From:	Hernandez, Christina, EMNRD
To:	"Mark Larson"
Cc:	Pennington, Shelby
Subject:	RE: 1RP-4932 - Arnott Ramsay Station 5 Produced Water Spill Delineation Report, July 13, 2018
Date:	Monday, October 1, 2018 11:47:00 AM
Attachments:	IMG_0834.JPG IMG_0840.JPG IMG_0820.JPG

Dear Mr. Larson:

After a site visit conducted on September 27, 2018, it was observed that there is no barrier present in the containment as described in the report submitted on July 17, 2018 . The liner is not properly placed nor is it stabilized at the boundary between the two tanks inside the containment. It is the recommendation of NMOCD to 1) remove the liner currently present (as it serves no real function and has a puncture in it) or 2) replace the liner on the entire containment. Additionally, it was observed that the gravel removed from containment is stock piled on a liner uncovered and is being washed out due to recent rain events; this could potentially release chlorides from gravel into surrounding pasture. Please dispose of gravel and in the future please be advised to cover stockpiles to prevent erosion.

In the interests of resolving **1RP-4932,** NMOCD approves the proposed remediation plan as outlined on August 13, 2018.
- Confirmation bottom and sidewall samples are required for proposed excavations at HA-3, DP-2, DP-3, and DP-4. At least one of the sidewall/edge samples is to be at the border between the different depths of excavation at areas DP-1, DP-2, DP-3, DP-4.
- All confirmation bottom and sidewall samples must be analyzed for Benzene, BTEX, TPH extended, and chlorides.
- Confirmation sample locations must be no greater than 200 square feet apart, documented by GPS coordinates on a scaled map.
- Provide dated, georeferenced photo documentation.

Thanks,
Christina Hernandez
EMNRD-OCD
Environmental Specialist
1625 N. French Drive
Hobbs, NM 88240
575-393-6161 x111
Christina.Hernandez@state.nm.us

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 13, 2018 12:48 PM
To: Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>
Cc: Pennington, Shelby <Shelby_Pennington@xtoenergy.com>
Subject: RE: 1RP-4932 - Arnott Ramsay Station 5 Produced Water Spill Delineation Report, July 13, 2018

Dear Ms. Hernandez and Ms. Yu,
XTO Energy, Inc. (XTO) and Larson & Associates, Inc. (LAI) has received your approval for the delineation report and remediation plan for 1RP-4932. We are in agreement with excavating soil and disposing soil from HA-3, DP-2, DP-3, DP-4 and disposal removal of gravel containing elevated chloride and confirmation samples. However, we do not feel that removing the tanks to line the entire battery is warranted due to the low volume of oil (3 to 5 barrels/day) and water (2 to 4 bbl) produced into the tanks and the concentration of chloride reported slightly above the delineation limit (600 mg/Kg) at samples HA-5 from 2 to 3 feet (602 mg/Kg) and HA-5 from 3 to 4 feet(636 mg/Kg). We believe the liner beneath the west side of the battery is intact except for the small hole at HA-5 caused by accidental puncture of the liner during gravel removal. XTO proposes to patch the hole in lieu of lining the entire battery. Soil containing chloride above the delineation limit (600 mg/Kg) at HA-2, 0 to 1 foot (1,820 mg/Kg) was excavated and confirmed below the 600 mg/Kg in a sample collected from 1 to 2 feet on April 20, 2018 (14.0 mg/Kg). We believe the chloride concentration reported in sample HA-2, 4 to 5 feet (1,580 mg/Kg) was the result of surface material (0 to 1 foot) falling into the boring once the core barrel was removed following sample collection from 0 to 4 feet. This was confirmed by a resample on April 20, 2018 that reported chloride at 7.80 mg/Kg from 4 to 5 feet. XTO will place clean gravel inside the containment and wishes to defer final cleanup until facility abandonment. Your approval of this is request is appreciated. Please contact Shelby Pennington with XTO at (432) 571-8276 or me if you have questions.
Respectfully,

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 205
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

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From: Hernandez, Christina, EMNRD [mailto:Christina.Hernandez@state.nm.us]
Sent: Wednesday, July 25, 2018 11:52 AM
To: Mark Larson; Yu, Olivia, EMNRD; 'rmann@slo.state.nm.us'
Cc: 'Pennington, Shelby'
Subject: RE: 1RP-4932 - Arnott Ramsay Station 5 Produced Water Spill Delineation Report, July 13, 2018

I received an email that the file failed to attach so here it is again.

Thanks,
CH

From: Hernandez, Christina, EMNRD
Sent: Wednesday, July 25, 2018 10:42 AM
To: 'Mark Larson' <Mark@laenvironmental.com>; Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; 'rmann@slo.state.nm.us' <rmann@slo.state.nm.us>
Cc: 'Pennington, Shelby' <Shelby_Pennington@xtoenergy.com>
Subject: RE: 1RP-4932 - Arnott Ramsay Station 5 Produced Water Spill Delineation Report, July 13, 2018

Dear Mr. Larson:

NMOCD approves of the delineation completed for 1RP-4932. The proposed remediation is also approved with these conditions:

- Please be advised to replace the liner currently inside west part of containment as it was unclear in report if liner puncture was repaired during the gravel removal activity on March 8, 2018.
- Due to levels of chloride over RRAL's underneath liner at HA-5 (2-4ft) and at HA-2 (0-1 and 4-5 ft), please be advised to excavate to 4' (where deemed applicable) and line entire containment. Please provide sidewall confirmation samples from inside containment.
- Please be advised to replace gravel inside containment as chloride concentrations are exceedingly high.
- Confirmation bottom and sidewall samples are required for proposed excavations at HA-3, DP-2, DP-3, and DP-4. At least one of the sidewall/edge samples is to be at the border between the different depths of excavation at areas DP-1, DP-2, DP-3, DP-4.
- Please be advised to excavate to 4' at DP-1 and use impermeable liner. Sidewall confirmation samples are required.
- Provide dated photo documentation of the remedial activities, including the proper emplacement of the liners used.
- Provide scaled map with the confirmation sample locations in relation to the delineation sample points.

Thanks,

Christina Hernandez
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1625 N. French Drive
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575-393-6161 x111
Christina.Hernandez@state.nm.us

From: Mark Larson <Mark@laenvironmental.com>
Sent: Tuesday, July 17, 2018 3:49 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>; 'rmann@slo.state.nm.us' <rmann@slo.state.nm.us>
Cc: 'Pennington, Shelby' <Shelby_Pennington@xtoenergy.com>
Subject: Re: 1RP-4932 - Arnott Ramsay Station 5 Produced Water Spill Delineation Report, July 13, 2018

Dear Ms. Yu, Ms. Hernandez and Mr. Mann,
Larson & Associates, Inc. (LAI), on behalf of XTO Energy, Inc. (XTO), submits the attached delineation report for a spill from the produced water tank at the Arnott Ramsay Station 5 tank battery located in Lea County, New Mexico. The spill occurred after a swedge on the produced water tank failed causing the release of produced water. XTO proposes the following remedial actions in response to the spill:

- Collect confirmation soil sample from excavated area at southeast corner of containment (HA-2) from approximately 1 foot bgs and analyze for chloride to confirm chloride below 600 mg/kg;
- Excavate soil to approximately 1 foot bgs in the vicinity of HA-3 (15' x 15');
- Excavate soil between approximately 1 and 4 feet bgs in the vicinity of DP-1, DP-2 and DP-3;
- Excavate soil to approximately 1 foot bgs in the vicinity of DP-4 (15' x 15');
- Collect confirmation samples from bottom and sidewalls of excavations and analyze for chloride by EPA Method 300;
- Excavate additional soil from bottom and sidewalls to reduce chloride below 600 mg/Kg based on initial confirmation soil samples;

- Dispose of excavated soil and gravel at Sundance (Parabo) disposal;
- Assuming no additional soil removal backfill excavations at HA-3 and DP-4 with caliche;
- Backfill excavation at DP-1, DP-2 and DP-3 with clean soil and seed with BLM Mix 3;

XTO will submit a remediation report and final C-141 upon receipt of laboratory analysis and completion of the remediation. Your approval of the delineation report and proposed remediation plan are appreciated. Please contact Shelby Pennington with XTO at (432) 682-8873 or email Shelby_Pennington@xtoenergy.com or me if you have questions.
Respectfully,

Mark J. Larson, P.G.
President/Sr. Project Manager
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