

FINAL PLAN OF REMEDIAL ACTION



J.G. Townsend OU-1 Site

*Intersection of Pepper & Kimmey St.
Georgetown, Delaware*

*September 15, 2009
DNREC Project No. DE-0208*

This Final Plan of Remedial Action (Final Plan) presents the Department of Natural Resources and Environmental Control's (DNREC's) requirements to address environmental contamination at the J.G. Townsend Operable Unit 1 (OU-1) site (Site).

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for the Site on August 23, 2009 and opened a 20-day public comment period. The Proposed Plan is attached. There were no comments or questions from the public. Therefore, the Proposed Plan is adopted as the Final Plan.

Final Plan will consist of the following requirements:

- The lead contaminated soil will be removed.
- Sample the groundwater for a year to confirm that the removal was successful. Based on the sample results, DNREC may require additional remedies including sampling and installing a new well (s).
- Prepare a contaminated material management plan to properly manage soil and groundwater to be used in the event that the Site is developed in the future.
- Site owner will record an environmental covenant consistent with Delaware's Uniform Environmental Covenants Act, UECA (Title 7, Del. Code Chapter 79, Subtitle II). The environmental covenant will limit land use to non-residential development, prohibit land disturbing activities without DNREC's prior written approval, and prohibit the installation of wells and use of any groundwater at the Site.
- DNREC will place a Groundwater Management Zone (GMZ) on the Site to prohibit shallow potable well installation without DNREC approval.
- Implement a DNREC-approved Operation and Maintenance (O&M) Plan to detail the procedures and practices for groundwater sampling, and vapor intrusion evaluation required prior to development.

Approval:

This Final Plan meets the requirements of the Hazardous Substance Cleanup Act.



Kathleen Stiller, Program Manager II
Site Investigation and Restoration Branch

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PROPOSED PLAN OF REMEDIAL ACTION

J.G. Townsend Jr. & Company
Fuel Depot Site Operable Unit 1 (OU-1)
Georgetown, Sussex County, Delaware
DNREC Project No. DE-1338



August 2009

Delaware Department of Natural Resources and Environmental Control
Site Investigation & Restoration Branch

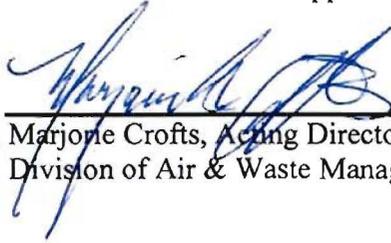


391 Lukens Drive
New Castle, Delaware 19720

CONTENTS

- Proposed Plan: Questions & Answers
- Figures 1-3
- Glossary of Terms
- Attachment: *What is a Proposed Plan?*

Approved by:



Marjorie Crofts, Acting Director
Division of Air & Waste Management

8.18.09

Date

PROPOSED PLAN
Questions & Answers

J.G. Townsend Jr. & Company
Fuel Depot (OU-1) Site



What is the J.G. Townsend & Company “Fuel Depot Site”?

The J.G. Townsend property consists of two parcels separated by Pepper Street located on the north side of the Town of Georgetown in Sussex County, Delaware. The larger parcel is occupied by the Frozen Foods plant. The smaller parcel, the JG Townsend Operable Unit 1 (OU-1) also known as Fuel Depot was formerly used for the storage of fuel oil. OU-1 was created for the Fuel Depot after petroleum contamination was observed at this location. OU-1 has been vacant since 2001. The locations of the Frozen Foods plant and OU-1 are shown on Figure 1 and 2.

<p>Tax Parcel Number: 1-35-14.16-55 (Sussex County) Nearest intersection: Pepper Street and Kimmey Street Area: 0.4 acres Surrounding Properties: Surrounding land use is a mixture of industrial (the Frozen Foods Plant), small commercial properties, and residential housing. Site Utilities: None Topography: Flat Groundwater: Columbia aquifer. Groundwater is 4-5 feet deep and flows north.</p>

What happened at the Site?

The Site had three (3) above-ground storage tanks (ASTs), one of 12,000 gallon capacity and two of 15,000 gallon capacity that were likely used to store fuel oil / heating oil / gasoline. The Site was used as a petroleum fuel distribution center for approximately 65 years. The Site was owned by several petroleum companies including Sinclair Oil Company, and British Petroleum Company (BP). J.G. Townsend & Co. reportedly purchased the site in 1973, and used the Site to store fuel for their production facility.

The three (3) ASTs, associated fuel dispensers, and other equipment were removed in 2001. Both the Frozen Foods plant parcel and the Fuel Depot parcel were investigated during a 2002 Remedial Investigation (RI). The site layout and the RI sampling locations are shown on Figure 3. The contamination at OU-1 is likely the result of spills and leaks from the tanks or equipment over the years of operation.

What is the environmental problem at the Site?

The surface soil contains lead contamination above DNREC standards in a small section of OU-1.

A layer of free-phase petroleum product less than one-inch thick was detected in one of the monitoring wells at the Site. The product was analyzed at a laboratory and was reported to consist of weathered gasoline and fuel oil. The product was removed as part of an interim action

as described in the section below. Levels of lead above DNREC standards have been observed in the groundwater. The presence of lead in the soil and in the groundwater indicates that the lead from the soil source on OU-1 may be leaching from the soil into the groundwater.

The volatile organic contamination in the groundwater would likely pose a human health risk vapor intrusion if a building were to be constructed on the Site.

Environmental investigations that were performed at the Site include a Preliminary Evaluation in June 2001; Remedial Investigation in December 2002, and Supplemental Investigation Report in May 2007 which includes a summary of previous reports as follows: Delineation of the Free Product in April 2004, Additional Evaluation of Groundwater in March 2005, Additional surface soil Evaluation in October 2006.

Since the former use of the Site was petroleum storage and the main types of contamination are petroleum related, DNREC-SIRB used DNREC Tank Management Branch Delaware Risk-Based Corrective Action Program (DERBCAP) Tier I standards as one of the applicable remediation standards for the Site. These investigations indicated that surface soil (0-2 feet depth) at the Site is contaminated with the lead above DNREC SIRB standards for commercial (non-residential) use of the property.

In 2003, 0.24 inches of light non-aqueous phase liquid petroleum product (LNAPL) also known as free-phase petroleum product was detected in a well on OU-1. Due to interim actions listed below, no measureable free-product has been observed since January 2004.

In addition to the free product, the groundwater has been impacted above DERBCAP Tier I standards for benzene, toluene, 1,2-dibromoethane (a gasoline additive) and lead. Although the groundwater samples from 2 of the 5 wells closest to the former AST locations contain benzene, toluene, ethylbenzene, and xylene (BTEX) and dissolved lead at concentrations above the USEPA drinking water maximum contaminant levels (MCLs), the shallow site groundwater is not used for drinking water. No BTEX compounds were detected at the down-gradient wells installed specifically to monitor the potential for groundwater contamination to migrate outside of OU-1. However, lead was detected in the well above Tier I standards.

The human health risk assessment for OU-1 indicated that future use of the property could result in an unacceptable level of risk to future site users. Future risks could be posed by the ingestion of onsite groundwater for drinking water, the Indoor Air pathway if a structure were constructed, and the direct contact with the high-lead area of surface soil.

What clean-up actions have occurred at the Fuel Depot Site?

Following discovery of the free product in 2003, interim actions were initiated. Free product was initially removed with a bailer and then with a more effective passive recovery system consisting of an absorbent material lowered into the well. This system was monitored and cleaned twice a month for the next year. No measurable product was found after January 6,

2004, and further monitoring was halted in October of 2004. A total of 0.5 gallons of free product was removed from the well.

What Additional Clean-up Actions are Proposed by DNREC for the Fuel Depot Site?

The proposed remedy for OU-1 includes:

- Removal of the lead contaminated soil to prevent ongoing impact to groundwater.
- Sample wells for a minimum of one year to confirm that lead removal was successful.
- Protect site workers by properly managing the soil and groundwater according to the DNREC approved Plan for any future land disturbing activities.

DNREC is proposing that the following Cleanup Actions be taken at the site:

1. The excavation and offsite disposal of the surface soils in the lead hotspot area containing lead at concentrations above the Restricted Use (commercial / industrial) Uniform Risk-Based Concentration of 1,000 mg/kg;
2. The redevelopment and re-sampling of site well MW-FD and downgradient wells. Sample these wells for Tier 1 petroleum products including lead for a year. Based on the sample results, DNREC may require additional remedies including installing new well (s).
3. An environmental covenant consistent with Delaware's Uniform Environmental Covenant Act (UECA) will be placed by the owner within 90-days following DNREC's adoption of the Final Plan of Remedial Action which will (1) restrict the future use of OU-1 to commercial or industrial use, (2) prohibit land-disturbing activities on OU-1 (including but not limited to digging, drilling, construction, earth moving, etc.) unless first obtaining DNREC's prior written approval, (3) prior to any Site redevelopment, submit for DNREC approval a Site-specific Contaminated Materials Management Plan (CMMP) to protect site workers from excavated subsurface soil. The CMMP must be implemented during property development. (4) prohibit the installation of drinking water wells and/or the use of any groundwater from the site unless first obtaining DNREC's written approval.
4. DNREC will place a Groundwater Management Zone (GMZ) on the Site that will stipulate that DNREC's review and approval will be required before placement of any water supply well or usage of groundwater at the site. The GMZ will prohibit the installation of any water supply well in the shallow aquifer. Water supply wells may be installed in the deeper aquifer only upon DNREC's written approval. Upon attainment of the remedial objectives, DNREC may consider removal of the GMZ and the environmental covenant as applicable.
5. A DNREC-approved Operation and Maintenance (O&M) Plan will be submitted which will detail the procedures for, and the frequency of, groundwater quality monitoring required after the removal of the high-lead soil from the site to monitor lead and VOC levels for use in a Vapor Intrusion evaluation prior to site redevelopment.

What are the long term plans for the Site after the cleanup?

The owners, J.G. Townsend & Company, have not proposed any changes or reuses of OU-1. At this time, long term plans for the Site include:

- restricting OU-1 use to non-residential (unless approved in advance by DNREC);
- preventing the use of groundwater for potable use;

- restricting land disturbance activities without DNREC's prior approval, require a DNREC-approved CMMP prior to OU-1 redevelopment and compliance with a DNREC-approved Operation and Maintenance (O&M) Plan;
- Implementing an Operations & Maintenance Plan to monitor groundwater to determine that the currently proposed remedial actions are appropriate and provide sufficient protection of human health and the environment and to describe future periodic inspections to make sure that future land use is consistent with the restrictive covenant.

Current and future owners of the property will be responsible for the implementation of all aspects and costs of the approved final plan of remedial action, the DNREC-approved Contaminated Materials Management Plan and O&M Plan, and the adherence to the requirements and conditions established in the uniform environmental covenants for the site.

DNREC plans to issue a Certificate of Completion of Remedy (COCR) for OU-1 after the completion of clean-up, groundwater sampling, the approval of the CMMP and O&M plan, and the implementation of the uniform environmental covenant at the site.

How can I find additional Site information or comment on the Proposed Plan?

The complete site file containing all investigation data and reports is available for public review at the DNREC office, 391 Lukens Drive in New Castle. Most documents are also found on:

<http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/>

The 20-day public comment period begins on August 23 and ends on September 14, 2009. Please send written comments to the DNREC office or call Rick Galloway, Project Manager, at: 302-395-2600.

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Glossary of Terms Used in this Proposed Plan

Brownfield	Property that is vacant or underutilized because of the perception or presence of an environmental problem.
Certified Brownfield	A brownfield that DNREC has determined is eligible for partial funding through the Delaware Brownfields Program.
Contaminant of Concern (COC)	These are potentially harmful substances at concentrations above acceptable levels (eg metals and PAH).
Certificate of Completion of Remedy (COCR)	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
Exposure	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
Final Plan of Remedial Action	DNREC's proposal for cleaning up a hazardous site after it has been reviewed by the public and finalized.
Hazardous Substance Cleanup Act (HSCA)	Delaware Code Title 7, Chapter 91. The law that enables DNREC to identify parties responsible for hazardous substances releases and requires cleanup with oversight of the Department.
Proposed Plan of Remedial Action	A plan for cleaning up a hazardous site submitted by DNREC and subject to public comments.
Risk	Likelihood or probability of injury, disease, or death.
Vapor Intrusion	The migration of vapors from subsurface contamination, including groundwater and in soil, into buildings.
Contaminated Material Management Plan	A plan for safely handling contaminated soil, groundwater or sediment during redevelopment of an environmentally contaminated property.
Operable Unit (OU)	A portion of property usually divided from the rest of the property due to the differences in contamination, risk or

What is a *Proposed Plan*?

A Proposed Plan of Remedial Action (Proposed Plan) is a summary of how DNREC intends to clean up a contaminated site. A Final Plan of Remedial Action (Final Plan) is the adoption of the Proposed Plan after DNREC considers all comments made by the public within the comment period of twenty days.

The Delaware State Legislature passed the Hazardous Substance Cleanup Act (HSCA) in 1990. The Legislature made sure that members of the public would be informed about environmental problems in their own neighborhoods and have a chance to express their opinions concerning the clean up of those environmental problems before DNREC takes action.

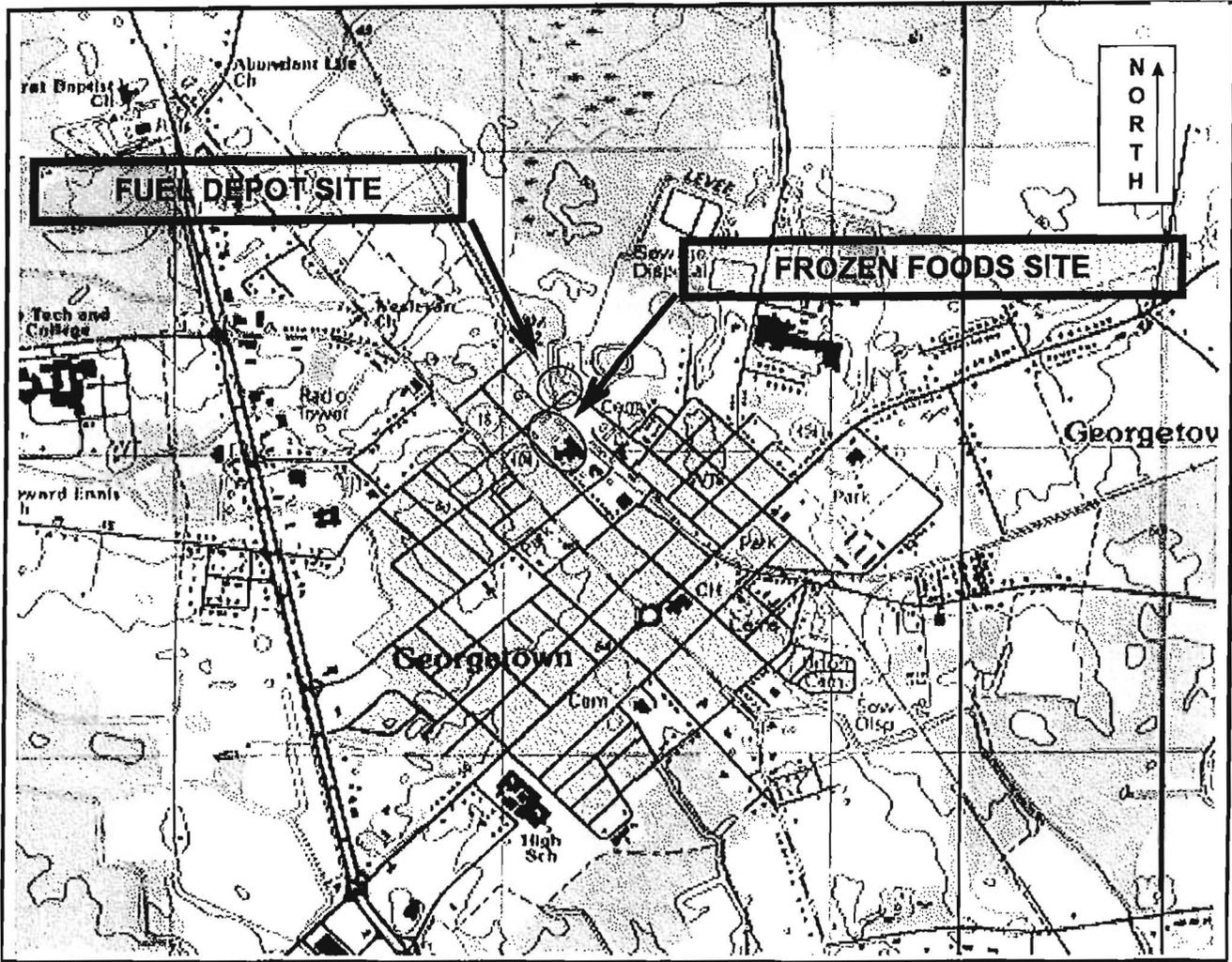
After DNREC studies a site, it summarizes the problems there and proposes one or more possible solutions in a *Proposed Plan*. The *Proposed Plan* contains enough information to allow the general public to understand the site and its problems. More detailed information can be found in the reports and documents approved by DNREC. All of the documents and reports created by DNREC or consultants during the course of the investigation of the site are available to the public at the offices of DNREC-SIRB or at DNREC's website:

<http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/sitefiles.asp> .

DNREC issues the Proposed Plan by advertising it in at least one newspaper in the county where the site is located. The legal notices for the Proposed Plans and the Final Plans usually run on Wednesdays or Sundays in the legal classified section of the News Journal and/or the Delaware State News. The public comment period begins on the day (Wednesday), or the day after (Sunday) the newspaper publishes the legal notice for the Proposed Plan.

DNREC frequently holds public meetings during the comment period. Those meetings are usually held near the site in the evening. Citizens can request a public meeting if DNREC did not already schedule one.

DNREC collects comments at the public meetings, by phone or in writing. DNREC considers all comments and questions from the public before it makes the Proposed Plan final.



This location sketch was adapted from the USGS Topographic Map,
 7.5 Minute Series for Georgetown, Delaware (1992)
 Contour interval 5 feet



**Ten Bears
 Environmental**

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 Milton, DE 19968

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FIGURE 1 - SITE LOCATION SKETCH

J.G. TOWNSEND JR. & CO. SITE

316 N. RACE STREET

GEORGETOWN, SUSSEX COUNTY, DELAWARE

DATE:	11/09/2006	JOB NUMBER:	F-104-01
DRAWN BY:	KJL/jpg	SCALE:	1 inch = approx. 2000 feet (1:24,000)
CHECKED BY:		FIGURE NO:	1
FILE NO:	F10401.RIFS.FIG1	SHEET	1 OF 1



The aerial photograph above was downloaded from the Delaware DataMill website.



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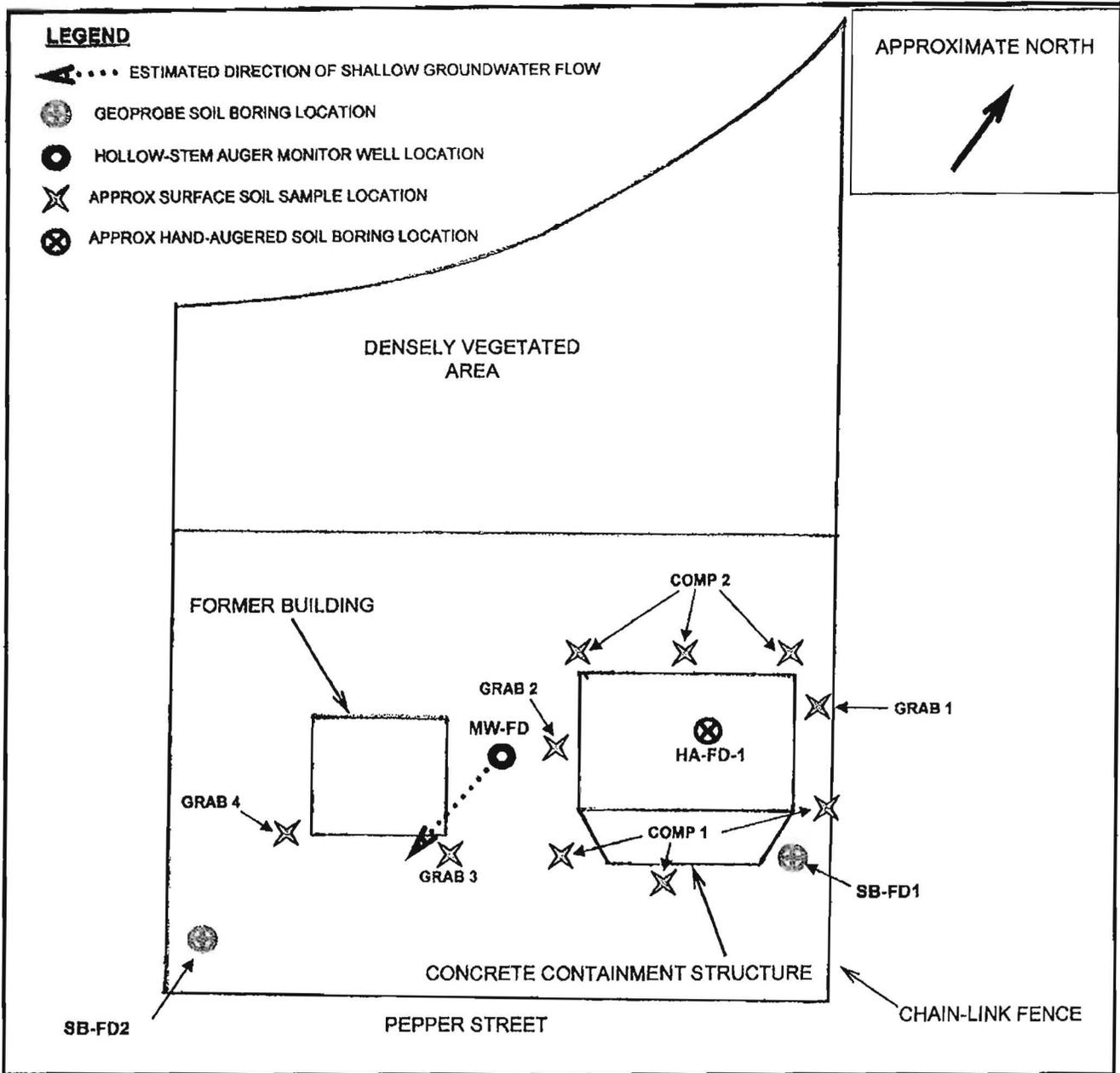
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FIGURE 2: FUEL DEPOT SITE 2002 AERIAL PHOTOGRAPH

FUEL DEPOT SITE

TOWN OF GEORGETOWN, DELAWARE

DATE:	11/14/2007	JOB NUMBER:	F-104-02
DRAWN BY:	JPG	SCALE:	1inch = approx. 200 feet
CHECKED BY:		FIGURE NO:	2
FILE NO:	F10402.FIG2	SHEET	1 OF 1



Note: This sketch is based on approximate field measurements obtained by Ten Bears Environmental personnel and is not the result of an evaluation completed by a professional land surveyor.

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FIGURE 3: SITE LAYOUT AND RI SAMPLING LOCATIONS
 (2002 -2003)
FUEL DEPOT SITE
 TOWN OF GEORGETOWN, DELAWARE

DATE:	11/14/2007	JOB NUMBER:	F-104-02
DRAWN BY:	JPG	SCALE:	1inch = approximately 30 feet
CHECKED BY:		FIGURE NO:	3
FILE NO:	F10402.FIG2	SHEET	1 OF 1