



Transferring Operator Water Reuse Plan

**TEP Rocky Mountain LLC and
Vanguard Operating, LLC**

Garfield County, Colorado

January 12, 2018

Purpose and Need

This water re-use plan is to be submitted to the Colorado Oil and Gas Conservation Commission (COGCC) with a Form 4 (sundry), per Rule 907.a.(1), to allow a temporary produced water transfer agreement between TEP Rocky Mountain LLC (TEP) and Vanguard Operating, LLC. (Vanguard).

Vanguard has a need for up to 500,000 barrels (bbls) of produced water for Exploration and Production (E&P) operations in Garfield County, Colorado. TEP and Vanguard both operate wells in the Kokopelli Field in Garfield County, Colorado. Produced water is generated from TEP production operations and is piped or trucked to approved underground injection control (UIC) locations in the area, or reused for drilling and completion activities. Water that cannot be reused or injected is sent to offsite disposal facilities.

TEP proposes to transfer excess produced water to Vanguard for beneficial re-use. The source of the produced water will come primarily from water stored at TEP's Centralized E&P facility located at the KP 32-17 location (Facility ID 443287). The Facility ID for the pit at this Centralized E&P facility is 418807. Water from the KP 32-17 pit is then pumped through TEP's water distribution and management pipeline throughout the Kokopelli field.

Additionally, produced water that is currently stored in TEP's KP 22-16 pit (Pit Facility ID 374696), and the Orion 44-20 pit (Pit Facility ID 296913) will be included in this water share agreement. These pits will be emptied of their present volume but will not be part of the on-going water sharing / management activities described in this agreement.

Benefits

Under this plan, each party shall use reasonable and available means to safely transfer production water, in sufficient volumes and quality, to meet the other party's transfer request, when mutually agreeable to do so. The benefits include:

- Less fresh water withdraws from surface water sources;
- Less heavy truck traffic to transport water;
- Less reliance on injection wells for disposal of production/flowback water;
- Increased operational efficiencies from reusing local supplies of production/flowback water to meet water demands for drilling, completion and workover activities.

Produced Fluid Pickup and Transfer Location

This transfer will be accomplished by connecting a temporary service line into TEP's water management and distribution system via a connection at the Orion 44-20 valve set located immediately east of TEP's Orion Pit 44-20-691 (COGCC Facility ID 296913). This will be the official Custody Transfer point (Lat: 39.50915, Long: -107.571747) for the purposes of this Water Share Agreement. The temporary service line will run a distance of approximately 360 feet where produced water will be delivered to a temporary water storage facility consisting of three x 500-bbl storage (i.e., frac) tanks.

The storage tank facility will be located at Vanguard's Jolley 20-6-66S91W/20SESE location (COGCC Facility ID #335185). The produced water will be delivered from the connection point to the storage facility using a temporary service line (10-inch poly) that will be installed, maintained, and operated by Vanguard. The temporary storage tank facility will be constructed within a lined secondary containment structure to provide containment protection for any spills / leaks that may occur at the storage tank facility, and to prevent any storm water runoff or discharge from leaving the storage tank facility area.

Positive pressure in TEP's water management system will ensure delivery from the transfer point to Vanguard's temporary storage tanks. A diagram showing the connection point, temporary service line, and temporary storage tank facility are depicted in Exhibit A.

Upon receipt of water into the storage facility, Vanguard will then pump water from the storage tanks into their water pipeline and distribution system to provide the water needed to supply their upcoming completions activities. Please refer to Exhibit A for pipeline routes, and locations of Vanguard storage facilities. Vanguard will test and verify compatibility of the produced water provided by TEP. Transfer of produced water would begin upon the date of COGCC approval and terminate on December 31, 2018, with an option for extension of the agreement if needed.

Once produced water leaves the Custody Transfer Point, Vanguard will assume all regulatory responsibility, custody and control of the water.

From the Temporary Water Storage Facility (Lat: 39.5099282, Long: -107.5709378), Vanguard will pump produced water via a buried 6-inch flex-steel pipeline that connects to a 10-inch poly pipeline connecting to the GGU Miller 11D Multi-Well Pit (Facility ID 451798, Sec 32, T6S-R91W) and to the MDP 6-2 Multi-Well Pit (Facility ID 451892, Sec 32, T6S-R91W), where produced water will be collected and stored for future use.

Transfer

TEP's transferring activities will consist of the following:

The primary source of produced water to be provided by TEP will come from produced water stored / managed at the KP 32-17 Centralized E&P facility. Water from this system may be pumped via TEP's water management and distribution system throughout the Kokopelli field. Vanguard will take custody of the produced water at the Orion 44-20 valve-set / riser that is located immediately east of the Orion 44-20 pit. The coordinates for the official Custody Transfer point are: Lat: 39.50915, Long: -107.571747.

As described above, produced water that is currently stored in TEP's KP 22-16 pit (Pit Facility ID 374696), and the Orion 44-20 pit (Pit Facility ID 296913) is also included in this water share agreement. The KP 22-16 pit will be emptied by transferring its contents to the KP 32-17 pit, and the Orion 44-20 pit will be emptied by transferring its contents to the temporary storage tank facility located at the at Vanguard's Jolley 20-6-66S91W/20SESE location (COGCC Facility ID #335185).

After the contents of the KP 22-16 pit and the Orion 44-20 have been emptied, these pits will not be associated with the on-going water sharing / management activities described in this agreement.

Produced water received by Vanguard at the custody transfer point will be pumped into Vanguard's water pipeline and distribution system to provide the water needed to supply their upcoming completions activities. Specifically, produced water received from TEP will be transferred and stored at the GGU Miller 11D Multi-Well Pit (Facility ID 451798, Sec 32, T6S-R91W) and to the MDP 6-2 Multi-Well Pit (Facility ID 451892, Sec 32, T6S-R91W).

The volumes of produced water to be delivered will be up to **36,000** bbls/day; actual transferred volumes will be metered as water leaves the Custody Transfer Point.

TEP will maintain records with the following information:

- Changes to the approved plan;
- Applicable training requirements for TEP and its contractors (lock out/ tag out, job hazard analysis at the transfer location, etc.);
- Types and results of internal and contractor audits conducted;
- Tabulated water generator records, if required by Rule 907.b.(2) including:
 - Date of transport
 - Identity of water generator
 - Identity of water transporter
 - Location of the water pick up site
 - Type and Volume of water transported
 - Name and Location of receiving point
(Transport tickets will be maintained for each load)
- Summary of spills, incidents or upsets;

Such records shall be signed by the transporter, made available for inspection by the Director during normal business hours, and copies thereof shall be furnished to the Director upon request.

Spill Response and Cleanup Measures

TEP's pads and facilities are covered under a Spill Prevention Control and Countermeasure Plan (SPCC).

Vanguard's receiving points are also covered under a SPCC plan.

Analytical Data

An analysis representative of the water to be transferred to Vanguard will be included as Attachment A.

Operator Contact Information

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Summary

Origination of produced water:

- TEP's KP 32-17 Centralized E&P facility and pit (CE&P Facility ID 443287 and Pit Facility ID 418807);
- TEP's KP 22-16 produced water pit (Pit Facility ID 374696); and
- TEP's Orion 44-20 produced water pit (Pit Facility ID 296913)

Destination of water:

- Vanguard's GGU Miller 11D Multi-Well Pit (Facility ID 451798, Sec 32, T6S-R91W);
- Vanguard's MDP 6-2 Multi-Well Pit (Facility ID 451892, Sec 32, T6S-R91W)

Water Transportation:

- All water transported to Vanguard will be pumped from the Custody Transfer Point (Lat: 39.50915, Long: -107.571747).
- Water from the Custody Transfer Point will be transferred to a Temporary Storage Tank facility (consisting of 3 x 500 bbl frac tanks) located at the Vanguard's Jolley 20-6-66S91W/20SESE location (COGCC Facility ID #335185).
- Vanguard will then pump via temporary surface lines and permanent buried lines from the Temporary Storage Tank Facility to GGU Miller 11D Multi-Well Pit (Facility ID 451798, Sec 32, T6S-R91W) and to the MDP 6-2 Multi-Well Pit (Facility ID 451892, Sec 32, T6S-R91W).

Estimated volume of water transferred: The total estimated volume of produced water authorized per this water sharing/transfer agreement is 500,000 bbls. This sharing agreement will be effective from date of COGCC approval through December 31, 2018. The anticipated maximum daily usage rate will be up to 36,000 bbls per day. If additional time or volume of water would be needed, TEP and Vanguard will seek an extension of this request via Sundry submittal to COGCC.

The transporting operator (Vanguard) shall implement the following:

- Approval of this plan is contingent upon analytical laboratory results for representative samples of TEP water collected from the water sourced identified above. Results shall be submitted to the COGCC within 45 days of approval of

this plan, unless included with the Form 4 submission. Standard EPA analytical laboratory analysis shall include:

- Volatile organic compounds EPA Method 624 (GC/MS)
- Semi-Volatile organic compounds (EPA Method 625 (GC/MS)
- Dissolved metals (EPA Method 200.7 ICP)
- Dissolved inorganics (non-metals) (EPA Method 300.0, IC)
 - Br, Cl, F, Nitrate / Nitrite, Sulfate
- General water quality parameters
 - Specific conductance (EPA Method 300.0, IC)
 - Hardness (EPA Method 130.1)
 - Total dissolved solids (EPA Method 160.1)
- Operator must implement best management practices to contain any unintentional release of fluids, including any fluids conveyed via temporary surface pipelines.
- Termination of activities: Both Vanguard and TEP shall notify the COGCC via Sundry 30 days prior to the effective date of the termination of activities.
- Vanguard and TEP will each separately submit an annual report to the COGCC summarizing the transfer of production water (both as transferring and receiving operator) during the calendar year. The annual report shall be submitted on or before the anniversary of the first date of transfer.

END OF DOCUMENT