

Exploration & Production Waste Management Plan  
Land Application & Incorporation of Water-Based Bentonitic Drilling Fluids  
& Associated Drill Cuttings  
High Plains Disposal

**Subject Property: Bella Farms**  
SW 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 High Plains Disposal 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. High Plains Disposal will certify this plan by signing said plan and certifying compliance with the contents of this plan (Attachment A).
2. High Plains Disposal 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.
6. High Plains Disposal personnel will ensure that the material is incorporated into the soil within 30 days, or after the crops have been harvested (site and weather

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conditions permitting). The cuttings will be staged on a small parcel of land located on the northeast corner of the Henrickson property pending appropriate agricultural and weather conditions. Furthermore, if the cuttings freeze there will need to be a minimum of 20 consecutive days of above freezing temperatures before the cuttings can be spread or the material may have to be spread during the spring of 2015.

7. High Plains Disposal 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 period of two years.
  
10. Upon closure of the site, High Plains Disposal will submit Form 4 Sundry Notice providing final confirmation soil sample(s) data and request closure for this site.



ATTACHMENT B

SURFACE OWNER APPROVAL

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

Address: 13278 CR 32  
Platteville CO

The owner or authorized agent of the referenced property located in the 3N 66W, Colorado, onto which High Plains Disposal 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 to commence land treatment applications on said property until subsequent written agreement has been completed terminating this authorization.

Bella Farnms

[Signature]

Date: 10-26-14

Property owner or authorized agent Signature

Gary Henrikson

Property owner Printed Name

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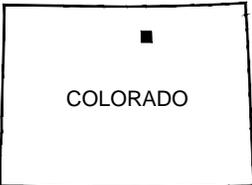
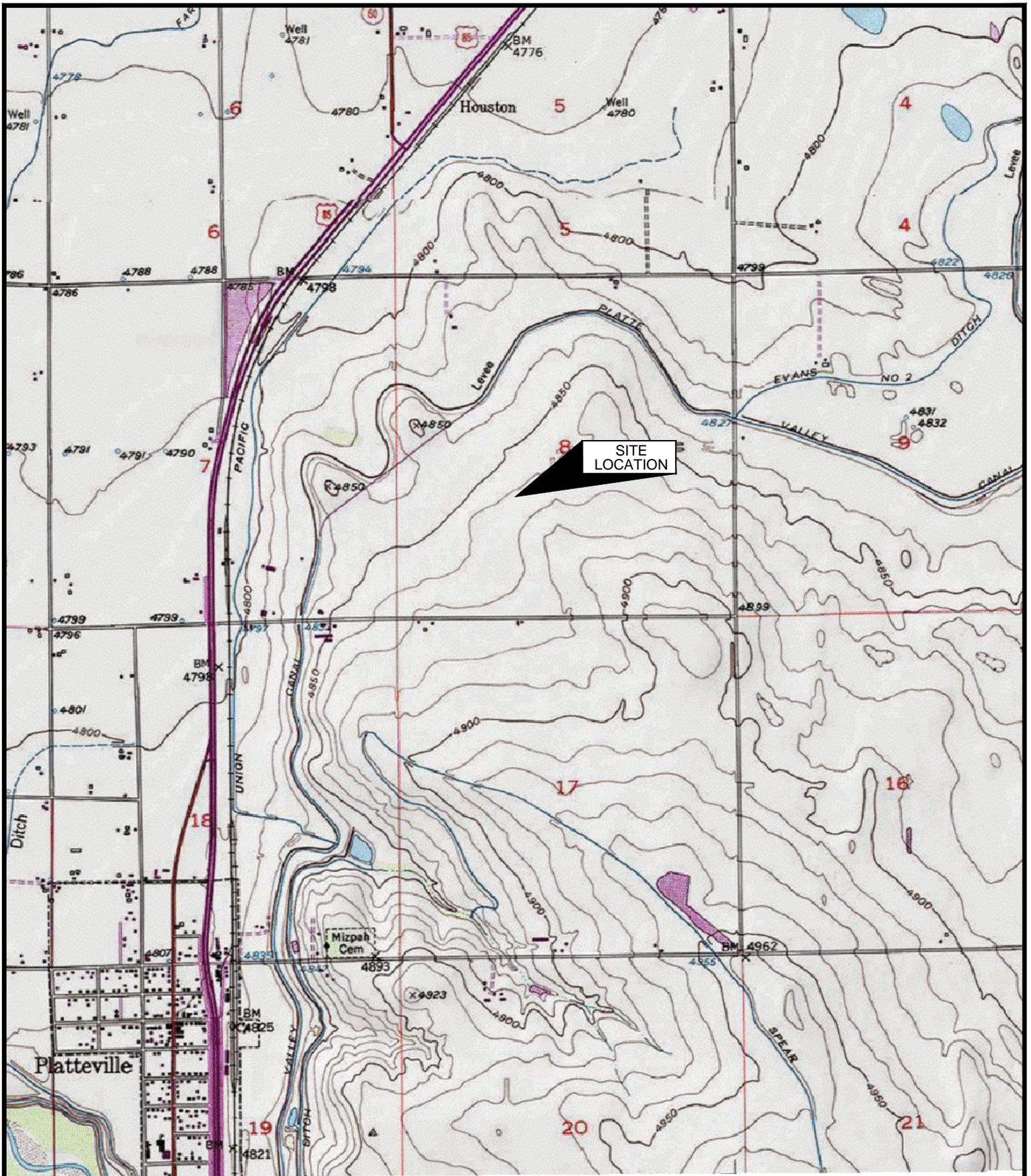
**FIGURES**

Figure 1: Topographic Map

Figure 2: Aerial Site Conditions Map

**ATTACHMENTS**

eAnalytics Laboratory Test Report: Baseline Soil Sample Analysis



COLORADO

■ QUADRANGLE LOCATION



NORTH

0 1000 2000

SCALE IN FEET

**FIGURE 1**  
SITE LOCATION MAP

HIGH PLAINS DISPOSAL WELL LAND APPLICATION SITE  
NE 1/4, SE 1/4, Sec. 8, 3, 66W  
PLATTEVILLE, COLORADO

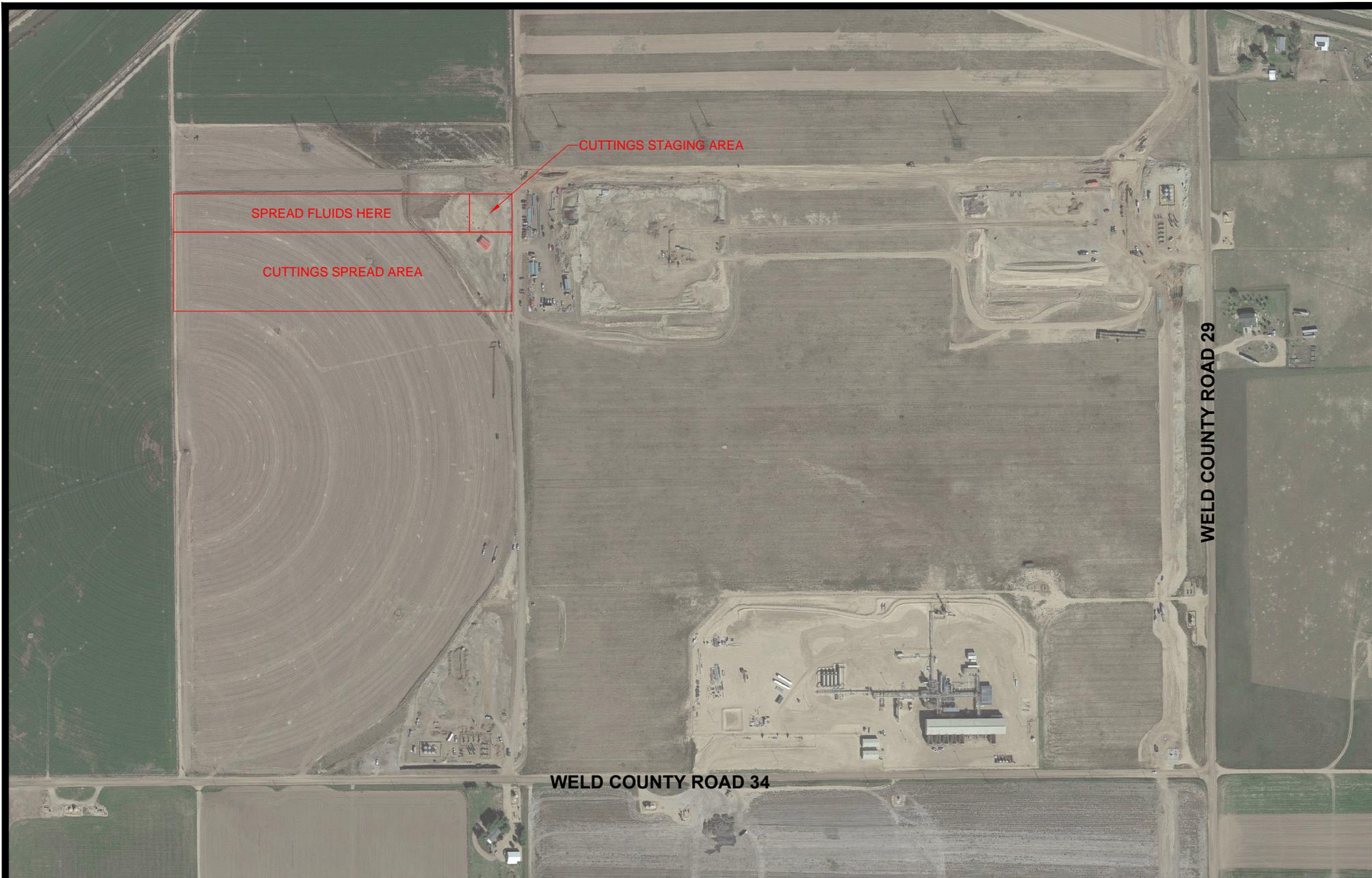
PROJECT:  
1-12556-14828aa

DATE:  
11/3/2014

DRAFT:  
MSP

REVIEW:





**FIGURE 2  
SITE DETAIL**

HIGH PLAINS DISPOSAL WELL LAND APPLICATION SITE  
NE 1/4, SE 1/4, Sec. 8, 3, 66W  
PLATTEVILLE, COLORADO



**NORTH**



PROJECT:  
1-12556-14828aa  
DATE:  
11/3/2014

DRAFT:  
MSP  
REVIEW:



# Test Report

## eANALYTICS LABORATORY

October 31, 2014

Client: CGRS

Project: High Plains Mud Farm

Lab ID: 2382

Date Samples Received: 10/29/2014

Number of Samples: 1

Sample Condition: Samples arrived intact and in appropriate sample containers

Sample Temperature: Within acceptable range of 2-6° C, or as specified in EPA Method

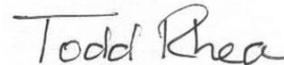
The quality control procedures associated with the requested analyses were satisfactorily passed before the samples were run.

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you.

Sincerely,



Christopher Dieken  
Quality Assurance Manager



Todd Rhea  
Laboratory Manager

**eAnalytics Laboratory**

1767 Rocky Mountain Avenue Loveland CO 80538

Chain of Custody

# eANALYTICS

## LABORATORY

Chain of Custody Form

|  |                      |   |   |
|--|----------------------|---|---|
|  |                      | 1767 Rocky Mountain Avenue Loveland CO 80538 Phone: (970) 667-6975 Fax: (970) 668-0911 www.eanalyticalab.com  |   |
| <b>CLIENT INFORMATION</b><br>(*New Clients please fill out completely)   |                      | <b>ANALYSIS INFORMATION</b><br>(Delete analysis by checking box or corresponding sample box)  |   |
| Company: <b>CGRS/ Kinetic</b><br>Project: <b>High Plains Mud Farm</b><br>Project Manager: <b>Ken</b><br>Sampler: <b>Shad</b><br>Phone/Email: <b>720552 1221</b><br>Address:  |                      | Other Analysis:<br>EC<br>SAR<br>COGCC TABLE 910-1<br>Priority metals  |   |
| Lab ID   | Sample Name          | Sampling Date/Time  | Number of Samples<br>Metals (Cd, Ni, Pb, W, Zn, Cr, V) (ppm) (10/14)<br>BTEX (ppm) (10/14) (PA 8200)<br>TPH (ppm) (10/14)<br>Volatiles (10/14) (PA 1313)<br>Full VOC (10/14) (PA 1313)<br>Semi Volatiles (10/14) (PA 1313)<br>PPE (10/14) (PA 1313)<br>PCBs (10/14) (10/14) (Download)<br>Best - Spot - (Priority) (Print) (Day)<br>PFAS (10/14)<br>Volatiles (10/14)<br>PCBs - Priority (10/14)<br>Other (10/14) |
|  | High Plains Mud Farm | 10-29-14  | 1 SX<br>Ken Rogowski<br>10/29/14  |
| Comments:  |                      |   |   |
| <b>Turnaround Time (Business Days)</b><br>TAT begins when sample is received by eANALYTICS<br>Normal (5-10 Days)<br>3 Day (25%) Rush analysis requires an extra charge.<br>2 Day (50%) If possible please inform eANALYTICS in advance for rush analysis.<br>1 Day (100%)<br>Same Day (200%) |                      | <b>Record of Custody</b><br>Released by: <b>Shad Martin</b> Date: <b>10/29/14</b><br>Company: <b>Kinetic Hydrovac</b> Date: <b>10/29/14</b><br>Received by: <b>Todd Rice</b> Date: <b>10/29/14</b><br>Category: <b>eANALYTICS</b> Date: <b>10/29/14</b> |   |
| Colorado OPS Project: Yes / No   |                      | For eANALYTICS Use<br>Samples Received Intact: Yes (circled) / No<br>Received Within Temperature Range (2-6°C): Yes / No<br>Sample Preservative: Ice / None / Acid / Other  |   |

WO # **2382**

eANALYTICS: Environmental testing made Easy

Page 1 of 1

### eAnalytics Laboratory

1767 Rocky Mountain Avenue Loveland CO 80538



Client: CGRS Lab ID: 2382  
 Project: High Plains Mud Farm  
 Analysis: Volatile Organics Method: EPA8260

| Sample Name          | Benzene<br>mg/kg | Toluene<br>mg/kg | Ethyl-<br>benzene<br>mg/kg | Total<br>Xylenes<br>mg/kg | Date<br>Sampled | Date<br>Analyzed | Lab ID |
|----------------------|------------------|------------------|----------------------------|---------------------------|-----------------|------------------|--------|
| High Plains Mud Farm | < 0.01           | < 0.01           | < 0.01                     | < 0.01                    | 10/28/14        | 10/29/14         | 2382 1 |

**e**ANALYTICS  
LABORATORY

Client: CGRS Lab ID: 2382

Project: High Plains Mud Farm

Analysis: EC SAR Method: USDA 60 (3)  
USDA 60 (20B)

| Sample Name          | EC<br>mmhos/cm | SAR<br>ratio | Date<br>Sampled | Date<br>Analyzed | Lab ID |
|----------------------|----------------|--------------|-----------------|------------------|--------|
| High Plains Mud Farm | <b>0.884</b>   | <b>2.33</b>  | 10/28/14        | 10/30/14         | 2382 1 |



Client: CGRS Lab ID: 2382  
 Project: High Plains Mud Farm  
 Analysis: Table 910 Metals Method: EPA6010/7196/7471

| Sample Name          | As<br>mg/kg | Ba<br>mg/kg | B (Hot<br>Water<br>Soluble)<br>mg/L | Cd<br>mg/kg | Cr (III)<br>mg/kg | Cr (VI)<br>mg/kg | Cu<br>mg/kg | Pb<br>mg/kg | Date<br>Sampled | Date<br>Analyzed | Lab ID |
|----------------------|-------------|-------------|-------------------------------------|-------------|-------------------|------------------|-------------|-------------|-----------------|------------------|--------|
| High Plains Mud Farm | 2.12        | 190         | < 1.20                              | < 0.50      | 2.70              | < 15             | 4.36        | 4.72        | 10/28/14        | 10/30/14         | 2382 1 |



Client: CGRS Lab ID: 2382  
 Project: High Plains Mud Farm  
 Analysis: Table 910 Metals Method: EPA6010/7196/7471

| Sample Name          | Hg<br>mg/kg | Ni<br>mg/kg | Se<br>mg/kg | Ag<br>mg/kg | Zn<br>mg/kg | Date<br>Sampled | Date<br>Analyzed | Lab ID |
|----------------------|-------------|-------------|-------------|-------------|-------------|-----------------|------------------|--------|
| High Plains Mud Farm | < 5.0       | <b>3.31</b> | < 5.0       | < 0.50      | <b>14.1</b> | 10/28/14        | 10/30/14         | 2382 1 |



Client: CGRS Lab ID: 2382  
 Project: High Plains Mud Farm Method: EPA8260

| Sample Name          | Dibromo-<br>fluoromethane<br>% Recovery | 1,2 Dichloro-<br>ethane-D4<br>% Recovery | Toluene-D8<br>% Recovery | Bromo-<br>fluorobenzene<br>% Recovery | Date<br>Sampled | Date<br>Analyzed | Lab ID |
|----------------------|---|--|--------------------------|---------------------------------------|-----------------|------------------|--------|
| High Plains Mud Farm | 89                                      | 87                                       | 110                      | 91                                    | 10/28/14        | 10/29/14         | 2382 1 |



Client: CGRS Lab ID: 2382  
 Project: High Plains Mud Farm  
 Analysis: Volatile Organics Method: EPA8260

| Sample Name                            | Benzene<br>% Rec | Toluene<br>% Rec | Ethyl-<br>benzene<br>% Rec | Total<br>Xylenes<br>% Rec | Date<br>Analyzed | Lab ID     |
|--|------------------|------------------|----------------------------|---------------------------|------------------|------------|
| Laboratory Control Sample<br>(70-130%) | 89               | 100              | 90                         | 103                       | 10/29/14         | LCS 2382 1 |
| Method Blank                           | < 0.01           | < 0.01           | < 0.01                     | < 0.01                    | 10/29/14         | MB 2382 1  |
|  | mg/kg            | mg/kg            | mg/kg                      | mg/kg                     |                  |            |

**eAnalytics Laboratory**

1767 Rocky Mountain Avenue Loveland CO 80538