

Exploration & Production Waste Management Plan
Land Application & Incorporation of Water-Based Bentonitic Drilling Fluids
& Associated Drill Cuttings
Synergy Resources Corporation
SE ¼, SE ¼, Sec 30, T3N, R66W

Subject Property:
COGCC Facility ID:
NE ¼, SE ¼, Sec 30, T3N, R66W
Weld County, Platteville, 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.a. (3). Only water-based bentonitic drilling fluids and associated drill cuttings generated by Synergy Resources Corporation 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. Synergy Resources Corporation will certify this plan by signing said plan and certifying compliance with the contents of this plan (Attachment A).
2. Synergy Resources Corporation 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 ensure protection to 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. Synergy Resources Corporation personnel will ensure that the material is incorporated into the soil within 10 days (site and weather conditions permitting).

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7. Synergy Resources Corporation 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 from a minimum of three (3) locations across the application area prior to the transfer/spreading of materials. Soil samples will be analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), inorganic analyses including electrical conductivity (EC), sodium adsorption ratio (SAR), and pH, and analyses of Table 910-1 priority metals.
 - Baseline samples will be collected in order to provide COGCC adequate capacity to establish pre-application soil conditions, especially as related to COGCC Table 910-1 footnote 1.
 - If horizontal wells will be drilled, obtain a horizontal drilling composite soil sample 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 volatile and extractable petroleum hydrocarbons (TVPH + TEPH) per COGCC reviewer requirements.
 - Following incorporation of the drilling mud and cuttings, a representative composite soil sample will be collected from an interval of 0-12 inches below ground surface (bgs) from a minimum of three (3) locations across the application area.
 - At a minimum, post incorporation soil samples will be analyzed for TVPH, TEPH, 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, Synergy Resources Corporation will submit a Form 4 Sundry Notice providing confirmation soil sample data and request closure for this site.

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ATTACHMENT A

PLAN CERTIFICATION

NE ¼, SE ¼, Sec 30, T3N, R66W

Weld County, Platteville, Colorado

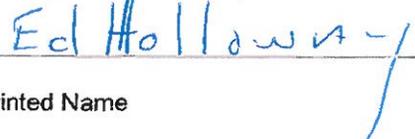
Management Approval Statement:

This Exploration & Production (E&P) Waste Management Plan is fully supported by the management of Synergy Resources Corporation. Synergy Resources Corporation 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. Synergy Resources Corporation 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

Synergy Resources Corporation 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 as surficial soil amendments.


_____ Date: 6/10/14

Synergy Resources Corporation owner or authorized agent Signature



Printed Name

Attachment B

LAND USE AGREEMENT

I Glenn Miller, legally own the following property, _____
160 acres

located in section 30 in township 3N and range 66W
in Weid County

Agree to allow Synergy (Name of Operator) to have applied
water based bentonitic clay drilling mud and cuttings from the following location/locations

(Lease/Leases) Starting 3/20, 20 14 and continuing through, 9/20, 20 14.
Either party can cancel the agreement by delivering a thirty day written notice.

A description of the areas to be used as application sites are as follows:

Site Number	¼ Section	Section	Township	Range	Available Acreage
<u>1</u>	<u>SE</u>	<u>30</u>	<u>3N</u>	<u>66W</u>	<u>60</u>
<u>2</u>	<u>NE</u>	<u>30</u>	<u>3N</u>	<u>66W</u>	<u>10</u>

I am aware that as the land applicator, I am responsible to apply all of the cuttings and drill mud according to the management plan developed and submitted by a registered, professional engineer, _____, and as per the guidelines and conditions set forth by the Colorado Oil and Gas Conservation Commission. In addition to these guidelines the following compensation and or services must be provided: _____

Frank Estep - Wise Services
Signed

Frank Estep
Printed

\$ 7500 / Well

Glenn Miller
Signed, Land Owner

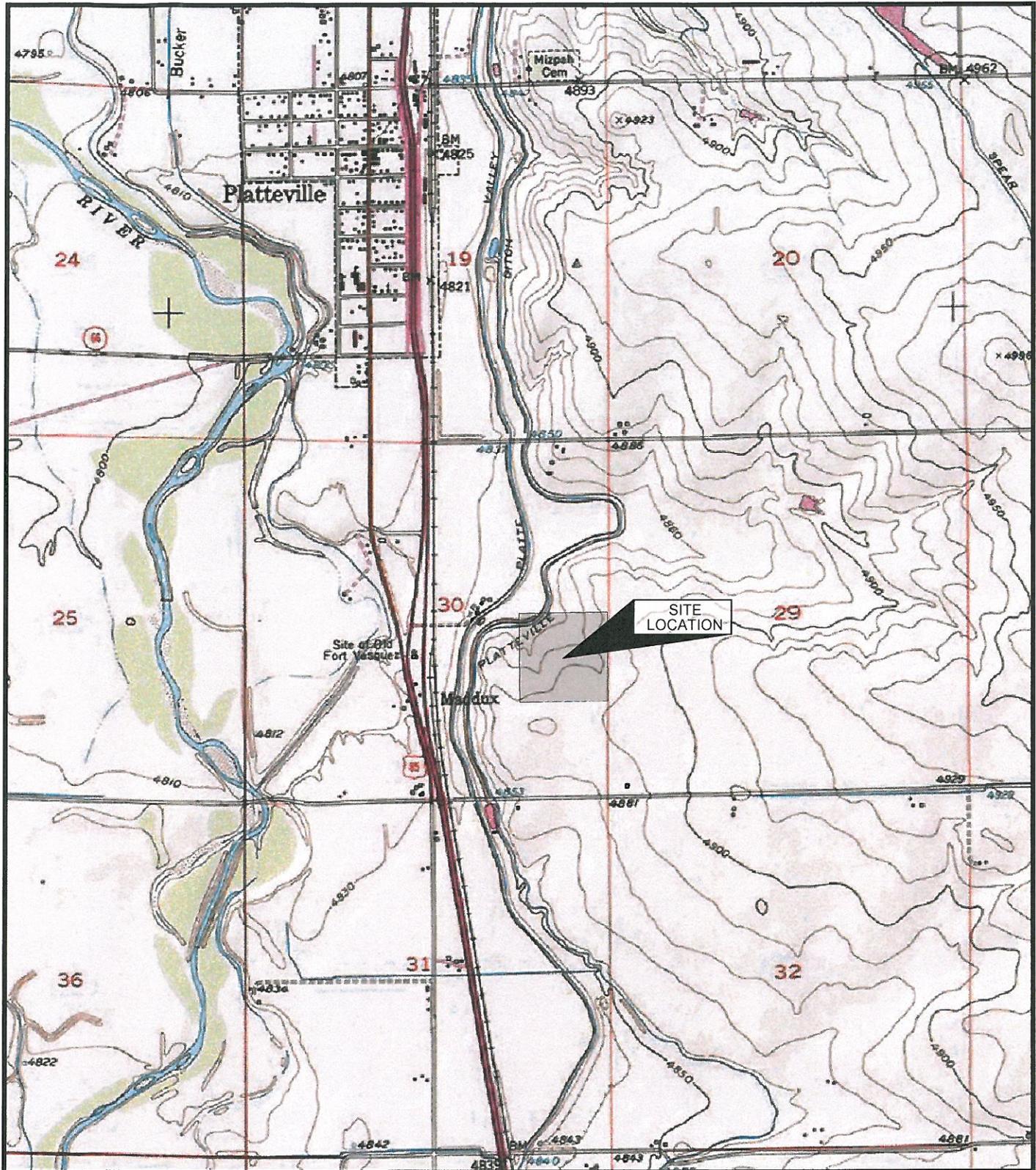
Glenn Miller
Printed, Land Owner

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FIGURES

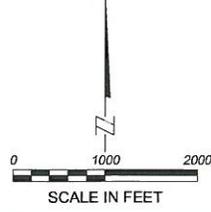
Figure 1: Topographic Map

Figure 2: Aerial Site Conditions Map



COLORADO

■ QUADRANGLE LOCATION



SCALE IN FEET

FIGURE 1
SITE LOCATION MAP

GLENN MILLER PROPERTY - SYNERGY RES.
NE 1/4, SE 1/4, Sec. 30, T3N, R66W
PLATTEVILLE, COLORADO

PROJECT:
1-12155-14578aa
DATE:
5/20/2014

DRAFT:
MSP
REVIEW:





FIGURE 2
SITE CONDITIONS MAP

GLENN MILLER PROPERTY - SYNERGY RES.
 NE 1/4, SE 1/4, Sec. 30, T3N, R66W
 PLATTEVILLE, COLORADO

PROJECT:	DRAFT:	
1-12155-14578aa	MSP	
DATE:	REVIEW:	
5/20/2014		

0 100 200 300 400 500
 SCALE IN FEET

NE 1/4, SE 1/4 SECTION 30 TOWNSHIP 3N RANGE 66W

PROPOSED LAND APPLICATION AREA

SPEER CANAL

FORT VELASQUEZ MUSEUM

U.S. HIGHWAY 85

WELD COUNTY ROAD 28

Test Report

eANALYTICS LABORATORY

May 15, 2014

Client: CGRS

Project: Glenn Miller Property 1-12155-14578aa

Lab ID: 1372

Date Samples Received: 5/13/2014

Number of Samples: 3

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

eANALYTICS
LABORATORY

Client: CGRS Lab ID: 1372
 Project: Glenn Miller Property 1-12155-14578aa
 Analysis: Volatile Organics Method: EPA8260

Sample Name	Benzene mg/kg	Toluene mg/kg	Ethyl- benzene mg/kg	Total Xylenes mg/kg	Date Sampled	Date Analyzed	Lab ID
SS-1	< 0.01	< 0.01	< 0.01	< 0.01	05/13/14	05/14/14	1372 1
SS-2	< 0.01	< 0.01	< 0.01	< 0.01	05/13/14	05/14/14	1372 2
SS-3	< 0.01	< 0.01	< 0.01	< 0.01	05/13/14	05/14/14	1372 3

eAnalytics Laboratory

1767 Rocky Mountain Avenue Loveland CO 80538

eANALYTICS
LABORATORY

Client: CGRS Lab ID: 1372
 Project: Glenn Miller Property 1-12155-14578aa
 Analysis: pH Method: EPA9045D
 EC USDA 60 (3)
 SAR USDA 60 (20B)

Sample Name	pH su	EC mmhos/cm	SAR ratio	Date	Date	Lab ID
				Sampled	Analyzed	
SS-1	6.3	0.168	1.40	05/13/14	05/14/14	1372 1
SS-2	6.0	0.096	0.67	05/13/14	05/14/14	1372 2
SS-3	6.2	0.116	1.40	05/13/14	05/14/14	1372 3

eAnalytics Laboratory

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eANALYTICS
LABORATORY

Client: CGRS Lab ID: 1372
 Project: Glenn Miller Property 1-12155-14578aa
 Analysis: Table 910 metals Method: EPA6010/7196/7471

Sample Name	As	Ba	B (HWS)	Cd	Cr (III)	Cr (VI)	Cu	Pb	Date	Date	Lab ID
	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Sampled	Analyzed	
SS-1	1.84	37.1	< 1.2	< 0.50	2.45	< 15	3.00	5.01	05/13/14	05/15/14	1372 1
SS-2	2.15	29.9	< 1.2	< 0.50	1.63	< 15	2.58	5.66	05/13/14	05/15/14	1372 2
SS-3	1.99	37.3	< 1.2	< 0.50	2.72	< 15	6.65	5.00	05/13/14	05/15/14	1372 3

eAnalytics Laboratory

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eANALYTICS
LABORATORY

Client: CGRS Lab ID: 1372
 Project: Glenn Miller Property 1-12155-14578aa
 Analysis: Table 910 metals Method: EPA6010/7196/7471

Sample Name	Hg mg/kg	Ni mg/kg	Se mg/kg	Ag mg/kg	Zn mg/kg	Date Sampled	Date Analyzed	Lab ID
SS-1	< 5.0	3.12	< 0.80	< 0.50	9.31	05/13/14	05/15/14	1372 1
SS-2	< 5.0	2.18	< 0.80	< 0.50	7.36	05/13/14	05/15/14	1372 2
SS-3	< 5.0	3.33	< 0.80	< 0.50	14.3	05/13/14	05/15/14	1372 3

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Soil
Quality Control - Surrogate Recoveries



Client: CGRS

Lab ID: 1372

Project: Glenn Miller Property 1-12155-14578aa

Method: EPA8260

Sample Name	Dibromo- fluoromethane % Recovery	1,2 Dichloro- ethane-D4 % Recovery	Toluene-D8 % Recovery	Bromo- fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID
SS-1	97	94	97	86	05/13/14	05/14/14	1372 1
SS-2	89	103	87	97	05/13/14	05/14/14	1372 2
SS-3	98	107	86	99	05/13/14	05/14/14	1372 3

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eANALYTICS
LABORATORY

Client: CGRS Lab ID: 1372
 Project: Glenn Miller Property 1-12155-14578aa
 Analysis: Volatile Organics Method: EPA8260

Sample Name	Benzene % Rec	Toluene % Rec	Ethyl- benzene % Rec	Total Xylenes % Rec	Date Analyzed	Lab ID
Laboratory Control Sample (70-130%)	91	104	102	104	05/14/14	LCS 1372 1
Method Blank	< 0.01 mg/kg	< 0.01 mg/kg	< 0.01 mg/kg	< 0.01 mg/kg	05/14/14	MB 1372 1

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