

Exploration & Production Waste Management Plan  
Land Application & Incorporation of Water-Based Bentonitic Drilling Fluids  
& Associated Drill Cuttings  
Expedition Water Solutions LLC

**Subject Property:**  
**COGCC Facility ID:**

SE ¼, NW ¼, Sec 3, T10N, R62W  
Weld County Road 79  
Weld County, Grover, Colorado

This Exploration & Production (E&P) Waste Management Plan outlines the operational requirements for applying water-based bentonitic drilling fluids and associated drill cuttings to privately owned agricultural land to maintain compliance with COGCC Rule 907.d. (3). Only water-based bentonitic drilling fluids and associated drill cuttings generated by Expedition Water Solutions LLC are covered by this plan. The drilling fluids and drill cuttings will be applied to the agricultural cropland as a beneficial soil amendment and as a conservation method to prevent soil erosion. A topographic map showing the site location is provided as Figure 1. An aerial photograph showing the location of the proposed land application site is provided as Figure 2. The E&P Waste Management Plan is outlined as follows:

1. Expedition Water Solutions LLC will certify this plan by signing said plan and certifying compliance with the contents of this plan (Attachment A).
2. Expedition Water Solutions LLC shall obtain written authorization from the surface owner prior to land application of the water-based bentonitic drilling fluids and associated drill cuttings (Attachment B).
3. The agreement certifies that only water-based bentonitic drilling fluids and associated drill cuttings will be applied at this site. No other E&P waste shall be deposited at this site.
4. Water based bentonitic fluids and associated drill cuttings will be applied and spread at a minimum distance of approximately 50 feet from each property boundary to provide an adequate buffer between the application site and surrounding properties.
5. A 3-inch maximum lift of water-based bentonitic drilling fluids and associated drill cuttings will be applied prior to incorporation. The waste shall be applied to prevent ponding or erosion.

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6. Expedition Water Solutions LLC personnel will ensure that the material is incorporated into the soil within 10 days (site and weather conditions permitting).
7. Expedition Water Solutions LLC will maintain records of the following information:
  - Name of the well where material was generated
  - Date the material was transferred from the well to the land application site
  - Volume of the material taken to the land application site
  - Name of the transporter
8. Soil sampling:
  - Baseline soil samples will be collected and analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), inorganic analyses including electrical conductivity (EC), sodium adsorption ratio (SAR), and pH, and analyses of COGCC Table 910-1 priority metals.
  - If horizontal wells will be drilled, a horizontal drilling composite soil sample will be obtained to determine the presence/absence of petroleum hydrocarbons in soil from the horizontal portion of the well within the producing formation. The soil sample will be submitted to a contract laboratory to determine the presence/absence of BTEX and total petroleum hydrocarbons (TVPH + TEPH).
  - Following incorporation of the drilling mud, representative soil sample(s) will be collected from an interval of 0-12 inches below ground surface (bgs). The number of samples collected will depend on the surface acreage used for incorporation.
  - At a minimum, post incorporation soil samples will be analyzed for TEPH-TVPH, BTEX, EC, SAR, pH, and Table 910-1 priority metals to ensure compliance with COGCC Table 910-1.
9. Water-based bentonitic drilling fluids and associated drill cuttings will be applied at this site for a maximum of two years.
10. Upon closure of the site, Expedition Water Solutions LLC will submit a Form 4 Sundry Notice providing final confirmation soil sample(s) data and request closure for this site.

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**ATTACHMENT A**  
**PLAN CERTIFICATION**

Management Approval Statement:

This Exploration & Production (E&P) Waste Management Plan is fully supported by the management of Expedition Water Solutions LLC. Expedition Water Solutions LLC is committed to the protection of surficial and subsurface environments, waters of the State, and public health, and maintains the highest standards for tracking drilling fluid applications, site subsurface monitoring, sampling and compliance with Colorado Oil and Gas Conservation Commission (COGCC) regulations. Expedition Water Solutions LLC ensures that E&P waste is properly stored, handled, transported, treated, recycled or disposed of to prevent threatened or actual adverse environmental impacts to air, water, soil or biological resources or to the extent necessary to comply with the concentration levels outlined in COGCC Table 910-1.

Expedition Water Solutions LLC will implement this Plan at the referenced facility and will provide the means necessary to control impact to the environment as a result of the application of water based bentonitic drilling fluids and associated drilling cuttings as surficial soil amendments.

*Paul Gottlob*

Date: 8-19-2014

Expedition Water Solutions LLC owner or authorized agent Signature

Paul Gottlob / IPT Agent for EWS LLC

Printed Name

ATTACHMENT B

SURFACE OWNER APPROVAL

PLSS Location: \_\_\_\_\_

Address: 37231 Hwy 14  
BRIGSDALE, CO 80611

The owner or authorized agent of the referenced property located in the SE 1/4 NW 1/4 3-10-62, Colorado, onto which EXPEDITION WATER SOLUTIONS LLC proposes to apply water based bentonitic drilling fluids and associated drill cuttings, authorizes the application of the drilling fluids onto the referenced property. The surface owner is fully aware and understands COGCC land application requirements as outlined in this plan, and formally stated in COGCC Regulation 907 d. (3) B. The property owner hereby authorizes KINETIC ENERGY SERVICES to commence land treatment applications on said property until subsequent written agreement has been completed terminating this authorization.

Joel Konig  
Property owner or authorized agent Signature

Date: 8/11/14

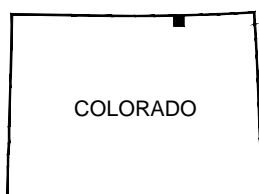
Joel Konig  
Property owner Printed Name

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**FIGURES**

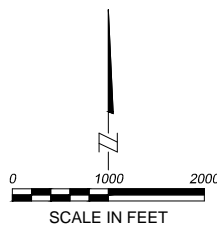
Figure 1: Topographic Map

Figure 2: Aerial Site Conditions Map



COLORADO

### ■ QUADRANGLE LOCATION



**FIGURE 1**  
**SITE LOCATION MAP**  
EXPEDITION WATER SERVICES, LLC  
KONIG PROPERTY  
SE 1/4, NW 1/4, Sec. 3, T10N, R62W  
GROVER, COLORADO

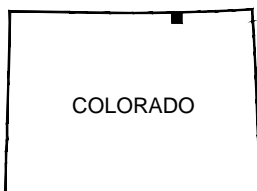
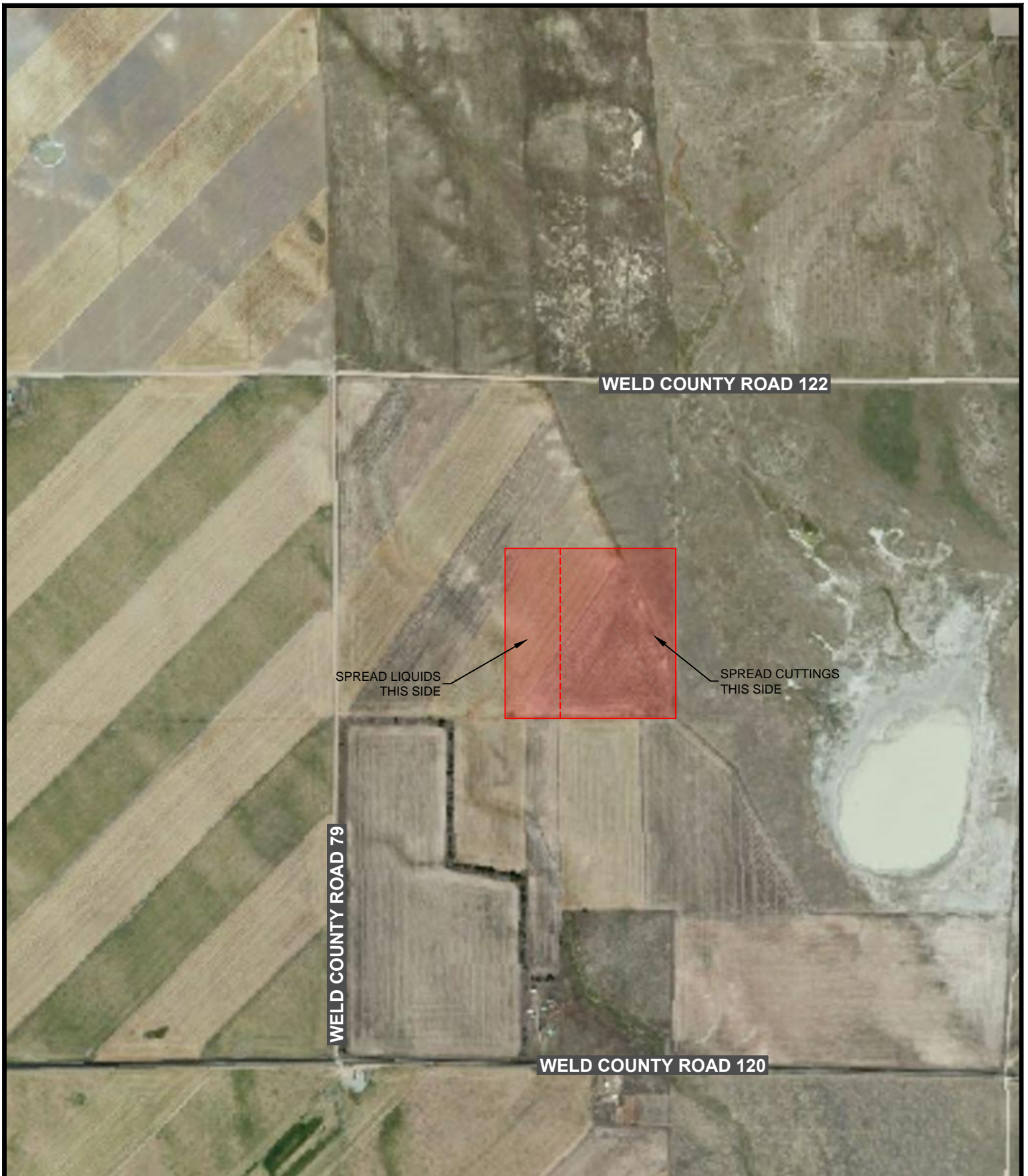
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DATE:  
8/18/2014

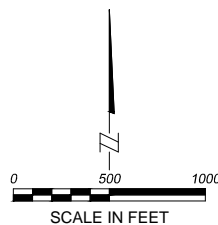
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REVIEW:





COLORADO

■ QUADRANGLE LOCATION



SCALE IN FEET

## FIGURE 2 SITE DETAILS

EXPEDITION WATER SERVICES, LLC  
KONIG PROPERTY  
SE 1/4, NW 1/4, Sec. 3, T10N, R62W  
GROVER, COLORADO

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1-12556-14680aa  
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DRAFT:  
MSB  
REVIEW:

