

STATE OF DELAWARE

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL-
SITE INVESTIGATION AND RESTORATION BRANCH

PROPOSED PLAN OF REMEDIAL ACTION



January 2006

Sussex Materials
Milford, DE

DNREC Project No. DE-1342

This proposed plan of remedial action (Proposed Plan) presents the Department of Natural Resources and Environmental Control's (DNREC's) proposed cleanup alternative for the Sussex Materials property in Milford, DE. For site-related reports and more information, please see the public participation section of this document.

The purpose of the proposed plan is to provide 1) specific information about the soil and groundwater contamination present at the site and 2) the remedy DNREC is proposing for the site. In addition, as described in Section 12 of the Delaware Regulations Governing Hazardous Substance Cleanup (Regulations), DNREC will provide notice to the public and an opportunity for the public to comment on the proposed plan. At the comment period's conclusion, DNREC will review and consider all of the comments received and then will issue a final plan. The final plan shall designate the selected remedy for the site. All investigations of the site, the proposed plan, and comments received from the public, DNREC's responses to the comments, and the final plan will constitute the Remedial Decision Record.

This proposed plan summarizes the remedial investigation and interim remedial actions that have already taken place at the Site. Each of these reports is included in the administrative record file. Copies of these documents can be obtained or viewed at the DNREC offices in New Castle, Delaware.

DNREC's proposed remedy is preliminary and a final decision will not be made until all comments are considered. The final remedy selected may differ from the proposed remedy based on DNREC's responses to comments.

INTRODUCTION

The Sussex Material site (Site) is located in the town of Milford in Kent County, Delaware (Figure 1). Sussex Materials L.L.C., the current owner of the site, contracted Ten Bears Environmental, L.L.C. (Ten Bears) an environmental consultant, to conduct an evaluation of the Site. The owner's intent is to develop the site into a nonresidential property. The owner of the Site entered into a Modified Brownfield Development Agreement (MBDA) with the Department of Natural Resources and Environmental Control-Site Investigation and Restoration Branch (DNREC-SIRB) to perform an investigation in order to evaluate risks to human health and the environment, and to perform a remedy if necessary.

Under the supervision of DNREC-SIRB, Ten Bears performed a Brownfield Investigation (BFI) at the subject site on behalf of Sussex Materials L.L.C. The purpose of the BFI was to:

1. Characterize the nature and extent of potential hazardous substances of environmental concern;
2. Identify the conditions that will warrant a remedial action; and
3. Result in a Certificate of Completion of Remedy (COCR) from DNREC-SIRB upon the completion of all required tasks.

SITE DESCRIPTION

The Site (tax parcel #3-30-15.05-1) is located east of the Penn Central/Conrail railroad tracks that cross a road designated as "Swains Private Rd" on the map, which is approximately ¾-mile south of Milford, Delaware. The closest surface water body, Herring Branch, is approximately 600 feet west of the Site. The Site occupies approximately 8 acres of land (Figure 1). Currently, the northern third (approximately 3 acres) of the Site is primarily paved, and includes two concrete masonry buildings; a wood frame building; two smaller metal sheds; a truck scale and associated scale house; and construction trailer. The remaining two-thirds (approximately 5 acres), in the southern portion of the Site, is covered with grassland.

Four underground tanks (USTs) were identified in the paved portion of the Site. Two tanks were used to store leaded gasoline and possibly diesel fuel. The other two tanks were used to store heating fuel. Based on field measurements provided by Coastal Pump & Tank personnel, all four tanks appear to be less than 1,000-gallon capacity. The USTs have been referred to the DNREC's Tank management Branch (TMB).

Land development in the general vicinity of the site is primarily agricultural/residential interspersed with some limited commercial uses. The City of Milford provides water as well as sewer services to the nearby areas and plans to extend the services to the Site as part of the redevelopment.

SITE HISTORY

The Site was formerly owned by the D&D Dismantling, Inc. The facility included a solid waste recycling and disposal area. The property was used as a base of operations and as a temporary storage facility in the demolition of industrial plants.

Ten Bears reviewed historical information including a soil map superimposed on the 1970 aerial photograph of the Site. The review also included aerial photographs available from the Sussex County Conservation District for 1977 and 1989.

There were indications of land disturbing activities on the 1970 aerial photograph of the Site. The land disturbance is primarily visible in the northern two-third section of the property. The 1977 aerial depicts similar conditions, though a few small rectangular objects suggestive of trailers, sheds, vehicle, or other small structures were observed scattered on the southern portion of the Site. The 1989 photograph shows similar conditions to those observed during the site reconnaissance. Indications of soil disturbances are visible, mostly in the southeastern third of the property, and along the western border of the property and slightly north of the current tire pile location. Trenches suggestive of buried solid waste debris were observed along the central portion of the southern third of the property.

INVESTIGATION RESULTS

General:

Ten Bears performed a Limited Subsurface Exploration (LSE) in December 2003 and January 2004. This consisted of 25 test pits excavated using a track-hoe, and nine soil borings completed using a direct push drilling method.

In accordance with the January 2005 Brownfield Investigation Work Plan (BFIWP), Ten Bears performed 13 additional direct push borings in February 2005 and installed three (3) monitoring wells. Figure 2 depicts the approximate locations of the test pits, soil borings, and monitoring wells. Soil and water samples were collected to evaluate potential soil and groundwater contamination. The following is a summary of the soil and groundwater sampling results.

Soil:

Twenty-six soil samples were sent to the DNREC-SIRB laboratory for screening analysis. The soil samples were screened for organic and inorganic compounds. All of the 26 samples tested contained one or more metals (antimony, barium, iron, manganese) at concentrations that exceeded the Uniform Risk-Based Standard (URS) for Unrestricted Use (residential), though none contained metals exceeding the URS for Restricted Use (commercial). Except for Tentatively Identified Compounds (TIC), there were no detectable concentrations of regulated organic compounds. A summary of the soil sample screening results showing only the metals that exceeded their URSS are included in Table 1.

**TABLE 1
SUMMARY OF SOIL SAMPLE SCREENING RESULTS**

<u>Contaminant</u>	<u>Maximum Observed Concentration (mg/kg)</u>	<u>URS for Unrestricted Use (mg/kg)</u>	<u>URS for Restricted Use (mg/kg)</u>	<u>Delaware Default Background Remediation Standard (mg/kg) *</u>	<u>Typical Delaware Soil Concentrations (mg/kg)</u>
<i>Inorganics- Metals</i>					
Antimony	6.6	3	82	N/A	N/A
Barium	574	550	14,000	N/A	N/A
Iron	17,000	2,300	61,000	2,300	3,000-22,000
Manganese	975	160	4,100	N/A	N/A

mg/kg – milligram per kilogram (parts per million or ppm).
N/A – Not Applicable.

Out of the 26 samples screened, 10 samples were submitted for confirmatory analyses. The analyses included both organic and inorganic contaminants. The results of the confirmatory analyses reveals that three out of 10 of the samples submitted had concentrations of iron (2,830 mg/kg), aluminum (13,900 mg/kg), and manganese (195 mg/kg). The confirmatory concentrations for iron and manganese exceed the Unrestricted Use URSs for both metals, but are not as high as the concentrations of the screening results. This indicates that the screening results were biased high. Furthermore, barium and antimony were detected during screening but were not confirmed by laboratory results, which also indicate biased screening.

Two of the 10 samples submitted for organic analysis contained polychlorinated biphenyl (PCB) compounds that were detected above the Unrestricted URS (0.3mg/kg). As indicated in Table 2, samples GB-7 contained PCB Aroclor1254 at a concentration of 0.52mg/kg and TP-13 contained PCB Aroclor 1248 at a concentration of 0.69mg/kg

**TABLE 2
SUMMARY OF SOIL SAMPLE LABORATORY ANALYSIS RESULT**

<u>Contaminant</u>	<u>Maximum Observed Concentration (mg/kg)</u>	<u>URS for Unrestricted Use (mg/kg)</u>	<u>URS for Restricted Use (mg/kg)</u>	<u>Delaware Default Background Remediation Standard (mg/kg) *</u>	<u>Typical Delaware Soil Concentrations (mg/kg)</u>
<i>PCBS</i>					
PCB Aroclor 1248	0.69	0.3	3	N/A	N/A
PCB Aroclor 1254	0.52	0.3	3	N/A	N/A

*mg/kg – milligram per kilogram (parts per million or ppm).
N/A – Not Applicable.

Groundwater:

Eight-groundwater samples were submitted for groundwater analysis. Iron and manganese were detected in filtered groundwater samples at concentrations exceeding their applicable URSs. Iron was detected in MW-1 at a concentration of 0.441 mg/L, exceeding its URS of 0.3 mg/L, based on Secondary Maximum Contaminant Levels (SMCLs), which are threshold values for odor and taste effects on drinking water and not cleanup standards. Manganese concentrations in MW-1 and MW-2 were 1.08 mg/L and 0.13 mg/L respectively, exceeding its URS of 0.05 mg/L. A summary of the groundwater results can be found in Table 3.

Two of the groundwater samples (MW-2) and (GP-5) submitted for laboratory analysis contained tetrachloroethylene (PCE) and acetone respectively. PCE concentration (0.007 mg/L) slightly exceeded its URS of 0.005 mg/L for groundwater, and the acetone concentration (0.085 mg/L) slightly exceeded its URS of 0.061 mg/L. Considering the close proximity of MW-2 and GP-5 to other monitoring wells that did not contain detectable PCE, it appears that the extent of the contaminations is minimal and localized. In November 2005, additional groundwater samples were collected from an onsite well located at the northernmost part of the Site as shown in Figure 2. Neither PCE nor acetone was detected in the tested samples. This further shows that groundwater contamination onsite is not widespread (Table 3).

**TABLE 3
GROUND WATER RESULTS**

<u>Contaminant</u>	<u>Maximum Concentration*</u> (mg/L)	<u>Groundwater URS</u> (mg/L)
<i>Inorganics – Dissolved Metals</i>		
Aluminum	0.231	0.2
Iron	0.441	0.3
Manganese	1.09	0.5
<i>Organics (VOCs)</i>		
Tetrachloroethene(PCE)	0.007	0.005
Acetone	0.085	0.061

* Maximum Concentration detected in groundwater.

* mg/kg – milligram per kilogram (parts per million or ppm).

Summary

The results of the investigation indicated that the Site contains some soil and groundwater contaminants at levels exceeding current URSs for Unrestricted Use but not the URSs for Restricted Use. Based on this and the current nonresidential usage and zoning of the site, the contaminant levels found on the Site do not pose a risk to human health and would not require a cleanup action under the HSCA. However, an environmental covenant restricting the site and groundwater use is required.

REMEDIAL ACTION OBJECTIVES

According to Section 8.4(1) of the Regulations, site-specific remedial action objectives (RAOs) must be established for all plans of remedial action. The Regulations provide that DNREC set objectives for land use, resource use, and cleanup levels that are protective of human health and the environment.

Qualitative RAOs describe, in general terms, what the ultimate result of the remedial action, if necessary, should be. The following qualitative RAOs are determined to be appropriate for the Site:

- Prevent human exposure to contaminated groundwater at the Site as long as the contaminant concentrations are at unacceptable levels.
- Restrict the Site to non-residential use.

The objectives are consistent with the proposed use of the Site as industrial/commercial, Kent County zoning policies, state regulations governing water supply, and worker health and safety.

Based on the above qualitative RAOs, the following quantitative RAO was developed:

- Prevent human exposure to groundwater having a PCE concentration greater than the DNREC URS value of 0.005 mg/L.

PROPOSED PLAN OF REMEDIAL ACTION

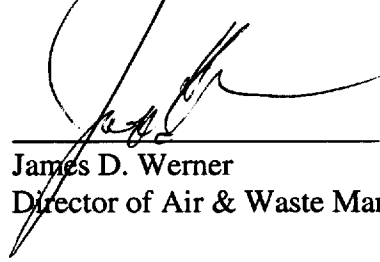
Based on DNREC-SIRB's evaluation of the Site information and the above remedial action objectives, the DNREC proposes the following remedial action be taken at the site:

- An environmental covenant, consistent with Delaware's Uniform Environmental Covenants Act, UECA (Title 7, Del. C. Chapter 79, Subtitle II), will be required at the Site, within 90-days following DNREC's adoption of the Final Plan of Remedial Action. The covenant will prohibit groundwater usage as a source of potable water and limit the use of the site to nonresidential (commercial/industrial).
- The USTs at the Site will be excavated and the TMB of the DNREC will conduct an investigation to identify any potential contaminants in the excavated area. If the result of the investigation reveals any contaminant levels above applicable standards, a cleanup action will be implemented in the area.

PUBLIC PARTICIPATION

The Department welcomes comments and suggestions on the proposed plan of remedial action. The comment period begins on February 8, 2006 and ends at the close of business (4:30 p.m.) on February 27, 2006.

If you have any questions or concerns regarding the site, or if you would like to view reports or other information regarding this site, please contact the project manager, Babatunde Asere, 391 Lukens Drive, New Castle, Delaware 19720 or at 302.395.2600.



James D. Werner
Director of Air & Waste Management

1 Feb 2006
Date

BTA:cc
BTA06000.doc
DE 1342 II B 8

FIGURES

FIGURE 1

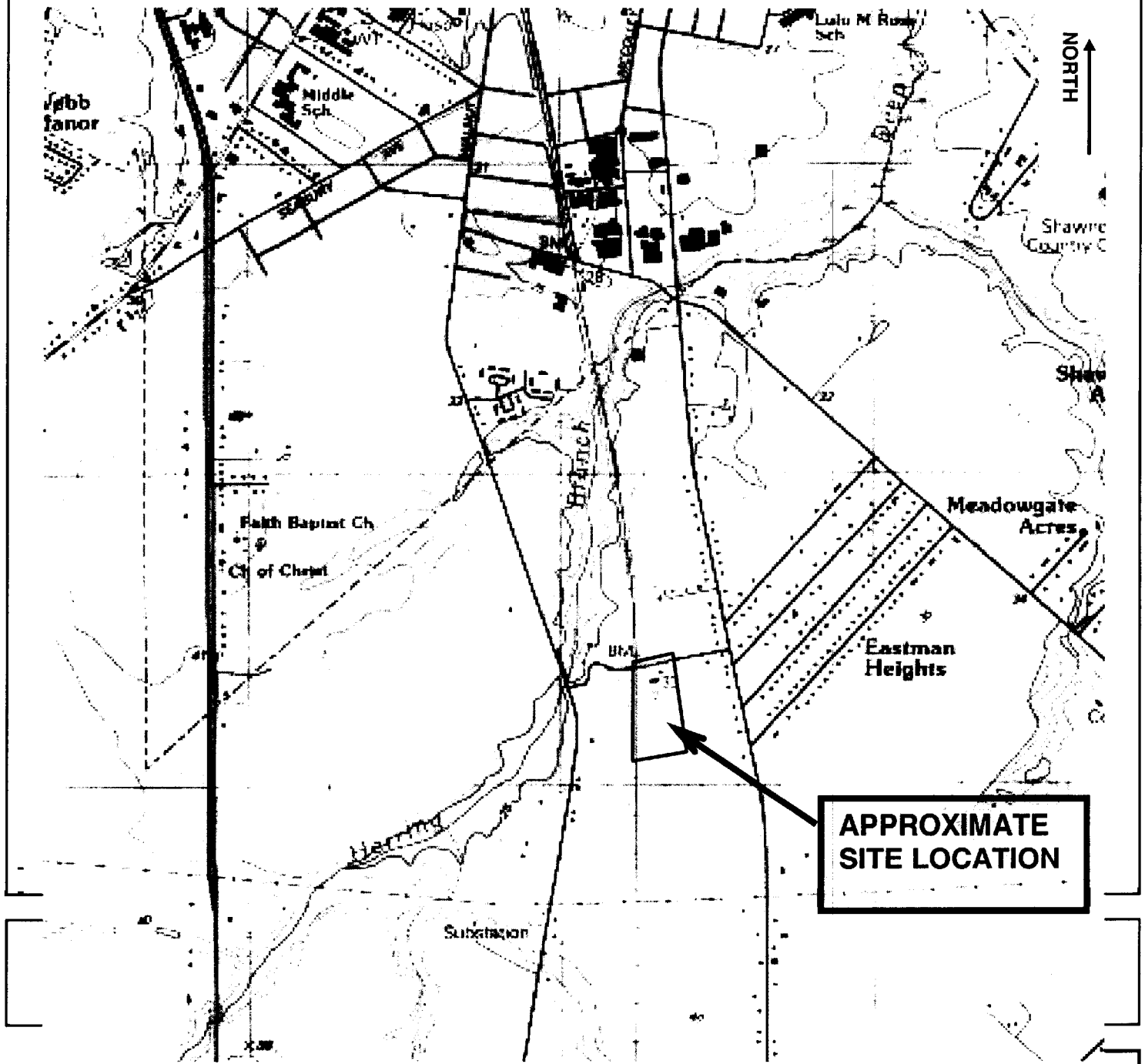


FIGURE 1 - SITE LOCATION SKETCH

SUSSEX MATERIALS SITE

MILFORD, SUSSEX COUNTY, DELAWARE

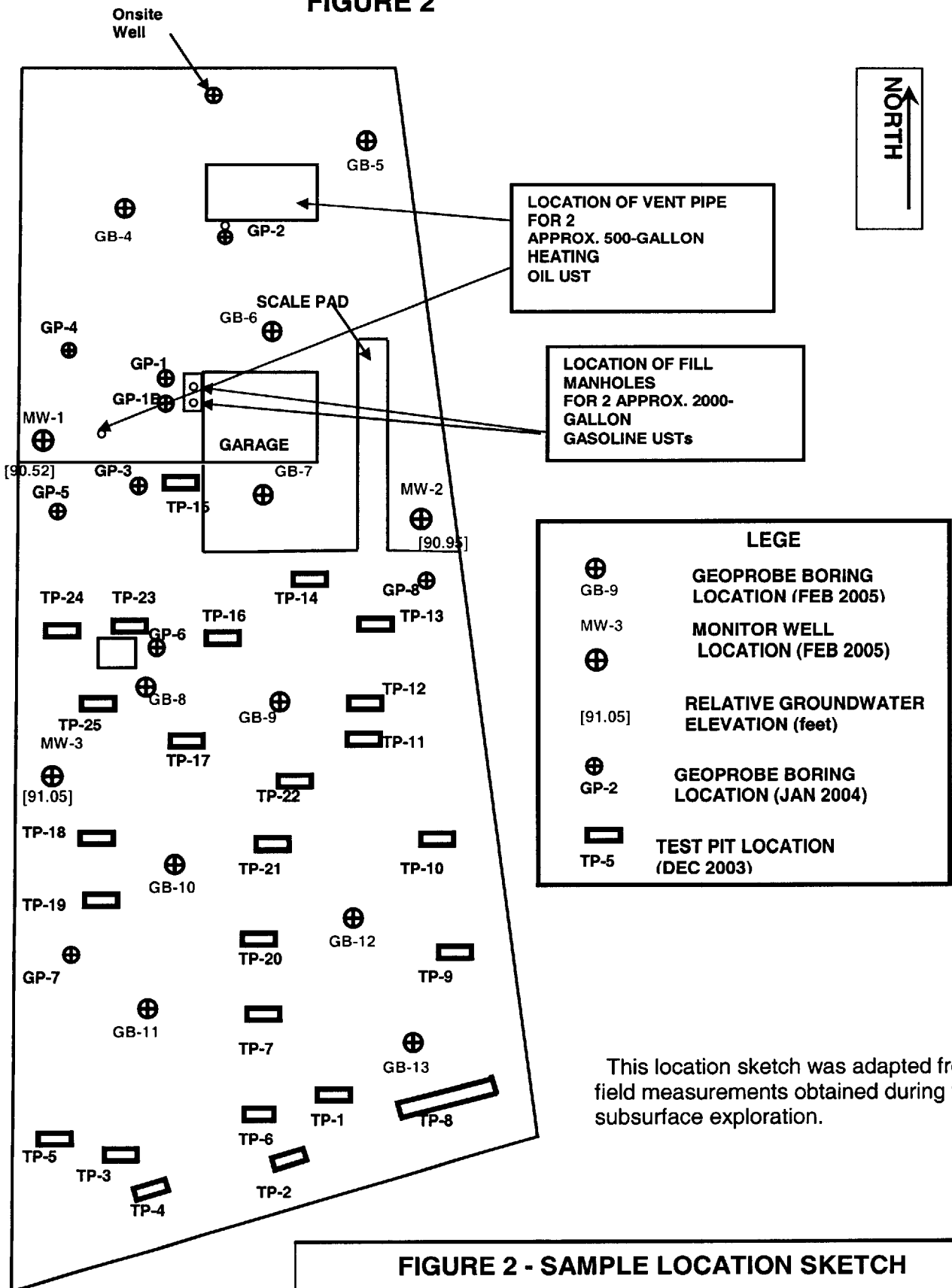


**Ten Bears
Environmental**

PHONE: (302) 761-6666 FAX: (302) 761-6665

DATE:	11 Jan 2005	JOB NUMBER:	04-150.B
DRAWN BY:	JPG	SCALE:	1 inch = approx. 1570 feet
CHECKED BY:		FIGURE NO:	1
FILE NO:	04-150B-rptfigs	SHEET	1 OF 1

FIGURE 2



This location sketch was adapted from field measurements obtained during the subsurface exploration.

**FIGURE 2 - SAMPLE LOCATION SKETCH
SUSSEX MATERIALS SITE**

MILFORD, SUSSEX COUNTY, DELAWARE

DATE:	18 MAR 2005	JOB NUMBER:	04-150.B
DRAWN BY:	JPG	SCALE:	1 inch = approx. 150 feet
CHECKED BY:		FIGURE NO:	3
FILE NO:	04-150.B.rptfigs	SHEET	1 OF 1