GRIFFIN INTERNATIONAL INC

April 28, 1995

Mr. Marc Coleman
Vermont ANR/DEC
Hazardous Materials Management Division
103 South Main Street/West Building
Waterbury, VT 05671-0404

RE: Underground Storage Tank (UST) Removal Inspection at H.N. Sanborn & Son, Chelsea, Vermont (UST Facility ID #6854646)

Dear Mr. Coleman:

On April 25, 1995, I inspected the removal of two USTs at H.N. Sanborn & Son located in Chelsea, Vermont. The two USTs were 6,000 gallons and 10,000 gallons in capacity and were used to store gasoline. They are to be replaced with two new tanks, 8,000 gallons and 10,000 gallons in capacity, including all associated piping and dispensers. The tanks are owned by H.N. Sanborn Realty. Tank removal and cleaning operations were conducted by Northland Petroleum, Inc. of Barre, Vermont.

All usable product was removed from the tanks on the morning of the removal. The tanks were purged of explosive vapors by aerating the tanks with a compressor while the vent pipes remained connected to the tanks. As excavation began on the 6,000 gallon tank (tank no. 1), a concrete pad of variable thickness was uncovered. This pad was apparently used to weight down the tanks to counteract buoyant forces on the tanks as they were located in an area with a relatively high water table. The concrete was broken up and removed from the top of the tanks and excavation continued. Once the top of the tanks were exposed, all piping was disconnected from the tanks.

Hand digging near the western end of tank no. 1 revealed that the water table was located approximately 3.5 feet below the ground surface. Soils were excavated from the western end of the tank and near the north side, in between the two tanks. Soils removed from the ground were temporarily moved to the south side of the building at the site to allow room for the installation of new tanks later. The type of soils surrounding the tank were predominantly brown medium grained sand, typically used for the backfill material surrounding tanks. At the edges of the excavation, some large cobbles were observed embedded in medium to coarse sand and some

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gravel. This is likely indicative of the native overburden soils in the vicinity. Soils removed from the excavation from below the water table were dark gray in color.

As soils were removed from around tank no. 1, groundwater flowed into the excavation and the tank began to float upward from the buoyant forces created by the water in the pit. A slight sheen was observed on groundwater along the northern side of the tank. As the tank was removed from the pit with the excavator, water flowed into where the tank had lain, and the sheen on the water surface was no longer visible. The tank was inspected after it had been removed from the ground. Based on visual observation, the tank appeared to be in good condition. It was only slightly corroded with some pitting in the area that was located near the water/soil interface. No holes were observed, nor was there any evidence that the tank had leaked.

All soils that had been removed from the ground were screened for volatile organic compounds (VOCs) with a portable photo-ionization detector (PID). According to the results of the soil screening, VOC vapor concentrations were detected in the soil ranging from 55 parts per million (ppm) to 220 ppm, with an approximate average reading of 110 ppm. The soils contained a strong petroleum odor. The odor was not similar to fresh gasoline, however. The odor was indicative of extremely weathered gasoline product.

Additional soil was removed from the tank pit for the removal of the 10,000 gallon tank (tank no. 2). Screening of these soils indicated a maximum VOC concentration of 200 ppm and a minimum concentration of 35 ppm, with an average of approximately 90 ppm. The tank was inspected as it was removed from the excavation and found to be in similar condition as tank no. 1. No holes were observed in the tank. Black stained soils were noted along the side of the tank. Removal of these soils revealed that the tank was in good condition. As a significant level of petroleum contamination was detected in the soils removed from the ground, the temporarily stockpiled soil was placed on and covered with polyethylene to prevent the spread of contamination to the environment.

Three groundwater monitoring wells are located at the site surrounding the tank pit area. One is located upgradient of the pit and two are located on the downgradient side. The location of the wells are approximately indicated on the site sketch on the tank removal form. A sample of the groundwater was removed from all three wells and inspected visually prior to tank removal. Initial water samples collected from each well were clear with a slight petroleum odor and no free product. A sample was collected from each well again after the wells were developed. The sample removed from monitor well MW-2 was brown in color with a moderate odor of very old gasoline. Water removed from MW-1 and MW-3, was placed in clean 250 ml jars and shaken vigorously. A headspace analysis was then performed on the jars with a PID. The results indicated a VOC vapor concentration of 14.5 ppm in the MW-1 headspace and 155 ppm in the MW-3 headspace. The petroleum odor from both of these wells was strong and smelled of old gasoline. Based on the results from the wells, the excavation of petroleum contaminated soil was deemed unfeasible, and all contaminated soil was to be returned to the ground.

Based on observations made during this tank removal inspection, petroleum contamination appears to have impacted soil and groundwater in the immediate vicinity of the tank pit. The extent of the contamination has not been defined. Based on a visual survey of the vicinity, the most immediate potential receptor to petroleum contamination is the First Branch of the White River, located approximately 100 feet to the west of the tank pit, in the likely hydraulically downgradient direction. The banks of the river were inspected at the time of the tank removal, and no evidence of petroleum contamination was observed.

The Town of Chelsea is served by a municipal water system, which obtains its water from four wells located approximately 1,600 feet to the south of the site. Based on a report prepared by Lincoln Applied Geology, dated July 7, 1994, entitled "Chelsea Contamination Evaluation Update", a total of approximately 9 private water supply wells are located within a half mile radius of the site, the closest being approximately 300 feet to the north. According to the site owners, no private wells are known to be in use due to the operation of the town water system.

The site is operated as a saddle shop, hardware store, and gasoline retailer and is located near the center of the main village of Chelsea. According to the store owners, the tanks that were removed from the ground were fifteen years in age. These tanks were installed when the current owners took ownership of the property. The previous owners operated an automobile repair shop at the site and reportedly operated USTs which were located in the exact location as the newly removed tanks. Based on this information, and information gathered during the recent tank removal at the site, it is likely that a significant amount of the petroleum contamination detected at the site is from a release that occurred before these tanks were installed.

Recommendations

In response to the petroleum contamination detected in the subsurface at this site, work should be conducted to further define the extent and degree of petroleum contamination at the site. This may be done through the collection and analysis of groundwater samples from the three monitoring wells already installed at the site.

Please call me if you have any questions.

Sincerely,

Erik C. Sandblom
Engineer

Attachments

cc: Brian Sanborn, H.N. Sanborn & Son Realty
Bob Starr, Northland Petroleum, Inc.

04/27/95

UST REMOVAL AT H.N. SANBORN & SON REALTY
SITE PHOTOGRAPHS

UST #1 IN TANK PIT

NORTH SIDE OF UST #1 IN TANK PIT

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UST REMOVAL AT H.N. SANBORN & SON REALTY
SITE PHOTOGRAPHS

UST #1

UST #2 IN TANK PIT

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UST REMOVAL AT H.N. SANBORN & SON REALTY
SITE PHOTOGRAPHS

UST #2

EMPTY TANK PIT