THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

FEB 09 1994

January 7, 1994

Dick Bushnell
Pomerleau Real Estate
69 College Street
Burlington, VT 05401

Re: Subsurface Investigation Report, Jiffy-Lube Property
Shelburne Road, Burlington, Vermont
JCO No. 1-1650-4

93-1439

Dear Dick:

On October 29, 1993, a subsurface investigation was carried out at the referenced property to better define the extent of the gasoline contamination which was discovered on July 28, 1993 during the removal of a gasoline underground storage tank (UST). The investigation included three soil borings for soil and groundwater sampling, and laboratory analysis of soil and groundwater samples from the borings. The drilling contractor for this investigation was Tri-State Drilling and Boring.

The first boring completed was located approximately 25 feet from the excavation completed for the UST removal. It is east of the former UST location, which we assume makes it hydrologically upgradient (groundwater flow direction in this case is assumed to be west, toward Lake Champlain) of the excavation. The auger spoil, air space and split spoon soil samples (which were collected at 5 foot intervals) were screened for volatile organic compounds (VOCs) with a Thermo Environmental Model 580B OVM (PID) which was calibrated on site prior to drilling. No VOCs were detected with the PID from any soil samples collected from this boring. The soils in this location are gray silty clay. The groundwater was encountered at a depth of approximately 15 feet. Because no VOCs were detected with the PID, a groundwater monitoring well was not installed in this boring. Instead, a sample of saturated soil was collected for laboratory analysis using EPA Method 8020. No contaminants were detected in this soil sample. Apparently due to the clayey soil texture, the laboratory reported a matrix spike recovery of 12-14% for this sample. The laboratory suggested that if any of the analytes had been present at levels of less than 100 ppb, they may not have been detected due to this low recovery rate. Fortunately, this sample was from a hydrologically upgradient position, and was intended to provide background data. The questionable nature of this data does not have any adverse effect on the overall investigation.

The second boring was completed approximately 90 feet from the excavation completed for the UST removal. It is west of the former UST location, which we assume makes it hydrologically downgradient of the excavation. The results from this boring were the same as for the first boring, except that the groundwater was encountered slightly deeper, at approximately 18 feet below the ground surface (bgs). As with the first boring, the saturated soils were sampled for laboratory analysis using EPA Method 8020.

The results of this analysis were: 7 parts per billion (ppb) toluene, 5 ppb ethylbenzene and 17 ppb total xylenes. The Vermont Groundwater Protection Rule and Strategy Enforcement Standards for these

compounds are 2,420 ppb for toluene, 680 ppb for ethylbenzene and 400 ppb for xylenes. There are no enforcement standards for these contaminants in soil, but the "rule of thumb" guideline used by the Vermont Department of Environmental Conservation for soils is 20 times the groundwater enforcement standard. For example, the soil rule of thumb guideline enforcement standard would be 8,000 ppb for xylenes.

The third boring was completed in the area where the former UST had been located. The soils sampled from 5-7 feet bgs produced plastic bag headspace PID readings of 48 parts per million (ppm). Similar readings (55 ppm) were obtained from the soil sample from 10-12 feet bgs. At 15-17 feet bgs, we had passed through the disturbed soils of the excavation area, and the PID headspace reading was 19 ppm. The soils were saturated at this depth. The soil sample recovered from 17-19 feet bgs produced a PID headspace reading of 1.1 ppm.

A groundwater monitoring well was installed in this boring. The bottom of the well was placed at approximately 17.3 feet bgs. A ten foot section of well screen was used. The well was packed with sand to a depth of 5 feet bgs. A two foot thick plug of bentonite chips was installed above the sand pack. The ground surface was finished with a flush mounted well guard, which was cemented into place.

The groundwater in this well was sampled on November 5, 1993. The depth to groundwater was approximately 2.6 feet bgs. This demonstrates the "bathtub effect" that is created by the clayey soils around this excavated area. The groundwater sample obtained from the well was shipped to Scitest on the day of sampling. It was analyzed for aromatic hydrocarbons using EPA Method 8020. The results of this analysis are:

COMPOUND	CONCENTRATION (ppb)	ENFORCEMENT STANDARD[1] (ppb)
Benzene	323	5
Toluene	191	2,410
Ethylbenzene	339	680
Xylenes	2,180	400
MTBE[2]	62	N/A

1 Vermont Groundwater Protection Rule and Strategy Enforcement Standards

2 MTBE - methyl tertiary butyl ether

The data obtained from this investigation indicates that, although the groundwater in the area of the former UST is contaminated with benzene and xylenes at levels exceeding the Vermont Groundwater Protection Rule and Strategy Enforcement Standards, contamination on the site has not migrated appreciably from the original release location. Since the UST has been removed from the site, it is our opinion that the current residual

site contamination will not get worse over time, but instead will eventually biodegrade and slowly volatilize from the soils and groundwater. We do not believe that this contamination is having an adverse effect on any sensitive receptors. We do not recommend any further investigation or remediation for this site.

A summary of costs incurred for this investigation is as follows:

Johnson Company	$1,640
Tri-State Drilling	$1,036
Scitest Laboratory	$ 280
Total	$3,156

Please feel free to call if you have any questions.

Sincerely,

THE JOHNSON COMPANY, INC.

By: Bradley A. Wheeler

Bradley A. Wheeler, CPSS
Senior Scientist

cc: Chuck Schwer, VT DEC SMS

Reviewed by: J-B
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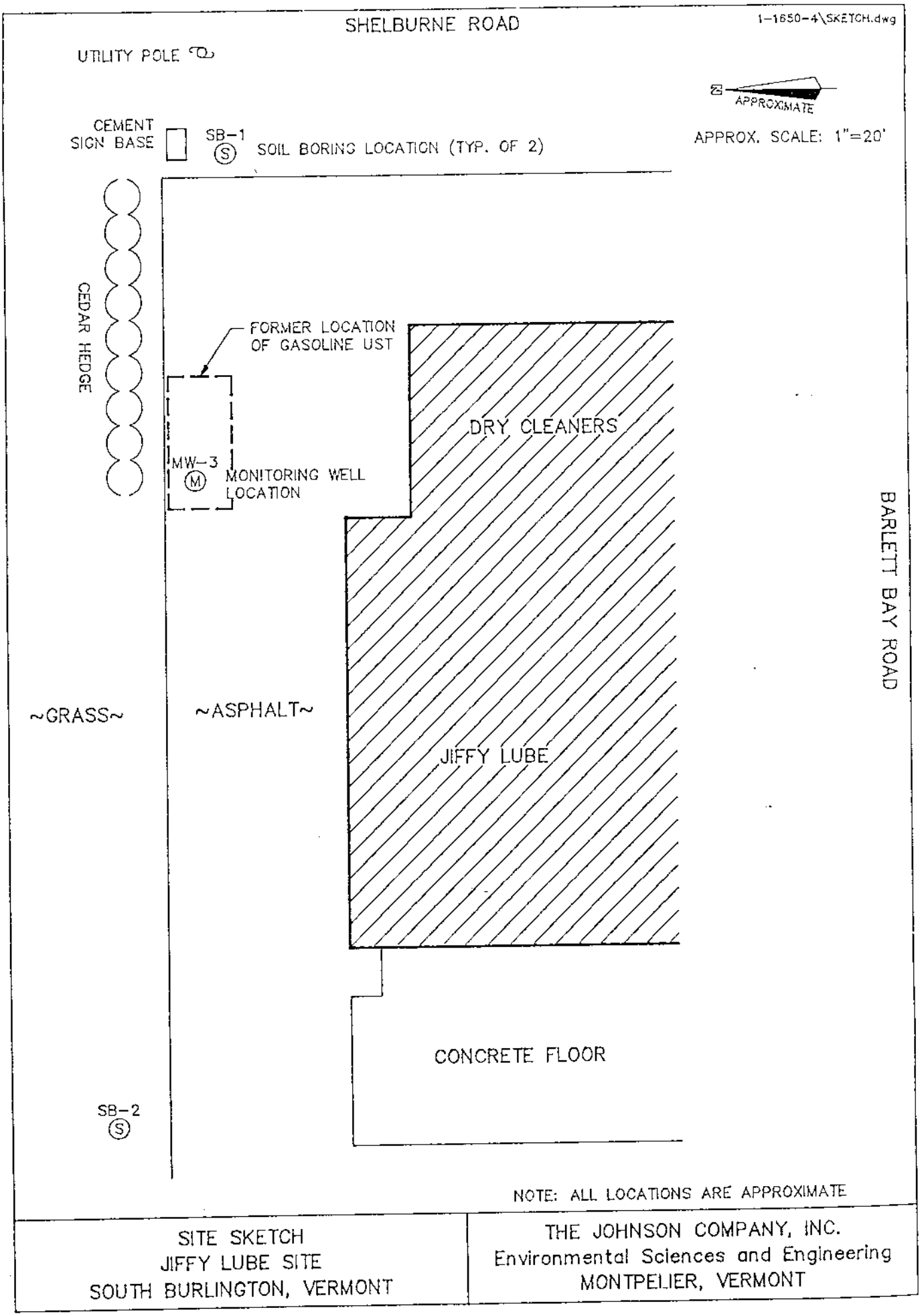

SITE SKETCH
JIFFY LUBE SITE
SOUTH BURLINGTON, VERMONT

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