

Oil Field Environmental Incident Summary

Incident: 20131125213123 **Date/Time of Notice:** 11/25/2013 19:54

Responsible Party: Denbury Onshore, LLC

Well Operator: DENBURY ONSHORE, LLC

Well Name: CEDAR CREEK 34X-02A-82H

Field Name: CEDAR CREEK

Well File #: 15476

Date Incident: 11/25/2013 **Time Incident:** 10:30

Facility ID Number:

County: BOWMAN

Twp: 130

Rng: 107

Sec: 2

Qtr: SW SE

Location Description: 2.8 miles of the big gumbo drainage in the Little Beaver (MT), Cedar Creek (ND Field. Fluid surfaced in Montana, followed the drainage into North Dakota. Impacted area in North Dakota is 1.4 miles. The leak terminates in the area of 34X-02A-82H.

Submitted By: Mark Jacobsen

Received By:

Contact Person: Mark Jacobsen
5320 LEGACY DR
PLANO, TX 75024-3127

General Land Use: Pasture

Affected Medium: Soil and Water

Distance Nearest Occupied Building: 1.5 Miles

Distance Nearest Water Well: 1.5 Miles

Type of Incident: Pipeline Leak

Release Contained in Dike: No

Reported to NRC: No

	Spilled	Units	Recovered	Units	Followup	Units
Oil	0	barrels	0	barrels		
Brine	17000	barrels	300	barrels	13885	barrels
Other	0	barrels	0	barrels		

Description of Other Released Contaminant:

Inspected: **Written Report Received:** 12/12/2013 **Clean Up Concluded:** 12/4/2013

Risk Evaluation:

None

Areal Extent:

Potential Environmental Impacts:

Possible soil contamination at the source. Recovery operations are ongoing.

Action Taken or Planned:

Leak was discovered and line shut in and repairs begun. The fluid migrated 2.8 miles in an easterly direction along the drainage.

Wastes Disposal Location: Section 8 waterflood SWD.

Agencies Involved:

Updates

Date: 11/25/2013 **Status:** Reviewed - Follow-up Required

Author: Roberts, Kris

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Brine pipeline break in Montana, flowing down Big Gumbo Creek drainage into North Dakota. Entry point 130-107-03. Followup underway by environmental response team on 11/26/2013. Termination point cited is where they believe the maximum flow extent ended; recovering liquids there.

Date: 11/27/2013 **Status:** Inspection

Author: Roberts, Kris

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

11/26&27/13 - 12:50 on location with environmental response team. Met by Dean Pearson (Bowman County emergency manager) and guided into the ND fluid interception site. Specific conductivity at that point 23 mS/cm, and 1/4 and 1/2 mile below that point it was 15 mS/cm. Further downstream checks were made as well and showed lower readings.

Meeting with Denbury and US BLM people at the field office. Agreement that environment is too fragile to do more than flush the drainage/creek with fresh water and/or Bio-Cal (calcium nitrate). Collected water sample from a pool upstream of the leak site (upper drainage dry other than a pool below a road culvert).

On 11/27, collected samples from the produced water at the Section 24 CTB, then several locations along the Big Gumbo Creek and tributaries, as well as upstream and downstream of the Little Missouri River at the confluence with Big Gumbo Creek.

Date: 11/29/2013 **Status:** Inspection

Author: O'Gorman, Brian

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived on location 11/29/13 at 1:45 pm. Spoke with a Denbury representative who described the on-going remediation of creek. The Denbury representative cited their plan to wash the creek with freshwater on Saturday and retrieve the wash water into their collection tanks at the collection point downstream. The Denbury representative also mentioned that they had spoken with the BLM and had excavated another collection point approximately 100 feet downstream of their original collection area to stop any additional water that may be moving past their original collection point. One EC reading was taken from the water in the collection area, and one was taken from the new excavation area. Values for the the original collection area was 25.0 ms/cm and 18.62 ms/cm at the collection area downstream of the original dam.

Date: 11/29/2013 **Status:** Inspection

Author: Roberts, Kris

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

11/27/13 - 15:13 - Preliminary analytical for chloride and sulfate back from NDDoH laboratory. All chloride concentrations on Big Gumbo Creek below 250 mg/L Class II and III stream standards. One tributary has both high chloride and sulfate numbers. Denbury will investigate its facilities in that drainage basin.

Contact with cattle owner pasturing below Camp Crook Road was made this date by Brian O'Gorman. Confirmed that all Big Gumbo Creek iced over, and cattle watering from Little Missouri River.

Preliminary lab results:

Lab #	Source	Chloride(mg/L)	Sulfate(mg/L)
13-C570	Upstrm Big Gumbo Creek (BGC)	28	685
13-C571	NW Tributary to BGC	519	14710
13-C572	N Tributary to BGC at 3 Forks	71	4780
13-C573	BGC at 3 Forks	234	3690
13-C574	BGC at Horseshoe Rd - Deep Pool	110	2390
13-C575	BGC at Camp Crook Rd.	121	3660
13-C576	BGC at Confluence with L. Miss. R.	16	660
13-C577	Upstream of Confluence - L. Miss. R.	13	601
13-C578	Downstream of Confluence - L. Miss. R.	13	604
13-C579	Spill Source Wtr - Denbury - Sec 24 SWC	8900	2170

Complete results to follow at later date.

Date: 12/5/2013 **Status:** Inspection

Author: O'Gorman, Brian

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived at wash location 12/5/13 at 2:20 pm CT. Observed area and took photos. Area snow covered with approximately a 30 by 30 foot area of frozen water where the company had been applying fresh water to the Big Gumbo Creek. Arrived at the collection area at 2:47 pm CT. Observed the area and took photos. 400-barrel collection tanks still on location with four roll-off dumpsters also on site for soil removal. The collection area was covered with 2 to 4 inches of snow, and observations of the area showed that most of the water in the collection area had been removed with the berm now absent from the down-gradient portion of the collection point. The most recent collection hole that had been constructed to the west and downgradient of the major collection area had the soil removed from the down-gradient portion of the creek, and some water had collected and frozen in the excavated hole. Very little ice or water was noticed in the creek upstream or downstream of the collection points. Follow up when snow melts.

Date: 10/7/2014 **Status:** Inspection

Author: Stockdill, Scott

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Arrived on location 10/7/2014.

Water samples collected in five locations along the Big Gumbo Creek and the Little Missouri River.

More followup is necessary upon examination of the water samples.

Date: 6/14/2016 **Status:** Inspection

Author: Martin, Russell

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

6/14/2016, sampled Big Gumbo Creek throughout the day. Sampled its confluence with the Little Missouri, the culvert under Camp Creek road, and finally the collection point off the wellpad (indicated in the report) at the end of the day. Vegetation is sparser where the storage tanks were located during the recovery operations, but otherwise no visible impact remains at the collection point. Vegetation within the Big Gumbo appears thick and healthy. Further follow-up dependent on sample results.

Updated Oil Volume:

Updated Salt Water Volume:

Updated Other Volume:

Updated Other Contaminant

Notes:

Received results for samples taken in June. Results show elevated levels of production (brine) water indicators still present in the water, despite apparent recovery of vegetation in that area. More follow-up required next growing season to continue monitoring vegetation.