	Carbon Range to C40+	5%
Electrical Conductivity	Saturated Paste	4 mmho/cm
pH	Standard	6 – 10

4. The permittee shall maintain the following records on each load of waste received at the facility for a period of three (3) years from the date of receipt:
  - a) description of the site where the waste was generated, including:
    - i. generator name;
    - ii. lease name, lease number and well number or gas ID or API well number;
    - iii. county;
    - iv. carrier name;
  - b) amount of waste material received (specify units);
  - c) type of waste and description of waste material, including any analyses required by subsection II.B.
  - d) designated number of the treatment cell in which the waste was placed;
  - e) Copies of all lab analyses for each sample required to be analyzed by Condition II.B.
5. A report of the records required by subsection II.B. shall be submitted to Technical Permitting in Austin as part of the Semiannual Report required in Condition I.J. of this permit. If no waste was received within a reporting period, a written statement

indicating that no waste was received during that period must be filed in place of the report.

### III. GENERAL FACILITY DESIGN

- A. The general layout and arrangement of the facility shall be consistent with the facility diagram dated June 22, 2013, which is attached to and incorporated as part of this permit as **Permit Appendix A**.
- B. A perimeter earthen berm shall be constructed to surround the entire facility. This berm shall be keyed into the underlying soil and shall be constructed to a minimum height of four (4) feet with the base width of at least four times the berm height.
- C. Technical Permitting in Austin and the Pampa District Office must be notified within 24 hours of any breach in the perimeter berm.
- D. Prior to beginning operations, compacted earthen berms shall be constructed to surround each chemical and fertilizer storage area. Each berm shall be keyed into the underlying soil and shall be constructed to a minimum height of four (4) feet with a base width of at least four times the berm height.
- E. Any chemical or fertilizer used in the treatment process shall be stored in vessels designed for the safe storage of the particular chemical or fertilizer and those vessels shall be maintained in a leak free condition.
- F. Prior to beginning operations the facility shall have security to prevent unauthorized access. A wire fence shall surround the entire property. Access shall be secured by a locked gate when the facility is unattended and by an attendant when attended. Only employees or contractors of the permittee may have a key to the lock.

### IV. LAND TREATMENT AREA

#### A. CONSTRUCTION

- 1. The treatment area shall consist of 23 treatment cells on a total of 361 acres. These cells shall be arranged and numbered as indicated on **Permit Appendix A**.
- 2. Storm water run-on shall be controlled and diverted around the landtreatment cells.
- 3. A sign shall be posted at each treatment cell, which shall show the landtreatment permit number and the cell number in numerals at least one inch in height.

## B. OPERATION

1. Use of the treatment cells is limited to treatment of wastes authorized in Condition II.A. of this permit.
2. The waste must be applied in such a manner that the waste will not pool or migrate off the approved landtreatment area or enter any drainage ditch, dry creek, flowing creek, river, or any other body of surface water.
3. Waste shall be applied evenly to a maximum thickness of 2 inches per application. Waste is defined as any combination of water-based or oil-based cuttings and gypsum such that the maximum thickness of each application is no greater than 2 inches. Each application shall immediately and thoroughly be tilled into the soil.
4. The permittee shall ensure that the waste is uniformly dispersed at a depth not to exceed 12 inches, and at such a rate that, after tilling, the maximum levels for TPH do not exceed 5% and the maximum levels for EC do not exceed 4 mmhos/cm. These loading rates shall be calculated based on the actual results of the sample analyses required by Condition No. II.B.
5. The cumulative waste applied to any cell shall not exceed twelve (12) inches.
6. The maximum tilling depth shall not exceed twelve (12) inches below ground level.
7. No waste may be applied to a landtreatment cell during periods of rainfall.
8. Fertilizer shall be added as required to maintain optimum C:N:P ratio.
9. Any standing or pooling rainwater in the landtreatment cells or within the perimeter berm shall be removed and disposed of in an authorized manner.
10. Should results of sample analyses required by Condition No. IV.C. indicate the average SAR is greater than 12 in the STZ or WTZ in any cell, deposition of waste in that cell shall cease until the SAR in that cell is remediated to below 12 in the STZ and WTZ.

## C. LANDTREATMENT AREA MONITORING

1. For the purposes of monitoring and sampling the soils, the following definitions will be employed:

<u>SOIL CORE SAMPLING DEPTHS</u>	<u>THREE ZONES</u>
<u>Treatment Zone</u>	<u>Zone Depth</u>
Surface Treatment Zone (STZ)	surface to 12"
Waste Treatment Zone (WTZ)	12" to 24"
Compliance Monitoring Zone (CMZ)	24" to 36"

2. For the purpose of sampling, each treatment cell shall be divided into one-acre sections.
3. Four (4) randomly selected core samples from each one-acre section of each treatment cell shall be collected using standard approved sampling and collection procedures. A minimum of one (1) grab sample shall be obtained from each of the three zones in each core. The samples from each zone shall be composited to obtain one composite sample for each of the three (3) zones in each one-acre section.
4. The composite samples for each of the three (3) zones shall be analyzed as follows using EPA approved laboratory methods or EPA methods approved on an interim basis:

<u>Sampling Frequency</u>	<u>Zone</u>	<u>Parameters to be analyzed</u>
Once for baseline prior to waste application	STZ, WTZ	pH, EC, SAR, CEC, TPH (Carbon Range up to C40+), Soluble Anions and Cations, Total Metals: Ag, As, Ba, Cd, Cr, Pb, Hg, Se

<u>Sampling Frequency</u>	<u>Zone</u>	<u>Parameters to be analyzed</u>
Quarterly	STZ, WTZ	pH, EC, SAR, CEC, TPH (Carbon Range up to C40+), BTEX, Soluble Anions and Cations, Total Metals: Ag, As, Ba, Cd, Cr, Pb, Hg, and Se

Annually	CMZ	pH, EC, SAR, CEC, TPH (Carbon Range up to C40+), BTEX, Soluble Anions and Cations, Total Metals: Ag, As, Ba, Cd, Cr, Pb, Hg, and Se
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5. More frequent analyses may be required depending on the results of analyses required by Condition No. IV.C.
6. The Pampa District Office shall be notified at least 48 hours prior to any sampling event.
7. A data interpretation and summary shall be submitted to Technical Permitting in Austin and the Pampa and District Office as part of the Semiannual Report required in Condition No. I.J. of this permit.

#### D. GROUNDWATER MONITORING

1. Four (4) monitor wells must be installed in the locations shown on **Permit Appendix A**.
2. The monitor wells must be completed as follows:
  - a. The wells must be completed in accordance with 16 TAC Part 4, Chapter 76 (Water Well Drillers and Water Well Pump Installers).

- b. The wells must be completed in the shallowest groundwater zone, and the completion must isolate that zone from any deeper groundwater zone.
  - c. The screened interval of the wells must be designed to intercept the top of the groundwater.
  - d. Provision must be made to protect the wellheads from damage by vehicles and heavy equipment.
  - e. The following information must be submitted within 30 days of completion of the wells:
    - i. A soil-boring log for each well, with the soils described using the Unified Soil Classification System (equivalent to ASTM D 2487 and 2488). The log must also include the method of drilling, total depth, and the top of the first encountered water or saturated soils.
    - ii. A well installation diagram for each well.
    - iii. A survey elevation for each wellhead reference point.
    - iv. A potentiometric map showing static water levels and the calculated direction of groundwater flow.
3. Monitor wells must be monitored for the following parameters after installation of the wells and quarterly thereafter:
- |                                       |               |
|---------------------------------------|---------------|
| a. Static water level                 | h. Nitrates   |
| b. Benzene                            | i. Carbonates |
| c. Total Dissolved Solids (TDS)       | j. Calcium    |
| d. Total Petroleum Hydrocarbons (TPH) | k. Magnesium  |
| e. Chlorides                          | l. Sodium     |
| f. Bromides                           | m. Potassium  |
| g. Sulfates                           |               |
4. A copy of all analytical results and measurements required by Condition.IV.D.3. shall be submitted to Technical Permitting in Austin as part of the Semiannual Report required in Condition I.J. of this permit.
  5. The Commission reserves the right to require additional monitor wells if the Commission believes they are warranted based upon review of groundwater monitoring information.
  6. The permittee may close or remove a monitor well only after receiving written authorization from Technical Permitting in Austin.

## V. CLOSURE

### A. CLOSURE OF LAND TREATMENT CELLS

1. Prior to commencing closure of any landtreatment cell, composite samples as described in Condition IV.C. of this permit shall be obtained from each treatment zone. These composite samples shall be analyzed, and the following constituent levels shall not be exceeded:

<u>PARAMETER</u>	<u>PRE-CLOSURE LIMIT</u>
pH (Standard Method)	6 to 10 Standard Units
Electrical Conductivity (EC) (Saturated Paste Method)	4 mmhos/cm
Sodium Absorption Ratio (SAR)	12
TPH (Method(s) Must Analyze Carbon Range up to C40+)	1 %
Metals (Total)	(mg/kg):
Arsenic	10
Barium	20,000
Cadmium	3
Chromium	100
Lead	200
Mercury	10
Selenium	5
Silver	200
Benzene (mg/kg)	5
BTEX (mg/kg)	30

2. Analytical results must be submitted within 30 days after analysis has been completed. When Technical Permitting in Austin has verified acceptable soil constituent levels, the earthen berms of the landtreatment cell shall be leveled. The treatment cell shall then be contoured and seeded with appropriate vegetation.

## B. GENERAL FACILITY CLOSURE

1. Upon closure of the entire facility, all landtreatment cells that have received waste shall meet the closure requirements of Condition No. V.A.1.
2. Soil samples shall be taken from areas around the treatment cells, parking area and roads and analyzed for the following parameters to ensure that additional cleanup is not needed:

### PARAMETER

Electrical Conductivity (Saturated Paste Method)

TPH (Method(s) Must Analyze Carbon Range up to C40+)

Sample locations must be shown on a copy of **Permit Appendix A**. A copy of **Permit Appendix A** showing sample locations and analytical results must be submitted to Technical Permitting in Austin for review.

3. All landtreatment cells shall be seeded with appropriate vegetation.
4. Provisions shall be taken to prevent erosion both during and following closure.
5. Technical Permitting in Austin and the Pampa District Office must be notified in writing 45 days prior to commencement of facility closure activities.

## VI. POST-CLOSURE CARE AND MONITORING:

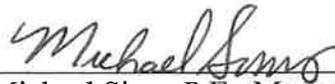
- A. The site shall be monitored for a period of no less than one (1) year after closure of the facility.
  1. The groundwater monitoring wells shall be sampled and analyzed quarterly, and the water level measured, as required by Condition IV.D.3.
  2. A summary of the results of the post-closure analyses required during the post-closure monitoring activity shall be submitted to Technical Permitting in Austin as part of the Semiannual Report required in Condition I.J. of this permit.
  3. The permittee must request in writing permission to cease post-closure monitoring. Post-closure monitoring requirements may be extended by Technical Permitting based on the results of the monitoring results.

4. Upon receiving permission to cease post-closure monitoring, the monitoring wells shall be properly plugged and abandoned in accordance with 16 TAC Part 4, Chapter 76 (Water Well Drillers and Water Well Pump Installers).

This authorization is granted subject to review and cancellation should investigation show that such authorization is being abused.

Note:

1. Changed the wording of Permit Condition I.J. concerning reporting periods and submittal dates for the Semiannual Reports.
2. Included a revised Permit Appendix A showing the correct numbering system for the monitor wells.
3. Updated the revision date for Permit Appendix A in Permit Condition III.A.

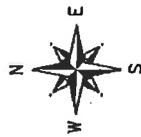


Michael Sims, P.E., Manager  
Environmental Permits and Support  
Technical Permitting



*6/22/13*  
*TRPE FIRM #2507*

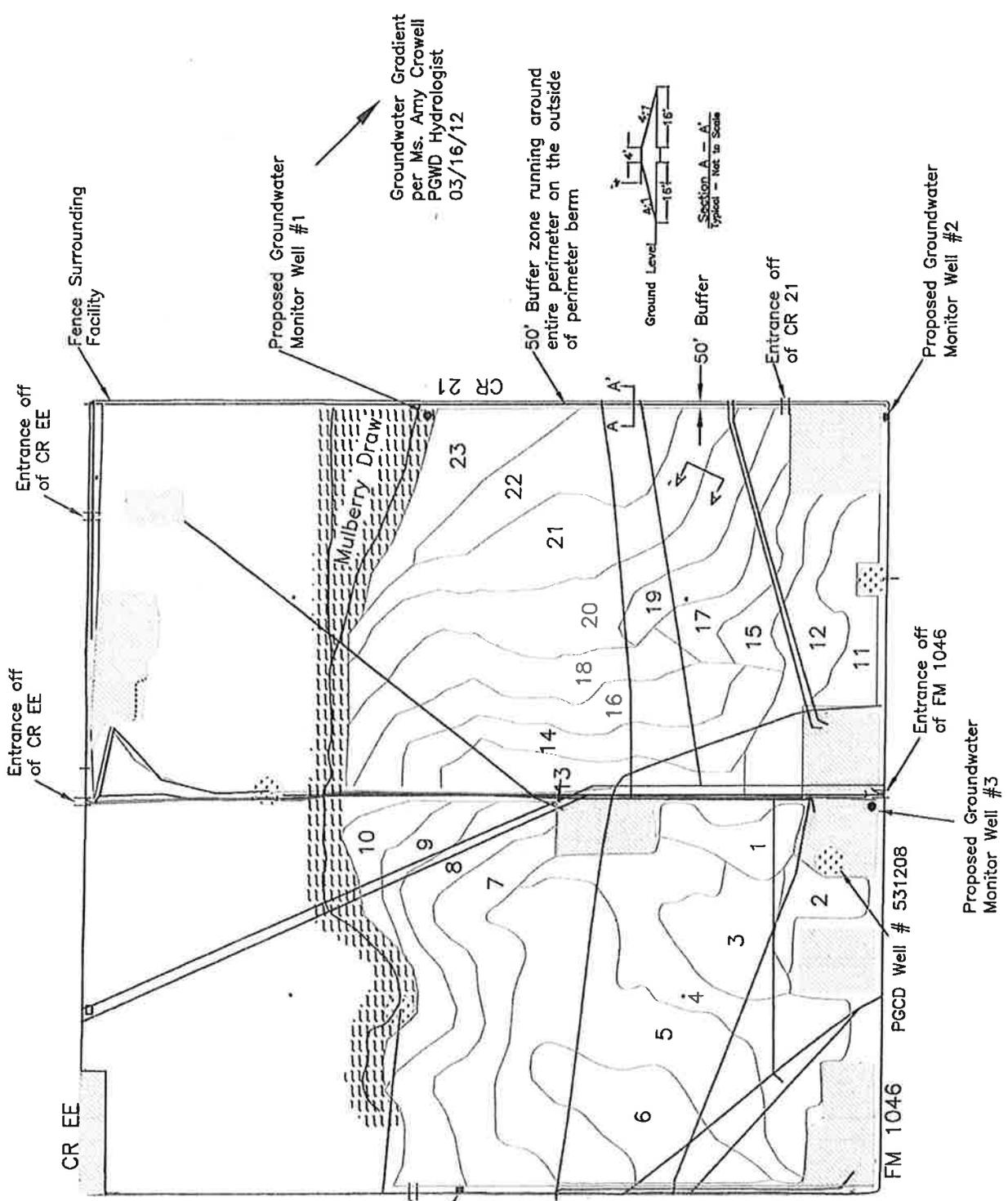
Entrance off of CR 20  
 Proposed Groundwater Monitor Well #4



0 1000  
 Scale: 1" = 1000'

**Legend:**

- All Cell Berms 4ft Tall
- Constructed on 4ft Intervals
- Gas Lines
- Underground Electric Lines
- 100' Well Buffer
- Out Areas
- ▨ 100' Draw Buffer From Flowline



Devon Energy Production Co., L.P.  
 Section 10, Block RE, Roberts & Eddlemen Survey  
 Wheeler County, Texas

Permit Appendix A  
 Land Treatment Cell Layout  
 Revised 06/20/13



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