

State of Colorado Oil and Gas Conservation Commission

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DE	ET	OE	ES
Document Number: <u>402860536</u>			
Date Received: <u>11/03/2021</u>			

SUNDRY NOTICE

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number: <u>96850</u>	Contact Name <u>Vicki Schoeber</u>
Name of Operator: <u>TEP ROCKY MOUNTAIN LLC</u>	Phone: <u>(970) 263-2721</u>
Address: <u>PO BOX 370</u>	Fax: <u>()</u>
City: <u>PARACHUTE</u> State: <u>CO</u> Zip: <u>81635</u>	Email: <u>vschoeber@terraep.com</u>

FORM 4 SUBMITTED FOR:

Facility Type: LOCATION

API Number : 05- 045 00 ID Number: 452011

Name: FEDERAL Number: RU 31-17

Location QtrQtr: NWNE Section: 17 Township: 7S Range: 93W Meridian: 6

County: GARFIELD Field Name: RULISON

Oil & Gas Location(s) and Oil & Gas Development Plan (OGDP) Information

Location(s)

Location ID	Location Name and Number
452011	FEDERAL RU 31-17

OGDP(s)

No OGDP

WELL LOCATION CHANGE OR AS-BUILT GPS REPORT

☐ Change of Location for Well * ☐ As-Built GPS Location Report ☐ As-Built GPS Location Report with Survey

* Well Location Change requires a new Plat.

SURFACE LOCATION GPS DATA Data must be provided for Change of Surface Location and As Built Reports.

Latitude _____ Longitude _____

GPS Quality Value: _____ Type of GPS Quality Value: _____ Measurement Date: _____

Well Ground Elevation: _____ feet (Required for change of Surface Location.)

WELL LOCATION CHANGE

Well plan is: _____ (Vertical, Directional, Horizontal)

Change of **Surface** Footage From:

Change of **Surface** Footage To:

Current Surface Location From	QtrQtr <u>NWNE</u>	Sec <u>17</u>	Twp <u>7S</u>	Range <u>93W</u>	Meridian <u>6</u>
New Surface Location To	QtrQtr	Sec	Twp	Range	Meridian

Change of **Top of Productive Zone** Footage From:

Change of **Top of Productive Zone** Footage To:

Current Top of Productive Zone Location	Sec	Twp	Range
New Top of Productive Zone Location	Sec	Twp	Range

Change of **Base of Productive Zone** Footage **From:**

Change of **Base of Productive Zone** Footage **To:**

**

Current **Base of Productive Zone** Location

Sec

Twp

Range

New **Base of Productive Zone** Location

Sec

Twp

Range

Change of **Bottomhole** Footage **From:**

Change of **Bottomhole** Footage **To:**

**

Current **Bottomhole** Location

Sec

Twp

Range

** attach deviated drilling plan

New **Bottomhole** Location

Sec

Twp

Range

SAFETY SETBACK INFORMATION

Required for change of Surface Location.

Distance from Well to nearest:

Building: _____ Feet
Building Unit: _____ Feet
Public Road: _____ Feet
Above Ground Utility: _____ Feet
Railroad: _____ Feet
Property Line: _____ Feet

INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit – as defined in 100 Series Rules.

SUBSURFACE MINERAL SETBACKS

Required for change of Top and/or Base of Productive Zone. Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? _____

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: _____ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: _____ Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: _____ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: _____ Feet

Exception Location

☐ If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers. _____

LOCATION CHANGE COMMENTS

OTHER

RULE 502 VARIANCE

Order Number:

Description:	
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REMOVE FROM SURFACE BOND Signed surface use agreement is a required attachment

CHANGE NAME OR NUMBER OF WELL, FACILITY, OIL & GAS LOCATION, OR OGDP

From: Name FEDERAL Number RU 31-17 Effective Date:

To:	Name	Number
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ABANDON PERMIT: Permit can only be abandoned if the permitted operation has NOT been conducted. Field inspection will be conducted to verify site status.

☐ WELL:Abandon Application for Permit-to-Drill (Form2) – Well API Number has not been drilled.

☐ PIT: Abandon Earthen Pit Permit (Form 15) – COGCC Pit Facility ID Number _____ has not been constructed (Permitted and constructed pit requires closure per Rule 911)

☐ **CENTRALIZED E&P WASTE MANAGEMENT FACILITY:** Abandon Centralized E&P Waste Management Facility Permit
(Form 28) – Facility ID Number has not been constructed (Constructed facility requires closure per Rule 907)

OIL & GAS LOCATION ID Number:

☐ Abandon Oil & Gas Location Assessment (Form 2A) – Location has not been constructed and site will not be used in the future.

☐ Keep Oil & Gas Location Assessment (Form 2A) active until expiration date. This site will be used in the future.

Surface disturbance from Oil and Gas Operations must be reclaimed per Rule 1003 and Rule 1004.

REQUEST FOR WELL RECORDS CONFIDENTIALITY (Rule 206.c.(1))

DIGITAL WELL LOG UPLOAD

DOCUMENTS SUBMITTED Purpose of Submission:

☒ **COMPLIANCE with CONDITION OF APPROVAL (COA) on** Form NO: 02A Document Number: 401058467

RECLAMATION

INTERIM RECLAMATION

☐ Interim Reclamation will commence approximately

Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

Interim reclamation complete, site ready for inspection.

Per Rule 1003.e(3) describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.

Field inspection will be conducted to document Rule 1003.e. compliance

FINAL RECLAMATION

☐ Final Reclamation will commence approximately

Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Final reclamation complete, site ready for inspection. Per Rule 1004.c(4) describe final reclamation procedure in Comments below or provide as an attachment.

Field inspection will be conducted to document Rule 1004.c. compliance

Comments:

ENGINEERING AND ENVIRONMENTAL WORK

☐ NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below, as required by Rule 434.b.(3).

Date well temporarily abandoned _____

Has Production Equipment been removed from site? _____

Mechanical Integrity Test (MIT) required. Date of last MIT _____

TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK

Details of work must be described in full in the COMMENTS below or provided as an attachment.

☐ NOTICE OF INTENT/REQUEST FOR APPROVAL Approximate Start Date _____

☐ SUBSEQUENT REPORT Date of Activity _____

- | | | |
|---|--|--|
| <input type="checkbox"/> Bradenhead Plan | <input type="checkbox"/> Venting or Flaring (Rule 903) | <input type="checkbox"/> E&P Waste Mangement |
| <input type="checkbox"/> Change Drilling Plan | <input type="checkbox"/> Repair Well | <input type="checkbox"/> Beneficial Reuse of E&P Waste |
| <input type="checkbox"/> Gross Interval Change | | |
| <input type="checkbox"/> Underground Injection Control | | |
| <input type="checkbox"/> Request approval of Reuse and Recycling Plan per Rule 905.a.(3). (Reuse and Recycling Plan must be attached.) | | |
| <input type="checkbox"/> Request approval of Alternative Sampling Plan per Rule 909.j.(6). for this Pit. (Alternative Sampling Program must be attached.) | | |
| <input type="checkbox"/> Other | | |

☐ Request that an existing produced water sample from the same formation be used per Rule 909.j.(6) to meet the requirements of Rule 909.j.(1)-(5) for this Well.

Pit ID _____ Pit Name _____

Data retrieval failed for the subreport, 'PitSampling', located at: W:\Inetpub\Net\Reports\Form4\04_PitSamplin

☐ Subsequent well operations with heavy equipment (Rule 312)

Data retrieval failed for the subreport, 'SubsequentWellOperations', located at: W:\Inetpub\Net\Reports\Form4

COMMENTS:

H2S REPORTING

☐ Intentional release of H2S gas due to Upset Condition or malfunction.

☐ Intent to temporarily abandon well with potential H2S concentration >100 ppm.

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: _____ in ppm (parts per million)

Date of Measurement or Sample Collection _____

Description of Sample Point:

Absolute Open Flow Potential _____ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: _____

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: _____

COMMENTS:

OIL & GAS LOCATION UPDATES

OGDP ID _____ OGDP Name _____

SITE EQUIPMENT LIST UPDATES

Indicate the number and type of major equipment components planned for use on this Oil and Gas Location:

Wells _____	Oil Tanks _____	Condensate Tanks _____	Water Tanks _____	Buried Produced Water Vaults _____
Drilling Pits _____	Production Pits _____	Special Purpose Pits _____	Multi-Well Pits _____	Modular Large Volume Tank _____
Pump Jacks _____	Separators _____	Injection Pumps _____	Heater-Treaters _____	Gas Compressors _____
Gas or Diesel Motors _____	Electric Motors _____	Electric Generators _____	Fuel Tanks _____	LACT Unit _____
Dehydrator Units _____	Vapor Recovery Unit _____	VOC Combustor _____	Flare _____	Enclosed Combustion Devices _____
Meter/Sales Building _____	Pigging Station _____		Vapor Recovery Towers _____	

OTHER PERMANENT EQUIPMENT UPDATES

Data retrieval failed for the subreport, 'OtherPermEquip', located at: W:\Inetpub\Net\Reports\NForm4\04_OtherPermEquip-2.rdlc. Please check the log files for more information.

OTHER TEMPORARY EQUIPMENT UPDATES

Data retrieval failed for the subreport, 'OtherTempEquip', located at: W:\Inetpub\Net\Reports\NForm4\04_OtherTempEquip-2.rdlc. Please check the log files for more information.

CULTURAL AND SAFETY SETBACK UPDATES

Data retrieval failed for the subreport, 'CulturalSetback', located at: W:\Inetpub\Net\Reports\NForm4\04_CulturalSetback-2.rdlc. Please check the log files for more information.

OTHER LOCATION CHANGES AND UPDATES

Provide a description of other changes or updates to technical information for this Location:

POTENTIAL OGDP UPDATES

PROPOSED CHANGES TO AN APPROVED OGDP

☐ This Sundry Form 4 is being submitted pursuant to Rule 301.c to propose changes to an approved Oil and Gas Development Plan.

Check all boxes that pertain to the type(s) of changes being proposed for this OGDP:

- | | |
|--|--|
| <input type="checkbox"/> Add Oil and Gas Location(s) | <input type="checkbox"/> Add Drilling and Spacing Unit(s) |
| <input type="checkbox"/> Amend Oil and Gas Location(s) | <input type="checkbox"/> Amend Drilling and Spacing Unit(s) |
| <input type="checkbox"/> Remove Oil and Gas Location(s) | <input type="checkbox"/> Remove Drilling and Spacing Unit(s) |
| <input type="checkbox"/> Oil and Gas Location attachment or plan updates | <input type="checkbox"/> Amend the lands subject to the OGDG |
| <input type="checkbox"/> Other | |

Provide a detailed description of the changes being proposed for this OGDG. Attach supporting documentation such as maps if necessary.

Best Management Practices

No BMP/COA Type

Description

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Operator Comments:

TEP Rocky Mountain LLC (TEP) is submitting an updated Waste Management Plan via Form 4 for the Federal RU 31-17 pad per the Form 2A (Doc # 401058467) COA requiring approval of ONSITE disposal of drill cuttings, and in response to an inspection corrective action (Doc # 402855135). Please route sundry to Alex Fischer and Aaron Trujillo.

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Vicki Schoeber
 Title: Regulatory Specialist Email: vschoeber@terraep.com Date: 11/3/2021

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: _____ Date: _____

CONDITIONS OF APPROVAL, IF ANY:

COA Type

Description

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General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)

Attachment List

Att Doc Num

Name

402860536	FORM 4 SUBMITTED
402861005	WASTE MANAGEMENT PLAN
402861007	CONST. LAYOUT DRAWINGS

Total Attach: 3 Files

Federal RU 31-17 Pad

Waste Management Plan



INTRODUCTION

TEP Rocky Mountain LLC (“TEP”) has developed the following waste management plan to address Exploration and Production (“E&P”) and other wastes related to its operations on the Federal RU 31-17 Pad. This plan provides an overview of methods TEP will use for managing waste materials as required by Colorado Oil and Gas Commission (“COGCC”) Rule 304.c.(11).

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

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

The following documents the general practices and procedures TEP will use to manage the identified waste streams generated during development of the nine (9) wells on the RU 31-17 pad.

DRILLING FLUIDS MANAGEMENT

A closed loop drilling system will be utilized to separate liquid and solids during drilling operations on the RU 31-17 pad. Drilling fluids will be re-used throughout the drilling process. Once drilling operations are complete, drilling fluids will be stored in tanks and recycled for future drilling operations. Unless noted otherwise, all drilling fluids used during TEP operations are composed of a water-based, bentonitic drill mud.

DRILL CUTTINGS MANAGEMENT

Drill cuttings generated during drilling operations on the RU 31-17 will be managed within a cuttings trench constructed in the southwest corner of the pad. The cuttings trench will be approximately two-hundred-twenty three feet (223') in length by eighty two (82') in width, with a depth of approximately seven feet (7'). The estimated volume of drill cuttings generated per well at this location is approximately 450 cubic yards (cy). Hence, the total volume of drill cuttings estimated for the nine (9) wells to be drilled at this location is approximately 4,050 cy. The cuttings trench has been designed with a maximum capacity of four-thousand three-hundred thirty cubic yards (4,330cy). The cuttings trench will be constructed with a two and one half foot (2.5') high earthen berm extending along the north, east, and western sides of the cuttings trench to ensure containment of drill cuttings. A wildlife ramp will be constructed near the northeast corner to prevent entrapment. Any excess drill cuttings that cannot be managed on location within the cuttings trench will be hauled to an approved third-party commercial disposal facility. Please see the attached construction layouts for additional details on the proposed drill cuttings management area.

Protocol for Managing Cuttings

As drill cuttings are brought to the surface, they will be temporarily placed into a high-walled, heavy-duty, metal storage bin that is placed close to the rig shaker assembly. If needed, sawdust (or another acceptable, inert material) may be mixed with the cuttings during this phase to moderate the moisture content of the cuttings. Once the storage bin becomes full, a loader is used to move the cuttings from the storage bin to the cuttings trench. The moisture content of the drill cuttings is kept as low as practicable to prevent accumulation of liquids within the cuttings trench. Once all drill cuttings are placed into the cuttings trench, samples are collected to determine compliance with COGCC Table 915-1 standards. Additional treatment or amendment of the cuttings may be needed to ensure that COGCC Table 915-1 standards are met prior to reclamation. If needed, clean fill material may be mixed with the cuttings to ensure that cleanup standards are met. Representative samples of the blended material will be collected and submitted to an approved analytical laboratory and analyzed for the full COGCC list of organic, inorganic, and metal compounds (in soils) to confirm that the drill cuttings comply with the appropriate COGCC Table 915-1 cleanup standards. After the representative drill cuttings sample data has been received and confirm compliance with COGCC cleanup standards, the drill cuttings will be covered with a minimum of three feet (3') of clean fill material when the pad is reclaimed.

In cases where weather conditions, safety concerns, or operational constraints require, drill cuttings may be transported via truck to an approved third-party commercial disposal facility in accordance with COGCC rules for treatment and final disposal.

COMPLETIONS / FLOWBACK

Returned stimulation fluids generated during flowback operations are processed through four (4) phase separators to remove gas, water, condensate, and sand. Water will be reused during future well completion operations or transported via pipelines as described in the Produced Water section below. Frac sand will be managed within a forty-foot (40') by forty-foot (40') earthen containment cell with two and one-half foot (2.5') high earthen berms surrounding all sides of the containment cell. This frac sand management area will be located on pad within the pad perimeter berm. Once flowback operations are complete, returned frac sand is mixed with drill cuttings and/or clean fill material and buried onsite within the cuttings trench or cut slope of the pad. Once mixed with the drill cuttings, sampling will be conducted as described above for drill cuttings to ensure that COGCC standards are met prior to pad reclamation. Any frac sand remaining onsite after reclamation activities are complete will be hauled off-site to an approved third-party commercial disposal facility.

Spent filter socks generated during the completions / flowback process are collected and stored separately from garbage / trash. The filters have been sampled and profiled for disposal at an approved third-party commercial disposal facility that is permitted and authorized to accept waste filter socks for disposal. Please see the Waste Handling Table (Table 1) below for additional details.

PRODUCED WATER

Produced water (water produced from the wells after the wells are turned over to production) will be transported through the proposed four-inch (4") produced water pipeline to the tie-in point with an existing six-inch (6") water pipeline at the RU 44-7 pad (Location ID# 439173). Water will then be transported via existing water pipelines to one of the following TEP operator Centralized E&P Waste Management Facilities:

Table 1, Existing E&P Waste Management Facilities

Facility Name	Location	COGCC Location ID	COGCC Facility ID
Spruce Creek 14-4-794	SWSW Section 4 T7S R94W	427810	441099
Smith Gulch 31-32-796	NWNW Section 32 T7S R96W	430110	446561
KP 32-17 Completions Pit	SWNE Section 17 T6S R91W	323844	418807
Parachute E&P Waste Management Facility	SWSW Section 36 T6S R96W	--	149015
Rulison E&P Waste Management Facility	NWSW Section 20 T6S R94W	--	149006
Mautz Ranch E&P Waste Fac.	SENE Section 19 T2S R98W	422672	444993

Produced water will be treated with biocide at the water management facility. Produced water will also be treated with biocide prior to disposal if necessary. Produced water is then disposed of through (1) natural evaporation at the evaporation ponds, (2) delivered and injected into one of the approved TEP operated underground injection control (“UIC”) facilities, (3) re-used in hydraulic fracturing operations, or (4) hauled to an approved third party, commercial disposal facility as described below.

Natural Evaporation Ponds

Produced water that has been collected and treated at any of the various Centralized E&P waste management facilities is stored in large, lined, engineered evaporation storage ponds that have been permitted and constructed to comply with COGCC Rule 907, Centralized E&P Waste Management Facilities, Rule 909 Pits – Construction and Operation, and Rule 910 Pit Lining Requirements and Specifications. These water storage ponds are purposefully designed with a large surface area to maximize evaporation of the produced water. Exposure to the sun, warm temperatures, and wind effectively evaporate water from the ponds and return that water to the atmosphere and ultimately to the hydrologic cycle. The arid climate of western Colorado is an ideal location for use of natural evaporation ponds as the annual evaporation rate typically is 3 – 4 times the annual precipitation rate for the area.

Underground Injection Control Facilities

Disposal of produced water at permitted underground injection control facilities is another viable option for disposal of excess produced water. Currently, TEP owns and operates 16 UIC injection wells (see Table 2) that are used for produced water disposal as needed. These UIC disposal wells / facilities are a critical component of TEP’s water management process as they help to maintain the balance between the total volume of production water generated, and the volume of water that is re-used / recycled or otherwise evaporated. All UIC facilities have been permitted per the Rule 800 series.

Table 2, Approved UIC Facilities

Well Name	Location	UIC Facility Number	Ownership	API
Circle B Land 33A-35-692	NWSE-S35-T6S-R92W	159277	Fee	05-045-18493
GGU Roderick	NENW-S31-T6S-R91W	159176	Fee	05-045-13803
Scott 41D-36-692	NENE-S36-T6S-R92W	159159	Fee	05-045-11169
Specialty 13A-28	NWSW-S28-T6S-R92W	159212	Fed	05-045-14054
KP SWD 9-12D	NESE-S8-T6S-R91W	159301	Fee	05-045-18532
PWD Federal 21-6	SWSE-S21-T6S-R91W	159479	Fed	05-045-21277

Well Name	Location	UIC Facility Number	Ownership	API
GM 14-36	Lot 4-S36-T6S-R96W	159262	Fee	05-045-07501
GM 239-36	NESW-S36-T6S-R96W	159369	Fee	05-045-14693
GM 523-36	NESW-S36-T6S-R96W	159266	Fee	05-045-13979
GM 923-1D	SWNE-S1-T7S-R96W	159295	Fee	05-045-18424
GM 931-1D	SWNE-S1-T7S-R96W	159297	Fee	05-045-18425
GM 943-1D	SWNE-S1-T7S-R96W	159296	Fee	05-045-18426
Fed 299-23-1	SESW-S23-T2S-R99W	159478	Fed	05-103-10488
Fed 299-23-2	NESE-S23-T2S-R99W	159452	Fed	05-103-10490
Fed 299-26-1	SWNW-S26-T2S-R99W	160001	Fed	05-103-10364
Fed 299-26-2	NWNW-S26-T2S-R99W	159413	Fed	05-103-10538
Fed 299-27-5	SWNE-S27-T2S-R99W	159317	Fed	05-103-10624
Fed 299-27-6	NENW-S27-T2S-R99W	159396	Fed	05-103-10644
RG 41-16-397	NWNE-S16-T3S-R97W	159410	Fed	05-103-11517
RMV 215-21	NESW-S21-T6S-R94W	159388	Fee	05-045-07465
RWF 434-21	SWSE-S21-T6S-R94W	159386	Fee	05-045-10469
RWF 623-21	NESW-S21-T6S-R94W	159387	Fee	05-045-10389
RWF 911-28D	SESW-S21-T6S-R94W	159447	Fee	05-045-22176
RWF 933-19D	SWNW-S20-T6S-R94W	159462	Fed	05-045-22333
SG 334-32	NWSE-S32-T7S-R96W	159971	Fee	05-045-18442
SG 914-32D	NESE-S32-T7S-R96W	159981	Fee	05-045-18533
SG 922-32D	SESW-S32-T7S-R96W	159960	Fee	05-045-22654
SG 924-29D	NWNE-S32-T7S-R96W	159974	Fed	05-045-23023
B19-N	NWNE-S32-T7S-R96W	159220	Fee	05-103-11000
BAT 23CWI-24-07-96	NESW-S24-T7S-R96W	159457	Fee	05-045-22313
CSF #1-10W (Speakman)	NESW-S10-T7S-R91W	159150	Fed	05-045-06273
Tompkins 41 AWI-08-07-95	SESE-S5-T7S-R95W	160006	Fee	05-045-22551
Valley Farms D3	NENW-S15-T6S-R92W	159299	Fee	05-045-12082
Valley Farms F4	NWSW-S14-T6S-R92W	159298	Fee	05-045-14287
Watson Ranch B 24AWI-17-07-95	SESW-S17-T7S-R95W	159983	Fee	05-045-22801
DOE 1-W-26	Lot 6-S26-T6S-R95W	159432	Fed	05-045-06583
DOE 1-W-27	Lot 5-S27-T6S-R95W	159432	Fed	05-045-06584
DOE 2-W-27	Lot 8-S27-T6S-R95W	159432	Fed	05-045-06585
DOE 2-W-29	Lot 8-S29-T6S-R95W	159418	Fed	05-045-06588

Re-use/Recycle in Hydraulic Fracturing Operations

Re-use and recycling of produced water is an effective and efficient use of produced water as it precludes the use and consumption of freshwater resources. As produced water is generated from existing wells, the water is collected / transported to one of the Centralized E&P waste management facilities for further treatment and potential re-use during hydraulic fracturing operations. The “finished” water from the

treatment facility has been treated to remove any residual hydrocarbon content that was not separated at the well-head. After treatment, the treated water may then be “re-used / recycled” during hydraulic fracturing operations where the water is pumped from a Centralized E&P waste management facility to a series of remote storage ponds where the water is staged and ultimately used for hydraulic fracturing operations. Hydraulic fracturing operations is a highly water intensive activity and re-using / recycling produced water serves to protect and reserve freshwater resources.

Third Party Disposal Facilities

Third party disposal facilities is an option available to TEP for management and disposal of produced water. However, because this option requires trucking to a distant commercial disposal facility, this is typically considered to be a labor-intensive option, is not cost effective for TEP, and therefore, is not a preferred option. There are five Third-Party, commercial disposal facilities that are locally / regionally available to TEP operations (see Table 3). Typically, TEP would only use a third-party commercial disposal facility for produced water disposal if our existing water treatment facilities were full (at maximum capacity) and/or TEP’s permitted injection wells were incapacitated (not available) for some reason.

Table 3, Approved Third Party Disposal Facilities

Facility Name	Location	Permit No.
OWL SWD Operating LLC Services	SE Sec 8, T20S, R24E Grand County, UT	Grand County Council Resolution 2798
Harley Dome #1 SWD 43-019-31622	Sec. 10-9S-25E	UIC-358-1
Greenleaf Environmental Services	15655 45 ½ Road Debeque, CO 81630	Mesa County CUP Resolution MCM 2012-044 APCD Permit – 02ME0577 CDPHE-HMWMD – SW / MES BLA / 2.2
White River Dome (Owned by RNI/DHI) Colorado disposal site	White River City Rio Blanco County, CO Intersection of CR 5 and Hwy 64	CDPHE Solid Waste Permit: SW-RBL.PIC 2.3 APCD Permit- 07RB0987
PBR Disposal	SWSW Section 2, T3S, R98W Rio Blanco County	Air Construction Permit. 09RB0921 Rio Blanco County SUP Resolution 2007-42 (07/13/09)

SPILL / CONTAMINATED SOILS

Occasionally, spills of productions fluids may occur during oil and gas operations that result in localized impacts to soils on or near the well pad. All spills are immediately investigated by TEP Environmental and Operations personnel. Contaminated soils are assessed to determine if they exceed regulatory cleanup standards and require removal, treatment, or disposal. Characterizing potentially contaminated soils is accomplished either by field-screening the impacted soils to determine relative hydrocarbon concentrations, and/or by collecting samples of the impacted soils and sending the samples to an approved commercial lab for analysis.

All contaminated soils exceeding regulatory cleanup standards are excavated and managed / disposed of appropriately. If a spill incident is subject to agency reporting requirements, the appropriate agencies are notified within the regulatory timelines. Impacted soils that exceed applicable cleanup standards are

typically excavated and taken to an off-site commercial disposal facility that is authorized to accept that type of waste.

SEWAGE

Chemical toilets (i.e., porta potties) will be provided on site for personnel use during construction, drilling, and completions operations. Porta potties will be emptied weekly by an approved sanitary waste contractor and hauled to an approved sanitary waste disposal facility. Please see the Waste Handling Table (Table 1) for additional details.

GARBAGE

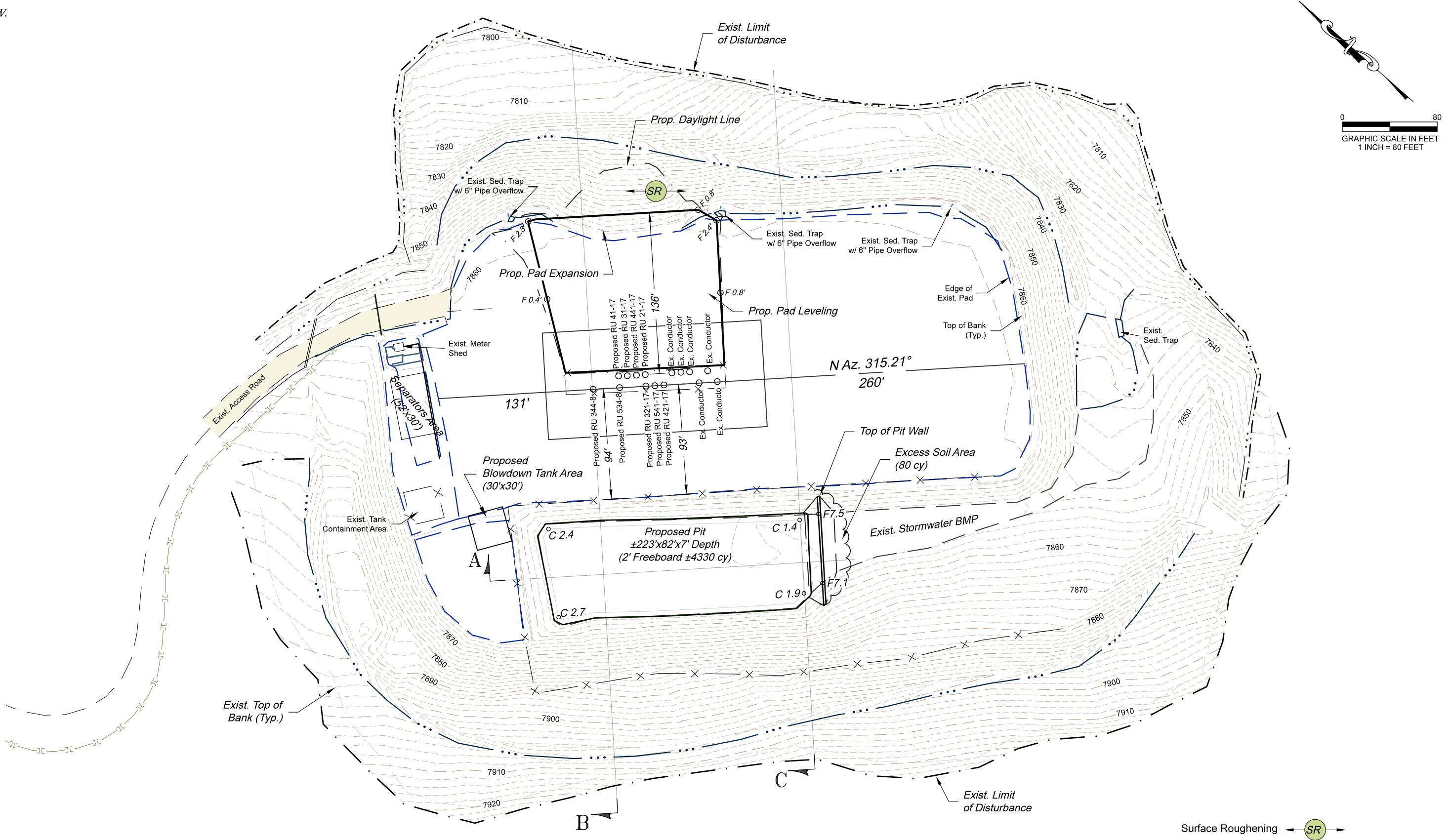
All garbage and trash (i.e., solid, non-hazardous wastes) will be stored in enclosed bear-proof trash containers. Disposal of garbage and trash will occur approximately once per week during drilling and completions operations. All garbage and trash will be transported to a permitted solid waste landfill within one (1) week following termination of drilling or completion operations. Garbage or trash will not be disposed of on-location. The well site and access road will be kept free of trash and debris during long-term production operations. No hazardous substances or hazardous wastes are anticipated to be generated during construction, drilling, and completions operations. Such materials are strictly prohibited for disposal at a solid waste landfill. Please see the Waste Handling Table (Table 1) for additional details.


SUMMARY

As described above, development of the wells on the RU 31-17 pad will produce waste fluids and materials which will be managed in accordance with all Federal, State, and local guidelines. Table 1, Waste Handling Summary, shows a detailed summary of the waste streams involved in development of the proposed wells.


Table 1, Waste Handling Summary

Waste Type	Waste Content Description	Waste per Well	Units	Disposal Frequency	Containment Description	Disposal Type	Disposal Location
Drilling	Drill Cuttings	450	Cubic Yards	One Time Only	Cuttings trench	On-site Disposal	Private
Sewage	Sewage	200	Barrels	Weekly	Chemical toilets or enclosed sewer system	Haul to Commercial Facility	Commercial
Garbage	Garbage/Trash	4000	Pounds	Weekly	Enclosed trash containers	Haul to Commercial Facility	Commercial
Flowback	Frac Sand	35000	Pounds	One Time Only	Earthen berm containment on pad	Burial on Site	Private
Produced Water	Produced water after well is turned over to production. The volume reported is not accurate nor known at this time.	100+	Barrels	Weekly	Water is piped into existing infrastructure	Recycled/Off-Lease Injection/Commercial Facility	Private
Spill-Impacted / Contaminated Soils	Soils impacted from spills of production fluids during oil and gas operations			As needed	Excavation and direct placement into dump trucks or temporary storage bins	Haul to approved commercial disposal facility	Commercial



Surface Roughening 

136 East Third Street
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Fax (970) 625-2773



BOOKCLIFF
Survey Services, Inc.

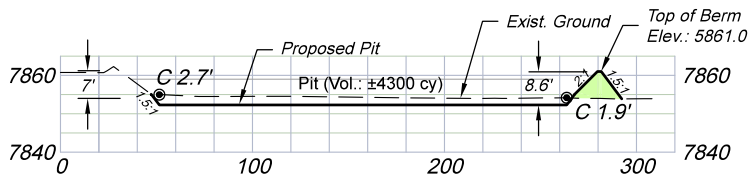
REVISED: 12/16/20

SCALE:	1" = 80'
DATE:	12/14/20
SHEET:	2 of 7
PROJECT:	TERRA
DFT:	CS

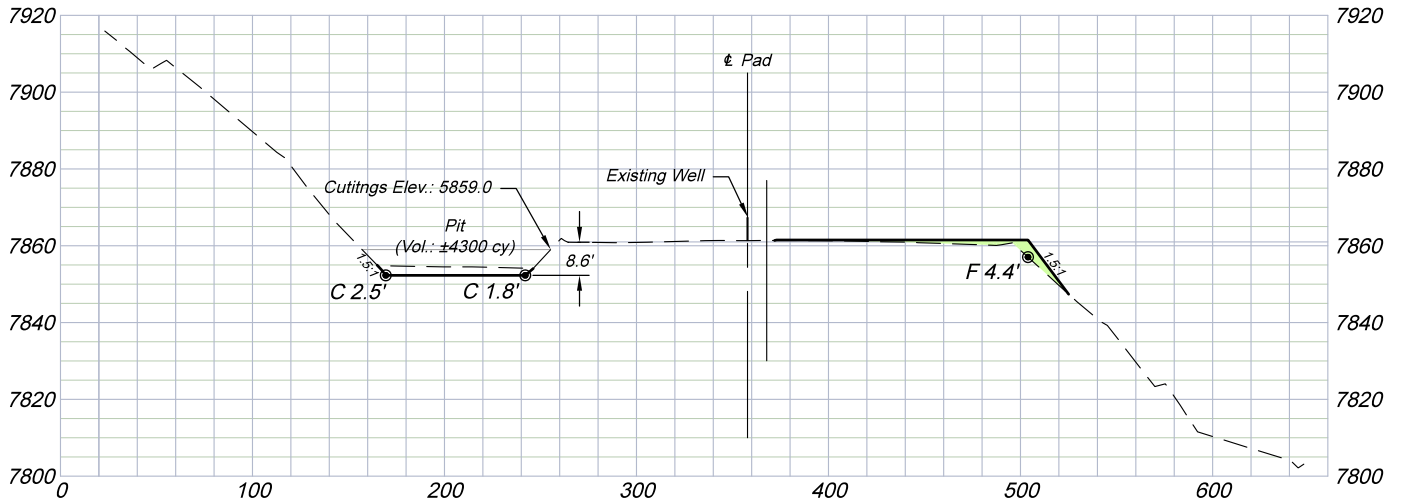
Construction Plan Prepared for:

TERRA TEP Rocky Mountain LLC

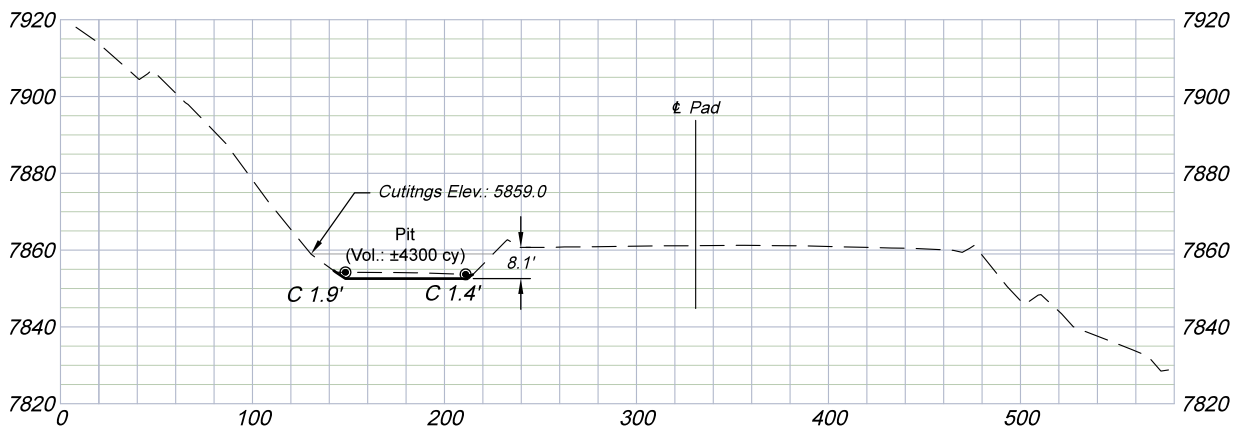
RU 31-17 Drill Pad - Plat 2
CONSTRUCTION LAYOUT



Section A



Section B



Section C

SCALE: Horiz.: 1" = 100'
Vert.: 1" = 50'

ESTIMATED EARTHWORK QUANTITIES (cy)				
ITEM	CUT	FILL	TOPSOIL	EXCESS
PAD	0	1,080	0	-1,080
Pit	1,380	220		1,100
TOTALS	1,380	1,360	0	20

*Notes

- 1) Pad Had Been Surfaced, No Additional Aggregate or Shale is Required
- 2) Pad: Edge Fill Slope: 1.5:1
Pad Fill Slope: 10:1
- 3) Pit: Cut Slope: 1.5:1
Fill Slope: 1.5:1
- 4) Topsoil based on 12" Soil Depth.
- 5) 10% Swell Factor Applied to Earthwork Cut Volume.

REVISED: 12/15/20

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BOOKCLIFF
Survey Services, Inc.

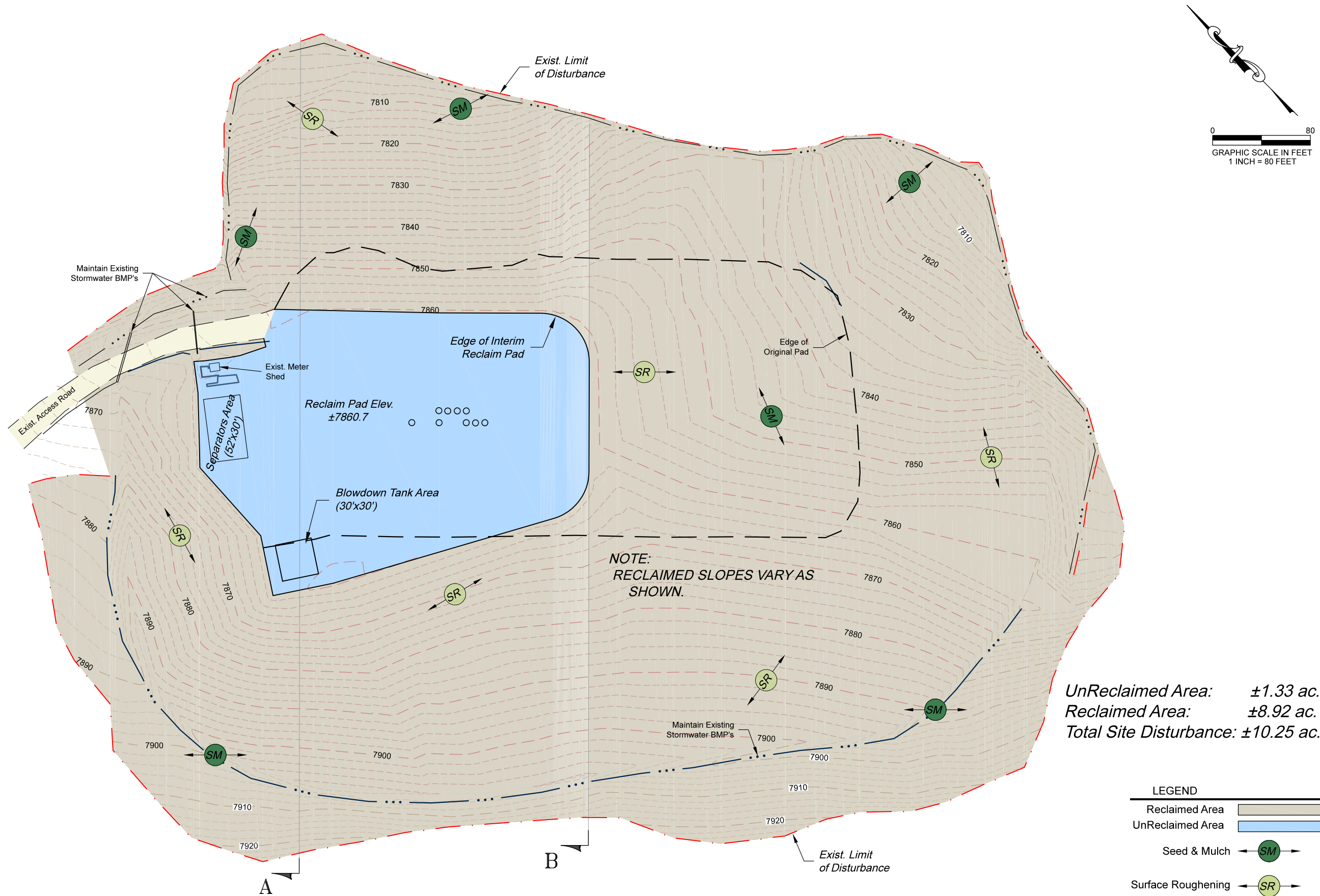
SCALE: As Noted
DATE: 12/14/20
PLAT: 2A of 7
PROJECT: TEP Valley
DFT: cs

Construction Plan Prepared for:



TEP Rocky Mountain LLC

RU 31-17 Drill Pad - Plat 2A
CONSTRUCTION LAYOUT
CROSS SECTIONS



UnReclaimed Area: ±1.33 ac.
Reclaimed Area: ±8.92 ac.
Total Site Disturbance: ±10.25 ac.

LEGEND	
Reclaimed Area	
UnReclaimed Area	
Seed & Mulch	
Surface Roughening	

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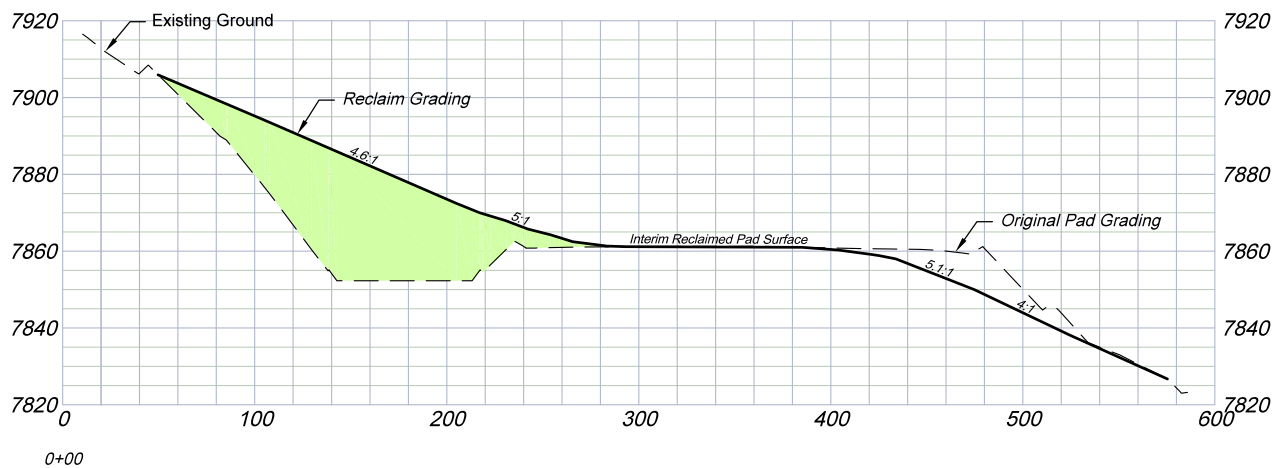
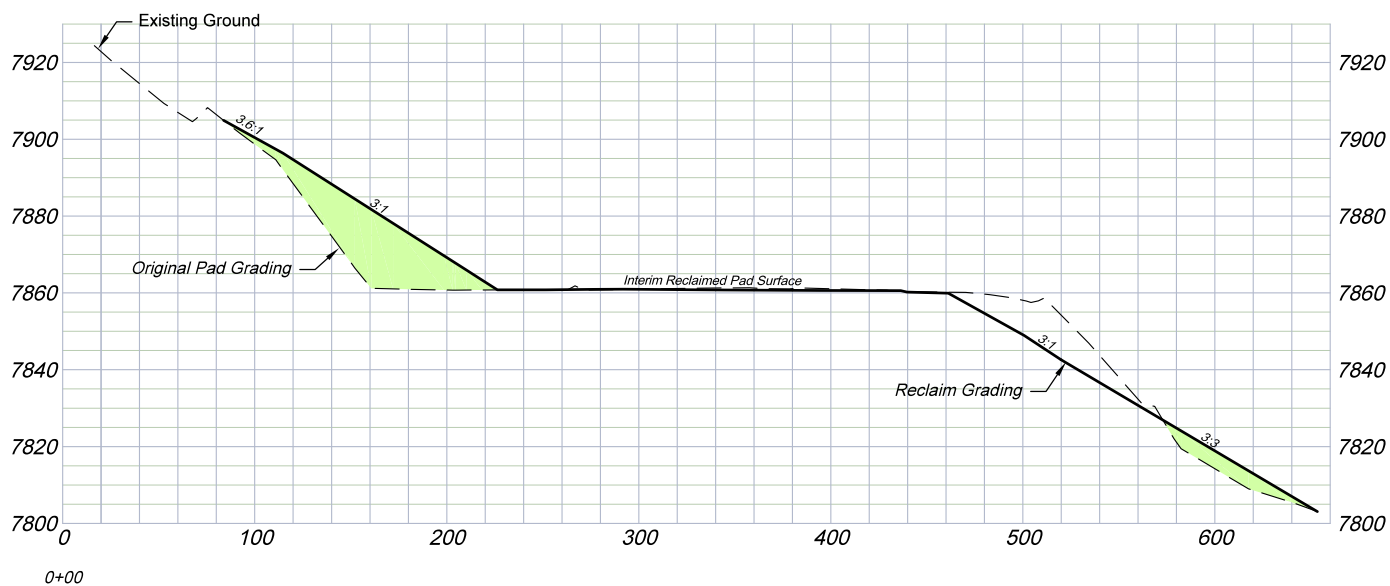
REVISED: 12/15/20

SCALE:	1" = 80'
DATE:	12/14/20
SHEET:	7 of 7
PROJECT:	TERRA
DFT:	CS

Construction Plan Prepared for:

TEP Rocky Mountain LLC

RU 31-17 Drill Pad - Plat 7
INTERIM RECLAMATION LAYOUT



***NOTE:**
Reclaim Slopes Vary as Shown.

SCALE: Horiz.: 1" = 100'
Vert. : 1" = 50'

REVISED: 12/15/20

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Rifle, Colorado 81650
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SCALE: As Noted
DATE: 12/14/20
PLAT: 7A of 7
PROJECT: TEP Valley
DFT: cs

Construction Plan Prepared for:



TEP Rocky Mountain LLC

*RU 31-17 Drill Pad - Plat 7A
INTERIM RECLAMATION
CROSS SECTIONS*