

Ringling Gasoline Spill (Ringling)

(September 7, 2016)

Location: The fuel spill area is located at the intersection of OK state Highway 70 and U.S. Highway 89 in Ringling, Jefferson County, Oklahoma. The legal description is the Northwest ¼ of Section 35, Township 4 South, and Range 4 West Indian Meridian.

Background: On February 23, 2009, a fuel truck overturned resulting in the discharge of 7,500 gallons of gasoline. Emergency activities were taken. Remediation crews utilized vacuum trucks to recover all phase-separated gasoline present along the spill path. Excavation of impacted soils was conducted across the site. Groundwater monitoring has been on-going along with several remedial measures, which include: mobile dual-phase extraction and oxidant injections.

Air: There are no known air quality issues.

Soil: Soil was excavated all along the ditches and above the shallow groundwater table where effected. The areas excavated were backfilled. Soils still contaminated are only at the zone of where the shallow water table fluctuates. Due to the fluctuation of the water table, soil can be contaminated again by the groundwater.

In 2014 remediation was conducted on contaminated subsurface soils and groundwater by using in-situ chemical oxidation (ISCO). PersulfOx and ORC-Advanced were the chemicals in treating the subsurface soils and groundwater.

Surface Water: There are no known surface water issues. There is an ephemeral creek approximately 0.10 mile west of the actual fuel spill. The gasoline did not reach the creek.

Groundwater: Groundwater is very shallow at the site. Depth to water levels range from 2.92 feet below ground surface (bgs) to 8.70 feet bgs. Groundwater flow is to the west.

There are nineteen (19) monitoring wells at the site. Benzene and gasoline range hydrocarbons are in the shallow groundwater. On December 17, 2012, a mobile dual-phase extraction feasibility test was conducted. Thereafter, on December 27, 2012, and oxidant injection feasibility test was conducted. In 2014, remediation was conducted on contaminated subsurface soils and groundwater by using in-situ chemical oxidation (ISCO). PersulfOx and ORC-Advanced were the chemicals in treating the subsurface soils and groundwater.

There are plans for additional remediation.

Private/Public Wells: No private or public wells are affected.

Vapor Intrusion to Indoor Air: Vapor intrusion sampling occurred at the Mattor and Sanner residences and Cowboy Cleaners. Only one vapor sample, at the Mattor residence, was above the EPA screening level of 3.1 ug/m³. The sample collected had a concentration of 3.3 ug/m³.

Subsequent remediation of the soil and groundwater should have addressed any potential vapor intrusion concerns.

Key Questions:

- **Have all known groundwater contaminant plumes been adequately evaluated and delineated?** The plume is delineated for TPH. The benzene plume may need additional delineation to the southwest.
- **Has the site been sampled for an adequate list of analytes?** Yes
- **Does soil or waste need to be cleaned up:** The only soils contaminated are near the shallow groundwater zone due to the fluctuating contaminated water table.
- **Has the surface water been sampled?** There are no surface water issues
- **Has soil at the site been cleaned up to levels protective of groundwater?** Soil contamination is localized and only in the fluctuating water table zone.