

# HUFF & HUFF, INC.

## **Environmental Consultants**

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September 15, 1997

Mr. Michael G. Farley
BRR Program Assistant
Wisconsin Department of Natural Resources
Box 12436
4041 N. Richards Street
Milwaukee, Wisconsin 53212

Re: Subsurface Investigation Work Plan Supplement

NT Dor-O-Matic; Greendale, Wisconsin

ERP

BRRTS#: 02-41-118817 Facility ID#: 241050590

Dear Mr. Farley:

A Subsurface Investigation Work Plan (Plan) was submitted to the Wisconsin Department of Natural Resources (WDNR) on June 12, 1997 for the above-referenced facility. This Plan was prepared with the assumption of encountering ground water at a relatively shallow depth based on one boring that was previously conducted at the site. The Plan proposed that four monitoring wells be installed to investigate if ground water had been impacted.

The subsurface investigation field work was conducted on June 12, 1997 and a follow-up status letter was sent to the WDNR on August 6, 1997. The follow-up status letter indicated that a ground water bearing stratum had not been encountered at the site to a depth of 20 feet. Samples at the site were collected continuously and the soils at the site were clayey silts to silty clays. A Shelby tube sample collected at a depth of 9 to 11 feet indicated a hydraulic conductivity of 1.86x10<sup>-8</sup> cm/sec.

Given the low hydraulic conductivity and no indication of a ground water bearing stratum, monitoring wells were not installed at that time. However, based upon the vertical extent that volatiles were present in the soils, further delineation is appropriate.

# VOC Impact Delineation

The second phase of the subsurface investigation would have a two-fold purpose. The first would be to delineate the vertical and horizontal extent of the VOC impact within the physical constraints at this site. Based upon the analytical results, the VOC impact appears to increase with depth in borings H-12, SB-101, and SB-102. Four additional borings are proposed to investigate the extent of migration. The proposed borings are labeled with a 200 series number and are depicted on the

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attached Figure 1.

The soil analytical results from the first investigation indicate that if the degreaser pit is the source of the VOC impact, the migration direction ranges from northwesterly to southerly. The lower VOC concentrations contained in H-13 (to the east) and SB-102 (to the north) delineate the migration in these directions. The proposed soil borings are located to define the extent of migration in the horizontal direction to the northwest and south of the degreaser pit.

The soil borings outside the building will be drilled using a truck mounted rotary drill rig. The samples collected with the truck-mounted rotary drill rig will have blow counts recorded and pocket potentiometer readings collected. Soil boring SB-204 is located on the downward slope and is therefore inaccessible by the drill rig. This will therefore be attempted using a hand auger. The borings inside the building will be conducted using a hand operated Geo-probe system

Soil boring 201, located east-northeast of the degreaser, will be continuously sampled to a depth of 40 feet or to the depth of ground water, which ever occurs first. A photoionization detector (PID) will be used in the field in an attempt to define the vertical extent. Soil borings SB-202 and SB-203 will be drilled to the vertical migration depth determined in SB-201, or shallower if the PID meter indicates a shallower vertical migration depth in these borings.

Soil boring SB-204 will be drilled to the depth physically possible with the hand auger or the extent of vertical migration, whichever is shallower. It is the intention with SB-204 to be located at the northerly extent of the VOC migration. This will be augered at the property line, which is 40 feet north of the building. The depth of the inside borings (H-212 and H-213) will be limited to 11 feet, the depth of the hard-packed clayey silt.

#### **Ground Water Determination**

The other purpose of the second phase of the subsurface investigation will be to determine the depth of a ground water bearing stratum. The maximum depth obtained during the first phase of the subsurface investigation plan was 20 feet. It is estimated that the depth to a ground water bearing stratum will be approximately 30 feet deep. This is the depth to the wetland area located to the north of the facility.

If a ground water bearing stratum is encountered, a monitoring well will be installed in accordance with the methodology presented in the June 12, 1997 Subsurface Investigation Work Plan. The purpose of the single monitoring well is to determine if ground water at the site has been impacted. If it has been determined that there is an impact to ground water, additional monitoring wells will be considered.

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## Soil Sample Analysis

The soil samples delivered to the laboratory for VOC analysis using Method 8260 will be determined based upon the PID screening. At least one sample will be sent to the laboratory for analysis from each boring. If the PID screening does not detect any VOC impact in any of the soil samples collected from an individual boring, the deepest soil sample collected will be analyzed. If the PID screening does detect VOC impact in a particular boring, the soil sample exhibiting the highest PID reading and the deepest soil sample that does not detect any VOC impact will be analyzed.

## Closing

The additional information will provide data to more accurately model the appropriate site specific clean up objectives. All procedures and methodology will follow the Subsurface Investigation Work Plan submitted to the WDNR on June 12, 1997. A copy of the Plan has been attached for reference.

Sincerely,

James E. Huff, P.E.

Vice President

JEH:sdl

**Enclosures** 

cc:

Mr. Don Straub, NT Dor-O-Matic

Mr. Udo Scholz, NT Dor-O-Matic

Ms. Laura Leonard, Sidley & Austin

Mr. Kevin Shaver, Montgomery Watson

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