

# State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

## EARTHEN PIT REPORT/PERMIT

This form is to be used for both reporting and permitting pits. Rule 903 describes when a Permit with prior approval, or a Report within 30 days, is required for pits. Submit required attachments and forms.

### FORM SUBMITTED FOR:

☐ Pit Report

☒ Pit Permit

### Complete the Attachment Checklist

Oper OGCC

Detailed Site Plan	✓	
Topo Map w/ Pit Location	✓	
Water Analysis (Form 25)		
Source Wells (Form 26)		
Pit Design/Plan & Cross Sect	✓	
Design Calculations		
Sensitive Area Determ.		
Mud Program		
Form 2A		

OGCC Operator Number: 28700

Name of Operator: ExxonMobil Oil Corporation

Address: P.O. Box 4358; CORP-MI-205

City: Houston State: Tx. Zip: 77210-4358

Contact Name and Telephone:

Lynn Neely

No: (281) 654-1949

Fax: (262) 313-9747

API Number (of associated well): \_\_\_\_\_ OGCC Facility ID (of other associated facility): Piceance Creek Unit 297-10C1,

Pit Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNW, Sec. 11, T2S, R97W, 6th P.M.

C2, C3, C4, C5, C6, C7, C8, C9

Latitude: 39.896106 Longitude: 108.254541 County: Rio Blanco

Pit Use: ☐ Production ☒ Drilling (Attach mud program) ☐ Special Purpose (Describe Use): \_\_\_\_\_Pit Type: ☒ Lined ☐ Unlined Surface Discharge Permit: ☐ Yes ☒ NoOffsite disposal of pit contents: ☒ Injection ☐ Commercial Pit/Facility Name: Piceance Creek Unit 297-11C Pit/Facility No: \_\_\_\_\_

Attach Form 26 to identify Source Wells and Form 25 to provide Produced Water Analysis results.

### Existing Site Conditions

Is the location in a "Sensitive Area?" ☐ Yes ☐ No Attach data used for determination. NA; Pit will be lined.

Distance (in feet) to nearest surface water: +/- 200' ground water: unknown water wells: &gt; 1 mile

LAND USE (or attach copy of Form 2A if previously submitted for associated well) Select one which best describes land use:

Crop Land: ☐ Irrigated ☐ Dry Land ☐ Improved Pasture ☐ Hay Meadow ☐ CRPNon-Crop Land: ☒ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe): \_\_\_\_\_Subdivided: ☐ Industrial ☐ Commercial ☐ Residential

SOILS (or attach copy of Form 2A if previously submitted for associated well)

Soil map units from USNRCS survey: Sheet No: 30 Soil Complex/Series No: 96

Soils Series Name: Veatch Channery Loam Horizon thickness (in inches): A: 8 ; B: 5 ; C: 5

Soils Series Name: \_\_\_\_\_ Horizon thickness (in inches): A: ; B: ; C:

Attach detailed site plan and topo map with pit location.

### Pit Design and Construction

Size of pit (feet): Length: 160 Width: 145 Depth: 12' &amp; 15'

Calculated pit volume (bbls): 30,850 w2' frbd. Daily inflow rate (bbls/day): Various

Daily disposal rates (attach calculations): Evaporation: N/A bbls/day Percolation: 0 bbls/day

Type of liner material: Impermeable synthetic Thickness: 24 mil woven coated polyethylene liner with an 8 ounce geotextile felt padding under the liner.

Attach description of proposed design and construction (include sketches and calculations).

Method of treatment of produced water prior to discharge into pit (separator, heater treater, other): separator

Is pit fenced? ☒ Yes ☐ No Is pit netted? ☒ Yes ☐ No

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Lynn Neely

Signed:

Title: Regulatory Specialist

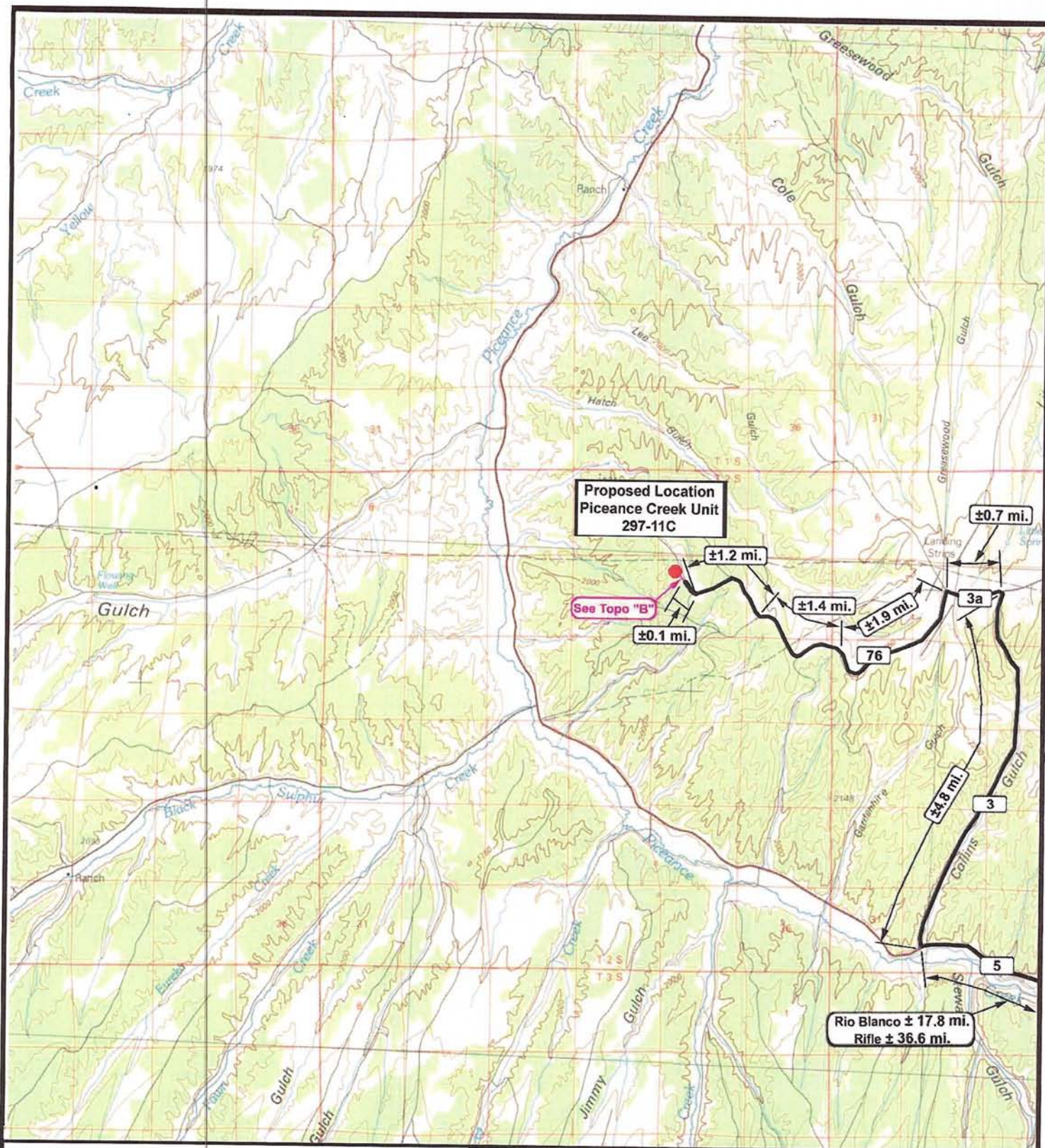
Date: 01/09/2009

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

FACILITY NUMBER:





**ExxonMobil Oil Corporation**

**Piceance Creek Unit 297-11C  
SEC. 11, T2S, R97W, 6th P.M.**



**Tri-State  
Land Surveying Inc.**  
(435) 781-2501  
180 North Vernal Ave. Vernal, Utah 84078

SCALE: 1 : 100,000  
DRAWN BY: JAS  
DATE: 07-24-2008

**Legend**

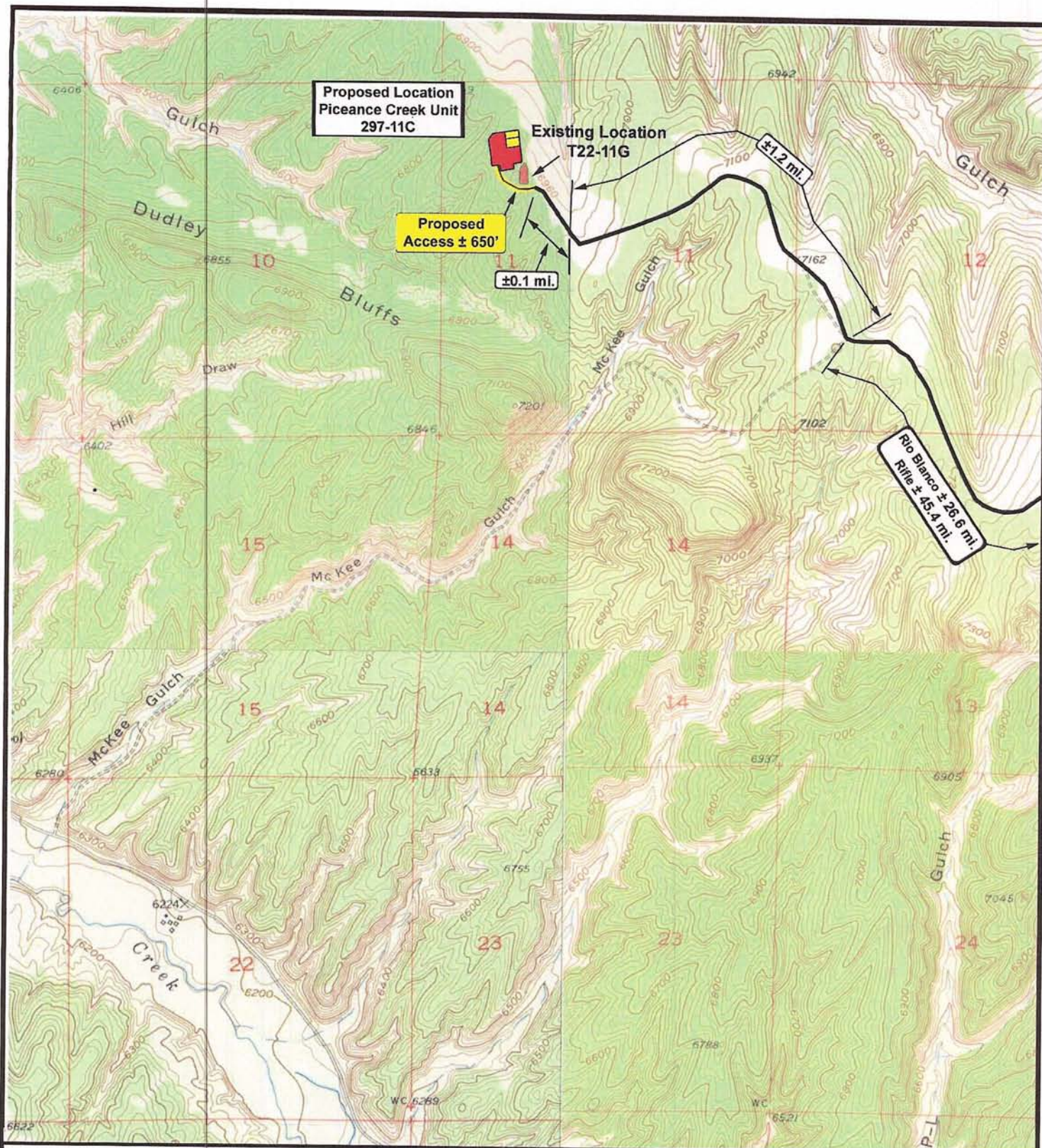
Existing Road  
Proposed Access

TOPOGRAPHIC MAP

**"A"**

SHEET  
**6**  
OF 9





**ExxonMobil Oil Corporation**

**Piceance Creek Unit 297-11C  
SEC. 11, T2S, R97W, 6th P.M.**



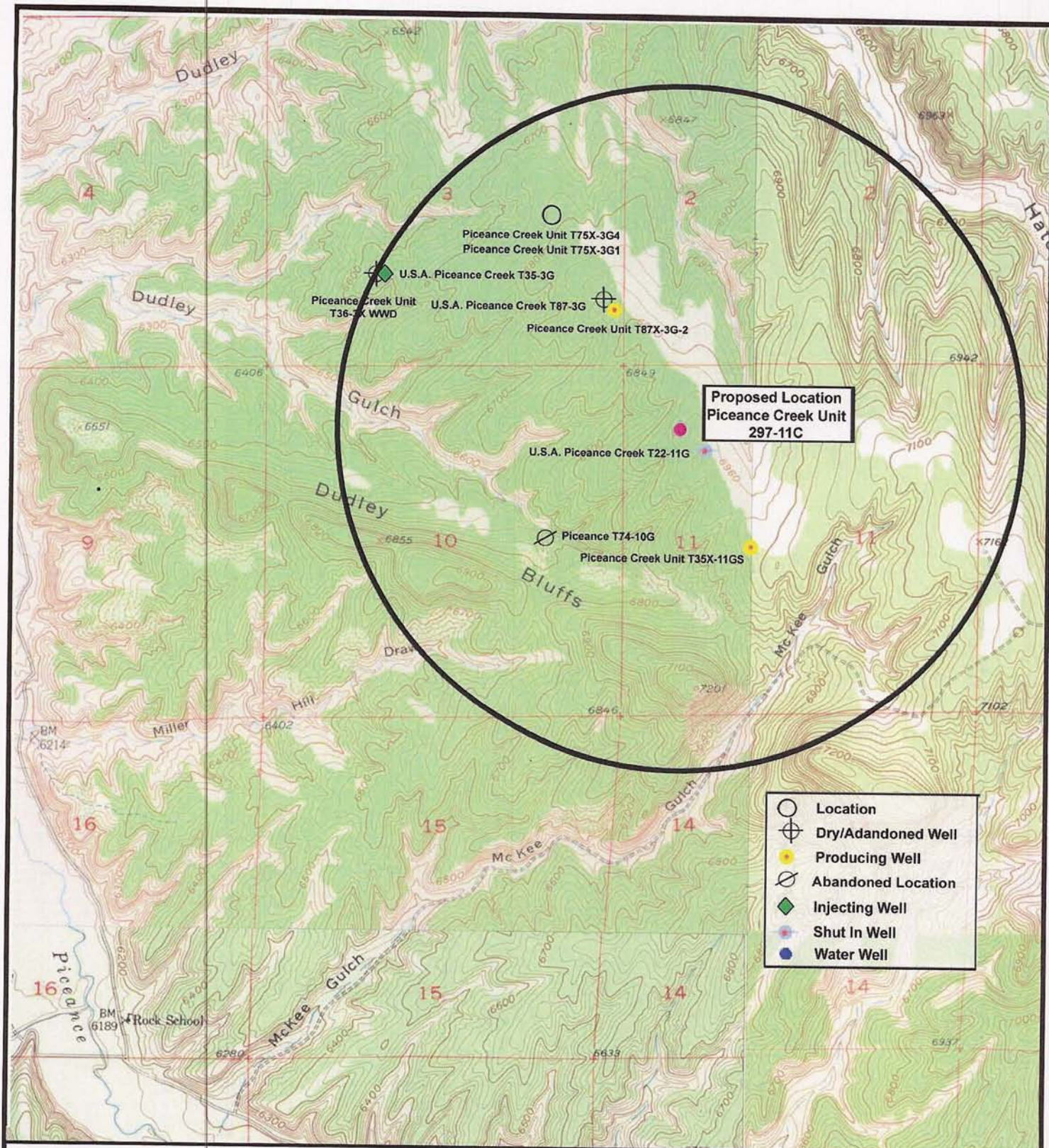
**Tri-State  
Land Surveying Inc.**  
(435) 781-2501  
180 North Vernal Ave. Vernal, Utah 84078

SCALE: 1" = 2,000'  
DRAWN BY: JAS  
DATE: 07-24-2008

**Legend**  
Existing Road  
Proposed Access  
Existing Two-Track

TOPOGRAPHIC MAP  
**"B"**  
SHEET  
**7**  
OF 9





**ExxonMobil Oil Corporation**

**Piceance Creek Unit 297-11C**  
**SEC. 11, T2S, R97W, 6th P.M.**



**Tri-State**  
*Land Surveying Inc.*  
(435) 781-2501  
180 North Vernal Ave. Vernal, Utah 84078

**SCALE: 1" = 2,000'**

**DRAWN BY: JAS**

**DATE: 07-24-2008**

**Legend**

Location  
One-Mile Radius

**TOPOGRAPHIC MAP**

**"C"**

**SHEET**

**8**

**OF 9**

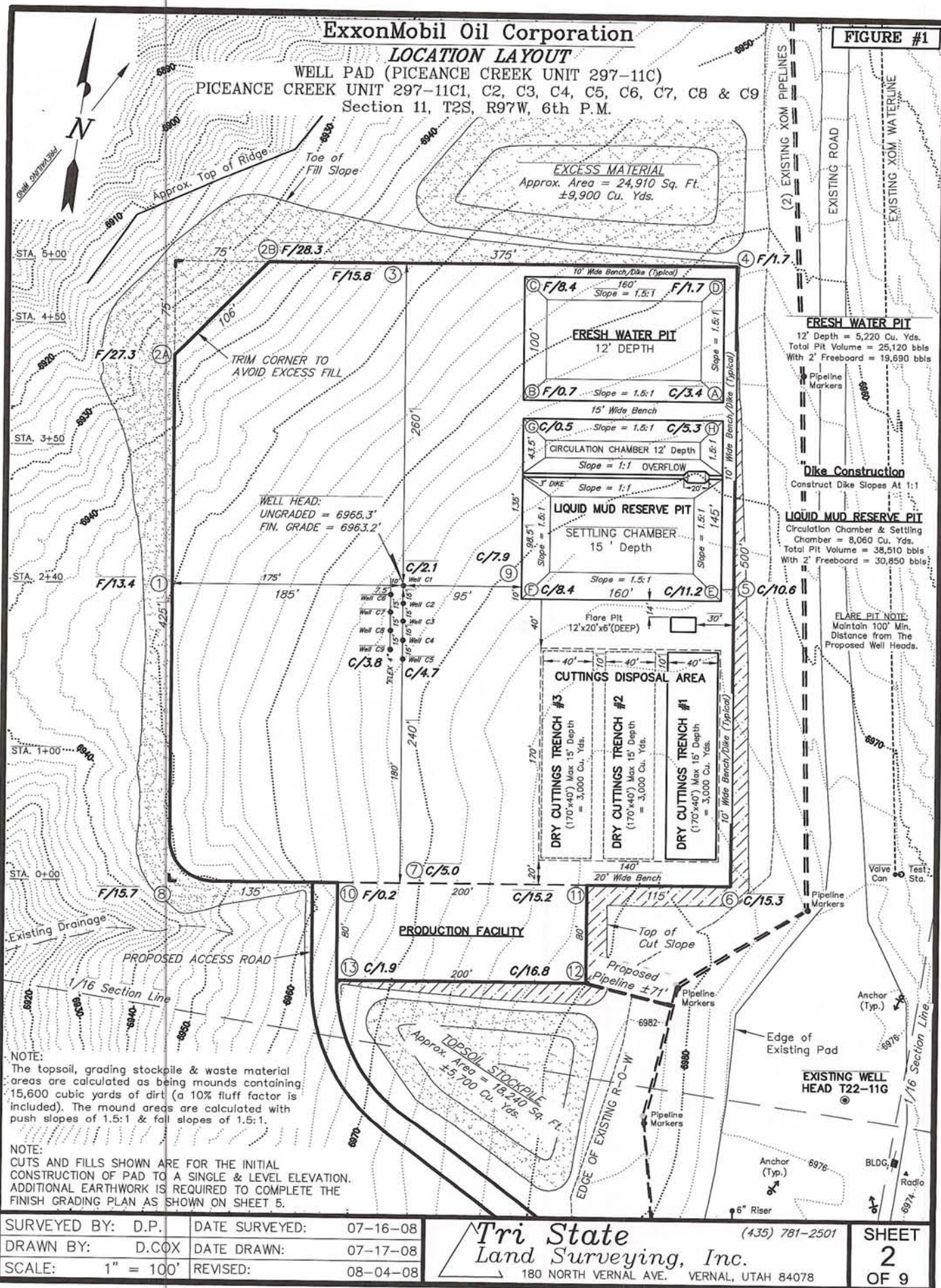


# ExxonMobil Oil Corporation

## LOCATION LAYOUT

WELL PAD (PICEANCE CREEK UNIT 297-11C)  
PICEANCE CREEK UNIT 297-11C1, C2, C3, C4, C5, C6, C7, C8 & C9  
Section 11, T2S, R97W, 6th P.M.

FIGURE #1



NOTE:  
The topsoil, grading stockpile & waste material areas are calculated as being mounds containing 15,600 cubic yards of dirt (a 10% fluff factor is included). The mound areas are calculated with push slopes of 1.5:1 & fall slopes of 1.5:1.

NOTE:  
CUTS AND FILLS SHOWN ARE FOR THE INITIAL CONSTRUCTION OF PAD TO A SINGLE & LEVEL ELEVATION. ADDITIONAL EARTHWORK IS REQUIRED TO COMPLETE THE FINISH GRADING PLAN AS SHOWN ON SHEET 5.

SURVEYED BY: D.P.	DATE SURVEYED: 07-16-08
DRAWN BY: D.COX	DATE DRAWN: 07-17-08
SCALE: 1" = 100'	REVISED: 08-04-08

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SHEET  
2  
OF 9



# ExxonMobil Oil Corporation

## DRILLING & COMPLETION FRESH WATER PIT DETAILS

WELL PAD (PICEANCE CREEK UNIT 297-11C)

PICEANCE CREEK UNIT 297-11C1, C2, C3, C4,

C5, C6, C7, C8 & C9

Section 11, T2S, R97W, 6th P.M.

### GENERAL NOTES:

All work shall be done in strict accordance with the COGCC Rules, Manufacturer's recommendations, and these drawings and specifications. Tri-State and the Operator shall be notified as soon as possible to any and all conflicts with the COGCC Rules, manufacturer's recommendations and these drawings and specifications.

It is the intent of these specifications that a quality safe finished product as described on the plans and specifications will be installed. It is the responsibility of the Contractor to take whatever measures that shall be deemed necessary and to coordinate with the Inspector and Operator to insure that this requirement is met. Site conditions may arise during construction that may require the use of a double geofabric and pit liner. The Contractor shall be flexible and open to such changes. If double liner or other major changes due to site conditions are needed, change orders will be given and the Contractor, Tri-State, and Operator will come to an agreement in writing.

A Tri-State representative will inspect the construction and materials of the pit. The following inspections will be done during the pit construction: 1) Finish Grade Surface Preparation, Anchor Trench, and Pit Materials, 2) In-Place Geofabric, 3) In-Place Pit Liner and Final Pit Inspection. Absolutely no material shall be placed in the pit above what is approved for until inspection approval in writing is given for that material as outlined in each of the (3) inspections. If approval in writing is not given, and pit materials above to that which is not approved is installed, the Contractor will be responsible to remove the materials. The following is a brief description of each of the pit inspections:

- 1) Finish Grade Surface Preparation, Anchor Trench, and Pit Materials - This inspection will check to see if the finish grade and anchor trench of the proposed pit is adequate for the installment of the geofabric and pit liner. This inspection will also check the initial pit design and make changes to the design, if needed, depending on site specific obstacles. The Inspector will watch for smooth uniform side slopes, compaction, and for any unwanted or potentially harmful materials that could damage the geofabric and pit liner. Before inspection, the Contractor is to have the pit constructed to the correct size and in the correct location and elevation. The pit is to be compacted solid, clean, and thoroughly trackwalked (several times and in several directions). After approval of the Finish Grade Surface Preparation and Pit Materials Inspection in writing, the Contractor may install the Geofabric.
- 2) In-Place Geofabric - This inspection will check to see if the Geofabric material is properly installed according to specifications. The Inspector will watch for pit coverage, material over lap, and any unwanted or potentially harmful materials that could damage the geofabric and pit liner. Before inspection the Contractor is to have the Geofabric installed, clean and free of debris. After approval of the In-Place Geofabric Inspection in writing, the Contractor may install the Pit Liner.
- 3) In-Place Pit Liner and Final Pit Inspection - This inspection will check to see if the pit liner and anchor trench is properly installed according to specifications. The Inspector will look in pit corners and gaps and other places where the liner might be stretched and could create potential tear problems. The Inspector will also verify that adequate excess material remains in corners and around edges so that the liner may expand and contract. The Inspector will also watch for bumps, imperfections, tears, holes, and any other defects in the liner. The Contractor shall notify and show any and all repairs to the liner to the Inspector. The pit liner is to be clean and contain no debris or any unwanted or potentially harmful materials that could damage the geofabric and pit liner on it. Before inspection the Contractor shall have the pit liner installed and the anchor trench backfilled and compacted.

### PREPARATION:

The finish grade of the pit shall have smooth solid look on the bottom, slopes, and top edges of the area to be lined. The areas to be lined shall be dry and clean prior to installing the pit liner. The finish grade shall be free of all sharp, loose, and unstable material including large rocks, angular and sharp rocks, rubble, ice, trash, vegetation, holes, cracks, sharp and other penetrating or raised surfaces. All such potentially harmful surfaces shall be removed from the pit area. The pit shall meet the size, location, and elevations shown on the drawings and shall be smooth, dense, uniform, and have no sudden changes in grade. Inspection approval will not be given and pit materials cannot be placed if pit preparation is unacceptable. If approval from the inspection is not given, additional Finish Grade Surface Preparation and Pit Materials Inspections will be at the Contractor's expense.

The finish grade pit base material shall be native base materials. If the native base material is determined unsuitable and upon written approval from Tri-State and the Operator, the base materials may be obtained from an Operator specified borrow area. All base material shall be compacted to a minimum 95% compaction within 2% optimum moisture.

The finish grade pit base shall be trackwalked several times in several directions until the pit has a smooth solid look. It is the Inspector's prerogative to have the Contractor re-trackwalk the pit to insure pit preparation to the Inspector's satisfaction.

The finish grade of the pit shall be prepared immediately prior to the placing of the liner and shall not sit to be subject to weathering.



DRAWN BY: P.H.

DATE DRAWN: 01-06-09

REVISED:

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SHEET

2a

OF 9



# ExxonMobil Oil Corporation

## DRILLING & COMPLETION FRESH WATER PIT DETAILS

WELL PAD (PICEANCE CREEK UNIT 297-11C)  
PICEANCE CREEK UNIT 297-11C1, C2, C3, C4,  
C5, C6, C7, C8 & C9  
Section 11, T2S, R97W, 6th P.M.

### MATERIAL:

All material used for pit construction shall be visually inspected by the Contractor upon delivery to the site. The material shall be unloaded, handled, and stored in a safe manner to ensure no damage is done to the material from weather, construction or moving.

A geofabric of at least 100 mils thickness, weighing 8 ozs. per square yard with a minimum grab tensile strength of 275 lbs. per square inch and a minimum Mullen burst strength of 450 pounds per square inch, is required to be placed on the finished grade base under the pit liner.

The material used for the pit liner shall be a continuous sheet of 24 mils reinforced polyethylene (RPE) membrane and shall have been satisfactorily demonstrated by prior use and testing to be suitable, appropriate and durable for the purpose of this work. The liner shall be resistant to sunlight (UV), chemicals, extreme weather (Cold temperatures), puncturing, and tearing. The liner shall also be flexible, durable, liquid tight, free from pinholes, blisters, contaminants or other off specification defects. The liner shall be of sufficient size to include the excess needed for the anchor trench, edges, corners, and difficult areas. The Contractor shall never attempt to bridge gaps and corners by stretching the liner over gaps and corners.

### INSTALLATION:

The Contractor is to ensure that the Inspector has approved the preparation of the pit in writing. If approval is not obtained, the Contractor will remove the installed material at the Contractor's expense and the installed material may not be reused. The Contractor is to ensure the pit liner material is the correct material to the correct size and shape as specified on the project construction plans specifications. No field modifications of the liner are acceptable. The Contractor is also to ensure that the pit is properly prepared as specified.

The geofabric sheets shall be placed in such a manner as to minimize overlapped edges. All seams are to be overlapped a of minimum 24". Only those pieces of fabric that can be installed and anchored during the workday shall be unpacked and placed in position. Do not place pit liner in extreme windy weather conditions. Do not try to repair damaged pieces of geofabric. Repaired pieces of geofabric may not be used.

The pit liner shall be preordered to fit the specific pit, and shall be one continuous factory built piece. The liner shall be placed over the approved prepared surface in such a manner as to assure a minimum of handling. Do not place pit liner in extreme windy or cold weather conditions. Any and all damage and defects to the liner that can be repaired will be shown to the Inspector. All repairs shall be done according to the recommendations of the manufacturer and shall be leak tested.

Sandbags and or other suitable weights may be used as required to hold the liner in position during the installation. The weights shall not have any sharp edges, which may snag or otherwise penetrate the liner fabric. Care should be taken to keep the liner as clean as possible and prevent potential liner damages.

No materials or equipment shall be dragged across the liner nor shall the workmen walk on or abuse the liner while installing the liner.

Pit liner and geofabric shall be placed in a "relaxed" condition, free from stress or tension. The geofabric and liner should closely fit around all protrusions and penetrations. All irregular projections, if any, shall be sealed and flashed with the fabricated boots or other approved sealing methods.

The edges of the liner and geofabric shall be secured by an anchor trench. The anchor trench shall be either an 18"x 36" 'V' trench or 24"x24" square trench. Slightly rounded corners will be provided in the trench where the liner adjoins the trench so as to avoid sharp bends in the liner. No loose soil or rocks will be allowed to underlie the liner or geofabric in the anchor trench. Leading edges of the anchor trench should be smooth and even. Care shall be taken when backfilling the trench so that no trench material falls into the pit.

The liner shall be installed according to manufacturer's recommendations. The Contractor is to ensure that the liner is laid out and installed in the correct direction and side. Liner shall be worked into corners and around bumps and into holes to prevent liner bridging situations. In addition, excess liner shall be given in corners, edges, and difficult areas to accommodate for liner expansion and contraction. Proper equipment and methods of pulling and installing the liner shall be used per the manufacturer's recommendations.



DRAWN BY: P.H.

DATE DRAWN: 01-06-09

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SHEET  
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**NOTES**

— See Location Layout Drawing for Finish Grade Elevations and Slopes

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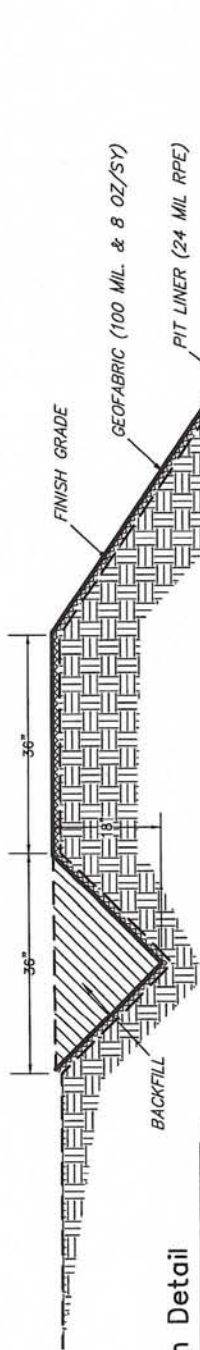
***DRILLING & COMPLETION FRESH WATER PIT DETAILS***

WELL PAD (PICEANCE CREEK UNIT 297-11C)

PICEANCE CREEK UNIT 297-11C1, C2, C3, C4,

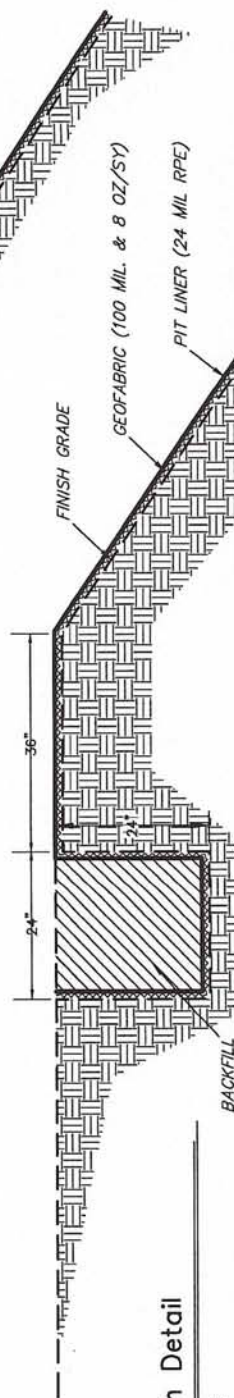
C5, C6, C7, C8 & C9

Section 11, T2S, R97W, 6th P.M.



**'V' Anchor Trench Detail**

SCALE: NOT TO SCALE

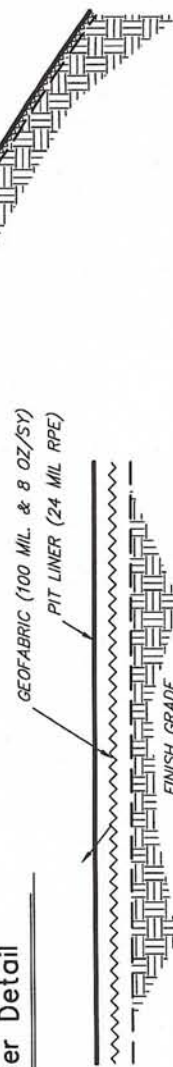


**Anchor Trench Detail**

SCALE: NOT TO SCALE

**Pit GeoFabric & Liner Detail**

SCALE: NOT TO SCALE



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SHEET

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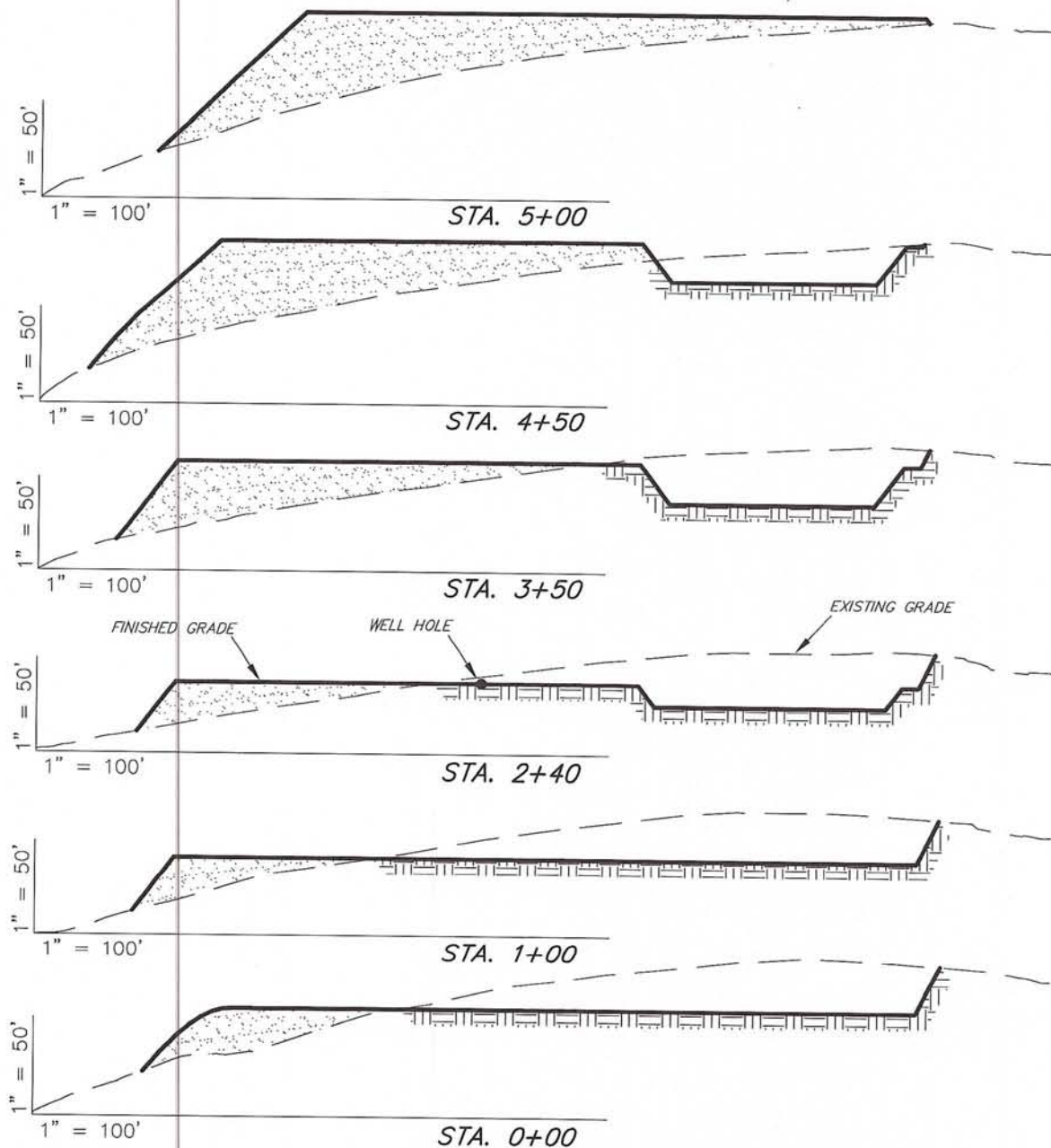


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FIGURE #2

## CROSS SECTIONS

WELL PAD (PICEANCE CREEK UNIT 297-11C)  
PICEANCE CREEK UNIT 297-11C1, C2, C3, C4, C5, C6, C7, C8 & C9  
Section 11, T2S, R97W, 6th P.M.



### NOTES:

- 1.) UNLESS OTHERWISE NOTED CUT SLOPES ARE AT 1:1 & FILL SLOPES ARE AT 1.5:1.
- 2.) ROAD DISTURBANCE ACRES CALCULATED WITH A TYPICAL 30' WIDE RIGHT-OF-WAY.

APPROXIMATE PROPOSED SURFACE DISTURBANCE		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±8.710 ACRES
PROPOSED NEW ACCESS ROAD DISTURBANCE	±650'	±0.448 ACRES
TOTAL DISTURBANCE	±650'	±9.158 ACRES

\* 2,390 CU. YDS. OF MATERIAL IS REQUIRED TO BE EXCAVATED & STOCKPILED TO COMPLETE THE FINISH GRADING PLAN AS SHOWN ON SHEET 5.

ESTIMATED EARTHWORK QUANTITIES (No Shrink or swell adjustments have been used) (Expressed in Cubic Yards)				
ITEM	CUT	FILL	6" TOPSOIL	EXCESS
FINISH GRADING	*3,180	*790	Topsoil is not included in Pad Cut	*2,390
PITS	13,280	0		13,280
PAD	39,330	46,000	5,180	-6,670
TOTALS	55,790	46,790	5,180	9,000

SURVEYED BY: D.P. DATE SURVEYED: 07-16-08  
DRAWN BY: D.COX DATE DRAWN: 07-17-08  
SCALE: 1" = 100' REVISED: 08-04-08

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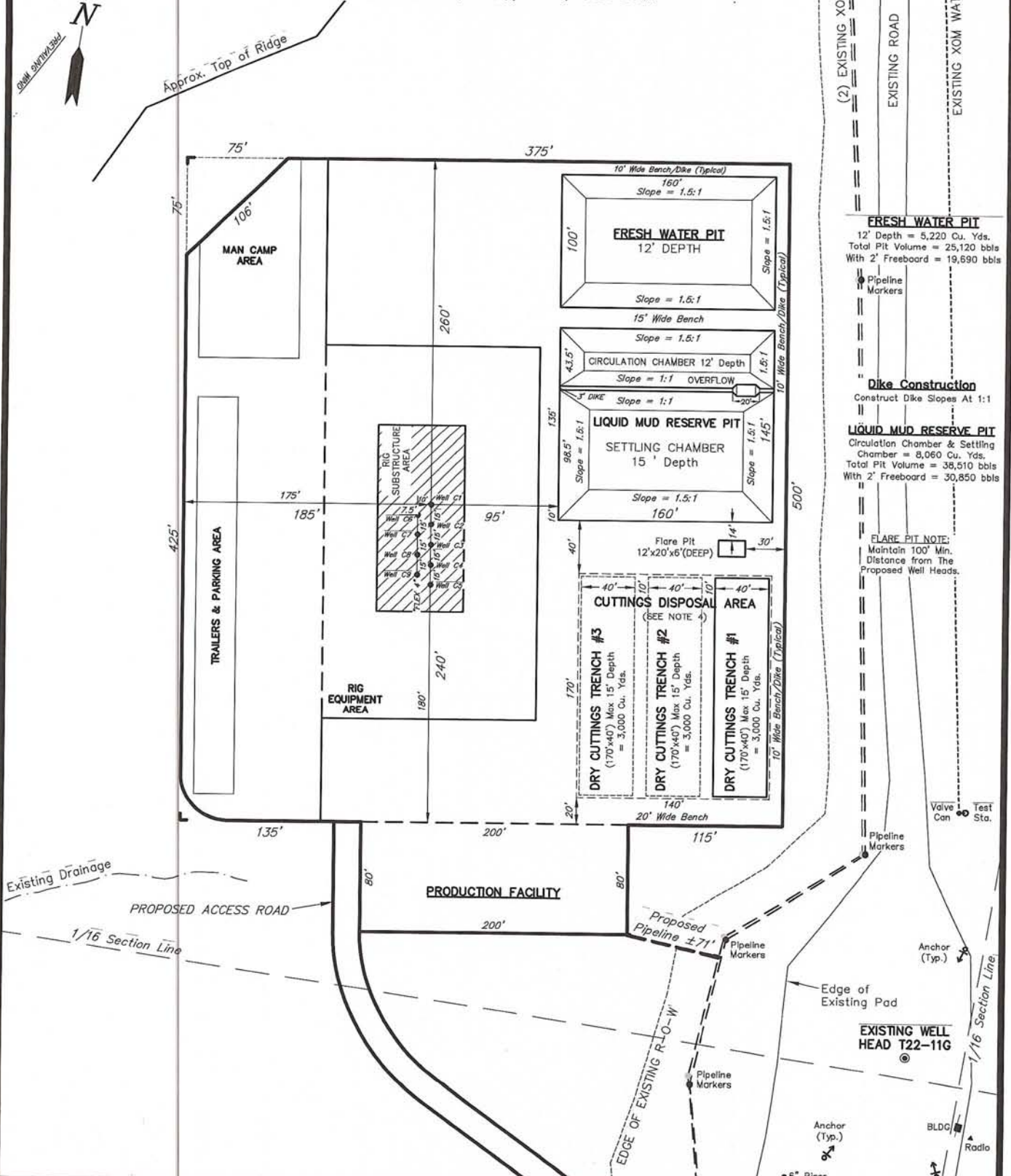


# ExxonMobil Oil Corporation

## TYPICAL RIG LAYOUT

WELL PAD (PICEANCE CREEK UNIT 297-11C)  
PICEANCE CREEK UNIT 297-11C1, C2, C3, C4, C5, C6, C7, C8 & C9  
Section 11, T2S, R97W, 6th P.M.

FIGURE #3



**FRESH WATER PIT**  
12' Depth = 5,220 Cu. Yds.  
Total Pit Volume = 25,120 bbls  
With 2' Freeboard = 19,690 bbls

**Dike Construction**  
Construct Dike Slopes At 1:1

**LIQUID MUD RESERVE PIT**  
Circulation Chamber & Settling Chamber = 8,060 Cu. Yds.  
Total Pit Volume = 38,510 bbls  
With 2' Freeboard = 30,850 bbls

**FLARE PIT NOTE:**  
Maintain 100' Min. Distance from The Proposed Well Heads.

SURVEYED BY: D.P.	DATE SURVEYED: 07-16-08
DRAWN BY: D.COX	DATE DRAWN: 07-17-08
SCALE: 1" = 100'	REVISED: 08-04-08

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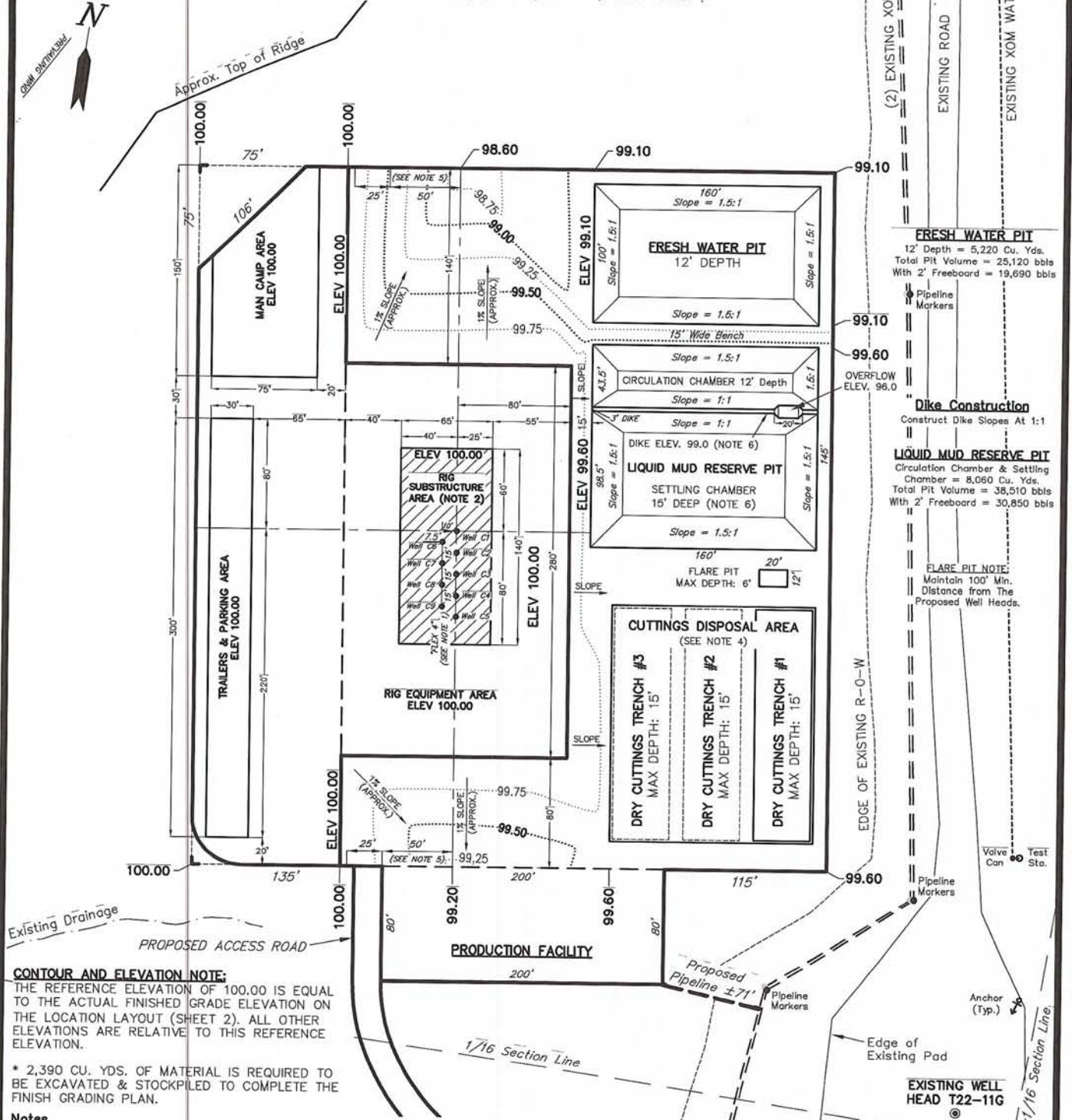


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## TYPICAL FINISH GRADING PLAN

WELL PAD (PICEANCE CREEK UNIT 297-11C)  
PICEANCE CREEK UNIT 297-11C1, C2, C3, C4, C5, C6, C7, C8 & C9  
Section 11, T2S, R97W, 6th P.M.

FIGURE #4



### CONTOUR AND ELEVATION NOTE:

THE REFERENCE ELEVATION OF 100.00 IS EQUAL TO THE ACTUAL FINISHED GRADE ELEVATION ON THE LOCATION LAYOUT (SHEET 2). ALL OTHER ELEVATIONS ARE RELATIVE TO THIS REFERENCE ELEVATION.

\* 2,390 CU. YDS. OF MATERIAL IS REQUIRED TO BE EXCAVATED & STOCKPILED TO COMPLETE THE FINISH GRADING PLAN.

### Notes

- Indicated row spacing for H&P "Flex 3" Drill Rig. H&P "Flex 4" will require 10'-0".
- Rig Substructure Area to be level. Compaction and testing per wellpad construction specification.
- Perimeter ditching not shown. Grading plan to be coordinated with approved Individual Storm Water Management Plan for each site.
- Cuttings Trench #1 to be constructed with wellpad. Additional trenches (#2 & #3) will be constructed during drilling operations as required.
- Indicated spacing may be increased to 75' based upon site topography. Alternate access location may be selected based upon site topography and direction of primary (existing) access.
- Excavate Reserve Pit to initial 12' depth. Construct diversion dike with 3.0' additional excavation from settling chamber.

SURVEYED BY: D.P.	DATE SURVEYED: 07-16-08
DRAWN BY: D.COX	DATE DRAWN: 07-17-08
SCALE: 1" = 100'	REVISED: 08-04-08

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