



Ursa Operating Company

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

FAC# 466144
Doc# 1949430
Date: 07/10/2019

Index

Boies Ranch Solidification Area

908.b Permit requirements

Narrative

- (1) The name, address, phone and fax number of the operator, and a designated contact person.
- (2) The name, address and phone number of the surface owner of the site, if not the operator, and the written authorization of such surface owner
- (3) The legal description of the site.
- (4) A general topographic, geologic, and hydrologic description of the site, including immediately adjacent land uses, a topographic map of a scale no less than 1:24,000 showing the location, and the average annual precipitation and evaporation rates at the site.

Appendix – A

- (5) **Centralized facility siting requirements.**
 - A. A site plan
 - B. Scaled drawings
 - C. The facility access
 - D. Facilities fire lane, perimeter fence and buffer zone drawing
 - E. Surface water diversion structures

Appendix – B

- (6) **Waste profile.**

Appendix – C

- (7) **Facility design and engineering info**
 - A. Geologic data
 - B. Hydrologic data
 - C. Engineering data
 - D. Storm –Water Management Plan (Site Specific)

Appendix – D

- (8) **Operating plan**
 - A. Soil amendments description
 - B. Dust and moisture control;
 - C. Sampling;
 - D. Inspection and maintenance;
 - E. Emergency response;

- F. Record-keeping;
- G. Site security;
- H. Hours of operation;
- I. Noise and odor mitigation
- J. Final disposition of waste

Appendix – E

(9) **Ground water monitoring.**

- A. Water Wells Sampling
- B. Site-specific monitoring wells

Appendix – F

(10) **Surface water monitoring**

Appendix – G

(11) **Contingency plan**

- A. EERP
- B. Permit approval
- C. Financial assurance
- D. Facility modifications
- E. Annual permit review
- F. Closure, preliminary and final

Appendix – H – RBC Special Use Building Permit



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Narrative

Rule 908.b

Boies Ranch

Solidification Area



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

COGCC FORM 28

Boies Ranch Solidification Area

URSA OPERATING COMPANY LLC (Operator Number 10447)

This supplement to the COGCC Form 28 for Ursa Operating Company LLC (Ursa) proposed Boies Ranch Solidification Area (BRSA) provides additional information required by COGCC Rules 704 and 908. This information is identified in the following sections by reference to the applicable section of Rules 704 and 908.

Ursa is proposing to construct the BRSA to increase efficiencies for handling waste streams such as drill cuttings, tank bottoms and spill materials to support their operations in the Piceance Creek area. The original project area was planned to be part of the Boies Ranch produced water pit build of 2018. The pit build was halted by Ursa due to changes in market conditions. Several locations were reviewed as potential alternatives including the old ExxonMobil man camp on Black Sulphur Creek but these locations each had either closer proximity to the creek or shallower groundwater depths making them less attractive.

Rule 704.

An estimate of the cost for proper reclamation, closure and abandonment of the proposed facility is provided with this submittal as an attachment (Appendix G - Bonding Justification). Prior to commencing construction of the facility, Ursa will provide the required financial assurance to the COGCC.

Rule 908.a.

The proposed facility is a non-commercial, centralized E&P waste management facility for the treatment, recycling, and beneficial reuse of E&P waste and will serve only Ursa's operations in Rio Blanco County, Colorado

Rule 908.b.(1)

This facility will be operated by Ursa. The information required by this rule is as follows:

Operator Name: Ursa Operating Company LLC

Address: 792 Buckhorn Dr,

Rifle, CO 81650

Phone: (970) 329-4367

Fax: (970) 625-9929

Contact Person: Dwayne Knudson



Ursa Operating Company LLC

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Rule 908.b.(2)

Ursa and XTO Energy split surface ownership at this location; therefore, no surface use agreement is required. Ursa has kept XTO in the loop on this permit and they are aware and have no objections to this.

Ursa Operating Company LLC
792 Buckhorn Drive
Rifle, CO 81650

ExxonMobil Oil Corporation (XTO)
P.O. Box 53
Houston, TX 77001-0053

Rule 908.b.(3)

The BRSA per the Rio Blanco County Assessors' database, is located in the NW¼, NW¼ of Section 29, Township 2 South, Range 97 West, 6th P.M. The subject 1-acre property is part of a larger parcel co-owned by Ursa and XTO.

Rule 908.b.(4)

A topographic map of the location is provided along with the geology and hydrology of the site (Appendix C- Location Drawings & 1000 Ft. Hydrology Assessment /Geology Map). The site was previously disturbed around 2010. The rock and soils in this area were used by ExxonMobil at the time as fill material mostly for the access roads. There has been very little hydrological activity associated with the facility. All stormwater will be managed according to Ursa's Storm water management plan and site-specific BMP's. Adjacent land uses have been historically used for agricultural grazing. The average annual precipitation and evaporation rates are provided in (Attached - Climate Info.).

Adjacent land uses in the surrounding areas include mountains/hills and valleys. The mountain/hill areas are the predominant feature for the adjacent lands and are used for rangeland. The valley bottoms are designated ag/meadow/land by Rio Blanco County.

Rule 908.b.(5).A.

The site plan identifies all of the features of the facility, including all proposed equipment. Construction and drainage details are also provided in the grading plans and drainage plans. Drainage details have been prepared and are in accordance with COGCC requirements for surface flows. Refer to (Appendix A – Location Drawings).



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Rule 908.b.(5).B.

A Location Drawing is included in this submittal see (Appendix A – Location Drawings). The distance at the surface to the nearest section/property line is approximately 365 feet to the north section line 20 and approximately feet 148 the east property line (BLM).

Rule 908.b.(5).C.

Facility will be fenced to control access. The location will only be manned as needed for operational needs (Appendix A – Location Drawings).

Rule 908.b.(5).D.

A 10-foot buffer zone will surrounding the facility. A 10-foot fire lane will also surround the entire facility (Appendix A – Location Drawings).

Rule 908.b.(5).E.

The grading and drainage plans are included in this submittal and provide details of the surface-water diversion structures designed to accommodate the precipitation events prescribed by this rule (Appendix C)

Rule 908.b.(6).

Analytical data results for the anticipated waste streams received at the facility will be on a case by case basis. (Appendix B – Waste Profile). Waste received at the facility will be included in Ursa's annual 908.b(10) facility report to the Director of the COGCC.

Rule 908.b.(7).

Location drawings are included in (Appendix A – Location Drawings). The facility has been designed with features to prevent spills or leaks from impacting the ground water and adjacent surface waters. Ursa's operational policies and procedures for this facility are designed to minimize risk to the environment and accommodate rapid response in the event of an accidental spill or release of fluids. This facility does not have a pit.

Rule 908.b.(7).A.

A description of the existing soil geological information and a map on geological and hydrological conditions are provided. (Appendix C - Geology Map)

Type and Thickness of Unconsolidated Units and Soils

This location is primarily underlain by soils of the Hesperus-Empedrado, moist Pagoda complex. This unit is found on mountain slopes and benches with 5 to 35 percent slopes. The Hesperus soils are found on the steeper mountainsides and are deep and well drained, formed in residuum derived predominantly from sandstone and shale. The surface layer of the Hesperus is typically about 7 inches thick and consists of a very dark gray to grayish brown loam. The subsoil is a brown loam, about 17 inches thick. The upper part of the substratum is a dark yellowish brown



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clay loam about 13 inches thick, and the lower part of the substratum is a brown clay loam to an approximate depth of 60 inches. Permeability in the Hesperus soils is moderately slow and the available water capacity is high.

The Empedrado is found on benches and in less sloping areas, but is also deep, well drained, and formed in residuum and colluvium derived predominantly from interbedded sandstone and shale. The surface layer of the Empedrado is typically about 10 inches thick and consists of a dark gray brown loam, and the upper part of the subsoil is a dark yellowish brown clay loam approximately 11 inches thick. The next part of the subsoil is a light olive brown gravelly, sandy, clay loam about 7 inches thick. The lowest part of the subsoil to an approximate depth of 60 inches is a yellowish brown to pale brown loam. Permeability and available water capacity in the Empedrado soils are both moderate.

The Pagoda soils are found on benches and mountainsides, are also deep and well drained, but formed in colluvium derived predominantly from shale. The surface layer is typically a dark grayish brown clay loam approximately 6 inches thick. The upper part of the subsoil is a dark brown clay loam about 11 inches thick that is underlain by a brown clay loam that is about 23 inches thick. The lower part of the subsoil to a depth of approximately 60 inches is a brown clay loam. Permeability in the Pagoda soils is slow and the available water capacity is moderate.

The Hesperus-Empedrado, moist Pagoda complex soils are found in areas that are not considered prime farmland. They are lightly acidic to moderately alkaline and the depth to bedrock typically ranges from 40 inches to 60 inches below ground surface.

Type and Thickness of Consolidated Bedrock

The location of the proposed facility is underlain by bedrock of the Tertiary age Wasatch Formation, including the lower Fort Union Equivalent at the base. The Wasatch Formation is divided into an upper section that ranges from 400 feet to 1,600 feet thick, a middle section that ranges from 0 to 400 feet thick, and a lower section that ranges from 400 feet to 900 feet thick. The upper section consists of variegated shale and clay and some lenticular sandstone, conglomerate, and limestone beds. The middle section consists of massive fine- to coarse-grained sandstone that is gray to brown in color, in part conglomeratic, and forms conspicuous ledges where exposed in outcrop. The lower section is composed of variegated shale and clay and some lenticular beds of sandstone, conglomerate, and limestone.

Rule 908.b.(7).B.

A map of surface water features within two miles of the proposed facility is provided in (Appendix C – Hydrology Assessment Map). As noted on this figure, the closest surface water is Fawn Creek located approximately 600 feet north/west of the facility. This proposed facility is not within an area identified as a flood hazard by FEMA. There are no surface waters subject to COGCC Rule 317B located in the vicinity of the proposed project. Upon approval, three monitoring wells will be installed and sampled. Monitoring wells will include one upgradient and two downgradient (Appendix E – Proposed monitoring well locations). Data from these monitoring wells will be reported in the annual report to the COGCC. Division of water



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resources online mapping service indicates that there are several registered wells within a one mile radius of the proposed facility.

The location is not within an identified floodplain and is located at an elevation well above the nearest surface waters. An assessment of potential impacts to wetlands and waters of the United States (US) according to Army Corps of Engineering (ACOE) standards found that the proposed project will not have any impacts to wetlands, or adversely affect water quality in any nearby waterways.

The BRSA facility has been designed with features that significantly reduce the potential for the facility to impact nearby surface and ground water. The proposed area will have a minimum 60 mil synthetic liner with appropriate steps taken to protect the liner (road base and/or mirafi).

Ursa does not anticipate impacts to nearby surface and ground water from the facility. Potential impacts are addressed via adherence to the COGCC approved design criteria for liners and operation. Potential impacts are also addressed via implementation of the SWMP document.

Rule 908.b.(7).C.

This proposed facility does not have a pit typically found with an E&P facility. A geotechnical report was not performed for that reason. The site plan for the facility and the grading plan and drainage plan are provided for the facility. The facility will have a liner that will underlay the mixing area will be a minimum of 60 mil impervious synthetic liner (Appendix A – Location Drawings).

The synthetic material used in the liners will be impervious, with high puncture and tear strength, adequate elongation, and resistance to deterioration.

Rule 908.b.(8).

An operating plan is provided and contingency plan for the facility are provided in this submittal. The total approximate volumes of waste will be dependent on operational needs. Monthly waste volumes received at the facility will be included in Ursa's annual 900 Series facility report to the Director.

Ursa's policy is to maintain accessibility to the facility at all times. Updates to the operating plan will be made on an as-needed basis.

Rule 908.b.(9).A.

One upgradient and two downgradient monitoring wells will be installed prior to construction of the BRSA. These wells will be installed, permitted and sampled according to applicable regulations. Sample data will be submitted via sundry or Form 43 to the COGCC (proposed locations are in Appendix E).



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Rule 908.b.(9).B.

As discussed above the Boies ranch solidification facility has been designed with features that reduce the potential for this facility to impact groundwater. In addition to these features, Ursa will upon approval, install monitoring wells around the proposed facility in a pre-determined location.

Rule 908.b.(10).

A baseline sample of existing surface water will be conducted prior to operation of the facility and on an as needed basis thereafter.

Rule 908.b.(11).

A contingency plan for the facility is included in this submittal along with an Emergency Evacuation, Assembly, Accountability and Response Plan (Appendix G).

The Operating Plan addresses all required elements including contingency planning. Ursa's roles and responsibilities are set forth in the Operating Plan. Additional contingency planning details are included in Ursa's Emergency Evacuation, Assembly, Accountability and Response Plan (Appendix D).

Rule 908.c.

No response required.

Rule 908.d.

An estimate of the cost for proper reclamation, closure and abandonment of the proposed facility is provided in (Appendix G - Bond Justification). Prior to commencing construction of the facility, Ursa will provide the required financial assurance to the COGCC.

Rule 908.e.

Throughout the life of the facility, Ursa shall submit proposed modifications to the facility design, operating plan, permit data, or permit conditions to the Director for prior approval.

Rule 908.f.

To facilitate the annual review of this facility by the COGCC, Ursa shall submit an annual report summarizing operations, including the types and volumes of waste actually handled at the facility.

Rule 908.g.

A preliminary plan for reclamation and closure of the facility, as well as a cost estimate to close and reclaim the facility is provided in this submittal.

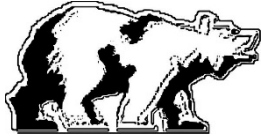


Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Rule 908.h.

This facility does not currently require a Rio Blanco County permit. A copy of the Rio Blanco County Special Use Building Permit is attached as (Appendix H).



Ursa Operating Company LLC

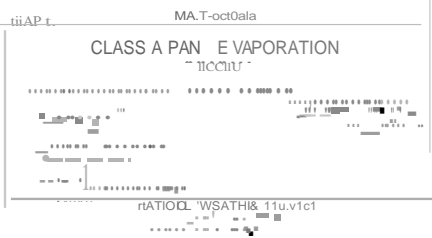
792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Climate Data

Rule 908.b(4)

Boies Ranch Solidification Area

[illegible]



NOAA leo..._1R...NWS 33

1956-1970
1956-1970



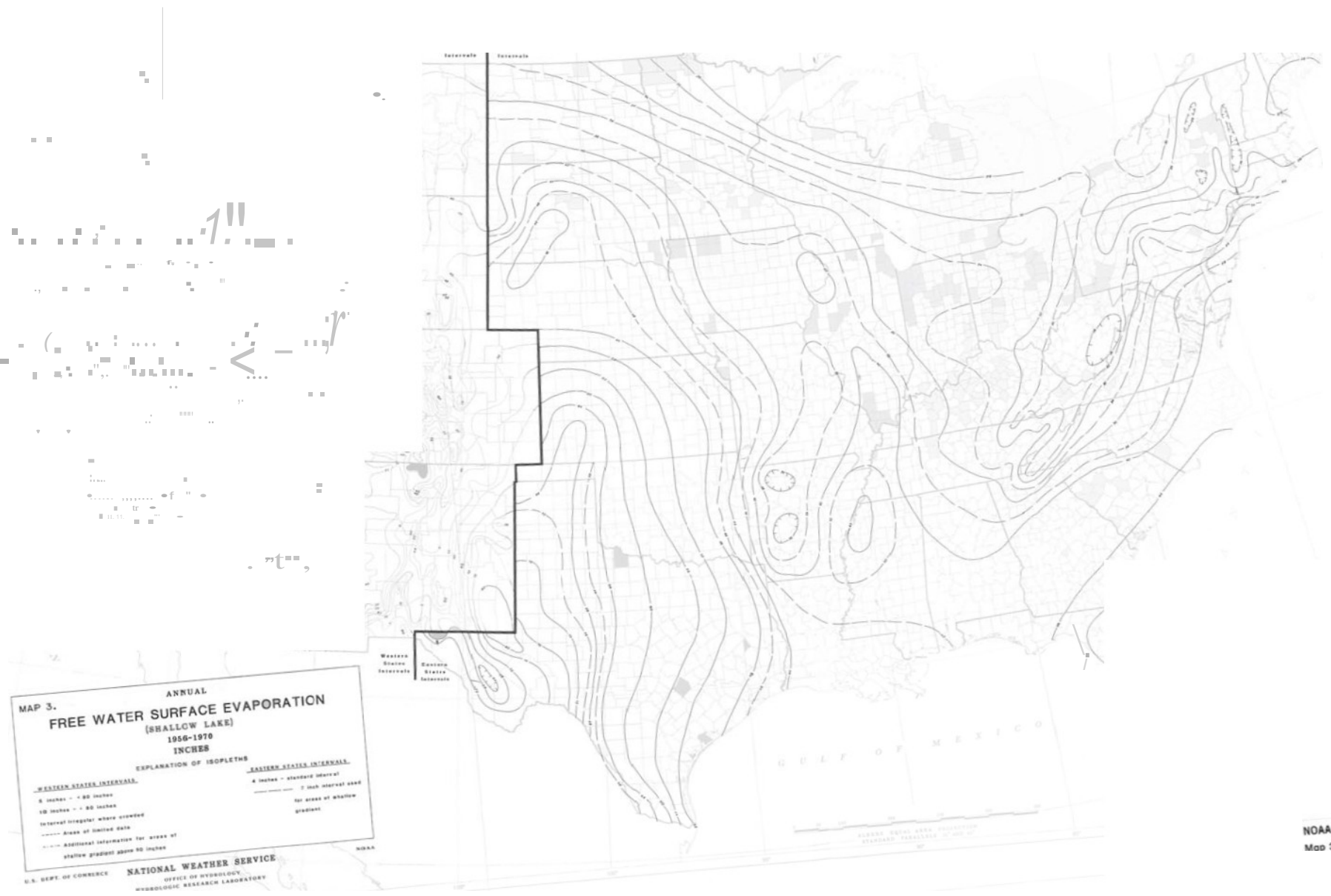
MAP 2.
FREE WATER SURFACE EVAPORATION
(SHALLOW LAKE)
1956-1970
INCHES

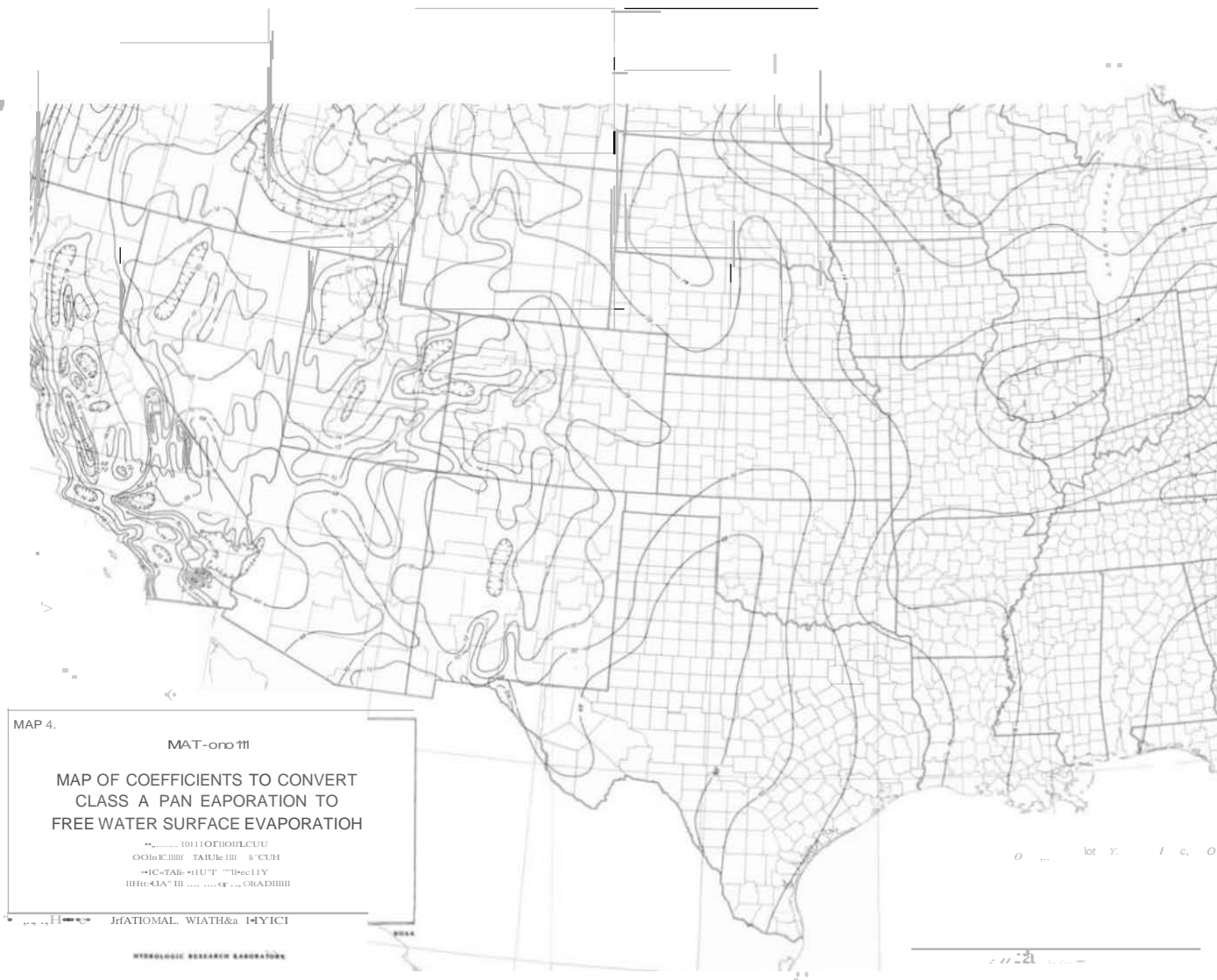
EXPLANATION OF ISOHYETS

WESTERN STATES INTERVALS
20 inches - 40 inches
40 inches - 60 inches
Interval irregular where provided
Areas of limited data
Additional information for areas of shallow gradient above 60 inches

EASTERN STATES INTERVALS
4 inches - standard interval
2 inch interval used for areas of shallow gradient

NATIONAL WEATHER SERVICE
U.S. DEPT. OF COMMERCE
OFFICE OF HYDROLOGY





1956-1970
1956-1970



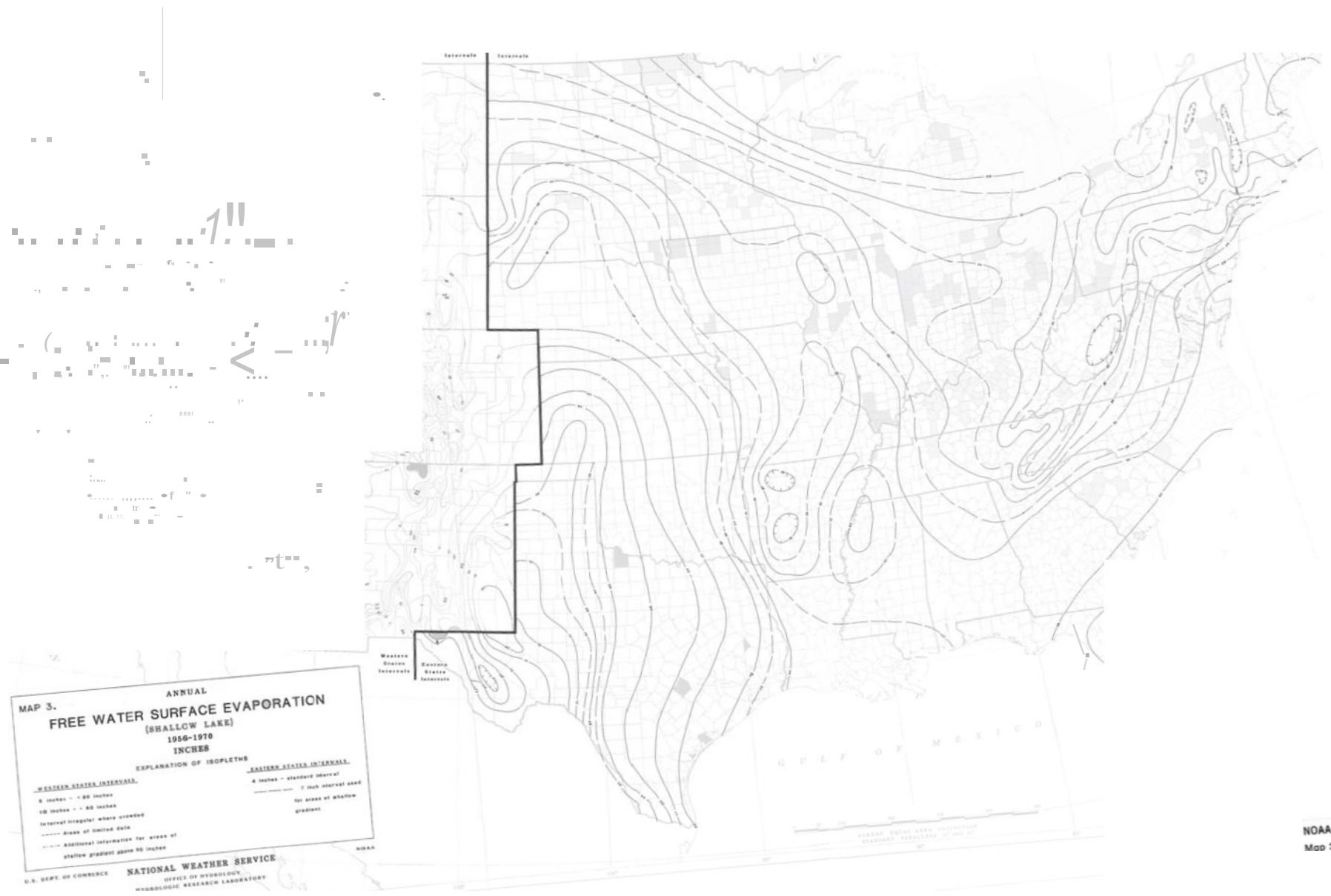
MAP 2.
FREE WATER SURFACE EVAPORATION
(SHALLOW LAKE)
1956-1970
INCHES

EXPLANATION OF ISOHYETS

WESTERN STATES INTERVALS
0 inches - 40 inches
40 inches - 80 inches
Interval irregular where provided
Areas of limited data
Additional information for areas of shallow gradient above 80 inches

EASTERN STATES INTERVALS
4 inches - standard interval
2 inch interval used for areas of shallow gradient

NATIONAL WEATHER SERVICE
U.S. DEPT. OF COMMERCE
OFFICE OF HYDROLOGY





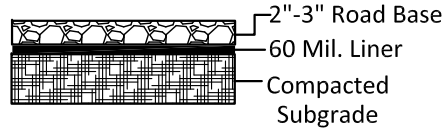
Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Siting Requirements – Appendix A

Rule 908.b(5)

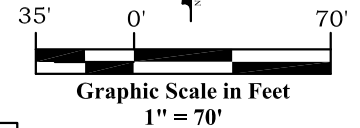
Typical Lined Containment Area Cross-Section



Surface Owner:
50% Ursa 50% XTO

100 Yr. Flood Calc's

$$\frac{(.76 \text{ ac}) (10.5 \text{ in of Runoff})}{12 \text{ in}} = 0.665 \text{ acre feet}$$



Solidification Area Summary

Lined Area - 0.76 ac
Unlined Area - 0.38 ac

Total 1.14 Ac
Elev= 6254'

FEMA 100yr Flood Boundary.
Solidification Area is Not Within the 100yr Flood Area.

Surface Owner:
Bureau of Land Management



Ursa OPERATING COMPANY

Notes or Comments:

- The Pad and Pad Infrastructure Shown Herein is Proposed.



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

Project: RVS 06001-65-SA

Field Date: 01-17-19

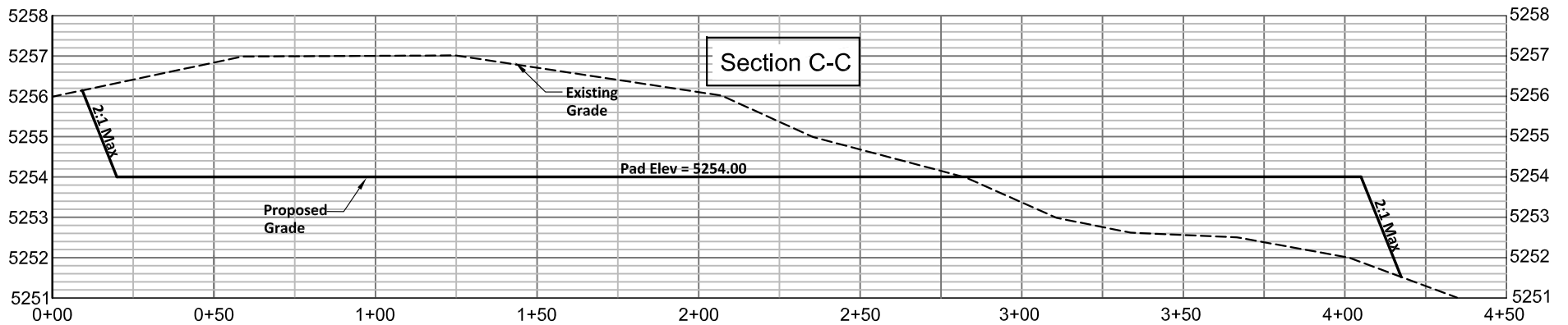
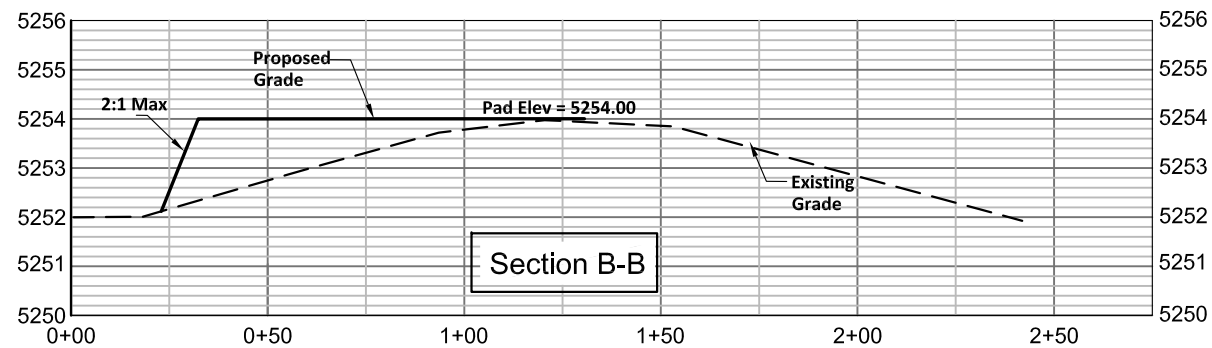
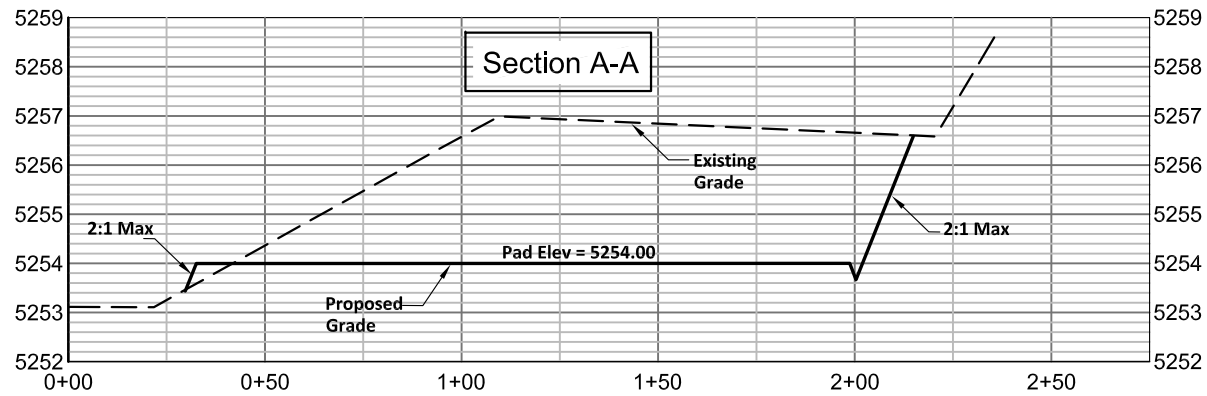
Scale: 1" = 70'

Date: 05-31-19

Sheet: 1 of 1

Construction Details

Boies Ranch Solidification Area
Section 29, Township 2 South, Range 97 West



Notes or Comments:

- The Pad and Pad Infrastructure Shown Herein is Proposed.



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

Project: RVS 06001-65-SA

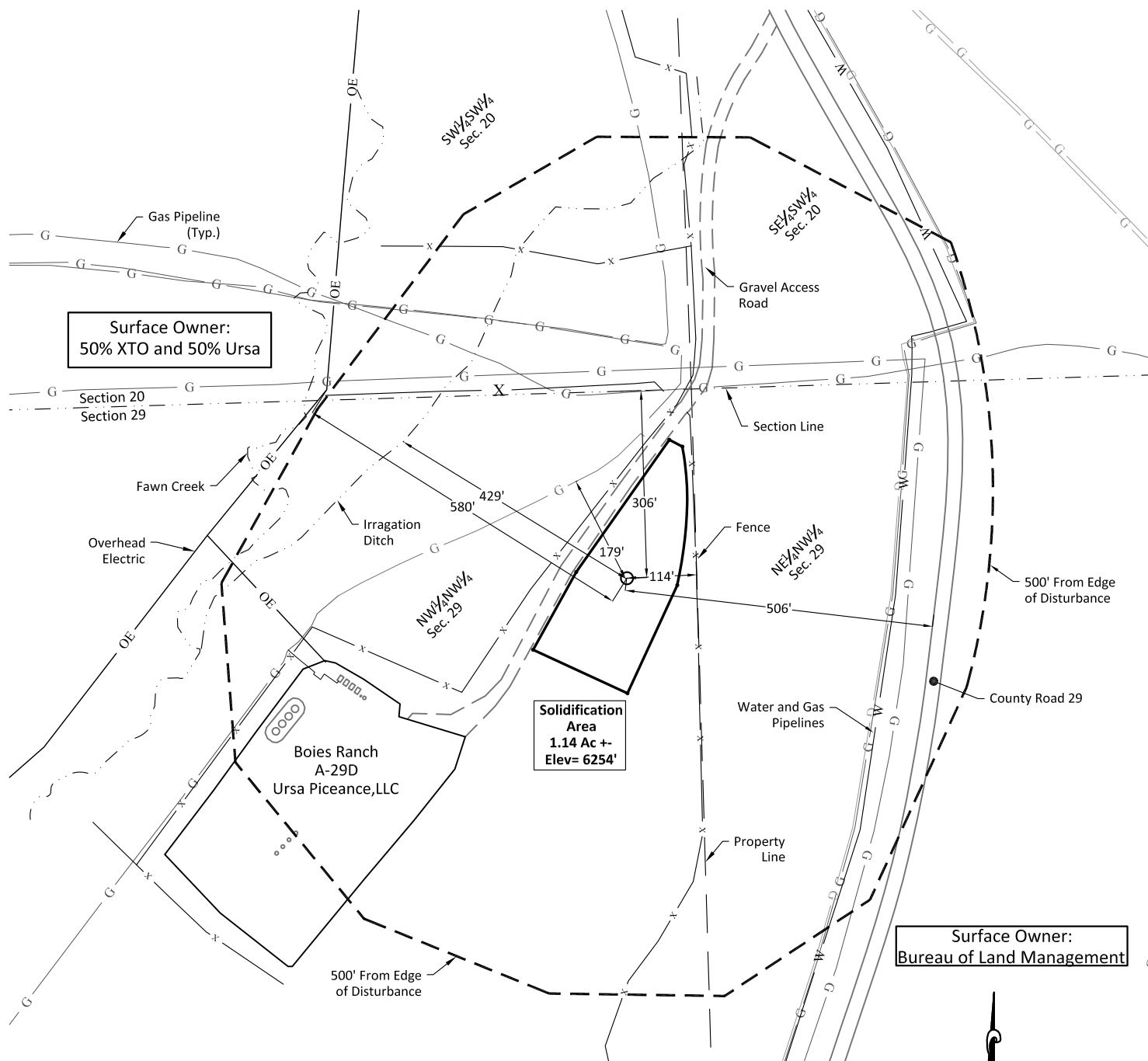
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Scale: 1"= 70'

Date: 05-15-19

Sheet: 1 of 1

Cross Sections
Boies Ranch Solidification Area
Section 29, Township 2 South, Range 97 West



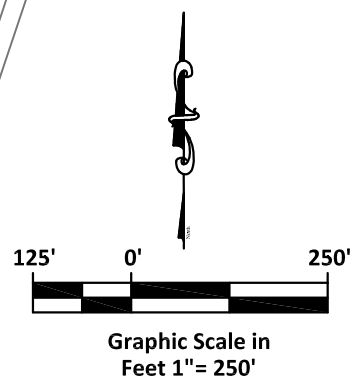
Distance / Improvement Summary

Improvement Type	Distance to Center of Pad
Building	1793'
Building Unit	1882'
HOBV	5280' +
DOAA	N/A
Public Roads/Trails	506'
Abv. Gnd. Utility	580'
Railroads	5280' +
Property Line	114'
School Facility	5280' +
School Property Line	5280' +
Child Care Center	5280' +
Pipelines	179'
Fence	114'
Mines	500' +
Oil / Gas / Inj Wells	500' +
Water Well	500' +
Sewers Manholes	500' +
Bodies of Water	500' +
Channels / Ditches	Onsite

PDOP at Time of Survey= 1.1. Inst. Operator: P. Hoffmann

Distance to Section Line

From Center of Pad:
 LAT: 39.8537877°N
 LONG: 108.3108754°W
 1,212' FWL
 306' FNL
 Elev.= 6254



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



Ursa OPERATING COMPANY

Project: - RVS 06001-65-SA

Field Date: 01-17-19

Scale: 1" = 250'

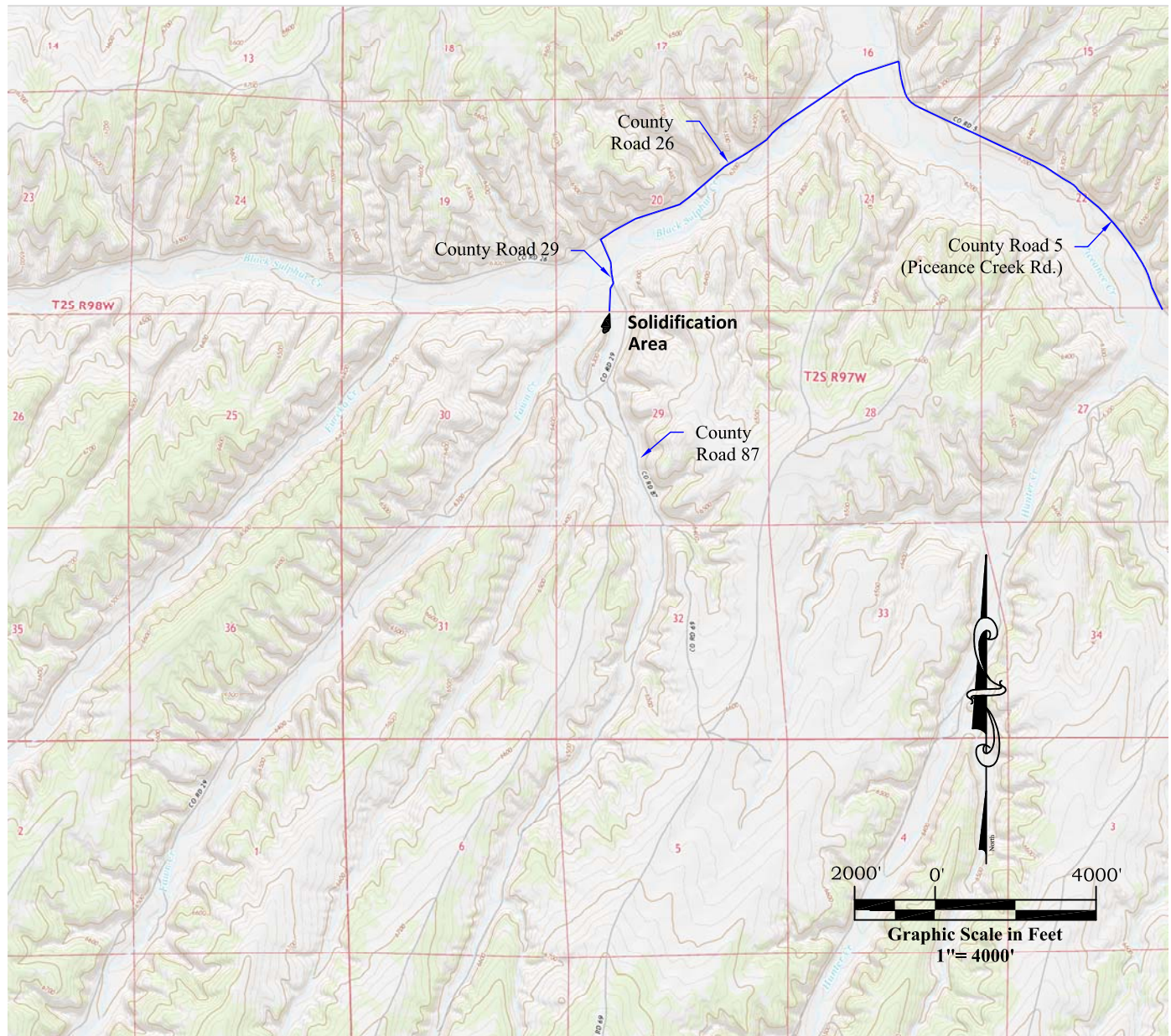
Date: 05-30-19

Sheet: 1 of 1

Rev:

By:

Form 2A-Attachment D
Boies Ranch Solidification Area
Location Drawing
 Section 29, Township 2 South, Range 97 West



Access:

The primary Light vehicle & Heavy Vehicle access route to the Project Area would be from Interstate 70 (I-70) exiting at Rifle, Colorado (Exit 90). Directions to the Project Area are as follows: After exiting I-70, proceed North on State Highway 13; proceed in a general northerly direction (20 Miles) along State Highway 13 to County Road 5 (CR 5); turn Left and follow CR 5 in a general northerly & westerly direction 23.5 Miles to County Road 26. Turn left on County Road 26 Proceeding westerly 1.6 miles to County Road 29. Turn left on County Road 29 Proceeding southerly 0.25 miles to the A-29D Access Road. Turn Right and Proceed Southwesterly 900' to the Solidification Area .



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

Project: RVS 06001-65-SA

Field Date: 01-17-19

Scale: 1" = 4000'

Date: 02-26-19

Sheet: 1 of 1

Form 2A - Attachment F Boies Ranch Solidification Area Access Road Map

Section 29, Township 2 South, Range 97 West

Boies Ranch Solidification Area
Looking East
January 17, 2019



Boies Ranch Solidification Area
Looking South
January 17, 2019



Boies Ranch Solidification Area
Looking North
January 17, 2019



Boies Ranch Solidification Area
Looking West
January 17, 2019



Notes or Comments:



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

Project: - RVS 06001-65-SA

Field Date: 01-17-19

Scale: NTS

Date: 01-18-19

Sheet: 1 of 1

Rev:

By: TJK



Ursa | OPERATING
COMPANY

Form 2A-Attachment B
Boies Ranch Solidification Area
Site Photographs
Section 29, Township 2 South, Range 97 West



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Waste Profile

Appendix B

Rule 908.b(6)

Boies Ranch Solidification Area

Representative Examples of Wastes

Boise Ranch Solidification Area
Rio Blanco County, Colorado

April 18, 2019

URSA Resources Group

Sample Delivery Group: L1086962
Samples Received: 04/09/2019
Project Number:
Description: B-19 Tank Bottoms

Report To: Dwayne Knudson
792 Buckhorn Drive
Rifle, CO 81650

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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B-19 TANK BOTTOMS L1086962-01 Solid

Collected by
Dwayne Knudson

Collected date/time
04/08/19 12:00

Received date/time
04/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1264836	5	04/12/19 07:39	04/16/19 20:04	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1265221	5000	04/09/19 13:46	04/14/19 14:58	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8021	WG1263564	250	04/09/19 13:46	04/10/19 16:20	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1264118	200	04/11/19 12:28	04/12/19 01:18	DMW	Mt. Juliet, TN

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

B-19 TANK BOTTOMS L1086962-02 Waste

Collected by
Dwayne Knudson

Collected date/time
04/08/19 12:00

Received date/time
04/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Preparation by Method 1311	WG1264431	1	04/11/19 14:06	04/11/19 14:06	CGD	Mt. Juliet, TN
Wet Chemistry by Method 9012 B	WG1263274	1	04/10/19 08:57	04/10/19 13:28	JER	Mt. Juliet, TN
Wet Chemistry by Method 9034-9030B	WG1265900	1	04/15/19 01:35	04/15/19 01:35	TCC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1265294	1	04/16/19 15:16	04/16/19 16:30	JD	Mt. Juliet, TN
Wet Chemistry by Method 9095B	WG1263931	1	04/10/19 22:35	04/10/19 23:36	TCC	Mt. Juliet, TN
Wet Chemistry by Method D93/1010A	WG1263762	1	04/10/19 22:06	04/10/19 22:06	TCC	Mt. Juliet, TN
Mercury by Method 7470A	WG1265036	1	04/12/19 12:40	04/14/19 21:55	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1265908	1	04/15/19 22:18	04/16/19 10:17	TRB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward
Project Manager

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.

All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Thorium	2.07	J	0.225	5.00	5	04/16/2019 20:04	WG1264836
Uranium	0.275	J	0.0800	5.00	5	04/16/2019 20:04	WG1264836

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	3.41		0.0300	0.125	250	04/10/2019 16:20	WG1263564
Toluene	51.6		0.0375	1.25	250	04/10/2019 16:20	WG1263564
Ethylbenzene	16.9		0.0275	0.125	250	04/10/2019 16:20	WG1263564
Total Xylene	587		2.30	7.50	5000	04/14/2019 14:58	WG1265221
TPH (GC/FID) Low Fraction	5770		108	500	5000	04/14/2019 14:58	WG1265221
(S) a,a,a-Trifluorotoluene(FID)	88.4			77.0-120		04/10/2019 16:20	WG1263564
(S) a,a,a-Trifluorotoluene(FID)	104			77.0-120		04/14/2019 14:58	WG1265221
(S) a,a,a-Trifluorotoluene(PID)	95.8			72.0-128		04/10/2019 16:20	WG1263564
(S) a,a,a-Trifluorotoluene(PID)	96.9			72.0-128		04/14/2019 14:58	WG1265221

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	11000		154	800	200	04/12/2019 01:18	WG1264118
(S) o-Terphenyl	0.000	J7		18.0-148		04/12/2019 01:18	WG1264118

B-19 TANK BOTTOMS

Collected date/time: 04/08/19 12:00

SAMPLE RESULTS - 02

L1086962

ONE LAB. NATIONWIDE.



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		4/11/2019 2:06:32 PM	WG1264431
Fluid	1		4/11/2019 2:06:32 PM	WG1264431
Initial pH	8.58		4/11/2019 2:06:32 PM	WG1264431
Final pH	5.06		4/11/2019 2:06:32 PM	WG1264431

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	04/10/2019 13:28	WG1263274

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	42.6		25.0	1	04/15/2019 01:35	WG1265900

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity by pH	8.40	T8	1	04/16/2019 16:30	WG1265294

Sample Narrative:

L1086962-02 WG1265294: 8.4 at 17.5C

Wet Chemistry by Method 9095B

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	04/10/2019 23:36	WG1263931

Sample Narrative:

L1086962-02 WG1263931: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170		1	04/10/2019 22:06	WG1263762

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	04/14/2019 21:55	WG1265036

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	04/16/2019 10:17	WG1265908
Barium	3.48		0.100	100	1	04/16/2019 10:17	WG1265908
Cadmium	ND		0.100	1	1	04/16/2019 10:17	WG1265908
Chromium	ND		0.100	5	1	04/16/2019 10:17	WG1265908
Lead	ND		0.100	5	1	04/16/2019 10:17	WG1265908
Selenium	ND		0.100	1	1	04/16/2019 10:17	WG1265908
Silver	ND		0.100	5	1	04/16/2019 10:17	WG1265908



Method Blank (MB)

(MB) R3400254-1 04/10/19 12:58

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L1086417-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1086417-01 04/10/19 13:12 • (DUP) R3400254-3 04/10/19 13:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	0.0768	1	29.8	J P1	20

L1086962-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1086962-02 04/10/19 13:28 • (DUP) R3400254-6 04/10/19 13:29

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3400254-2 04/10/19 12:59

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Reactive Cyanide	2.50	2.61	104	50.0-150	

L1086842-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1086842-01 04/10/19 13:24 • (MS) R3400254-4 04/10/19 13:26 • (MSD) R3400254-5 04/10/19 13:27

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	1.67	ND	0.776	0.996	42.1	55.3	1	75.0-125	J6	J3 J6	24.8	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3401666-1 04/15/19 01:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1086423-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1086423-02 04/15/19 01:35 • (DUP) R3401666-3 04/15/19 01:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

L1088558-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1088558-09 04/15/19 01:35 • (DUP) R3401666-4 04/15/19 01:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3401666-2 04/15/19 01:35

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Reactive Sulfide	100	85.3	85.3	70.0-130	

L1086962-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1086962-02 04/16/19 16:30 • (DUP) R3402288-2 04/16/19 16:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
Corrosivity by pH	8.40	8.36	1	0.477		1

Sample Narrative:

OS: 8.4 at 17.5C

DUP: 8.36 at 18C

Laboratory Control Sample (LCS)

(LCS) R3402288-1 04/16/19 16:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
Corrosivity by pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 18.2C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



L1086617-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1086617-01 04/10/19 23:36 • (DUP) R3400432-1 04/10/19 23:36

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

Sample Narrative:

OS: Contains No Free Liquid

DUP: Contains No Free Liquid





L1086647-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1086647-08 04/10/19 22:06 • (DUP) R3400417-2 04/10/19 22:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	116	118	1	1.71		10

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1087451-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1087451-01 04/10/19 22:06 • (DUP) R3400417-3 04/10/19 22:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	DNI at 170	DNI at 170	1	0.000		10

Laboratory Control Sample (LCS)

(LCS) R3400417-1 04/10/19 22:06

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	Deg. F	Deg. F	%	%	
Ignitability	82.0	83.1	101	96.0-104	



Method Blank (MB)

(MB) R3401659-1 04/14/19 21:09

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00330	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3401659-2 04/14/19 21:12 • (LCSD) R3401659-3 04/14/19 21:20

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0302	0.0298	101	99.4	80.0-120			1.40	20

L1086423-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1086423-01 04/14/19 21:22 • (MS) R3401659-4 04/14/19 21:25 • (MSD) R3401659-5 04/14/19 21:27

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0305	0.0307	102	102	1	75.0-125			0.627	20

L1087006-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1087006-06 04/14/19 21:30 • (MS) R3401659-6 04/14/19 21:32 • (MSD) R3401659-7 04/14/19 21:35

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0316	0.0306	105	102	1	75.0-125			2.97	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3402086-1 04/16/19 09:41

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0330	0.100
Barium	U		0.0330	0.100
Cadmium	U		0.0330	0.100
Chromium	U		0.0330	0.100
Lead	U		0.0330	0.100
Selenium	U		0.0330	0.100
Silver	U		0.0330	0.100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3402086-2 04/16/19 09:44 • (LCSD) R3402086-3 04/16/19 09:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.62	9.66	96.2	96.6	80.0-120			0.425	20
Barium	10.0	10.1	10.1	101	101	80.0-120			0.456	20
Cadmium	10.0	9.71	9.78	97.1	97.8	80.0-120			0.756	20
Chromium	10.0	9.53	9.63	95.3	96.3	80.0-120			1.02	20
Lead	10.0	9.69	9.78	96.9	97.8	80.0-120			0.848	20
Selenium	10.0	9.88	9.87	98.8	98.7	80.0-120			0.160	20
Silver	2.00	1.88	1.90	94.0	95.0	80.0-120			1.08	20

L1086978-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1086978-01 04/16/19 09:49 • (MS) R3402086-5 04/16/19 09:54 • (MSD) R3402086-6 04/16/19 09:56

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.78	9.64	97.8	96.4	1	75.0-125			1.47	20
Barium	10.0	0.450	10.8	10.7	104	103	1	75.0-125			1.23	20
Cadmium	10.0	ND	9.88	9.81	98.8	98.1	1	75.0-125			0.732	20
Chromium	10.0	ND	9.85	9.82	98.5	98.2	1	75.0-125			0.334	20
Lead	10.0	ND	9.94	9.89	99.4	98.9	1	75.0-125			0.544	20
Selenium	10.0	ND	9.87	9.68	98.7	96.8	1	75.0-125			1.94	20
Silver	2.00	ND	1.92	1.92	96.0	95.9	1	75.0-125			0.0635	20



L1087062-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1087062-02 04/16/19 09:59 • (MS) R3402086-7 04/16/19 10:02 • (MSD) R3402086-8 04/16/19 10:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.88	9.92	98.4	98.8	1	75.0-125			0.448	20
Barium	10.0	0.136	10.4	10.5	103	103	1	75.0-125			0.492	20
Cadmium	10.0	ND	9.93	9.97	99.3	99.7	1	75.0-125			0.467	20
Chromium	10.0	ND	9.74	9.76	97.4	97.6	1	75.0-125			0.134	20
Lead	10.0	ND	10.0	10.0	100	100	1	75.0-125			0.353	20
Selenium	10.0	ND	10.1	10.2	101	102	1	75.0-125			1.19	20
Silver	2.00	ND	1.93	1.92	96.4	96.1	1	75.0-125			0.390	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3402735-2 04/16/19 18:57

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Thorium	U		0.225	5.00
Uranium	U		0.0800	5.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3402735-3 04/16/19 19:02 • (LCSD) R3402735-4 04/16/19 19:07

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Thorium	100	89.2	107	89.2	107	80.0-120			18.5	20
Uranium	100	94.9	107	94.9	107	80.0-120			11.7	20

L1087307-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1087307-01 04/16/19 19:12 • (MS) R3402735-7 04/16/19 19:26 • (MSD) R3402735-8 04/16/19 19:31

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Thorium	20.0	ND	90.2	80.3	88.1	78.2	5	75.0-125			11.6	20
Uranium	20.0	ND	102	93.1	102	92.7	5	75.0-125			9.49	20

Method Blank (MB)

(MB) R3401727-5 04/14/19 12:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0219	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	99.8			72.0-128

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3401727-1 04/14/19 10:33 • (LCSD) R3401727-2 04/14/19 10:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Total Xylene	0.150	0.157	0.163	105	109	37.0-160			3.50	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				99.5	98.9	72.0-128				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3401727-3 04/14/19 11:13 • (LCSD) R3401727-4 04/14/19 11:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.90	5.08	89.1	92.3	72.0-127			3.59	20
(S) a,a,a-Trifluorotoluene(FID)				93.6	93.8	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				100	101	72.0-128				



Method Blank (MB)

(MB) R3401297-5 04/10/19 11:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000202	⬇	0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
(S) a,a,a-Trifluorotoluene(FID)	93.9			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	97.2			72.0-128

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3401297-1 04/10/19 09:52 • (LCSD) R3401297-2 04/10/19 10:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0484	0.0467	96.7	93.3	76.0-121			3.61	20
Toluene	0.0500	0.0462	0.0446	92.4	89.1	80.0-120			3.60	20
Ethylbenzene	0.0500	0.0496	0.0475	99.1	95.1	80.0-124			4.15	20
(S) a,a,a-Trifluorotoluene(FID)				94.4	93.0	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				96.3	94.9	72.0-128				



Method Blank (MB)

(MB) R3400916-1 04/11/19 16:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	62.6			18.0-148

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3400916-2 04/11/19 16:58 • (LCSD) R3400916-3 04/11/19 17:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	50.0	35.9	41.5	71.8	83.0	50.0-150			14.5	20
(S) o-Terphenyl				62.6	23.0	18.0-148				

L1087667-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1087667-01 04/11/19 19:27 • (MS) R3400916-4 04/11/19 19:39 • (MSD) R3400916-5 04/11/19 19:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	47.4	15.2	46.7	37.7	66.5	47.2	1	50.0-150		J3 J6	21.3	20
(S) o-Terphenyl					35.0	37.3		18.0-148				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Condition:
NCF / OK



April 23, 2019

Mr. Dwayne Knudson
Ursa Operating
792 Buckhorn Drive,
Rifle, CO, 81650

**Re: OWL Western Gravel & Disposal Pre-Screening Solid Waste Evaluation
'Acceptance Letter'**

Dear Dwayne,

OWL SWD operating, LLC, have completed the pre-screening evaluation for OWL Project #: 2019102WG, identified with Ursa as project 'B-19 Pad Tank Bottoms.' We are pleased to advise the solid waste has been classified as acceptable. Hazardous waste is strictly prohibited at the facility.

In order to be accepted at the facility the transporter of the material must present the relevant signed Waste Manifest at the scale house prior to unloading. Further, all loads must be covered.

OWL Western Gravel & Disposal reserves the right to conduct inspections of all loads entering the facility at their discretion. Additionally, there is a random inspection program for loads entering the facility which requires mandatory compliance if selected. Please communicate the inspection program to the transporter of the material.

For the purpose of project analytical sampling, you have been classified as an on-going producer.

Please note the facility is operational on an on-call basis, and cannot accept solids on Sundays.

Sincerely,

Kelan Donahue
Sales Manager
OWL SWD Operating, LLC
12789 Emerson St
Thornton, CO, 80241

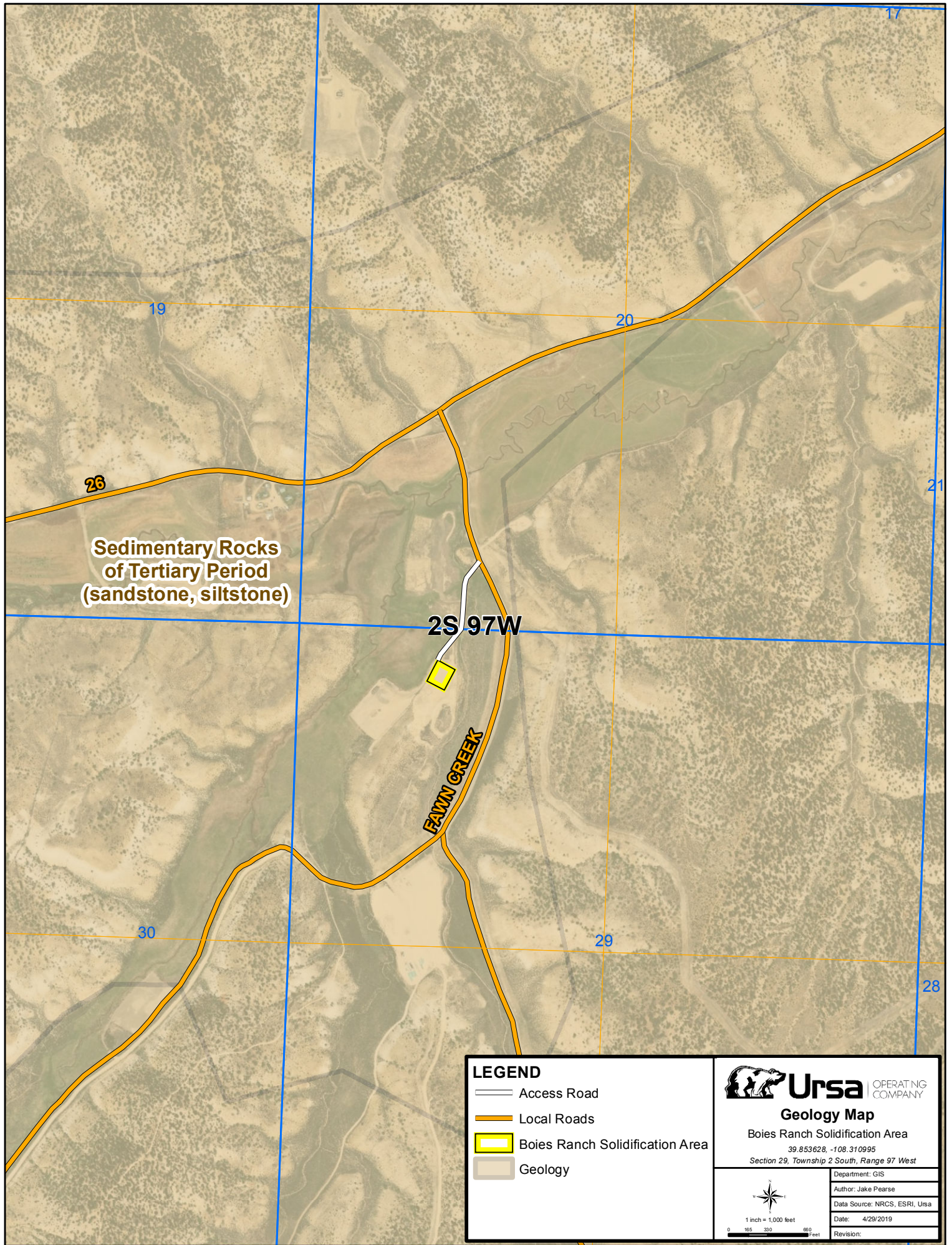


Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Facility Design and Engineering Info – Appendix C

Rule 908.b(7)




Sedimentary Rocks
of Tertiary Period
(sandstone, siltstone)

2S 97W

FAWN CREEK


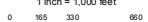
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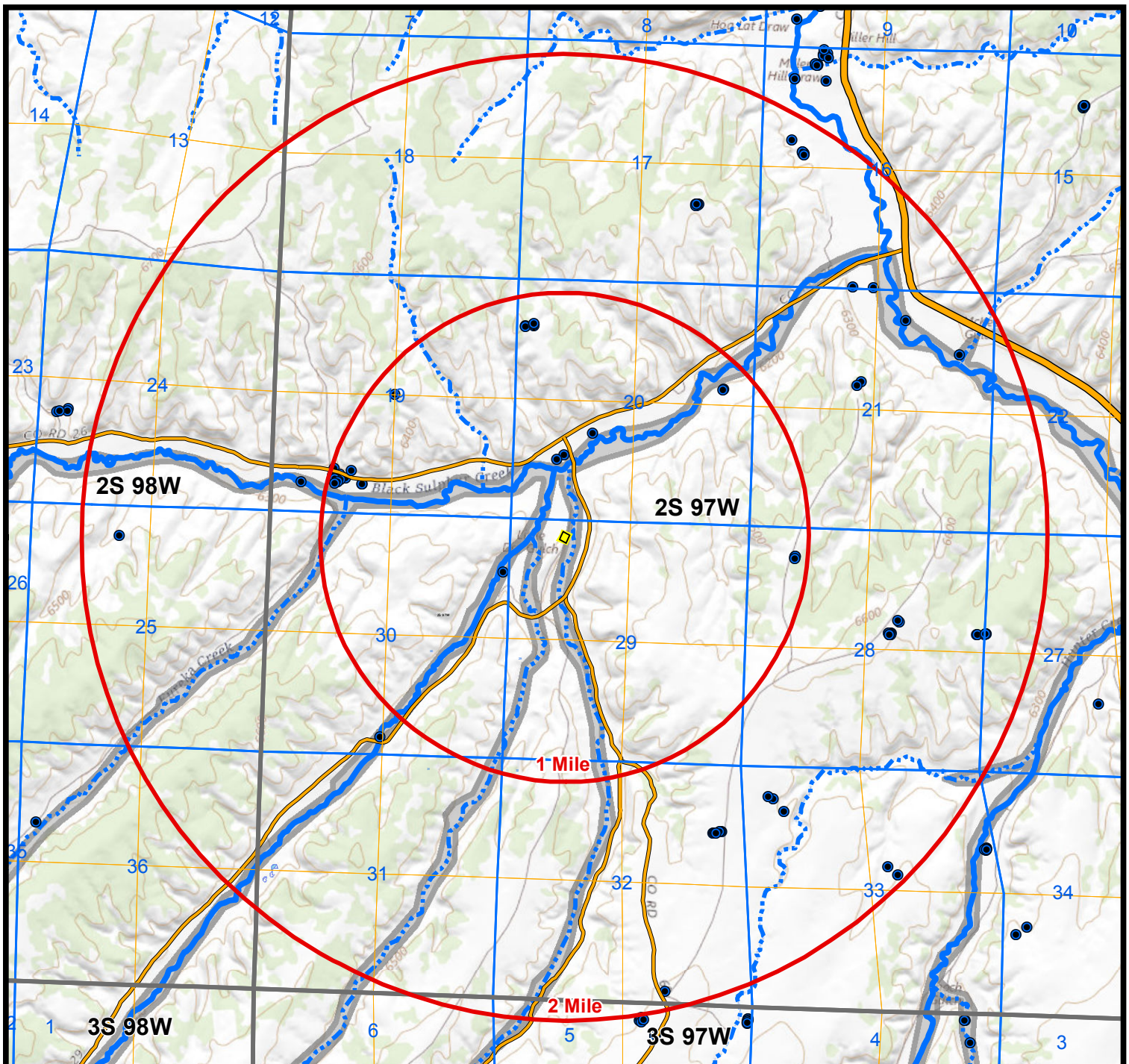
- Access Road
- Local Roads
- Boies Ranch Solidification Area
- Geology

**Ursa** OPERATING COMPANY

Geology Map
Boies Ranch Solidification Area
39.853628, -108.310995
Section 29, Township 2 South, Range 97 West

Department: GIS
Author: Jake Pearse
Data Source: NRCS, ESRI, Ursa
Date: 4/29/2019
Revision:


1 inch = 1,000 feet




HYDROLOGY:

FEATURE	PRESENT WITHIN 1 Mile
317B Buffer	No
Canal/Ditch	No
Floodplain (100 yr)	Yes
Groundwater Depth	Unknown
Ephemeral Stream	No
Intermittent Stream	Yes - 76 ft
Perennial Stream	Yes - 492 ft
Riparian Area	No
Spring	No
Waterbody	No
Watershed	Lower Black Sulphur Creek
Water Well	Yes - Depth 82'
Wetland	No

NOTES/COMMENTS:

100 Year Flood Plain digitized from 1990 FIRM Maps



Ursa | OPERATING COMPANY

Hydrology Map

Topographic Map Showing Surface Waters

Boies Ranch Solidification Area

39.853628, -108.310995

Section 29, Township 2 South, Range 97 West

- Buffer
- Boies Ranch Solidification Area
- Local Roads



1 inch = 3,167 feet

0 550 1,100 2,200 Feet

Department: GIS

Author: Jake Pearse

Date: 4/29/2019

Source(s): Ursa, NHD,
ESRI, CO DWR

Appendix F - Site Specific Stormwater Management Plan

Revised:

Project Name (Site): Solidification Area

Field Name: Boies Ranch

Latitude: 39.853628° **Longitude:** -108.310995°

CDPS Permit Number: COR404830

Inspection Type: 14 Day

Phase: Pre-Construction

Name of Receiving Water: Fawn Creek, Black Sulphur Creek, Piceance Creek, ultimately the White River

Estimated Distance to Receiving Water: ~565 ft, 1,400 ft, 2 miles, 18 miles respectively

Twp, Sec, Range: T-2-S, R-97-W, Section 29

Major Erosion Control Facilities/Structures Utilized at Site: 60 mil liner, berm, road side bar ditch

Estimate of Total Area of Site: ~0.8 acres

Acres to be reclaimed: 0.8

Soil Types: Glendive fine sandy loam

Permeability: Moderate to rapid

Soil Erosion Potential: Slight to moderate

Existing Vegetation Description: Basin Wildrye, Indian ricegrass, Western wheatgrass, Sagebrush.

Final Stabilization Date: TBD

Estimate of Percent Vegetative Ground Cover: 0% pre-disturbance

Seed Mix for Interim Final Reclamation: Boies Ranch Mix

Description of Non-SW Discharge Components (e.g., Springs, Irrigation): None

Location of Non-SW Discharge Components (e.g., Springs, Irrigation): None

Phased Control Measures:

Construction:

Location is located inside a bowl, road side bar ditch will be re-defined prior to dirt moving activity.

Temporary:

Activities that may occur on site are:

- Storage of solid wastes
 - Potential Pollutants associated with this activity are:
 - Fuels and lubricants from equipment;
 - Drilling chemicals;
 - Sanitary sewage associated with portable toilets and septic tanks;
 - Trash and debris from activities, materials, and workers;
 - Drill cuttings and drilling fluids;

Interim:

Not Applicable

Final:

Not Applicable

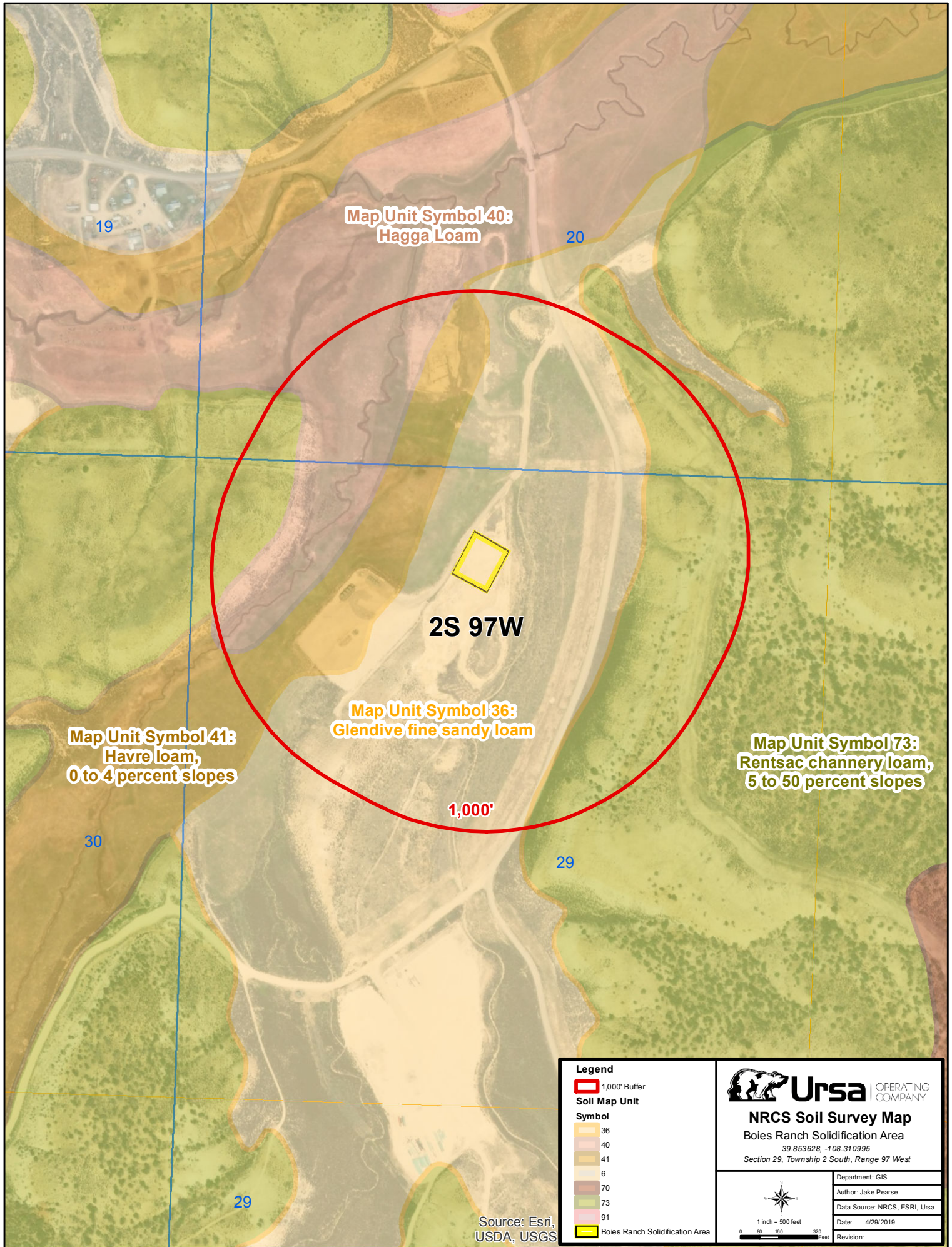
Monitoring:

- Inspections will occur every 14 days while site is active.
- Inspections will be conducted by a certified person familiar with the site-specific control measures and COAs of the pad.
- Inspections will cover the following:
 - Disturbed area;
 - All BMPs, temporary and permanent;
 - Materials storage areas;
 - Down gradient areas;
 - Surface water diversions;
 - Access road; and
 - Pad entrance.

Maintenance Procedures:

Maintenance will include prompt repairs and/or adjustments to any erosion and sediment control structures that are deteriorating or found to be performing inadequately. BMP conditions and dates of BMP maintenance will be documented within the stormwater inspection checklists.

Comments: Minor dirt work will take place at this location. Containment area will be graded with a 2% grade, moving water to the north end of location. Entire location will have a berm with a height of 1 ½ feet around entire area. Liner will be tied into berm making containment 100%. Berm height has been calculated to contain a 100-year storm event.





Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Operating Plan

Rule 908.b(8)

**Boies Ranch
Solidification Area**



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

BOIES RANCH SOLIDIFICATION AREA OPERATING PLAN

A. Description

Ursa Operating Company LLC (Ursa), Boies Ranch Solidification Area (BRSA). The proposed BRSA would be located on property co-owned by Ursa and XTO.

The BRSA per the Rio Blanco County Assessors' database, is located in the NW¼, NW¼ of Section 29, Township 2 South, Range 97 West, 6th P.M.

The facility will hold and manage different waste streams from the Boies Ranch Field such as drill cuttings, tank bottom cleanout material, and various spill impacted soils.

During normal drilling, completions and production operations the E&P facility allows waste to be gathered, treated and stored at a central facility. When deemed appropriate to Ursa's operations, solids and waste will be mixed and trucked out of the facility for disposal to a permitted licensed disposal site (examples – Rio Blanco County Landfill – Oilfield Water Logistics). Waste stored at the facility will be transported to a commercial facility via truck.

B. Dust and Moisture Control

The primary dust control measure used at the facility will be to apply fresh water to the access road and facility site as needed to control dust during operation.

C. Sampling

Monitoring wells are anticipated be placed upon approval around the site with 1 up gradient well and 2 downgradient wells (Appendix E). Sampled/testing of the wells to be determined to evaluate water quality. Results of the monitoring program will be included in Ursa's annual 900 Series facility report to the Director of the COGCC.

D. Inspection and Maintenance

During normal operations, a regular inspections will be performed by the operator. The operator will ensure that the facility is in proper working order and that the inspection is documented. If there are any corrective actions noted during the inspection, a supervisor shall be notified and (if required) an appropriate response plan will be coordinated to resolve the corrective actions.



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

E. Emergency Response

To ensure a safe and timely response to emergency situations, Ursa has developed an Emergency Evacuation, Assembly, Accountability and Response Plan for the BRSA (Appendix H – EERP). Ursa has also provided office personnel with contact information for the Rio Blanco County Sheriff's Department, the local fire department, and emergency medical service providers. Ursa will provide local emergency response agencies with a detailed map showing the location of the proposed facility, detailed directions to it, and GPS coordinates to facilitate timely response. Since the facility would be located within an active field, roads will be well maintained and snow plowed in the winter to facilitate vehicle access. Ursa will install signage to adequately identify the entrance to the location.

In the case of a medical emergency, the type of action taken will depend on the severity of the medical emergency. Should a life threatening medical emergency arise, Ursa or its contractors would summon St. Mary's Care Flight in Grand Junction for helicopter response. Helicopter landing sites have been established in close proximity to the facility on the access road adjacent to the facility. The GPS locations of the landing site will be provided to office personnel for communication to first responders in the event of an incident. In the case of injuries or medical problems that are not life threatening, the injured worker would either be transported from the facility in a company or contractor vehicle to the nearest medical center for treatment or transportation by ambulance summoned to the site, depending on the circumstances.

Since the proposed facility is located on a location that is clear of vegetation, the risk of wildfires is minimal. Smoking on-site and open fires will not be permitted at the facility.

F. Record Keeping

As stated above, typical operation of the facility will include waste stream management. It will be the responsibility of the operator to manage inputs and outputs to the facility. Results of the waste streams will be included in Ursa's annual 900 Series facility report to the Director of the COGCC.

G. Site Security

The site is located in a rural and remote area of Rio Blanco County south west of Meeker.

The entire facility shall be fenced to prevent access by domestic animals. Signage will be located at the facility. Employee training will take place annually in conjunction with Ursa's SPCC/Spill and Storm Water trainings.



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

H. Hours of Operation

The proposed facility will operate on an as needed basis depending on operational needs.

I. Noise and Odor Mitigation

Ursa does not anticipate any noise or odor issues with the proposed facility. There will be no water holding pit that might create odor issues.

J. Final Disposition of Waste

Wastes and solids will be solidified and transported to a licensed facility (examples – Rio Blanco County Landfill or Oilfield Water Logistics) for disposal after sampling analysis has determined the chemical constituents of the materials.

K. Contingency Planning

The objective of contingency planning is to prepare for emergency responses. It includes coordinating with emergency response organizations, describing actions during emergencies, conducting training, and performing drills. The Project Coordinator, Site Manager, or Site Safety Officer will coordinate drills and plan for emergencies while synchronizing the Company's efforts with off- site emergency response organizations. In order to properly prepare for an emergency response, project personnel shall:

- Communicate to the Incident Commander that an emergency is in progress.
- Recognize the hazards in the area potentially affected by the emergency.
- Know what to do and what not to do.
- Understand warning sounds and alarms.
- Know where to assemble.

The Company will provide first aid, cardiopulmonary resuscitation (CPR), and automated external defibrillator (AED) training to First Responder level consistent with the requirements of 29 CFR 1910.151(b). One individual on each shift at the BR PWP facility shall be trained to this level.



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Proposed Surface and Ground Water Sampling – Appendix E & F



Fawn Creek Sample Point


DG #2
X

DG #1
X

UG Well
X



LEGEND

 Boies Ranch Solidification Area



Ursa OPERATING COMPANY

Geology Map

Boies Ranch Solidification Area

39.853628, -108.310995

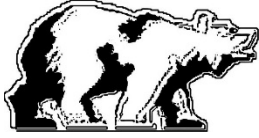
Section 29, Township 2 South, Range 97 West



1 inch = 101 feet

0 15 30 60 feet

Department: GIS
Author: Jake Pearse
Data Source: NRCS, ESRI, Ursa
Date: 5/21/2019
Revision:



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Ursa Operating Company, LLC

Boise Ranch

Solidification Area

(Appendix E)

SAMPLING

AND

ANALYSIS PLAN

Rio Blanco County, Colorado

June 2019

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•	Groundwater Monitoring.....	2
•	Surface Water Monitoring.....	2
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5.0	Sample Collection Procedures	3
6.0	Quality Control	3
7.0	Data Reduction, Validation, & Reporting.....	3
8.0	Internal Quality Control Checks	4
9.0	Calibration Procedures & Frequency for Field Equipment	4

1.0 Introduction

This Sampling and Analysis Plan (SAP) also referred to as “The Plan” is used to outline sampling & analysis procedures at the Boise Ranch Solidification facility and is an addendum to the Field Wide Surface & Groundwater Baseline Sampling, Analysis and Monitoring Plan (Field Wide Plan). Although this facility doesn’t fall within the boundaries of 317B and rules applicable to 609, Ursa will utilize Colorado Oil and Gas Conservation Commission (COGCC) rules outlined in 317B and 609 as guidance for this SAP Plan. The practices outlined in this Plan is intended to satisfy requirements outlined in the COGCC Form 15 and Form 28 permits. This Plan describes, but is not limited to, baseline water sampling and analysis, surface water monitoring, and sampling events directly related to the facility and associated wastes. All procedures and methodologies in the Plan remain effective and are applicable except in those cases where this addendum provides procedures specific to the Boise Ranch Produced Water Pit facility operations.

2.0 Background & Scope

Ursa has developed and implemented this Plan to present the procedures for the sampling and analysis for the groundwater & surface water monitoring, as well as sampling of pit liquids (influent & effluent), and profiles for waste streams proposed to be managed at the facility.

3.0 Sampling Locations

- Groundwater Monitoring
Based on COGCC Rule 609.b, three groundwater monitoring wells will be installed and will be sampled in accordance with COGCC and any applicable COAs outlined on the permits. (Appendix E)
- Surface Water Monitoring
Surface water samples will be collected at an up-gradient point deem appropriate to determine representative background concentrations on Fawn Creek and uninfluenced by the facility and surrounding activities associated with the facility prior to construction. Additionally, a downgradient sample point will be established and sampled to monitor surface water conditions and compared to the up-gradient sample location.

4.0 Sampling Analysis

Generally, groundwater well analysis will include, but is not limited to, testing for the constituents outlined in COGCC Rule 609.e (2) for the initial sample collected prior to operations. For any subsequent sampling, analysis will be conducted for the constituents outlined in COGCC Rule 609.e (3). Refer to **Appendix A** for a list of constituents.

Surface water samples will be analyzed for constituents outlined in the COGCC 317B analyte list. Refer to **Appendix B** for a list of constituents.

Additional samples for waste profiles, or treatment evaluation of liquids within the pit impoundment will be determined at time of sampling.

5.0 Sample Collection Procedures

Sample collection procedures are in accordance with EPA procedures and include, but are not limited to: how to collect samples, landowner access if crossing property boundaries for surface water locations, documentation of sampling conditions and procedures, and decontamination of equipment.

Field measurements and sampling will be conducted in accordance with Environmental Protection Agency (EPA) procedures. Specific measures will be taken to minimize collection errors. These include the following:

- All samples will be collected with disposable or clean tools that have been decontaminated;
- Disposable gloves will be worn and changed between sample collection;
- Sample containers will be filled quickly without overfilling or displacing preservation;
- Containers will be quickly and adequately sealed;
- Rims will be cleaned prior to tightening lids;
- Sample containers will be labeled as appropriate for the sample location; and
- Containers will be immediately preserved.

6.0 Quality Control

Generally, the handling, control, documentation, and shipping of collected samples will be documented for clear chain-of-custody and to ensure the integrity of the samples collected.

7.0 Data Reduction, Validation, & Reporting

Data collected will be evaluated for any apparent collection errors and compared to historical concentrations or trends before the data is accepted, qualified, or rejected. Data tracking tables will be generated outlining information, including but not limited to: analytical method, sampling date, and reporting units.

Copies of all final laboratory analytical results will be provided to the Director and the water well owner or landowner within three (3) months of collecting the samples. The analytical results, the surveyed sample water source locations will be submitted to the Director in an electronic data deliverable (EDD) format or through a Form 43.

- **Required Reporting Limits** – The detection limits for water wells will be in accordance with EPA method-specific protocols. The operator will notify the Director and the owner of the water well immediately if:
 - The test results indicated thermogenic or a mixture of thermogenic and biogenic gas;
 - The methane concentration increases by more than 5.0 mg/l between sampling periods;
 - The methane concentration is detected at or above 10 mg/L; and
 - If any BTEX compounds or TPH are detected in a water sample above threshold limits

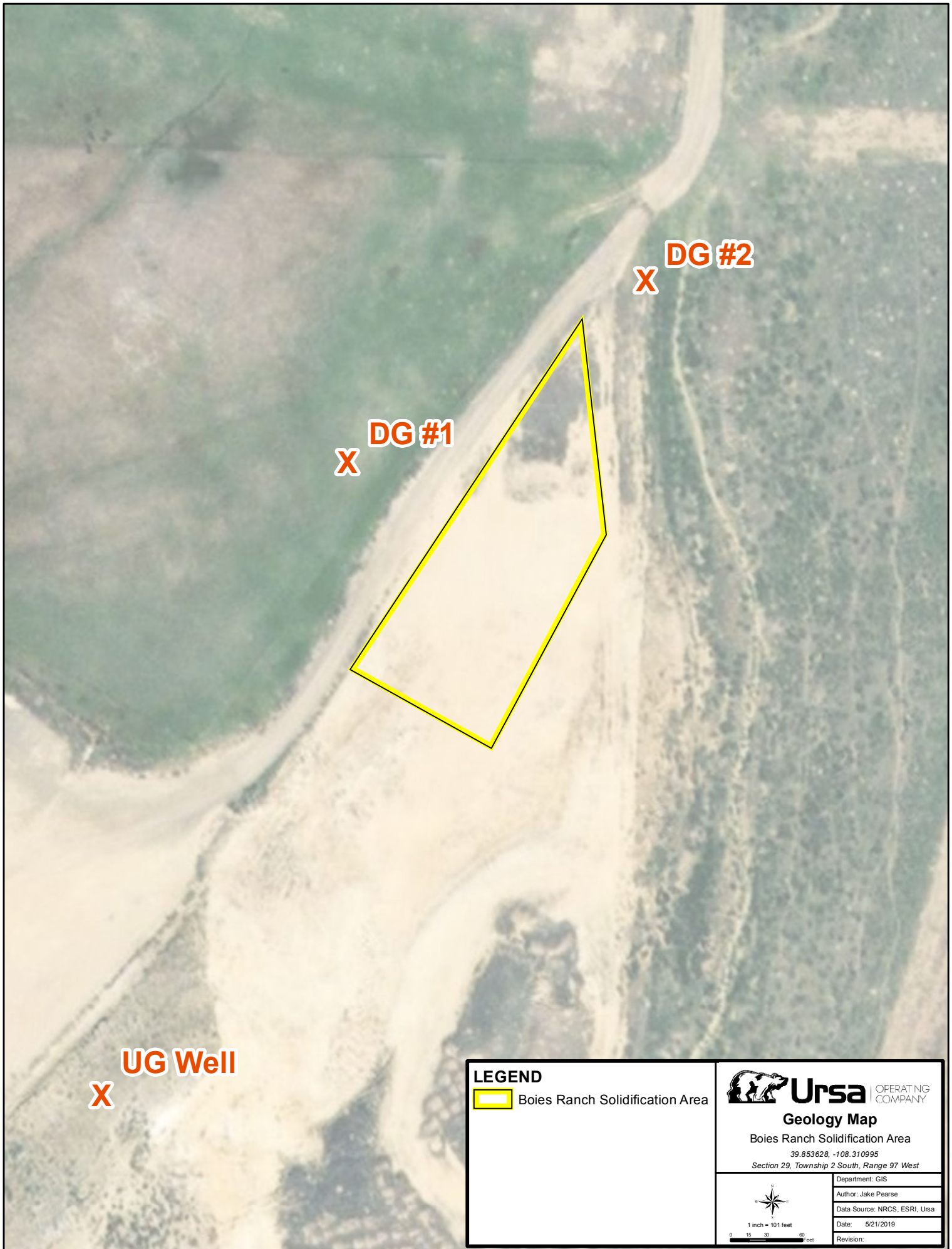
8.0 Internal Quality Control Checks

Ursa will implement the procedures and protocols in the Field Wide Plans. As a check on field sampling and QA/QC measures, internal quality checks, such as collecting duplicate or replicate samples, will be implemented.

9.0 Calibration Procedures & Frequency for Field Equipment

To ensure accuracy and reproducibility, instruments and equipment used to gather, generate, or measure data will be calibrated before each use with known calibration standards and in accordance with the manufacture's specifications.

PROPESED GROUNDWATER MONITORING WELL LOCATIONS





Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Contingency Plan – Appendix G



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Rule 908.g(1)B Estimate of Cost to Close and Reclaim

Facility – Impoundments

Ursa Resources LLC – Boise Ranch Solidification Area

Closure Cost

Date: June 1, 2019

Bond Justification and Cost Estimate for Closure

Facility ID # TBD

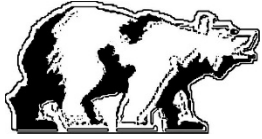
Ursa Operating Company - Boise Ranch Solidification Area

Date: 6/3/2019

Cost | Unnamed

Item	Description	Quantity	Unit	Direct Unit Cost	Direct Total Cost	Contingency (10%)	Subtotal	Notes
A.	Construction Contractor Costs							
1	Mobilization/Demobilization	1	Lump Sum	\$ 2,500.00	\$ 2,500.00	\$ 250.00	\$ 2,750.00	Onsite equipment
2	Stormwater and Erosion Control	1	Lump Sum	\$ 2,500.00	\$ 2,500.00	\$ 250.00	\$ 2,750.00	Upgrade SW BMP's Post Reclamation
3	Surface Water Sampling (317B) and water well (609) sampling.	2	Samples	\$ 500.00	\$ 1,000.00	\$ 100.00	\$ 1,100.00	Includes labor, lab and summaries for 317B and 609 data.
4	Monitoring Well Abandonment	3	Wells	\$ 800.00	\$ 2,400.00	\$ 240.00	\$ 2,640.00	Actual costs for similar wells in the area by HRL out of GJ - includes mob.
5	Removal of liner and roadbase material	1	Lump Sum	\$ 7,500.00	\$ 7,500.00	\$ 750.00	\$ 8,250.00	Equipment and operator to stockpile and load material into trucks
6	Landfill disposal fees for liner and roadbase	600	Tons	\$ 22.00	\$ 13,200.00	\$ 1,320.00	\$ 14,520.00	Liner and 3" road base covering - assuming disposal to Oilfield Water Logistics (OWL)
7	Transport of liner and roadbase to disposal	34	Loads (18tons)	\$ 255.00	\$ 8,670.00	\$ 867.00	\$ 9,537.00	Assuming 18 tons per load and 3hr trips.
8	Removal of Impacts/Staining 3" inch depth - Sub Liner	306	Cubic Yards	\$ 50.00	\$ 15,300.00	\$ 1,530.00	\$ 16,830.00	Assuming 3" impact depth on average for the .76 acre lined area
9	Backfill, Compact, & Restore Site, Includes Seeding	1	Lump Sum	\$ 30,000.00	\$ 30,000.00	\$ 3,000.00	\$ 33,000.00	All dirt work included, backfilling location, and final reclamation.
	Subtotal for Bonding				\$ 83,070.00	\$ 8,307.00	\$ 91,377.00	

Cost Estimate Summary



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Reclamation Plan

Interim Reclamation

A site will be selected for the spoils from the pond and construction. The topsoil will be stripped from the site and stock piled outside of the construction area. The spoils will be utilized for berming as applicable. Remaining spoils will be stockpiled. Once the construction is completed, the topsoil will be spread over the berms evenly and re-seeded with a seed mix appropriate for the elevation and area. The site will be managed under Ursa Operating Company's (Ursa) Stormwater Management Plan until the vegetation has established.

Final Reclamation

Ursa estimates that the proposed facility will be in operation for an anticipated period of approximately ten plus years during development and production of Ursa's Rio Blanco County operations. Upon termination of the development and production activities, the project area will be reclaimed, as outlined below:

- The liners will be removed for disposal at a licensed disposal facility. The soil under the liner will be tested for adherence to Table 910-1 constituent standards.
- The pond location will be recontoured to include swales and land forming with slopes ranging from 4:1 to 5:1. The intent of this recontouring is to create an area that could naturally accumulate runoff as it drains toward Fawn Creek and be easily utilized by wildlife. After recontouring, the entire area will be re-vegetated. Top soil will be redistributed across the site and will be reseeded with an approved seed mix (see attached seed mix recommendation).
- Ursa or its successors will monitor the site to ensure that 70 percent of the pre-existing vegetation is achieved, per the requirements of the CDPHE Stormwater Permit for the site.

Seedbed Preparation and Slope Reconstruction:

Cut and fill slopes will be re-contoured to a slope of 5:1 – 3:1 or less in instances where necessary to match the existing natural topography. Following final contouring, all backfilled or ripped surfaces will be covered evenly with topsoil. Recontouring should form a slope resembling the natural drainage of the area. Final seedbed prep will consist of scarifying/surface roughening the topsoil prior to seeding.

Surface roughening can be in the form of dozer tracks or furrows perpendicular to the direction of slope, pocking can be done utilizing hand tools or a back hoe to create depressions in the ground. The use of disks, tillers etc. to create uneven surfaces that follow along the contours of the grade can also be utilized as a form of surface roughening. When hydro-seeding or mulching, surface roughening should be done prior to seeding, unless the mulch is to be crimped into the soil surface. If broadcast seeding and harrowing, surface roughening will be done as part of the harrowing. Furrowing can be done by several methods, the simplest of which is to drill seed perpendicular to the direction of slope in a prepared bed. Other simple imprinting methods include deep hand raking and harrowing, always perpendicular to the direction of slope. All compacted areas will be ripped to depth of 18" with max furrow spacing of 2'. Where practicable, ripping will be conducted in two passes at perpendicular direction.

Topsoil: Following final contouring, all backfilled or ripped surfaces will be covered evenly with topsoil. The topsoil in the cut slope on the northwest of the pad will be heavily pocked using the excavator bucket to form an uneven soil surface complex which will aid in revegetation and help with slope stabilization. The fill slope, and remaining disturbed, and reclaimed areas will be track walked to aid in revegetation and slope stabilization. In areas that may not have been disturbed during the reclamation process or areas of suspected compaction that will be reseeded, measures will be taken to loosen and spread the topsoil. These measures may include scarifying the soil by raking or harrowing the soil.

Seed Mix: Seed mix used for reclamation will be taken from the approved seed mixtures identified below:

Boies Ranch Seed Mix

Common Name	Scientific Names	Form	PLS lbs/acre*
Western wheatgrass	<i>Pascopyrum smithii</i>	Sod former	2.0
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp.</i>	Bunch	2.0
Needleandthread	<i>Hesperostipa comata</i>	Bunch	1.0
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Bunch	2.0
Fourwing Saltbrush	<i>Atriplex canescens</i>	Shrub	1.0
Utah Sweetvetch	<i>Hedysarum boreale Nutt.</i>	Forb/herb	1.0
Total lbs/acre			9.0 lbs/acre

Double this rate if broadcast or hydroseeded.

Seeding Procedures: For best results and success, the recommended grass mixture reseeding should be done in late autumn to take advantage of natural precipitation for the region. The reseeding rate should be doubled for broadcast application. Preferred seeding method is multiple seed bin rangeland drill with no soil preparation other than simple grading to slope and surface roughening, where applicable.

Alternative seeding methods include, but are not limited to:

- harrow with just enough soil moisture to create a rough surface, broadcast seed and re-harrow, preferably at a 90-degree angle to the first harrow;
- hydro-seeding; and
- hand raking and broadcast followed by re-raking at a 90-degree angle to the first raking.
- These are not the only means of replanting the site. However, these methods have been observed to be effective in similar landscapes.

The prepared soils will be seeded (weather permitting) no more than 24 hours following completion of final seedbed preparation. The seeding will be conducted by means of drilling the prescribed seed at prescribed seeding rate. The seed will be drilled with a common range drill at a depth of 0.25 – 0.5” beneath the soil surface. The seed will be drilled horizontally across the pad faces and perpendicular to the track walking when possible. When slope gradient less than 2.5:1 exists and drilling is not possible from a mechanical and safety standpoint the soils will be broadcast seeded at twice the prescribed amount. The reseeding will be monitored and reseeded as appropriate until the reclamation standards detailed above are met.

Mulch: With 24 hours of reseeding (weather permitting) hydromulch will be applied to all reclaimed and reseeded surfaces. Areas where the erosion potential is such that biodegradable blankets will be used will not be hydromulched.

BOIES RANCH SOLIDIFICATION AREA



Emergency Evacuation, Assembly, Accountability and Response Plan

MAY 2019

EMERGENCY: *A sudden and urgent occasion for action; pressing necessity.*
-New American Webster Dictionary



BOIES RANCH
SOLIDIFICATION AREA
Rio Blanco, CO, Colorado

FACILITY LOCATION
Lat: 39.853628, Long: -108.310995
Elevation: 6,257'
SECT.29, T2S, 97W

Ursa Operating Company LLC (Rifle, CO Office)
Buckhorn Dr.
Rifle, CO 81650

Area Office Phone Number: 970-625-9922

24 hr Emergency Dispatch: **855-625-9922**

Area Office Address: 2500 CR 26
Rifle, CO 81650
(Unmanned Office.
Use 24 Hour Dispatch
or Call 911)

Revision Number: N/A

Revision Date: N/A

Implemented Date: 05/14/2019

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In compliance with:

29 CFR 1910.38-39 Means of Egress – Emergency Action/Fire Prevention Plans
NFPA 1 – Fire Prevention Code
NFPA 101 – Life Safety Code®
Best Management Practices for Wildfire Mitigation

1.0 PURPOSE AND SCOPE

This Emergency Evacuation and Response Plan (“EERP”), also known as the Emergency Action Plan (EAP), has been prepared to address activities, including potential wildfires, at the Boies Ranch Solidification Area. The EERP is applicable to emergencies that may occur at the Site and is intended for use by all Ursa Operating Company LLC (“Company”) personnel, contractors, consultants, and sub-contractors.

This plan is intended to minimize the potential for injury, loss of life and/or property, and to define the responsibilities of the Company’s personnel during emergency situations. In the event of an emergency, it is necessary to establish immediate coordination with local responders, with Company corporate officials, and with Company representatives in Rifle, Colorado. A contingency plan shall be implemented, as needed, to meet local responders’ requirements and response capabilities.

Emergency procedures will be updated as needed for all potential incidents, including wildfire, structural fire, explosion, toxic gas leaks, acid or caustic spills into primary water sources, weather disturbances and civil unrest. Procedures will include details on communications, firefighting, medical, security, evacuation resumption of operations or others as required by the situation and as directed by site supervision.

In accordance with 29 CFR 1910.38, this EAP will be kept at the workplace and readily available to all employees. All personnel will be trained on this policy at the time of hire and any time changes are made thereafter.

2.0 ROLES AND RESPONSIBILITIES

This section identifies the roles and responsibilities of project personnel and off-site response organizations crucial to handling an emergency. Contact information for key personnel and organizations are included as an attachment to this Plan.

Key project personnel for planning, responding to, and reporting an emergency include Company management representative, Boies Ranch Solidification Area personnel, and Emergency Response Organizations involved in the response of a hazmat, fire, or medical emergency.

2.1 PROJECT COORDINATOR

Roles of the Project Coordinator include:

- Serve as the primary spokesperson for the Company during a response to an emergency involving hazardous materials or events that could potentially affect the public.
- Provide interface between the Company and the media.
- Delegate or transfer roles or responsibilities to appropriate personnel as necessary.
- Notify corporate management, the United States Environmental Protection Agency (EPA) when necessary, and the Supervising Contractor and/or other outside agency contacts of emergency conditions and status, as required.

2.2 SITE MANAGER/SUPERVISOR OR LEAD OPERATOR

The Site Manager/Supervisor or Lead Operator shall:

- Provide program management, technical oversight, and expertise in Boies Ranch Solidification Area field activities and assign employees roles and responsibilities.
- Review response plans, incident reports, post emergency critiques, and lessons learned.
- Ensure all employees possess the proper and adequate training to perform emergency response actions during a hazmat, fire, medical, or other type of emergency.
- Perform duties associated with the normal operations of the Boies Ranch Solidification Area.
- Isolate the response area as directed by the guidance of this document, the Emergency Response Guide (United States Department of Transportation, 2012) (ERG), or per the Project Coordinator, Site Manager, or Site Safety Officer.
- Make notifications to appropriate managers/supervisors as well as the applicable emergency response organizations.
- Recognize the nature of the hazard.
- Call for evacuation or shelter-in-place, as required and if the Incident Commander has not arrived on site.
- If prevailing winds preclude the use of a decontamination facility in the assembly area, designate an alternative meeting place for all on-site workers, contractors, and consultants in the event of an emergency.
- Perform spill response using equipment and/or spill response kits as designated and trained to do so. If an Incident Commander has been designated, by either the Company or a local emergency response agency, the spill response activities shall be dictated by that person's orders in accordance with industry practices.
- If trained to do so, extinguish insipient stage fires using appropriate portable fire extinguishers and initiate emergency fire assistance with local fire services and incident command.
- Coordinate and ensure that facilities have been properly and thoroughly evacuated in the event of a fire or emergency.
- Ensure all personnel are properly trained on the policies contained herein.
- Ensure adequate resources are made available to Boies Ranch Solidification Area personnel during an emergency or, more importantly, to prevent incidents from occurring.
- Act as the Incident Commander until a Company Corporate, Public Agency, or Private Sector Incident Commander with greater incident command experience arrives at the scene to relieve him/her of this responsibility.
- Designate primary and alternate supervisors responsible for coordination of the accounting process at all muster points once evacuation has been achieved.

2.3 SITE SAFETY OFFICER

The Site Safety Officer shall:

- Provide oversight for emergency planning.
- Serve as on-scene coordinator during the emergency and advise the Incident Commander on the emergency condition or event.
- Assist the Incident Commander with emergency response actions.
- Assist emergency response/medical personnel in making notifications as requested.
- Keep emergency response/medical personnel apprised of emergency status.
- Provide a current inventory of chemicals and hazardous substances, materials, or wastes present on site and identify storage locations to off-site response organizations.
- Ensure emergency response communications systems are available and operational and conduct annual tests of those systems.

- Assist in preparing records of emergency response events, including incident investigation reports, for noteworthy practices and emergency response improvements.
- Ensure responders meet the requirements for medical surveys prior to and after exclusion zone entries.
- Establish a worker, contractor, and consultant sign-in or tag-in system to account for all on-site workers, contractors, or consultants in the event of an emergency.

2.4 INCIDENT COMMANDER

The Incident Commander is a Company employee or local emergency response official who is trained to the level of First Responder Operations, including Incident Management (IC) training, and is primarily responsible for responding to an emergency at the Boies Ranch Solidification Area.

Incident Commander shall:

- Direct emergency response actions using appropriate personnel and resources to control or minimize the emergency.
- Authorize site-wide evacuations of personnel or call for shelter-in-place.
- Declare an emergency.
- Delegate personnel for positions of emergency response, including operations, emergency response coordination, and public relations.
- Verify personnel accountability list.
- Maintain succession of authority during the emergency.
- Protect the health and safety of the public and site personnel.
- Conduct a post-emergency assessment as soon as practicable following stabilization of the emergency condition.

3.0 OFF-SITE AND/OR LOCAL EMERGENCY RESPONSE ORGANIZATIONS

Off-site agencies or local emergency response services will be used for emergencies requiring specialized training and resources of those organizations. Company employees shall act to provide aid and resources, including information and technical assistance, to off-site response organizations as necessary but shall not be responsible for emergency response activities at a technical level. Company and employees will allow access to the property for all personnel and equipment required for emergency response, such as fire equipment, law enforcement vehicles, ambulances, and flight-for-life helicopters. Depending on the scope and severity of the emergency, any of these organizations, other than the hospital, could provide an Incident Commander who is responsible for managing the emergency.

3.1 RIO BLANCO COUNTY EMERGENCY COMMUNICATION

The Rio Blanco County Emergency Communications Center is responsible for all 911 calls received by dispatch and for mobilizing appropriate response agencies during an emergency, including sites located in Rio Blanco County. Local lines calling 911 are directed to this authorized organization.

3.2 BUREAU OF LAND MANAGEMENT EMERGENCY RESPONSE

Roles of the Bureau of Land Management (BLM) Emergency Response include:

- Emergency response services within the BLM areas of Piceance Creek Fire Suppression, Hazardous Materials Mitigation Fire Prevention, Rescue, Training and Public Education, and other emergency services including ambulance and wild fire responses.
- Provides first response medical services for all injured or ill Company, contractor, subcontractor, or vendor employees and for site visitors.

- Transports injured or ill personnel by ambulance to medical facilities from the site or related property.
- The BLM Field Office in Meeker, CO is located at: 220 E Market Street, Meeker, CO 81641. Emergency response shall dispatch emergency responders from the BLM depending on availability and response times and shall be determined by dispatch at the time the emergency call is made.
- The phone number is 970-878-3800 and should be used only to coordinate emergency response planning and related activities. 911 should be dialed in the event of an emergency.

3.3 PIONEERS MEDICAL CENTER

Roles of the Pioneers Medical Center include:

- Providing medical treatment of personnel who are ill or have life-threatening injuries associated with a project emergency.
- Located at 100 Pioneers Medical Center Drive, Meeker, CO 81641.

3.4 RIO BLANCO SHERIFF'S DEPARTMENT

Roles of the Rio Blanco Sheriff's Department include:

- Providing law enforcement protection, traffic control and coordination, and other law enforcement services.
- Coordinating emergency law enforcement services.
- Providing a suitable area or accommodations for use as an emergency operations center.
- Located at 355 4th Street Meeker, CO 81641.

3.5 ST. MARY'S CAREFLIGHT HELICOPTER

In case of a life-threatening situation requiring immediate medical attention that cannot be accommodated or treated by emergency responders located closer to the Boies Ranch Solidification Area, St. Mary's Hospital in Grand Junction can provide medical evacuations via helicopter when necessary.

4.0 COORDINATION WITH OFF-SITE RESPONSE ORGANIZATIONS

Effective coordination with off-site organizations will result in effective response to any emergency situation. Training and drills as described in Sections 7.0 and 8.0, respectively, should be periodically made available to off-site emergency response organizations. Under the direction of the Site Manager or Site Safety Officer, a project representative will participate in local emergency planning committee meetings when possible. The Company recognizes that close coordination with response organizations continuously improves emergency responses by enhancing communication, site familiarity, and lessons learned for all involved.

5.0 CONTINGENCY PLANNING

The objective of contingency planning is to prepare for emergency responses. It includes coordinating with emergency response organizations, describing actions during emergencies, conducting training, and performing drills. The Project Coordinator, Site Manager, or Site Safety Officer will coordinate drills and plan for emergencies while synchronizing the Company's efforts with off-site emergency response organizations.

In order to properly prepare for an emergency response, project personnel shall:

- Communicate to the Incident Commander that an emergency is in progress.
- Recognize the hazards in the area potentially affected by the emergency.
- Know what to do and what not to do.
- Understand warning sounds and alarms.

- Know where to assemble.

The Company will provide first aid, cardiopulmonary resuscitation (CPR), and automated external defibrillator (AED) training to First Responder level consistent with the requirements of 29 CFR 1910.151(b). One individual on each shift at the Boies Ranch Solidification Area shall be trained to this level.

6.0 TRAINING

The Company maintains training programs to ensure personnel are adequately trained and prepared for the work they perform and for potential emergencies. Company personnel, contractors, and consultants who regularly work at the Boies Ranch Solidification Area must receive training on the current EERP.

Specific training is provided to workers who have special duties during emergencies, such as the facility's Supervisor and Site Operator who may need to respond directly to an incident.

Site visitors and vendors will be accompanied by trained site personnel and shall log in upon arrival and sign out when leaving. Site-designated First Responders will train and practice procedures for any site EMS responses and off-site emergency responses.

Off-site response organizations should be offered training on site hazards; potential injuries and/or illnesses that could result from contamination by contact, ingestion, or inhalation of toxic substances present on site; and contamination risks associated with fires, explosions, or other releases of materials located on site. This training, along with a site tour, shall be offered annually by the Company.

7.0 DRILLS

Annual on-site drills shall be conducted to practice emergency response protocol and evaluate those responses. Such drills shall simulate a variety of emergencies and may involve a single field crew, the entire site personnel, and/or off-site emergency response organization. Drills may also involve detailed coordination and physical role-playing to establish familiarity with these procedures. Drills help improve the Emergency Response process by addressing opportunities for improvement within the Emergency Response System used at this Site.

8.0 EMERGENCY ACTIONS

For the purpose of this plan, an emergency is considered to be *any condition which requires assistance over and above that which can be supplied by the normal personnel present at the time or which cannot be handled in a routine manner.*

All emergency situations are unique and present various conditions. Always evaluate the situation before deciding on a course of action. Company representatives must ensure that all site personnel do not “rush in” until the following has been considered:

- Is there an immediate threat to life from fire, explosion, structure collapse, chemical spill or release? If so, sound the alarm and evacuate.
- Is there an immediate potential for release of toxic (poisonous) chemicals or fumes in the air? If so, evacuate uphill and upwind of the release.
- Is there an immediate potential for uncontrollable energy release (pressure), electrical shock, chemical spill, fuel to “feed” a fire? If so, de-energize equipment, disconnect power, engage emergency shut off valves to

pumps and fuel sources; but only do so if the action will not cause a more serious problem or endanger someone.

- Eliminate sources of ignition by shutting down all other powered equipment, including vehicles, pumps, construction equipment, welding equipment, combustors, separator burners, auxiliary generators, power tools, etc. that may be on site at the time.
- When in doubt, sound the alarm, evacuate, and call for help.

With regard to any emergency observed at the work site, the immediate supervisor must be contacted, and the nature of the emergency reported.

8.1 ACTIONS COMMON TO ALL EMERGENCIES

Emergency Response actions should account for life safety first, the environment second, and lastly, property (Company or non-Company). The steps below should be considered during any emergency:

- Survey the scene for personal safety. If the area is deemed unsafe, re-locate.
- Warn others in area by whatever means available (voice, telephone, radio, portable sirens, car horn.)
- Implement chain of command notification for an organized response.
- Survey the scene and determine resources needed by emergency personnel.
- Stop or secure the operation causing the emergency, but only if safe to do so.
- Minimize exposure to potentially hazardous conditions as part of the emergency.
- Identify other hazards present (e.g., the potential for fire or explosion.)
- Isolate the area and establish control boundaries, if possible.
- Contact and direct emergency response organizations to the scene as necessary.
- At no time should an emergency response be performed if the Incident Commander determines the area is unsafe for personnel to enter.

Good communication is essential for effective emergency responses. The simple warning system described in Table 8-1 will be used to notify personnel of an emergency. This warning system shall be tested at least annually by the Site Safety Officer.

Upon notification of an emergency, the Site Safety Officer will notify the Project Coordinator. Notifications to agencies and organizations will be determined by the Project Coordinator. Supplemental actions will be determined by the on-site Incident Commander and carried out as quickly possible after immediate actions are addressed.

All Boies Ranch Solidification Area employees must be able to identify hazards in the immediate area and be aware of alarm notification procedures. Table 8-1 below describes the alarm method using a handheld air horn. DO NOT use vehicle horns if potential for ignition exists. Boies Ranch Solidification Area personnel should be trained to recognize these alarms.

TABLE 8-1
Warning Signals and Actions

ACTION	WARNING SIGNAL
ATTENTION (Emergency Event)	<ol style="list-style-type: none"> 1. Continuously blast horn for 5 seconds. Repeat three times with a 5-second pause in between. 2. Supervisor must then radio employees to communicate further instructions to all personnel.
EVACUATION	<ol style="list-style-type: none"> 1. Make five 10 five-second blasts with horn 10-second blasts with horn, with 5-second pauses in between each blast. Repeat two times. 2. Immediately evacuate to the designated assembly area for personnel accountability.
SHELTER IN PLACE	<ol style="list-style-type: none"> 1. Continuously blast horn for thirty seconds. Repeat one time if necessary with a 5-second pause in between. 2. Immediately proceed to shelter-in-place and proceed with emergency preparations as indicated herein.

8.1.1 SITE SAFETY KIT

The Boies Ranch Solidification Area has an Emergency Response Station (**Please see attached map Page 32 for location**) shall maintain a safety kit specifically designed for that site. It shall be available for transport to an emergency location. The kit should include, at a minimum:

- First response bags/first aid kits.
- AED (available for trained personnel only at Boies Ranch Field Warehouse).
- Eye wash kit.
- Spill response materials such as absorbent pillows, vermiculite, spill response trailer, etc.
- Minimum 20 lb. ABC fire extinguisher.
- Spotlight/flashlights.

8.2 ADDITIONAL INFORMATION FOR SPECIFIC EMERGENCIES

Additional information for specific emergencies includes:

- Bomb or Terrorist Threats
- Explosions
- Evacuations
- Fires
- Floods
- Earthquakes
- Severe Storms
- Power Failure
- Material or Chemical Spills
- Medical Emergencies
- Public Disturbances

- Transportation/Vehicle Incidents
- Special Actions at the Pond Site
- Shelter in Place

8.2.1 BOMB OR TERRORIST THREATS

If a bomb threat is received, stay calm. It is important to keep the caller on the line to obtain as much information as possible. Someone other than the call recipient should notify the Project Coordinator or Site Manager of the threat while the caller is still on the line. A bomb threat may be followed by a site evacuation depending on information obtained from the caller.

8.2.2 EXPLOSIONS

If flammable natural gases or liquids are released, the following action should be taken immediately:

- Evacuate all personnel from area.
- Shut down all running equipment.
- Close all valves upstream and downstream of leak.
- Call 911.
- Contact appropriate Company personnel and implement notification chain of command.
- Follow instructions in "Fire" section in case of a fire.
- If personnel are injured, apply first aid as trained to do so and transport them to nearest medical facility, if possible. Otherwise, wait for emergency responders to arrive.

8.2.3 EVACUATIONS

Depending on the emergency, personnel shall evacuate to a location upwind and uphill, if possible. Personnel shall meet at the designated safe area and a head count will be taken by the supervisor or designee to ensure that everyone is accounted for.

A call for an evacuation may be restricted to a specific work area or executed for the entire site. Area evacuations can be ordered by any Company employee, contractor, subcontractor, or others during an emergency. A site-wide evacuation may be authorized by the Project Coordinator, Site Manager, Site Safety Officer, and/or Incident Commander.

All buildings, truck bays, and tank farms must be evacuated if the fire alarm sounds or if authorized personnel orders an evacuation. Never ignore an emergency alarm.

Evacuation beyond muster points may be required. The Incident Commander will direct evacuation beyond muster areas to an area of safe refuge.

If an onsite evacuation goes into effect Company will coordinate with all necessary agencies and surrounding land owners that may potentially be affected by an evacuation.

When instructed to evacuate, proceed with the following:

- Implement emergency shut-down procedures by activating the emergency shut-off valves on all equipment.
- Identify the direction of the wind by observing the direction of the wind sock and evacuate immediately cross or upwind of the affected area to the designated assembly area or muster point.

- Follow the primary exit route. If the designated route or assembly point is not accessible or safe due to wind direction, proceed to a secondary or alternate assembly area as designated herein or by the Incident Commander.
- If primary exit is blocked or unable to be reached, choose secondary evacuation route.
- All radio traffic should cease except for those authorized to broadcast emergency information on the main radio channel. A radio channel may be designated for supervisors to communicate with an emergency coordinator or a Company representative.
- Assist injured persons evacuating the site as needed and if able and trained to do so.
DO NOT CAUSE MORE HARM AND DO NOT BECOME ANOTHER VICTIM BY RUSHING INTO A HAZARDOUS ENVIRONMENT.
- All engine-driven equipment should be shut down and engines turned off. Keys should be left in the ignition.
- Vehicles should be parked and clear of traffic lanes and access routes. Emergency vehicles and personnel must have clear access to the location.
- Move to the predetermined muster point away from the incident.
- If individuals are ignoring the alarm, warn them to evacuate immediately. Do not get involved in an altercation but notify the supervisor immediately of the location of these employees.
- Do not reenter the work area until directed to do so by authorized personnel or after the "All Clear" signal has been given by the Site Supervisor.

8.2.3.1 Assembly Areas/Muster Point

Assembly areas are designated safe refuge zones during a site emergency. If prevailing winds put either the primary or secondary muster point downwind of the accident site, workers will be directed via radio or cell phone to an alternative area. All personnel must be aware of the primary and secondary muster points, even if they are NOT marked.

PRIMARY MUSTER POINT	SECONDARY MUSTER POINT
Please See Attached Map Page 32	Please See Attached Map Page 32
HELICOPTER LANDING ZONE	
Please See Attached Map of Boies Ranch Ursa Field Office Helipad Coordinates Page 33	

8.2.3.2 Evacuation Routes

Evacuation routes will be clearly communicated to all personnel by postings or radio directives as mandated by changing conditions. As stated above, the primary evacuation route shall follow the access road that leads away from the site and towards County Road 29 & 26 to County Road 5. If conditions warrant, this evacuation route shall be revised to account for upwind possibilities that are safer than traveling downslope along the access road during certain emergency situations. The Incident Commander and Site Safety Supervisor will determine if a change in the primary evacuation route is mandated.

- Evacuation routes shall be upwind of any hot zone or exclusion zone and windsocks shall be visible to all site personnel to determine which exit route to take during evacuation.
- Travel south or west away from the staging area and the on or offloading area of the site.
- If the primary evacuation route is unusable, workers shall be directed via radio to an alternate route.

- Be aware of flooded or adverse driving conditions on evacuation roadways that one may encountered while traveling away from jobsite. Drive with care and never attempt to drive through flooded road sections and minimal visibility conditions.

The Project Coordinator or Site Manager will ensure evacuation routes are rehearsed as a part of regularly conducted site emergency drills.

8.2.3.3 Personnel Accountability

The Incident Commander or Safety Officer shall use an accountability list to account for all personnel. The accountability list shall be based off the Site's daily sign-in/sign-out log or sheet. A count of all personnel shall be done at the muster point. The names of missing and/or unaccounted for personnel must be delivered to the Project Coordinator as soon as possible.

CAUTION: Searches for missing personnel shall be conducted only if possible to do so safely. No personnel shall conduct a search in dangerous conditions.

8.2.4 FIRE

The objective is to take actions that might reduce the consequences of a fire in the event one occurs at the Boies Ranch Solidification Area. When a fire alarm sounds, leave immediately. Instruct all employees to leave the area immediately as you evacuate and notify the supervisor. Be aware of individuals who may need assistance. Do not reenter the site until directed to do so by authorized personnel.

8.2.4.1 Extinguishable Fire (Incipient Stage)

- Report the fire by activating the nearest fire alarm.
- Use a fire extinguisher in your area to extinguish the fire, if trained to do so.
- Use the **PASS** system:
 - a. **P**ull the safety pin.
 - b. **A**im – Remove the hose and aim the nozzle toward the fire.
 - c. **S**queeze – Holding the handle, squeeze the trigger.
 - d. **S**weep – Extinguish the fire in a sweeping motion, from left to right.
- Immediately report the incident to the supervisor.
- Rule of thumb: If you have already discharged one 20-30-pound fire extinguisher at the base of a fire and have made no impact on the fire, then it is beyond the incipient stage and steps in **Section 8.2.4.2** below must then be followed.



8.2.4.2 Non-Extinguishable Fire

- Report the fire by activating the nearest fire alarm and contacting the supervisor on duty.
- Call the fire department and give all needed information, referencing the emergency numbers listed herein.
- Conduct an emergency shut down and evacuate the area.

If a potential wildfire breaks out, the most important thing is accountability. First notify someone of the fire. Second, call the Rio Blanco Fire Protection District immediately. The sooner the fire department is dispatched, the quicker the response time. All fires on require immediate notification to applicable Company personnel. If a fire cannot be put out by the fire extinguisher in the incipient stage, it is time to evacuate the area immediately.

8.2.5 FLOOD

Flood BMP's have been designed and will be installed to mitigate any potential flood events that may arise. The onsite actions taken in the event of a flood will depend upon the amount of warning received before a flood actually occurs. Flooding associated with thunderstorms can result in rapid increase in flow in drainages, potentially causing evacuation response. Refer to **Section 8.2.3** for additional evacuation guidance.

8.2.6 EARTHQUAKE

The likelihood of an earthquake at or near Western Colorado is highly unlikely. This information is provided for awareness only. Be prepared for additional aftershocks. They are usually smaller but can cause additional damage or bring weakened structures down. Do not attempt to move seriously injured persons unless they are in immediate danger of further injury. Report the location of the injured person to emergency personnel.

8.2.6.1 Indoors

- Stay inside. Falling debris can cause serious injury outside.
- Take cover under a sturdy desk, table, or other furniture, in a supported doorway, or along an inside wall.
- Stay as far away from glass and windows as possible.
- Extinguish open flames and do not use lighters, matches, or candles, due to possible gas leaks.
- After tremors have ceased, leave the building until structural safety can be assessed. Do not enter any building until structural integrity can be verified.

8.2.6.2 Outdoors

Move away from buildings and utility wires. Once in open, stay until the tremors stop.

8.2.6.1 Moving Vehicle

- Stop as quickly as safety permits. Remain in the vehicle.
- When tremors stop, drive carefully and watch for falling objects, downed electrical lines, and broken or undermined roadways.

8.2.7 SEVERE STORMS

Colorado weather at all times of the year can be unpredictable. To prepare for contradictory conditions, personnel shall monitor news and weather reports for forecasts. Supervisors should be warned of threatening conditions.

The Company will keep supervisors informed of the changing conditions and the effects of weather on operations. Supervisors will subsequently inform all employees. Supervisors will look at the difference in the drive time to and from the work site due to severe weather and adjust accordingly, if necessary. Supervisors will also review the appropriate PPE for the weather condition and inform all employees of any necessary changes.

8.2.7.1 Severe Lightning

- If a tornado or severe lightning is seen, sound the alarm and evacuate.
- Seek shelter away from the pond, trailers, and vehicles.
- Get low to the ground, away from trees, preferably in a ditch or depression if no likelihood of flash flooding exists in the area.
- If time allows, notify others of your location and situation.
- Do not attempt to outrun severe weather or flash floods.
- Do not park beneath trees and avoid exposed areas such as ridgelines and natural washes.
- Seek shelter if available, otherwise stay in vehicle.
- If caught out of your vehicle, proceed downhill to a less exposed side slope location. Avoid trees, fences, large rocks. Squat in the open on the balls of your feet with your head down. Cover ears with hands, elbows in, and wait the situation out.
- Never attempt to walk or drive across flooded roads or ditches.

8.2.7.2 Blizzard

- Tune into and monitor local weather radio or news broadcasts.
- When a blizzard warning has been issued, immediately notify office and field personnel that may be affected.
- Inform others to tune into weather broadcasts and stay abreast of possible conditions and/or weather changes in their area.
- Inform personnel if blizzard is underway.
- If stranded in blizzard conditions, notify others of deteriorating conditions along with your location and situation before communications are lost.
- **DO NOT** leave your vehicle unless absolutely necessary. Assure exhaust pipe is clear of obstructions (such as snow buildup) and run engine only when needed, so fuel is conserved.
- If stranded away from vehicle or if necessary to abandon it, seek shelter in a stable structure and wait for help to arrive. If shelter is not available, build a snow cave and wait for help. If caught outside of shelter, build a fire if possible.
- Try and stay dry. Change to dry and weather resistant gear.
- If caught with more than one person in a blizzard, **DO NOT SEPARATE**. Help others if you are capable.
- Do not attempt to walk off the mountain during blizzard conditions.

8.2.8 POWER FAILURE

If there is a power failure at the Boies Ranch Solidification Area, proceed with the following steps:

- Switch off all equipment being used to prevent injury when power returns.
- Ensure all other equipment or switches are turned off to prevent possible damage to equipment from power surges when power is restored.
- Notify the supervisor in charge of your actions due to the power failure.

After the power has been restored, check your area and report any equipment or other damage to your supervisor. Verify that all electronics are up and running and report any discrepancies.

8.2.9 MATERIAL OR CHEMICAL RELEASE AND/OR SPILLS

Actions in the event of a spill of petroleum products or toxic materials, including condensate and process water, will be provided in the Company's Spill Prevention, Control and Countermeasure Plan for the Boies Ranch Solidification.

Notify all employees and other appropriate personnel of the spill and any chemicals involved. All employees will comply with the Company's personal protective equipment policy for any chemicals they are using or to which they may be exposed at the Site in the event of a spill.

8.2.10 MEDICAL EMERGENCIES

While all employees are responsible for immediate action in response to a medical emergency, no employee is required to provide first aid for which he or she has not been trained or if uneasy about doing so. Occasionally accidents will happen where individuals, including the victim, will assume that no injury has occurred and that no medical attention is required. If symptoms become evident later, an Incident Report needs to be filled out and turned into the supervisor on duty. The injury incident will then be investigated and analyzed for root causes to mitigate or eliminate hazards that led to the incident.

Different procedures for varying degrees of medical emergencies shall be utilized by site personnel when responding to a medical emergency.

8.2.10.1 Life Threatening

EXAMPLES: Unconsciousness, inability to move, potential spinal injuries, seriously broken bones, uncontrollable bleeding, heart attack, stroke, inability to breathe, etc.

- Do not move the victim unless he or she is in a life-threatening situation or environment. Render first aid applicable to your training and abilities.
- Call for emergency help and reference the emergency phone numbers listed herein. If necessary, send someone to meet emergency personnel and bring them to the victim's location.
- Notify supervisor immediately and report the following:
 - Name of victim.
 - Date and time of injury.
 - Description and/or circumstances of the injury.
 - Summary of what happened and include actions taken as a result.
 - Names of witnesses.
 - Conditions of the site or location of injury.
 - Need for Incident Report Form.

8.2.10.2 Non-Life Threatening

EXAMPLES: Cuts, abrasions, sprains, fainting, simple fractures, etc.

- Immediately contact medical services by referencing emergency phone numbers. Render first aid applicable to your training and abilities.
- Notify the supervisor of the injury and report the following:
 - Name of victim
 - Date and time of injury.
 - Description and/or circumstances of the injury.
 - Summary of what happened and include actions taken as a result.
 - Names of witnesses
 - Conditions of the site or location of injury.
 - Need for Incident Report Form.

8.2.10.3 General

Basic guidelines for medical emergencies:

- Make sure it is safe to be in the victim's area;
- Call 911 and request an ambulance. Provide the following information:
 - Number and location of victim(s);
 - Nature of injury or illness;
 - Hazards involved; and,
 - Nearest entrance (emergency access point.)
- Alert trained employees to respond to the victim's location and bring a first aid kit and/or AED.
- Notify the Site Supervisor or Site Manager.
- Only trained responders/personnel shall provide first aid and assistance.
- Never move a victim in need of medical assistance unless:
 - Directed by a competent medical authority.
 - The injury will not be aggravated or complicated by a move.
 - Greater physical harm to the victim likely if not moved from current location.
 - Wound severity is life-threatening.
- Take "universal precautions" to prevent contact with bodily fluids and exposure to blood borne pathogens.
- Meet the ambulance at the nearest entrance or emergency access point and direct them to the victim(s).

Never delay EMS access to the scene while applying administrative controls or prescribing personal protective equipment. Decontamination of victims, emergency medical services (EMS) personnel, and any associated equipment and materials will be performed in proportion to the nature and severity of the medical emergency.

8.2.11 PUBLIC DISTURBANCE ACTIONS

A public disturbance is defined as a demonstration by activists or a threat to operations on the Boies Ranch Solidification Area. Public disturbances can take the form of events that may serve to:

- Disrupt Company, contractor, or subcontractor operations.
- Adversely affect Company or contractor properties.
- Jeopardize the safety and health of Company, contractor, or subcontractor employees.
- Adversely affect the reputation or public image of the Company.
- Threaten or cause bodily injury or hazardous material exposure to the general public.

If there is no immediate threat to personal safety, the Project Coordinator or Site Manager will work with the corporate and off-site emergency response organization(s) to determine the appropriate response actions needed to safeguard personnel and property during a public disturbance, as they often occur with little or no warning.

8.2.12 TRANSPORTATION OR VEHICLE INCIDENTS

A vehicle collision is defined as any vehicle contact or damage requiring repairs to a Company vehicle, another vehicle, and injury to a pedestrian, animal, or third-party, or damage to Company property.

8.2.12.1 Vehicle Accident

- **STOP. NEVER LEAVE THE SCENE OF AN ACCIDENT.**
- Obtain help for injured persons.
- Notify policy and a Company supervisor.
- Obtain necessary information at the scene. Exchange only driver's license number and insurance information with another driver. DO NOT make commitments. State the collision will be reported to your company. Any liability will be determined by the Company and its insurance carrier. DO NOT express opinions or become involved in arguments.
- Have witnesses provide address and telephone numbers.
- If injury results from a vehicle accident, an injury report must be completed.

8.2.12.2 Transportation Incident

A transportation incident is an emergency event involving vehicle/truck transport of operation materials (such as sludge, acids, bases, or polymers) being delivered to, or shipped from, the Boies Ranch Solidification Area.

- If an injury requiring immediate medical attention occurs, or if there is a potential for impact to the environment that cannot be contained with a small spill kit or hand tools, the incident will be handled by off-site response organizations.
- The carrier used for transportation incidents shall be included in all accident investigations involving their transport vehicles.
- Conveyance or transportation employee/staff shall be trained to minimize the contamination of property by inspecting shipping equipment for any leaking material, signs of damage or excess wear prior to its use.
- Conveyance or transportation employee/staff shall be trained to respond to an emergency without endangering personal safety.
- Shipping personnel will immediately notify the Site Manager or Site Safety Officer and/or the off-site emergency response organizations of the potentially hazardous emergency and the possible threat to the public's health and safety, the potential impact to the environment, and any possible or impending damage to property.
- The Project Coordinator, Site Manager, Site Safety Officer, or the conveyance company will coordinate contractor emergency response cleanup support as needed.

NOTE: If the amount of material spilled exceeds the reportable quantity (RQ) as defined in the Hazardous Substance/RQ Table by the Department of Transportation and the Environmental

Protection Agency, the **National Response Center** will be contacted by the Project Coordinator within twenty-four (24) hours of the incident at **800-424-8802**.

8.2.13 MEDIA RESPONSE

No personnel will talk to any media representative without prior approval. All comments will be referred to the Company representative or the Corporate Office in Denver. Employees shall state “no comment” to any media questions posed to them.

8.2.14 SHELTER IN PLACE

If chemical, biological, or radiological contaminants are released into the environment in such quantity and/or proximity to the rig site, it may be safer to remain indoors, or shelter-in-place, rather than to evacuate. Such releases may be either accidental or intentional.

“Shelter-in-place” means selecting a building with few windows, or none at all, in which to take refuge. In many cases, local authorities will issue advice to shelter-in-place via TV or radio. Use common sense and available information to determine if this type of refuge is necessary. In any emergency, local authorities may or may not immediately be able to provide information on what is happening and what you should do. If large amounts of debris are in the air, or if local authorities say the air is badly contaminated, a shelter-in-place order should be issued by the Incident Commander.

To shelter-in-place, follow these instructions:

- Lock exterior doors and close windows, air vents and other openings.
- Turn off all fans, heating and air conditioning systems where present.
- If there is danger of explosion, cover windows to protect against flying glass and debris.
- Use duct tape and plastic sheeting to seal all windows, doors and vents.
- Gather essential disaster supplies such as food, bottled water, battery-powered radios, first aid supplies, etc.
- Write down names of everyone in the room and contact Company's designated emergency contact to report who is in the room with you and their affiliation with the business.
- Avoid overcrowding and do not select a room with mechanical equipment like ventilation blowers or pipes because that equipment may not be able to be sealed properly.
- Call emergency contacts and have phone available to report a life-threatening condition, if necessary.
- Listen to radio, etc., for further information and additional emergency notifications.

9.0 WILDFIRE MITIGATION MEASURES

The predominant causes of wildfire are lightning, recreational activities, residents, industry activities (industry category is ranked the third highest human-caused ignition source), railroads, or other agents. A contributing factor that poses additional risk to oil and gas installations are traveling embers from existing fires that are carried on the wind and can ignite upon contacting structures and uncontrolled vegetation. Radiant heat from wildfires also poses a risk to structures and personnel at oil sites. Smoke from wildfires can affect evacuation routes and staging areas. Thus, any emergency response plan specifically addressing wildfires must consider the following:

- Increased safety for personnel;
- Reduced risk to industry infrastructure from wildfires;
- More secure production schedules less likely to be disrupted in the event of a wildfire;
- Reduced liability from wildfires caused by the oil and gas industry;
- Increased environmental stewardship and overall corporate responsibility.

In addition, several factors affect a site's susceptibility to wildfire hazards and the potential for wildfires to be fueled by site installations. By assessing structures, vegetation, powerlines, equipment used on site, and work tasks conducted on site, the Company has evaluated the Boies Ranch Solidification Area and created the measures herein for dealing with wildfire risk and potential occurrence.

9.1 DEFINITIONS

CONIFEROUS VEGETATION FUEL TYPE – Any of various needle-leaved (mostly) or scale-leaved, chiefly evergreen, cone-bearing trees or shrubs such as pines, spruces, and firs.

DEBRIS – The woody or herbaceous material which results from vegetation clearing operations.

DECIDUOUS VEGETATION FUEL TYPE – Typically used in reference to trees or shrubs that lose their leaves seasonally, and other plant structures that shed (such as petals or seed structures) after flowering or fruit when ripe.

EMBER TRANSPORT – Embers or fire brands are produced as trees and other combustible objects burn. These embers carry in the atmosphere and by winds over long distances. Hot embers ultimately come to rest and may ignite surfaces far removed from a fire, thus resulting in fire spread. This process is commonly referred to as spotting.

FIRE BEHAVIOR – The way fuel ignites, flame develops, and fire spreads as determined by the interaction of fuels, weather, and topography.

FIRE HAZARD – A hazard based on physical fuel characteristics, such as fuel arrangement, fuel load, condition of herbaceous vegetation and presence of elevated fuels. A general term to describe the potential fire behavior without regards to the state of weather influenced fuel moisture content and/or resistance to fireguard construction for a given fuel type.

FIRE OCCURRENCE – The number of fires started in a given area over a given period of time.

FUEL BREAK – An existing barrier or change in fuel type (to one that is less flammable) or a wide strip of land in which the native vegetation and topography has been modified or cleared to act as a buffer to fire spread so that fires can be more readily controlled. A strategically planned barrier, either manually or mechanically constructed that is intended to stop or slow down the rate of fire spread and from which suppression action can be carried out to control a fire.

LADDER FUELS – Vegetation that will help carry a surface fire up to the tree crown/tops that result in a crown fire (typically in coniferous fuel types.)

HAZARD REDUCTION – Treatment of living or dead forest fuels to diminish the likelihood of a fire starting and to lessen the potential rate of spread.

MINERAL SOIL – Non-organic soil.

MITIGATION – Action that decreases the severity of a fire hazard or risk.

MIXED WOOD VEGETATION FUEL TYPE – A ‘mixed’ forest in which two or more tree species are predominant in the canopy.

RADIANT HEAT TRANSFER – Heat transfer to the surrounding environment through radiation.

RISK FROM WILDFIRE – The potential of loss from wildfire that can be calculated by multiplying damage or loss by uncertainty of occurrence and contributing factors.

SUPPRESSION CAPABILITY – The factors and limitations that are related to the ability to contain a wildfire upon detection to protect values at risk.

STAGING AREA – A location at an incident where resources can be placed while awaiting tactical assignment. Also used to describe an area where tasks are conducted that may be dangerous or hazardous if performed on-site or near installations.

VALUES AT RISK – The specific or collective set of natural resources and man-made improvements/developments that have measurable or intrinsic worth that could be destroyed or otherwise altered by fire in any given area.

WICKING – Vegetation connectivity or pattern that contributes to an increase in fire spread.

WILDFIRE – Any unwanted or unplanned wildland fire that burns in forested or grassland areas.

9.2 STRUCTURES AND IGNITION POTENTIAL

The distance between structures and flammable vegetation can affect structural ignition potential through ember transport or radiant heat exposure to structures or vegetation. It's important to note that a wildfire will burn more rapidly and intensely on slopes compared to flat or level ground. As a result, structures on or adjacent to a slope with vegetation below are more susceptible to wildfires and face a significantly higher probability of ignition due to heat exposure.

The radius around structures must be assessed according to the structure's materials, flammable storage units (e.g., hydrocarbon storage tanks), and on-site vegetation.

The roof of a structure is the most vulnerable component for fire ignition and the main cause of structural losses during a fire. Embers and flaming debris from wind-driven fires can travel great distances, and embers landing on a combustible roof surface can start a new fire.

Flammable material storage on site, such as hydrocarbons or propane tanks, also creates additional threats to structures based on:

1. Presence or absence of hydrocarbons on site;
2. Flammable material rating;
3. Potential for accumulation of airborne embers on tanks; and,
4. Distance from storage sites to forest vegetation.

Structures with metal, tile, asphalt, or non-combustible materials, such as concrete or metal siding, and that have no eaves or contain screened vents with openings turned down, possess the lowest flammability risk. Those with wood or vinyl siding and/or open eaves and no soil or metal covers at the base of the structure where embers can be trapped, pose the highest flammability risk.

The location of petroleum products and combustibles (such as storage tanks) from fuel sources also increases or decreases flammability risk. Storage that is not located near structures, or that is more than ten (10) yards from those structures, pose the lowest risk. Storage sites that are 3-10 yards from a structure pose a mid-level risk, and those that are less than 3 yards from any structure pose the greatest flammability risk.

To prevent the entry of airborne embers, all eaves and vents will be inspected to ensure they face downward to decrease the chances of embers accumulating in them and increasing the potential for fire on the site's structures. Any tanks located on site, such as the saltwater storage tanks, will be handled in this manner.

9.3 VEGETATION MANAGEMENT

The main point to managing vegetation around the site is to minimize the risk of high-intensity crown fires. This can be done through several steps, beginning with thinning any surrounding forest stands to less than 40% of the surrounding area with at least 3 meters between crowns (of the trees) and decreasing crown cover (the percentage of ground area covered by tree crowns if viewed from above) to that level. At the Boies Ranch Solidification Area, there are no tree-stands and few shrubs onsite that could affect the flammability of the landscape. Any vegetation management treatment outside the site's boundaries may require communication and coordination with surrounding landowners, Enterprise Partners, as well as agency approvals.

9.4 POWERLINES

Falling trees can come into contact with powerline conductors and thus ignite wildfires and interrupt power to the site. Burned wooden power poles can also interrupt the current in distribution lines. Trees that come in contact with powerlines may also cause a ground arc, which can result in power outages and/or cause a wildfire ignition. None of these risks are present at the Boies Ranch Solidification Area because there are no trees large enough or near enough to the powerlines that pose a falling risk, and the power lines are constructed of metal towers and do not have wood power poles. In addition, the local utility company is responsible for the right-of-way easement where the powerlines are constructed to the south of the site and thus fall within the utility company's responsibility for vegetation and structural management. As a result, the Company shall contact the local utility company to establish maintenance schedules and responsibilities of those agencies in maintaining the areas surrounding the power lines. Should any potential hazard develop that needs attention, the Company will contact the utility company and report it immediately.

Disruption of a continuous electrical source of power during a wildfire incident may have a significant impact on the facility's activities. The Company has installed back-up measures and power shut-off procedures for the facility in the event of a wildfire emergency.

9.5 DEBRIS PILES

In order to decrease the risk of holdover fires from debris piles, best management practices (BMPs) require mulching rather than burning. If burning is used, ensure all legislative requirements are met and the proper

permits are obtained prior to commencing a burn. After the burn is completed, ensure the remaining debris piles are properly extinguished by using one of the following three approaches:

- Use a bare hand to check for hot embers (referred to as cold trailing);
- Use a temperature probe or metal rod to detect heat within the piles; or,
- Use infrared technology to scan the debris piles for residual hot embers.

Where feasible, utilize a portable burning sled to reduce holdover potential and accelerate burning combustion, and reduce the amount of soil contained in the woody piles to allow for more efficient burning and help reduce the chance for holdover fires.

9.6 ATVs AND/OR EQUIPMENT

Personnel will be briefed on proper maintenance of ATVs and inspecting the vehicle's exhaust system at regular intervals when operating and to park on sites with bare mineral soil, gravel or cement. BMPs also recommend carrying a small container of water that can extinguish small fires if one should ignite from the exhaust system. Use of ATVs and other light vehicles with catalytic converters should not be parked in areas where tall dry grass is prevalent. Consider restricting the use of these vehicles, ATVs, during prolonged periods of extreme fire danger levels and forest closures due to fire risk. In addition, travel on ATVs should occur during the early morning and later evening when relative humidity is usually higher.

Heavy equipment exhaust systems can cause wildfire ignition by one of the two following means:

1. Clearing forest vegetation with heavy equipment can cause an accumulation of very fine organic material on the exhaust systems. This organic material dries and if heated on exhaust systems to high temperatures could cause it to ignite. Through vibrations, the ignited materials can fall to the forest floor and ignite vegetation, thus causing a wildfire.
2. Diesel engines that idle for long periods build up carbon in the exhaust system. When the engine is throttled up then placed under load, small, hot carbon pieces can be expelled, causing wildfire ignition. During windy days, particles can be carried longer distances from the equipment and pose an even greater wildfire hazard.

The Company will ensure that contractors inspect and clean their heavy equipment exhaust systems on a regular basis. While cleaning the equipment, park it on bare mineral soil if possible or spray the area with water before driving the equipment over the wet area to clean. Place heavy equipment with diesel engines over mineral soil or other non-flammable material. Then throttle up and place the diesel engine under load to expel any loose carbon particles after considering wind speed first.

9.6.1 WELDING OPERATIONS

Employees and contractors operating in any wildland areas on the site shall conduct their operations on mineral soil if possible. As an alternative, during high fire hazard periods, the work area where welding is to take place can be wet down with water or foam additives if allowed by the Forest Service. Water is not very effective in fibrous soils during high and extreme build up indices (BUI), however. The Company will also ensure that all employees and contractors performing welding operations will have the appropriate equipment on hand for fire and emergency situations.

Another option is to use a non-flammable shield around the area where welding will take place to confine and prevent the sparks from spreading in all directions.

If it is essential to conduct welding operations during high and extreme fire danger periods with very high probability of wildfire ignitions, then a water tanker and crew may accompany the welding operation to patrol, detect, and extinguish any fires that may be ignited.

Wildfire foam additives can be considered for use when welding on pipelines during high and extreme ignition potential periods to reduce the amount of water required to be on hand and to ensure the water penetrates into the organic layers. Properly mixed foam will increase the effectiveness of water by 3-5 times, depending on the foam and equipment used. Foam solutions act as a fire suppressant rather than a fire retardant. A suppressant extinguishes the flaming and glowing phases of combustion when applied directly to forest vegetation.

9.7 EMERGENCY RESPONSE MEASURES TO WILDFIRES

Personnel should always know what to do during a wildfire, and thus the Company will ensure that all personnel are trained on the provisions in this procedure for clarification and knowledge about wildfire hazards that may exist at the facility.

During a wildfire emergency, personnel should (1) determine the minimum number of personnel required to operate during a wildfire threat; and, (2) issue evacuation alerts.

9.7.1 WILDFIRE EVACUATION ROUTES

Evacuation routes are critical for evacuating personnel from a location during a wildfire emergency. It should be noted that visibility during a wildfire may be drastically reduced due to smoke drifting across access roads, and thus knowledge of evacuation routes and training thereon assist personnel in properly evacuating if needed.

When identifying evacuation routes:

- Identify safe helicopter landing areas for air lift evacuation. If road access has been cut off, helicopters may provide the only means of evacuation.
- Identify adjacent waterways that can be accessed by boat if applicable.
- Identify current roads into the site. Assess the threat of wildfire on the potential evacuation routes.

9.7.2 ACCESS ROADS

All-weather gravel roads should be used as evacuation routes for emergency vehicles or workers. Narrow or dead-end roads without proper turnarounds are particularly problematic for wildfire suppression vehicles since they may not be able to turn around when necessary. Road rings are optimal for this purpose. Whenever possible, access or evacuation routes should double as barriers to fire spread by helping to slow or impede the spread of wildfire.

9.7.3 WATER SOURCES

Wildfire suppression needs substantial volumes of water from a dependable source. There are local water resources near the Boies Ranch Solidification Area facility, but the local emergency responders will determine how and where water sources will be utilized during a wildfire. By having water sources integrated into the plan, both the wildfire and structural fire suppression capability of the site will be greatly enhanced.

9.7.4 PERSONNEL SAFETY

If evacuation alerts have been issued for the facility, Company personnel should follow these protocols and ensure that all other emergency shut-off measures, as identified by the EAP as well as any additional facility site measures determined by the Company, are implemented.

A proper assessment for access roads and water sources near and around the site should be analyzed to determine the flammability risk of the facility and whether or not these resources can be used for proper fire suppression and fire barriers in order to protect personnel. If these resources are deemed adequate to reduce high flammability risk, then they should be included as part of a site drawing and given to local emergency responders who would be responsible for fighting the wildfire. Obviously, the lowest flammability risk occurs within areas of the facility that are graveled or paved which can also be used as evacuation routes or by emergency vehicles for turning around, entering, and/or leaving the site during an emergency.

Employees must be adequately trained on the evacuation plan and routes, the facility management to reduce wildfire risk, flammability of surrounding vegetation, contact numbers for local agencies (including utility company for powerline management), and emergency alarms and local emergency warnings to successfully maintain a safe work environment.

In case of a nearby wildfire that poses no risk to the site and which has not prompted evacuation orders, employees shall monitor the site for ignitions from embers and extinguish them ONLY to ensure personnel safety if evacuation orders have not been issued and ONLY if employees have been properly trained on how to use the fire extinguishers. Once evacuation orders have been issued, employees shall follow emergency protocol and NOT fight the wildfire. The local emergency responders are responsible for wildfire firefighting and Company personnel need to stay out of their way by evacuating and allowing emergency responders to do their job.

The Company will obtain and maintain emergency contact lists, including the numbers of local emergency responders and reporting agencies in case of a wildfire warning or evacuation measure issued due to wildfire risk. The number of on-site personnel should be decreased, or evacuated in its entirety, after emergency shut-down procedures and other measures in the EAP are completed, if possible. In addition, evacuation staging areas to be used during a wildfire event shall be identified, and then personnel shall be made aware of evacuation alerts, routes, and staging areas away from the wildfire and the method to be used for those alerts so that personnel know what to do in case of a wildfire. The methods of transportation for evacuation shall also be determined and personnel shall be notified of that method during a wildfire event. Short-term food and safe lodging arrangement may also be determined by the Company as part of the facility's specific wildfire emergency measures. In addition, personnel will be trained and tested, such as conducting mock wildfire exercises, to test the evacuation plans and train personnel in the EAP measures in the event of a wildfire.

If the potential exists for Company personnel to become trapped by an approaching wildfire, those individuals will be trained to recognize and utilize adequate evacuation staging areas that have been identified prior to commencing operations. Staging areas should have the following characteristics:

- Clean burn site, natural cleared area, or constructed site free of vegetation;
- Quickly and safely accessed from the worksite;
- Free of hazardous materials; and,
- Radiant heat and preheated air associated with wildfire flame fronts must also be considered in evacuation staging area selection and size.

For successful employee participation, the Company shall review wildfire safety issues each spring with its employees. They will inform personnel of the implications of wildfire in the forest environment and be trained upon emergency procedures in preparation for a wildfire event and/or entrapment. In addition, the protocols for reporting a wildfire, or if they see smoke or fire, shall be reviewed. Any wildfire trends and obtaining and/or monitoring weather information in the surrounding area on days when fire danger is high or extreme, shall also be done by the Company when necessary. Whenever fire danger ratings are high and extreme, and restrictions may be in effect, the Company will ensure its employees are notified of such conditions and have received proper training for managing those situations (such as obtaining permits, heeding road closures or forest closures, open fire bans, etc.)

When possible, the Company shall coordinate its wildfire prevention measures with state, federal, and local agencies responsible for handling wildfires and other forest management issues. In these instances, the Company shall attempt to ensure that all items relating to wildfire administration, prevention, pre-suppression, wildfire operations, and training are addressed and understood by its employees and are in coordination with the other agencies' requirements and wildfire measures.

Training prepares personnel for a more coordinated and educated approach to both wildfire prevention and wildfire emergency response. Training is essential for firefighter safety, equipment compatibility, integrating communications, understanding procedures and wildfire incident command structures, understanding wildfire management and fire behavior, and developing and implementing consolidated emergency response plans with other agencies as stated above.

9.8 GENERAL WILDFIRE SAFETY TIPS

Many incidents that result in tragic and costly losses from wildfire can be attributed to substandard communication and lack of proactive measures in emergency response planning. When planning a wildfire emergency response plan, the following recommendations shall be analyzed:

- Incorporating open spaces such as borrow pits, lay down yards, spoil piles, parking lots, for staging equipment and personnel in wildfire emergencies;
- Place open spaces downslope and/or upwind of site (using existing wind conditions as a guideline);
- Use open spaces as a barrier to fire spread if they are at least thirty (30) yards wide on level ground and up to fifty (50) yards wide when located near slopes;
- Open spaces should have trimmed short grass, gravel, or mineral soil.
- Main access road surfaces should provide two-way access with travel surface not less than 6.1 yards;
- Fire service access routes should be identified and connect to principal roadways;
- Road gradients should not exceed ten (10%) percent;
- Dead-end roadways that are more than ninety (90) yards in length should be constructed with a turnaround at the end and have no less than eighteen (18) yards turning radius or a hammerhead "T" alternate turnaround. A site loop or ring road is the best option for short-term planning;
- All gates should be located at least nine (9) yards off the main road and does not open downward. Gate openings should provide a clear opening of not less than 0.6 yards wider than the access or traveled roadway;
- Fire service personnel should be provided with ready access to any locking mechanisms at site;
- Bridges should be designed and built with an all-weather surface capable of supporting heavy pieces of equipment traveling across the bridge. Weight limits should be clearly posted at the approaches to each bridge;
- If the main access road is cut off by wildfire, alternative emergency evacuation routes will be identified;
- Natural water sources, such as streams, small lakes, and rivers, should be identified and, if not available, a water storage facility can be developed on high value sites such as tank farms and plant

sites for emergency use. Non-draining borrow pits or large tanks may be used for storing large volumes of water in extreme cases, but will only be done at the recommendation of local emergency responders when that agency deems it necessary; and,

- Ensure access to natural water sources for tanker trucks and portable pump set-up is identified where possible and if located near the site and in coordination with local emergency responders and their requirements for wildfire firefighting.

10.0 EVENT NOTIFICATIONS AND REPORTING

All incidents (serious or non-serious) must be reported to the Safety Officer. Note: All near miss incidents and equipment damage accidents must be reported to the Boies Ranch Solidification Area Supervisor and/or Safety Officer so corrective actions can be taken to avoid the same or similar situations in the future.

10.1 EVENT NOTIFICATIONS

The notifying first responder or acting Incident Commander will report the emergency to Alternate Project Coordinator or Site Manager. Boies Ranch Solidification Area employees/first responders will endeavor to keep all affected agencies informed of any emergency or incident that may occur. Small incidents that do not pose a human health or environmental hazard shall be remedied immediately by trained personnel. Incidents that pose a serious threat to employees, the public, the environment, or property will immediately be reported to the Alternate Project Coordinator or Site Manager. Notifications to outside regulatory agencies shall be made as required.

10.2 REPORTING REQUIREMENTS

Spills or leaks that can be contained wholly on-site or does not represent a reportable quantity (RQ) value as per 40 CFR 117 should be reported to the appropriate Company representative.

Spills or leaks that meet or exceed RQ values as per 40 CFR 117 will result in the contact of the following agencies:

- National Response Center (800-424-8802)
- EPA Region 8 – Mountain States (800-227-8917)

Spills or leaks which pose a potential threaten public health and safety requires the contact of all the following in addition to those above:

- Rio Blanco Sheriff's Department (970-878-9620)
- Colorado State Patrol (970-328-0249)
- Bureau of Land Management (970-878-3800)
- Pioneers Medical Center (970) 878-9292

10.1.1 EMERGENCY NOTIFICATION

Depending on where the incident occurs (on or off the facility site), notification may be required pursuant to the Emergency Planning and Community Right-to-Know Act (EPCRA). The Project Coordinator or Site Manager shall make the determination if reporting is required.

Reporting shall contain the following information to the extent known at the time of notice, if a delay does not occur in reporting results:

- Where is the spill?
- What spilled?
- How much spilled?
- How concentrated is the spilled material?
- Who spilled the material?

- Is anyone cleaning up the spill?
- Are there resource damages (e.g. dead fish or oiled birds)?
- Who is reporting the spill?
- How can the person reporting the spill be reached?

10.1.2 FOLLOW-UP NOTICE REQUIREMENTS

A nationwide notification system has been established for hazardous material spills during transport. The Chemical Manufacturer's Association's Chemical Transportation Emergency Center (CHEMTREC) is located in Washington, D.C. (800-424-9300). The information specialist on duty will ask for the following information:

- Name of the caller
- Location of the caller
- Name of the shipper/Transporter
- Product or hazmat involved
- Destination of the hazmat
- Location of incident
- What happened
- Weather conditions
- Proximity to populated areas.

CHEMTREC will give the caller recommendations for controlling the emergency situation until the shipper of the materials and a specialist can contact the caller promptly.

11 POST-EMERGENCY RESPONSE INCIDENT INVESTIGATION

11.1 POST-EMERGENCY ASSESSMENT

A post-emergency assessment will be conducted by the Incident Commander as soon as practicable following stabilization of the emergency condition. If classification of the emergency or results of the assessment indicate that more extensive investigation is required, the Alternate Project Coordinator, Site Manager, or Site Safety Officer will initiate the investigation.

11.2 LESSONS LEARNED

Lessons learned from the emergency will be documented and distributed to appropriate project personnel, incorporated into project personnel training, and used to amend this plan and to institute corrective measures and procedures in an effort to prevent a similar emergency condition in the future. In addition, the lessons learned will be incorporated in the project Operating Experience/Lessons Learned program.

ATTACHMENT A AGENCY EMERGENCY CONTACT LIST

NAME	PHONE
FEDERAL AND STATE GOVERNMENT	
Bureau of Land Management	(970) 878-3800
National Response Center	(800) 424-9300
Colorado Oil & Gas Conservation Commission (COGCC)	(888) 235-1101
CHEMTREC	(800) 424-9300
SEPC (State Emergency Planning Committee)	(970) 846-3912
Colorado Division of Wildlife (DOW)	(970) 255-6100
US Forest Service (USFS) District Ranger in Rifle	(970) 625-2371
Colorado Department of Public Health & Environment (CDPHE)	(877) 518-5608
Poison Control Hotline	(800) 222-1222
LOCAL GOVERNMENT and OTHER AGENCIES	
Rio Blanco Sheriff's Department	(970) 878-9620
Rio Blanco County Emergency Communications Center	911
Rio Blanco County Environmental Health Department	(970) 878-9450
Rio Blanco Road and Bridge Department	(970) 878-9590
Rio Blanco Emergency Management	(970) 878-9623
Pioneer Hospital and Medical Center	(970) 878-9292
St. Mary's CareFlight Helicopter	(970) 332-4923
URSA OPERATING COMPANY LLC	
Ursa Operating LLC Emergency Number	(855) 625-9922
Ursa Operating Company LLC, Rifle CO	(970) 625-9922

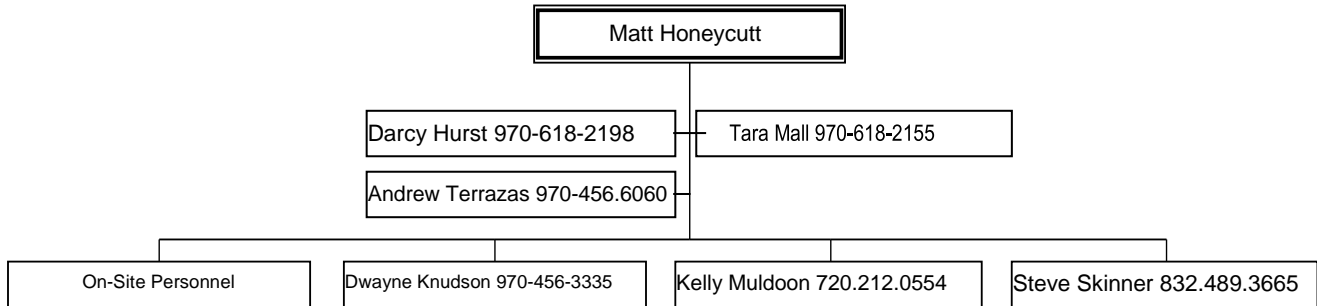
NOTE: DO NOT USE "911" from a satellite phone. You will likely not be able to reach a local dispatcher. In many oil and gas work areas, cell phones will not connect with a local dispatch either. The above phone numbers can be used from any phone and will reach immediate response teams. It is very crucial that everyone follows this procedure to ensure an appropriate response time of emergency personnel

Attachment B

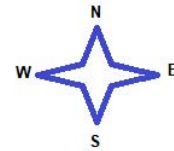
General Directory of Ursa Contacts and Vendors Ursa Operating Company, LLC: 24 Hour Emergency Contact Number	
	1-855-625-9922
Ursa Operating Company, LLC 792 Buckhorn Drive Rifle, CO 81650	970-625-9922
Ursa Operating Company, LLC 1600 Broadway #2600 Denver, CO 80202	720-508-8350
Matt Honeycutt- VP Operations	Direct Number (970) 625-9922 Cell Number (970) 812-2198
Darcy Hurst Production Superintendent	Direct Number (970) 625-9922 Cell Number (970) 618-3592
Andrew Terrazas Production Lead	Direct Number (970) 625-9922 Cell Number (970) 456-6060
Tara Mall- Safety Manager	Direct Number (970) 625-9922 Cell Number (970) 618-2155
John Doose- Surface Landman	Direct Number (970) 625-9922 Cell Number (970) 309-9359
Dwayne Knudson- Environmental Manager	Direct Number (970) 625-9922 Cell Number (970) 456-3335
Dave Hayes – Operations Coordinator	Cell Number (970) 250-2590
Ursa Operating Company Denver	Contact Numbers
Steve Skinner-CEO	Direct Number (720) 508-8350 Cell Number (832) 489-3665
Kelly Muldoon- VP Land & Business Development	Direct Number (720) 508-8350 Cell Number (720) 212-0554
Chris McRickard- Regulatory Manager	Direct Number (720) 508-8362 Cell Number (303) 877-7581

Attachment C

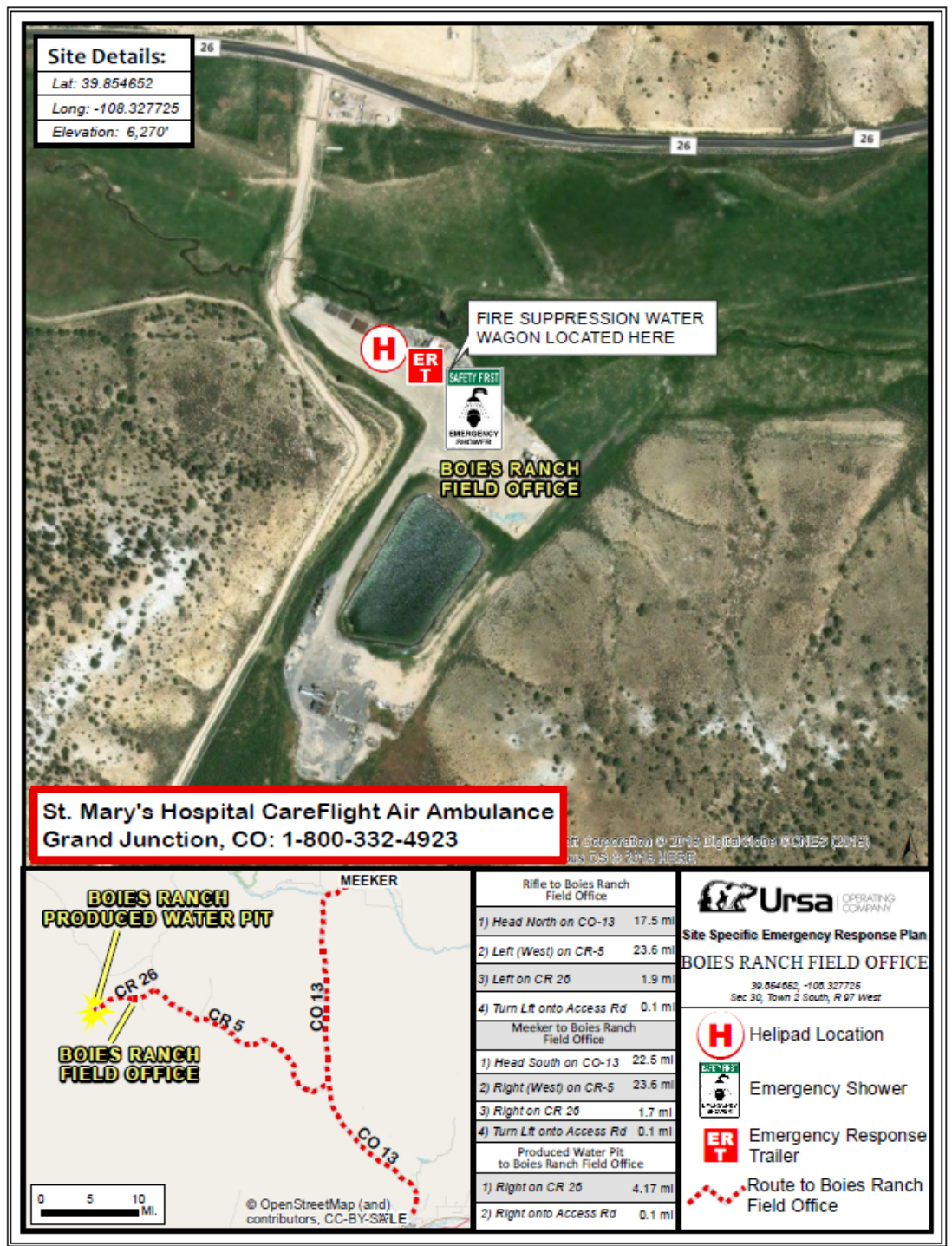
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Boies Ranch Solidification Area



Attachment D



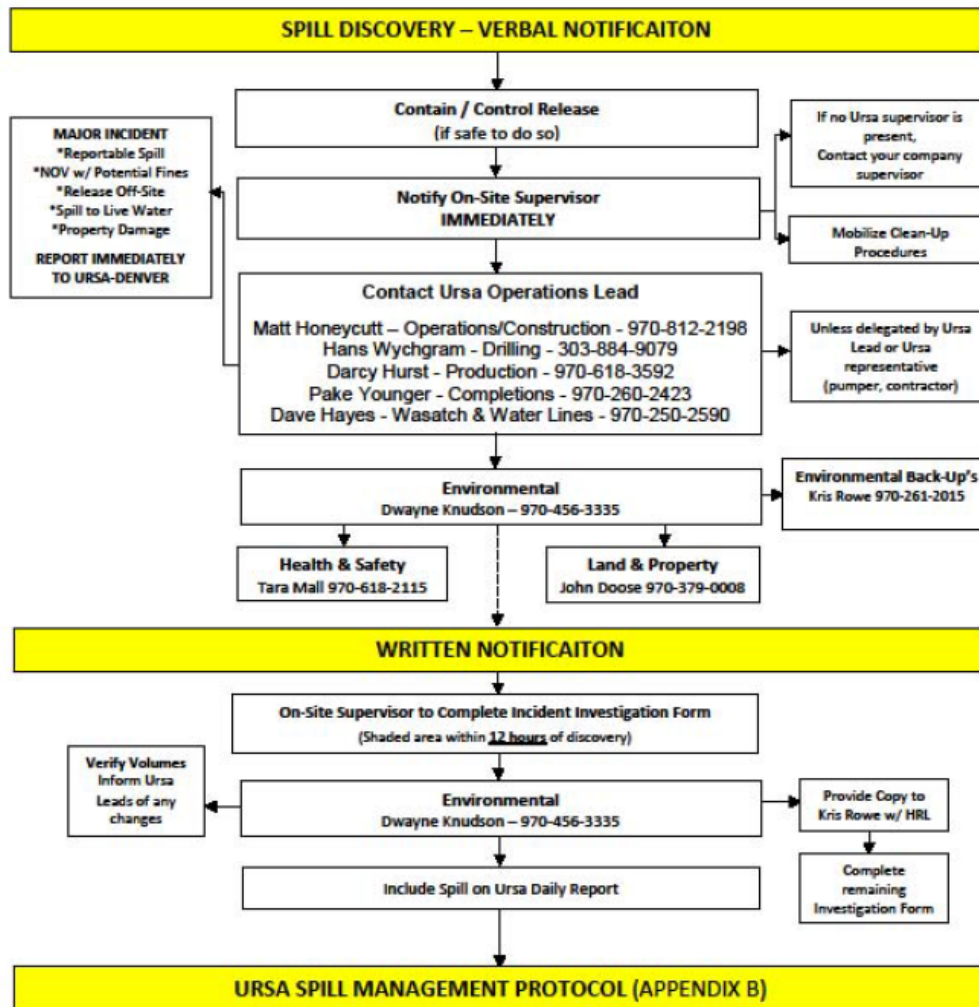
Attachment E



Appendix A

Colorado Operations

SPILL NOTIFICATION & MANAGEMENT PROTOCOL (SPILLS, ENVIRONMENTAL INCIDENTS/THREATS)



EMERGENCY EVACUATION RESPONSE PLAN

MAY 2019

Attachment F



ENVIRONMENTAL SPILL/RELEASE INVESTIGATION

Pad/Location:	_____
Report Date:	_____

Responsible Party

<input type="checkbox"/>	URSA OP's PHASE	_____
<input type="checkbox"/>	CONTRACTOR:	_____

*Attach Billing Info

Initial Reporting (personnel that discovered release)				
Occurred: _____	Time: _____	Discovered By: _____	Company: _____	Ph: _____
Est. Volume: _____	Material Released _____	Within 317B Area? () NO () YES		
Spill Contained on Location () NO () YES		Live Water Impacted? () NO () YES		Within Secondary Containment? () NO () YES
SIGNIFICANT THREAT TO HUMANS OR ENVIRONMENT () NO () YES - Implement Emergency Response Plan				

Follow Up (for Ursa Official Use)

INCIDENT LOCATION	RELEASE TYPE	LANDS AFFECTED	MEDIA AFFECTED	317B AREA
() Well Pad	() E&P Waste	() Private	() Land/Soil	() Buffer Zone
() Facility	() Non- E&P	() Federal	() Waters (U.S)	() Water Impacted
() Transportation (DOT)		() Split Estate	() Wetland/Riparian	() N/A
() Other:	() Other:	() On- Lease	() Ground Water	
		() Off- Lease		

INCIDENT DESCRIPTION (How incident occurred, type of effluent, emissions, chemical, etc.):

VOLUME RECOVERED:

ROOT CAUSE:

PLANS TO IMPLEMENT ADDITIONAL TRAINING (DESCRIBE):

DATE TRAINING COMPLETE:

Waste Management (Requires Ursa Approval)

FINAL DISPOSITION OF WASTE (STORAGE, TREATMENT, DISPOSAL):	Ursa Approval: () NO () YES	DATE: _____
DISPOSAL LOCATION:		
Manifesting Required: () NO () YES		

NOTIFICATION/REPORTING ACTIONS (to be completed by Ursa Spill Program Support - K.Rowe HRL)

Agency/Owner	Verbal Notification Required			Written Reporting Required		
Landowner	Yes	No	Date: _____	Yes	No	Date: _____
COGCC	Yes	No	Date: _____	Yes	No	Date: _____
FED-BLM	Yes	No	Date: _____	Yes	No	Date: _____
CDPHE	Yes	No	Date: _____	Yes	No	Date: _____
LEPC	Yes	No	Date: _____	Yes	No	Date: _____
NRC	Yes	No	Date: _____	Yes	No	Date: _____
FIRE CHIEF	Yes	No	Date: _____	Yes	No	Date: _____

**THIS REPORT MUST BE FILED AND SUBMITTED IMMEDIATELY
OF THE INCIDENT TO THE URSA SPILL COORDINATOR**

Attachment G

LOADING/ UNLOADING STANDARD OPERATING PROCEDURE GUIDANCE**Remember All Spills and/or Incidents Have To Be Reported To****Ursa Operating Company LLC Immediately**

1. Upon arrival at location survey area for hazards. (Other workers or Vehicles).
2. Make certain area is clear to back and use a spotter (If available).
3. Prior to exiting truck all PPE should be in place. (Hard hat, safety glasses with side shields, FR clothing {must be outer most layer and worn correctly} wriststat, gloves and safety boots.
4. Depress clutch and engage PTO.
5. When exiting truck always use 3 points of contact (Facing inward).
6. Place cones (one front and one back) and chocks (On drive tires).
7. Attach grounding strap to containment, grounding rod, etc.
8. Climb stairs (3 points) and attach wriststat to railing.
9. Vent thief hatch (Do not stand with head directly above hatch while venting).
10. Strap tank and record levels.
11. Attach hose to tank and truck.
12. Remove seal (If present) and record number.
13. Engage pump and open valves slowly.

14. If any leaks are found immediately shut down and fix problem. Remove equipment from service if problem cannot be repaired and contact your supervisor and Ursa Operating Company LLC designated supervisor.
15. Remain at rear of truck to monitor fluid level and be ready to close valves in the event problems should arise. Do not sit in cab of vehicle while hoses are connected.
16. When finished loading/unloading make sure to suck out hose and close valves.
17. Strap tank and record levels.
18. Attach new seal and record number.
19. Pick up all hoses and fittings and secure them on truck.
20. Complete all paperwork completely and place a copy in appropriate place.
21. Walk around truck and pick up cones, unhook ground and pick up chocks (Making sure you have a clear path to exit location)
22. Enter truck using 3 points of contact and leave location.

Attachment H

MEEKER SCHOOL DISTRICT RE-1

2018/2019 SCHOOL YEAR

Administration Office 878-9040
Meeker High School 878-9070
Barone Middle School 878-9060
Meeker Elementary/Pre-School 878-9050
Bus Garage 878-9080
Food Service 878-9090

August 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

September 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24	25	26	27	28	29

October 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

December 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

January 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

February 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

March 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

April 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

May 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

June 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29






July 2019



Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Month	Days	Notes
August	1-12	1 Flex Day for Teachers
August	13-16	Teacher Pre-service
August	20	First Day of School
September	3	Labor Day—No School
September	14	Teacher PD / Work Day
October	18	End of First Quarter (35 Quarter Days)
October	19	Teacher PD / Work Day
October	24-25	Parent/Teacher Conference (After School)
November	16	Teacher PD and Work Day
November	21-22	Thanksgiving Break
December	20	End of 2nd Quarter (34 Quarter Days)
December	24-Jan 6	1 Flex Day for Teachers
December	24-31	Winter Break
January	1-3	Winter Break
January	7	School Resumes
January	25	Teacher PD / Work Day
February	8	Teacher PD / Work Day
March	7	End of 3rd Quarter (36 Quarter Days)
March	8	Teacher PD / Work Day
March	13-14	Parent/Teacher Conference (After School)
March	18-21	Spring Break
April	23	End of 4th Quarter (40 Quarter Days)
April	24	Teacher Work Day
April	25	Graduation

SCHOOL	STARTING TIME	ENDING TIME	LUNCH/RECESS BREAK	INSTRUCTIONAL HOURS
Preschool	a.m. 8:00	12:00		435
	p.m. 12:40	3:45		
Elementary	8:00	3:45	50 minutes	1002.9
Middle School	7:50	3:50	35 minutes	1080.3
High School	7:50	3:55	35 minutes	1087.5

(Lunch/Recess is not included in instructional hours)

 First Day of School
  No School
  End of Quarter
  School Breaks
  Graduation Day

 Teacher Work Days/Professional Development Days - No School for students
  P/T Conferences

Total Student Days 145
 Total Teacher Days 160

Adopted: February 20, 2018



Ursa Operating Company LLC

792 Buckhorn Drive Rifle, CO 81650 – 970-625-9922

Rio Blanco County Permit – Appendix H



**RIO BLANCO COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT**

Historic Courthouse
555 Main St, 1st Floor
Post Office, Box 599
Meeker, CO 81641
970 878 9456

**OIL or GAS WELL PAD
SPECIAL USE/BUILDING PERMIT**

SUBP NUMBER COGW-0002-19

PERMIT HOLDER URSA OPERATING COMPANY LLC

MAILING ADDRESS 950 17TH STREET, SUITE 1900

PHONE # 720-508-8362

WELL PAD LOCATION NW NW 29, T2S, 97W

WELL PAD NAME BOISE RANCH SOLIDIFICATION AREA

DATE MAY 23, 2019 DATE AMENDED _____

The Rio Blanco County Planning and Development Department has reviewed your application for a special Use Permit for your proposed Oil or Gas Well Pad. The well Pad, as proposed, meets the minimum requirements of Article 9, of the Land Use Regulations and is hereby approved.

This Special Use permit is valid for the life of the pad from the issue date. Additional wells, or changes in Production Structures must be added with an amendment.

APPROVING OFFICIALS

Natural Resources  5/23/2019

Building 

cc. File
Building Department
Use Tax
Assessor



RIO BLANCO COUNTY
BOARD OF COUNTY COMMISSIONERS
COUNTY COURTHOUSE, 555 MAIN
P.O. BOX 1
MEEKER, COLORADO 81641
970-878-9430

May 23, 2019

Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

Re: Form 2A Doc #402021974

Boies Ranch Solidification Area

Sec. 29, T2S, R 97W, 6th PM

1,212' FWL, 306' FNL

Latitude: 39.853787, Longitude: -108.3108754

Dear Director Robbins,

Under the new COGCC Oil & Gas Regulations, SB 19-181, Ursa Resources has submitted a Special Use/ Building Permit application to Rio Blanco Co. (RBC) for consideration of the proposed **Boise Ranch Solidification Area** oil and gas location. This location has been previously constructed and lies within the jurisdictional boundaries of Rio Blanco County. Per Section 9-106 of the Rio Blanco County Land Use Regulations, "County permitting to the well pad and production facilities on the pad is accomplished by the Well Pad Special Use / Building Permit (SU/BP) process..." RBC has determined that there is no significant impact to the local residents, ground water and the environment.

Rio Blanco County has received and reviewed the application materials provided with the Special Use Building Permit. As of May 23, 2019, Rio Blanco County has approved the Special Use Building Permit application and considers the approval its final determination of this location.

Sincerely,

A handwritten signature in black ink, appearing to read "Lannie Massey".

Lannie Massey
Natural Resources Specialist
COGCC Local Government Designee
Rio Blanco County