

South Leverich 13-09 Pad Sensitive Area Determination Checklist



TEP Rocky Mountain, LLC	
Person (s) Conducting Field Inspection	
Name: Dean Goebel	Date: September 17, 2021
Comment: Desktop analysis	
Site Information	
Location Name: S. Leverich 13-09 Pad	COGCC Location ID: 335045
Type of Facility: Well Pad	
Environmental Conditions	
Temperature (°F): NA	
Comments	

Sensitive Area: A sensitive area is an area vulnerable to potential significant adverse groundwater impacts, due to factors such as the presence of shallow groundwater or pathways for communication with deeper groundwater; proximity to surface water, including lakes, rivers, perennial or intermittent streams, creeks, irrigation canals, and wetlands. Additionally, areas classified for domestic use by the Water Quality Control Commission, local (water supply) wellhead protection areas, areas within 1/8 mile of a domestic water well, areas within 1/4 mile of a public water supply well, ground water basins designated by the Colorado Ground Water Commission, and surface water supply areas are sensitive areas.

Has the proposed, new, or existing location been designated as a sensitive area?

Yes No

SURFACE WATER

- Are there any surface water features or Surface Water Supply Areas (SWSAs) adjacent to or within 500 feet of the proposed or existing facility?

Yes No

If yes, list type of surface water feature(s), i.e. rivers, creeks, intermittent or perennial streams, seeps, springs, wetlands:

If yes, describe location relative to facility:

- Could a potential release from the facility reach surface water features?

Yes No

If yes, describe the pathway a release from the facility would likely follow to determine if the potential to impact surface water is high or low.

Is the potential to impact surface water from a facility release high or low?

High Low

GROUNDWATER

1. Will the proposed/new or existing facility have any pits which will contain hydrocarbons and chlorides or other E&P wastes?

Yes No

If yes, List the pit type(s):.

2. Is the site of the proposed facility underlain by an unconfined aquifer or recharge zone?

Yes No

3. Is the hydraulic conductivity of the underlying soil or geologic material $\leq 1.0 \times 10^{-7}$ cm/sec?

Yes No

4. Is the proposed facility located within 1/8 mile of a domestic water well or 1/4 mile of a public water supply well which would use the same aquifer?

Yes No

5. Is the proposed facility located within a 100-year floodplain?

Yes (Sensitive) No (If no, proceed to question #6)

6. Is the depth to groundwater known?

Yes (If yes, follow instructions provided in 6(a) of this section).

No (If no, follow instructions provided in 6(b) of this section).

- a. If yes, could a potential release from the proposed facility reach groundwater?

Yes No

If yes, explain:

- b. If no:

- i. Evaluate surrounding soils, topography, and vegetation which may suggest the presence of shallow groundwater.
- ii. Gather information from surrounding well data in order to determine a depth to groundwater, i.e. State Engineers Office.

7. Is the potential to impact ground water from the facility in the event of a release high or low?

High Low

Additional Comments:

Potential surface water impacts are deemed low for the sensitive area determination for the proposed expansion of an existing well pad. The closest stream is Beaver Creek, which is located 640 feet to the west within the downgradient area of the pad. Surface waters (including wetlands) are not located within 500 feet of the well pad. Intermittent streams identified within the 1/2-mile site radius are located 2,255 feet and 2,493 feet north of the well pad. These intermittent drainages eventually join to the north into a single intermittent drainage. Although the drainages are downgradient of the site, the drainages lack of a defined bed and bank pathway promotes sheet flow rather than concentrated flow thus limiting the potential for offsite migration to these drainages. The perennial and intermittent drainages eventually

discharge to the Colorado River near Rifle. A spring, located 1,460 feet northeast of the pad is oriented along a topographic contour relative to the well pad; thus, lacking potential head for a spill release to reach and impact the spring. Three ponds qualifying as Waters of the United States (WOUS) are located 1,654 feet northeast, 1,892 feet east, and 2,187 feet northeast of the pad. The nearest surface water body, similar to the spring, is oriented along a topographic contour relative to the well pad, which therefore lacks potential head to reach this surface water body. The two furthestmost surface water bodies are higher in elevation than the well pad and are, thus physically incapable of being impacted by a potential spill release. Site grading will provide erosion control measures minimizing potential fluid migration off site. Best Management Practices (BMPs) will be installed during site construction which will eliminate preferential pathways for offsite depression flow using earthen berms and diversion ditches. All newly constructed BMPs will be closely monitored and maintained to ensure complete on-site containment of a potential release.

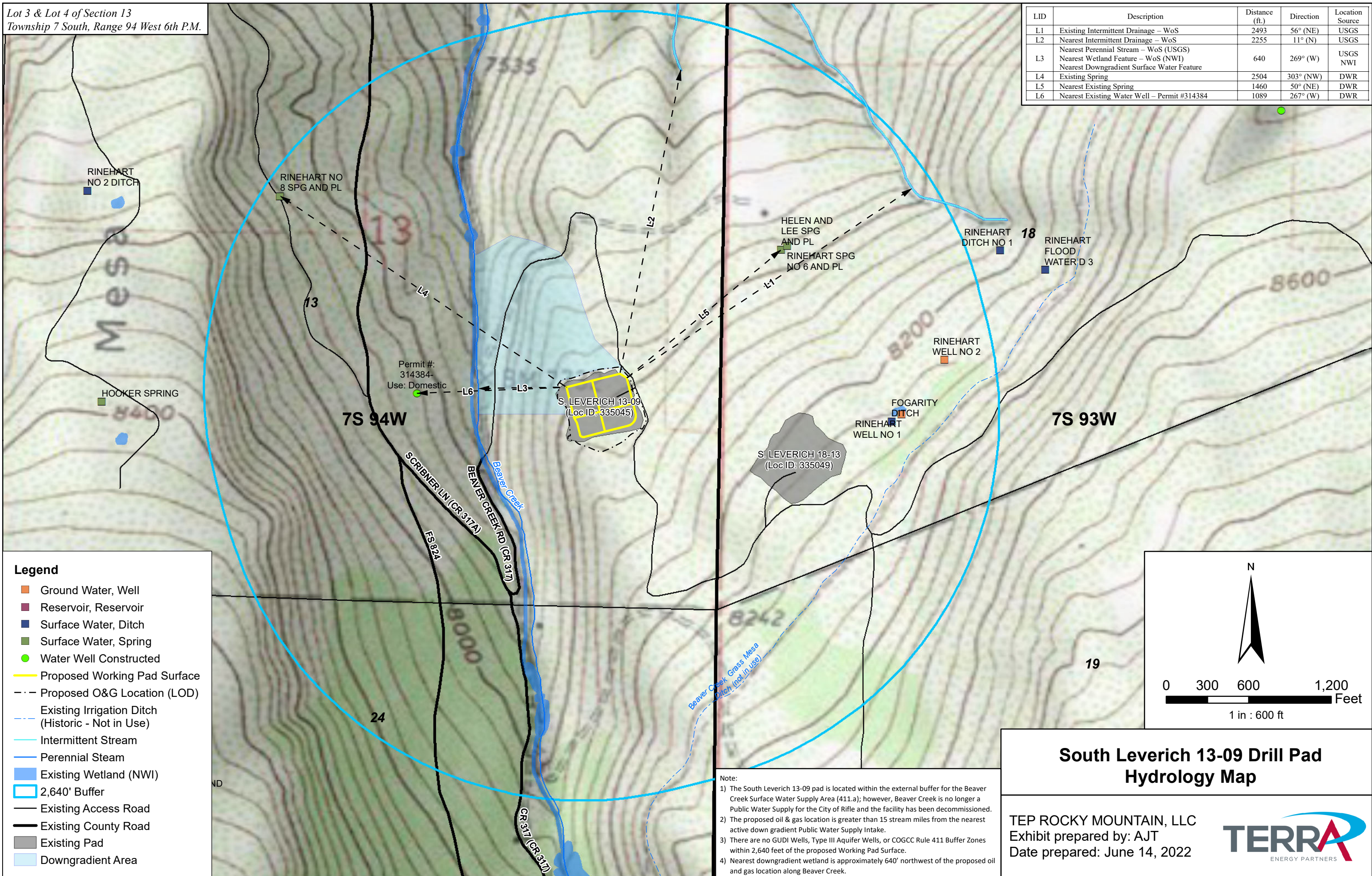
State Engineers Office and USGS records were reviewed indicating only one permitted monitoring well (permit no. 314384) located 1,089 feet west of the well pad. The well is 160 feet deep, with solid casing from 0-120 feet and perforated pipe from 120-165 feet. The static water level is 90 feet with an estimated well yield of 15 gallons per minute (gpm). Visual observations of the site gleaned during a site visit and available aerial photography indicates sagebrush, oak brush, serviceberry, and aspen dominated vegetation. Depth to shallow groundwater residing in the local flow system is greater than 80 inches (6.67 feet) based on NRCS soil properties and qualities for Morval-Tridell complex and Cimarron loam mapped soil units occurring at the site. Typical soil profiles for these mapped soil units indicate soil profiles up to 60 inches (5 feet) comprised of clay loam with silt and gravel clasts. Saturated hydraulic conductivity (K_{sat}) for the mapped soils is greater than 1.0×10^{-7} cm/sec.

Dominant upland vegetation indicates unsaturated soil conditions without hydric indicators of shallow groundwater conditions. Evidence of springs or seeps, other than the identified spring discussed above, were not detected during site reconnaissance and vegetation assessments conducted for the Biological Survey Report. Hydrogeological indicators do not support the occurrence of shallow groundwater at the site. Depth to groundwater is likely greater than 90 feet in the underlying bedrock. Potential impacts to groundwater resources at the site is deemed to be low based on the site hydrogeology.

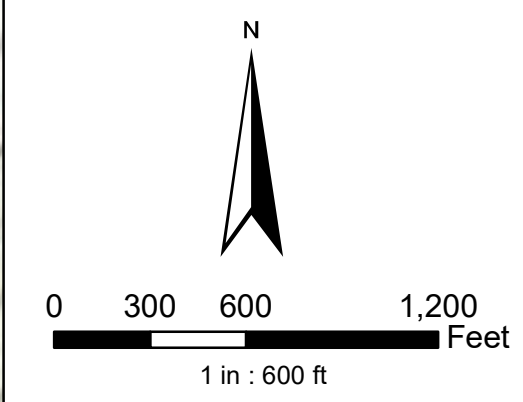
Based on the information collected during the desktop review, the potential for impacts to surface water and groundwater is deemed to be low if properly mitigated with control measures implemented when expanding the well pad. It has been determined that this pad location is not within a sensitive area.

Lot 3 & Lot 4 of Section 13
Township 7 South, Range 94 West 6th P.M.

LID	Description	Distance (ft.)	Direction	Location Source
L1	Existing Intermittent Drainage – WoS	2493	56° (NE)	USGS
L2	Nearest Intermittent Drainage – WoS	2255	11° (N)	USGS
L3	Nearest Perennial Stream – WoS (USGS) Nearest Wetland Feature – WoS (NWI) Nearest Downgradient Surface Water Feature	640	269° (W)	USGS NWI
L4	Existing Spring	2504	303° (NW)	DWR
L5	Nearest Existing Spring	1460	50° (NE)	DWR
L6	Nearest Existing Water Well – Permit #314384	1089	267° (W)	DWR



- Legend**
- Ground Water, Well
 - Reservoir, Reservoir
 - Surface Water, Ditch
 - Surface Water, Spring
 - Water Well Constructed
 - Proposed Working Pad Surface
 - Proposed O&G Location (LOD)
 - Existing Irrigation Ditch (Historic - Not in Use)
 - Intermittent Stream
 - Perennial Steam
 - Existing Wetland (NWI)
 - 2,640' Buffer
 - Existing Access Road
 - Existing County Road
 - Existing Pad
 - Downgradient Area



**South Leverich 13-09 Drill Pad
Hydrology Map**

Note:

- 1) The South Leverich 13-09 pad is located within the external buffer for the Beaver Creek Surface Water Supply Area (411.a); however, Beaver Creek is no longer a Public Water Supply for the City of Rifle and the facility has been decommissioned.
- 2) The proposed oil & gas location is greater than 15 stream miles from the nearest active down gradient Public Water Supply Intake.
- 3) There are no GUDI Wells, Type III Aquifer Wells, or COGCC Rule 411 Buffer Zones within 2,640 feet of the proposed Working Pad Surface.
- 4) Nearest downgradient wetland is approximately 640' northwest of the proposed oil and gas location along Beaver Creek.

TEP ROCKY MOUNTAIN, LLC
Exhibit prepared by: AJT
Date prepared: June 14, 2022

