Red River Supply Warehouse

What began as a request to help monitor the air around an intense chemical fire with a large smoke plume at an oil and gas industry warehouse in Williston, ND, quickly grew in significance as copious amounts of water used to suppress the fire leached toxic chemicals from the warehouse into storm drains. Prompted by a call from the North Dakota Department of Public Health, EPA responded and, after reviewing the MSDS sheets on a long list of oil industry chemicals that were stored in the warehouse, set up monitoring stations to ensure that the nearby community would be safe from potential volatiles.

Federal On-Scene Coordinator Paul Peronard quickly realized that particulate matter caused by the fire would be the chief concern. The blaze was so large and so hot that eventually the city fire department decided to abandon attempts to extinguish the fire. And the city, after reviewing concerns with Incident Command, put out an advisory to the citizens of Williston to evacuate or shelter in place. The Red River Supply Warehouse was left with charred buildings, contaminated soil and debris.

"Of course, we had to deal with all of the water used in the fire which was now contaminated with chemicals from the warehouse," said Peronard, and so storm drains were blocked and berms were built around the periphery to contain the contaminated water. An Army Corps pump station on a canal adjacent to the site was shut down and clean canal waters above the site were drained directly into a Missouri River tributary, the Little Muddy River, thus isolating the chemically-contaminated waters.

The challenge of isolating large amounts of contaminated water was compounded when locally heavy rains, immediately after the response, caused chemically-contaminated on-site water to breach an earthen berm and enter the canal, resulting in a fish kill. When the berm burst, oxygen scavengers, chemicals used in the petroleum industry to prevent corrosion and bacteria growth, washed into the canal and depleted the oxygen supply, killing the fish. The EPA added strippers/aerators to raise the dissolved oxygen levels and remove many of the contaminants and, within a couple of weeks, mitigation efforts were effective enough to return the trapped water in the canal to the Little Muddy River.

"The berms helped us to contain more than 250,000 gallons of contaminated water on site, most of which was captured in frac tanks," said the OSC and continued, "We used some of the water for gross decon and dust suppression, some was sent off-site for treatment and some disposed of through deep well injection."

Before the project was complete, burned and damaged buildings and debris were removed and staged for recycling or disposal and the top 18-inches of soil removed. The Red River Supply Warehouse, in coordination with the State of North Dakota, identified

approved disposal/reclamation locations and began off-site shipments.