

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

**Subject Property:**  
**COGCC Facility ID:**  
NE ¼, SE ¼, Sec 36, T3N, R65W  
Weld County Road 49  
Weld County, Hudson, 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). Due to a recent business transaction, the original operator name High Sierra Energy was changed to NGL Water Solutions DJ LLC. In order to retain effectiveness of this plan during this transitional period, NGL Water Solutions DJ LLC and High Sierra Energy may be used interchangeably in this plan.

Only water-based bentonitic drilling fluids and associated drill cuttings generated by NGL Water Solutions DJ 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. NGL Water Solutions DJ LLC will certify this plan by signing said plan and certifying compliance with the contents of this plan (Attachment A).
2. NGL Water Solutions DJ 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.

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

6. NGL Water Solutions DJ LLC personnel will ensure that the material is incorporated into the soil within 10 days (site and weather conditions permitting).
7. NGL Water Solutions DJ 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, NGL Water Solutions DJ LLC will submit a Form 4 Sundry Notice providing final confirmation soil sample(s) data and request closure for this site.

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

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

Management Approval Statement:

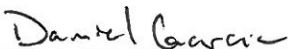
This Exploration & Production (E&P) Waste Management Plan is fully supported by the management of NGL Water Solutions DJ LLC. NGL Water Solutions DJ LLC is committed to the protection of surficial and subsurface environments, waters of the State, and public health, and maintains the highest standards for tracking drilling fluid applications, site subsurface monitoring, sampling and compliance with Colorado Oil and Gas Conservation Commission (COGCC) regulations. NGL Water Solutions DJ 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.

NGL Water Solutions DJ 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.



Date: 5-14-2014

NGL Water Solutions DJ LLC owner or authorized agent Signature



Printed Name

ATTACHMENT B

SURFACE OWNER APPROVAL

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

Address: \_\_\_\_\_

The owner or authorized agent of the referenced property located in the Weld County, Colorado, onto which High Sierra 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 High Sierra (C3A Well) to commence land treatment applications on said property until subsequent written agreement has been completed terminating this authorization.

Alvin Dechant Date: 5-7-14

Property owner or authorized agent Signature

Alvin Dechant Jr. S36

Property owner Printed Name

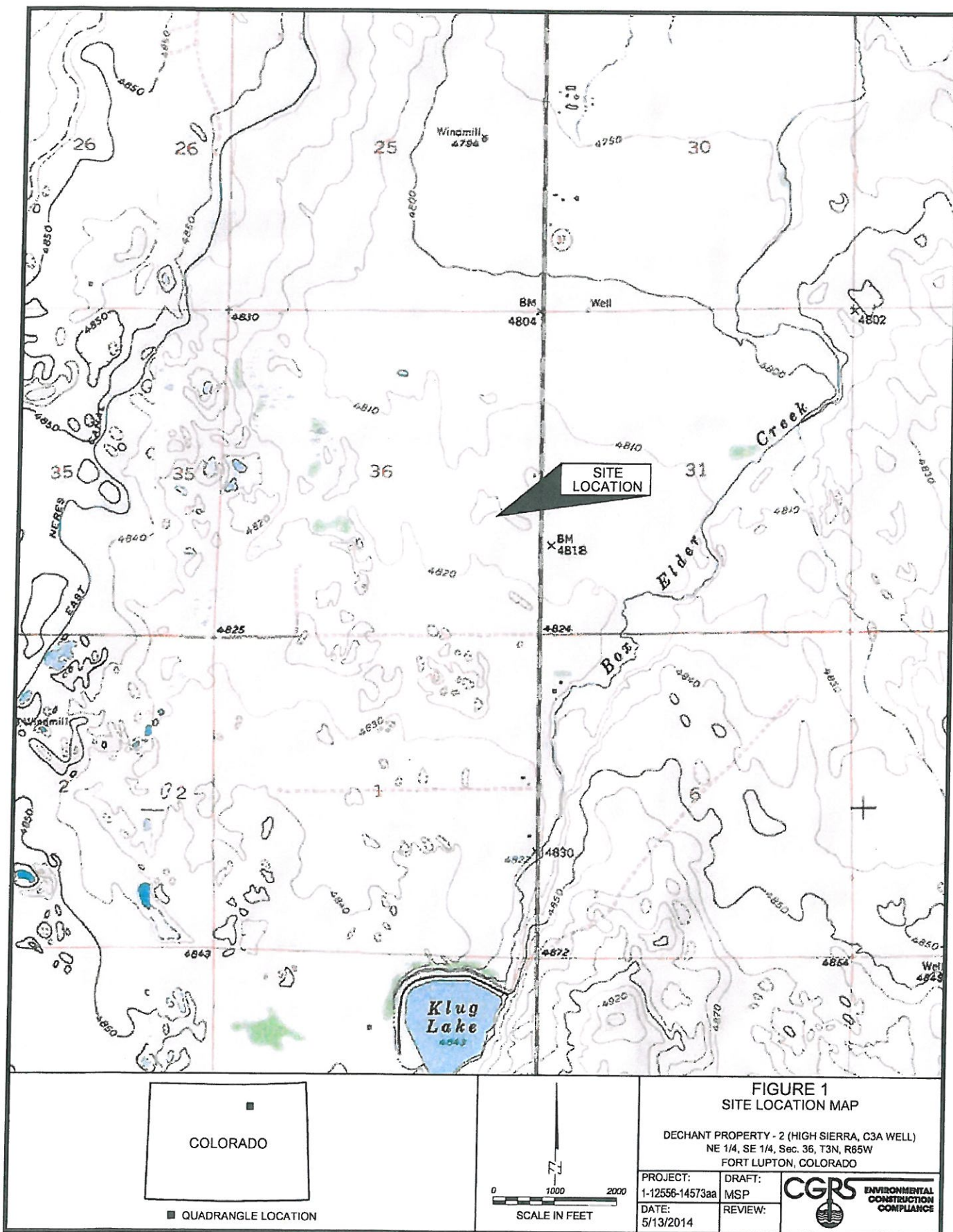
NEXSE 1/4 SEC 36 T3 R65

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

**FIGURES**

Figure 1: Topographic Map

Figure 2: Aerial Site Conditions Map





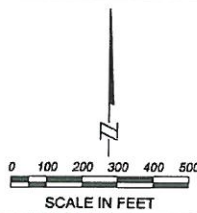


FIGURE 2  
SITE DETAILS

DECHANT PROPERTY - 2 (HIGH SIERRA, C3A WELL)  
NE 1/4, SE 1/4, Sec. 36, T3N, R65W  
FORT LUPTON, COLORADO

PROJECT:  
1-12556-14573aa  
DATE:  
5/13/2014

DRAFT:  
MSP  
REVIEW:



ENVIRONMENTAL  
CONSTRUCTION  
COMPLIANCE