792 Buckhorn Dr.
Rifle, CO 81650

Wasatch Bench E&P Facility Annual Report

Colorado Operations

Piceance Basin

Garfield County, CO

December 2013 – Rev #0

792 Buckhorn Dr.
Rifle, CO 81650

Wasatch Bench E&P Facility Annual Report

Piceance Basin

Garfield County, CO

December 2013 – Rev #0

Prepared by:
HRL Compliance Solutions, Inc.
2385 F ½ Road
Grand Junction, CO 8150

Contents

ATTACHMENTS

1.0 Introduction

This *Annual Report* was prepared in order to present information and data regarding the efficient, safe, and environmentally compliant operation of the Ursa Operating Company, LLC (Ursa) Wasatch Bench E&P Facility, hereafter referred to as the *facility*, in accordance with COGCC Rule 908.f, *Annual Permit Review* for *Centralized E&P Waste Management Facilities.* It specifically provides information pertaining only to updates and changes to the operation of the facility which may have occurred in the calendar year 2013, which may include the following:

- Operator and contact information; surface owner information; legal description of the site; topographic, geological, and hydrogeological description of the site, including immediate adjacent land uses;
- Centralized facility siting requirements;
- Waste Profile;
- Facility design and engineering;
- Operating plan;
- Ground water monitoring;
- Surface water monitoring;
- Permit approval;
- Financial assurance;
- Facility modifications;
- Annual permit review;
- Closure; and
- Local requirements for zoning and construction of facilities . . . approval notices, permits, or other similar types of notifications for the facility from local governments or other agencies

2.0 Permit Status

On June 5, 2007, the COGCC issued Antero Resources Piceance Corporation (Antero) a permit for the facility. It was permitted by the COGCC as the *Brynildson Water Storage Facility.* Ursa acquired the facility from Antero in May 2013. The facility is constructed on land owned by Scott and Linda Brynildson of Rifle, Colorado. A *Letter of Agreement* to extend the land lease to December 2016 was prepared by Ursa and signed by the Brynildson's on August 7, 2013. The facility is located in rural Garfield County approximately 4.5 miles southeast of Rifle, Colorado. The site is approximately 11.682 acres and is located in the NW ¼ NW ¼ of Section 20, Township 6 South, Range 92 West in the 6th Prime Meridian. The facility accepts fluids that originate from oil and gas operations in Garfield County, Colorado, operating twenty-four hours per day, 365 days per year. No changes to topographic, geological, and hydrogeological description of the site, including immediate adjacent land uses, have occurred in 2013. A facility Site Map is presented in Attachment A of this report.

3.0 Centralized Facility Siting Requirements Update

No new changes to the *Facility Siting Requirements* have been implemented for the calendar year 2013. Ursa operates the facility for recycling produced initial post frac flowback, and produced water via trucks and underground piping for approximately seventy (70) well pads (280 wells) in the Piceance basin. The pit also receives fresh water from the Colorado River in order to meet completion needs. These operations include the *Battlement Mesa*, *Gravel Trend* and *North Gravel Trend* fields. It does not accept fluids for commercial waste treatment purposes from any other producer or industrial source. Approximately 2,000 to 5,000 plus barrels (bbls) of water are cycled through the facility each day. The pit has a water storage capacity of approximately 205,300 barrels (bbls).

4.0 Waste Profile

A characteristic waste profile has been completed by Ursa in order to delineate waste treated at the facility during the 2013 calendar year. As Ursa E&P procedures are performed in the Piceance basin water is either delivered or removed from the pit for fracing and production activities. Some water originating at well sites is disposed of into injection wells which include the *Valley Farms F-4*, *Valley farms D-3*, and the *Castle Springs Federal 1-10W* injection wells.

Shortly after Ursa acquired the facility from the previous operator a series of investigative environmental sampling events were conducted by Ursa in order to identify chemical, biological and mechanical parameters associated with the facility. Of special interest were parameters related to odor and water treatment of the pit water at the facility. Sampling and investigative events were conducted at the facility beginning in May 2013, which included the following:

- Microbiological analysis of pit water to determine the potential of H_2S producing bacteria;
- Chemical analysis of pit water;
- Chemical analysis and determination of sediment levels in the pit;
- Waste Profiling analysis of water from E&P sources and activities; and,
- Weekly analysis of pit water environmental chemical parameters.

The following information reports the investigative and sampling events related to the facility completed by Ursa in 2013.

4.1 H_2S Microbiology Investigation

On June 6, 2013 water samples were collected to determine if H_2S producing bacteria were significantly present at the facility. These analyses were completed to determine the need of biocides for odor control in the pit. Water sources sampled for analysis included frac water, pit water, and water collected from the Robinson A and Robinson C well pads where production activities were being performed by Ursa. The analyses for H_2S microbiology were performed by Multi-Chem. Data suggested that some water samples

contained H_2S producing bacteria. The end result was the application of biocide to control odor associated with the pit.

4.2 Pit Water and Sediment Analysis

On July 2, 2013 Ursa conducted an initial investigation on pit environmental parameters which included pit water and pit sediment chemistry. Analytical data for collected water samples are presented in the *Wasatch Bench E&P Facility Sampling Report* located at the Ursa Rifle office. Pit water sampling parameters included the following:

- Diesel Range Organics (DRO)
- Gasoline Range Organics (GRO)
- Biological Oxygen Demand (BOD)
- Nitrogen, Potassium, Phosphorus (N,P,K)
- Heterotrophic Plate Count (HPC)
- BTEX (mg/L)
- Methanol (mg/L)

Pit sediment sampling parameters included the following:

- Diesel Range Organics (DRO)
- Gasoline Range Organics (GRO)
- Biological Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- Nitrogen, Potassium, Phosphorus (N,P,K)
- Semi Volatiles – PAH

Other chemicals which are likely associated with the pit water being transferred to the facility can include fluids commonly associated with oil and gas drilling and production operations.

4.3 Influent Water Fallout Study

On August 16, 2013 Multi-Chem completed a *Fallout Study* for solids accumulation in the pit. A visual timed study was conducted to estimate solid precipitation in produced water from three locations to calculate solid fallout time in produced water. Samples were pulled from water tankers off loading at the Facility. This data has helped determine waste handling and segregation at the Facility.

4.4 Point Source Water Sampling and Analysis

Water samples were also collected from three (3) different well pad locations to identify water chemistry from well pad production water being delivered to the pit. The samples were obtained from the *McLin C*, *North Bank C*, and *Gentry C* well pads respectively. The water samples were collected from water trucks

delivering produced water to the pit on August 5, 2013. The following is a list of analytes performed on each water sample from the three well pad locations:

- Diesel Range Organics
- Gasoline Range Organics
- Mercury
- Metals
- Benzene
- Ethylbenzene
- Toluene
- Xylenes
- Alkalinity
- Heterotrophic Plate Count
- Anions (Chloride)
- Specific Gravity
- Organic Carbon
- Total Suspended Solids

These water samples are characteristic and representative of those encountered in the Piceance basin Ursa operations. All Piceance basin Ursa wells may produce or receive water for operations from the facility. Analytical data for water utilized for recompletion or fracing production activities is represented in section 4.5 of this report entitled *Weekly Water Sampling and Analysis*.

4.5 Weekly Water Sampling and Analysis

Since mid-July 2013 the facility water has been field screened weekly using a Y*SI 556 Water Quality Meter* (YSI) to determine maintenance procedures and to aid in the calculations for air emissions and permitting. Analytical parameters recorded include the following:

- Temperature
- Electrical Conductivity (EC)
- Resistivity
- Total Dissolved Solids (TDS)
- Salinity
- Dissolved Oxygen (DO)
- pH
- Oxidation Reduction Potential (ORP)

Of particular interest to scientists monitoring the pit water are the Dissolved Oxygen (DO) and Oxidation-Reduction Potentials (ORP). These two parameters, in particular, measure environmental outcomes relating to favorable or unfavorable odor production in the pit. Based on this analytical data scientists can

recommend and apply treatment products to control odor emissions at the Facility that result from pit water storage and petroleum hydrocarbon volatilization. TPH constituents are not currently being analyzed weekly at this time.

4.6 Waste Generation, Handling and Disposal

Water and associated petroleum hydrocarbons generated by the production activities at individual well site locations are treated, recycled and reused at the facility. However, some waste is collected or generated as a result of the treatment process. This waste includes tank bottom fines, sedimentation and some petroleum hydrocarbons. The amount of waste removed for solids disposal from the facility and associated well sites in 2013 was approximately 7,500 tons. The solids were generated as a result of flowback sludge, sediment and tank bottom fines. The waste collected was dewatered and then transferred to a metal containment bin where amendments were added to solidify the waste for hauling and disposal. The collected waste was transferred to two (2) different waste facilities in 2013. These facilities include Reams Construction Company, a Colorado Department of Public Health and Environment's (CDPHE) approved solid waste facility located in Montrose, Colorado, and ECDC Environmental, L.C., a Utah Department of Environmental Quality permitted waste facility located in East Carbon, Utah.

No liquid waste was disposed of at the facility. As was previously mentioned in section 4.0, some water was delivered to Ursa owned and operated injection wells in the Piceance basin which resulted from well production activities, but no liquid waste was removed from the pit for disposal.

5.0 Facility Design and Engineering Update

In April 2013, Ursa determined that the facility design may not meet operational needs or comply with COGCC or CDPHE regulations. As such, an evaluation of the entire system has been on-going since May 2013. A current site map of the site is presented in Attachment A. The general operation of the facility is outlined below.

The facility uses a truck offload and underground pipeline system to deliver produced water for treatment at the facility. The system includes processes for solids removal, skimming and polishing. The volume of liquid passing through the facility is primarily water with some sediment. There are five (5) tanks and a storage pit located on the property, each with a different purpose described as follows:

- One (1) truck offloading Surge tank to receive produced water and flow back liquids from vacuum trucks;
- One (1) Sludge recovery tank to collect sludge/sediment from separated liquids in the surge tank;
- Two (2) Skim tanks receive flowback liquids and produced water from vacuum trucks;
- One (1) Condensate sales tank stores condensate; and,
- Storage and recovery pit for recycling of treated water.

At the inlet of the facility, operations offload trucks to a *Truck Offloading Surge Tank*. The surge tank separates free phase hydrocarbons and sludge from water entering the treatment system. Sludge is transferred from the Surge Tank to a *Sludge Recovery Tank*. Condensate is collected into a *Condensate Recovery Tank*. Sludge is transferred from the sludge tank to pumper trucks for hydrocarbon recovery, disposal or remediation. The free phase hydrocarbons passing through the system are primarily comprised of low molecular weight hydrocarbons ranging in size from C5 to C10. The hydrocarbons then separate into a condensate layer on top of an emulsion layer between the condensate layer and the water. The hydrocarbons are further removed via a polishing tank which then offloads into a series of two (2) skim tanks which further remove floating hydrocarbons. The recovered hydrocarbons from the two (2) skim tanks are then sent to the condensate recovery tank. Condensate is then removed for processing via a pumper truck.

The sludge tank and the skim tanks are periodically cleaned of tank bottom solids in order to prevent residual buildup. The sludge is removed via vacuum truck and associated personnel. The sludge is transferred to a containment bin on site where it is mixed with amendments for solidification so that the waste can be transferred to an approved landfill for disposal.

Once passing through the hydrocarbon recovery system, the processed water is sent to a HDPE lined pit which was replaced in 2011 by the previous operator (information regarding the pit liner removal and installation is provided in section 15.0 of this report). Any accumulation of floating hydrocarbons on the pit water surface is removed via skimming and vacuum truck for sale or disposal. Prior to May 2013 some water was pumped directly into the pit without passing through the recovery system. This process was halted beginning in June 2013 when Ursa began managing the pit. The pit is covered by a migratory bird deterrent netting system.

Three (3) large mobile water circulation pumps were delivered to the site in August 2013 and strategically placed along the western, northern and eastern edges of the pit to improve circulation and dissolved oxygen concentrations in the water. The pit is operated as an aerobic bioactive environment for biodegradation of free phase and dissolved hydrocarbons. Since August 2013 the pit has been maintained monthly with oxygenation products to reduce TPH and odor associated with the pit. Prior to this the pit was being treated with commercial hydrocarbon degrading microorganism products and nutrients when deemed necessary by facility management; there was no regularly scheduled treatment for the pit. However, this process also required the use of a biocide to reduce bacteria populations and the biogenic odors produced in the pit once oxygen levels decreased as a result of microbial activity. Since implementing monthly chemical oxygenation measures in August 2013, there has been no need for biocide use at the facility.

6.0 Operating Plan Update

In December 2013 a newly revised *Operating Plan* was written by Ursa for the facility. The operating plan prepared by the previous operator lacked many details and specifications required for the efficient use and operation of the facility. It was also discovered that the previous plan had not been entirely

implemented based on its original design and construction, including the installation of equipment needed for the proper operation of the facility. The new plan details specific operational procedures and outcomes for the facility which are in compliance with Rules 908b.(8)A-J. The Operational Plan provides a detailed description of treatment, loading rates, and application of nutrients and amendments used at the facility. It also discusses dust and moisture control, sampling, inspection and maintenance, emergency response, record-keeping, site security, hours of operation, noise and odor mitigation, and final disposition of waste. It is comprehensive and covers all aspects required by the COGCC pertaining to the efficient, safe, and environmentally compliant operation of the facility. Changes or modifications to the Operating Plan are briefly described in sections 6.1 to 6.10 of this report. Generally, these changes went into effect between August 2013 and December 2013.

6.1 Treatment, Loading Rates, and Application of Nutrients and Amendments Update

Treatment of the production water entering the pit is outlined in the newly revised Ursa *Operating Plan* and section 5.0 of this report. Changes to the previous operators plan include the following:

- Installation of three (3) mobile circulation pumps in the pit.
- Prevention of direct offloading of trucks into the pit.
- Cease the use of biological amendments, nutrients and biocides in the pit.
- Addition of oxygenation products to the pit on a monthly basis.
- Frequent skimming of oil solids from pit surface.

6.2 Dust and Moisture Control Update

No changes have been made to the facility regarding dust and moisture control for the calendar year 2013. Normal operating procedures as outlined in the current permit are in effect.

6.3 Sampling Update

Changes have been made to the facility regarding *Sampling* for the calendar year 2013. New elements of the sampling process are outlined in the Ursa *Operating Plan* for the facility, and include the following:

- A new *Water Sampling Plan* was produced by Ursa for the facility. The water sampling plan includes procedures, schedules, analytes to be tested, directions for sampling, surface water sampling, water wells, site specific groundwater monitor wells, influent production water sources, and pit water and effluent quality.
- *Air Quality Sampling* will be determined using the results obtained from water sampling at the facility.

6.4 Inspection and Maintenance Update

Changes have been made to the facility regarding *Inspection and Maintenance* for the calendar year 2013. New elements of the inspection process are outlined in the Ursa *Operating Plan* for the facility.

6.5 Emergency Response Update

No significant changes have been made to the facility regarding *Emergency Response* for the calendar year 2013. Normal operating procedures as outlined in the current permit are in effect, but have been updated using Ursa operating procedures and guidelines. All local, county and state emergency response entities have been notified of the transfer of ownership of the facility.

6.6 Record-Keeping Update

Changes have been made to the facility regarding *Record-keeping* for the calendar year 2013. New elements of the record-keeping process are outlined in the Ursa *Operating Plan* for the facility. These include the following:

- Development of new daily, weekly and monthly record-keeping charts.
- Development of new line of authority standards for record-keeping.
- Development of record-keeping storage and data sharing and transfer procedures.
- Records will be maintained at two locations (Facility office and Ursa Rifle, CO office)

6.7 Site Security Update

Minor changes have been made to the facility regarding *Site Security* for the calendar year 2013. New elements of site security are outlined in the Ursa *Operating Plan* for the facility. These include the following:

- Record-keeping of site visitors.
- New locks installed on all gates and doors.
- Additional signage at the facility describing security procedures and areas.
- Employee training.

6.8 Hours of Operation Update

No changes have been made to the facility *Hours of Operation* for the calendar year 2013. Normal operating procedures as outlined in the current permit are in effect. The facility is in operation 24 hours a day for 365 days a year. Ursa personnel are on site 24 hours a day.

6.9 Noise and Odor Mitigation Update

No changes have been made to the facility regarding *Noise Mitigation* for the calendar year 2013. Normal operating procedures as outlined in the original permit are currently in compliance.

Changes have been made to the facility regarding *Odor Mitigation* for the calendar year 2103. New elements of odor mitigation are outlined in the Ursa *Operating Plan* for the facility, and include the following:

- Installation of mobile water circulation pumps.
- Monthly treatment of pit water with oxygenation products.
- Increased sampling events and intervals.
- Implementation of new air quality standards sampling and reporting.

6.10 Final Disposition of Waste Update

No changes have been made to the facility regarding *Final Disposition of Waste* for the calendar year 2013. Waste management for the facility is outlined in the Ursa *Operating Plan* for the facility.

7.0 Ground Water Monitoring Update

No water wells within a one (1) mile radius of the facility were sampled or analyzed by Ursa in 2013, as this is generally a procedure for establishing baseline water quality for the original permitting process which occurred in 2007.

Site-specific monitor wells for the facility were sampled in 2013. There are currently two (2) groundwater monitoring wells and one (1) peisometer located north (down gradient) of the facility. These wells were drilled for monitoring groundwater at the facility. During the preparation process of the sampling event a notice of intent (NOI) for a third monitor well was discovered by Ursa, but the well was never drilled by the previous operator. On July 26, 2013 the site-specific monitor wells were sampled for groundwater depth. Monitor Wells 1 and 2 reported water at 4.6 feet and 45.9 feet, respectively. Monitor Well 1 is a peisometer established to a total depth of ten (10) feel below ground surface (bgs). Water samples were collected and sampled for COGCC Table 910.1 parameters for wells 1 and 2. The groundwater collected from wells 1 and 2 revealed no constituents which exceeded COGCC Table 910.1 standards. Monitor Well 3 was dry with no water encountered to a total depth of 39 feet bgs.

8.0 Surface Water Monitoring Update

No surface water analysis was completed in 2013 as there were no requests from the Director to do so.

9.0 Contingency Plan Update

No changes have been made to the facility regarding a *Contingency Plan* for the calendar year 2013. Normal operating procedures as outlined in the current permit are in effect.

10.0 Permit Approval Update

The permit for the facility was approved by the Director in 2007. This report presents information for the *Annual Permit Review* and is *not* being submitted to the Director for a new facility permit.

11.0 Financial Assurance Update

No changes have been made to the facility regarding the *Financial assurance* of the facility for the calendar year 2013, with the exception of the ownership transfer from the previous operator to Ursa.

12.0 Facility Modifications

Several facility modifications and environmental reports have been completed or written in 2013 which pertain to the operation and maintenance of the facility. These modifications were completed in order to enhance the performance and management of the facility. Several of the modifications came at the request of the CDPHE so that air quality could be better assessed and monitored at the facility. Several modifications were proposed and completed in order to prevent the buildup of sediment in the pit, thereby helping to improve water and air quality associated with the pit. Most of the modifications were completed between August 2013 and December 2013. Ursa has also initiated a pilot study to be performed at the site to reduce sediment in the pit, as well as to make the separator/filter system more capable of handling an increase in water for future operations at the facility. The modifications that occurred at the site in 2013 are presented in the following sections.

12.1 Pit Influent and Effluent Monitoring

In October 2013 a series of metering devices which are capable of monitoring the flow of water in and out of the pit were activated and/or installed. Several meters were installed by the previous operator, but were never operational. Ursa installed several other metering devices as well. Ursa management provided electrical modifications to the facility so that the metering devices could be utilized. A complete water tracking system is now in place and is fully functional. Eight (8) monitoring meters are now operating at the facility and are assimilated with *supervisory control and data acquisition* (SCADA). All water going into and coming out of the pit as of October 20, 2013 is now being recorded. The metering devices are set up as follows:

- Four (4) meters track truck off-loading
- One (1) meter tracks anything that may go directly into the pit
- Two (2) meters track flows from the frac sites and any incoming freshwater

- One (1) meter tracks output

Prior to the operation of these meters all data associated with the amount of water entering and exiting the pit was recorded using truck hauler record sheets. Ursa is anxiously engaged in developing this metering system in order to better record data for COGCC and CDPHE regulatory requirements.

12.2 Pit Water Filtering Pilot Study

A Form 4 Sundry Notice outlining a proposed *Pilot Study* for the facility was submitted to the COGCC in October 2013. The pilot study has been proposed to field test a novel filtering system for the facility. In past years the facility has been overwhelmed by sediment and solids entering the pit because separation tanks and polishers were not able to effectively remove all sediment from influent water. As a result, sediment buildup in the pit would occur. This in turn created environmental conditions which were detrimental to successful water and air quality management. Ursa proposed that the separation system currently operating at the site be evaluated and modified, if necessary, to accommodate the high flow of production water entering the pit. To begin the evaluation process, a bench-scale pilot test was performed by an engineering firm in order to best assess how sediment and fines could be effectively removed from water in the separator system. A novel approach was considered in which a GeoTube® would be used to filter the water prior to entering the pit after the water was sent through the separator system currently operating. Results from the bench scale study indicated that the use of a GeoTube® could be a viable option for water treatment.

The objectives of the proposed pilot study submitted to the COGCC are to validate the preliminary findings identified in the bench scale test. If successful, the application of the GeoTube® to the existing system, along with the use of a clarifier, could minimize the volume of waste water sediment byproduct generated through the current solidification process. A reduction in sediment buildup in the pit and associated waste disposal could be achieved. Truck traffic from the facility is also expected to be reduced, as well as the concerns associated with safety, dust, noise, and road damage. The pilot study is currently awaiting approval from the COGCC. A map delineating the proposed location of the Pilot Study on site is located in Attachment A.

12.3 Equipment Modifications

In 2013 several equipment repairs, installations, and operating procedures were completed by the facility manager. These activities include the following:

- Replaced, repaired, or cleaned all of the measuring and level control devices including tank gauges, automatic valve actuators, etc. for safety and spill prevention.
- All tank heaters were made functional for winter use by re-programming/repairing the heating controls and fixing or replacing heating elements.

- Migratory bird and wildlife mitigation has been addressed by having the pit net checked for integrity and stretched. All perimeter fences and gates have been repaired and installed with measures to keep out large and small wildlife.
- The facility is staffed 24 hours per day for spill prevention, safety and security purposes.
- A comprehensive daily operational standard and checklist for the operators that are on site has been developed.
- Emergency equipment is now functional and working in case of power outages or emergencies.

13.0 Annual permit review

This report was written to assist in the COGCC Directors evaluation of the facility for annual permit renewal status.

14.0 Closure

No changes have been made regarding the *Closure* specifications of the facility for the calendar year 2013. Normal operating procedures as outlined in the current permit are in effect. The facility is not slated for closure in 2013.

15.0 Local Requirements, Notices, Permits, or Other Similar Types of Notifications

This section reports on other local requirements, notices, permits or other similar types of notifications that pertain to the facilities operation and function. Other standards or regulations that apply to this facility include air permitting, county permitting, SPCC plans, stormwater maintenance, waste management, and pit maintenance.

15.1 CDPHE-APCD Permit Update

On May 8, 2013, immediately subsequent to the official acquisition of Antero's assets, the facility was inspected by the CDPHE's Air Pollution Control Division (APCD). At this time, it was discovered that the facility had been operating without being properly permitted by the previous operator for six (6) years. However, Ursa's willingness to bring the facility into compliance, and their desire to maintain operational transparency, prevented a notice of violation (NOV). Since that time, updates have been submitted to the CDPHE-APCD on a regular basis to provide them with progress towards bringing the facility back into compliance with regulations. Much of the information provided in this report contains data that was initiated by requests from both the COGCC and the CDPHE-APCD. To begin estimating the facility's *Potential to Emit* (PTE) the following activities were completed based on suggestions and requirements outlined by the CDPHE-APCD:

- Pit water samples were collected from the facility inlet (the effluent of tank one "sand separator") as well as the outlet to the pit, and were analyzed using EPA testing methods 8015 and 8260.

Samples were also analyzed using EPA-8015 tests for total petroleum hydrocarbons (GRO and DRO), methanol concentrations and EPA method 8260 for BTEX.

- Flow meter data of pit water inputs and outputs were recorded.
- Back fees for emissions from the operation of the facility were required by the CDPHE-APCD.

At present, a draft application (Form APCD-100) was completed by Ursa and is currently undergoing internal review for a *Facility Wide Construction Permit* before submission to the CDPHE-APCD. Ursa is anxiously engaged in permitting the facility with the CDPHE-APCD in order to bring the facility into compliance with state laws and regulations.

15.2 Ursa Spill Prevention and Management Plan Update

In April 2013 a *Spill Prevention and Management Plan* for Ursa Colorado Operations was completed. This plan complements the Ursa EH&S policy and will be used in conjunction with the site-specific ERPS (SSERPs), including the site specific SPCC plan for the facility. The report can be reviewed at the Ursa office in Rifle, Colorado.

In July 2013 a *Site Specific SPCC Plan* was prepared by Ursa for the facility. The site specific SPCC report can be reviewed at the Ursa office in Rifle, Colorado.

15.3 Ursa Stormwater Plan Update

In July 2013 a *Site Specific Stormwater Maintenance Plan* was prepared by Ursa for the facility. The stormwater report can be reviewed at the Ursa office in Rifle, Colorado.

15.4 Ursa Waste Management Update

In April 2013 a *Waste Management Plan* was prepared for all Ursa Piceance Basin operations, including the facility. All waste handled at the facility utilizes the guidelines established in the Ursa Waste Management Plan. The Ursa Waste Management Plan can be reviewed at the Ursa office in Rifle, Colorado.

15.5 Ursa Pit Maintenance Plan Update

In September 2013 a *Pit Maintenance Plan* was prepared by Ursa in order to establish methods for the efficient, safe, and environmentally compliant operation of the pit. The plan/manual included a description of the method(s) of treatment and application of nutrients and amendments; installation of application and sampling equipment; operation manual and automated sampling procedures; inspection and maintenance of equipment; and, record-keeping guidelines. The maintenance plan can be reviewed at the Ursa office in Rifle, Colorado.

15.6 Pit Liner Replacement Update

In March 2011 the previous operator submitted a Form 4 Sundry notice for the Liner repair/Replacement at the facility. On June 3, 2011 the COGCC sent back the Sundry notice with Conditions of Approval (COA) attached. On July 22, 2011 the COGCC provided approval in an email to Mr. Kilstrom of Antero to conduct hydrostatic testing of the liner. On November 15, 2012 the previous operator completed the COA outlined by the COGCC and submitted a new Form 4 for their review. The COGCC reviewed the Form 4 on November 21, 2012. On March 3, 2013 final approval from the COGCC was granted pertaining to the COA follow-up.

15.7 2011 and 2012 Annual Reports Update

On January 31, 2013 the COGCC received *Annual Reports* for the facility submitted by the previous operator. No follow-up regarding the reports have been identified by Ursa. The Form 4 was approved by the COGCC on February 11, 2013.

16.0 Conclusion

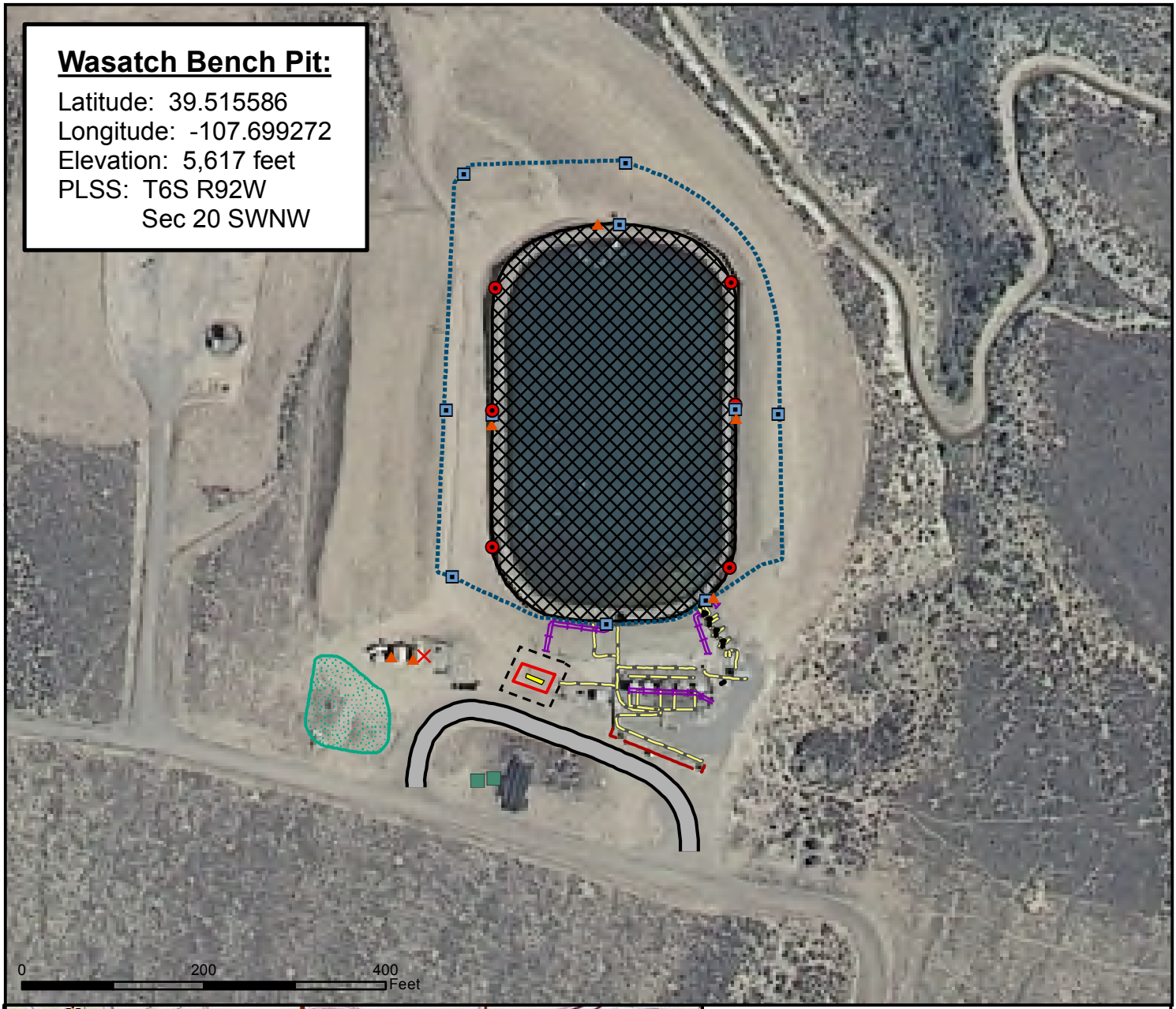
This *Annual Report* was prepared in order to present information and data regarding the efficient, safe, and environmentally compliant operation of the Ursa Operating Company, LLC Wasatch Bench E&P Facility in accordance with COGCC Rule 908.f, *Annual Permit Review* for *Centralized E&P Waste Management Facilities.* It specifically provides information pertaining only to updates and changes to the operation of the facility which may have occurred in the calendar year 2013.

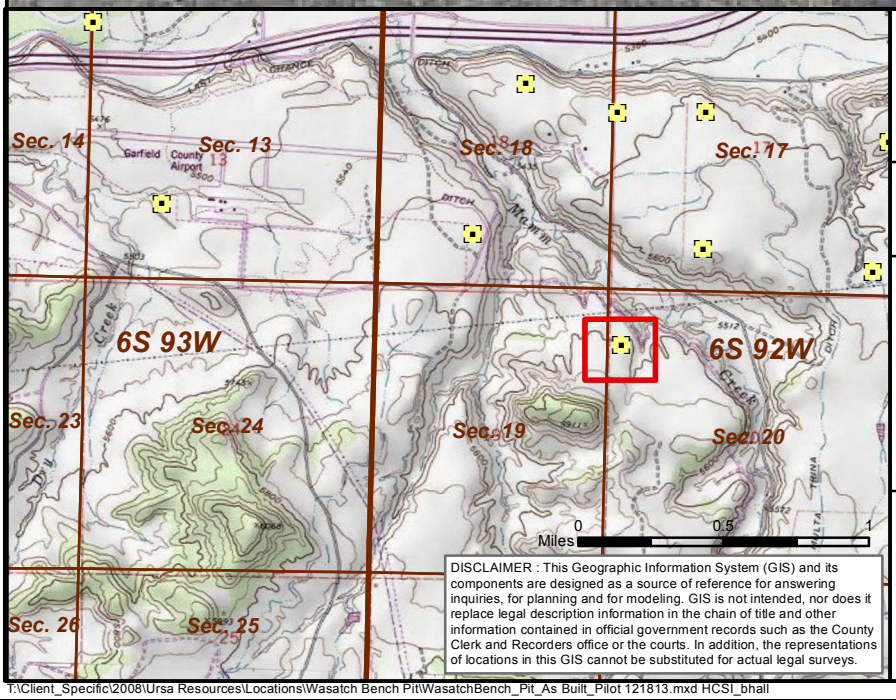
ATTACHMENT A

Facility Site Map

Wasatch Bench Pit:

Latitude: 39.515586
Longitude: -107.699272
Elevation: 5,617 feet
PLSS: T6S R92W
Sec 20 SWNW





DISCLAIMER : This Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and for modeling. GIS is not intended, nor does it replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Recorders office or the courts. In addition, the representations of locations in this GIS cannot be substituted for actual legal surveys.

Ursa OPERATING COMPANY

Wasatch Bench Pit

As Built

Valve	Gate
Buoy	Mixing Area
Dumpster	Filter Box
ESV	Temp Earthen Berm
Fire Extinguisher	Pilot Study Area

N
W E
S

HCSI ENVIRONMENTAL CONSULTANTS
HRL COMPLIANCE SOLUTIONS, INC.

T:\Client_Specific\2008\Ursa Resources\Locations\Wasatch Bench Pit\WasatchBench_Pit_As Built_Pilot 121813.mxd HCSI_bhall

Revision Date: 12/18/2013 12:01:02 PM