

# AP 33-9-695

Facility ID 279972 | Location ID 335626

## 909.j.(6) Alternative Sampling Plan

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### A. INTRODUCTION

TEP Rocky Mountain LLC (“TEP”) has prepared this Alternative Sampling Plan for director approval per COGCC Rule 909.j.(6) for the AP 33-9-695 Pit. TEP has extensive water reuse and recycle infrastructure to utilize produced water from approximately 7,000 natural gas wells in the Piceance Basin for hydraulic fracturing of new natural gas wells, primarily in Garfield and Rio Blanco Counties. Twenty-eight (28) lined produced water pits are part of this infrastructure. Due to the very large number of individual actively producing wells it is impractical to sample produced water from each well. However, since proximate wells are producing from the same, or similar, formations, collecting and analyzing produced water from the composite inlet stream of each lined pit will provide representative analytical results.

### B. LOCATION DESCRIPTION

The AP 33-9-695 pit is a multi-well pit located within Section 9, Township 6 South, Range 95 West in Garfield County (facility ID 279972, location ID 335626, lat. 39.537346, long. -107.99968). A facility diagram is attached for reference. The facility consists of a 3,952 barrel capacity lined produced water pit, one natural gas well, and produced water & oil storage tanks.

### C. PRODUCED WATER SAMPLING PROTOCOL

In accord with COGCC Rule 909.j.(1) produced water samples will be collected from the inlet produced water pipeline entering the pit and analyzed for the properties and constituents listed below. A list of wells that send produced water to the AP 33-9-695 Pit is included in Section D (“Well List”) below.

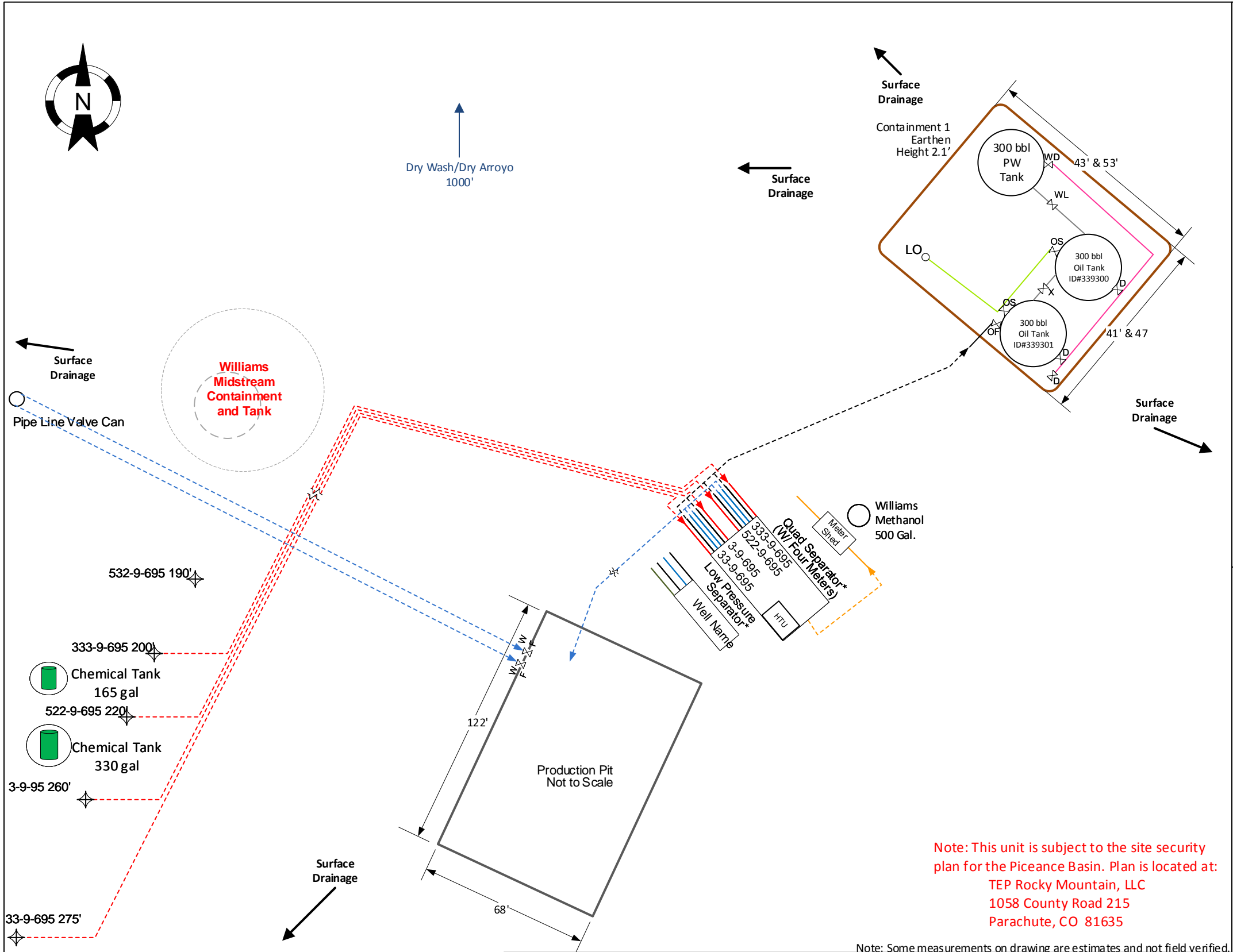
- pH
- Specific conductance
- Total dissolved and suspended solids (TDS and TSS)
- Alkalinity (total, bicarbonate, and carbonate as CaCO<sub>3</sub>)
- Major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, and phosphorus)
- Major cations (calcium, iron, magnesium, manganese, potassium, and sodium)
- Other elements (barium, boron, selenium, and strontium)
- Naphthalene
- Total petroleum hydrocarbons (“TPH”) as total volatile hydrocarbons (C6 to C10) and total extractable hydrocarbons (C10 to C36)
- BTEX compounds (benzene, toluene, ethylbenzene, and xylenes)
- Radium (226Ra and 228Ra)

In accord with COGCC Rule 909.j.(3) analytical results will be submitted to the COGCC via Form 43.

#### D. WELL LIST

| Well Pad Name    | Well Pad Location ID | Well API     | Field Code | Formation 1 | Formation 2 |
|------------------|----------------------|--------------|------------|-------------|-------------|
| AP 41-14-695 PAD | 324329               | 05-045-11018 | 67350      | WFCM        | -----       |
| RMV 240-29 PAD   | 335371               | 05-045-09942 | 75400      | WFCM        | -----       |
| RMV 240-29 PAD   | 335371               | 05-045-07486 | 75400      | WFCM        | -----       |
| AP 33-9-695 PAD  | 335626               | 05-045-14039 | 67350      | WFCM        | -----       |
| AP 33-9-695 PAD  | 335626               | 05-045-06695 | 67350      | WSTC        | -----       |
| AP 33-9-695 PAD  | 335626               | 05-045-14041 | 67350      | WFCM        | -----       |
| AP 33-9-695 PAD  | 335626               | 05-045-14040 | 67350      | WFCM        | -----       |
| AP 33-9-695 PAD  | 335626               | 05-045-11017 | 67350      | WFCM        | -----       |
| AP 22-10-695 PAD | 335661               | 05-045-14062 | 67350      | WFCM        | -----       |
| AP 22-10-695 PAD | 335661               | 05-045-14063 | 67350      | WFCM        | -----       |
| AP 22-9-695 PAD  | 335753               | 05-045-06715 | 67350      | WSTC        | -----       |
| AP 22-9-695 PAD  | 335753               | 05-045-14043 | 67350      | WFCM        | -----       |
| AP 22-9-695 PAD  | 335753               | 05-045-11019 | 67350      | WFCM        | -----       |
| AP 22-9-695 PAD  | 335753               | 05-045-14042 | 67350      | WMFK        | WFCM        |

| Formation Codes |                       | Field Codes |           |
|-----------------|-----------------------|-------------|-----------|
| CMEOC           | Cameo Coal            | 67350       | Parachute |
| WFCM            | Williams Fork - Cameo | 75400       | Rulison   |
| WMFK            | Williams Fork         |             |           |
| WSTC            | Wasatch               |             |           |



|             |          |   |  |   |  |  |  |  |  |
|-------------|----------|---|--|---|--|--|--|--|--|
| Facility ID |          | <div>Facility Diagram</div> <div>TEP Rocky Mountain LLC</div> <div>North Grand Valley</div> <div>AP 33-9-695 Pad</div> <div>Latitude: 39.537346 Longitude: -107.99968</div> <div>NE/SW, Sec.9, TS6S, R95W</div> <div>COC# NONE</div> <div>Garfield County, CO</div> |  | <div>Legend</div> <div><div><div><div></div></div><div><div></div></div></div><div>Water Dump Line</div></div> <div><div><div></div></div><div><div></div></div></div> <div>Oil Dump Line 4</div> <div><div><div></div></div><div><div></div></div></div> <div>Flowline</div> <div><div><div></div></div><div><div></div></div></div> <div>Gas Sales Line</div> <div><div><div></div></div><div><div></div></div></div> <div>Valve</div> <div><div><div></div></div><div><div></div></div></div> <div>Overflow Line</div> <div><div><div></div></div><div><div></div></div></div> <div>Vent Line</div> <div><div><div></div></div><div><div></div></div></div> <div>Manifold Line</div> <div><div><div></div></div><div><div></div></div></div> <div>Load Line</div> <div><div><div></div></div><div><div></div></div></div> <div>Drip Tank</div> <div><div><div></div></div><div><div></div></div></div> <div>Load Out Valve</div> <div><div><div></div></div><div><div></div></div></div> <div>Well Head</div> <div>Dotted lines denote underground pipes. All lines denote 2" steel pipe, unless otherwise noted. Valves on separator not shown.</div> |  |  |  |  |  |
| DRAWN BY:   | TG       |   |  |   |  |  |  |  |  |
| DATE:       | 12/12/18 |   |  |   |  |  |  |  |  |
| SCALE: NONE |          |   |  |   |  |  |  |  |  |

