

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

Subject Property: Hester Farms

Facility ID: 442545

SE ¼, NW ¼, Sec 31, T7N, R66W
Weld County, 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 Bayswater Exploration & Production, 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. Bayswater Exploration & Production, LLC will certify this plan by signing said plan and certifying compliance with the contents of this plan (Attachment A).
2. Bayswater Exploration & Production, 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). The property located at Latitude: 40.533330, Longitude: -104.826643 is used for dry land agriculture with some irrigated cropland.
3. The agreement certifies that only water-based bentonitic drilling fluids and associated drill cuttings will be applied at this site.
4. A 3-inch maximum lift of water-based bentonitic drilling fluids and associated drill cuttings will be applied prior to incorporation.
 - The cuttings and drill fluids hauled from the drilling rig to the mud field will be incorporated (disked into) within 10 days of application (site and weather conditions permitting).
5. 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

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surrounding properties. The spread areas lie at an elevation of approximately 4915 feet and is relatively flat over the entire area.

6. 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.
7. Bayswater Exploration & Production, LLC performed a database records search for water wells near the spread field. Figure No. 3 indicates there are 2 water wells within one quarter mile of the spread area and approximate depth to water is 11-17 feet. Due to the static water level and the physical locations of the water wells in the area there is minimal chance for impacts to the groundwater from spreading activities.
8. Based on research conducted using the COGCC GIS Online map it was determined the site is not in a mapped Sensitive Wildlife Habitat Area or a Restricted Surface Occupancy Area (Figure 4).
9. High visibility pink colored retro-reflective tape and numerous large wooden stakes marked with the operator's identification placed along the transport route and at the spread areas will serve to notify the public and prevent unauthorized dumping or access.
10. Bayswater Exploration & Production, LLC personnel, in conjunction with Kinetic Energy Resources, LLC will ensure that the material is incorporated into the soil within 10 days, unless adverse weather conditions are encountered or after the crops have been harvested (site and weather conditions permitting). 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. Every reasonable effort will be made to comply with the 10 day policy.
11. Bayswater Exploration & Production, 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.

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- Volume of the material taken to the land application site (anticipating approximately 37,500 yards/47,000 tons of soil cuttings & approximately 9,000 BBLs of drilling mud per year)
- Name of the transporter.

12. Soil sampling:

- Baseline soil samples will be collected by 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.
- The composite baseline soil sample collected on July 17, 2015 revealed that the spread area is not considered a sensitive area as the analyses shows all parameters within acceptable limits according to COGCC Table 910-1 (Attachment C).
- 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.
- In addition to the baseline soil sampling, annual soil sampling will be obtained and any supplementary soil maintenance on an as-needed basis will be performed to ensure that the land application site is compliant per COGCC regulations.

13. Water-based bentonitic drilling fluids and associated drill cuttings will be applied at this site for a maximum period of three years.

14. Upon closure of the site, Bayswater Exploration & Production, LLC will submit Form 4 Sundry Notice providing final confirmation soil sample(s) data and request closure for this site.

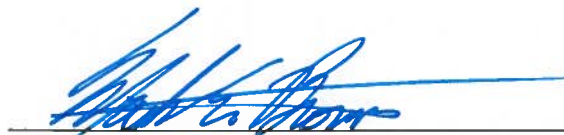
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ATTACHMENT A
PLAN CERTIFICATION

Management Approval Statement:

This Exploration & Production (E&P) Waste Management Plan is fully supported by the management of Bayswater Exploration & Production, LLC . Bayswater Exploration & Production, 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. Bayswater Exploration & Production, 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.

Bayswater Exploration & Production, 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.



Mark E. Brown, Operations Manager

Date: 7/24/15

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ATTACHMENT B


SURFACE OWNER APPROVAL

PLSS Location: SE ¼ NW ¼ Section 31-7N-66W

Address: 12246 CR 76, Eaton, CO 80615

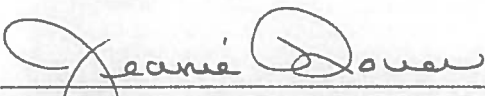
The owner or authorized agent of the referenced property located in the SE ¼ NW ¼ of Section 31, T7N, R66W, Weld County, Colorado, onto which Bayswater Exploration & Production, LLC proposes to apply water based bentonitic drilling fluids and associated drill cuttings, authorizes the application of the drilling fluids onto the referenced property. The surface owner is fully aware and understands the COGCC land application requirements as stated in COGCC Regulation 907 d.(3)b. The property owner hereby authorizes Bayswater's third party trucking contractors to commence land treatment applications on said property until subsequent written agreement has been completed terminating this authorization.

HESTER FARMS, INC.



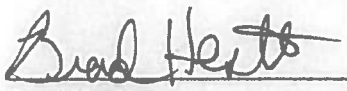
Jeanie Dover, individually

Date: July 15, 2015



Jeanie Dover, as AIF for Kenneth J. Hester, Sr.

Date: July 15, 2015



Brad Hester

Date: 7/15/15

ATTACHMENT C: BASLINE SOIL SAMPLING ANALYTICAL RESULTS

Test Report



July 20, 2015

Client: CGRS

Project: Hester Farms

Lab ID: 3622

Date Samples Received: 7/17/2015

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,

A handwritten signature in black ink, appearing to read "Chris Dieken".

Christopher Dieken
Quality Assurance Manager

A handwritten signature in black ink, appearing to read "Todd Rhea".

Todd Rhea
Laboratory Manager

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

Chain of Custody

eANALYTICS
LABORATORY

Chain of Custody For

[illegible]

eANALYTICS
LABORATORY

Client: CGRS Lab ID: 3622

Project: Hester Farms

Analysis: Volatile Organics Method: EPA8260

Sample Name	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Date Sampled	Date Analyzed	Lab ID	
	mg/kg	mg/kg	mg/kg	mg/kg				
Composite	<0.010	<0.010	<0.010	<0.010	07/17/15	07/18/15	3622	1



Client: CGRS Lab ID: 3622

Project: Hester Farms

Analysis: pH Method: EPA9045D
EC USDA 60 (3)
SAR USDA 60 (20B)

Sample Name	pH	EC	SAR	Date	Date	Lab ID
	su	mmhos/cm	ratio	Sampled	Analyzed	
Composite	7.0	0.816	1.35	07/17/15	07/17/15	3622 1



Client:

CGRS

Lab ID:

3622

Project:

Hester Farms

Analysis:

Table 910 metals

Method:

EPA6010/7196/7471

Sample Name	As	Ba	Cd	Cr (III)	Cr (VI)	Cu	Pb	Hg	Date	Date	Lab ID
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Sampled	Analyzed	
Composite	<0.30	40.6	<0.50	0.545	<15	3.10	2.74	<5.0	07/17/15	07/20/15	3622 1



Client: CGRS Lab ID: 3622

Project: Hester Farms

Analysis: Table 910 metals Method: EPA6010/7196/7471

Sample Name					Date	Date	Lab ID
	Ni	Se	Ag	Zn	Sampled	Analyzed	
	mg/kg	mg/kg	mg/kg	mg/kg			
Composite	3.12	<5.0	<5.0	14.2	07/17/15	07/20/15	3622 1

eANALYTICS
LABORATORY

Client: CGRS

Lab ID: 3622

Project: Hester Farms

Method: EPA8260

Sample Name	Dibromo- fluoromethane % Recovery	1,2 Dichloro- ethane-D4 % Recovery	Toluene-D8 % Recovery	4-Bromo- fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID
Composite	109	108	91	94	07/17/15	07/18/15	3622 1

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

eANALYTICS
LABORATORY

Client: CGRS Lab ID: 3622

Project: Hester Farms

Analysis: Volatile Organics Method: EPA8260

Sample Name	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Date Analyzed	Lab ID		
	% Rec	% Rec	% Rec	% Rec				
Laboratory Control Sample	106	96	93	95	07/18/15	LCS	3622	1
(70-130%)								
Method Blank	< 0.010	< 0.010	< 0.010	< 0.010	07/18/15	MB	3622	1
	mg/kg	mg/kg	mg/kg	mg/kg				

eAnalytics Laboratory

4130 Clydesdale Parkway Loveland CO 80538

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FIGURES

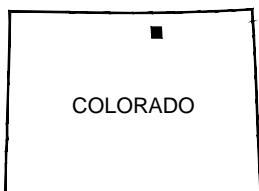
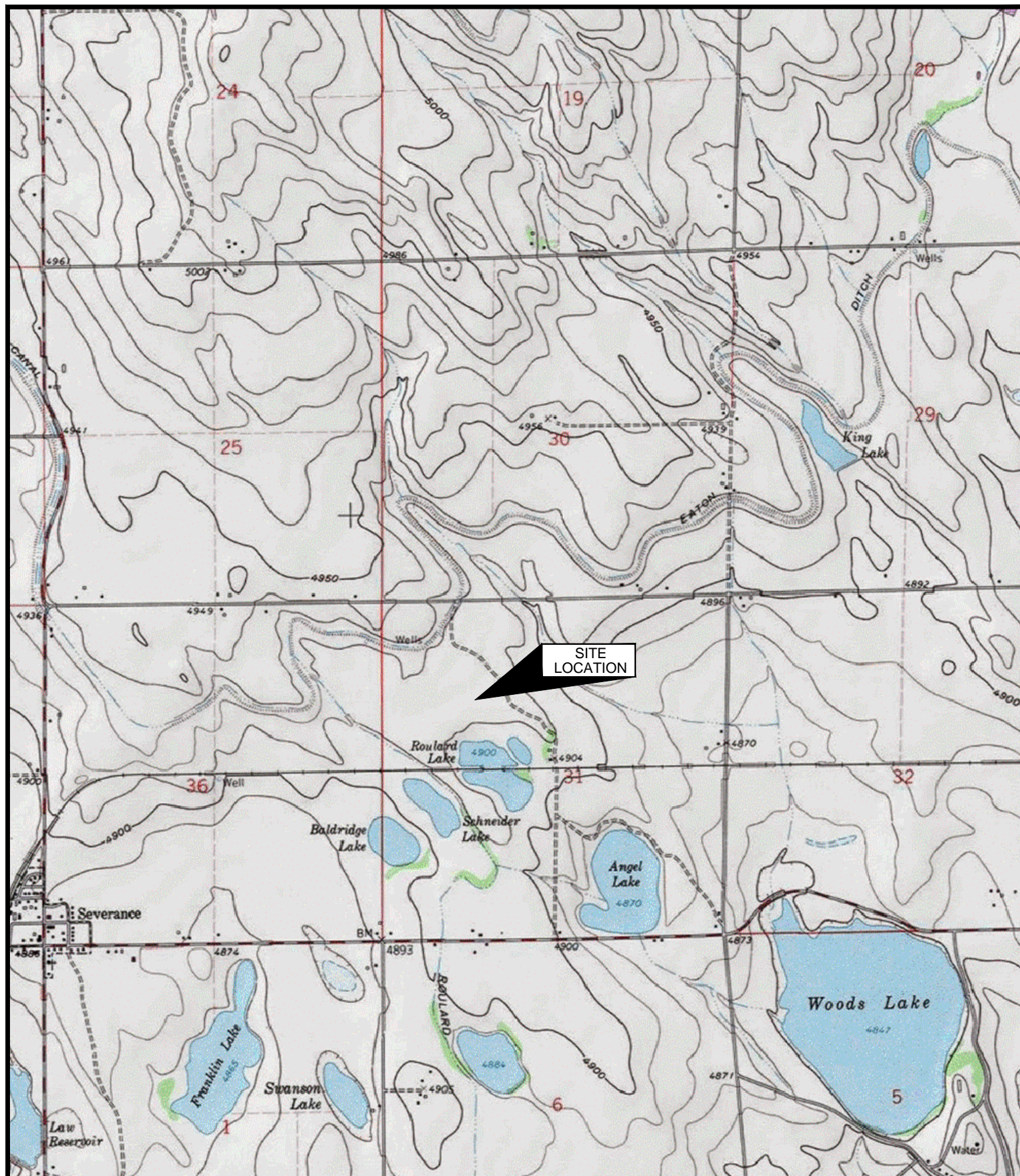
Figure 1: Topographic Map

Figure 2: Site Conditions Map

Figure 3: Division of Water Resources Water Wells

Table 1: Division of Water Resources Water Wells Table

Figure 4: Sensitive Wildlife Habitat and Restricted Surface Occupancy Areas



COLORADO

■ QUADRANGLE LOCATION



NORTH

0 1000 2000

SCALE IN FEET

FIGURE 1 SITE LOCATION MAP

BAYSWATER EXPLORATION AND PRODUCTION LLC
HESTER FARMS
SENV, SEC 31, T7N, R66W
SEVERANCE, COLORADO

PROJECT:
1-12380-15564aa

DATE:
7/23/2015

DRAFT:
SJK

REVIEW:





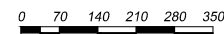
LEGEND



TREE



NORTH



SCALE IN FEET

**FIGURE 2
SITE CONDITIONS MAP**

BAYSWATER EXPLORATION AND PRODUCTION LLC
HESTER FARMS
SENW, SEC 31, T7N, R66W
SEVERANCE, COLORADO

PROJECT:
1-12380-15564aa
DATE:
7/23/2015

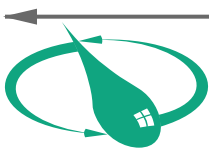
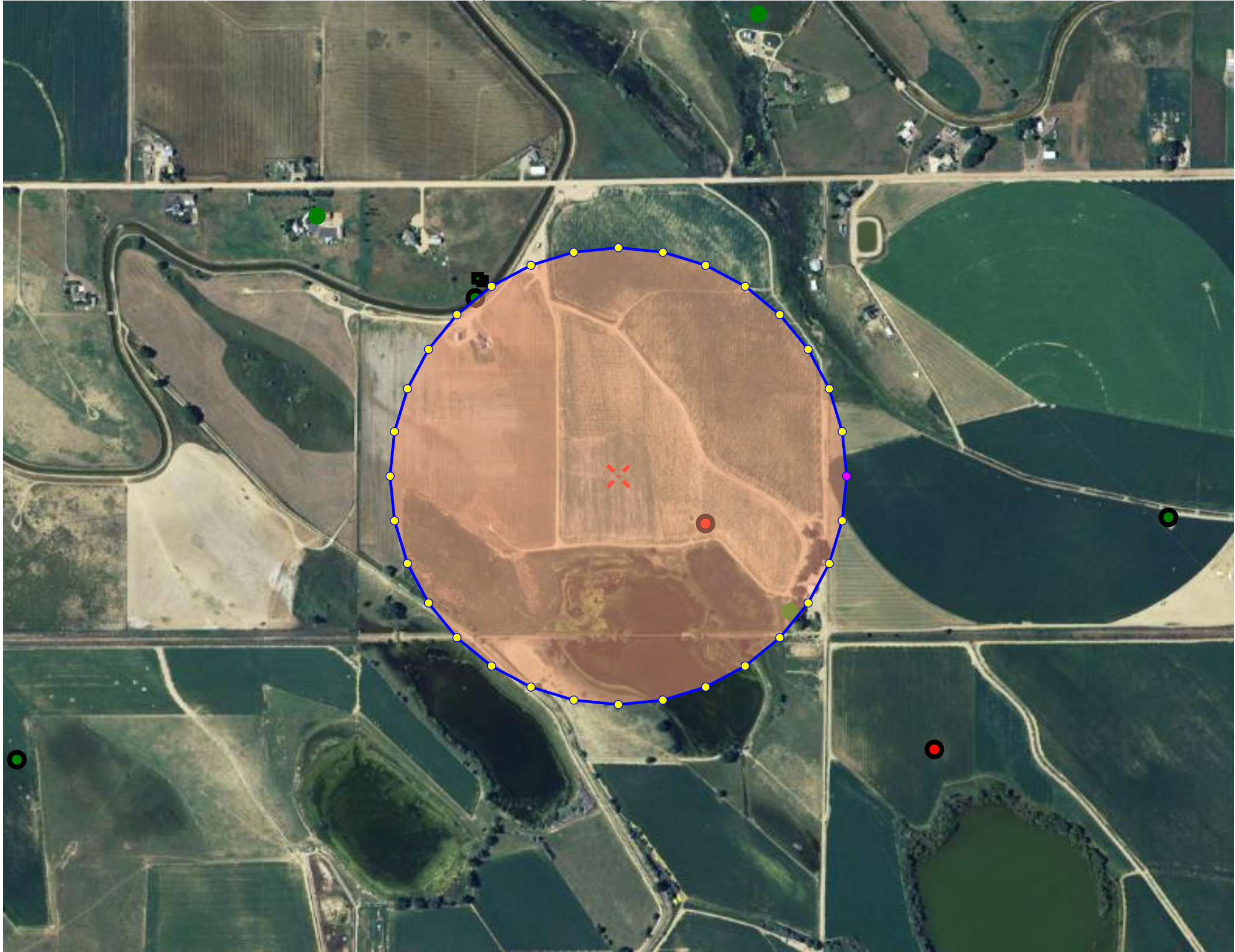
DRAFT:
DRS
REVIEW:



FIGURE 3. DIVISION OF WATER RESOURCES WATER WELLS

AQUAMAP
Colorado Division of Water Resources
Department of Natural Resources

Map created by kmr 7/22/2015



Based on work developed at <http://www.carto.net>

Address location by Bing Maps
AquaMap Version 3.0.1 July 5, 2009

MAP NAVIGATION

Click to create PDF
UTM X, Zone 13: 382643
UTM Y, Zone 13: 4105874
Long: -106° 19' 13.9"
Lat: 37° 5' 30.6"
UTM and Geographic(LL)
coordinates in NAD 83

DATA DISPLAY

☒ Background
☒ Counties
☒ Water Well Application
2011 Aerials
☐ PLSS
☐ DWR Parcels
☐ Roads
☐ EPA Well Notification
☐ Hydrography
☐ Oil/Gas Well Location
☐ County Parcels (No Public Access)
☐ Towns
Transparency
☐ Low ☐ High
[More Data](#)

LOCATION

Section: 31 Township: 7 N Range: 66 W Meridian: Sixth
[PLSS Locator](#) [Quick Zoom](#) [Spacing](#)

PRINTING

Output Scale: 7,765 Page Size: 11x17 User: kmr
Title:

Note: The well locations displayed on AquaMap are based on location information provided by well permit application forms and are only as accurate as the information provided. The actual physical locations of all wells have not been field verified and may vary from the location displayed. Refer to a copy of the original well permit file, available on the Division of Water Resources website, for well location details.



TABLE 1: DIVISION OF WATER RESOURCES - WATER WELLS WITHIN 1/4 MILE OF HESTER FARMS SPREAD

WELL DESCRIPTION	LOCATION	WELL INFORMATION		
		Depth	Static Water Level (ft)	Aquifer
Permit Number 80436/Receipt Number C620424 Owner: Hester K. J.	SENE 31 7 N-66W	100	11	GW
Permit Number 424/Receipt Number 9065581 Owner: Hester DR K. J.	SENE 19 5 N-63W	75	17	GW

FIGURE 4: Sensitive Wildlife Habitat and Restricted Surface Occupancy Areas

