

Elevator Groundwater Containment System Constructed in Salina



Groundwater Containment System, represented by the yellow line.

The former Bunge grain elevator is located at 1112 N. Halstead road, approximately a mile and a half southwest of the I-70 and I-135 interchange in Salina. Soil and groundwater is contaminated with carbon tetrachloride and chloroform, a degradation product of carbon tetrachloride. These chemicals are associated with grain fumigants formerly used and stored at the facility. Investigations identified release(s) of grain fumigant in the vicinity of a former above-ground storage tank and groundwater contamination had migrated beyond the property boundaries. Some private wells were contaminated with carbon tetrachloride and chloroform. Impacted residences have been connected to a rural water supply.

A half mile long Groundwater Containment System (GCS) was completed in June 2013 as an interim remedial measure to capture contaminated groundwater migrating from the grain elevator. The objective of the GCS is to maintain hydraulic control of the groundwater plume in the vicinity of the down-gradient property boundary through active extraction, treatment, and discharge.

The GCS is designed control groundwater migration by pumping groundwater from 15 extraction wells (blue dots) and transferring it to an air stripper located inside the groundwater treatment building (orange square). The air stripper consists of six perforated trays creating turbulent flow and a high air-to-liquid surface area for efficient removal of volatile organic compounds. The treated groundwater is then discharged to Mulberry Creek via subsurface piping and a constructed outfall.



An air stripper inside the treatment building.

The GCS has operated continuously since starting up in June 2013. Initial performance data indicate the system successfully depresses the groundwater surface, resulting in a significant zone of containment along the southern property boundary and preventing off-site migration of contaminated groundwater.