

State of Colorado
Oil and Gas Conservation Commission

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Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

403221962

Date Received:

04/17/2023

Spill report taken by:

DERANLEAU, GREG

Spill/Release Point ID:

482977

SPILL/RELEASE REPORT (SUPPLEMENTAL)

This form is to be submitted by the party responsible for the oil and gas spill or release. Refer to COGCC Rule 912.b. for reporting requirements of spills or releases of E&P Waste, produced Fluids, or unauthorized Releases of natural gas. Submit a Site Investigation and Remediation Workplan (Form 27) if Rule 913.c. applies.

OPERATOR INFORMATION

Name of Operator: PETERSON ENERGY OPERATING INC	Operator No: 68710	Phone Numbers
Address: PO BOX 2169		Phone: (970) 669-7411
City: LOVELAND State: CO Zip: 80539-2169		Mobile: ()
Contact Person: Ryan Dornbos		Email: ryan@PEOperating.com

☐ Transfer of Operatorship: Pursuant to Rule 912.f, this Supplemental Form 19 is being submitted to designate the Buying Operator as the responsible Operator for this Spill and Release.

INITIAL SPILL/RELEASE REPORT

Initial Spill/Release Report Doc# 403169688

Initial Report Date: 09/16/2022 Date of Discovery: 09/16/2022 Spill Type: Recent Spill

Spill/Release Point Location:

QTRQTR NENE SEC 25 TWP 3S RNG 51W MERIDIAN 6

Latitude: 39.768419 Longitude: -103.032741

Municipality (if within municipal boundaries): County: WASHINGTON

Enter Lat./long measurement of the actual Spill/Release Point. Lat./Long. Data shall meet standards of Rule 216.

Reference Location:

Facility Type: PIT

☒ Facility/Location ID No 279810

Spill/Release Point Name: Produced Water Evaporation Pit

☐ Well API No. (Only if the reference facility is well) 05- -

☐ No Existing Facility or Location ID No.

Estimated Total Spill Volume: use same ranges as others for values

Estimated Oil Spill Volume(bbl): 0

Estimated Condensate Spill Volume(bbl): 0

Estimated Flow Back Fluid Spill Volume(bbl): 0

Estimated Produced Water Spill Volume(bbl): >=100

Estimated Other E&P Waste Spill Volume(bbl): 0

Estimated Drilling Fluid Spill Volume(bbl): 0

Specify: 7,871 bbls

Has the subject Spill/Release been controlled at the time of reporting? Yes

Land Use:

Current Land Use: NON-CROP LAND

Other(Specify): CRP

Weather Condition: Sunny, Warm, Storm previous night

Surface Owner: FEE

Other(Specify): Caerus WashCo LLC

Describe what is known about the spill/release event (what happened -- including how it was stopped, contained, and recovered):

09/16/2022: The produced water pit at the Church production facility gave way in the NW corner of the east pit, flowed into secondary containment, flooded the pad and water has evaporated/percolated upon discovery. Approximately 1000 bbls left secondary containment and flowed out onto the pad, but did not leave the location.

09/28/2022: Upon further investigation it is evident that approximately 7871 bbls (4 ft of water in the 170 ft x 64 ft east pit) (COA #7) was released at the point of failure in the NW corner, and after filling the secondary containment, the walls failed on the east and west corners and the water left the Church facility location and entered the surrounding grassland. Attached map shows the extent determined based on our onsite investigation on 09/20/2022 (COA #1). Samples were taken from the point of breach west, northwest, and southeast where the water left the O&G location. (COA #2)

List of Agencies and Other Parties Notified Pursuant to Rule 912.b.(7)-(11):

OTHER NOTIFICATIONS

Date	Agency/Party	Contact	Phone	Response
9/16/2022	Caerus WashCo LLC	Natasha Nightingale	303-565-4600 Ex115	Called and notified at 19:25
9/16/2022	Washington County Emergency	Bryant McCall	970-630-8662	Called and notified at 19:13
9/16/2022	COGCC	Susan Sherman	719-775-1111	Called and notified at 19:20

REPORT CRITERIA

Rule 912.b.(1) Report to the Director (select all criteria that apply):

Yes Rule 912.b.(1).A: A Spill or Release of any size that impacts or threatens to impact any Waters of the State, Public Water System, residence or occupied structure, livestock, wildlife, or publicly-maintained road.

Waters of the State: n/a

Public Water System: n/a

Residence or Occupied Structure: n/a

Livestock: n/a

Wildlife: Threatened to Impact

Publicly-Maintained Road: n/a

Yes Rule 912.b.(1).B: A Spill or Release in which 1 barrel or more of E&P Waste or produced fluids is spilled or released outside of berms or other secondary containment.

Yes Rule 912.b.(1).C: A Spill or Release of 5 barrels or more of E&P Waste or produced Fluids regardless of whether the Spill or Release is completely contained within berms or other secondary containment.

No Rule 912.b.(1).D: Within 6 hours of discovery, a Grade 1 Gas Leak. For a Grade 1 Gas Leak from a Flowline, the Operator also must submit the Form 19 – Initial, document number on a Form 44, Flowline Report, for the Grade 1 Gas Leak

Enter the approximate time of discovery _____ (HH:MM)

Enter the Document Number of the Grade 1 Gas Leak Report, Form 44 _____

Was there a reportable accident associated with either a Grade 1 Gas Leak or an E&P waste spill or release? _____

Enter the Document Number of the Initial Accident Report, Form 22 _____

Was there damage during excavation? _____

Was CO 811 notified prior to excavation? _____

No Rule 912.b.(1).E: The discovery of 10 cubic yards or more of impacted material resulting from a current or historic Spill or Release. Discovery and reporting will not be contingent upon confirmation samples demonstrating exceedance of Table 915-1 standards.

Estimated Volume of Impacted Solids (cu. yd.): _____

No	Rule 912.b.(1).F: The discovery of impacted Waters of the State, including Groundwater. Discovery and reporting will not be contingent upon confirmation samples demonstrating exceedance of Table 915-1 standards. The presence of free product or hydrocarbon sheen on Groundwater or surface water is reportable. The presence of contaminated soil in contact with Groundwater or surface water is reportable. Check all that apply:
	<input type="checkbox"/> The presence of free product or hydrocarbon sheen Surface Water <input type="checkbox"/> The presence of free product or hydrocarbon sheen on Groundwater <input type="checkbox"/> The presence of contaminated soil in contact with Groundwater <input type="checkbox"/> The presence of contaminated soil in contact with Surface water
No	Rule 912.b.(1).G: A suspected or actual Spill or Release of any volume where the volume cannot be immediately determined, including a spill or release of any volume that daylight from the subsurface.
No	Rule 912.b.(1).H: Spill or Release resulting in vaporized hydrocarbon mists that leave the Oil and Gas Location or Off-Location Flowline right of way from an Oil and Gas Location and impacts or threatens to impact off-location property.
	<input type="checkbox"/> Areas offsite of Oil & Gas Location <input type="checkbox"/> Off-Location Flowline right of way
No	Rule 912.b.(1).I: A Release of natural gas that results in an accumulation of soil gas or gas seeps.
No	Rule 912.b.(1).J: A Release that results in natural gas in Groundwater.

SPILL/RELEASE DETAIL REPORTS

#1	Supplemental Report Date: 11/28/2022		
FLUIDS	BBL's SPILLED	BBL's RECOVERED	Unknown
OIL	0	0	<input type="checkbox"/>
CONDENSATE	0	0	<input type="checkbox"/>
PRODUCED WATER	7871	0	<input type="checkbox"/>
DRILLING FLUID	0	0	<input type="checkbox"/>
FLOW BACK FLUID	0	0	<input type="checkbox"/>
OTHER E&P WASTE	0	0	<input type="checkbox"/>
specify: _____			
Was spill/release completely contained within berms or secondary containment? <u>NO</u> Was an Emergency Pit constructed? <u>NO</u>			
<i>Secondary containment, including walls & floor regardless of construction material, must be sufficiently impervious to contain any discharge from primary containment until cleanup occurs.</i>			
A Form 15 Pit Report shall be submitted within 30 calendar days after the construction of an emergency pit			
Impacted Media (Check all that apply) <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water <input type="checkbox"/> Dry Drainage Feature			
Surface Area Impacted: _____		Length of Impact (feet): <u>360</u>	
		Width of Impact (feet): <u>435</u>	
Depth of Impact (feet BGS): <u>1</u>		Depth of Impact (inches BGS): _____	
How was extent determined?			
Extent was determined by visually inspecting the conditions of the soil where signs of moisture, recent standing water and/or moving water were present. Samples were taken to the West, NW, Breach point and SE where the produced water left the pad and entered onto the surrounding CRP. A background sample was taken to the North of the facility. The permeability of the soil and extremely low moisture content allowed for rapid percolation and prevented further travel from the breach point. The area as measured is 2.34 acres or 101,941 square feet including the production pad foot print. This equates to about 6 inches of water on average across the extent of the impact that would have percolated into the soil.			
Soil/Geology Description:			
Sandy Loam			
Depth to Groundwater (feet BGS) <u>185</u>		Number Water Wells within 1/2 mile radius: <u>1</u>	
If less than 1 mile, distance in feet to nearest	Water Well <u>2523</u>	None <input type="checkbox"/>	Surface Water _____ None <input checked="" type="checkbox"/>
	Wetlands _____	None <input checked="" type="checkbox"/>	Springs _____ None <input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Spill Details Not Provided Above:

Due to the available capacity of the pits to take water, they are consistently operated with more than the required 2 ft of freeboard and usually 3-5 ft freeboard as an extra precaution. The pits were generally operated by switching between them bi-weekly to maintain similar levels in each, always below the 2 ft freeboard line. During the summer months we would see a maximum per-pit percolation/evaporation rate of about 1 ft/week, down to a few inches over the winter months. 1 ft/week in the smaller eastern pit equates to about 330 bbl/day and the lease reports an average of 350 bbl/d of produced water production. If the 2 ft freeboard line was approached in both pits the well was shut in until there was room for the water, as observed in the 2021/2022 fall/winter timeframe. There was no free product to clean up. Final removal of the oil-stained soil and weeds was being conducted and fit into two five gallon buckets. (COA #3)

In March and Early April of 2023 original sample locations were re-sampled to determine current status or previously impacted soils to create procedures for addressing potential impacts. These second round samples came back within Table 915, likely due to the above average winter moisture and warrant request for closure.

CORRECTIVE ACTIONS

#1 Supplemental Report Date: 09/28/2022Root Cause of Spill/Release Natural Force Damage

Other (specify) _____

Type of Equipment at Point of Spill/Release: Other

If "Other" selected above, specify or describe here:

Earthen Pit Wall

Describe Incident & Root Cause (include specific equipment and point of failure)

At the time of the failure of the NW corner of the East pit wall at the Church Facility, there was nobody on site to witness the event. Weather data represented there were two large rain storms that passed through the area. Within 24 hours the pumper visited (on the routine daily visitation) and found there had been a release. Earlier in the week, the produced water had been switched to the West pit and was still discharging into that pit at the time of the release.

Our analysis indicates that the large volume of rainwater saturated the NW corner of the East Pit wall to the point that it started to erode and eventually gave way. Structural collapse is evident on the outside of the pit bank that was not caused by the released water. We have no evidence that the produced water level in the pit was ever high enough to crest the pit bank. We believe increased saturation due to the rainfall event was the cause of the structural failure of the pit wall.

Describe measures taken to prevent the problem(s) from reoccurring:

Peterson Energy will monitor and record freeboard in the West pit daily and shut in the producing well when freeboard gets to 2.5'. Once the property receives approval of the unitization application we will discontinue daily disposal of water into the West pit. (COA #6)

Volume of Soil Excavated (cubic yards): 0Disposition of Excavated Soil (attach documentation) ☐ Offsite Disposal ☒ Onsite Treatment☐ Other (specify) _____Volume of Impacted Ground Water Removed (bbls): 0Volume of Impacted Surface Water Removed (bbls): 0

REQUEST FOR CLOSURE

Spill/Release Reports should be closed when impacts have been remediated or when further investigation and corrective actions will take place under an approved Form 27.

- Basis for Closure: ☒ Corrective Actions Completed (documentation attached, check all that apply)
- ☒ Horizontal and Vertical extents of impacts have been delineated.
- ☒ Documentation of compliance with Table 915-1 is attached.
- ☐ All E&P Waste has been properly treated or disposed.
- ☐ Work proceeding under an approved Form 27 (Rule 912.c).
- Form 27 Remediation Project No: _____
- ☐ SUSPECTED Spill/Release did not occur or was below Rule 912.a.(5) reporting thresholds.

OPERATOR COMMENTS:

CURRENT SUBMITTAL: After conversations with COGCC EPS Staff, This Form 19 was RTD to provide additional information and further sample analysis. Delay in returning to the location for further sampling and analysis was due to adverse weather and excessive snow cover. Peterson Energy has revisited the site and resampled previous sample locations to evaluate the necessity for remediation efforts and possible continuance of the project under a Form 27.

All locations were re-sampled for SAR, and the Breach and Background samples were additionally run for metals. The Breach sample, the location with the highest level SAR levels, lies inline with the North wall of the East pit, where failure occurred. The Background sample taken North of the pad approximately 3 ft higher in elevation than the surrounding area and was never in contact with produced water from the release. Both the Breach and Background samples were tested for metals. Both had relatable levels of Arsenic, and were within table 915 limits for the remainder of the samples.

All samples have been re-analyzed and are within Table 915 limits, with the exception of Arsenic which is also over Table 915-1 limits in the Background sample. As a result, Peterson Energy believes there is no additional benefit to health, safety, welfare, the environment or wildlife to be gained by further investigation or treatment of soils that came into contact with the produced water.

Decommissioning of the East Pit will be commenced under a new Form 27. As of the date of submission of this Form 19, soil samples have been collected and plans for remediation and reclamation are in process for the East Pit.

PREVIOUS SUBMITTAL: Peterson Energy has conducted field inspections and monitoring of the area impacted by the produced water release on 9/16/2022. The attached photo log shows the green grass after the release that benefitted from the moisture and the surrounding un-impacted area remaining dead and brown.

COAs ADDRESSED BELOW:

1. Provide detailed map of extent of produced water spill and sediments from pit wall/berm. (Utilize GPS or drone technology to develop map) MAP ATTACHED
2. Propose sampling plan to delineate vertical and lateral extent of impact from Produced Water first Form 19 Supplemental. SAMPLE MAP AND RESULTS ATTACHED.
3. Provide details of free product removal from spill-impacted area on first Form 19 Supplemental. THERE WAS NO FREE PRODUCT TO CLEAN UP. FINAL REMOVAL OF THE OIL-STAINED SOIL AND WEEDS WAS CONTAINED IN TWO 5 GALLON BUCKETS.
4. Submit a detailed reclamation plan for the spill and sediment affected area. CONFIRMATION SAMPLES SHOW CONCENTRATIONS WITHIN TABLE 915 LIMITS. NO RECLAMATION OR REMEDIATION IS NECESSARY.
5. Provide engineered design for the pit wall repair; or decommission eastern pit. THE EAST PIT HAS BEEN TAKEN OUT OF SERVICE AND WILL NOT BE REBUILT. THE PROPERTY HAS RECENTLY BEEN UNITIZED TO ENABLE SUBSURFACE DISPOSAL OF PRODUCED WATER INTO THE CHURCH 41-25 UIC WELL WHICH WILL COMMENCE FOLLOWING FINAL APPROVAL OF UIC PERMITS.
6. Provide records to demonstrate compliance with Rule 909.c prior to spill on first Form 19 Supplemental. PUMPING GAUGE SPREADSHEET ATTACHED WITH LAST 9 MONTHS PIT SWITCHING RECORDS.
7. Provide detailed calculations to support spill volume calculations on first Form 19 Supplemental. 7871 BBLS (4 FT OF WATER IN THE 170 FT x 64 FT EAST PIT)

Provide additional details regarding the unitizing of the site, future utilization of the pit, frequency of usage of the pit, and the current capacity of the pit after damage.

The Church Lease has been Unitized, and Injection permitting is in process. The East pit has been decommissioned. The West will remain in place for use only in upset conditions once injection is permitted. Approximately 3,875 bbls of water remain at a maximum height of 2' BGL. This water is contained and has no possibility of leaving the East pit.

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

Signed: _____ Print Name: Ryan Dombos
Title: Petroleum Engineer Date: 04/17/2023 Email: ryan@PEOperating.com

COA Type

Description

0 COA	

Attachment List

Att Doc Num

Name

403221962	FORM 19 SUBMITTED
403222429	ANALYTICAL RESULTS
403222447	SOIL SAMPLE LOCATION MAP
403225561	OTHER
403369808	ANALYTICAL RESULTS
403369815	ANALYTICAL RESULTS
403375922	PHOTO DOCUMENTATION
403375956	ANALYTICAL RESULTS

Total Attach: 8 Files

General Comments

User Group

Comment

Comment Date

Environmental	Provide additional details regarding the unitizing of the site, future utilization of the pit, frequency of usage of the pit, and the current capacity of the pit after damage.	02/23/2023
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Total: 1 comment(s)