

**CHRONOLOGY OF VARIOUS INVESTIGATIONS OF  
THE ASHWELL PROPERTY**

By  
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**1. PRELIMINARY HAZARDOUS SUBSTANCE CONTAMINATION  
ASSESSMENT, SPRING STREET PAVILION BY ECC NOV. 23, 1988.**

The report indicated that no free petroleum product was measured in any of the wells. However, none of the wells were constructed on the Lot 26.

Building located in the southeast corner of Lot 26 is a former gas station. Information given to ECC indicated that two of the three USTs were still on the property (this was old information).

Approximately 100' north of the gas station, Horn Motors operates a small repair shop. An additional tank exists about 20' east of the repair shop. It appears that 2000 gallon steel UST was reported to be associated with Ashwell automobile dealership. It had leaked for a long time before its use reported ended in 1981.

A 250 gallon above ground fuel storage tank located adjacent to the building on Lot 26 exhibited staining that could be observed for about 30 ft in the easterly direction. (see page 111 for location of monitoring wells and soil borings)

Lead Concentration	=	15 ppm – 10.5 ppm
TPH	=	108 ppm – 600 ppm
BTEX	=	7 ppm – 158 ppm

Benzene (Soil MW6)	=	7 ppm
Toluene	=	156 ppm
Xylene	=	16 ppm
Ethylbenzene	=	133 ppm

*Primary Recommendation*

*The following remediation recommendations involve excavation, removal, and following remediation, probably reuse of the suspected contaminated soils. **The regulation required that UST must be removed.** ECC further recommends ambient air monitoring for the protection of on-site workers from the release of air-borne contaminants during removal activities. Soils surrounding the tank area may be treated by the aeration method.*

## 2. REMOVAL OF UNDERGROUND STORAGE TANKS AND LIMITED SUBSURFACE INVESTIGATION – Prepared For Ronald Ashwell, July 20, 1990

The tanks were removed on March 26, 1990. "As a result of encountering an indeterminate amount of soil contamination, a limited subsurface investigation and site assessment, consisting of four soil borings and one groundwater monitoring well in the former tank pit area was requested by VWCB. The contaminated soil was encountered during the removal of the three USTs immediately adjacent to Elden Street." The fourth tank was located adjacent to the existing service bays, approximately 300 feet north of Elden Street."

"Approximately 160 tons of petroleum contaminated soil, excavated as part of the tank excavation project, was removed from the site and disposed of by Soil Safe Inc. Lab tests showed that TPHs in concentrations ranging from 570 ppm to 2200 ppm were found in the excavations for Tanks 1, 2 and 4. Soil samples recovered from Tank 3 showed THP concentrations of 38 and 71 ppm.

### ***Recommendation & Subsequent Actions.***

*Based on the high levels of concentrations in the pits, VWCB ordered **limited subsurface investigation** to assess the extent of subsurface contamination surrounding the former Tanks 1, 2 and 4.*

Based on its limited subsurface investigation, ECC recommended a "No-Action" Alternative. It suggested that the no-action alternative appears to be the appropriate remedial alternative for the Ashwell Subaru site.

However, *on September 11, 1990*, contractors working for the Town of Herndon during the excavation of a sanitary sewer line encountered soil possessing a petroleum odor. **The excavation was located in the central portion of the property**, approximately equidistant between the previously discussed underground storage tank areas.

### ***Order By VWCB***

Because of the obvious petroleum odors emanating from the trench, a stop work order was issued. As a result of the presence of subsurface petroleum contamination encountered during construction, the VWCB rejected the no action alternative and **instructed Ashwell to conduct a complete site characterization study and develop a CAP based on the study results.** The excavation was temporarily backfilled with clean material pending resolution of the onsite contamination issues. As shown later, this area was never remediated again.

## 3. CORRECTIVE ACTION PLAN, DECEMBER 29, 1990

**On September 26, 1990**, during excavation of a **water line** located on the north side of Elden street, soil possessing a strong petroleum hydrocarbon odor was encountered

approximately 5' below grade. In addition to the contaminated soil, water possessing a petroleum odor and containing an obvious black oily material was observed flowing into the trench from beneath the water line.

### ***Another Order by VWCB***

*VWCB instructed Ashwell to initiate product recovery from the utility line area.*

The subsurface investigation conducted by the ECC at the Ashwell site consisted of the installation and sampling of six groundwater monitoring wells and four soil borings. In addition, the scope of this investigation including sampling and analysis of three existing wells located on the site. The installed monitoring wells and soil borings were located to characterize the southern portion of the property, adjacent to Elden Street, Spring Branch and the former UST locations.

### **Soil Contamination:**

B1, B2, B3 detected TPH as gasoline at concentrations of 66, 35 and 10 ppm, but TPH as diesel were reported between 60 and 620 ppm. In soils around MW- 10, and 11, TPH concentrations were 120 ppm and 3 ppm respectively.

### **Groundwater Contamination**

Approximately 0.2 ft of free floating product was observed in MW-8 located one foot north of the property boundary. TPH were not detected in MW- 4, 5, 6, 10 and 11. Concentrations of **MTBE** in MW-10 and MW-11 were 130 ppb and 1 ppb respectively. Concentrations of **Total BTEX** for MW 10 and MW 11 were 19 ppb and not detect respectively. Concentrations of Total **BTEX** for MW-4, MW-5, and MW-6 were 3,085 ppb, 156 ppb and 192 ppb respectively. Va Action Level for BTEX in groundwater was 100 ppb. Hence, some action was needed.

Area 2 is in the vicinity of MW-6. *The third identified area is in the vicinity of MW-4, located approximately 10 ft east of the former UST in the north central portion of the site.*

### ***Corrective Action***

- a. Excavation and disposal of **all** soil containing TPH levels equal to or greater than 100 ppm. Soils with concentrations less than 100 ppm shall be placed in non-public environments. Soil with concentrations equal to or greater than 100 ppm shall be disposed of via incineration. Monitor ambient air during excavation.
- b. Pump, Treat and dispose of the Groundwater
- c. Monitor contamination in specific wells.

#### 4. ADDITIONAL INVESTIGATIONS –PRELIMINARY CAP FEBRUARY 10, 1992

##### *Another Order by VWCB*

*On October 23, 1991, VWCB changed the scope of services to assess the extent of documented PH South of MW 8, aquifer characteristics and a discussion of petroleum hydrocarbon contaminants with regard to a TOH public improvement project. The project includes construction of dual storm sewer culverts with channelize Spring Branch, the natural drainage-way, through the nearby area and the southern portion of the Ashwell property. The continuation is part of an overall project involving the installation of an approximately 1700 foot twin box culvert through the CBD with is designed to collect natural and stormwater runoff from an 300 acre area.*

Due to the extent of excavation and nature of the infrastructure project, and the unknown impact of these improvements on groundwater flow, direction, and velocity within the Ashwell property, **a CAP for the Ashwell property outside the excavation limits is not included within this assessment.**

"Upon completion of the proposed public improvement and following equilibrium of groundwater parameter, **a formal CAP for this portion of the Ashwell property shall be prepared.**

##### **Letter from ECC to Mr. Ashwell – July 1992**

"Based upon our previous investigations and site plans provided by the Town of Herndon, it is estimated that 3,060 cubic yards of soil must be removed from the Ashwell Property and the proposed Town of Herndon stormwater improvement project easement. Of the approximate 3,060 cubic yards of material, **it is estimated that 2,000 yards of material shall be contaminated with petroleum products in excess-of State action limits for TPH or BTEX.** Following disposal characterization, this material shall be disposed of via incineration at a State approved facility. **The remaining approximate 1,000 yards of material shall be disposed of within a debris dump as uncontaminated solid waste.** It should be noted that actual quantities of contaminated soil shall be determined based upon field observation, field screening, and laboratory analyses.

Cost of CAP (Pages 340-342)

Excavation all soil, and Loading, Transport and Disposal of 1000 cy	= \$ 62,530
Disposal of 2000 cu yd of contaminated soil with > 100 ppm	= \$156,000
Groundwater treatment and disposal	= \$ 79,000
Engineering Oversight	= \$ 45,375
Total	= \$341,405

Or, about **\$90/ton** of soil contaminated with contaminants above 100 ppm.

## 5. CORRECTIVE ACTION PLAN – DATED DEC, 1992

**(Excerpt From The Previous Investigations)** - Town of Herndon initiated excavation activities for storm sewer system at the southeast corner of the site in 1990. Upon excavation of the storm sewer trench, a strong petroleum odor and water exhibiting a petroleum sheen were observed. Trenching work was halted by order of the County Fire and Rescue department due to potentially explosive conditions in the storm sewer excavation. The excavation was backfilled and storm sewer work ceased on the site property. The storm system has since been completed, with the exception of the on-site section.

### Soil Contaminants

17 samples – TPH concentrations varied between 10 and 2500 ppm at 8 locations and above 100 ppm at 4 locations that correspond to former UST areas. Concentration at levels above 100 ppm requires corrective action by VWCB.

### Groundwater Contaminants

BTEX compounds were detected at 156, 192, and 3085 ppb from monitoring wells 5, 6 and 4 respectively. Monitoring well 8 was not sampled because it was found to have "floating" hydrocarbon products. *The risk to human health is significant when the subsurface environment is exposed during excavation activities from the Spring Branch storm sewer installation.*

### Corrective Action

The Spring Branch storm sewer system on the site consists of twin 8 x 5 feet concrete culverts installed to depths of 10 feet. The excavation for these culverts is approximately 160 feet in length on-site, and will be at least 25 feet in width at the surface to allow for engineering cut-backs as mandated by Virginia Occupational Safety and Health Standards for the Construction Industry (29 CFR Part 1926.651).

**An estimate of soil removal from the excavation is 2,000 tons.** The excavation of subsurface soils for the Spring Branch storm sewer system is based upon Town of Herndon infrastructure needs and not environmental risk. The excavation activity, however, provides an opportunity to remove residual petroleum contaminated soils from the site, lessening the potential for further contaminant migration and groundwater degradation. Representatives of Paul Brothers of Virginia, L.C. and the Town of Herndon have agreed upon a cooperative approach to performing the excavation activities.

In addition to the sewer utility corridor, subsurface soils will be excavated in the vicinity of borings B-1 and B-2 at the southeastern corner of the site, where TPH concentrations of 760 ppm and 2500 ppm have been observed.

**An estimated 100 tons of soil will be removed from this operable area.**

There are environmental and health risks associated with the excavation activities. To avoid dewatering discharge of contaminated water accumulated in the trench, a petroleum recovery vacuum truck will remove all accumulated trench water for disposal at an approved facility.

**6. ADDITIONAL CLARIFICATIONS AND REVISIONS REQUIRED BY VWCB ON OR ABOUT APRIL 1993 AND THE RESPONSE (PAGE 378)**

Among other things, it states:

"... DEQ cannot accept your request for soil excavation activities in the area of B-1, B-2, and B-4 (located outside the box culvert excavation). Based on current information, the DEQ does not consider this soil excavation to be an appropriate corrective action for the effective cleanup of the site. If soil remediation is needed for this area, it can be pursued under a Corrective Action Plan (CAP) Permit."

**The new estimate of the amount of soil that must be removed is 2,670 cy**

**7. PHASE I- PRELIMINARY ENVIRONMENTAL ASSESSMENT – MAY 27, 1994 –**  
Conducted for George Mason Bank (why the bank?) Summarized all previous studies.

VA Pollution Complaint 90-1343 – Entitled "Ashwell Oldsmobile indicated three 2,000 gallon gasoline tanks and one 550 gallon heating oil tank were removed from the dealership on March 26, 1990.

"As a result of the contamination, the following reports were prepared:

- UST removal and Site Characterization Reports
- Removal of USTs and Limited Subsurface Investigation (Completed July 20, 1990)
- Site Characterization and Corrective Action Plan (Completed Dec. 29, 1990)
- Additional Site Characterization and Interim Corrective Action Plan (Completed February 1992)

Additional information regarding the Interim Corrective Action Plan was requested by the VDEQ. Free product recovery has been performed since March 1991, but has been recently discontinued since no free product was observed. The case is listed as open.

"The information reviewed indicated that the contamination from the USTs did not migrate to the subject property and was concentrated near the sources of the contamination."

"As indicated on Figure 1, which is located in Appendix A, a culvert carries water beneath the subject property (Lot 20A) in a northerly direction to an outfall approximately 140 feet north of the property's north property line. At various locations along the culvert, grated inlets located immediately above the culvert intercept the surface flow"

- 8. PHASE I – ENVIRONMENTAL SITE ASSESSMENT – PAUL BROTHERS PROPERTY – LOTS 20F AND 20C (AS THEY ARE NOW DESIGNATED) – FEBRUARY 10, 1995** - Conducted for the Town of Herndon – This study is an update of the study conducted on May 27, 1994 (see below)

Summarizes All of the Previous Studies –

"Although there was no evidence noted of a release from the above ground tanks located on the adjacent parcel, if a spill or release should occur, it is likely that the product would flow overland to the subject property."