

Adams, Eric

From: Kollar, Kurt
Sent: Friday, April 10, 2015 4:28 PM
To: Eberle, Michael; Butler, Craig; Canepa, James; Whitehouse, Peter; Sferra, James; Mehl, James; Billman-Kotsko, Jodi; Princic, Kurt; Kurko, Jennifer; Beals, Rodney; Brown, Reginald; Adams, Eric; Rice, Nancy; DiFranco, Stivo; Orr, Gregory; Loucek, Joseph; Nelius, Cheri; Vanah, Patricia; Fodo, Ronald; Ray, Bart; Balsler, Wade
Subject: RE: KDA Operations and Release Response Summary including photos
Attachments: KDA001_01 Figure 2.pdf; 150561 Figure 1.jpeg

Attached are Figures 1 and 2 referenced in the summary. Thank you everybody for all the help!

From: Eberle, Michael
Sent: Friday, April 10, 2015 8:15 AM
To: Butler, Craig; Canepa, James; Whitehouse, Peter; Sferra, James; Mehl, James; Billman-Kotsko, Jodi; Princic, Kurt; Kurko, Jennifer; Beals, Rodney; Brown, Reginald; Adams, Eric; Rice, Nancy; DiFranco, Stivo; Orr, Gregory; Loucek, Joseph; Eberle, Michael; Nelius, Cheri; Vanah, Patricia; Fodo, Ronald; Ray, Bart; Balsler, Wade; Kollar, Kurt
Subject: KDA Operations and Release Response Summary including photos

I asked Kurt Kollar to provide this KDA summary for the group. Feel free to share as needed.

- Mike Eberle

Description of KDA

The following is a simplified summary of the operation for the KDA facility and release of oil to the environment. It is intended to provide a better understanding of the nature of the facility and the magnitude of the impact from the release. All which may have been prevented with proper containment.

KDA Inc.'s primary work at this facility is the underground/deep well injection of oil field waste using 5 wells located within their property. At maximum output, the wells inject 200 barrels of brine per hour, 24 hours a day, 365 days a year (8400 gph, 201,600 gpd; 73,584,000 gpy.) The facility houses 30 210-barrel above ground storage tanks in the tank farm. (Photo 1) The oil field waste is brought in via tanker trucks with loads varying in size up to 6000 gallons. The facility has two off-loading stations on the north and south side of the tank farm. The south side of the tank farm has been in operation for approximately 4.5 years. The north side was built last year and put into operation approximately 6 months ago (Photo 1 does not show the north side off-loading area as it was not built at the time of the photo). Tanker trucks back into the unloading station and hook up to hoses to unload their contents into enclosed pits. (Photo.2) The unloading area has secondary containment for spillage from hoses and other miscellaneous spills with an underground holding septic tank. The waste brought in consists of brine, some solids and oil including drip gas condensate. In each unloading pit the company installed septic tanks in the bottom to allow the settled solids to collect. (Photo 3) The facility has a working oil skimmer in the south unloading pit to skim of the oil which is collected in a tank for resale. (Photo 4) The brine is pumped into the tanks pending injection. The tank farm is built atop a concrete pad with an underlying plastic membrane. The solution is injected via one of two pumps (Photo 5) then injected into the targeted formation via a well (Photo 6). Each well has two pressure gauges that monitor the pressure in the injection well and the outer casing. A pressure differential shows that the well/casing integrity is intact. The tank farm and unloading racks are designed with secondary containment designed to hold spilled fluids. The tank farm is surrounded by an earthen berm covered with a plastic membrane. The septic tanks in each unloading rack are also built into a lined pit. The tanks were encased in concrete up to the floor of the unloading pit. The entire area (tank farm and unloading racks) was supposed to be built within a self-contained "bathtub." The company also provides limited oil field support

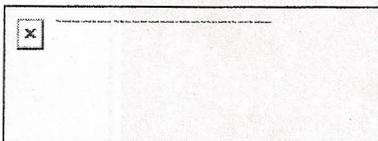
services such as cleaning oil field storage tanks. ODNR's investigation of the tank farm area found the liner under the unloading areas is not sealed. The liner just lies against the concrete walls of the buildings and doesn't provide a seal.

The investigation of the release of the oil has determined that the containment system built for the north tank farm and unloading rack is flawed and has allowed the release of the oil from multiple points. The release has been linked to over-filling the AST's and a crack in the wall of one of the septic tanks in the north unloading area. Large gaps in the edge of the berm liner and the concrete pad were observed. (Photo 7) A dye test showed the dye passed by the containment and was found flowing into an observation trench in the gravel outside of the berm within minutes of starting the test. (Photo 8) The east side of the tank farm is used for parking large equipment and access to the various areas. It is covered with approx. 3' of stone and gravel. Via trenching, the oil was found to have completely saturated the gravel base that sits atop native clay in the area east of the tank farm. A sump with drainage system was found and according to the company, it is connected to a drainage system that surrounds the tank farm and serves as containment in the event of a release. The collected fluids are pumped back into the septic tanks within the north tank farm. Upon discovery of the sump by OEPA and ODNR personnel, the sump had oil/drip gas present in the sump crock and oil/drip gas trickling into it. Reportedly, the company checks this sump daily and is supposed to report the findings to management. The company did not bring up the existence of the sump and reported that no product was ever reported in the daily checks. ODNR required the company to evaluate the full extent of the impact from the release including all sides of the tank farm. Buried drain tile intersects the impacted area appears to be the primary link to the discharge to the creek. (Photo 9) The release impacted over 3000 feet of creek including four identified wetlands (Photo 10 and 11) a private pond (Photo 12) and the tributary of Little Yankee Run. (Figure 1) Access to the containment and recovery points requires traversing remote areas. Crews are dragging vacuum hoses back areas required heavy equipment to travel over a dirt access road. (Photo 13) The road has been heavily degraded and stone and equipment has been used to maintain use of the road. Erosion control measures are being used to control the mud. (Photo 14)

Containment of the oil to prevent impact to Little Yankee Run required multiple containment measures to be installed in the creek, pond and wetlands. (Photos 15 and 16) To better manage the cleanup, the area has been divided into 10 zones. (Figure 2) ODNR is handling Zone 1 and 2 as the permitted facility. Ohio EPA is responsible for Zones 3 – 10. Cleanup involves the recovery of the oil from the waterways (Photo 17 and 18) using vacuum trucks and adsorbent materials. The grossly impacted vegetation in the creek and wetlands is being removed (Photo 19 and 20) to allow recovery of the residual oil. The impacted gravel in the service yard is being excavated for disposal and the free product draining from the gravel is being recovered in trenches (Photo 21). The wetlands will undergo several steps in the cleanup process including using adsorbent pads to help draw up residual oil. Excavation of the heavily impacted sediments and soil areas may be required to achieve proper cleanup of the areas. Cleanup options to address residual contamination in the various media are being evaluated. Ohio EPA DSW personnel have been on location for assessment of the wetlands and water quality. The property owner of the pond has expressed concern about residual contamination causing sheening on the water throughout the summer. The company has hired an environmental consulting firm along with two cleanup companies to assist them with the cleanup.

Public concern about the impact from the release and the facility operation was discussed at a well-attended public meeting. (Photos 22)

Kurt Kollar



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