792 Buckhorn Drive
Rifle, CO 81650

SURFACE USE PLAN OF OPERATIONS

Ursa Operating Company LLC.
Castle Springs Federal E Pad
Garfield County, CO

***CSF 22C-09-07-91* (PROPOSED WELL)** Lat: 39.458485, Long: -107.558944 (surface hole) Lat: 39.4631923, Long: -107.5608857 (bottom hole)	***CSF 22D-09-07-91* (PROPOSED WELL)** Lat: 39.458458, Long: -107.558984 (surface hole) Lat: 39.4622865, Long: -107.5608755 (bottom hole)
***CSF 44B-09-07-91* (PROPOSED WELL)** Lat: 39.458559, Long: -107.558839 (surface hole) Lat: 39.4569145, Long: -107.5514672 (bottom hole)	***CSF 44C-09-07-91* (PROPOSED WELL)** Lat: 39.458536, Long: -107.558872 (surface hole) Lat: 39.4560088, Long: -107.5514572 (bottom hole)

***CSF 32C-09-07-91* (EXISTING WELL)**
Lat: 39.458513, Long: -107.558905 (surface hole)
Lat: 39.4630648, Long: -107.5563627 (bottom hole)

The onsite for this pad occurred on April 4, 2014. The Castle Springs Federal E Pad is an existing pad which is located on federal surface and is fully permitted and approved through both the BLM and the COGCC. Located on the pad is one (1) existing well. Ursa is proposing to further develop the Castle Springs Federal E location by drilling an additional four (4) directional production wells. No new surface disturbance is proposed in connection with this development activity. All construction, drilling, and completions operations would occur entirely on existing disturbance. The primary staging area would be the Castle Springs Federal E Pad, with the adjacent pads and road network used as support locations as needed to stage remote water tank batteries, mob/de-mob locations, rig moves, temporary surface water lines, and other requirements that cannot be physically accommodated on the surface of the Castle Springs Federal E Pad (Attachment K, Surface Operations - Castle Springs E & Q Development, and Attachment K (1) – Pipeline Alignment Plan).

All four (4) wells included in this proposed expansion would access federal minerals from the federal surface location of the Castle Springs Federal E Pad. All four (4) wells would reach total depth within the Rollins Formation. The target formations for all wells would be the Williams Fork and Cameo formations.

Ursa is planning to fully develop the Castle Springs Federal E Pad with a total of twelve (12) producing wells at a future point in time to be determined. These additional seven (7) wells on the Castle Springs Federal E Pad (beyond the four (4) wells described in this document) are included for planning purposes in two (2) of the attachments to this document (Attachment J, Facility Layout Drawing and Attachment L, CSF E Pad Multi-well Diagram). The development of these wells is not finalized or fully committed to by Ursa at this time, and is not further addressed in this document.

The relevant contractors would be provided with an approved copy of this Surface Use Plan of Operations before initiating any construction or surface-disturbing activities.

1. Existing Roads

A. The well pad is located approximately 8.1 miles southeast of the Town of Silt. A map with an access road description to the well pad is included (Attachment F, Access Route Map).

B. The use of roads under State and County Road Department maintenance would be necessary to access the well pad. However, an encroachment permit is not anticipated as there are no upgrades to these road systems proposed at this time.

C. No topsoil stripping would occur as there are no improvements proposed to existing State, County or BLM access roads.

D. All existing roads would be maintained and kept in good repair during all phases of operation. Ursa Operating Company LLC. (Ursa) would coordinate with the necessary owners/agencies to ensure maintenance of the access roads.

D. Vehicle operators would obey posted speed restrictions and observe safe speeds commensurate with road and weather conditions. Additional signs may be posted, as necessary, to warn the public of project related traffic. Travel would be limited to the existing access roads.

2. Planned Access Roads

A. All necessary access roads to reach the Castle Springs Federal E Pad already exist, and are in adequate and serviceable condition. The road is engineered to be sufficient to the proposed use (Attachment F (1), Well Pad Access Map). No additional road construction or road modification is required in connection with the proposed development.

B. Vehicle operators would obey posted speed restrictions and observe safe speeds commensurate with road and weather conditions. Additional signs may be posted, as necessary, to warn the public of project-related traffic. Travel would be limited to the existing access road.

C. The access roads would be inspected and maintained by Ursa on an as-needed or quarterly basis (at a minimum). Aggregate for road maintenance would be obtained from private or federal lands in conformance with applicable regulations. Aggregate would be of sufficient size, type, and amount to allow all weather access and alleviate dust.

3. Location of Existing Wells

A. Following is a list of existing wells within a one-mile radius of the proposed wells (Attachment D, Federal 1-Mile Radius Well Map).

i.	Water wells	0
ii.	Abandoned (undrilled) wells	2
iii.	Drilling wells	0
iv.	Injecting wells	1
v.	Plugged & Abandoned wells	0
vi.	Producing wells	2
vii.	Permitted locations	0

4. Proposed Location of Production Facilities

A. See Facilities Layout Drawing (Attachment J). Final facility layout would be submitted after completion. Facilities for this pad may be shared for the wells drilled from this pad. Surface facilities could consist of wellheads, separation units, fugitive emission combustors, radio antennas, solar panel brackets, pig launcher/receiver, chemical storage containers less than 500 gallons in capacity and above-ground condensate and produced water tanks with approximately 300 to 500-bbl capacities each. Telemetry equipment may be used where feasible to remotely monitor well conditions (Attachment C, List of Equipment/Facilities).

B. Production facilities would be located on the well pad. Tank batteries would be placed within secondary containment to prevent the off-site migration of accidentally spilled condensate or produced water. Secondary containment would consist of corrugated steel containment rings with fabric liners bolted to the containment ring. The liners would be sufficiently impermeable to prevent lateral or vertical movement of fluids out of the containment ring. Secondary containment shall conform to the provisions of 40 CFR 112.9, and would be sized to contain a minimum of 110 percent of the storage capacity of the single largest tank within the barrier, in addition to the volume of a 24 hour, 25 year precipitation event. All loading lines would be placed inside the containment barrier or would have secondary containment vessels. All liquid hydrocarbon production and measurement shall conform to the provisions of 43 CFR 3162.7-2, as well as Onshore Oil and Gas Order No. 4 for the measurement of oil. Any variances necessary would be submitted in writing.

C. All existing above-ground structures are currently painted a flat, non-reflective color to match the standard environment as directed in the visual impact mitigation standards of the Gold Book. All additional above-ground structures would be painted to meet the same standards. Facilities would be painted within six (6) months of being located onsite. As required by the Occupational Safety and Health Administration (OSHA), some equipment would not be painted for safety considerations.

D. All site security guidelines would be followed as identified in 43 CFR 3163.7-5 and Onshore Oil and Gas Order No.3.

E. All gas production and measurement shall comply with the provisions of 43 CFR 3162.7-3, Onshore Oil and Gas Order No. 5.

F. A combustor would be installed at this location for control of associated condensate tank emissions. The combustor could range from 24-in to 48-in wide and from approximately 10-ft to 27-ft tall. Combustor placement would be on existing disturbance and would not be closer than 75' to any tank or wellheads (Attachment J, Facility Layout Drawing).

G. The area around the wellheads would be fenced, and the pad may require periodic maintenance to ensure that drainages are kept open and free of debris, ice and snow, and that surfaces are properly treated to reduce erosion, fugitive dust, and impacts to adjacent areas.

H. No new pipelines are proposed to service the proposed four (4) wells. The existing pipeline infrastructure is sufficient to accommodate the additional production that is anticipated (Attachment F (1), Well Pad Access Map).

I. No additional reclamation would be required because the proposed activities are located entirely on existing disturbance.

5. Location and Type of Water Supply

A. Ursa would utilize water from its own water system in the field or would purchase any additional water needed from private landowners. If an alternate source will be used, a Sundry Notice would be filed indicating the new source of water.

6. Source of Construction Materials

A. The use of materials required for any incidental maintenance of existing pad features would conform to 43 CFR 3610.2-3.

B. No construction materials would be removed from federal surface without prior approval.

C. Aggregate required for any necessary road maintenance during operations or production would be obtained from private or federal lands in conformance with applicable regulations.

7. Methods of Handling Waste Disposal

A. All wastes associated with this application would be contained and disposed according to BLM and COGCC regulatory requirements and at state-approved facilities. Please see Attachment O for a detailed description of Ursa's Waste Management Plan. Please see Attachment M for a detailed description of Ursa's proposed Best Management Practices for the Castle Springs Federal E Pad development.

Drilling Operations

B. The Castle Springs Federal T Pad and Castle Springs Compressor Station would be used as support locations to accommodate activities that cannot be accommodated on the Castle Springs Federal E Pad itself. Such activities include mob/de-mob locations and parking, as well as rig moves (Attachment K, Surface Operations - Castle Springs E & Q Development).

C. Conductor pipe is typically installed prior to drilling to support sidewalls to allow drilling. This material removed is essentially soil and is not a waste. Drill Cuttings (aka muds) are the primary E&P waste generated during drilling (aka spudding), which consists of drilling a surface hole, and production hole. Drilling is typically done using air and water (surface hole) and green (synthetic non-oil based) mud for the production hole. MSDS sheets are required to be maintained for any additives used in the drilling process.

D. *Cuttings Sampling and Stabilization*
Both surface and production hole drill cuttings would be generated at the well pad. Raw cuttings (not stabilized) would be sampled and profiled at the location of generation in accordance with Ursa's Waste Management Plan (Attachment O). Once the raw cuttings are sampled they would be stabilized (absorption / removing liquids) in a temporary area on the well pad. The cuttings would be stabilized using either native soils (preferable) or a commercially available inert adsorbent (sawdust, EZ Stabil, etc.). If the volume of cuttings on the well pad during drilling exceeds the capacity of the on-site temporary area, limits operational capabilities to complete drilling, or creates safety concerns, a Sundry (Form 4) would be submitted for approval from the COGCC to relocate the cuttings to another location pending the results of sampling analytical results.

E. *Cuttings Management and Disposal*
If sampling results for cuttings meet 910-1 standards they would be treated as soil and beneficially reused on location or at another location as approved under a Sundry (Form 4). If cuttings do not meet standards, then Ursa would implement one of two options: continued mixing to meet 910-1 standards for beneficial reuse, or transport to an authorized waste facility in accordance with Federal and State (COGCC / CDPHE) regulations, including manifesting. Final decisions would be based on site-specific operations logistics.

F. *Drilling Fluid Management*
Drilling fluid that is no longer required at a pad would be re-used at the next pad that the drilling rig moves to, in most cases. More than one drilling rig may be in use, and in those cases, excess drilling fluid may be shared amongst other drilling rigs that require additional drilling fluid. If the fluid properties are no longer acceptable, the solids would be removed from the fluid. Those solids would be treated as drill cuttings, per the previous paragraph. The remaining clean fluid would be recycled and used in the drilling operation at the next pad.

Completion Operations

G. Completion operations at this pad would utilize flowback completion technologies and would not require a pit to store flowback liquids.

H. Completions at the location would be supported by staging temporary tank batteries / water pumping stations at adjacent existing locations also on BLM surface managed property. The pad locations proposed are permitted by both the COGCC and BLM as oil and gas locations.

I. For the Castle Springs Federal E Pad completions, it is anticipated that the following Castle Springs locations could potentially be used as staging locations for temporary tank batteries: Castle Springs Federal Pads B, D, T, Q, W, and the Castle Springs Compressor Station. Utilizing existing adjacent well pads would eliminate the need for additional surface disturbance. Water would be transferred between the Castle Springs locations via buried waterline where water lines are present and adequate to the task. If needed, temporary surface lines would also be used, and would be installed along the existing road network connecting the proposed support locations with the Castle Springs Federal E Pad. All potential locations for surface operations within the Castle Springs field are illustrated in Attachment K, Surface Operations - Castle Springs E & Q Development. No surface disturbance outside the boundaries of existing disturbance is proposed in connection with the installation and operation of any temporary water lines.

J. There are no existing buried pipelines that are adequate to the task of transporting the necessary volume of completions water to the Castle Springs water pipeline network. A temporary surface line will be installed to transport water from the western boundary of the Castle Springs Field to the Castle Springs Federal T Pad. The precise location of this temporary surface line is illustrated in Attachment K (1) – Pipeline Alignment Plan. All surface disturbance associated with the installation and operation of this temporary surface line will be confined to areas of existing disturbance, primarily the Castle Springs access road. The location of the surface line will be marked every $1/10^{th}$ mile with cautionary signage mounted on t-posts, in order to alert the public to its presence and location.

Due to flex constraints of the steel pipe to be used, it is anticipated that the temporary surface line will need to cross the access road approximately five (5) times. At all such locations, the surface line will be sleeved in a culvert to cross the road and the locations of all culverts will be marked upon installation.

Once the water has been transported to the Castle Springs Federal T Pad, it will be distributed via the network of permanent and temporary surface lines illustrated in Attachment K, Surface Operations - Castle Springs E & Q Development.

K. Ursa's standards for the operation of temporary tank batteries is provided in Attachment N, Temporary Tank Farm – Operations Protocol.

L. During completions, a mixture of approximately 99.5 % water (fresh or recycled) and propants would be in injected into the production zone to maintain the flow of gas and oil from the wellbore. This water returned to the surface is referred to as flowback, which is the primary E&P waste. This waste would then treated/recycled/reused for additional stimulation at other locations. Most flowback is treated at a COGCC approved facility under their Section 900 Rules. MSDS sheets are required to be maintained for any additives used in the stimulation process. In addition, all additives used are required to be reported to the COGCC within 120 days of completion activities. All tanks are labeled in accordance with Federal and COGCC regulations.

Non-salable gaseous phase effluent would be directed to the temporary flare stack on the pad site to be combusted with a minimum of noise or vapor release. Any hydrocarbon gas of salable quality would be directed to a combination of sand traps, separators, or other equipment as needed to ensure safe separation of sand, hydrocarbon liquids, water, and gas. The salable gas would then be directed to the sales pipeline. Any salable liquid hydrocarbons would be separated and stored in the condensate tank battery on site for truck loading and sales.

M. If it is safe and technically feasible, closed-top tanks would utilize backpressure systems that exert a minimum of four (4) ounces of backpressure and a maximum that does not exceed the pressure rating of the tank to facilitate gathering and combustion of tank vapors. Vent/backpressure values, the combustor, lines to the combustor, and knock-outs would be sized and maintained so as to safely accommodate any surges the system may encounter.

N. All salable quality gas would be directed to the sales line as soon as practicable or shut in and conserved. Temporary flaring would be conducted as a safety measure during upset conditions and in accordance with all other applicable laws, rules, and regulations.

O. Closed-loop green completions techniques would be used at this site, and no flare pit would be required. A flare stack would be installed on the Castle Springs Federal E Pad for the duration of the completions activities. Any non-salable vapors would be directed

into the flare stack for combustion with a minimum of noise or visual impacts. No venting of un-combusted gas would occur.

P. Produced water that can be recycled is treated at Ursa's permitted Wasatch Bench Pit facility in accordance with COGCC 900 rules. This water can then be recycled/reused to minimize the need for additional fresh water used for completion activities. Produced water that cannot be recycled is disposed of in Underground Injection Control (UIC) wells that are permitted by the COGCC.

Produced water not re-used would be sent to one of the facilities below.

Produced Water Disposal Facilities

1. **Castle Springs W Injection Well, Castle Springs W Pad (API# 05-045-06273)**
2. **ECDC Environmental LC, East Carbon, UT (Permit # 9422R1)**

Flowback sands and other solid E&P waste recovered during completions operations would be solidified at the Wasatch Bench Pit facility, and disposed of at approved and permitted solid waste disposal facilities.

Solid wastes would be sent to one of the facilities below.

Solid E&P Waste Disposal Facilities

1. **Reams Construction 80 Pond, Naturita, CO (Montrose Co. Approval #SU-04-0017)**
2. **ECDC Environmental LC, East Carbon, UT (Permit # 9422R1)**

General Waste Disposal

Q. Containment areas and pits would be fenced as appropriate and in accordance with BLM and COGCC guidelines.

R. Any spills of oil, gas, salt water or other produced fluids would be cleaned up and removed in accordance with BLM and COGCC regulations.

S. Any salts and/or chemicals which are an integral part of the drilling system would be disposed of in the same manner as the drilling fluid.

T. Chemicals on the EPA's Consolidated List of Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) in quantities over 10,000 pounds that may be used, produced, stored, transported or disposed of annually in association with the drilling, testing or completion of each well include diesel fuel, hydrochloric acid and silica sand. This material would be consumed in the drilling and completion process. No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities would be used, produced, stored, transported or disposed of in association with the drilling, testing or completion of the well.

U. Non E&P wastes are generated primarily during construction activities, and are typical of most household or commercial trash that can be disposed of at local landfills. Such wastes would be contained in an enclosed bear-proof trash cage on the pad and hauled away to an approved disposal site as necessary but no later than at the completion of drilling operations.

V. Sanitary facilities would be on site at all times during drilling operations. Sewage would be placed in a portable chemical toilet and the toilet replaced periodically utilizing a licensed contractor to transport by truck the portable chemical toilet so that its contents can be delivered to an approved facility/landfill. The toilet would be removed following the completion of drilling and completion operations.

8. Ancillary Facilities

A. Ancillary facilities on site during drilling would include garbage containers and portable toilets as well as three (3) site offices to provide accommodation to personnel (Attachment C, List of Equipment/Facilities). All ancillary facilities would be removed following the conclusion of drilling and completions activity.

9. Well Site Layout

A. Each well would be properly identified in accordance with 43 CFR 3162.6.

B. The well pad and road design is adequate for the intended use and traffic required to drill and operate directional wells. Diagrams are attached indicating the construction layout (Attachment I), cross sections of the well pad (Attachment I (1)), and the facility layout (Attachment J).

C. All surface activities would be supervised by a qualified, responsible company representative who is aware of the terms and conditions of the APD and the specifications in the approved plans.

D. Water application may be implemented if necessary to minimize the amount of fugitive dust.

10. Plans for Reclamation of the Surface

Ursa has committed to honoring the reclamation commitments agreed to by Antero in the original SUPO for the construction and operation of the Castle Springs Federal E Pad.

A. Upon completion of drilling, the location and surrounding area will be cleared of all remaining debris, materials, trash and junk not required for production and hauled to the nearest landfill.

A closed loop system will be used and therefore, no reserve pits will need to be reclaimed. Ursa or its respective contractor will notify the BLM-Colorado River Valley at (970) 876-9000, a minimum of forty-eight (48) hours before starting reclamation work that involves earth-moving equipment and upon completion of restoration measures.

After completion activities, Ursa will reduce the size of the well pads to the minimum surface area needed for production facilities, while providing for reshaping and stabilization of cut and fill slopes. Slopes will be re-contoured to minimize areas that exceed a 3:1 slope. Any areas exceeding the 3:1 slope criteria or high walls shall be reclaimed using enhanced stabilization and erosion prevention methods.

If a well is capable of producing Ursa will:

B. Upgrade and maintain access roads as necessary to prevent soil erosion and accommodate year-round traffic. Reshape areas unnecessary for operations to blend as close as possible to the natural terrain, rip or disk, and seed all disturbed areas outside the work area according to the approved site specific seed mixture. The topsoil will be saved to be used during final reclamation unless the location can be recontoured to meet final reclamation specifications. Ursa will consult with the authorized officer on use of the topsoil for interim reclamation. Perennial vegetation will be established. Additional work will be required in case of seeding failures. All permanent facilities placed on the location will be painted the non-reflective standard environmental color approved by the BLM-Colorado River Valley NRS team/Authorized Officer, unless otherwise specified in the individual well APD. The well site will be recontoured to the original contours or a contour that blends in with the surrounding landform, the stockpiled topsoil will be redistributed, and the site will be revegetated. See Attachment G - Interim Reclamation Detail (this site specific drawing will be included in each APD package).

After the last well on a location is abandoned Ursa will:

C. Restore the access road (unless BLM determines that the road is still needed) and location to blend with the natural topography. During reclamation of the site, push the fill material into cuts and up over the backslope. Leave no depressions that will trap water or form ponds. Distribute topsoil evenly over the location and seed according to

the above seed mixture. The access road and location will be ripped or disked prior to seeding.

D. All disturbed areas will be seeded with the approved APD site specific seed mixture. Application rates are for pure, live seed (PLS). Seed tags will be submitted to the BLM-Colorado River Valley within 30 days of seeding. The seedbed will be prepared by contour cultivating four to six inches deep. Seed will be drilled % to 1 inch deep following the contour. In areas that cannot be drilled, seed will be broadcast at 1.5 times the application rate and cover % to 1 inch deep with a harrow or drag bar.

E. Seeding will be completed after August 15 and prior to October 1.

Ursa accepts that the following criteria will be met for BLM to consider the disturbed area to be satisfactorily reclaimed:

i. Soil erosion resulting from the operation has been stabilized.
ii. Vegetative cover at least equal to that present prior to disturbance and a plant species composition at least as desirable as that present prior to disturbance has been established. Establishment of all of the species in the seed formula will be considered as meeting the composition/desirable species criteria.

Additional reclamation work will be completed until these conditions are satisfied. The stockpiled ground cover will be evenly distributed over the disturbed areas.

11. Surface and Mineral Ownership

A. Surface Ownership –

United States of America/Bureau of Land Management,
Colorado River Valley Field Office

Address: 2300 River Frontage Road, Silt, CO 81652
Telephone: 970-876-9000

B. Mineral Ownership –

United States of America/Bureau of Land Management,
Colorado River Valley Field Office

Address: 2300 River Frontage Road, Silt, CO 81652
Telephone: 970-876-9000

Ursa OPERATING COMPANY

792 Buckhorn Drive
Rifle, CO 81650

OPERATOR CERTIFICATION

Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein would be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company that I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filings of false statements.

Executed this 16th day of April, 2014

Signed,

Name: Jennifer Lind

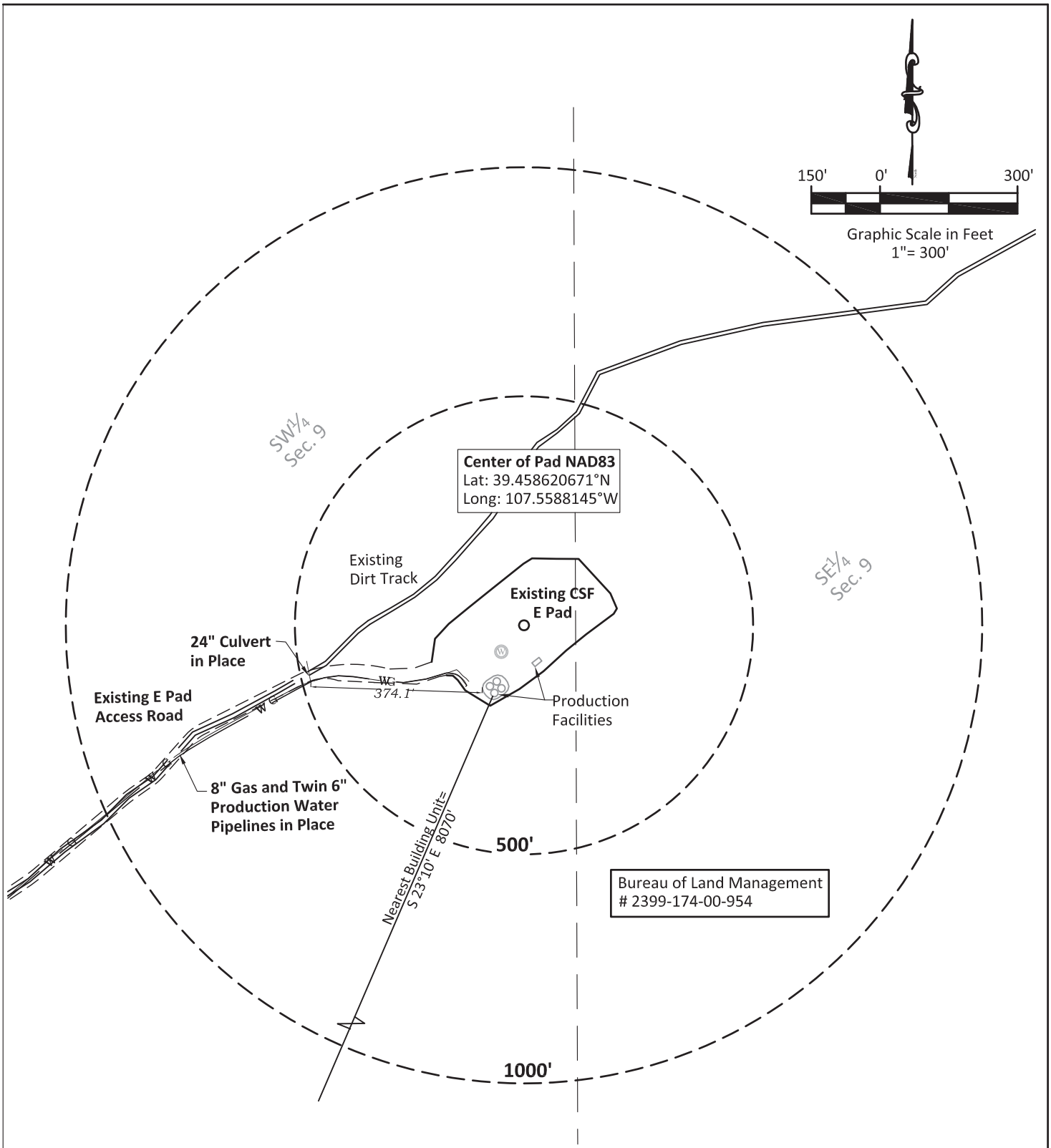
Position Title: Regulatory Analyst – Rockies

Address: 1050 17th Street, Suite 2400, Denver, CO 80265

Contact Information: (720) 508-8362, jlind@ursaresources.com

ATTACHMENTS

Attachment A –	Visible Improvements / Nearest Bldg. Unit
Attachment B –	Four Color Photographs
Attachment C –	List of Equipment / Facilities
Attachment D –	Federal 1-Mile Radius Well Map
Attachment E –	Topographic Map Showing Surface Waters
Attachment F –	Access Route Map
Attachment F (1) –	Well Pad Access Map
Attachment G-	Interim Reclamation Detail
Attachment H –	NRCS Soil Map and Soil Survey
Attachment I –	Construction Layout Drawing
Attachment I (1) –	Construction Layout Drawing Cross Section Plot
Attachment J –	Facility Layout Drawing
Attachment J (1) –	Facilities Layout Drawing – Drilling Operations Detail
Attachment K –	Surface Operations - Castle Springs E & Q Development
Attachment K (1) –	Pipeline Alignment Plan
Attachment L –	CSF E Pad Multi-well Diagram
Attachment M –	Best Management Practices
Attachment N –	Temporary Tank Farm – Operations Protocol
Attachment O –	Waste Management Plan
Attachment P, Q, & S –	Surface Restrictions



Visible Improvement Summary	
Improvement Type	**Present Within 500' Y/N**
Buildings - Residential	Nearest= 8070'
Buildings - Commercial	No
Buildings - Agriculture	No
Buildings - Other	No
Public Roads/Trails	No
Abv. Gnd. Utility Lines	No
Railroads	No
Pipelines	No
Mines	No
Oil/Gas Wells	No
Ditch/Channel	No
Surface Use	Gas Pad

Notes or Comments:

-This pad is located on Federal Surface, no Building Units within 1000' of the location

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: - RVS 06001-41Q		
Field Date: 12-18-12	**Scale:** 1"= 300'	
Date: 02-05-14	**Sheet:** 1 of 1	
Rev:	**By:**	

Ursa OPERATING COMPANY

Attachment A

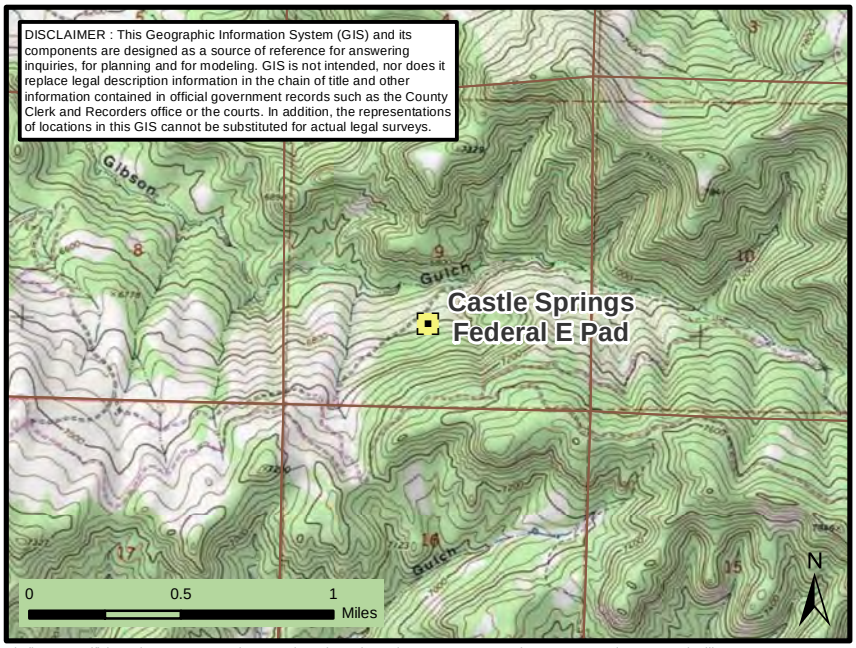
Visible Improvements / Nearest Bldg. Unit
Castle Springs Federal E Pad
Section 9, Township 7 South, Range 91 West

Castle Springs Federal E Pad
Looking North

Castle Springs Federal E Pad
Looking South

Castle Springs Federal E Pad
Looking East

Castle Springs Federal E Pad
Looking West



Ursa OPERATING COMPANY

Castle Springs Federal E Pad

39.458481 -107.559065

Attachment B
Four Color Photographs

Note: Color photographs show the Castle Springs Federal E Pad in the four cardinal directions as noted.

HCSI ENVIRONMENTAL CONSULTANTS
HRL COMPLIANCE SOLUTIONS, INC.

Author: M Spinelli

Revision: 0

Date: 2/19/2014

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Revision Date: 2/19/2014 11:52:36 AM

Ursa OPERATING COMPANY

Castle Springs Federal E Pad
Attachment C
List of Equipment/Facilities

Some equipment and facilities included herein may already exist if an expanded pad or new wells are added to the location under the Form 2A

CONSTRUCTION

- Bulldozers, backhoes and dirt hauling trucks (if needed)

DRILLING

- Spudding Rig (temporary) for drilling surface hole (optional - if needed)
- 1 Drilling Rig (temporary) with auxiliary equipment / materials (Mud, water tank, diesel tanks)
- 3 temporary offices / safety building and auxiliary equipment to directly support accommodation
- Generator-set, Sewage Tanks, Potable water tanks (temporary)
- Sub-Surface waterlines 2 x 6" (existing)

COMPLETIONS

- Up to 50 – 600bbl temporary tanks for well stimulation (see Construction Layout)
- Temporary flowback equipment for green completions
- Temporary flare stack equipment

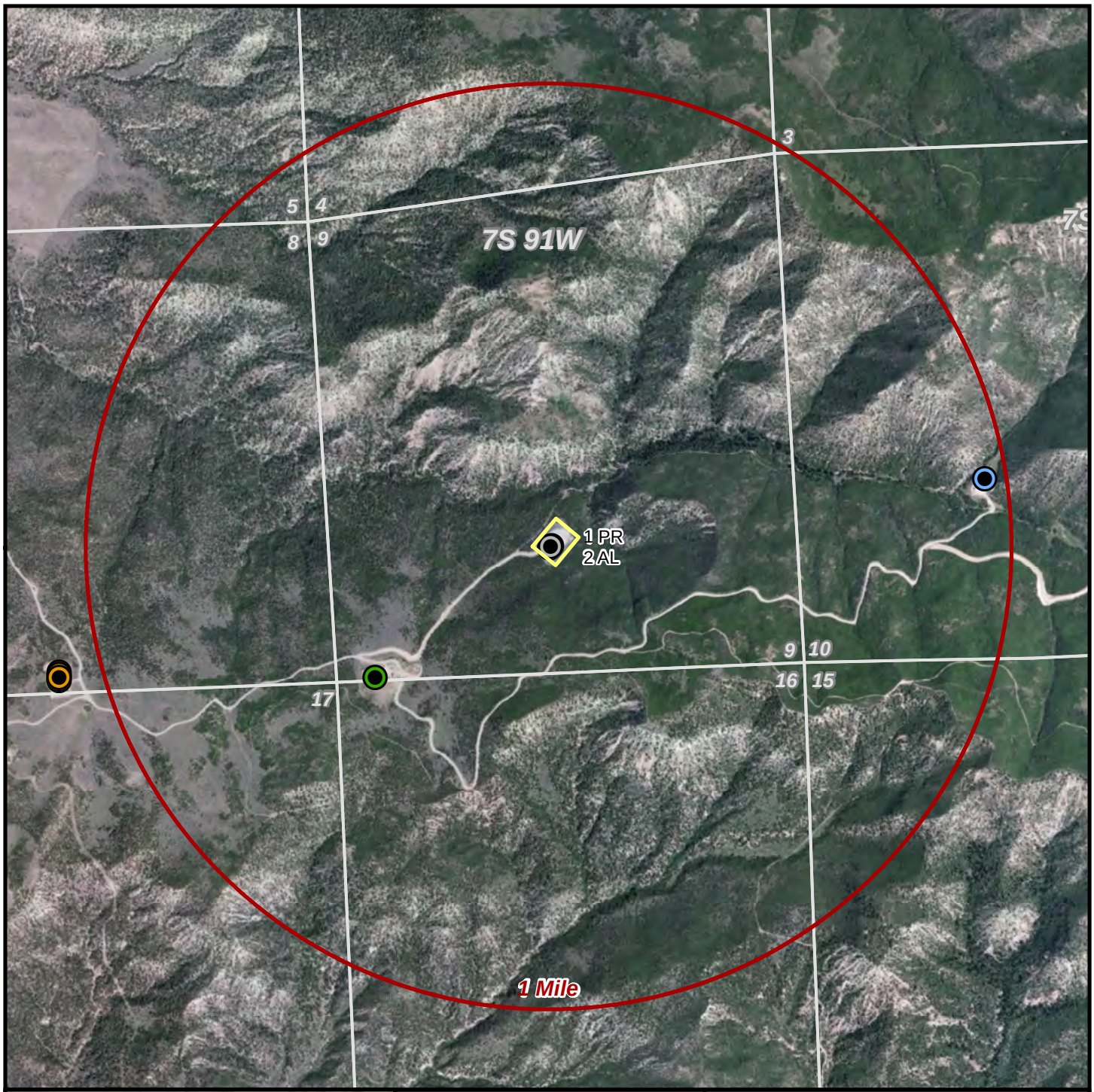
PRODUCTION

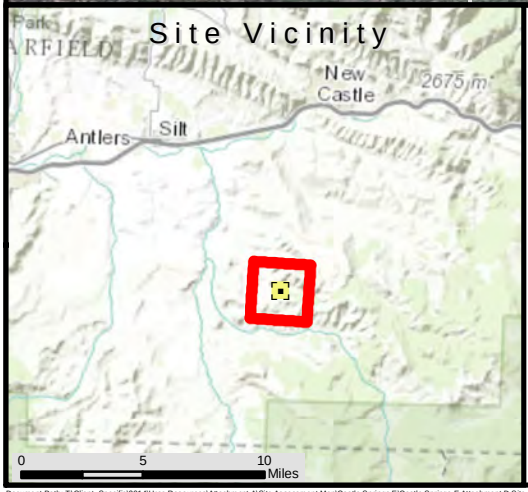
- 12 Wellheads with production manifolds and lubricator (1 existing)
- Common Guard/Fence around wellheads
- 12 buried flow-lines from well head to separators and to water and oil tanks
- 3 Quad Separator Units (12 total)
- 2 Condensate low profile color coded Tanks (with oil heaters) (existing)
- 2 Produced Water low profile color coded Tanks (existing)
- Primary and secondary containment for tanks (steel rings with liners)
- Communications and control instrumentation to include solar panels and telemetry (existing)
- 1 buried Gas Pipeline to connect with gas gathering network (existing)
- 1 VOC Combustor and knockout vessel for liquid gas (existing)
- Pig Launcher /Receiver
- Chemical/Soap Injection and plunger running Facilities for wells (as needed)

RECOMPLETIONS / WORKOVERS*

- Workover – Rig and artificial lift equipment (temporary – as required)
- Recompletions – Tanks and flowback equipment (temporary – as required and approved by COGCC)
- Recompletions – Temporary tank staging (temporary - prior to and following recompletes)

* Recompletions and workovers are dependent upon well production; therefore equipment and required temporary facilities cannot be projected at this time. Recompletions are subject to COGCC rules and approval, typically through submittal of a Sundry Notice.





Well Types:

- (AL) Abandoned Location
- (DG) Drilling
- (IJ) Injecting
- (PA) Plugged & Abandoned
- (PR) Producing
- (XX) Permitted Location
- (WW) Water Wells

Ursa OPERATING COMPANY

Attachment D:
Federal 1-Mile Radius Well Map

Castle Springs E

39.458490 -107.559018

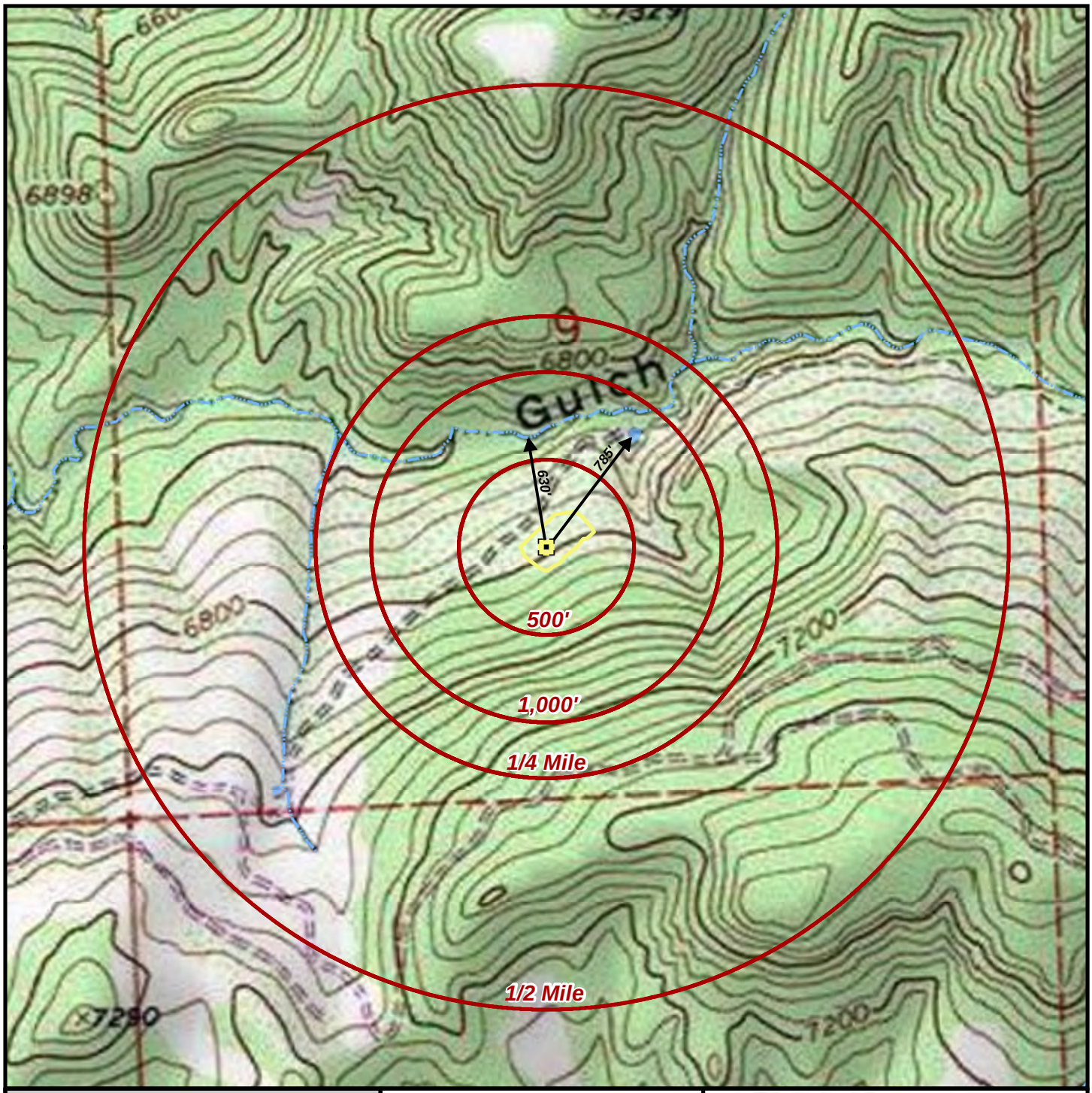
Well Pad
Proposed Development
County Roads
Local Roads
0 1,000 2,000
Feet

HCSI
HSE Compliance Solutions, Inc.

N

Author: B Hall
Revision: 0
Date: 3/5/2014

Document Path: T:\Client_Specific\2014\Ursa Resources\Attachment A\Site Assessment Map\Castle Springs E\Castle Springs E Attachment D Site Federal 1-Mile Radius Well Map 3-5-14.mxd



HYDROGRAPHY:

FEATURE	PRESENT WITHIN 1,000 ft
Water Well	No
Spring	No
Ditch	No
Intermittent Stream	***Yes - 630 ft N***
Perennial Stream	No
Water Body	***Yes - 785 ft NE***
County Watershed	No

Notes / Comments:

Ursa OPERATING COMPANY

Castle Springs Federal E Pad

39.458481 -107.559065

Attachment E

Topographic Map Showing Surface Waters

Well Pad
Proposed Development
County Roads
Local Roads

0 500 1,000
Feet

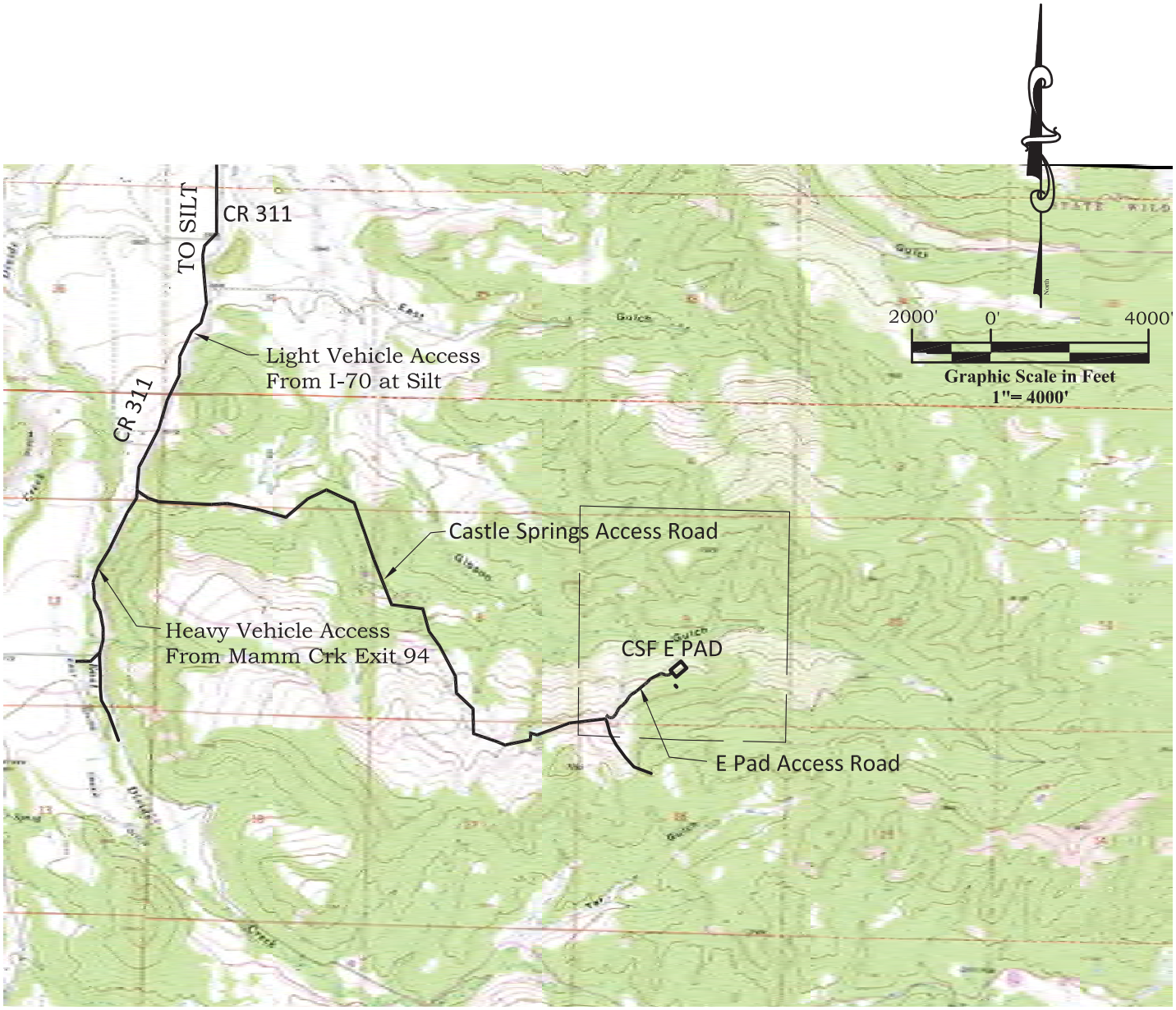
HCSI

N

Author: M Spinelli

Revision: 0

Date: 2/19/2014



Access:

The primary light vehicle access route to the NCS Project Area would be from Interstate 70 (I-70) exiting at Silt, Colorado (Exit 97). Directions to the NCS Project Area are as follows: After exiting I-70, proceed to the frontage road (River Frontage Road) at the south end of the Silt/I-70 interchange; proceed in a general easterly direction along this frontage road 0.4 miles to the intersection with County Road 311 (CR 311); turn right and follow CR 311 in a general southerly direction crossing the Colorado River and continue 0.6 miles to the intersection with CR 331; turn left and follow CR 311 in a general easterly direction for 1.4 miles to the intersection with CR 335. Turn right at the intersection of CR 311 and CR 335, and follow CR 311 in a general southeasterly direction along Divide Creek approximately 5.5 miles to the intersection with a gravel road that enters the NCS Project Area on the left. Continue easterly along NCS access 3.7 miles to the E Pad access road. Turn left and proceed northerly 0.4 miles to the E Pad.

The primary heavy vehicle access routes will continue to be defined by Garfield County heavy haul vehicle routes. The current (June 2010) heavy haul route to the NCS project area is as follows: Exit I-70 at the Rifle Municipal Airport Exit (Exit 94). After exiting I-70, proceed to the frontage road (CR 346) at the south end of the Airport/I-70 interchange. Proceed in a general easterly direction along CR 346 for 3 miles to the intersection with CR 331 (Dry Hollow Rd.). Turn right and follow CR 331 for 6.75 miles in a general southerly direction to the intersection with CR 324. Turn left onto CR 324 (Maxfield Rd) and follow CR 324 in a general easterly direction for 2.4 miles to the intersection with CR 311. Turn left at the intersection of CR311 and CR 324 and follow CR 311 in a general northerly direction for 2.3 miles to the intersection with a gravel road that enters the NCS project area on the right. Continue easterly along NCS access 3.7 miles to the E Pad access road. Turn left and proceed northerly 0.4 miles to the E Pad.

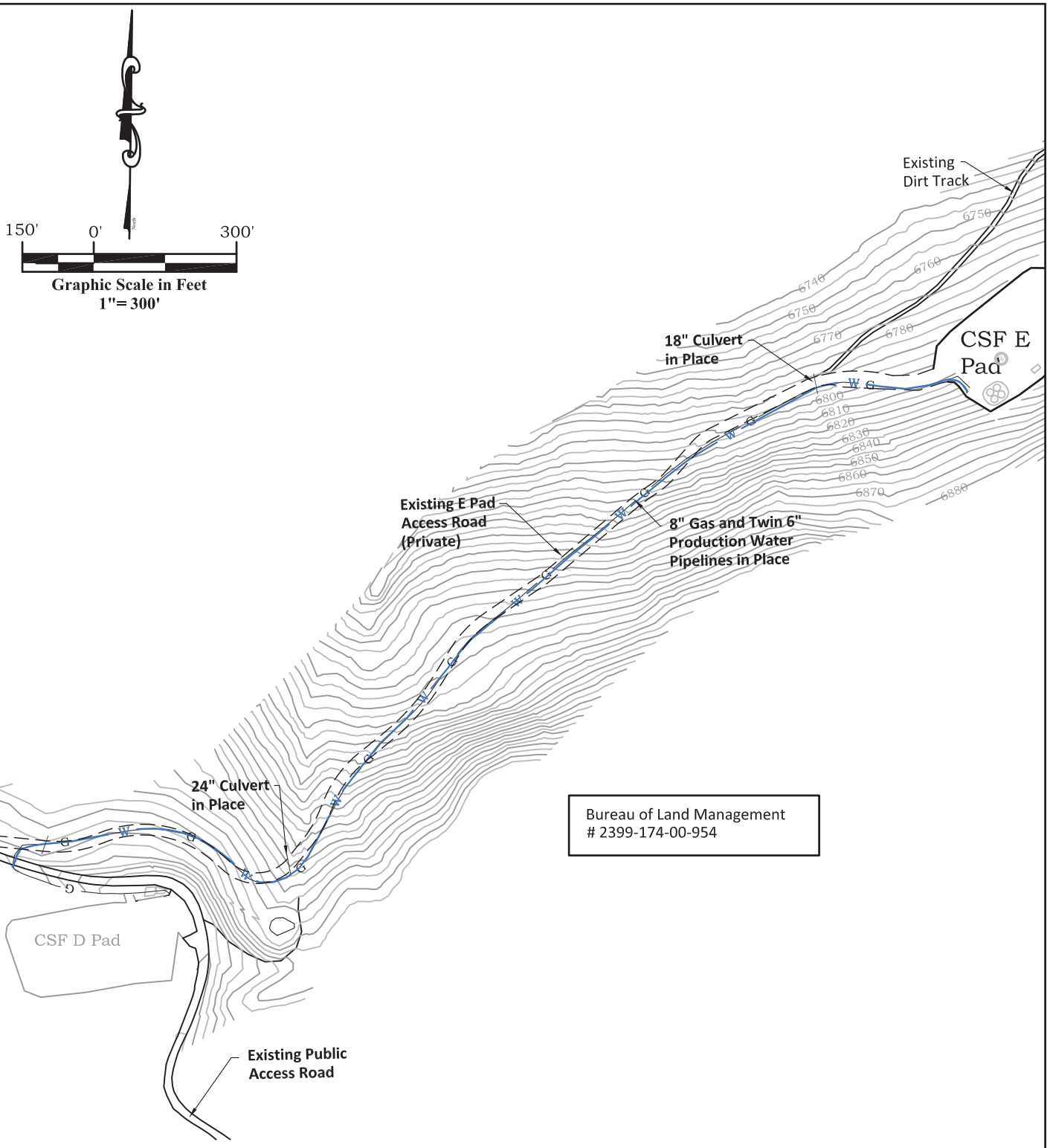
Notes or Comments:

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Ursa OPERATING COMPANY

Project: - RVS 06001-41Q	
Field Date: 12-18-12	**Scale:** 1"= 4000'
Date: 02-14-14	**Sheet:** 1 of 2
Rev:	**By:**

Attachment F
Castle Springs Federal E Pad Access Route Map
Section 9, Township 7 South, Range 91 West



Notes or Comments:

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Ursa OPERATING COMPANY

Project: - RVS 06001-41E	
Field Date: 12-18-12	**Scale:** 1"= 300'
Date: 02-14-14	**Sheet:** 2 of 2
Rev 02-19-14	**By:** sea

Attachment F(1)
Castle Springs Federal E Pad
Well Pad Access Map
Section 9, Township 7 South, Range 91 West

CSF E Pad

Attachment G - Interim Reclamation

Section 9, Township 7 South, Range 91 West

50' 0' 100'

Graphic Scale in Feet
1"= 100'

All Reclaimed and Revegetated Slopes Shall Be Contoured to Blend With the Adjacent Natural Slopes.

Area to be Reclaimed

Disturbance Area Table	
Item	Acerage
Total Disturbed Area	3.5
Total Reclaimed Area	1.8
Total UnReclaimed Area	1.7

CSF E Pad
Pad Elev.= 6807.0

Combustor

Separators

CSF 32C-09-07-91
CSF 23C-09-07-91
CSF 24D-09-07-91

E PAD ACCESS ROAD

Containment Ring
Tanks

Area to be Reclaimed

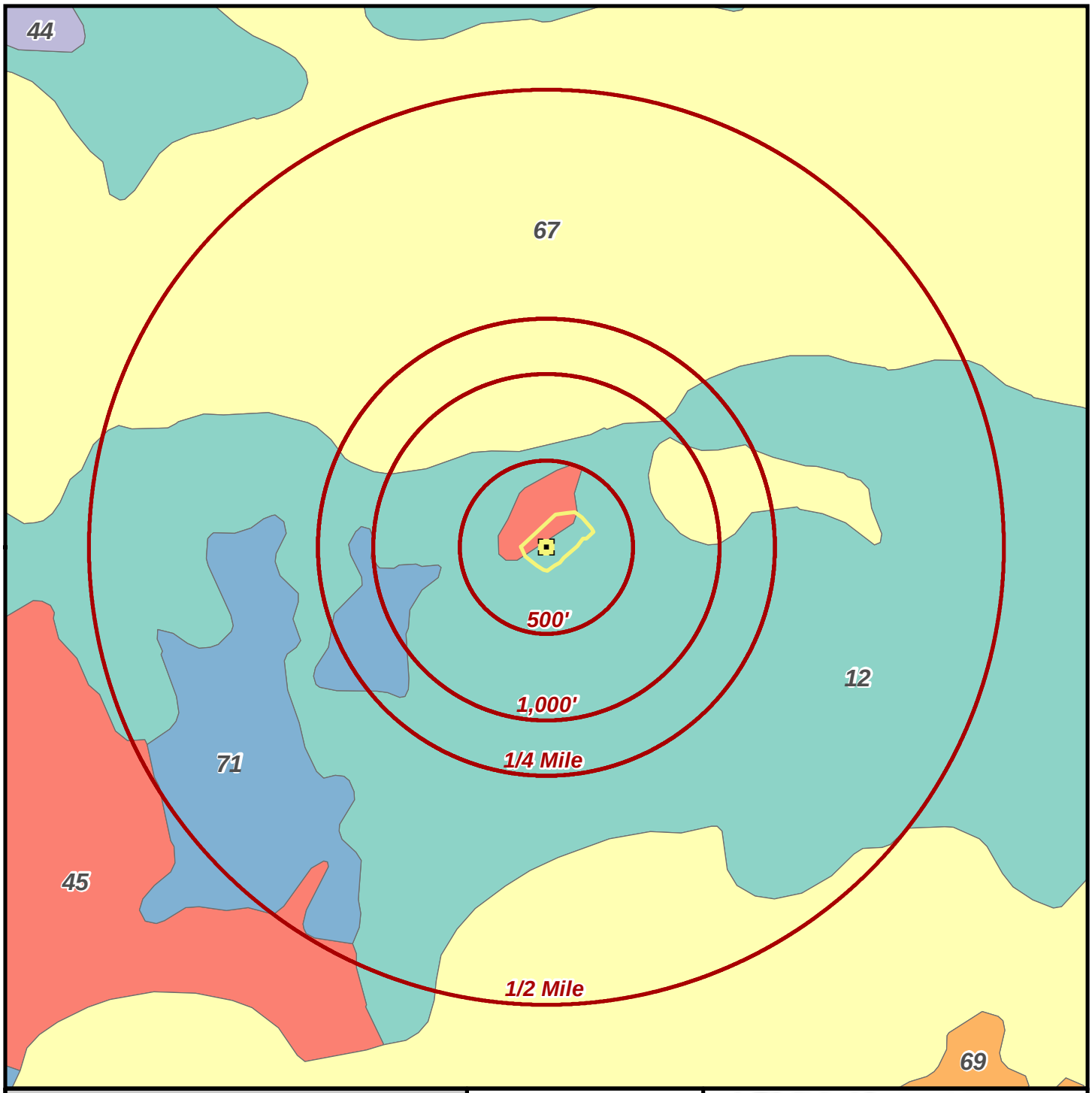
River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: CASTLE SPRINGS FEDERAL E PAD	
Field Date: 06-09-10	Scale: 1"= 100'
Date: 07-07-10	Sheet: 12 of 14

Well Location Plat
Prepared For Antero Resources

Situate In:
SW1/4 Section 9, T7S., R. 91 W. of the 6th P.M., Garfield County, Colorado

ANTERO RESOURCES



NRCS SOILS KEY

Map Symbol	Series Name
12	Bucklon-Inchau loam (25 to 50% slopes)
44	Morval loam (3 to 12% slopes)
45	Morval-Tridell, complex (6 to 25% slopes)
67	Torriorthents-Rock outcrop complex (steep)
69	Vale silt loam (6 to 12% slopes)
71	Villa Grove-Roltay loams (15 to 30% slopes)

Notes / Comments:

Ursa OPERATING COMPANY

Castle Springs Federal E Pad

39.458481 -107.559065

Attachment H

NRCS Soil Map

Well Pad
Proposed Development
County Roads
Local Roads

0 500 1,000
Feet

HCSI
HSE Compliance Solutions Inc

N

Author: M Spinelli

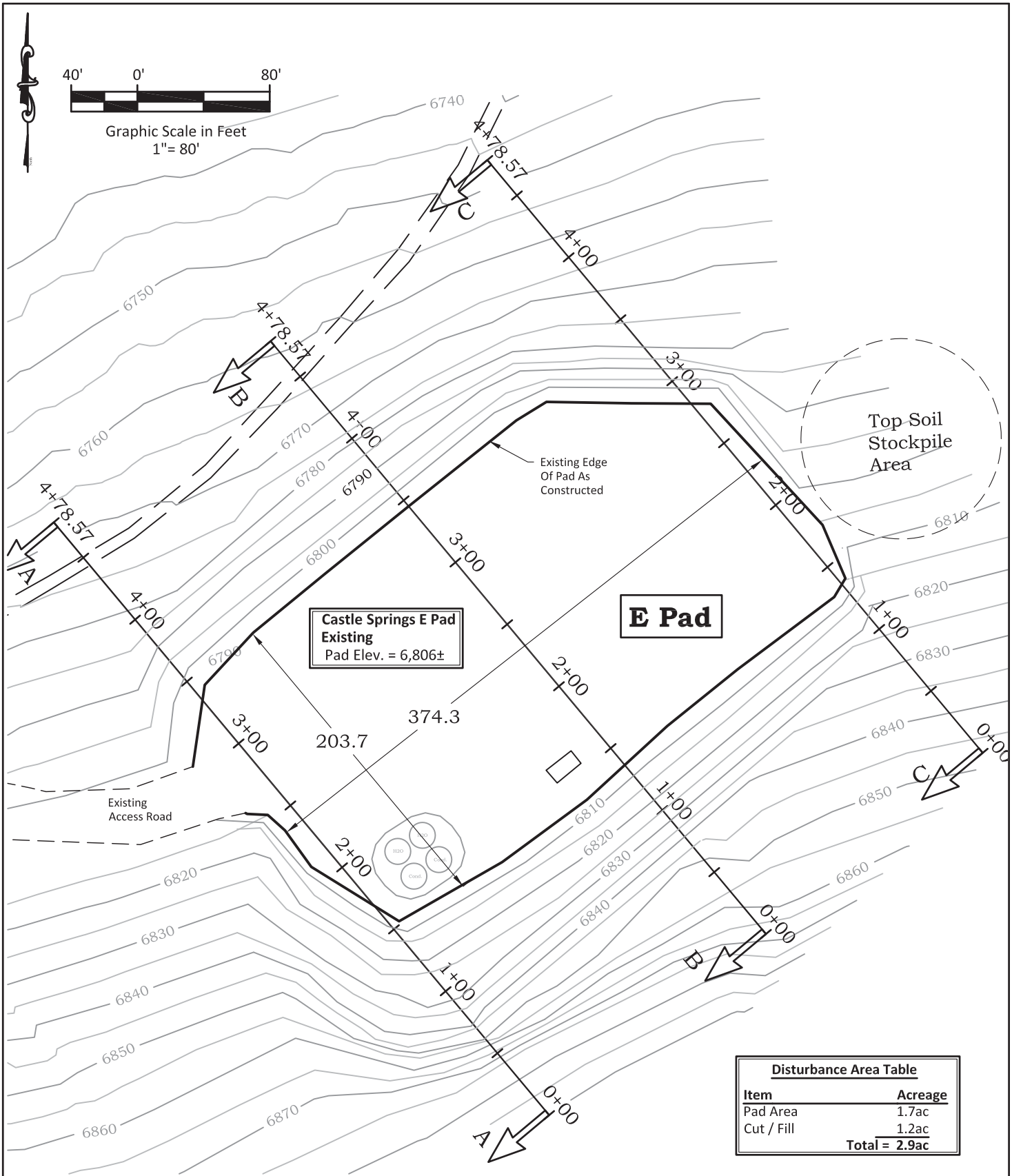
Revision: 0

Date: 2/19/2014

Attachment H – NRCS Soil Survey, Rifle Area

Map Symbol 12 – Bucklon-Inchau loam 25-50% slopes	
Shallow to moderately deep, well-drained, moderately sloping soils found on ridges and mountainsides.	
Elevation	7,000 to 9,500 feet
Average Annual Precipitation	Approximately 18 inches
Average Annual Air Temp	Approximately 40 degrees F
Frost Free Days	Approximately 75 days
Permeability	Slow to Moderate
Available Water Capacity	Very Low to Moderate
Effective Rooting Depth	10-40 inches
Surface Runoff	Medium
Erosion Hazard	Severe
Native Vegetation: Mainly Gambel oak, elk sedge and bromes.	
Community development and recreation are limited by steep slopes, depth to rock and low strength. This soil complex is in capability subclass VIIs, nonirrigated.	

Map Symbol 45 –Morvall-Tridell Complex 6-25% slopes	
Deep and well-drained, moderately sloping soils found on the sides of mesas.	
Elevation	6,500 to 8,000 feet
Average Annual Precipitation	Approximately 15 inches
Average Annual Air Temp	Approximately 44 degrees F
Frost Free Days	Approximately 100 days
Permeability	Moderate to Moderately Rapid
Available Water Capacity	Moderate to Low
Effective Rooting Depth	60 inches
Surface Runoff	Medium
Erosion Hazard	Moderate
Native Vegetation: Needleandthread, Indian ricegrass, junegrass, serviceberry, mountain mahogany, wheatgrass, sagebrush, big sagebrush, pinyon, Utah juniper, and Rocky Mountain juniper.	
Community development is limited by large stones. This soil complex is in capability subclass VIe, nonirrigated.	



Disturbance Area Table	
Item	**Acreage**
Pad Area	1.7ac
Cut / Fill	1.2ac
	Total = 2.9ac

NOTES OR COMMENTS:

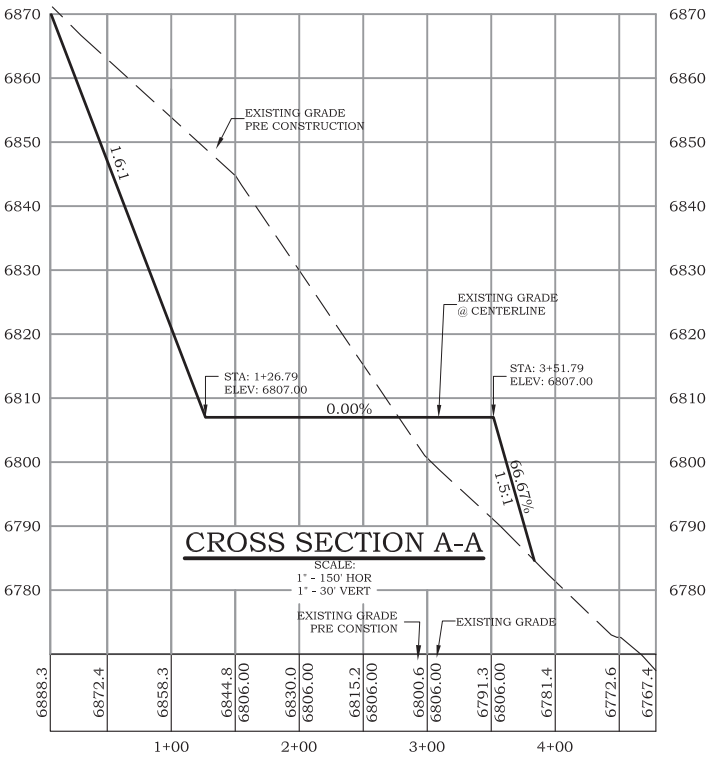
- Cross Sections A, B and C denotes post construction conditions.

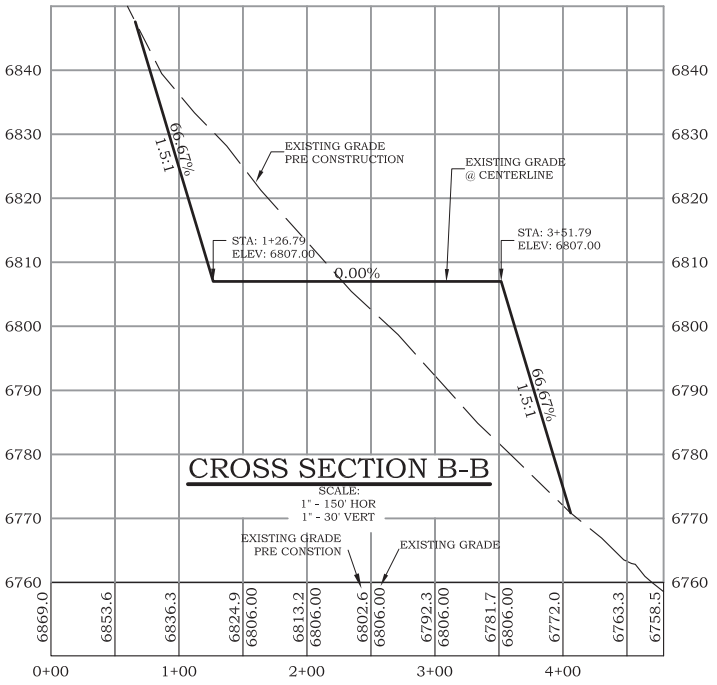
River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

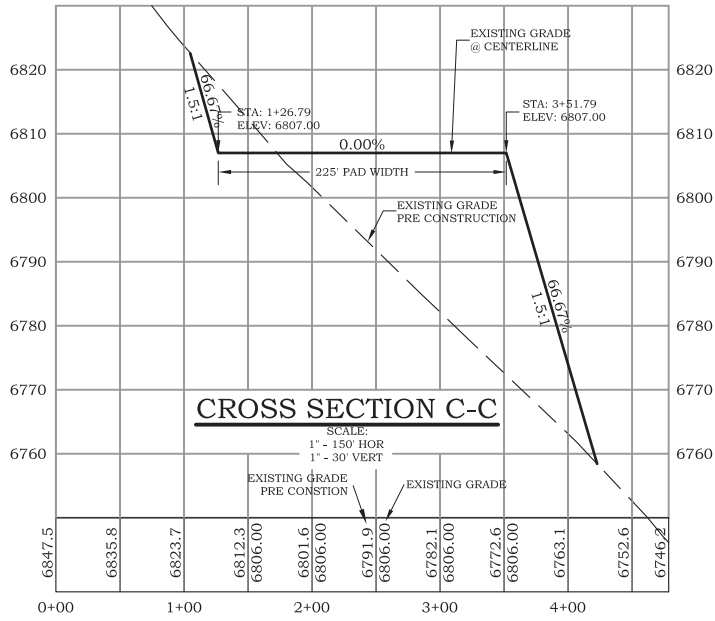
Ursa OPERATING COMPANY

Project: - RVS 06001-41E	
Field Date: 12-18-12	**Scale:** 1"= 80'
Date: 02-14-14	**Sheet:** 1 of 2
Rev:	**By:**

Attachment I
Castle Springs Federal E Pad
Construction Layout Drawing
Section 9, Township 7 South, Range 91 West







NOTES OR COMMENTS:

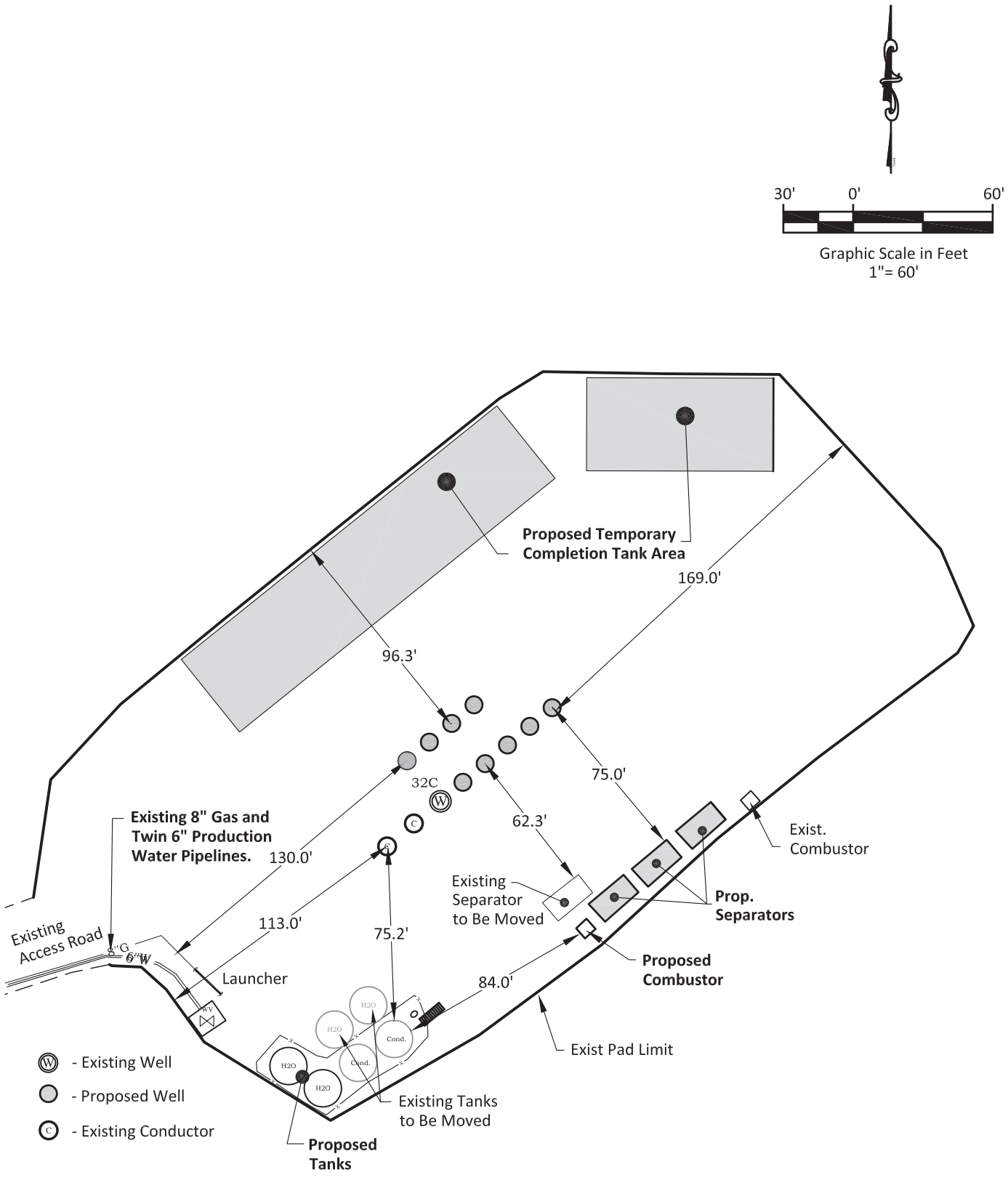
- Cross Sections A, B and C denotes post construction conditions.

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Ursa OPERATING COMPANY

Project: - RVS 06001-41E	
Field Date: 12-18-12	**Scale:** 1"= 150'
Date: 02-14-14	**Sheet:** 1 of 2
Rev:	**By:**

Attachment I(1)
Castle Springs Federal E Pad
Construction Layout Drawing
Section 9, Township 7 South, Range 91 West



Notes or Comments:

- No Additional Disturbance.

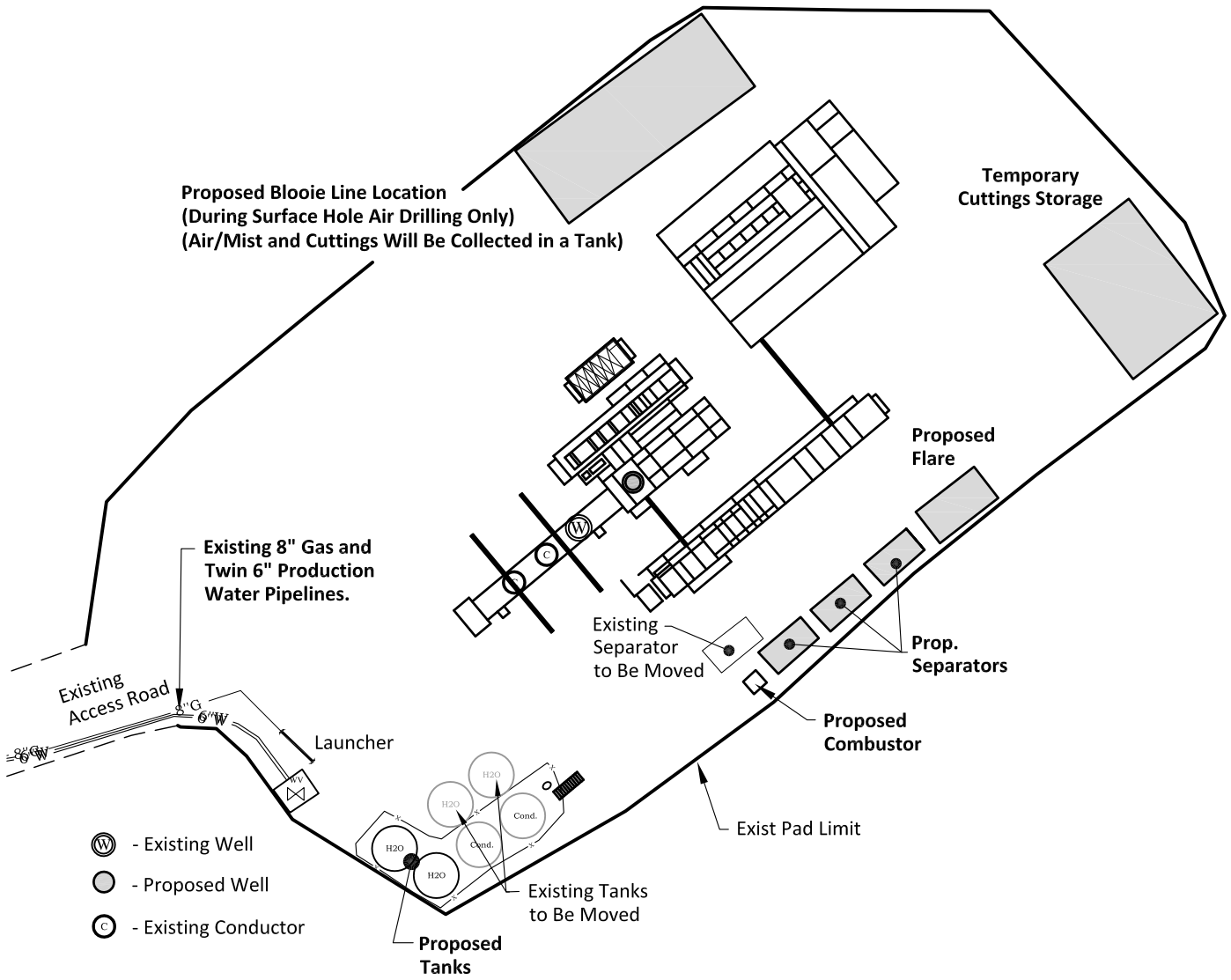
- Re-Configuration of Facility Layout adding 2 additional Quad Separators.

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Ursa OPERATING COMPANY

Project: - RVS 06001-41E	
Field Date: 12-18-12	**Scale:** 1"= 60'
Date: 02-14-14	**Sheet:** 1 of 1
Rev: 03-03-14	**By:** sea

Attachment J
Castle Springs Federal E Pad
Facility Layout Drawing
Section 9, Township 7 South, Range 91 West



Notes or Comments:

- No Additional Disturbance.

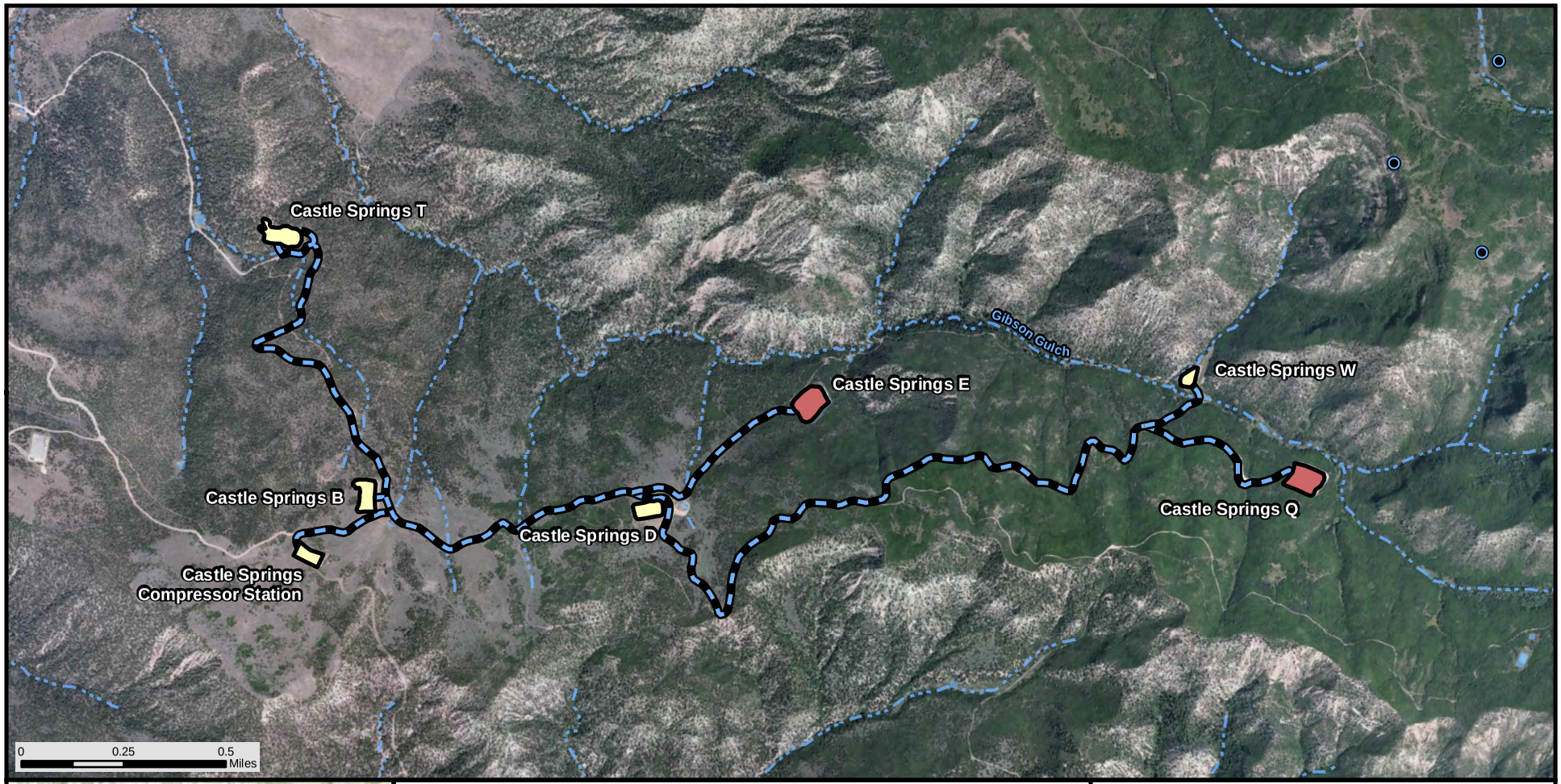
- Re-Configuration of Facility Layout adding 2 additional Quad Separators.

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Ursa OPERATING COMPANY

Project: - RVS 06001-41E	
Field Date: 12-18-12	**Scale:** 1"= 60'
Date: 04-25-14	**Sheet:** 1 of 1
Rev: 04-29-14	**By:** sea

Attachment J(1)
Castle Springs Federal E Pad
Facility Layout Drawing
Section 9, Township 7 South, Range 91 West



Notes / Comments:

Ursa OPERATING COMPANY

Attachment K: Surface Operations

Castle Springs E & Q Development

39.4543 -107.5648

Township 7 South, Range 91 West

- Temporary Surface Water Lines
- Support Locations
- Drilling & Completions Activities
- Water Well
- Intermittent Stream
- Waterbody

HCSI ENVIRONMENTAL CONSULTANTS
HRL Compliance Solutions, Inc.

N

Author: M. Spinelli

Revision: 0

Date: 3/3/2014

AGENCY CONTACT LIST

GOVERNING AUTHORITY
GARFIELD COUNTY
108 8TH STREET
GLENWOOD SPRINGS, CO 81601
(970) 945-8212

OWNER
URSA OPERATING COMPANY
792 BUCKHORN DRIVE
RIFLE, COLORADO 81650
(970) 625-9922

BURNING MT. FIRE PROTECTION DISTRICT
611 MAIN STREET
SILT, CO 81652
ATTN: ORRIN MOON

NATURAL GAS UTILITY
SOURCE GAS
0096 COUNTY ROAD 160
GLENWOOD SPRINGS, CO 81601
(970) 928-0407

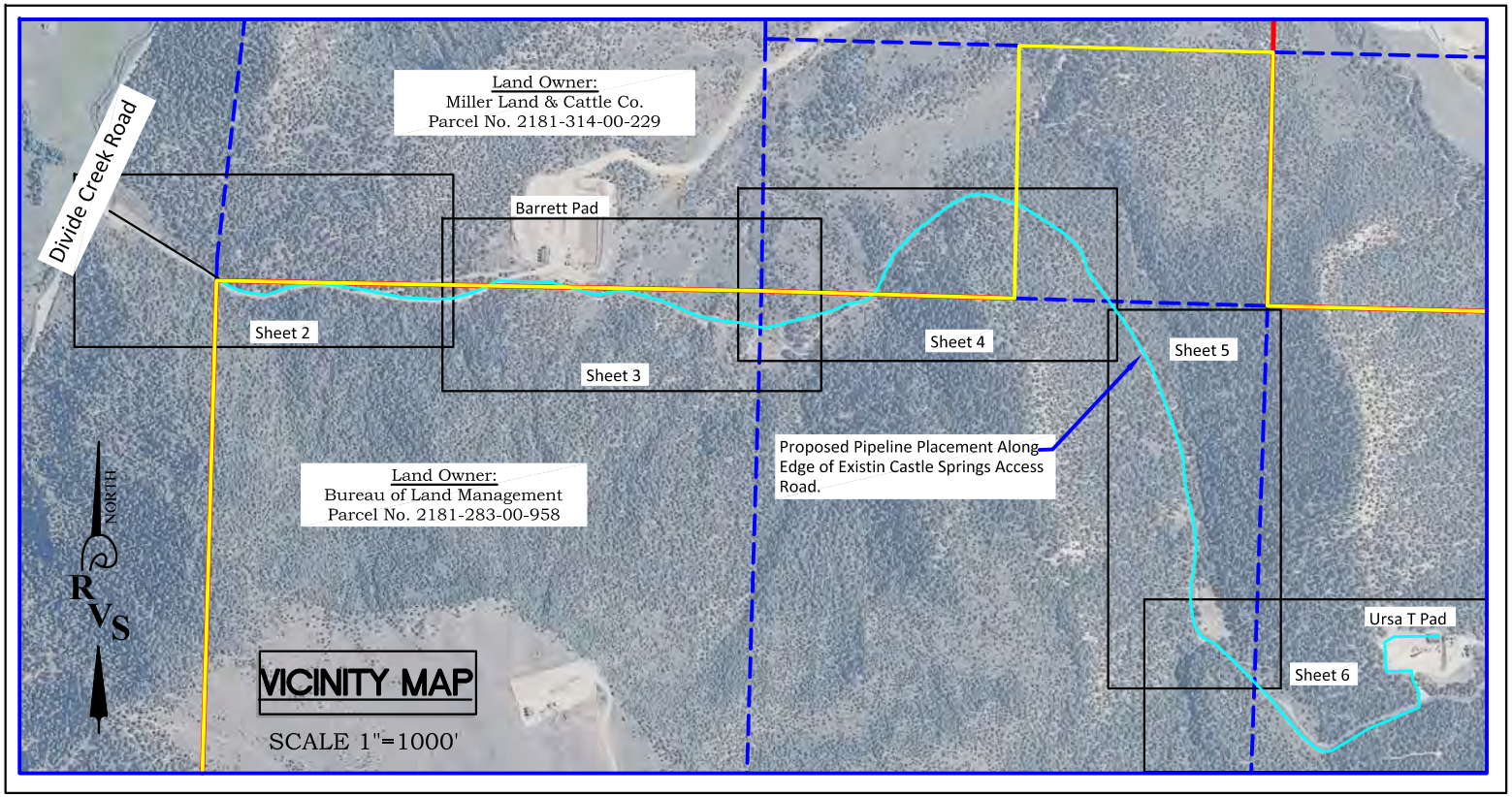
ELECTRIC UTILITIES
HOLY CROSS ENERGY
3799 HIGHWAY 82
GLENWOOD SPRINGS, CO 81602
(970) 945-5491

EXCEL ENERGY
2538 BLICHMANN AVENUE
GRAND JUNCTION, CO 81505
(970) 244-2695
ATTN: TILLMON McSCHOOLER

TELEPHONE UTILITY
QWEST
921 GRAND AVENUE
GLENWOOD SPRINGS, CO 81601
ATTN: GARY GIBSON/JASON SHARPE
PH: (970) 348-0255

UNCC
CALL BEFORE
YOU DIG
1-800-922-1987
Utility Notification
Center of Colorado
Administrative Office 303-232-1991
12600 W. Colfax Ave., Suite B-310
Lakewood, Co 80215

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



PIPELINE SUMMARY *TABLE*			
OWNER	*STATION*	*FEET*	*RODS*
Bureau of Land Management	*6+91 to 21+33*	*1442'*	*87.4*
	25+66 to 42+34	*1668'*	*101.1*
	52+32 to 100+67	*4835'*	*293.0*
	Total=	*7,945'*	*481.5*

LEGEND

- BLM BOUNDARY
- SECTION LINE
- PROPOSED WATER PIPELINE

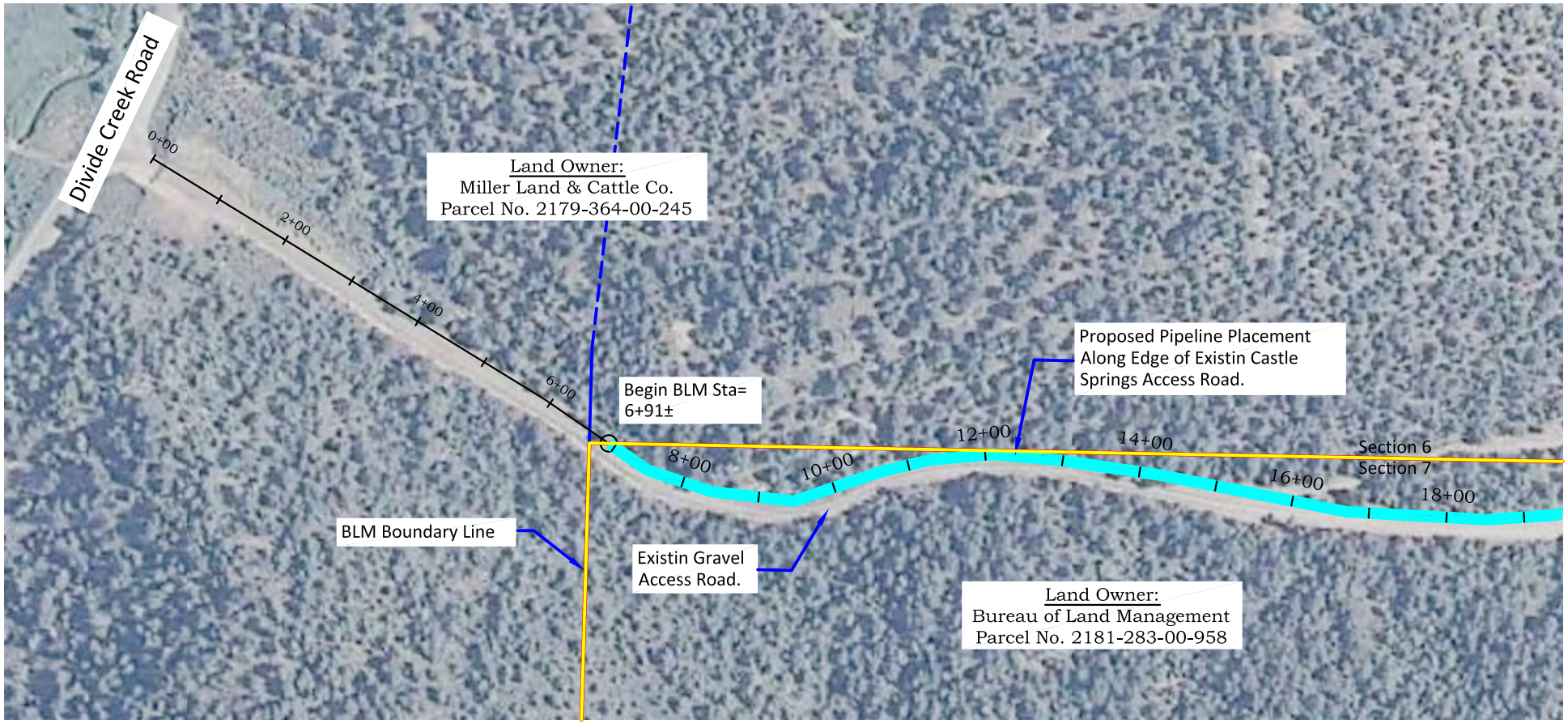
Ursa OPERATING COMPANY

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: RVS 06001-41
Field Date: 04-08-14 **Scale:** 1"= 200'
Date: 04-14-14 **Sheet:** 1 of 6

Pipeline Alignment Plan

Castle Springs Federal Temporary Water Line
From County Road 313 To Castle Springs T Pad
Situated in Sections 6, 7 and 8
Township 7 South, Range 91 West of the 6th P.M.



100' 0' 200'

Graphic Scale in Feet
1"= 200'

NORTH

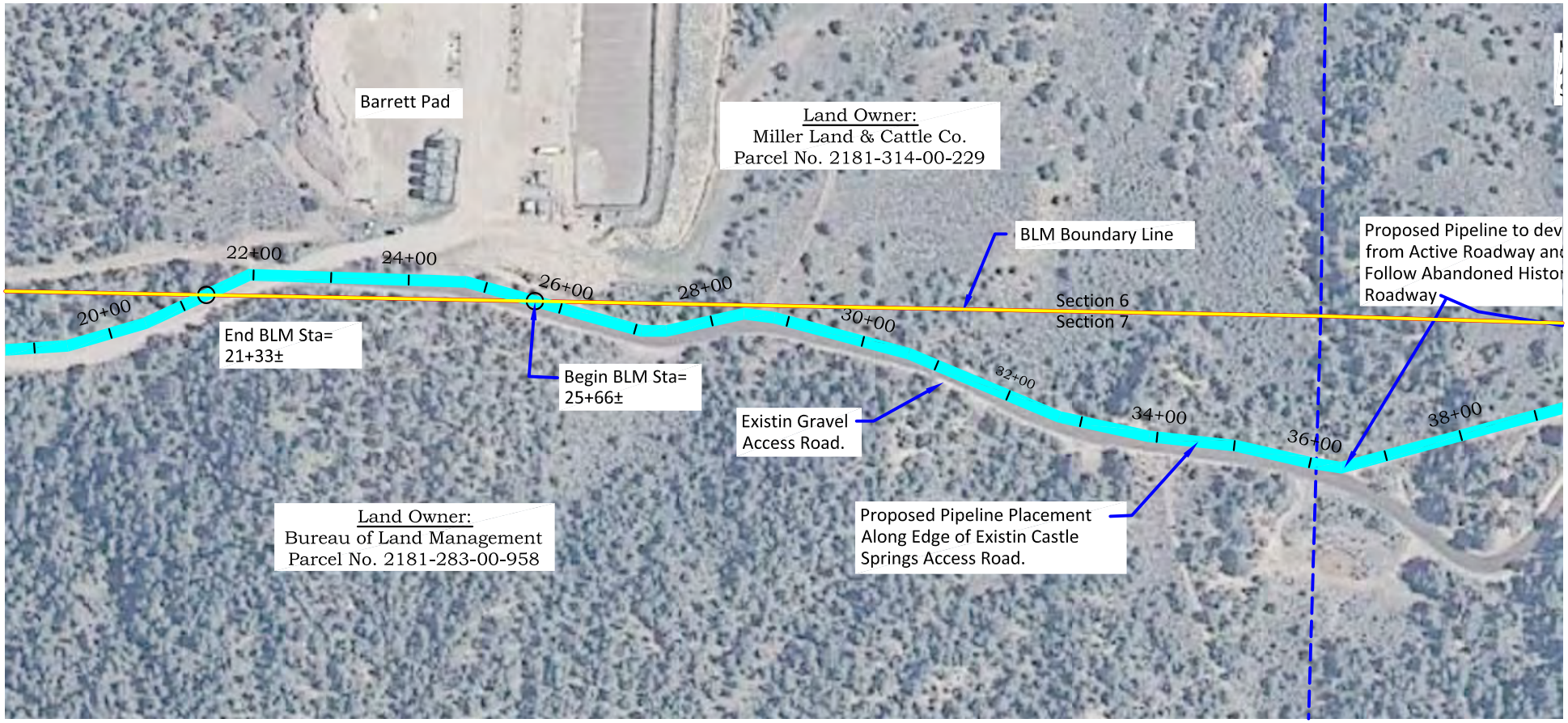
River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: RVS 06001-41	
Field Date: 04-08-14	**Scale:** 1"= 200'
Date: 04-09-14	**Sheet:** 2 of 6

Ursa OPERATING COMPANY

Pipeline Alignment Plan

Castle Springs Federal Temporary Water Line
From County Road 313 To Castle Springs T Pad
Situated in Sections 6, 7 and 8
Township 7 South, Range 91 West of the 6th P.M.



NORTH

100' 0' 200'

Graphic Scale in Feet
1"= 200'

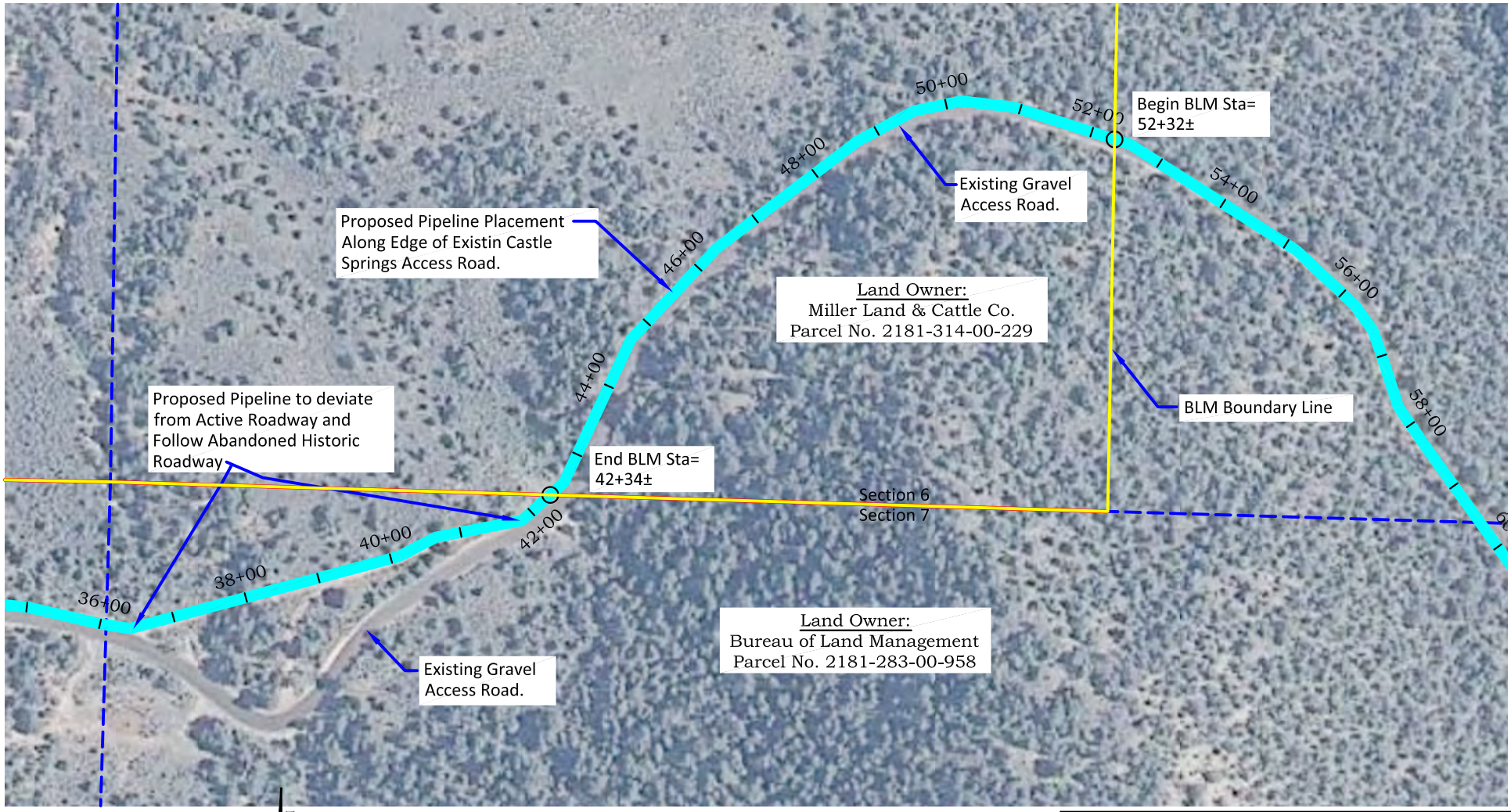
River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: RVS 06001-41	
Field Date: 04-08-14	**Scale:** 1"= 200'
Date: 04-14-14	**Sheet:** 3 of 6

Ursa OPERATING COMPANY

Pipeline Alignment Plan

Castle Springs Federal Temporary Water Line
From County Road 313 To Castle Springs T Pad
Situated in Sections 6, 7 and 8
Township 7 South, Range 91 West of the 6th P.M.



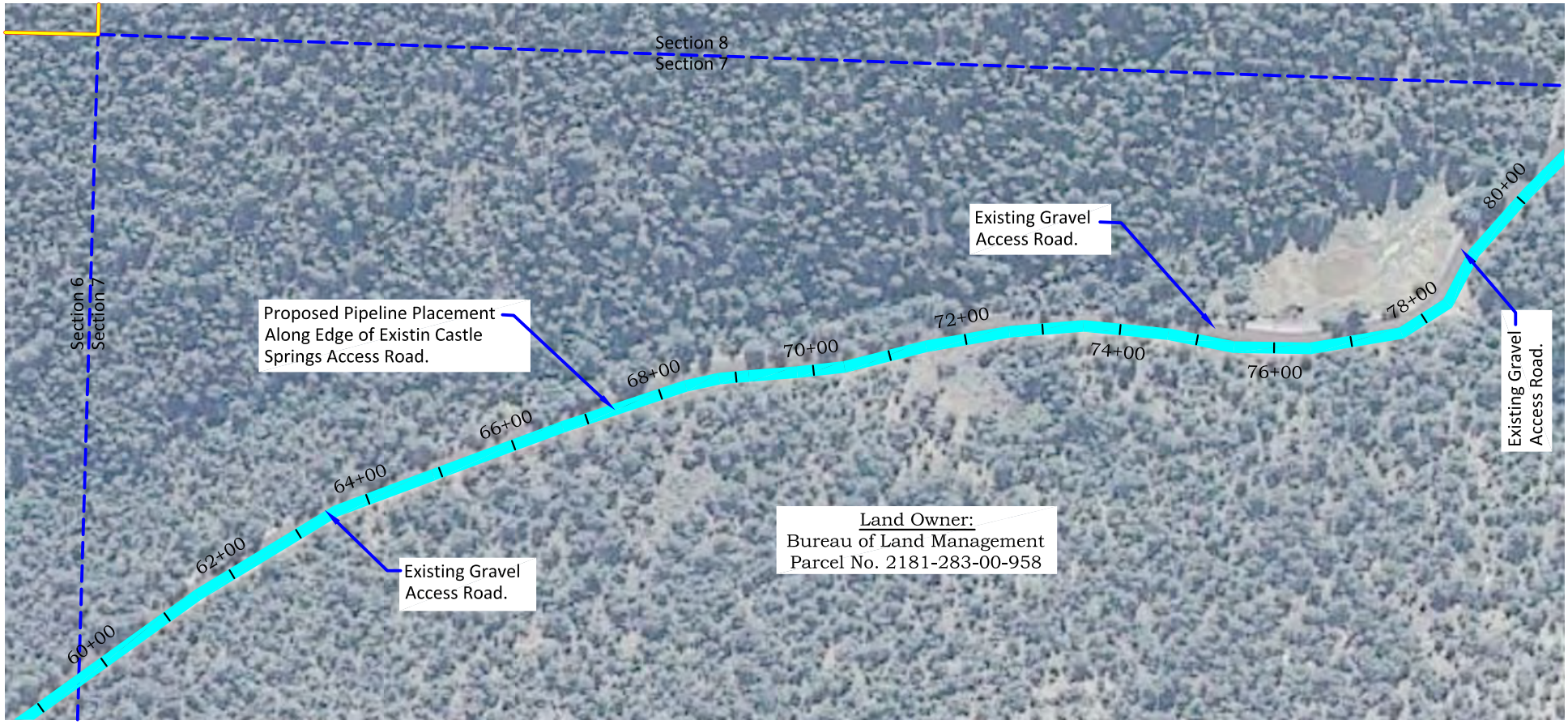
River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: RVS 06001-41	
Field Date: 04-08-14	**Scale:** 1"= 200'
Date: 04-14-14	**Sheet:** 4 of 6

Ursa OPERATING COMPANY

Pipeline Alignment Plan

Castle Springs Federal Temporary Water Line
From County Road 313 To Castle Springs T Pad
Situated in Sections 6, 7 and 8
Township 7 South, Range 91 West of the 6th P.M.



NORTH

100' 0' 200'

Graphic Scale in Feet
1"= 200'

River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: RVS 06001-41	
Field Date: 04-08-14	**Scale:** 1"= 200'
Date: 04-14-14	**Sheet:** 5 of 6

Ursa OPERATING COMPANY

Pipeline Alignment Plan

Castle Springs Federal Temporary Water Line
From County Road 313 To Castle Springs T Pad
Situated in Sections 6, 7 and 8
Township 7 South, Range 91 West of the 6th P.M.

NORTH

100' 0' 200'

Graphic Scale in Feet
1"= 200'

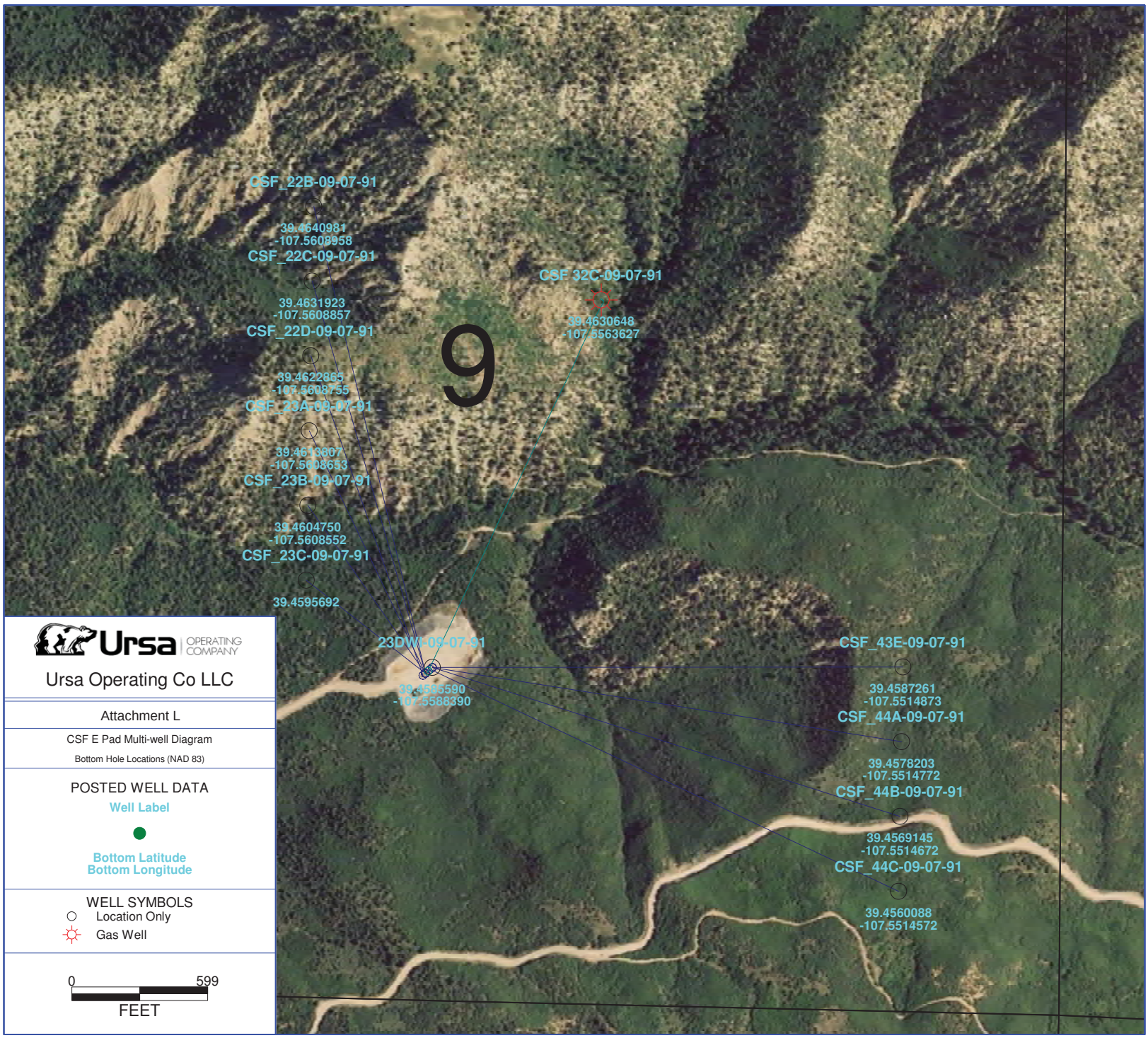
River Valley Survey, Inc.
110 East 3rd. Street, Suite 213
Rifle, Colorado 81650
Ph: 970-379-7846

Project: RVS 06001-41	
Field Date: 04-08-14	**Scale:** 1"= 200'
Date: 04-14-14	**Sheet:** 6 of 6

Ursa OPERATING COMPANY

Pipeline Alignment Plan

Castle Springs Federal Temporary Water Line
From County Road 313 To Castle Springs T Pad
Situated in Sections 6, 7 and 8
Township 7 South, Range 91 West of the 6th P.M.



PETRA 1/22/2014 2:45:05 PM

Castle Springs Federal E Pad
Attachment M
Best Management Practices

BACKGROUND

- Surface ownership for this location is under the jurisdiction of the Bureau and Land Management (BLM) and is therefore subject to Federal regulations related to surface protection and mitigation in accordance with the BLM Resource Management Plan and site-specific NEPA documents.
- This location is constructed and producing gas and is subject to the BMPs and COAs in the previously approved Form 2A.
- No new additional surface disturbance will occur. The addition of wells to the Facility Layout Diagram is therefore the focus of the BMPs described herein.
- The need for BLM meetings and site visits prior to approval of the Federal location/pad and well permits are subject to BLM discretion under their regulations.

GENERAL – PLANNING

- Prior to initiation of the COGCC Form 2A and BLM permitting processes, Ursa held internal meetings and/or onsites are held to determine the feasibility of the location, and topographic constraints, proximity to building units, potential public and environmental concerns including surface waters, traffic/haul routes, 317B applicability, wildlife RSOs and SWH areas, noise potential, soil stability, and environmentally sensitive areas, plants, and wildlife. All information that may affect the location is documented as appropriate in Ursa's "Site Assessment Checklist / Map. A copy of these internal practices was provided to the COGCC at the Setback Training on August 30, 2013 held in Grand Junction.
- Upon approval of the Form 2A, Ursa will hold Pre-Construction, Pre-Spud, Pre-Completions and Pre-Production meetings with contractors performing work at the location, as applicable to the proposed activity. As a BMP, Ursa has developed checklists for these meetings to review COAs, NTOs and related issues.
- Traffic and Public Safety – Ursa developed a site-specific Emergency Response Plan and Haul Route Map which is communicated to local emergency response agencies and stakeholders, as well as contractors performing work at the location.

GENERAL - COMMUNITY OUTREACH AND NOTIFICATIONS

- Ursa has notified the BLM of intended plans as the surface ownership is under Federal jurisdiction. BLM has waived all COGCC notifications to include Pre-application notifications, statutory notifications, MIRU notifications and construction, drilling and completions notifications related to Federal surface, as they are intimately involved in with all phases of permitting the location and associated wells.
- Ursa routinely communicates proposed plans and operations schedules to stakeholders to through Community Counts, the GARCO Energy Advisory Board, and others. In addition, periodic stakeholder meetings are held with landowners and affected parties.
- Communication with Kirby Wynn and municipal LGDs are also held routinely in addition to communication required by COGCC regulations.

CONSTRUCTION AND SITE STABILIZATION

- The location is already constructed and there will be no further surface disturbance. Use of the existing location will eliminate the need for an additional well pad and access roads; hence a reduction in surface disturbance, traffic, and impacts to the environment and wildlife habitat.
- The BMPs below entitled "Environmental Stewardship and Compliance" provided more detailed information regarding environmental protection applicable to construction and site stabilization activities.
- For safety purposes, the location and site layout has been designed to accommodate all operations within the limits of disturbance while meeting Federal and state safety regulations, including required buffers and distances between operating components and combustion sources.

DRILLING

- Directional / horizontal drilling will be implemented to avoid the need for additional well pads; reducing potential environmental impacts to include habitat loss and fragmentation, noise, traffic concerns, and related impacts to air, land and water.
- The Castle Springs T Pad and Castle Springs Compressor Station would be used as support locations to accommodate activities that cannot be accommodated on the Castle Springs E pad itself. Such activities include mob/de-mob locations and parking, as well as rig moves.
- The BMPs below entitled "Environmental Stewardship and Compliance" provided more detailed information regarding environmental protection applicable to drilling activities.

COMPLETIONS

- Completions at the location will be supported by staging temporary tank batteries / water pumping stations at adjacent existing locations also on BLM surface managed property. The pad locations selected are permitted by both the COGCC and BLM as oil and gas locations.
- For the Castle Springs E completions, it is anticipated that the following Castle Springs locations may be used for temporary tank batteries: Castle Springs Pads B, D, T, Q, W, and the Castle Springs Compressor Station. This will eliminate the need for additional surface disturbance. Water will be transferred between the locations via buried waterline. If needed, a temporary surface line may also be used. Ursa's standards for the operation of such temporary tank batteries is provided in Attachment N.
- The BMPs below entitled "Environmental Stewardship and Compliance" provided more detailed information regarding environmental protection applicable to completion activities.

PRODUCTION

- All production equipment to include separators and tanks will be placed onsite in accordance with the Facility Layout Diagram and appropriate secondary containment.
- The BMPs below entitled "Environmental Stewardship and Compliance" provided more detailed information regarding environmental protection applicable to production activities.

ENVIRONMENTAL STEWARDSHIP AND COMPLIANCE

OPERATIONS (GENERAL/ALL OPERATIONS PHASES)

- AGENCY INSPECTIONS AND CORRECTIVE ACTIONS – Ursa will implement corrective actions necessary in response to all agency inspections in a timely manner. Inspections resulting in the potential

for immediate or significant environmental impacts will be addressed immediately, subject to safety and weather considerations.

- AIR PERMITTING AND COMPLIANCE – Ursa will comply with CDPHE regulations regarding air permitting, compliance monitoring and inspections and reporting. All air sources will be assigned AIRS ID numbers and tracked for compliance and reporting purposes. In addition, Ursa is required to track, monitor and report Greenhouse Gas (GHG) emissions to EPA.
- CHEMICAL & MATERIAL HANDLING – All materials and chemicals will be managed to minimize environmental contamination in accordance with MSDS sheets and EPA, COGCC and CDPHE regulations. Materials and chemicals that are not a waste may be reused or recycled.
- NOXIOUS WEEDS – Weeds will be managed in accordance with Ursa's Noxious Weed plan; to include up to three treatments per year depending upon the species being managed and mapping as needed, throughout the life cycle of the location (construction – final reclamation).
- SPILLS / INCIDENTS – Spill prevention and response are addressed in Ursa's Spill Prevention and Management Plan. This includes training of employees and contractors personnel on at least an annual basis. Spills response includes notifications, reporting, response actions, remediation and corrective actions. The spill criteria in Ursa's plan requires that waste be properly classified as E&P or non-E&P wastes. For E&P waste, all spills greater than 1 barrel the COGCC will be reported to the COGCC using a Form 19. Should remediation be required, a Form 27 will be submitted as well. Spills related to non-E&P waste will be managed in accordance with CDPHE and EPA regulations depending on the volume spilled.
- WASTE - The location will be managed in accordance with Ursa's Waste Management Plan as summarized in Attachment J (1) of this application. Ursa's Waste Management Plan complies with and incorporates COGCC 900 rules regarding E&P waste, and CDPHE rules regarding hazardous wastes. The plan minimizes the potential for any exploration and production wastes, chemicals, fluids, etc. from leaving the location, including berms, barriers, and use of spill control materials.
- WILDLIFE - A Wildlife Mitigation Plan (March 24, 2010) is in place that was agreed to by Ursa (previously Antero). The plan allows for 90+ well pads. Currently, Ursa has 62 well pads. Ursa is current on all obligations under the plan.

CONSTRUCTION OPERATIONS

- DUST CONTROL - The pad and access road will be graveled to reduce fugitive dust and maintained as required by COGCC rules. In addition, water and other dust suppressants are used as required, dependent upon the level of activity, moisture conditions, etc. throughout all phases of operations
- RECLAMATION (Temporary and Interim) - The site will stabilized using seed mixes and materials compatible with soil types, moisture, and local climate conditions as specified by the appropriate agency and/or in landowner surface use agreements, or locally acceptable industry practices. Temporary seeding / stabilizations will be completed during optimum conditions to achieve best results for plant growth. Once all wells at the location are drilled, Ursa will complete interim reclamation in accordance with COGCC 1000 rules; and stabilize/seed the location as soon as practical subject to seasonal/weather constraints.
- STORMWATER - The location will be constructed in accordance with the CDPHE AND COGCC stormwater regulations as implemented by Ursa's Stormwater Management Plan, so as to control sediment run-off. Stormwater BMPs will also serve as secondary or tertiary containment in the event of a spill. Site specific plans (i.e. diagrams) will be developed and inspected against at the frequency

required by CDPHE regulations, to include 14 day, 30 day, and major storm event inspections until 70% reclamation is achieved. Corrective actions will be tracked and implemented. COGCC inspections will be conducted through 80% interim reclamation and annually thereafter. These inspections are also tracked and corrective actions implemented. Native soils will be used whenever available to construct stormwater BMPs, supplemented by non-native materials based on site-specific conditions.

- WATER WELL SAMPLING (COGCC Rule 609) – No water wells exist within ½ mile of the locations under this Form 2A.

DRILLING OPERATIONS

- WATER SAMPLING (Public Water Supply) – the location is not located within a COGCC 317B designated area.

COMPLETIONS OPERATIONS

- AIR & ODORS - Well completions will utilize flowback completion technologies and/or flares to reduce odors from plug drillout, and reduce venting of salable and non-salable gas
- CHEMICAL USE – All chemicals used will be tracked and reported in accordance with COGCC rules and submitted through FracFocus within 120 days of initiating well stimulation.
- WASTE MANAGEMENT OF WATER – Flowback water used for well completions will be recycled and treated to the maximum extent practical at the location. Water that can't be recycled will be injected through the use of wells approved by COGCC and Garfield County, or transported via truck or pipeline to the COGCC and Garfield County approved Wasatch E&P Facility.
- WATER LINES – Buried water pipeline infrastructure will be used to transport flowback water where water lines exist in close proximity to the well pad ad described above.
- WASTE - No stimulation or flowback pits will be constructed.

PRODUCTION OPERATIONS

- AIR & ODORS - Combustor controls will be used to mitigate odors from production tanks. Ursa will perform inspections on at least a monthly basis to ensure potential emissions sources are properly managed. In addition, Ursa's pumper crew inspects each location on a daily basis.
- REMOTE MONITORING - Remote monitoring will be used to reduce truck traffic, fugitive dust to the extent practical.
- VISUAL IMPACTS - Above-ground facilities (e.g. production tanks) will be managed to minimize visual effects (e.g. painted to blend with environment)
- WILDLIFE – All separators/dehydrators and heater –treater equipment are outfitted with bird cones.
- WATER RECYCLING – Produced water used for well completions will be recycled and treated to the maximum extent practical. Water that can't be recycled will be injected through the use of wells approved by COGCC and Garfield County, or transported via truck or pipeline to the COGCC and Garfield County approved Wasatch E&P Facility.

Date: _____

Location: _____

TEMPORARY TANK FARM - Operations Protocol (July 2013-Revised December 2013): **Attachment N**

Pre-Startup Checklist:

- **Complete JSA. Attach this completed checklist to the JSA.**
- **Perform integrity inspection of all poly lines and valves. Repair any leaks prior to start-up.**
- **Visually verify integrity of berm. Notify contacts below if berm is compromised in any way.**
- **Ensure all tank hatches are closed, unless physically monitoring tank(s) being filled.**
- **Ensure all equipment (pumps, filters, etc.) is free from leaks, and is in proper working order.**
- **Verify emergency spill kit is readily available.**
- **Make sure all poly hook ups are properly supported to prevent damage to welds.**
- **Ensure all tanks are properly labeled, ensure carbon blankets are in place.**
- **Ensure location is free of trash and debris.**

In Service Daily Checklist:

- **Complete JSA. Attach this completed checklist to the JSA.**
- **Perform integrity inspection of all poly lines and valves at shift change.**
- **Visually verify integrity of berm. Notify contacts below if berm is compromised in any way.**
- **Ensure all tank hatches are closed, unless physically monitoring tank(s) being filled.**
- **Ensure all equipment (pumps, filters, etc.) is free from leaks, and is in proper working order.**
- **Verify emergency spill kit is readily available.**
- **Verify all poly hook ups are properly supported to prevent damage to welds.**
- **Ensure all tanks are properly labeled. Ensure carbon blankets are in place.**
- **Ensure location is free of trash and debris. Remove stormwater in a timely manner.**
- **Report any and all fluid releases immediately.**
- **Verify no fluids have escaped primary, secondary or tertiary containment.**
- **Color cut tanks to determine oil buildup. Use best known methods to minimize oil on tanks.**

Out of Service:

- **On-duty System Manager to Complete JSA. Attach this completed checklist to the JSA.**
- **ENSURE ALL VALVES ON SITE ARE IN CLOSED POSITION. All tanks MUST be isolated.**
- **BLIND FLANGE all return / supply lines AND manifolds when no personnel are on-site. Do NOT trust valves to hold fluid pressure.**
- **Visually verify integrity of berm. Notify contacts below if berm is compromised in any way.**
- **Ensure all tank hatches are closed.**
- **Verify emergency spill kit is readily available.**
- **Ensure all tanks are properly labeled (OUT – OF – SERVICE). Ensure tanks are cleaned & sanitized.**
- **Ensure location is free of trash and debris.**
- **Report any and all fluid releases immediately.**
- **Verify no fluids have escaped primary or secondary containment.**

Ursa Contacts:

- Luke Greiger: 970-985-2332
- Ralph Tolle: 307-350-5501
- Matt Honeycutt: 970-812-2198
- Pake Younger: 970-260-2423

Emergency Contacts:

IN CASE OF EMERGENCY, CALL 911
URSA 24/7: 1-855-625-9922

Inspection Completed By (Print Name): _____

Ursa OPERATING COMPANY

Castle Springs Federal E Pad
Attachment O
Waste Management Plan

While this plan is not required for this location, as there are no building units within 1000 feet, Ursa is submitting it to clarify waste management practices.

General Information

Ursa Operating Company LLC has developed and implemented a comprehensive waste management plan to address Exploration and Production (E&P) and other wastes related to its operations in the Piceance Basin, Colorado. This plan provides an overview of key points relative to Form 2A approval, based on Ursa's comprehensive plan.

E&P wastes are not regulated (i.e. exempt) as hazardous wastes by the Environmental Protection Agency (EPA) (40 CFR 261) or by the Colorado Oil and Gas Conservation Commission (COGCC). COGCC manages E&P wastes in the State of Colorado. Both agencies publish a list of E&P exempt wastes on their websites. To qualify as an E&P waste, the waste must be generated during the drilling, completions, or production operations. These wastes must be managed (treated, stored, transported and disposed of) in accordance with COGCC, County and municipal regulations, and land use codes and ordinances.

Non-E&P Wastes are those that are not generated as part of Oil and Gas downhole operations, and are generally classified as non-hazardous or hazardous. These wastes must be managed in accordance with Colorado Department of Public Health and Environment (CDPHE) regulations, and County and Local landfill or waste disposal facility requirements.

NOTE: Chemicals used for stimulation and completions are not considered wastes until they are introduced (i.e. used) into the completions phase of operations. However, they must be managed in accordance with EPA, COGCC and CDPHE regulations, including posting of Material Safety Data sheets (MSDS). The MSDS provides chemical information, and safety and environmental actions to be taken in the event of an exposure or spill.

Construction Wastes

No E&P wastes are generated during construction activities. Wastes primarily generated are typical of most household or commercial trash that can be disposed of at local landfills. Equipment maintenance and servicing wastes (oil, hydraulic fluids, etc.) are not allowed to be managed on Ursa's locations, and must be recycled or disposed of in accordance with CDPHE regulations.

Ursa OPERATING COMPANY

Drilling Wastes

Conductor pipe is typically installed prior to drilling to support sidewalls to allow drilling. This material removed is essentially soil and is not a waste. Drill Cuttings (aka muds) are the primary E&P waste generated during drilling (aka spudding), which consists of drilling a surface hole, and production hole. Drilling is typically done using air and water (surface hole) and green (synthetic non-oil based) mud for the production hole. MSDS sheets are required to be maintained for any additives used in the drilling process.

Cuttings Sampling and Stabilization

Both surface and production hole drill cuttings will be generated at each well pad. Raw cuttings (not stabilized) will be sampled and profiled at the location of generation in accordance with Ursa's Waste Management Plan. Once the raw cuttings are sampled they will be stabilized (absorption / removing liquids) in a temporary area on the well pad. The cuttings will be stabilized using either native soils (preferable) or a commercially available inert adsorbent (sawdust, EZ Stabil, etc.). In some cases, relocation of cuttings to another location during drilling would be required due to the small pad size previously permitting by Antero Resources (previous operator). If the volume of cuttings on the well pad during drilling exceeds the capacity of the on-site temporary area, limits operational capabilities to complete drilling, or creates safety concerns, a Sundry (Form 4) will be submitted for approval to relocate the cuttings to another location pending the results of sampling analytical results.

Cuttings Management and Disposal

If sampling results for cuttings meet 910-1 standards they will be treated as soil and beneficially reused on location or at another location as approved under a Sundry (Form 4). If cuttings don't meet standards, then Ursa will implement one of two options: continued mixing to meet 910-1 standards for beneficial reuse, or transport to an authorized waste facility in accordance with Federal and State (COGCC / CDPHE) regulations, including manifesting. Final decisions will be based on site-specific operations logistics.

Drilling Fluid Management

Drilling fluid that is no longer required at a pad will be re-used at the next pad that the drilling rig moves to, in most cases. More than one drilling rig may be in use, and in those cases, excess drilling fluid may be shared amongst other drilling rigs that require additional drilling fluid. If the fluid properties are no longer acceptable, the solids will be removed from the fluid. Those solids will be treated as drill cuttings, per the previous paragraph. The remaining clean fluid will be recycled and used in the drilling operation at the next pad.

Ursa OPERATING COMPANY

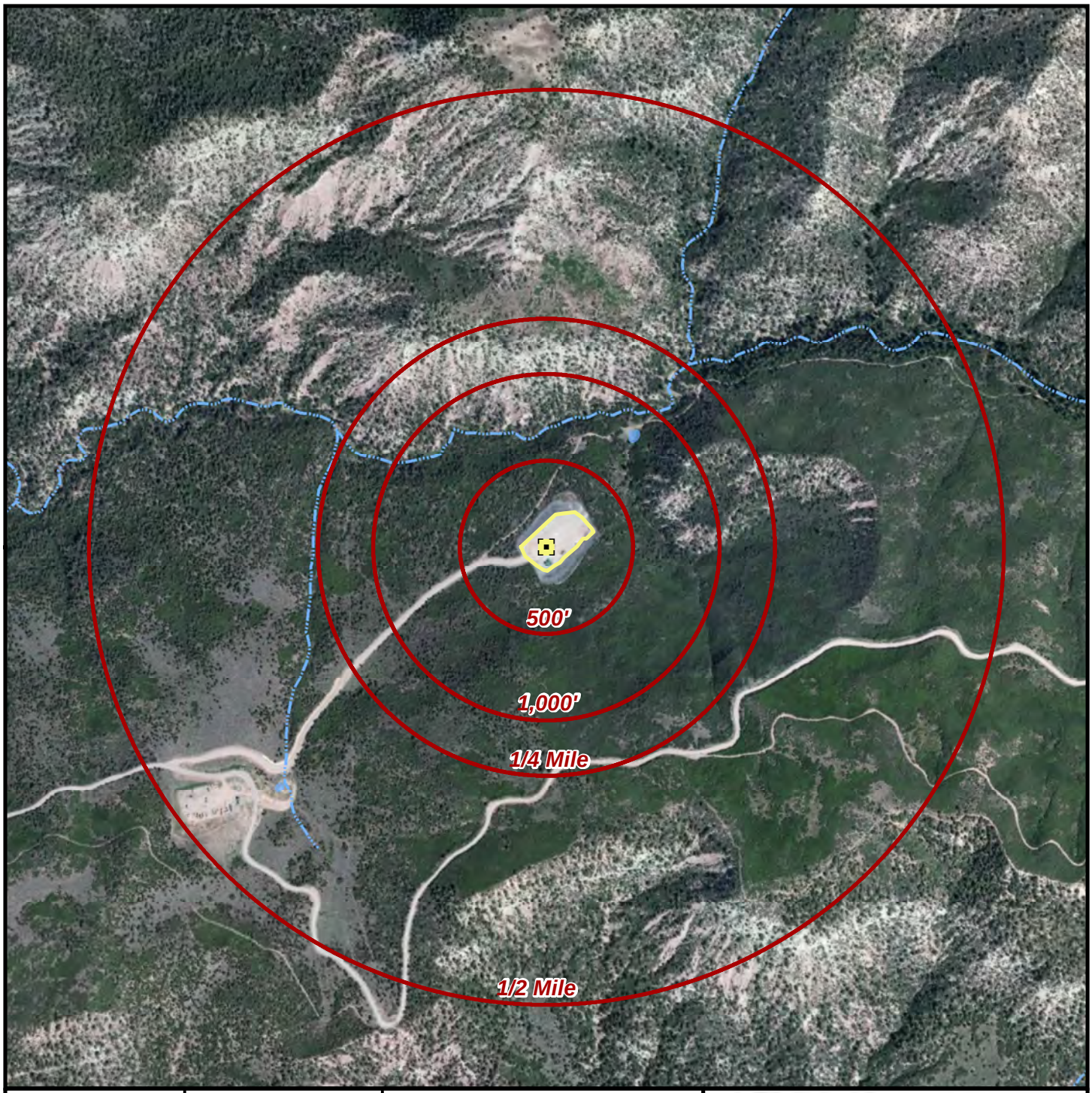
Completions

During completions, a mixture of approximately 99.5 % water (fresh or recycled) and propants will be in injected into the production zone to maintain the flow of gas and oil from the wellbore. This water returned to the surface is referred to as flowback, which is the primary E&P waste. This waste is then treated/recycled/reused for additional stimulation at other locations. Most flowback is treated at a COGCC approved facility under their Section 900 Rules. MSDS sheets are required to be maintained for any additives used in the stimulation process. In addition, all additives used are required to be reported to the COGCC within 120 days of completion activities. All tanks are labeled in accordance with Federal and COGCC regulations.

Production

Once a well is drilled and completed, separators at each location separate out the produced water and condensate from the natural gas, prior to the gas being transported by underground pipelines to a processing facility. Both produced water and condensate tanks are installed at each well pad to collect water produced from the production formation, as well as condensate. Produced water and Condensate are classified as the primary E&P wastes by the COGCC and EPA. Produced water that can be recycled is treated at Ursa's permitted Wasatch Facility in accordance with COGCC 900 rules. This water can then be recycled/reused to minimize the need for additional fresh water used for completion activities. Produced water that cannot be recycled is disposed of in Underground Injection Control (UIC) wells that are permitted by the COGCC.

Condensate is a saleable product and is typically collected by trucks for transport to a processing facility. Production tanks are managed in accordance with COGCC and EPA regulations regarding primary and secondary containment to minimize the potential for a spill or release to the environment. All tanks are labeled in accordance with Federal and COGCC regulations, and are inspected daily, monthly and quarterly; also in accordance with Ursa Best Management Practices, and EPA, COGCC and local fire district regulations.



Wildlife

CODE	WILDLIFE HABITAT

Hydrography

- Ditch
- Intermittent
- Perennial Stream
- Waterbody
- County Watershed
- 317B Buffer

Notes / Comments:

*Attachment P - Not within a sensitive wildlife habitat or a restricted surface occupancy area

**Attachment S - No PCN Required to Army Corps of Engineers

Ursa Operating Company

Castle Springs Federal E Pad

39.458481 -107.559065

Attachment P, Q & S

Surface Restrictions

- Well Pad
- Proposed Development
- County Roads
- Local Roads

0 500 1,000 Feet

HCSI HSE Compliance Solutions, Inc.

N

Author: M Spinelli

Revision: 0

Date: 2/19/2014