

**AP - 80**

**WORKPLAN**

**06/30/2014**

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 30, 2014

Mr. Jim Griswold  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

RE: Yates Petroleum State QE 13 #1  
T12S R34E Section 1 Unit Letter L,  
Lea County NM  
NMOCD #AP-080

Dear Mr. Griswold:

R.T. Hicks Consultants (Hicks consultants), is pleased to submit this work plan on the behalf of Yates Petroleum (Yates). The purpose of this report is to notify the New Mexico Oil Conservation Division (NMOCD) of activities scheduled to take place at the above referenced site. Plate 1 shows the location of the former reserve pit, the oil well, and the soil stockpiles.

## **Drilling Pit Excavation Closure Plan**

To characterize the stockpiled soil to be used in the vadose zone remedy, on June 9, 2014 we obtained five point composite samples of the three existing stockpiles, SP-1, SP-2, and SP-3 (Plate 1). Chloride concentrations were 540mg/kg, 57mg/kg, and non-detect, respectively. Hence, the blended material will have a concentration of about 200 mg/kg, low enough to support revegetation efforts. Previous sampling had demonstrated a chloride concentration at the reserve pit floor of 32 mg/kg

The proposed vadose zone remedy for the pit excavation is to install a sloping vegetated cap (an evapotranspiration barrier) with its base at least 4 feet below the final surface grade.

Plate 2 shows a schematic sequence of the steps to install the vadose zone remedy given below.

1. Smooth the reserve pit floor by pushing loose floor material to the south side of the pit.
2. Expand the existing drilling pit excavation as necessary to create a 3-foot wide area where subsurface impact of pit leakage does not exist.
3. Use blended material from the stockpiles and/or deepen the excavation as necessary to create a surface that slopes across the bottom of the excavation as suggested in Plate 2. The top of this surface must be at least 4-feet below final grade
4. Spread the loose material from the pit bottom over the new floor surface. As possible, place coarse materials on top of this surface.

## State X #1 Vadose Zone Remedy Work Plan

5. Blended soil from the stockpiles will be placed over the material in the pit in layers to construct a surface with a topographic high over the center of the former reserve pit.
6. Backfill the excavation as necessary with clean material, beginning with caliche and/or sand and finishing the top of the backfill with the greater of the background thickness of top soil or one-foot of top soil.
7. The new grade is to be a 3-5% slope that drains to the "ponding area" on the edges of the pit excavation. The final grade of the surface over the former pit should blend with the surroundings as much as possible.
8. Seed the reclaimed pit area with a mixture approved by the State Land Office.

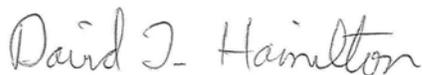
### ***Re-vegetation Plan***

1. The first growing season after the pit is closed, the operator will seed or plant the disturbed areas.
2. The operator will accomplish seeding by drilling on the contour whenever practical
3. The operator will obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation).
4. The operator will follow State Land Office directives for the seed mixture and maintain the cover through two successive growing seasons.
5. During the two growing seasons that prove viability, there will be no artificial irrigation of the vegetation.
6. The operator will repeat seeding or planting until it successfully achieves the required vegetative cover.
7. If conditions are not favorable for the establishment of vegetation, the operator may delay seeding or planting until soil moisture conditions become favorable or may require the operator to use additional cultural techniques such as mulching, fertilizing, irrigating, fencing or other practices.
8. The operator will notify the division when it has seeded or planted and when it successfully achieves re-vegetation.

If you have any question or comments, please contact David Hamilton at 505-266-5004.

Sincerely,

R.T. Hicks Consultants



David Hamilton

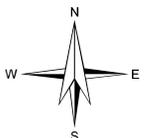
cc: Katie Parker (Yates Petroleum Corporation – Artesia, NM)

R.T Hicks Consultants



**Explanation**

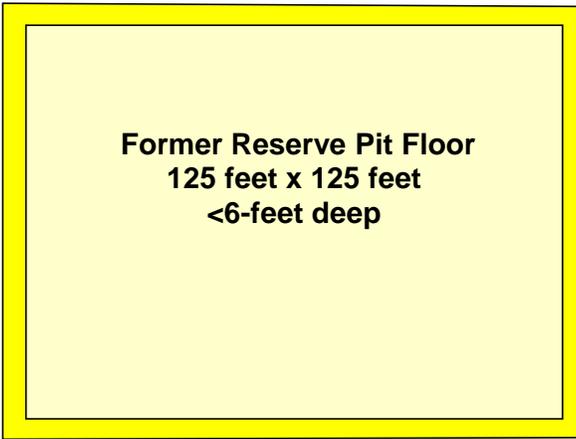
-  5 point composite (soil stockpile)
-  Discrete sample for 5-point composite (reserve pit floor)
-  Wellhead
-  Well pad
-  Drilling pit
-  Burial trench



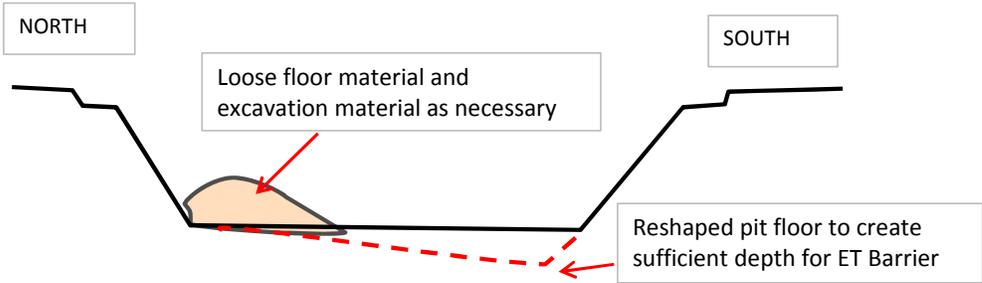
**R.T. Hicks Consultants, Ltd**  
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 Albuquerque, NM 87104  
 Ph: 505.266.5004

 Soil Sample Locations  
  
 Yates Petroleum: State QE 13 #1

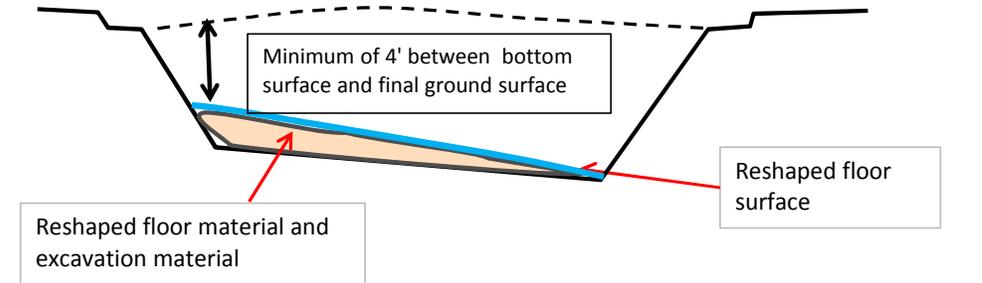
Plate F  
  
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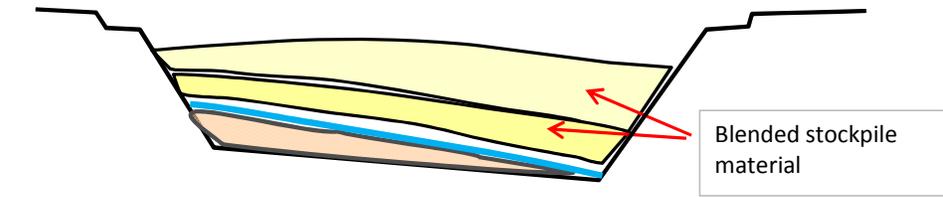
**Step 1**  
Excavate as required to create a 3 foot wide, shallow, clean zone around former pit excavation.  
  
Reserve all topsoil and clean caliche



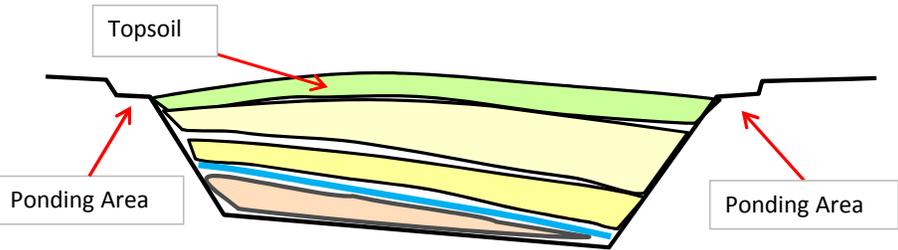
**Step 2**  
Push loose floor material to one side of pit.  
  
Excavate as necessary to get sufficient depth for ET barrier floor.



**Step 3**  
Shape loose floor material to create a sloping surface for ET barrier floor.  
  
Minimum depth between floor and eventual ground surface must be at least 4 feet.



**Step 4**  
Place blended stockpile material from over new floor surface



**Step 5**  
Place topsoil over blended stockpile materials  
  
Grade to send runoff to ponding areas on edge of excavation

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**Yates Petroleum**  
  
**State QE 13 #1 Reserve Pit Excavation Closure Plan**

**Plate 2**  
  
**June, 2014**